

Arch Cape / Cove Beach Local Wetland Inventory



Prepared for

Columbia River Estuary Study Taskforce/
North Coast Watershed Association

Prepared by

Pacific Habitat Services, Inc.
Wilsonville, Oregon

APPROVED LOCAL WETLANDS INVENTORY
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OREGON DEPARTMENT OF STATE LANDS



July 2011

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1.0 INTRODUCTION

The coastal communities of Arch Cape and Cove Beach, through grants from the Nature Conservancy and the US Fish and Wildlife Service, hired Pacific Habitat Services, Inc. (PHS) to conduct a Local Wetlands Inventory (LWI) within Arch Cape and the portion of Cove Beach within Clatsop County. The study area is defined by the Arch Cape Rural Residential Zone, and in Cove Beach, that portion of the Coastal Residential Zone within Clatsop County (Township 4 South, Range 10 West, Sections 19, 30 & 31, Willamette Meridian).

Two major stream systems within the study area are Asbury Creek, including its tributary Shark Creek in the north-central portion of Arch Cape, and Arch Cape Creek, located at the south end of Arch Cape. There are no major streams in Cove Beach. The approximate study area is shown on Figure 1. All figures are in Appendix A.

The goal of the study was to address the wetland requirements of Statewide Planning Goal 5 (*Natural Resources, Scenic and Historic Areas, and Open Spaces*) and Goal 17 (*Coastal Shorelands*) Oregon Administrative Rule (OAR) Section 660, Division 23. The objective of Goal 5 is to "protect natural resources and conserve scenic, historic and open space resources for present and future generations."

A portion of the study area also falls within the Goal 17 planning area. Goal 17 applies to an area called "coastal shorelands", which is generally all lands bordering the ocean, estuaries, and coastal lakes, and lands west of Highway 101. Goal 17 is intended "to conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics."

PHS determined the quality and quantity of wetlands throughout the study area. The quantity was determined through the local wetlands inventory. The quality was determined by applying the Oregon Freshwater Wetland Assessment Methodology (OFWAM) and then determining whether they are locally significant by applying the criteria contained in state administrative rules (OAR 141-86-300-350) within the Goal 5 planning area and similar criteria in the Goal 17 planning area. Significant wetlands within the Goal 17 planning area are referred to as Major Marshes. This report presents the results of the wetland inventory and assessment.

1.1 Report Format

This report begins by discussing the definitions used in the report and inventory (Section 2), followed by the methodology used to conduct the field work for the LWI, the wetland assessment methodology, and the methodology used to produce the maps for the inventory (Section 3). Section 4 discusses the project cartography. Section 5 is the study area characteristics, such as the climate, topography, soils and vegetation; Section 6 is the Local Wetlands Inventory discussion and conclusions, including wetland distribution, acreage, and Cowardin classification. Section 7 discusses the results of the *Oregon Freshwater Wetland Assessment Methodology* and Section 8 lists the significant wetlands in the project area; Section 9 presents staff qualifications. Section 10 summarizes the project and Section 11 provides a list of the references used in the report.

There are six appendices to the report. Appendix A contains figures illustrating general location, soils and the National Wetlands Inventory maps of the study area.

Appendix B contains the wetland characterization forms for each wetland, organized by wetland code. The characterization sheets note wetland location, tax lots, acreage, Cowardin classification, Hydrogeomorphic classification, soil series, wetland vegetation, adjacent upland vegetation, and other notes related to adjacent wetlands or hydrology. This form was completed for each wetland unit, regardless of whether it was an on-site or off-site determination. If it was an on-site determination, sample point numbers are noted. Locally significant wetlands and major marshes are also noted on the characterization form.

Appendix C contains the wetland determination data forms. These forms document the sample points taken for the on-site wetlands and adjacent uplands. Hydrology, soils, and dominant vegetation are recorded for each sample point in order to determine whether it is wetland or upland.

Appendix D is the *Oregon Freshwater Wetland Assessment Methodology* data and summary for each wetland unit. Each wetland's functions and conditions are assessed according to an established state methodology. The results and rationale are also summarized for each wetland unit.

Appendix E contains the determination of significance for each wetland unit.

Appendix F includes OFWAM field forms and watershed summary tables, that helped answer the OFWAM Assessment.

2.0 DEFINITIONS

These terms helped define the methodology used for the Arch Cape Local Wetlands Inventory and may be referred to in this report.

1987 Manual

The Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1.
(Environmental Laboratory 1987)

This manual is used by the Army Corps of Engineers ("Corps") and the Oregon Department of State Lands ("DSL") to document the location of wetlands within the State of Oregon. The 1987 manual provides technical criteria, field indicators, and recommended procedures to be used in determining whether an area is a jurisdictional wetland. Undisturbed areas require three criteria for them to be classified as wetland. These criteria are hydric soils, a dominance of hydrophytic vegetation, and wetland hydrology.

Cowardin Wetland Classification

The classification of wetlands as defined by plants, soils and the frequency of flooding is described in "*Classification of wetlands and deepwater habitats of the United States.*" (Cowardin, et. al. 1979) See Palustrine System and Estuarine System.

Field verify

To walk over and/or visually check an area to make a wetland determination and map wetlands. This may or may not include collecting sample plot data." (OAR 141-086)

Goal 5

Goal 5 (OAR 660, Division 23) is intended "to protect natural resources, and conserve scenic and historic areas and open spaces." (LCDC, 1996)

Goal 17

Goal 17 specifically addresses coastal shorelands. It is intended "to conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics." (LCDC, 1996)

Goal 17 applies to an area called the coastal shorelands planning area defined in the goal, which is generally all lands bordering the ocean, estuaries, and coastal lakes. Coastal shorelands include "natural or man-made riparian resources, especially vegetation necessary to stabilize the shoreline and to maintain water quality and temperature necessary for the maintenance of fish habitat and spawning areas." Coastal jurisdictions must inventory or identify coastal shorelands, including riparian resources.

Growing Season

"The portion of the year when soil temperatures at 19.7 inches below the soil surface are higher than biological zero (41° Fahrenheit, 5° Celsius)." (COE, 1987)

The growing season for any given site or location is determined from Natural Resource Conservation Service (NRCS, formerly the U.S. Soil Conservation Service SCS) data and information. The length of the season can be approximated from frost-free days, based on air temperature.

Hydric Soils

"Soils which are ponded, flooded, or saturated for long enough during the growing season to develop anaerobic conditions." (USDA, SCS, 1985)

Periodic saturation of soils causes alternation of reduced and oxidized conditions which leads to the formation of redoximorphic features (gleying and mottling). Mineral hydric soils will be either gleyed or will have bright mottles and/or low matrix chroma. The redoximorphic feature known as gley is a result of greatly reduced soil conditions, which result in a characteristic grayish, bluish or greenish soil color. The term mottling is used to describe areas of contrasting color within a soil matrix. The soil matrix is the portion of the soil layer that has the predominant color. Soils that have brightly colored mottles and a low matrix chroma are indicative of a fluctuating water table.

Hydric soil indicators include: organic content of greater than 50% by volume, sulfidic material or "rotten egg" smell, and/or presence of redoximorphic features and dark soil matrix, as determined by the use of a Munsell Soil Color Chart. This chart establishes the chroma, value and hue of soils based on comparison with color chips. Mineral hydric soils usually have a matrix chroma of 2 or less in mottled soils, or a matrix chroma of 1 or less in unmottled soils.

Hydrogeomorphic (HGM) Wetland Classification

A method of assessing wetlands using the physical, chemical, and biological functions of wetlands. It is based on the relationship of geomorphic setting, water source, and hydrodynamics. (Brinson, 1993)

Hydrophytic Vegetation

"Plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content." (National Resource Council, 1995)

The U.S. Fish and Wildlife Service, in the *National List of Plant Species that Occur in Wetlands*, has established five basic groups of vegetation based on their frequency of occurrence in wetlands. These categories, referred to as the "wetland indicator status," are as follows: obligate wetland plants (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and obligate upland (UPL).

Local Wetlands Inventory (LWI)

An inventory of all wetlands greater than 0.5 acres in size within a local jurisdiction using the standards and procedures of OAR 141-86-110 through 141-86-240.

In 1989, the Oregon State legislature authorized DSL to develop a statewide wetlands inventory for planning and regulatory purposes. Accordingly, DSL established Local Wetlands Inventory (LWI) standards and guidelines under ORS 196.674. An approved LWI replaces the National Wetlands Inventory maps and is incorporated into the statewide wetlands inventory.

An LWI is conducted using color or color infrared aerial photographs taken within 5 years of the inventory initiation and at a minimum scale of 1 inch = 400 feet (1" = 400'). Wetlands are located using the on-site option where access to property is allowed or off-site where access is denied. Wetlands can be mapped off-site by using information such as topographic and National Wetlands Inventory maps, aerial photographs, and soils surveys.

The approximate location of wetlands is placed on a parcel-based map. The parcel-based map allows the property owner, the local jurisdiction, and DSL, to know which tax lots may contain wetlands.

The maps and documents produced for the LWI are intended for planning purposes only. Mapped wetland boundaries are accurate to within 25 feet; however, there may be unmapped wetlands that are subject to regulation. In all cases, actual field conditions determine wetland boundaries.

Palustrine Wetlands (e.g. PEM)

"All nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens and all such wetlands that occur in tidal areas where salinity is less than 0.5%. This includes areas traditionally called swamps, marshes, fens, as well as shallow, permanent or intermittent water bodies called ponds." (Cowardin et. al. 1979)

- **Palustrine Unconsolidated Bottom (PUB)**

A wetland or deepwater habitat with at least 25% cover of particles smaller than stones, and a vegetative cover less than 30%.

- **Emergent Wetland (PEM)**

These wetlands have rooted herbaceous vegetation which stand erect above the water or ground surface.

- **Scrub-shrub Wetland (PSS)**

Wetlands dominated by shrubs and tree saplings that are less than 20 feet high.

- **Forested Wetland (PFO)**

Wetlands dominated by trees that are greater than 20 feet high.

Riparian Area

"The area immediately adjacent to a water resource, which affects or is affected by the water resource. Riparian areas do not include the water resource itself." (PHS, 1998)

Riverine System

"The riverine system includes all wetlands and deepwater habitats contained within a channel." (Cowardin, et. al. 1979)

Waters of the State

Natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable. Natural waterways are defined as: waterways created naturally by geological and hydrological processes and waterways that would be natural but for human-caused disturbances (e.g. channelized or culverted streams, impounded waters, partially drained wetlands or ponds created in wetlands). (ORS 196.800-196.990, 1995)

Water Resource

"An intermittent or perennial stream, pond, river, lake and including their adjacent wetlands." (PHS, 1998)

Wetland

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." (Federal Register 1982).

Wetland Assessment

Determining the relative quality of a wetland by assessing its functions and conditions. The methodology generally used to determine the relative quality of wetlands for purposes of an LWI is the *Oregon Freshwater Wetland Assessment Methodology*. (Roth, et. al. 1996)

Wetland Condition

"The integrity of a wetland's physical and biological structure. This determines the ability of the wetland to perform specific functions, as well as its resilience and enhancement opportunities." (Roth et al., 1996)

Wetland Function

"A characteristic action or behavior associated with a wetland that contributes to a larger ecological condition such as wildlife habitat, water quality and/or flood control." (Roth, et. al. 1996)

Wetland Hydrology

"Permanent or periodic inundation or prolonged soil saturation sufficient to create anaerobic conditions in the upper soil profile." (COE, 1987)

Wetland hydrology is related to duration of saturation, frequency of saturation, and critical depth of saturation. The 1987 manual defines wetland hydrology as inundation or saturation within a major portion of the root zone (usually above 12 inches), typically for at least 12.5% of the growing season. The wetland hydrology criterion can be met, however, if saturation within the major portion of the root zone is present for only 5% of the growing season, depending on other evidence.

Wetlands Regulation

Wetlands in Oregon are regulated by the Department of State Lands (DSL) under the Removal-Fill Law (ORS 196.800-196.990) and by the U.S. Army Corps of Engineers (Corps) through Section 404 of the Clean Water Act.

3.0 PROJECT METHODOLOGY

3.1 Public Involvement

Prior to beginning the inventory field work, selected landowners (i.e. those suspected of having wetlands or stream on their property) were mailed notices describing the project and asking permission to enter their property. Right of access was granted to PHS by landowner permission only. The properties of those not responding were not accessed. Access information was collected in a database and then transferred to the base map for use in the field.

Two public meetings were held during the course of the inventory. The first meeting was held on November 17, 2007, to introduce the project to the residents of Arch Cape. This meeting was held prior to the date required for the return of the access request letters so that PHS could address any questions affected landowners may have.

The second public meeting was held on September 20, 2008, to present the draft results of the inventory. An important goal of this meeting was to solicit any comments and suggestions the landowners had on the accuracy of the mapping. Additional field work was conducted after the public meeting, including a meeting on October 1, 2008, with a local landowner, to look at several of the mapped wetland boundaries.

3.2 Local Wetlands Inventory Methodology

3.2.1 Routine Off-site Determination

Prior to beginning field work, off-site mapping was conducted to determine the approximate location of wetland boundaries based on available information. This information included the USGS topographic quadrangles, soil survey maps for Clatsop County (NRCS, 1988), the *National Wetlands Inventory* maps (USFWS, July 1982), and true color aerial photographs (1"=400'). If access was allowed, the wetland boundaries were verified in the field (see Section 3.2.2). If access was not granted, the boundaries were based on the mapping conducted in the office (non-field verified), or on the observation of wetland boundaries from adjacent roads, right-of-ways, or properties, if possible (field verified). Some of the larger wetlands were only partially field verified, denoting access to a portion, but not all, of the wetland.

3.2.2 Routine On-site Determination

Where property access permission was granted, on-site observation and inspection of soils, vegetation, and hydrology were made using the Routine On-site Method of the 1987 manual. Soil pits were excavated up to a depth of approximately 18-inches in selected locations. The soil profiles were examined for hydric soils and wetland hydrology field indicators.

A visual percent-cover estimate of the dominant species of the plant community for a maximum 30-foot radius was conducted at each sampling location. Sampling locations were chosen to document a change in the wetland boundary and a particular plant community. Data was recorded in the field and transferred to computer-generated wetland delineation data sheets (Appendix C).

Field work for the inventory was conducted between April and October, 2008. Except where requested by the landowner, no wetland boundaries were staked or flagged in the field.

3.3 Wetland Quality Assessment

3.3.1 The Oregon Freshwater Wetland Assessment Methodology

The quality of wetlands in the study area was assessed using the *Oregon Freshwater Wetland Assessment Methodology* (OFWAM) (Roth et al. 1996). OFWAM was developed by an interagency committee to assess the relative quality of wetlands primarily for planning and educational purposes. Copies of the methodology are available from DSL for a fee. OFWAM does not assign a numeric ranking to the wetlands, but does determine the relative quality of six functions and three conditions for each of the wetlands. A description of each of the functions and conditions is included below.

Wetland Functions

Wildlife habitat: Evaluates the habitat diversity for species usually associated with wetlands, without emphasizing one particular species. Wetlands assessed by OFWAM can provide diverse habitat for wildlife, habitat for some wildlife species, or does not provide habitat.

Fish habitat: Evaluates how a wetland contributes to fish habitat in streams, ponds or lakes associated with a wetland. The questions are suitable for both warmwater and coldwater fish, and no particular species is emphasized. Wetlands assessed by OFWAM can have fish habitat function intact, impacted or degraded, or lost or not present.

Water Quality: Evaluates the potential of a wetland to reduce the impacts of excess nutrients in storm water runoff on downstream waters. A wetland's water quality function can be assessed by OFWAM as intact, impacted or degraded, or lost or not present.

Hydrologic control: Evaluates the effectiveness of a wetland to reduce downstream flood peaks and store floodwaters. A wetland's hydrologic control functions can be assessed by OFWAM as intact, impacted or degraded, or lost or not present.

Education: Evaluates the suitability of a wetland to provide educational opportunity and act as an "outdoor classroom." A wetland assessed by OFWAM can have educational uses, have the potential to provide, or not be appropriate for educational uses.

Recreation: Evaluates the suitability of a wetland and associated watercourses for non-powered boating, fishing, and similar recreational activities. A wetland assessed by OFWAM can provide, have the potential to provide, or not provide recreational opportunities.

Wetland Conditions

Sensitivity to Future Impacts: Evaluates the wetland's ability to sustain itself and its ability to recover from future impacts. It is an indication of risk to the wetland because of future changes in the watershed and surrounding land. A wetland can be assessed by OFWAM as sensitive to future impacts, potentially sensitive to future impacts, or not sensitive to future impacts. An undisturbed forested wetland is more sensitive to future impact than a wetland that has already been disturbed, such as agricultural wetland.

Enhancement Potential: Evaluates the suitability of a degraded wetland for enhancement. A wetland providing this condition does not provide one or more of the functions assessed by OFWAM. A wetland fulfilling this condition, therefore, would be of lower overall quality than a wetland providing wildlife habitat, fish habitat, etc. Wetlands that provide diverse wildlife habitat were not assessed in this section, as per the revised OFWAM. Wetlands are assessed as having high enhancement potential, moderate enhancement potential, or little enhancement potential.

Aesthetic quality: Evaluates the visual and aesthetic quality of the wetland. Wetlands can be considered pleasing, moderately pleasing, or not pleasing.

3.3.2 Wetlands of Special Interest for Protection

The first filter in OFWAM is to determine whether the wetland is in a management plan, is protected by regulatory rules or statutes, or is uncommon in Oregon. Ten questions are answered for each wetland and a “yes” answer to any of the questions puts the wetland into the “special interest for protection” category. If the wetland falls into this category, it is noted on the wetland characterization sheet.

3.3.3 Field Methodology

During the process of determining the boundaries for the LWI, data were also collected for the process of determining its relative quality. Data collected for this purpose are explained in the *Wetland Characterization* section of OFWAM. Data collected in the field included the Cowardin classes, the types of disturbance (if any) in the wetland area, the hydrology of the wetland area (e.g. the location of constrictions), the presence of fish, large woody debris, the degree of vegetative cover, and other information necessary to complete the assessment of the wetland in the office.

If the wetland determination was off-site, the OFWAM section and wetland characterization was based on review of the aerial photographs and knowledge of other similar or adjacent wetlands.

3.3.4 Office Assessment

Subsequent to the field work, the data collected for each wetland were used to answer questions for each function and condition. Additional information on the wetlands, the landscape and the general area were gathered in the office. The answers within each function and condition section of the methodology were entered into a computer spreadsheet, which automatically displays the results of the assessment methodology.

Prior to starting the OFWAM assessment certain criteria or baseline information was established. The following is a list of the criteria used in answering the questions:

The Oregon Department of Environmental Quality has not mapped any bodies of water within the Arch Cape study area as water quality limited.

The enhancement potential section was not required if the wetland was assessed with “diverse wildlife habitat,” as per OFWAM directive. In addition, question 3 was specifically directed towards wetlands whose primary source of hydrology was surface water. If this was not the case (i.e. primary source of hydrology is groundwater), question 3 was not answered.

4.0 CARTOGRAPHY

Color aerial photographs were obtained for use in the field. These photos are 2005 true color, with a scale of approximately 1 inch = 400 feet. Clear acetate was overlaid and permanently registered on the photographs and preliminary wetland boundaries and data point locations were drawn directly on the acetate in the field. A second map of the study area containing tax lots within the project area where permission to enter was granted or denied was also used. The wetland boundaries were transferred into a digital format and inserted into a computer-based map derived from the County's GIS base.

Additional layers added to the GIS base map included streams and stream names, wetland codes, and sample point locations. A hydrologic basin refers to the drainage area for an individually named stream or creek.

Each wetland was assigned a code beginning with the three letter hydrologic basin designation and the number of wetlands within the north and south portions of the inventory area (e.g. ARC - # for Arch Cape; COV - # for Cove Beach). Wetlands that were hydrologically connected but separated by roads or were similar in character and in close proximity were assessed as a single wetland unit. Several small potential wetlands that could not be accurately assessed, and are less than one-half acre in size, were labeled on the maps with a designation of "PW" ("probable wetland"). The final maps include a legend, north arrow, scale, and a disclaimer noting that not all wetland areas were assessed on-site.

5.0 STUDY AREA CHARACTERISTICS AND EXISTING INVENTORY INFORMATION

5.1 Topography

Arch Cape and Cove Beach rest on marine terrace materials that in turn overlie sandstone and basaltic rock formations. Within Arch Cape, the nearly level to gently sloping areas located between the ocean and just east of Highway 101 are generally located between 0 and 40 feet National Geodetic Vertical Datum (NGVD). Elevations increase to between 80 and 120 feet across the lower slopes of the forested hills located in the central and southeastern areas of Arch Cape. Arch Cape is separated from Cove Beach by a coastal headland approaching 600 feet in elevation. Unlike Arch Cape, much of the community of Cove Beach is located on the edge of a bluff overlooking the beach. Slopes between the ocean and Highway 101 are much steeper in Cove Beach, with the elevations approaching 280 feet at the eastern limits of the project area, just west of the highway.

5.2 Hydrology

5.2.1 Hydrologic Features of the Study Area

Major hydrologic features of the project area include Arch Cape Creek, and Asbury Creek, with its tributary Shark Creek. These are the only creeks with a permanent free and open connection to the Pacific Ocean. Other creeks, such as Austin Creek at the north end of Arch Cape; an unnamed drainage which flows through ARC-8 and ARC-11 in central Arch Cape; and Cedar Creek and Mason Creek in Cove Beach, all flow to the beach, but under normal conditions are connected to the ocean via culverts that do not allow fish passage.

Austin Creek is located at the north end of Arch Cape. The creek flows from forest lands northeast of Arch Cape. Numerous springs along the channel augment flow. While most of these springs retain a direct connection to the creek, historic connections have been altered by the construction of homes through the construction of Big Cedar Court. Though generally open, Austin Creek is piped beneath Hwy 101, and again from Carnahan Street to the beach.

Asbury Creek, and its large tributary, Shark Creek, are located in the north central portion of the community of Arch Cape. Asbury Creek is designated essential salmonid habitat (ESH) from the ocean, east through the study area and into the forested areas east of Arch Cape. The DSL designates ESH streams in consultation with the Oregon Department of Fish and Wildlife (ODFW). However, a large culvert under Highway 101 is a known barrier to fish passage from the ocean (though fish likely live year-round within the reach of the creek upstream of Highway 101). Asbury Creek is also federally designated Critical Habitat (CH) for Oregon Coast Coho salmon, but only from the ocean to the Highway 101 culvert.

Arch Cape Creek is the largest stream in the study area. It includes several perennial and intermittent tributaries, including the largest, Dichter Creek. Most tributaries flow out of the hills south and east of the study area, though seasonally, there are drainages which flow out of the wetlands located north of E. Shingle Mill Lane. Arch Cape Creek is ODFW-designated essential salmonid habitat from the ocean to approximately 1 mile upstream where there is a 15-foot waterfall, a natural barrier to fish passage (StreamNet, 2008). This same one mile section of Arch Cape Creek is federally designated CH for Oregon Coast Coho salmon (Federal Register, 2008).

5.2.2 Hydrologic Basin Designation

The study area was subdivided into two assessment areas: Arch Cape Creek (ARC) and Cove Beach (COV). Each of these areas includes several perennial and intermittent tributaries to the Pacific Ocean. Since each tributary has a relatively small watershed, the determination of boundaries for each hydrologic basin was based upon field observations, topography, and from aerial photographs. The basins and their sizes are listed in Table 1.

Table 1: Hydrologic Basins and Acreage for the Arch Cape LWI

Hydrologic Basin	Basin Area (acres)
Austin Creek	71.42
Asbury Creek	52.60
Unnamed #1	24.37
Unnamed #2	72.44
Arch Cape Creek	108.34
Cove Creek	48.70
Cedar Creek	24.54
Unnamed #3	25.36
Mason Creek	19.53
Unnamed #4	15.46
Total Project Acreage	462.76

5.3 Soils

Table 2 lists the soils that have been mapped by the Natural Resources Conservation Service (NRCS; formerly the Soil Conservation Service) within the study area. Figure 2 shows the mapped location of these soils.

Table 2. Soils Mapped Within the Arch Cape LWI Study Area

Soil Series	Soil Name	Slopes	Classification	Drainage Class	Hydric?
3F	Ascar-Rock outcrop complex	60-90%	Andic Humitropepts	Well drained	No
4	Beaches		N/A	N/A	All
6A	Brallier mucky peat	0-1%	Typic Trophemists	Very poorly drained	All
21D	Grindbrook silt loam	3-30%	Typic Humitropepts	Moderately well drained	Inclusions
27	Humitropepts	25-60%	Humitropepts	Somewhat poorly drained	Inclusions
28	Humitropepts-Tropaquepts complex	0-20%	Humitropepts	Well drained to Moderately well drained	Inclusions
33E	Klootchie-Necanicum complex	30-60%	Typic Dystrandeps	Well drained	No
35C	Knappa silt loam	7-15%	Typic Humitropepts	Well drained	Inclusions
38F	Laderly-Rock outcrop complex	60-90%	Typic Dystrandeps	Well drained	No
45A	Mues silt loam	0-3%	Typic Dystrandeps	Moderately well drained	Inclusions
50F	Necanicum-Ascar complex	60-90%	mixed	Well drained	No
58D & E	Skipanon gravelly silt loam	3-60%	Andic Humitropepts	Well drained	Inclusions
66	Tropofluents	0-3%	Tropofluents	Moderately well drained to excessively well drained	Inclusions
71C	Walluski silt loam	7-15%	Typic Humitropepts	Moderately well drained	Inclusions

5.4 Vegetation

5.4.1 Vegetation Overview

The coastal communities of Arch Cape and Cove Beach are located within the Sitka Spruce (*Picea sitchensis*) Forest Zone (as characterized by Franklin and Dyrness, 1973). This vegetation zone occupies a low-elevation strip along the immediate coastline, often only a few miles wide, and is subject to a relatively wet and mild climate. The zone is distinguished largely by the presence of Sitka spruce, frequent summer fogs, and proximity to the ocean. This portion of the Oregon coast is drier however, than other coastal areas to the north. Areas to the east of the first ridge or sheltered from prevailing winds and fog begin to assume plant compositions more similar to the interior valleys.

Common trees found in this region include Sitka spruce (*Picea sitchensis*), western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), Douglas-fir (*Pseudotsuga menziesii*), and red alder (*Alnus rubra*). Other trees observed in the drier or more protected areas include shore pine (*Pinus contorta*). Further discussion of coastal plant communities within the Sitka Spruce Zone can be found in *Natural Vegetation of Oregon and Washington* (Franklin and Dyrness, 1973).

5.4.2 Local Vegetation Communities

Generalized plant communities encountered within the coastal communities of Arch Cape and Cove Beach include upland broadleaf-scrub/shrub thicket, upland coniferous forest, upland mixed coniferous/deciduous forest, developed-urban, wetland, and riparian. Wetland communities are further distinguished as freshwater (palustrine emergent, palustrine scrub-shrub, palustrine forested, and open water) following the Cowardin classification system developed for the US Fish and Wildlife Service (Cowardin, et. al., 1979). Each of the above communities is described in the sections below.

Upland Broadleaf Scrub/Shrub Thicket

Shrub communities are typically associated with relatively recent or periodically occurring disturbances (i.e. following logging, grading, and fire; or subject to flooding). Dominant species may include saplings of regenerating conifers such as Sitka spruce or Douglas-fir, deciduous trees such as red alder, and shrubs such as salmonberry (*Rubus spectabilis*), thimbleberry (*Rubus parviflorus*), salal (*Gaultheria shallon*), vine maple (*Acer circinatum*), evergreen huckleberry (*Vaccinium ovatum*), rhododendron (*Rhododendron macrophyllum*), and blackberries (*Rubus* spp.). Introduced Scots' broom (*Cytisus scoparius*) and Himalayan blackberry (*Rubus discolor*) are also rapid colonizers in disturbed areas. Herbaceous species are common in cleared openings, often being the first plants to colonize disturbed ground.

Upland Coniferous Forest

The dominant species in the coniferous overstory are Douglas-fir, Sitka spruce, western hemlock, and western red cedar. Sitka spruce is more common closer to the ocean, with the other species becoming more dominant further inland or in managed forests. Understory plants vary greatly with the density of the tree canopy. A closed canopy forest tends to suppress understory species diversity and density, though species such as salal, false lily-of-the-valley (*Maianthemum dilatatum*) and sword fern (*Polystichum munitum*) are commonly encountered. Openings in the canopy allow greater shrub development, with salmonberry, salal, rhododendron, and evergreen huckleberry often evident. Though no old growth stands were documented, large areas of second growth trees exist throughout much of the undeveloped forest lands east of Highway 101 in Arch Cape and west of Highway 101 in some relatively native forested areas in Cove Beach.

Upland Mixed Coniferous-Deciduous Forest

The conifer species mentioned above may be codominant with deciduous hardwoods such as red alder, bigleaf maple (*Acer macrophyllum*), and willows (*Salix* spp). Shrub understories are often well-developed due to a more open tree overstory for much of the year. Common shrubs include salmonberry, red elderberry (*Sambucus racemosa*), vine maple, evergreen huckleberry, salal, and cascara (*Rhamnus purshiana*).

Developed-Urban

In general, plant communities in the Arch Cape and Cove Beach study areas have been influenced by human activities for much of the last century. Land use within developed areas is dominated by single-family residential homes; with actual planned subdivisions only recently contributing to lot layout. As such, there are a few undisturbed natural areas within the developed residential areas in both Arch Cape and Cove Beach. There are several areas of undeveloped forested area in Arch Cape located east of Highway 101. These areas have been platted for development; however, due to lack of roads, this area remains undeveloped. Another large forested natural area is located in Cove Beach and is owned by the Cove Beach Water District. This area contains the headwaters for a large spring used for drinking water in Cove Beach.

Residences, parking areas, and roadways all represent unvegetated or landscaped areas. Vegetation is often of horticultural origin or weedy in these areas. The fringes of these developed areas may have been subject to disturbance as well, often allowed to regenerate as red alder, Scot's broom or blackberry thickets. More frequent disturbance may maintain areas as open spaces dominated by weedy grasses and forbs.

Wetlands

Wetland areas are generally transitional between upland or riparian areas and truly aquatic sites with permanently open water. Open water may or may not be present, in which case the wetland can occupy a position where the groundwater table comes close to the surface for an extended period at some time during the growing season.

Palustrine forested wetlands (PFO) in the area are dominated primarily by an overstory of Sitka spruce, western hemlock, western red cedar, and red alder. Palustrine scrub/shrub (PSS) wetlands typically include sapling red alder, willows and twinberry (*Lonicera involucrata*). Palustrine emergent wetlands (PEM) are dominated by herbaceous species such as Slough sedge (*Carex obnupta*), coltsfoot (*Petasites palmatus*), skunk cabbage (*Lysichiton americanum*), water parsley (*Oenanthe sarmentosa*), rushes (*Juncus spp.*), and creeping buttercup (*Ranunculus repens*).

Riparian

Riparian forests are often similar to the upland mixed evergreen-deciduous forests, though species preferring wetter sites may be more common. Alder and willow dominate in the wetter areas, with Sitka spruce and bigleaf maple more common in the drier riparian zones.

5.4.3 Wetland and Upland Indicator Species

Species lists of commonly encountered plants, along with their status as indicators of wetland conditions, have been prepared for all regions of the country by the USFWS (1988). The status of a particular plant, as discussed in Section 2.0, is the probability of that plant occurring in a wetland. Table 3 summarizes the wetland indicator codes.

Table 3. Wetland Indicator Codes and Status

Indicator Code	Status
OBL	Obligate wetland. Estimated to occur almost exclusively in wetlands (>99%)
FACW	Facultative wetland. Estimated to occur 67-99% of the time in wetlands.
FAC	Facultative. Occur equally in wetlands and non-wetlands (34-66%).
FACU	Facultative upland. Usually occur in non-wetlands (67-99%).
UPL	Obligate upland. Estimated to occur almost exclusively in non-wetlands (>99%). If a species is not assigned to one of the four groups described above it is assumed to be obligate upland.
NI	Has not yet received a wetland indicator status, but is probably not obligate upland.

Many plants are found in transitional areas between wetlands and uplands. These areas are usually characterized by flat to gradually sloping terrain where the species composition may not reflect true wetland boundaries. In such areas, a species with a status of FACU may extend into the wetland areas, just as FACW species may also be present in upland areas.

6.0 LWI DISCUSSION AND CONCLUSIONS

6.1 U.S. Fish & Wildlife Service National Wetland Inventory Areas

The U.S. Fish and Wildlife Service, as part of the National Wetlands Inventory (NWI) program, have mapped wetland in the study area (Figure 3). The NWI maps are generated primarily on the basis of interpretation of relatively small-scale color infrared aerial photographs (e.g., scale of 1:58,000) with limited "ground truthing" conducted to confirm the interpretations.

In general, wetlands as shown on the NWI are represented by wetlands mapped in the inventory. There are however, some differences between the mapped size and shape; in most cases the NWI shows a larger wetland. Conversely, the NWI shows none of the smaller wetlands, such as those that are isolated, or are located along sections of some of the small creeks within the study area.

Though development since the time of NWI mapping has no doubt contributed to differences between NWI designated wetlands and those identified for the LWI, the primary reason for differences can be attributed to the opportunity for ground truthing provided by the LWI. There are two areas in which the NWI does not have a corresponding wetland in the LWI. These areas are located in the vicinity of the existing fire station west of East Beach Road at the south end of Arch Cape and a wetland north of Ashbury Creek in the vicinity of ARC-6.

6.2 Local Wetlands Inventory Results

6.2.1 Wetland Acreage and Distribution

A total of 27 wetland units were identified during the LWI with a total area of approximately 38.09 acres (Sheets 1, 2, & 3). The 27 wetlands include sixteen probable wetlands (wetlands less than a 0.50 acre). The project area was divided into 10 hydrologic basins. Table 4 summarizes wetland acreage and distribution across the study area; however, each of these hydrologic basins extends east of the inventory boundary. Table 4 is useful in identifying where wetlands are concentrated within the project area.

Table 4. Wetland Areas Within Each Basin of the Arch Cape LWI Study Area

Watershed	Area (acres)	Wetland (acres)	Percent of basin that is wetland
Austin Creek	71.42	1.24	1.74
Asbury Creek	52.60	1.33	2.53
Unnamed #1	24.37	0	0.00
Unnamed #2	72.44	5.44	7.51
Arch Cape Creek	108.34	21.48	19.83
Cove Creek	48.70	5.67	11.64
Cedar Creek	24.54	0.06	0.24
Unnamed #3	25.36	0.61	2.41
Mason Creek	19.53	0.43	2.20
Unnamed #4	15.46	2.2	14.23
Total Project Acreage	462.76	38.46	8.31

6.2.2 Wetland Classification

Each wetland was classified according to the Cowardin and hydrogeomorphic system. Palustrine forested (PFO) wetlands are the dominant (71%) wetland type in the study area, totaling 27.48 acres. Palustrine scrub-shrub (PSS) wetlands were the second most common (15%), totaling 5.77 acres. Palustrine emergent wetlands were slightly less common at 4.25 acres (11%). Open water wetlands were the least common, totaling only 0.96 acres within the study area.

Tables 5 and 6 summarize the wetland classifications for the LWI study area. Table 5 is a summary of the distribution of wetland classes within each basin. Table 6 includes the Cowardin classification and acreage for each wetland.

Table 5. Types of Wetlands within the Arch Cape LWI Study Area

Wetland Classification	Area (acres)	Percent of Wetlands
Palustrine forested (PFO)	27.48	71%
Palustrine scrub-shrub (PSS)	5.77	15%
Palustrine emergent (PEM)	4.25	11%
Palustrine Unconsolidated Bottom (PUB)	0.96	2%
Total	38.46	100%

Table 6. Cowardin Classification of all Wetlands Identified in the Arch Cape LWI

Wetland Code	USFWS Wetland Classification				Total Acreage
	PFO	PSS	PEM	PUB	
ARC-1	0.16	0.07			0.23
ARC-2	0.17	0.11	0.05		0.33
ARC-3	0.08		0.32		0.40
ARC-4	0.28				0.28
ARC-5		0.11			0.11
ARC-6	0.33				0.33
ARC-7	0.89				0.89
ARC-8	1.06	2.48			3.54
ARC-9	0.66				0.66
ARC-10	0.14				0.14
ARC-11	0.88		0.22		1.10
ARC-12	1.78				1.78
ARC-13	13.20				13.20
ARC-14	0.05				0.05
ARC-15	0.02				0.02
ARC-16	6.43				6.43
COV-1		1.72	1.72	0.92	4.36
COV-2	1.05		0.26		1.31
COV-3	0.06				0.06
COV-4	0.24				0.24
COV-5			0.33	0.04	0.37
COV-6			0.14		0.14
COV-7		0.26			0.26
COV-8			0.03		0.03
COV-9		0.48	0.39		0.87
COV-10		0.51	0.77		1.28
COV-11		0.03	0.02		0.05
TOTAL	27.48	5.77	4.25	0.96	38.46

7.0 Oregon Freshwater Wetland Assessment Methodology Results

7.1 Wetland Quality Assessment

An assessment of the quality for each of the Goal 5 wetlands identified through the inventory was conducted using the *Oregon Freshwater Assessment Methodology* (OFWAM) (Roth et al, April 1996). OFWAM assesses 6 functions and 3 conditions, as described in Section 3.3.1. Appendix D contains all of the results for each of the 27 wetlands assessed by the methodology along with summary sheets of the functions and conditions assessed by the methodology and the rationale for the results.

Although OFWAM provides qualitative information on the relative value of wetlands and does not have a numerical ranking, numbers were assigned to the assessment criteria to easily compare the results. A number 1 was assigned to wetlands receiving the highest function or condition result (e.g. intact, diverse), a number 3 was assigned to the wetlands receiving the lowest result (lost or not present, not appropriate), and a number 2 was assigned to the results which do not fit the other criteria (potential, impacted or degraded). This system is summarized in Table 7.

Table 7. Key to the Oregon Freshwater Wetland Assessment Methodology Numerical Ranking

Wildlife Habitat	<ol style="list-style-type: none"> 1. Wetland provides diverse wildlife habitat 2. Wetland provides habitat for some wildlife species 3. Wetland does not provide wildlife habitat
Fish Habitat	<ol style="list-style-type: none"> 1. Wetland's fish habitat function is intact 2. Wetland's fish habitat function is impacted or degraded 3. Wetland's fish habitat function is lost or not present
Water Quality	<ol style="list-style-type: none"> 1. Wetland's water-quality function is intact 2. Wetland's water-quality function is impacted or degraded 3. Wetland's water-quality function is lost or not present
Hydrologic Control	<ol style="list-style-type: none"> 1. Wetland's hydrologic control function is intact 2. Wetland's hydrologic control function is impacted or degraded 3. Wetland's hydrologic control function is lost or not present
Sensitivity to Impact	<ol style="list-style-type: none"> 1. Wetland is sensitive to future impacts 2. Wetland is potentially sensitive to future impacts 3. Wetland is not sensitive to future impacts
Enhancement Potential	<ol style="list-style-type: none"> 1. Wetland has high enhancement potential 2. Wetland has moderate potential for enhancement 3. Wetland has little enhancement potential
Education	<ol style="list-style-type: none"> 1. Wetland has educational uses 2. Wetland has potential for educational use 3. Wetland is not appropriate for educational use
Recreation	<ol style="list-style-type: none"> 1. Wetland provides recreational opportunities 2. Wetland has the potential to provide recreational activities 3. Wetland is not appropriate for or does not provide recreational opportunities
Aesthetic Quality	<ol style="list-style-type: none"> 1. Wetland is considered to be pleasing 2. Wetland is considered to be moderately pleasing 3. Wetland is not pleasing

Table 8 shows the results of the quality assessment conducted on all of the wetlands identified through the inventory. Some functions or conditions were not applicable to certain wetlands. For instance the methodology states that if a wetland receives an assessment of "diverse wildlife habitat" then the enhancement potential assessment is not applicable.

Table 8. Oregon Freshwater Wetland Assessment Methodology Numerical Ranking Results for the Arch Cape LWI

Wetland Code	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Sensitivity to Impact	Enhancement Potential	Education	Recreation	Aesthetic Quality	Size (acres)
ARC-1	2	NA	2	1	2	1	3	3	1	0.23
ARC-2	2	2	2	3	2	2	2	1	2	0.33
ARC-3	2	2	2	3	2	2	3	3	2	0.40
ARC-4	2	NA	2	2	2	1	3	3	2	0.28
ARC-5	2	NA	3	2	2	3	3	3	3	0.11
ARC-6	1	1	2	2	2	N/A	3	3	3	0.33
ARC-7	2	NA	2	2	2	1	3	3	3	0.89
ARC-8	2	2	2	1	2	1	3	3	3	3.54
ARC-9	2	NA	2	2	2	1	3	3	2	0.66
ARC-10	2	NA	2	1	2	2	3	3	3	0.14
ARC-11	1	1	2	2	2	N/A	3	3	1	1.10
ARC-12	2	NA	2	1	2	1	3	3	2	1.78
ARC-13	1	NA	2	1	2	N/A	1	2	3	13.20
ARC-14	2	NA	2	1	2	1	3	3	1	0.05
ARC-15	2	NA	2	1	2	1	3	3	1	0.02
ARC-16	2	1	2	2	2	2	3	3	3	6.43
COV-1	2	2	2	1	2	1	2	2	1	4.36
COV-2	2	NA	2	2	2	1	2	3	2	1.31
COV-3	1	NA	3	3	2	N/A	2	3	1	0.06
COV-4	2	NA	2	2	2	1	2	2	3	0.24
COV-5	2	2	2	2	2	1	3	3	1	0.37
COV-6	2	NA	2	3	2	2	3	3	3	0.14
COV-7	2	2	3	3	2	2	3	3	3	0.26
COV-8	2	NA	2	2	2	1	3	3	1	0.03
COV-9	2	NA	2	2	2	1	3	3	2	0.87
COV-10	2	2	2	2	2	1	1	2	2	1.28
COV-11	2	NA	2	2	2	1	3	3	2	0.05

While only three of the assessed wetlands provided diverse wildlife habitat, the remaining wetlands provided wildlife habitat for some species. Three of the wetlands had intact fish habitat; and seven had impacted or degraded fish habitat. As result of the general lack of fish habitat in wetlands within the study area, 16 of the 27 were not assessed for this function.

The water quality function was assessed as impacted or degraded in 88% of the wetlands and lost or not present in 11%. None of the wetlands maintained an intact water quality function. The lack of an intact water quality function is due in large part to the natural, groundwater sources of hydrology, which typically do not require water quality enhancement; the lack of development in the contributing watersheds; and the fact that there are no water quality limited water bodies within the assessment area.

Hydrologic control was assessed as intact in 30% of the wetlands, while 51% were assessed as impacted or degraded. The remaining 19% were assessed with lost or not present function. Conditions that affect this function include the lack of natural floodplain, unrestricted outflow, or downstream open space. Though these features may be natural and or desirable, they decrease the ability of a wetland to perform this function.

All of the wetlands were considered to be potentially sensitive to future impacts due to existing or zoned development in adjacent lands.

A majority (59%) were assessed as having high enhancement potential. Twenty-two percent (22%) retained a moderate enhancement potential and one had little enhancement potential. Two wetlands have education uses while the remaining wetlands were given a low (not appropriate) or medium (has potential for) rating for educational or recreational opportunities due to their location on private lands, lack of public access or developed paths, and safety concerns associated with public access and physically-challenged access. Aesthetic quality of the wetlands was varied according to presence of major roads and noisy traffic, adjacent development, and number of Cowardin classes in the wetland. Thirty percent (30%) were considered to be aesthetically pleasing, while a comparable 37% were assessed as not aesthetically pleasing.

7.2 Wetlands of Special Interest for Protection

Each wetland was assessed according to the ten questions in this section of OFWAM. These questions are regarding the presence of Federal or State listed threatened, endangered or sensitive species, existing management plans, conservation plans, protected mitigation areas, critical habitat, wetland reserve areas and the presence of uncommon wetland plant communities in Oregon.

These questions were answered “no” for the majority of wetlands; however wetlands immediately adjacent to Asbury Creek or Arch Cape Creek qualify as “wetlands of special interest for protection.” Both creeks are federally designated critical habitat for Oregon Coast coho salmon (Federal Register, 2008). In addition, both creeks are also mapped as essential salmonid habitat by the Oregon Department of Fish and Wildlife. The result is that both ARC-5 and ARC-16 meet the criterion of Special Interest for Protection.

8.0 SIGNIFICANT WETLANDS DETERMINATION

8.1 Distinction between Goals 5 and 17 Areas

The study area is divided between the Statewide Goal 5 and the Goal 17 Planning areas. Goal 17 (Coastal Shorelands) defines the Coastal Shorelands Planning Area (CSPA) as: all lands west of the Oregon Coast Highway (Highway 101) and; all lands within an area defined by a line measured horizontally 1,000 feet from the shoreline of estuaries and 500 feet from the shoreline of coastal lakes (LCDC, 1996). For the Arch Cape LWI, the CSPA includes all lands seaward from Highway 101 (i.e. west of Highway 101). Goal 5 applies to all areas of the study area, and can also overlap Goal 17 lands. A wetland can be regulated as a Goal 5 resource if its functions are not derived from the ocean or an estuary.

8.2 Goal 5 Locally Significant Wetlands Criteria

On September 1, 1996, the Land Conservation and Development Commission adopted a revised Statewide Planning Goal 5. The goal requires local jurisdictions to inventory the natural resources covered under the goal, determine the significance of these resources, and develop plans to achieve the goal. In other words, local jurisdictions must adopt land use ordinances regulating development in and around significant areas.

Local jurisdictions determining significant wetlands must use the criteria adopted by the Oregon Department of State Lands (ORS 197.279(3)(b)) and (OAR 141-086-300 et seq.). This criterion identifies *Locally Significant Wetlands*. The significance criteria are divided into three sections, as shown in Table 9.

Table 9. Criteria for Determining Goal 5 Locally Significant Wetlands

Exclusions:	A wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".
1	Is this wetland artificially created entirely from upland and: a. created for the purpose of controlling, storing, or maintaining storm water b. is used for active surface mining or as a log pond c. is a ditch without a free and open connection to natural waters of the state d. is less than 1 acre and created unintentionally from irrigation or construction e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard
2	Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)

Table 9, continued

<p>Mandatory Locally Significant Wetland Criteria: A wetland is locally significant if "Yes" is the answer to any of the criteria below.</p> <ol style="list-style-type: none">1 Does the wetland provide <i>diverse wildlife habitat</i>?2 Is the wetland's <i>fish habitat function intact</i>?3 Is the wetland's <i>water quality function intact</i>?4 Is the wetland's <i>hydrologic control function intact</i>?5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i>?6 Does the wetland contain a rare plant community?7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i>?
<p>Optional Locally Significant Wetland Criteria: Local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.</p> <ol style="list-style-type: none">1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has an <i>intact, or impacted or degraded hydrologic control function</i>.2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i>?

8.3 Goal 17 Significant Wetlands (Major Marsh) Criteria

Significant wetlands under Goal 17 are known as major marshes. Unlike Goal 5, Goal 17 does not define or provide criteria for designating major marshes. The only reference to major marshes in the Goal's *Identification of Coastal Shorelands* section is "Areas of significant shoreland and wetland biological habitats whose habitat quality is primarily derived from or related to the association with coastal water areas." The term "major marsh" is peculiar to Goal 17 and appears to not be used elsewhere in planning or wetland science.

Unlike estuarine wetlands, wetlands within the Goal 17 planning area originate principally from freshwater. Although they are located along the coast and derive much of their character from this landscape position, they are nevertheless similar to wetlands within the Goal 5 planning area. LCDC now recognizes OFWAM as appropriate for assessing wetlands in both Goal 5 and Goal 17 planning areas.

Due to the similar nature of wetlands in the Goal 5 and the Goal 17 planning areas and the fact that all of the wetlands were assessed using OFWAM, PHS found it appropriate to base the Goal 17 Major Marsh criteria on the Goal 5 significant wetland criteria. The criteria have a number of exclusions, including if the wetland has been identified as a dredge spoils site, or a water-dependent use (Marine Activity designation in local Comprehensive Plan). None of the exclusions apply to wetlands in the Arch Cape project boundary.

The Goal 17 criteria are shown in Table 10. Appendix D shows the results of applying the criteria for Goal 17 wetlands.

Table 10. Criteria for Determining Major Marshes within the Goal 17 Planning Area

<p>Exclusions: A wetland cannot be designated as a Major Marsh if the answer to any of the criteria below is "Yes".</p>
<ol style="list-style-type: none"> 1 Is this wetland artificially created entirely from upland and: <ol style="list-style-type: none"> a. created for the purpose of controlling, storing, or maintaining storm water b. is used for active surface mining or as a log pond c. is a ditch without a free and open connection to natural waters of the state d. is less than 1 acre and created unintentionally from irrigation or construction e. created for the purpose of wastewater treatment, farm watering, sediment settling, cooling industrial water, or a golf hazard 2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b) 3 Is the wetland or a portion of the wetland designated as a dredge spoils site in the comprehensive plan? 4 Is the wetland or a portion of the wetland designated as a water dependent use in the comprehensive plan?
<p>Goal 17 Significant Wetland (Major Marsh) Criteria: A wetland is considered to be a Major Marsh if "Yes" is the answer to any of the criteria below.</p>
<ol style="list-style-type: none"> 1 Does the wetland provide <i>diverse wildlife habitat</i>? 2 Is the wetland's <i>fish habitat function intact</i>? 3 Is the wetland's <i>water quality function intact</i>? 4 Is the wetland's <i>hydrologic control function intact</i> <u>and</u> <i>is the wetland within the 100-year floodplain</i>? 5 Does the wetland have a direct surface water connection to the Rogue River (a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i>? 6 Does the wetland contain a rare plant community? 7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?
<ol style="list-style-type: none"> 8 Does the wetland have a direct surface water connection to the Rogue River, Hunter Creek, Saunders Creek, Indian Creek or Pacific Ocean (water bodies mapped by ODFW as <i>essential indigenous anadromous salmonid habitat</i>) or is the wetland mapped as a significant habitat site on the <i>Oregon Estuary Plan</i>?

As with Goal 5, the Goal 17 criteria for determining significance are not based on size. The committee that created the Goal 5 significance criteria determined that even relatively small wetlands might provide an important (or major) function in their particular landscape position. For example, a small wetland in an urban area may provide habitat for a rare, threatened, or endangered species. For this reason, PHS did not add the size of the wetland as one of the significance criteria. Therefore, we saw the term "Major Marsh" referring to the importance of the wetland and not necessarily to its size.

8.4 Applying Significant Wetland Criteria to the LWI Study Area

8.4.1 Goal 5 Significant Wetlands

The Locally Significant Wetlands criteria were applied to all wetlands. The results of applying the criteria are included in Appendix E. Based on the criteria, 11 of the 27 wetlands (41%) were determined to be significant. These wetlands met the criteria for significance because they meet one or more of the mandatory criteria. Although other wetlands within the Goal 5 area are relatively valuable for some functions, they do not satisfy the significant wetlands criteria. Identified locally significant wetlands are listed in Table 11.

8.4.2 Goal 17 Significant Wetlands (Major Marsh)

The results of applying the criteria to each of the wetlands in the Goal 17 Coastal Shorelands Planning area identified that only one wetland satisfied the criteria for Major Marsh. Although all wetlands in Cove Beach, and five in Arch Cape, are located west of Highway 101, within the Goal 17 CSPA, they do not qualify because they do not derive their habitat quality from "association with coastal water areas" (LCDC, 1996). The only wetland (COV-1) identified as a major marsh is listed in Table 11.

Table 11. Locally Significant Wetlands and Major Marshes in the Arch Cape LWI

ARC-1	ARC-11	ARC-15
ARC-6	ARC-12	ARC-16
ARC-8	ARC-13	COV-1*
ARC-10	ARC-14	COV-3

* Major Marsh

Sheets 4, 5, and 6 highlight those wetlands that are either locally significant, or are a major marsh. These graphics also identify the limits of the significant riparian corridors bordering fish bearing streams and associated wetlands.

9.0 Determination of Significant Riparian Corridors

A "riparian area" is defined as the area adjacent to a river, lake, or stream, consisting of the area of transition from an aquatic ecosystem to a terrestrial ecosystem. A riparian corridor or buffer is a Goal 5 resource that includes the water areas, fish habitat, adjacent riparian areas, and wetlands within the riparian boundary.

The Goal 5 Administrative Rules require local governments to inventory and determine significant riparian corridors by following either the safe harbor process or the standard methodology. In the safe harbor approach, only fish-bearing water bodies must be inventoried whereas in the standard process, all water areas may be included and assessed for significance.

9.1 Safe Harbor Method

The safe harbor process uses criteria already established by Goal 5 to determine boundaries of significant riparian corridors using a standard setback distance from all fish bearing streams and lakes (OAR 660-23-090(5)).

These setback distances are as follows:

- (a) Along all streams with average annual stream flow greater than 1,000 cubic feet per second (cfs) the riparian corridor boundary shall be 75 feet upland from the top of each bank.
- (b) Along all lakes, and fish-bearing streams with average annual stream flow less than 1,000 cfs, the riparian corridor boundary shall be 50 feet from the top of bank.
- (c) Where the riparian corridor includes all or portions of a significant wetland as set out in OAR 660-23-100, the standard distance to the riparian corridor boundary shall be measured from, and include, the upland edge of the wetland.
- (d) In areas where the top of each bank is not clearly defined, or where the predominant terrain consists of steep cliffs, local governments shall apply OAR 660-23-030 rather than apply the safe harbor provisions of this section.

All of the creeks within the study area have less than 1,000 cfs average annual stream flow. As such, the maximum width of the buffer is 50 feet. However, the buffer only applies to fish-bearing creeks. This means that no creeks within the Cove Beach area are designated with a 50-foot riparian corridor. The creeks within Arch Cape that have a buffer are as follows: Arch Cape Creek, Dichter Creek, Shark Creek, and Asbury Creek. Sheets 4, 5, and 6 identify the limits of the significant riparian buffer within the study area.

10.0 STAFF QUALIFICATIONS

John van Staveren:	President; Senior Scientist; Professional Wetland Scientist
Project Role:	Project Manager
Project Responsibility:	Contract negotiations, monthly billing Wetland and inventory field work and assessment Public presentations Quality control Regulatory agency coordination

As President, Mr. van Staveren directs Pacific Habitat Services' environmental projects throughout the Pacific Northwest. He has conducted over 1,000 wetland delineations, 27 Local Wetland Inventories and riparian inventories, designed and implemented dozens of freshwater and estuarine wetland mitigation plans, provided expert witness testimony, and testified at numerous public hearings. John served on three state-appointed Technical Advisory Committees concerning wetland policy in the State of Oregon. He is principal author of the *Urban Riparian Inventory and Assessment Guide* prepared for the Oregon Department of State Lands and *Freshwater Wetland Restoration* a chapter in *The Art and Science of Ecological Restoration in Cascadia. The Science and Practice of Ecological Restoration* (Island Press, 2006).

Shawn Eisner: Wetland Scientist

Project Role: Wetland Scientist
Project Responsibility: Wetland and riparian inventory field work and assessment
Quality control and editing
Report writing
Data input

Shawn provides specialized support pertaining to wetland delineations, determinations, and monitoring; stream and natural resource assessments and environmental permit processing. He conducts field work and data collection for Local Wetland Inventories and is involved in report preparation and wetland/riparian assessments. He has played an integral role in the Molalla, Bandon, North Plains, Corvallis, Depoe Bay, and Eugene LWIs.

Michele Eccleston: Wetland Scientist

Project Role: Wetland Scientist
Project Responsibility: Wetland and riparian inventory field work and assessment
Report writing

Michele Eccleston has delineated numerous wetlands and prepared wetland mitigation plans. She has conducted several LWI and riparian inventories throughout Oregon in cities such as Bandon, Depoe Bay, Corvallis, and Eugene. She conducts field work and data collection for Local Wetland Inventories and is involved in report preparation.

Jane Le Blanc: Technical Editor

Project Role: Technical Editor
Project Responsibility: Graphics
Report editing, formatting and layout
Data input

Jane Le Blanc is a technical editor and provides permitting support for PHS. Her duties include formatting and editing wetland reports, proposals, and letters as well as data input.

Tom Rodgers: AutoCAD and Arc-Info Specialist
Project Role: Cartographer
Project Responsibility: Mapping
Graphics

Tom Rodgers is a computer graphics specialist, with experience in the production of Local Wetlands Inventories. He is proficient with AutoCAD Map, Arc-View and Arc-Info programs. He has prepared the maps for several LWIs and coordinated with Planning Departments and Council of Governments to ensure that map products and digital information is compatible with local operating systems.

11.0 REFERENCES

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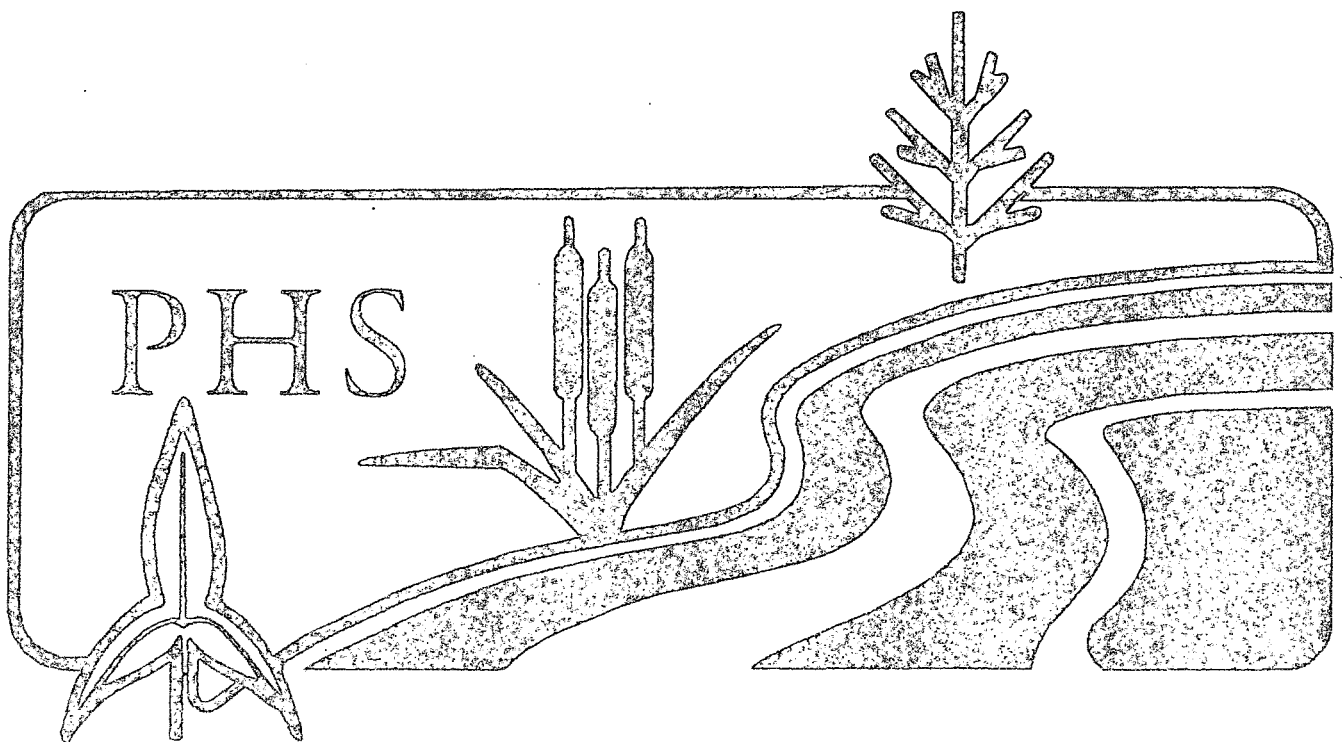
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U.S.G.S. *7.5-minute topographic quadrangle*, 1985 Provisional Edition. Arch Cape, OR,
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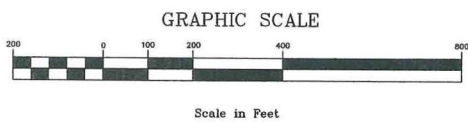
Appendix A

Figures and Sheets



APPROVED LOCAL WETLANDS INVENTORY
9/13/2011 AB
OREGON DEPARTMENT OF STATE LANDS

9/13/2011 AB



Watershed Boundary	Wetland field verified	
Project Boundary	Wetland NOT field verified	
Potentially Jurisdictional Creeks/drainages	Probable Wetland	PW
TRS	Sample Point	
	Wetland Code	ARC-1

Funding for this project was provided by the US Fish and Wildlife Service Coastal Program; The Nature Conservancy's Salmon Habitat Fund; Arch Cape Community Club; and Arch Cape Service District.

THIS MAP IS FOR PLANNING PURPOSES ONLY
WETLAND BOUNDARIES ARE APPROXIMATE
AND SUBJECT TO CHANGE

Information shown on this map is for planning purposes only and wetland information is subject to change. There may be unmapped wetlands subject to regulation and all wetland boundary mapping is approximate. In all cases, actual field conditions determine wetland boundaries. You are advised to contact the Department of State Lands and the U.S. Army Corps of Engineers with any regulatory questions.

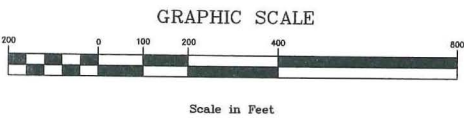
DATE:	August 2008
BASE MAP INFO:	Supplied by Columbia River Estuary Study Taskforce (CREST)
JOB NO.:	4014

Arch Cape Local Wetlands Inventory

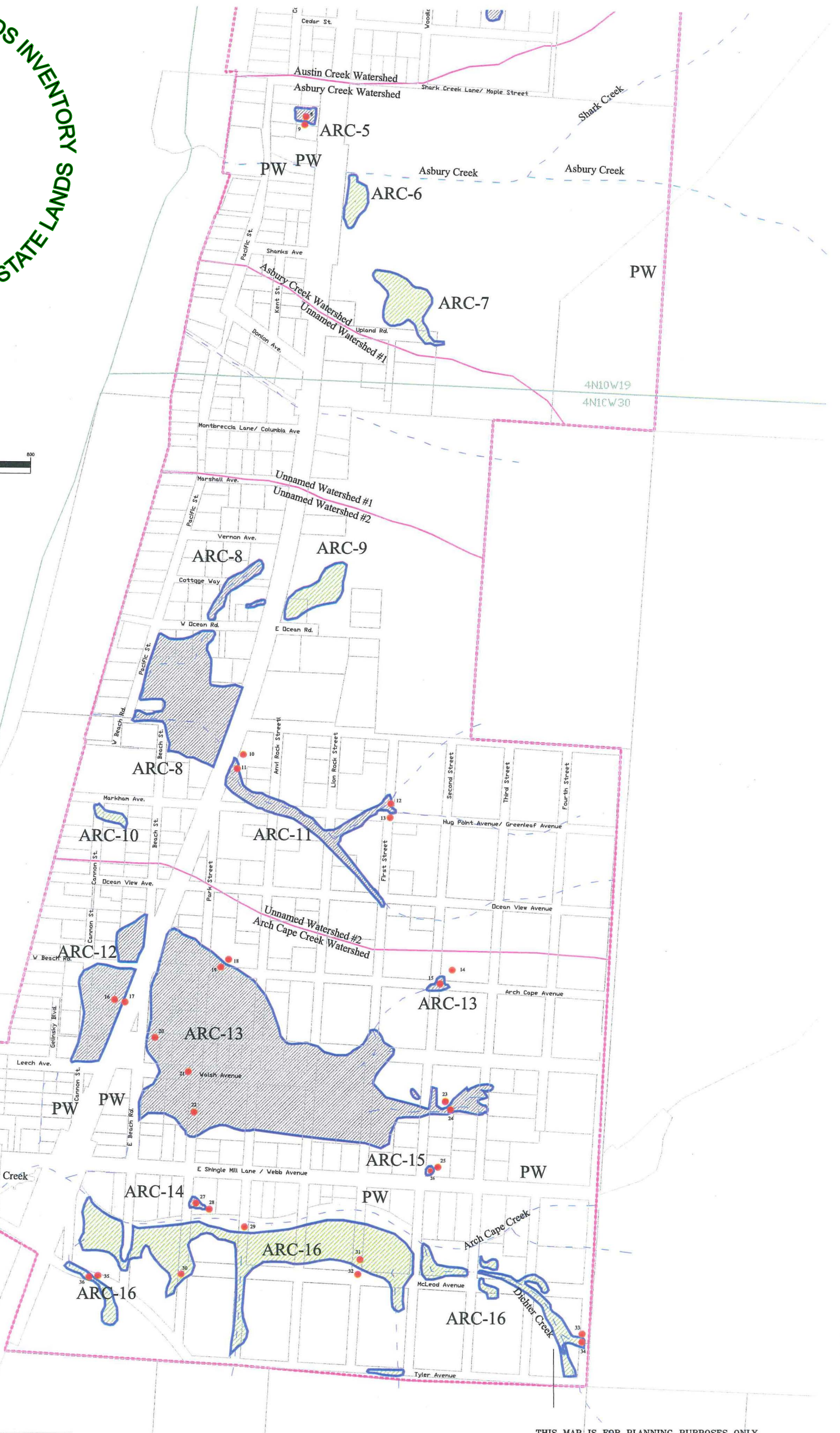
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, Oregon 97070
Phone: (503) 570-0800

9/13/2011 AB

OREGON DEPARTMENT OF STATE LANDS



Pacific Ocean



Watershed Boundary	Wetland field verified	Blue hatched pattern
Project Boundary	Wetland NOT field verified	Yellow hatched pattern
Potentially Jurisdictional Creeks/drainages	Probable Wetland	PW
TRS	Sample Point	Red dot with number
	Wetland Code	ARC-1

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Arch Cape

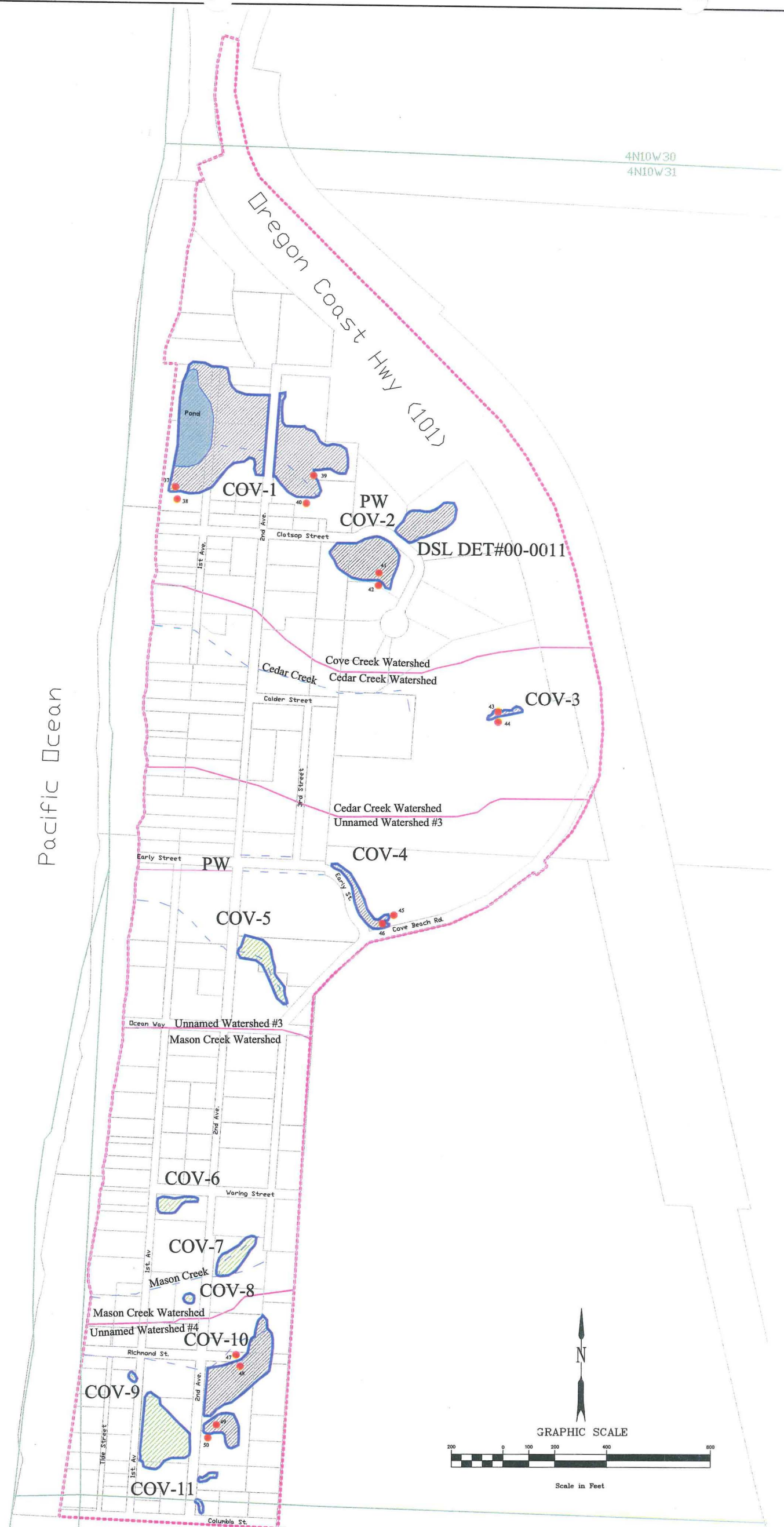
Local Wetlands Inventory

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Phone: (503) 570-0800

9/13/2011 AB

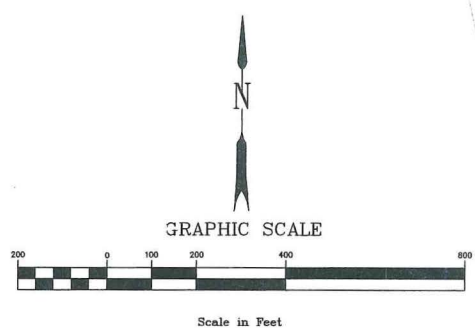
APPROVED LOCAL WETLANDS INVENTORY
OREGON DEPARTMENT OF STATE LANDS

Pacific Ocean



4N10W30
4N10W31

DSL DET#00-0011



Watershed Boundary	Wetland field verified
Project Boundary	Wetland NOT field verified
Potentially Jurisdictional Creeks/drainages	Probable Wetland PW
TRS	Sample Point 58
	Wetland Code ARC-1

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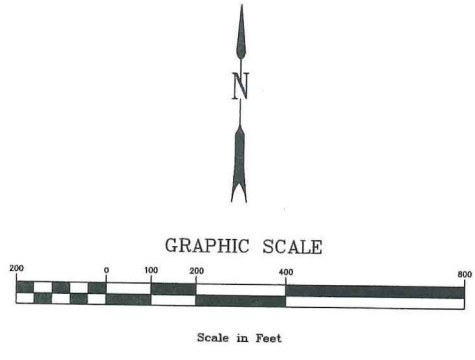
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Arch Cape Local Wetlands Inventory

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Watershed Boundary	Major Marsh
Project Boundary	Other Wetlands
Potentially Jurisdictional Creeks/drainages	Locally Significant Wetland
Significant Riparian Buffer	Probable Wetland PW
TRS	Wetland Code ARC-1

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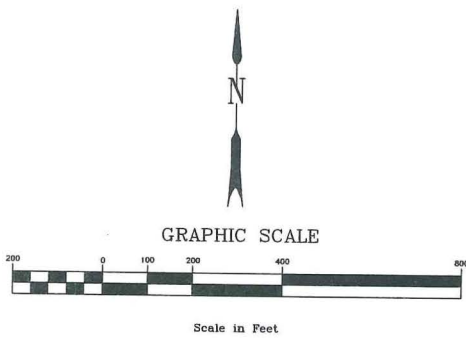
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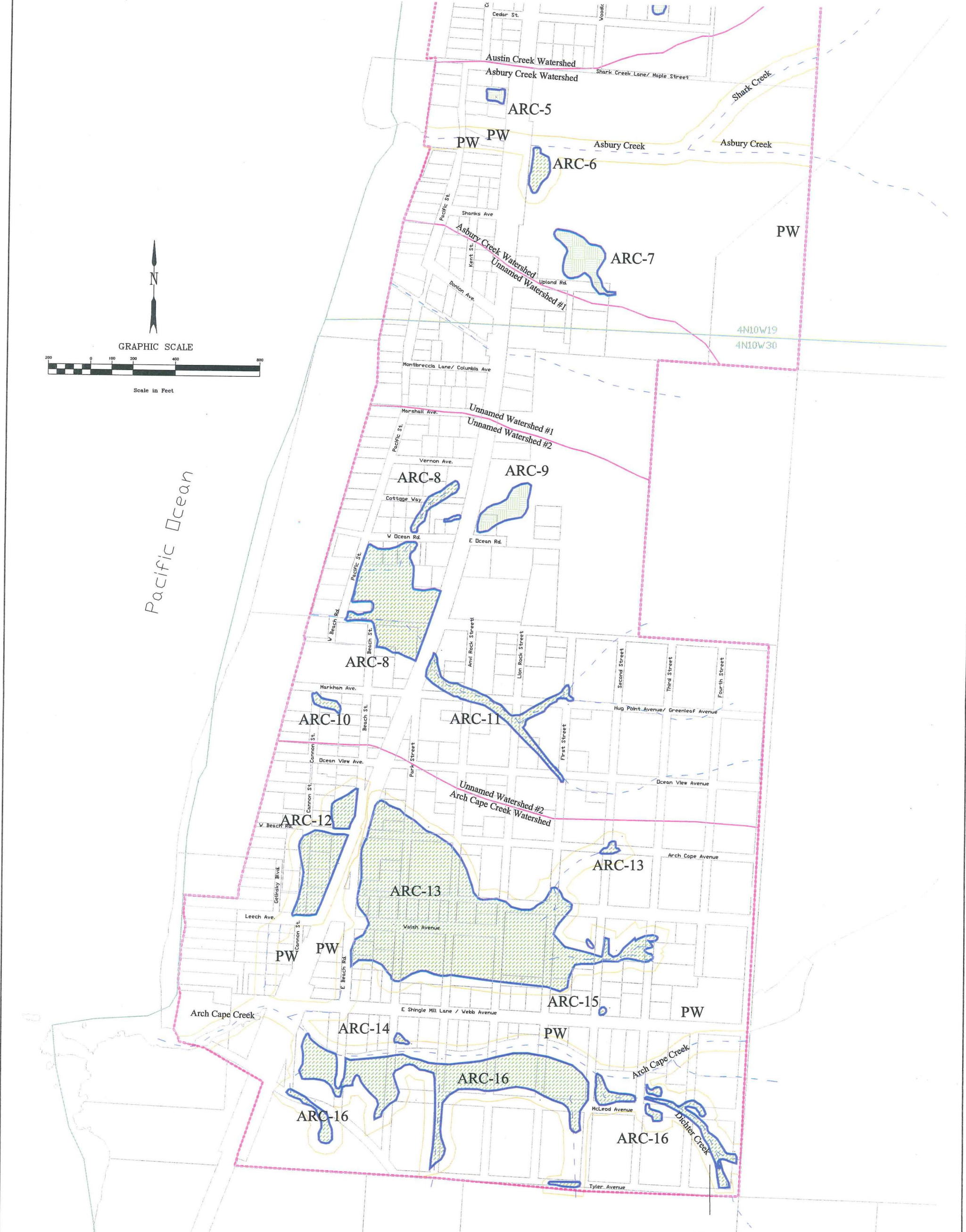
DATE:	August 2008
BASE MAP INFO:	Supplied by Columbia River Estuary Study Taskforce (CREST)
JOB NO.:	4014

Arch Cape Local Wetlands Inventory Resource Areas

Pacific Habitat Services, Inc.
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 Wilsonville, Oregon 97070
 Phone: (503) 570-0800



Pacific Ocean



Watershed Boundary	Major Marsh
Project Boundary	Other Wetlands
Potentially Jurisdictional Creeks/drainages	Locally Significant Wetland
Significant Riparian Buffer	Probable Wetland PW
TBS	Wetland Code ARC-1

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Arch Cape Local Wetlands Inventory Resource Areas

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Wilsonville, Oregon 97070
Phone: (503) 570-0800

4N10W30
4N10W31

Pacific Ocean

Oregon Coast Hwy (101)

DSL DET#00-0011

COV-1

PW
COV-2

COV-3

COV-5

COV-4

PW

Unnamed Watershed #3
Mason Creek Watershed

COV-6

COV-7

COV-8

COV-10

COV-9

COV-11

Cove Creek Watershed
Cedar Creek Watershed

Cedar Creek Watershed
Unnamed Watershed #3

Ocean Way

Waring Street

Mason Creek

Mason Creek Watershed
Unnamed Watershed #4

Richard St.

Tide Street

Columbia St.

1st Ave.

2nd Ave.

Clatsop Street

Calder Street

3rd Street

Early Street

Cove Beach Rd.



GRAPHIC SCALE



Scale in Feet

Watershed Boundary	Major Marsh
Project Boundary	Other Wetlands
Potentially Jurisdictional Creeks/drainages	Locally Significant Wetland
Significant Riparian Buffer	Probable Wetland PW
TRS	Wetland Code ARC-1

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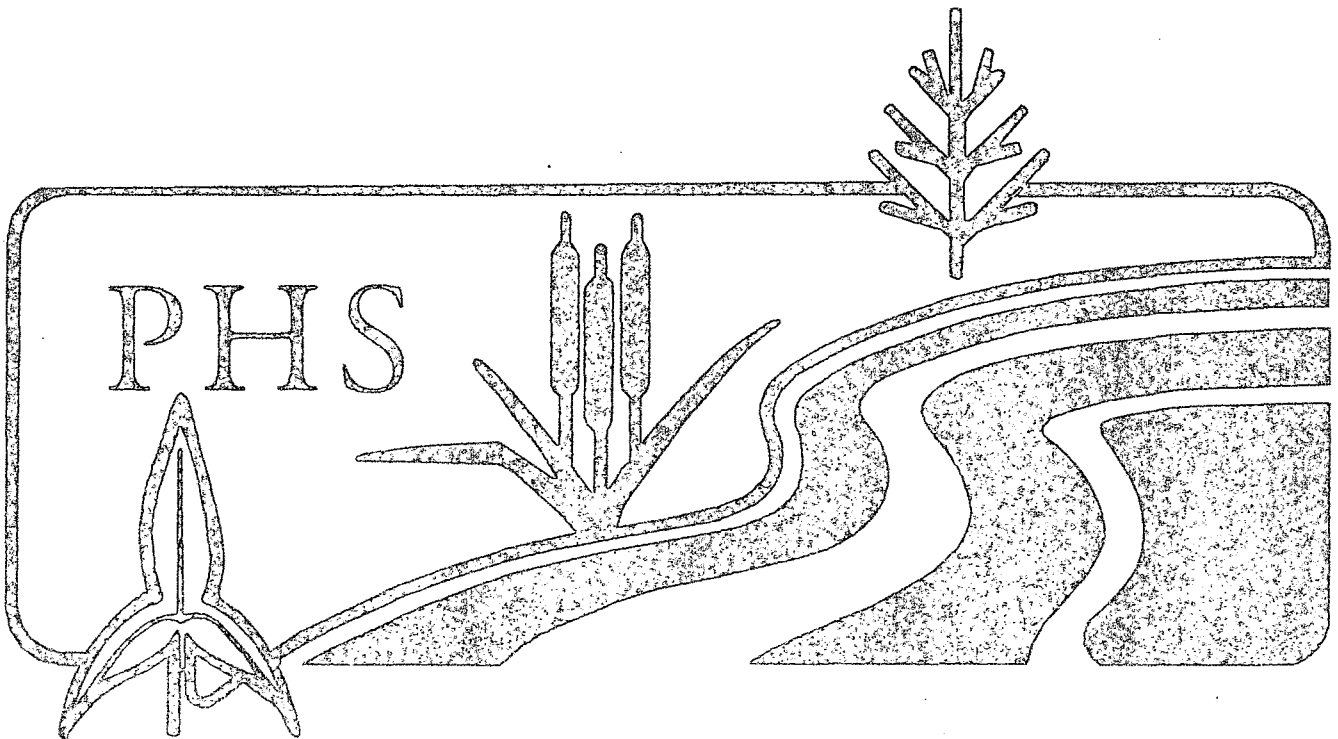


Sheet: 6

of: 6

Appendix B

Wetland Characterization Sheets



Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-1
Date(s) of field work:	4/17/2008	Size (acres):	0.23
Data Sheet Numbers:	1	Cowardin Class(es):	PFO, PSS
Investigator(s):	SE / ME	HGM Class(es):	S/F

Location -- Legal:	T4N, R10W, S19 CB
Other:	West of Highway 101, between Carnahan and Poppe Lane
Tax Lots:	100, 200, 500
Hydrologic basin:	Austin Creek
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Tsuga heterophylla</i>	Western Hemlock	<i>Lycopodium alpinum</i>	Alpine Clubmoss
<i>Gaultheria shallon</i>	Salal	<i>Petasites palmatus</i>	Sweet Coltsfoot
<i>Rubus spectabilis</i>	Salmonberry	<i>Juncus effusus</i>	Soft Rush
<i>Rubus discolor</i>	Himalayan Blackberry	<i>Carex obnupta</i>	Slough Sedge
		<i>Cardamine oligosperma</i>	Few-Seed Bitter-Cress
		<i>Athyrium distentifolium</i>	Alpine Lady Fern
		<i>Oenanthe sarmentosa</i>	Water-Parsley

Comments: **Locally Significant Wetland**
 The wetland begins at the bottom of the Highway 101 fill slope. There are two wetland areas hydrologically connected by two culverts under a residential driveway. Water flows into the wetland from the east via a culvert under Hwy 101. The associated creek channel is the same channel that is associated with ARC-3. Outflow from the western portion of the wetland is culverted beneath residential homes and daylight at an outfall at the eastern limits of the beach.
 Adjacent upland species: *Picea sitchensis*, *Rubus discolor*, *Lonicera involucrata*, *Sambucus racemosa*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-2
Date(s) of field work:	4/17/2008	Size (acres):	0.33
Data Sheet Numbers:	2,3	Cowardin Class(es):	PFO, PSS, PEM
Investigator(s):	SE / ME	HGM Class(es):	RFT

Location -- Legal:	T4N, R10W, S19 CA
Other:	East of Highway 101, North of Buena Vista Drive
Tax Lots:	4900, 5000, 5100, 6600, 6700, 6800, 6900, 7000, 7100, 7200, 7500, 7600, 7700, 8500
Hydrologic basin:	Austin Creek
Soil -- Mapped series:	Skipanon gravelly silt loam
Hydrologic Source:	Surface flow

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Thuja plicata</i>	Western Red Cedar	<i>Petasites palmatus</i>	Sweet Coltsfoot
<i>Gaultheria shallon</i>	Salal	<i>Lysichiton americanum</i>	American Skunk-Cabbage
<i>Rubus spectabilis</i>	Salmonberry	<i>Athyrium filix-femina</i>	Subarctic Lady Fern
<i>Alnus rubra</i>	Red Alder	<i>Tolmiea menziesii</i>	Youth-On-Age
<i>Salix hookeriana</i>	Hooker Willow	<i>Claytonia perfoliata</i>	Miner's-Lettuce Springbeauty
		<i>Geranium robertianum</i>	Robert Geranium
		<i>Carex deweyana</i>	Dewey's Sedge
		<i>Carex obnupta</i>	Slough Sedge
		<i>Juncus effusus</i>	Soft Rush

Comments:
 ARC-2 includes wetlands immediately adjacent to Austin Creek, as well as off-channel wetlands that drain directly or indirectly into the creek. The creek flows through a residential neighborhood and as a result is culverted twice. The downstream portion of the channel, west of Big Cedar Court has less adjacent wetland than to the east. A small soft rush dominated wetland east of Big Cedar Court appears isolated; however, it is hydrologically connected via a culvert under the street.

Adjacent upland species: *Tsuga heterophylla*, *Gaultheria shallon*, *Vaccinium parvifolium*, *Vaccinium ovatum*, *Rubus spectabilis*, *Equisetum arvense*, lawn grasses

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-3
Date(s) of field work:	4/17/08, 4/18/08, 5/16/08	Size (acres):	0.40
Data Sheet Numbers:	4, 5, 6, 7	Cowardin Class(es):	PEM, PFO
Investigator(s):	SE / ME	HGM Class(es):	S

Location -- Legal:	T4N, R10W, S19 CA
Other:	East & west of Woodland Heights, within & south of Spruce St. ROW
Tax Lots:	3401, 3500, 4000, 4001, 4003, 4005
Hydrologic basin:	Austin Creek
Soil -- Mapped series:	Walluski silt loam / Grindbrook silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Sambucus racemosa</i>	Red Elderberry	<i>Lycopus americanus</i>	American Bugleweed
<i>Rubus spectabilis</i>	Salmonberry	<i>Athyrium filix-femina</i>	Subarctic Lady Fern
<i>Lonicera involucrata</i>	Bearberry Honeysuckle	<i>Blechnum spicant</i>	Deer Fern
<i>Alnus rubra</i>	Red Alder	<i>Polystichum munitum</i>	Pineland Sword Fern
<i>Tsuga heterophylla</i>	Western Hemlock	<i>Maianthemum dilatatum</i>	False Lily-Of-The-Valley
		<i>Oenanthe sarmentosa</i>	Water-Parsley
		<i>Lysichiton americanum</i>	American Skunk-Cabbage

Comments:
 Wetlands associated with perennial drainage located primarily within platted ROW of Spruce Street. Drainage meanders through emergent and scrub shrub communities. Trees are present, but primarily limited to a few at the edges of the wetland. Perennial spring defines the eastern limits of the wetland and the drainage. Additional seasonal springs are reported to exist upslope (east) of the wetland.
 Adjacent upland species: *Tsuga heterophylla*, *Gaultheria shallon*, *Rubus spectabilis*, *Polystichum munitum*, *Pteridium aquilinum*, *Maianthemum dilatatum*, *Picea sitchensis*, *Alnus rubra*, *Vaccinium parvifolium*, *Thuja plicata*, *Equisetum arvense*, *Athyrium filix-femina*, *Blechnum spicant*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL= Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-4
Date(s) of field work:	10/1/2008	Size (acres):	0.28
Data Sheet Numbers:	None off-site	Cowardin Class(es):	PFO
Investigator(s):	SE / ME	HGM Class(es):	S

Location -- Legal:	T4N, R10W, S19 CA
Other:	Between Cedar St. and Hemlock St; east of Woodland Heights Rd.
Tax Lots:	4207 & 4208
Hydrologic basin:	Austin Creek
Soil -- Mapped series:	Grindbrook silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Carex obnupta</i>	Slough Sedge
<i>Rubus spectabilis</i>	Salmonberry	<i>Scirpus microcarpus</i>	Small-Fruit Bulrush
<i>Rubus discolor</i>	Himalyan Blackberry	<i>Polystichum munitum</i>	Pineland Sword Fern
		<i>Lysichiton americanum</i>	American Skunk-Cabbage

Comments:
 A small forested wetland fed by groundwater and presumably, seasonal surface flow. Seasonal outflow is culverted under Hemlock Street at the northern limits of the wetland. It appears that the street culvert daylight north of the road but that flow is again piped under at least a portion of the lots north of Hemlock Street. A hydrologic connection to the Austin Creek tributary within the Spruce Street right-of-way was assumed.
 Adjacent upland species: *Tsuga heterophylla*, *Gaultheria shallon*, *Sambucus racemosa*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DGP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-5
Date(s) of field work:	4/17/2008	Size (acres):	0.11
Data Sheet Numbers:	8, 9	Cowardin Class(es):	PSS
Investigator(s):	SE / ME	HGM Class(es):	S/F

Location -- Legal:	T4N, R10W, S19 CC
Other:	West of Highway 101, South of Shark Creek Lane
Tax Lots:	104, 108
Hydrologic basin:	Asbury Creek
Soil -- Mapped series:	Humitropepts-Tropaquepts complex
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Salix hookeriana</i>	Hooker Willow	<i>Gaultheria shallon</i>	Salal
<i>Alnus rubra</i>	Red Alder	<i>Hedera helix</i>	English Ivy
<i>Rubus discolor</i>	Himalayan Blackberry	<i>Polystichum munitum</i>	Pineland Sword Fern
<i>Lonicera involucrata</i>	Bearberry Honeysuckle	<i>Carex obnupta</i>	Slough Sedge
		<i>Oenanthe sarmentosa</i>	Water-Parsley
		<i>Petasites palmatus</i>	Sweet Coltsfoot
		<i>Juncus effusus</i>	Soft Rush

Comments:
 The wetland is a small scrub-shrub system on an undeveloped residential lot. The source of hydrology is groundwater. Though there may be an outlet, it could not be identified and as a result the wetland was assessed as if it were isolated from other jurisdictional waters.

Adjacent upland species: *Picea sitchensis*, *Gaultheria shallon*, *Rubus spectabilis*, *Maianthemum dilatatum*, *Carex obnupta*, *Equisetum arvense*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-6
Date(s) of field work:	7/24/2008	Size (acres):	0.33
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PFO
Investigator(s):	ME/SE	HGM Class(es):	S/F

Location -- Legal:	T4N, R10W, S19
Other:	East of Highway 101, South of Shark Creek Lane
Tax Lots:	2100
Hydrologic basin:	Asbury Creek
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Carex obnupta</i>	Slough Sedge
<i>Salix hookeriana</i>	Hooker Willow	<i>Polystichum munitum</i>	Pineland Sword Fern
<i>Sambucus racemosa</i>	Red Elderberry		
<i>Picea sitchensis</i>	Sitka Spruce		

Comments: **Locally Significant Wetland**
 Off-site assessment. Used best professional judgement along with aerial photo interpretation to identify the wetland boundary because access was limited from Highway 101 right-of-way. Asbury Creek defines the northern limits of this wetland. Fish habitat not assessed because wetland does not have an unimpeded surface water connection to Asbury Creek.
 Adjacent upland species: *Tsuga heterophylla*, *Gaultheria shallon*, *Vaccinium ovatum*, *Rubus spectabilis*, *Equisetum arvense*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-7
Date(s) of field work:	7/24/2008	Size (acres):	0.89
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PFO
Investigator(s):	SE / ME	HGM Class(es):	S/F

Location -- Legal:	T4N, R10W, S19 CC
Other:	East of Highway 101, North and south of Upland Drive
Tax Lots:	2100; CC4700
Hydrologic basin:	Asbury Creek
Soil -- Mapped series:	Walluski silt loam, Grindbrook silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Picea sitchensis</i>	Sitka spruce	<i>Carex obnupta</i>	Slough Sedge
<i>Alnus rubra</i>	Red Alder	<i>Polystichum munitum</i>	Pineland Sword Fern
<i>Crataegus douglasii</i>	Douglas' Hawthorne		

Comments:
 Off-site assessment. Used best professional judgement along with aerial photo interpretation to identify the wetland boundary because access was limited to what could be seen from Upland Road and the Highway 101 right-of-way.

Adjacent upland species: *Picea sitchensis*, *Gaultheria shallon*, *Rubus discolor*, *Lotus corniculatus*, *Dactylis glomerata*, *Polystichum munitum*, *Anthoxanthum odoratum*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-8
Date(s) of field work:	4/18/2008	Size (acres):	3.54
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PFO, PSS
Investigator(s):	SE / ME	HGM Class(es):	S, RFT

Location -- Legal:	T4N, R10W, S30 BB & BC
Other:	West of Highway 101, North and south of Cottage Way & Ocean Road
Tax Lots:	BB 500, 600, 602, 604, 605, 800, 801, 900, 901, 1400, 1802, 1803; BC 500, 501, 1300
Hydrologic basin:	Unnamed #2
Soil -- Mapped series:	Brallier mucky peat, Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Picea sitchensis</i>	Sitka Spruce	<i>Carex obnupta</i>	Slough Sedge
<i>Salix hookeriana</i>	Hooker Willow	<i>Lysichiton americanum</i>	American Skunk-Cabbage
<i>Alnus rubra</i>	Red Alder	<i>Equisetum arvense</i>	Field Horsetail
<i>Lonicera involucrata</i>	Bearberry Honeysuckle	<i>Oenanthe sarmentosa</i>	Water-Parsley
<i>Gaultheria shallon</i>	Salal	<i>Ranunculus repens</i>	Creeping Buttercup
		<i>Athyrium filix-femina</i>	Subarctic Lady Fern
		<i>Maianthemum dilatatum</i>	False Lily-Of-The-Valley

Comments: **Locally Significant Wetland**
 Off-site assessment. The northern portion of the wetland, north of Ocean Road, is associated with a narrow drainage. The drainage flows through a series of culverts between residential properties and structures. South of Ocean Road, the larger area is comprised of palustrine forested and scrub-shrub plant communities. Two more drainages flow into this wetland, one from ARC-9, and one from ARC-11, both located east of Hwy 101.
 Adjacent upland species: *Picea sitchensis*, *Gaultheria shallon*, *Hedera helix*, *Galium aparine*, *Polystichum munitum*, *Montia linearis*, *Tanacetum vulgare*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-9
Date(s) of field work:	10/1/2008	Size (acres):	0.66
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PFO
Investigator(s):	SE / ME	HGM Class(es):	S

Location --	Legal: T4N, R10W, S30BB
	Other: East of Highway 101; North of Ocean Road
	Tax Lots: 3700 & BB300
	Hydrologic basin: Unnamed #2
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation

TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Carex obnupta</i>	Slough Sedge
<i>Salix spp.</i>	Willows		
<i>Rubus discolor</i>	Himalayan Blackberry		
<i>Sambucus racemosa</i>	Red Elderberry		

Comments:

Off-site assessment. Used best professional judgement along with aerial photo interpretation to identify the wetland boundary because access was limited to what could be seen from Hwy 101 or Ocean Road. A culvert beneath Highway 101 provides a hydrologic connection between this wetland and a short section of drainage that is part of ARC-8.

Adjacent upland species: *Tsuga heterophylla*, *Gaultheria shallon*, *Rubus discolor*, *Polystichum munitum*, *Sambucus racemosa*, *Cytisus scoparius*, *Tanacetum vulgare*, *Hypochaeris radicata*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-10
Date(s) of field work:	4/18/2008	Size (acres):	0.14
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PFO
Investigator(s):	ME / SE	HGM Class(es):	DCNP

Location -- Legal:	T4N, R10W, S30 BC
Other:	Located south of Markum Road, within and east of Cannon Street
Tax Lots:	3200
Hydrologic basin:	Unnamed #2
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Carex obnupta</i>	Slough Sedge
<i>Lonicera involucrata</i>	Bearberry Honeysuckle	<i>Lysichiton americanum</i>	American Skunk-Cabbage
<i>Rubus spectabilis</i>	Salmonberry	<i>Athyrium filix-femina</i>	Subarctic Lady Fern

Comments: **Locally Significant Wetland**
 Off-site assessment. The wetland is bordered by residential housing to the west, south and east. A narrow forested buffer separates it from Markum Street to the north. There is a culvert that daylight into the wetland at its eastern boundary; the hydrologic source of water from the culvert is unknown.
 Adjacent upland species: *Picea sitchensis*, *Menziesia ferruginea*, *Lonicera involucrata*, *Polystichum munitum*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA = Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-11
Date(s) of field work:	6/13/2008	Size (acres):	1.10
Data Sheet Numbers:	10, 11, 12, 13	Cowardin Class(es):	PEM, PFO
Investigator(s):	SE / ME	HGM Class(es):	RFT, S/F

Location -- Legal:	T4N, R10W, S30 BC & BD
Other:	East of Highway 101, North and south of Hug Point Avenue
Tax Lots:	BC 800, 900, 1000, 1100, 1400, 1500, 1700, 1800; BD 501, 800, 1800, 1900, 2000
Hydrologic basin:	Unnamed #2
Soil -- Mapped series:	Skipanon gravelly silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Blechnum spicant</i>	Deer Fern
<i>Tsuga heterophylla</i>	Western Hemlock	<i>Athyrium filix-femina</i>	Subarctic Lady Fern
<i>Rubus spectabilis</i>	Salmonberry	<i>Oenanthe sarmentosa</i>	Water- Parsley
<i>Sambucus racemosa</i>	Red Elderberry	<i>Carex obnupta</i>	Slough Sedge
		<i>Stachys cooleyae</i>	Cooley's Hedgenettle
		<i>Lysichiton americanum</i>	American Skunk-Cabbage
		<i>Montia linearis</i>	Narrowleaf Miner's Lettuce

Comments: **Locally Significant Wetland**
 Partial off-site assessment. The wetland is located in a forested, undeveloped area. The wetland includes the confluence of two tributaries to the Pacific Ocean. The boundaries of the wetland were identified using best professional judgement and by accessing platted ROWs. The tributary is culverted under Highway 101 where it flows into ARC-8 located west of the highway.
 Adjacent upland species: *Alnus rubra*, *Thuja plicata*, *Picea sitchensis*, *Tsuga heterophylla*, *Menziesia ferruginea*, *Gaultheria shallon*, *Vaccinium parvifolium*, *Blechnum spicant*, *Montia linearis*, *Athyrium filix-femina*, *Polystichum munitum*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-12
Date(s) of field work:	4/18/2008	Size (acres):	1.78
Data Sheet Numbers:	16, 17	Cowardin Class(es):	PFO
Investigator(s):	ME / SE	HGM Class(es):	DCP

Location -- Legal:	T4N, R10W, S30 BC & CB
Other:	West of Highway 101, North and south of Arch Cape Avenue
Tax Lots:	BC 5901, 5902, 6000, 8700, 8704, 8705, 8900, 9000, 9100; CB 600, 701
Hydrologic basin:	Arch Cape Creek
Soil -- Mapped series:	Mues silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Carex obnupta</i>	Slough Sedge
<i>Picea sitchensis</i>	Sitka Spruce	<i>Lysichiton americanum</i>	American Skunk-Cabbage
<i>Malus fusca</i>	Pacific Crabapple	<i>Oenanthe sarmentosa</i>	Water-Parsley
<i>Rubus spectabilis</i>	Salmonberry	<i>Athyrium filix-femina</i>	Subarctic Lady Fern
<i>Lonicera involucrata</i>	Bearberry Honeysuckle	<i>Polystichum munitum</i>	Pineland Sword Fern
<i>Oemleria cerasiformis</i>	Oso-Berry		

Comments: **Locally Significant Wetland**

Partial off-site assessment. Wetland located at the bottom of the Highway 101 fill slope. The north and south portions of the wetland are hydrologically connected by a culvert under Arch Cape Avenue. An outlet from the wetland could not be identified; outflow from the wetland is therefore assumed to be restricted. Prior to construction of Hwy 101, ARC-12 and ARC-13 were very likely part of the same wetland. A small culvert beneath Highway 101 maintains a hydrologic connection between them.

Adjacent upland species: *Pinus contorta*, *Crataegus douglasii*, *Rubus laciniatus*, *Sambucus racemosa*, *Rubus discolor*, *Lonivera involucrata*, *Polystichum munitum*, *Hedera helix*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA = Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-13
Date(s) of field work:	4/18, 6/12, & 7/24, 2008	Size (acres):	13.20
Data Sheet Numbers:	14, 15, 18 through 24	Cowardin Class(es):	PFO
Investigator(s):	ME / SE	HGM Class(es):	S

Location --	Legal:	T4N, R10W, S30 BC, BD, CA, CB
	Other:	East of Highway 101, South of Ocean View and North of Webb Avenue
	Tax Lots:	See Back
	Hydrologic basin:	Arch Cape Creek
Soil -- Mapped series:	Skipanon gravelly SL; Grindbrook SL; Mues SL; Klootchie-Necanicum complex	
Hydrologic Source:	Groundwater	

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Picea sitchensis</i>	Sitka Spruce	<i>Carex obnupta</i>	Slough Sedge
<i>Alnus rubra</i>	Red Alder	<i>Polystichum munitum</i>	Pineland Sword Fern
<i>Rubus spectabilis</i>	Salmonberry	<i>Ranunculus repens</i>	Creeping Buttercup
<i>Sambucus racemosa</i>	Red Elderberry	<i>Glyceria occidentalis</i>	Noerthwestern Manna Grass
<i>Tsuga heterophylla</i>	Western Hemlock	<i>Poa sp.</i>	Bluegrass species
		<i>Stachys cooleyae</i>	Cooley's Hedgenettle
		<i>Oenanthe sarmentosa</i>	Water-Parsley
		<i>Phalaris arundinacea</i>	Reed Canary Grass
		<i>Lysichiton americanum</i>	American Skunk-Cabbage
		<i>Athyrium filix-femina</i>	Subarctic Lady Fern

Comments: **Locally Significant Wetland**
 Partial off-site. Access to this forested wetland was obtained mainly through platted ROWs and consenting property owners. Additional info was obtained from off-site observations, aerial photos, and local residents. Prior to construction of Hwy 101, it is likely that ARC-12 & 13 were part of the same wetland; a culvert under Hwy 101 maintains a hydrologic connection. ARC-13 has a seasonal connection to Arch Cape Creek via ditches along E Beach Rd and E Shingle Mill Lane. Large springs in the east portion are reported to provide a significant source of hydrology, resulting in extensive flooding during the winter and early spring.
 Adjacent upland species: *Alnus rubra*, *Tsuga heterophylla*, *Picea sitchensis*, *Pinus contorta*, *Sambucus racemosa*, *Rubus discolor*, *Rubus laciniatus*, *Rubus spectabilis*, *Gaultheria shallon*, *Polystichum munitum*, *Oxalis oregana*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Tax Lots for ARC-13
Township 4 North, Row 10 West, Section 30

Section 30			
BC	BD	CA	CB
6600	2600	100	200
6700	3100	200	300
7200	3200	300	400
7400	3300	400	2900
8200		700	2901

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-14
Date(s) of field work:	4/18/2008	Size (acres):	0.05
Data Sheet Numbers:	27, 28	Cowardin Class(es):	PFO
Investigator(s):	ME / SE	HGM Class(es):	DCP

Location -- Legal:	T4N, R10W, S30 CB
Other:	East of Highway 101, South of Webb Avenue, East of Park Street
Tax Lots:	4700
Hydrologic basin:	Arch Cape Creek
Soil -- Mapped series:	Tropofluvents
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Lonicera involucrata</i>	Bearberry Honeysuckle	<i>Carex lyngbyei</i>	Lyngbye's Sedge
<i>Alnus rubra</i>	Red Alder	<i>Lysichiton americanum</i>	American Skunk-Cabbage
		<i>Oenanthe sarmentosa</i>	Water- Parsley
		<i>Athyrium filix-femina</i>	Subarctic Lady Fern

Comments: **Locally Significant Wetland**

Located just east of platted Park Street, on undeveloped portion of a residential parcel. The wetland is just north of Arch Cape Creek and likely has a subsurface connection. The wetland included shallow ponding across its western extent at the time of the site visit. The primary hydrologic source is apparently groundwater.

Adjacent upland species: *Alnus rubra*, *Rubus discolor*, *Rubus spectabilis*, *Sambucus racemosa*, *Polystichum munitum*, *Oxalis oregana*, *Viola langsdorfii*, *Carex obnupta*, *Oenanthe sarmentosa*, *Cardamine oligosperma*, *Galium aparine*, *Hydrophyllum tenuipes*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL= Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-15
Date(s) of field work:	6/12/08 & 6/13/08	Size (acres):	0.02
Data Sheet Numbers:	25, 26	Cowardin Class(es):	PFO
Investigator(s):	ME / SE	HGM Class(es):	DCNP

Location -- Legal:	T4N, R10W, S30 CA
Other:	Northeast of corner of 2nd Street and Webb Avenue
Tax Lots:	1005
Hydrologic basin:	Arch Cape Creek
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Athyrium filix-femina</i>	Subarctic Lady Fern
<i>Picea sitchensis</i>	Sitka Spruce	<i>Oenanthe sarmentosa</i>	Water- Parsely
<i>Sambucus racemosa</i>	Red Elderberry	<i>Lysichiton americanum</i>	American Skunk-Cabbage
<i>Tsuga heterophylla</i>	Western Hemlock	<i>Ranunculus repens</i>	Creeping Buttercup
		<i>Equisetum arvense</i>	Field Horsetail
		<i>Maianthemum dilatatum</i>	False Lily-Of-The-Valley
		<i>Phalaris arundinacea</i>	Reed Canary Grass

Comments: **Locally Significant Wetland**
 A very small depressional wetland fed by groundwater; may experience shallow seasonal ponding. The south and western boundaries are defined by fillslope of adjacent streets. This wetland has no apparent outlet.

Adjacent upland species: *Tsuga heterophylla*, *Gaultheria shallon*, *Athyrium filix-femina*, *Sambucus racemosa*, *Heuchera sp.*, *Polystichum munitum*, *Montia linearis*, *Maianthemum dilatatum*, *Vaccinium parvifolium*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL= Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	ARC-16
Date(s) of field work:	6/12/2008 & 7/24/08	Size (acres):	6.43
Data Sheet Numbers:	29 through 36	Cowardin Class(es):	PFO
Investigator(s):	ME / SE	HGM Class(es):	RFT, S/F

Location -- Legal:	T4N, R10W, S30 CA and CB
Other:	E of Highway 101, S of Arch Cape Creek, and within platted Tyler Avenue
Tax Lots:	CA1800, 2100, 2300, 2400, 2600, 3100, 3300, 3500, 3700, 3800, 4800, 4900; CB 3600, 3900, 4200
Hydrologic basin:	Arch Cape Creek
Soil -- Mapped series:	Walluski silt loam / Grindbrook silt loam
Hydrologic Source:	Groundwater, Surface Flow

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Oenanthe sarmentosa</i>	Water-Parsley
<i>Tsuga heterophylla</i>	Western Hemlock	<i>Ranunculus repens</i>	Creeping Buttercup
<i>Picea sitchensis</i>	Sitka Spruce	<i>Juncus effusus</i>	Soft Rush
<i>Thuja plicata</i>	Western Red Cedar	<i>Scutellaria galericulata</i>	Marsh Skullcap
<i>Vaccinium parvifolium</i>	Red Honeysuckle	<i>Tellima grandiflora</i>	Fringecup
		<i>Carex obnupta</i>	Slough Sedge
		<i>Equisetum arvense</i>	Field Horsetail
		<i>Lysichiton americanum</i>	American Skunk-Cabbage
		<i>Oxalis oregana</i>	Oregon Oxalis
		<i>Athyrium filix-femina</i>	Subarctic Lady Fern

Comments: **Locally Significant Wetland**
 Partial off-site. This forested wetland is located in the undeveloped area between Arch Cape Creek, which defines much of the northern border of the wetland, and Oswald West State Park (to the south). Access was obtained mainly through platted ROWs. Additional info was obtained from off-site observations, aerial photos, and local residents. The wetland has several small channels that flow into Arch Cape Creek. The wetland is fed by groundwater, as well as several drainages that flow from the hills to the south and east.
 Adjacent upland species: *Picea sitchensis*, *Tsuga heterophylla*, *Thuja plicata*, *Alnus rubra*, *Sambucus racemosa*, *Vaccinium parvifolium*, *V. ovatum*, *Rubus discolor*, *R. ursinus*, *R. spectabilis*, *Gaultheria shallon*, *Polystichum munitum*, *Blechnum spicant*, *Maianthemum dilatatum*, *Athyrium filix-femina*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA = Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-1
Date(s) of field work:	5/15/2008	Size (acres):	4.36
Data Sheet Numbers:	37, 38, 39, 40	Cowardin Class(es):	PSS, PEM, PUB
Investigator(s):	ME/SE	HGM Class(es):	S/F

Location -- Legal:	T4N, R10W, S31 BB
Other:	North of Clatsop Avenue, east and west of 1st and 2nd Avenues
Tax Lots:	203, 400, 402, 403, 500, 505, 506, 604, 606
Hydrologic basin:	Cove Creek
Soil -- Mapped series:	Walluski silt loam / Skipanon gravelly silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation

TREES / SHRUBS		VINES / HERBS	
<i>Lonicera involucrata</i>	Bearberry Honeysuckle	<i>Carex obnupta</i>	Slough Sedge
<i>Spiraea douglasii</i>	Douglas' Hawthorne	<i>Scirpus validus</i>	Soft-Stem Bulrush
<i>Potentilla anserina</i>	Silverweed	<i>Typha latifolia</i>	Common Cattail
<i>Alnus rubra</i>	Red Alder	<i>Juncus tenuis</i>	Slender Rush
<i>Gaultheria shallon</i>	Salal	<i>Ranunculus repens</i>	Creeping Buttercup
		<i>Tanacetum vulgare</i>	Common Tansy
		<i>Lotus purshiana</i>	Spanish-Clover
		<i>Equisetum arvense</i>	Field Horsetail
		<i>Petasites palmatus</i>	Sweet Coltsfoot
		<i>Digitalis purpurea</i>	Purple Foxglove

Comments:

Major Marsh

Partial off-site assessment. The western portion is located on Wetland Conservancy land. It consists of an open water pond surrounded by PSS and PEM wetlands to the north, east, and south. Approximately 60% of the pond's surface is covered with large woody debris. The wetland is separated from the beach by a rock berm. Seasonally, water in the open water pond may be several feet deep. It is assumed the wetland is hydrologically connected to the ocean by subsurface lateral groundwater movement through the rock berm.

Adjacent upland species: *Salix hookeriana*, *Gaultheria shallon*, *Echinocystis lobata*, *Petasites palmatus*, *Oenanthe sarmentosa*, *Vicia sativa*, *Alnus rubra*, *Rubus parviflorus*, *Rubus spectabilis*, *Polystichum munitum*, *Heracleum lanatum*, *Cardamine oligosperma*, *Digitalis purpurea*, *Tanacetum vulgare*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-2
Date(s) of field work:	5/15/2008	Size (acres):	1.31
Data Sheet Numbers:	41,42	Cowardin Class(es):	PFO, PEM
Investigator(s):	ME/SE	HGM Class(es):	S/F

Location -- Legal:	T4N, R10W, S31 B & BC
Other:	North and south of Clatsop Street.
Tax Lots:	B 402, 403, 404; BC 100
Hydrologic basin:	Cove Creek
Soil -- Mapped series:	Skipanon gravelly silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Carex obnupta</i>	Slough Sedge
<i>Rubus spectabilis</i>	Salmonberry	<i>Oenanthe sarmentosa</i>	Water-Parsley
<i>Gaultheria shallon</i>	Salal	<i>Tellima grandiflora</i>	Fringecup
<i>Tsuga heterophylla</i>	Western Hemlock	<i>Juncus tenuis</i>	Slender Rush
		<i>Athyrium filix-femina</i>	Subarctic Lady Fern
		<i>Montia linearis</i>	Narrowleaf Miner's Lettuce

Comments:
 Partial off-site assessment. Wetland is located in a developing residential area. The wetland was divided into two sections following the construction of Clatsop Street (R-F permit #23185). It is hydrologically connected to wetland COV-1 located to the northwest, by a culvert under Clatsop Street. The source of hydrology is groundwater. The portion of the wetland located southwest of Clatsop Street is within a conservation easement
 Adjacent upland species: *Picea sitchensis*, *Rubus spectabilis*, *Gaultheria shallon*, *Polystichum munitum*, *Blechnum spicant*, *Carex obnupta*, *Carex densa*, *Oxalis oregana*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-3
Date(s) of field work:	5/16/2008	Size (acres):	0.06
Data Sheet Numbers:	43, 44	Cowardin Class(es):	PFO
Investigator(s):	ME/SE	HGM Class(es):	Slope, RFT

Location -- Legal:	T4N, R10E, S31 B
Other:	West of Highway 101, North of Cove Beach Road
Tax Lots:	400
Hydrologic basin:	Cedar Creek
Soil -- Mapped series:	Skipanon gravelly silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Polystichum munitum</i>	Pineland Sword Fern
<i>Abies grandis</i>	Grand Fir	<i>Oenanthe sarmentosa</i>	Water-Parsley
		<i>Montia linearis</i>	Narrowleaf Miner's Lettuce
		<i>Stachys cooleyae</i>	Cooley's Hedgenettle
		<i>Petasites palmatus</i>	Sweet Coltsfoot

Comments: Locally Significant Wetland

The very small wetland is located in a forested area west of Hwy 101 on Cove Beach Water District property. The wetland is groundwater fed, but appears to be seasonally influenced by upslope drainage which is likely to include stormwater from Highway 101. A discontinuous series of small drainages extend a few hundred feet downslope (west) from the wetland. They appear to be the result of seasonally high outflow; the combined result of greater groundwater discharge within the wetland, and of overland flow from the upslope drainage.

Adjacent upland species: *Picea sitchensis*, *Tsuga heterophylla*, *Alnus rubra*, *Gaultheria shallon*, *Polystichum munitum*, *Montia linearis*, *Athyrium filix-femina*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-4
Date(s) of field work:	5/15/2008	Size (acres):	0.24
Data Sheet Numbers:	45, 46	Cowardin Class(es):	PFO
Investigator(s):	ME/SE	HGM Class(es):	S

Location -- Legal:	T4N, R10W, S31 C
Other:	North of Cove Beach Road on Water District property.
Tax Lots:	200
Hydrologic basin:	Unnamed #3
Soil -- Mapped series:	Skipanon gravelly silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Rubus spectabilis</i>	Salmonberry	<i>Carex obnupta</i>	Slough Sedge
		<i>Athyrium filix-femina</i>	Subarctic Lady Fern
		<i>Polystichum munitum</i>	Pineland Sword Fern
		<i>Blechnum spicant</i>	Deer Fern
		<i>Oenanthe sarmentosa</i>	Water-Parsley
		<i>Lysichiton americanum</i>	American Skunk-Cabbage
		<i>Cardamine angulata</i>	Angled Bitter-Cress
		<i>Montia linearis</i>	Narrowleaf Miner's Lettuce

Comments:
Wetland is located on Cove Beach Water District property. The wetland is fed by one or more groundwater seeps at its eastern limits. Wetland overflows into a roadside ditch north of Cove Beach Road.

Adjacent upland species: *Picea sitchensis*, *Tsuga heterophylla*, *Alnus rubra*, *Gaultheria shallon*, *Polystichum munitum*, *Montia linearis*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL= Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-5
Date(s) of field work:	5/15/2008	Size (acres):	0.37
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PEM, PUB
Investigator(s):	ME/SE	HGM Class(es):	RFT, S, DO

Location -- Legal:	T4N, R10W, S31 CB
Other:	Located north of Ocean Way, east of 2nd Avenue
Tax Lots:	200, 202, 203
Hydrologic basin:	Unnamed #3
Soil -- Mapped series:	Skipanon gravelly silt loam
Hydrologic Source:	Groundcover

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Carex obnupta</i>	Slough Sedge
<i>Rubus spectabilis</i>	Salmonberry	<i>Athyrium filix-femina</i>	Subarctic Lady Fern
		<i>Lysichiton americanum</i>	American Skunk-Cabbage
		<i>Oenanthe sarmentosa</i>	Water-Parsley

Comments:
 Off-site assessment. The NW portion of the wetland consists of an excavated pond with adjacent wetland in a residential yard. It is fed at least in part by an upslope drainage culverted under the Beach Cove Entrance Road. The NE portion of the wetland is a *Juncus effusus* and *Alnus rubra* sapling dominated system that appeared to have been recently cleared; the boundary reflects the documented dominance of wetland plants.
 Adjacent upland species: *Picea sitchensis*, *Alnus rubra*, *Sambucus racemosa*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL= Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-6
Date(s) of field work:	5/15/2008	Size (acres):	0.14
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PEM
Investigator(s):	ME/SE	HGM Class(es):	S/F

Location -- Legal:	T4N, R10W, S31 CC
Other:	South of Waring Street, East of First Avenue
Tax Lots:	301
Hydrologic basin:	Mason Creek
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
		<i>Juncus effusus</i>	Soft Rush
		<i>Ranunculus repens</i>	Creeping Buttercup
		<i>Equisetum arvense</i>	Field Horsetail
		<i>Oenanthe sarmentosa</i>	Water-Parsley
		<i>Lysichiton americanum</i>	American Skunk-Cabbage
		<i>Lotus corniculatus</i>	Birds-Foot Trefoil

Comments:
 Off-site assessment. The wetland is located on a developed residential lot. The existing house was constructed on pilings and the wetland apparently continues beneath the house. Hydrology from the wetland flows into a roadside ditch east of First Avenue. The ditch continues south.

Adjacent upland species: *Picea sitchensis*, *Sambucus racemosa*, *Gaultheria shallon*, *Rubus discolor*, *Petasites palmatus*, mowed lawn

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-7
Date(s) of field work:	5/16/2008	Size (acres):	0.26
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PSS
Investigator(s):	ME/SE	HGM Class(es):	S/F

Location -- Legal:	T4N, R10E, S31 CC
Other:	North of Richmond Street, west of 2nd Avenue
Tax Lots:	200, 201
Hydrologic basin:	Mason Creek
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Juncus tenuis</i>	Slender Rush
		<i>Lysichiton americanum</i>	American Skunk-Cabbage
		<i>Athyrium filix-femina</i>	Subarctic Lady Fern

Comments:
 Off-site assessment. The wetland is located at the bottom of a steep, west facing hillslope. The wetland is bisected by a perennial drainage that flows downslope to the west. The drainage has three branches that converge south of the wetland before continuing west to the beach. The wetland appears to be fed by upslope seeps or springs.
 Adjacent upland species: *Picea sitchensis*, *Gaultheria shallon*, *Sambucus racemosa*, *Athyrium filix-femina*, *Anthoxanthum odoratum*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-8
Date(s) of field work:	5/16/2008	Size (acres):	0.03
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PEM
Investigator(s):	ME/SE	HGM Class(es):	S/F

Location -- Legal:	T4N, R10, S31 CC
Other:	Located north of Richmond Street, West of 2nd Avenue
Tax Lots:	302
Hydrologic basin:	Mason Creek
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Rubus discolor</i>		<i>Juncus effusus</i>	Soft Rush
		<i>Equisetum arvense</i>	Field Horsetail
		<i>Athyrium filix-femina</i>	Subarctic Lady Fern
		<i>Alnus rubra (saplings)</i>	Red alder
		<i>Blechnum spicant</i>	

Comments:
 Off-site assessment. Small emergent wetland in an apparent depression on an otherwise forested lot. Though difficult to determine from off-site, the wetland does not appear to extend into the adjoining forested areas.

Adjacent upland species: *Tsuga heterophylla*, *Alnus rubra*, *Picea sitchensis*, *Gaultheria shallon*, *Rubus discolor*, *Pteridium aquilinum*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA = Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-9
Date(s) of field work:	5/16/2008	Size (acres):	0.87
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PSS, PEM
Investigator(s):	ME/SE	HGM Class(es):	S/F

Location -- Legal:	T4N, R10W, S31 CC
Other:	South of Richmond Street, East and west of First Avenue
Tax Lots:	1302, 1500, 1503, 1504
Hydrologic basin:	Unnamed #4
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Equisetum arvense</i>	Field Horsetail
<i>Rubus spectabilis</i>	Salmonberry	<i>Athyrium filix-femina</i>	Subarctic Lady Fern
		<i>Juncus effusus</i>	Soft Rush
		<i>Lysichiton americanum</i>	American Skunk-Cabbage
		<i>Ranunculus repens</i>	Creeping Buttercup
		<i>Stachys cooleyae</i>	Cooley's Hedgenettle
		<i>Rumex crispus</i>	Curly Dock
		<i>Oenanthe sarmentosa</i>	Water-Parsley
		<i>Petasites palmatus</i>	Sweet Coltsfoot
		<i>Polygonum cuspidatum</i>	Japanese Knotweed

Comments:
 Off-site assessment. Wetland shown as two separate areas on the map because it is culverted under First Avenue. The wetland hydrology flows northwest where it converges with a roadside ditch that flows along the west side of First Avenue and then, along the south side of Richmond Street. It is culverted again at Tide Avenue before flowing to the beach.
 Adjacent upland species: *Pinus contorta*, *Rubus discolor*, *Sambucus racemosa*, *Gaultheria shallon*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA = Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-10
Date(s) of field work:	5/16/2008	Size (acres):	1.28
Data Sheet Numbers:	47, 48, 49, 50	Cowardin Class(es):	PSS, PEM
Investigator(s):	ME/SE	HGM Class(es):	S/F

Location -- Legal:	T4N, R10W, S31 CC
Other:	East of second Avenue, south and north of Richmond Street
Tax Lots:	100, 202, 1600, 1702
Hydrologic basin:	Unnamed #4
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Juncus tenuis</i>	Slender Rush
<i>Pinus contorta</i>	Shore Pine	<i>Athyrium filix-femina</i>	Subarctic Lady Fern
<i>Rubus spectabilis</i>	Salmonberry	<i>Equisetum arvense</i>	Field Horsetail
<i>Gaultheria shallon</i>	Salal	<i>Carex obnupta</i>	Slough Sedge
<i>Rubus discolor</i>	Himalayan Blackberry	<i>Blechnum spicant</i>	Deer Fern
<i>Lonicera involucrata</i>	Bearberry Honeysuckle	<i>Athyrium filix-femina</i>	Subarctic Lady Fern
		<i>Lysichiton americanum</i>	American Skunk-Cabbage

Comments:
 Partial off-site assessment. Southern portion of this wetland is a subtle depression bordered in part by the circular access road through a new residential development. The northern portion of the wetland borders development; its boundaries generally defined by the limits of a broad drainage way which includes several shallow, meandering channels. Much of the wetland is located within open space tracts.
 Adjacent upland species: *Alnus rubra*, *Pinus contorta*, *Picea sitchensis*, *Rubus discolor*, *Tsuga heterophylla*, *Rubus spectabilis*, *Gaultheria shallon*, *Anthoxanthum odoratum*, *Lotus corniculatus*, *Festuca sp.*, *Leontodon nudicaulis*, *Equisetum arvense*, *Hypochaeris radicata*, *Montia lineris*, *Galium aparine*, *Luzula parviflora*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL= Flats	

Wetland Characterization Sheet



Project Name: Arch Cape LWI

		Wetland Code:	COV-11
Date(s) of field work:	5/16/2008	Size (acres):	0.05
Data Sheet Numbers:	None / Off-site	Cowardin Class(es):	PSS, PEM
Investigator(s):	ME/SE	HGM Class(es):	DCNP

Location -- Legal:	T4N, R10W, S31 CC
Other:	North of Columbia Street, east of Second Avenue
Tax Lots:	1603, 1604
Hydrologic basin:	Unnamed #4
Soil -- Mapped series:	Walluski silt loam
Hydrologic Source:	Groundwater

Dominant Wetland Vegetation			
TREES / SHRUBS		VINES / HERBS	
<i>Alnus rubra</i>	Red Alder	<i>Juncus tenuis</i>	Slender Rush
		<i>Athyrium filix-femina</i>	Subarctic Lady Fern
		<i>Carex obnupta</i>	Slough Sedge
		<i>Ranunculus repens</i>	Creeping Buttercup
		<i>Oenanthe sarmentosa</i>	Water-Parsley

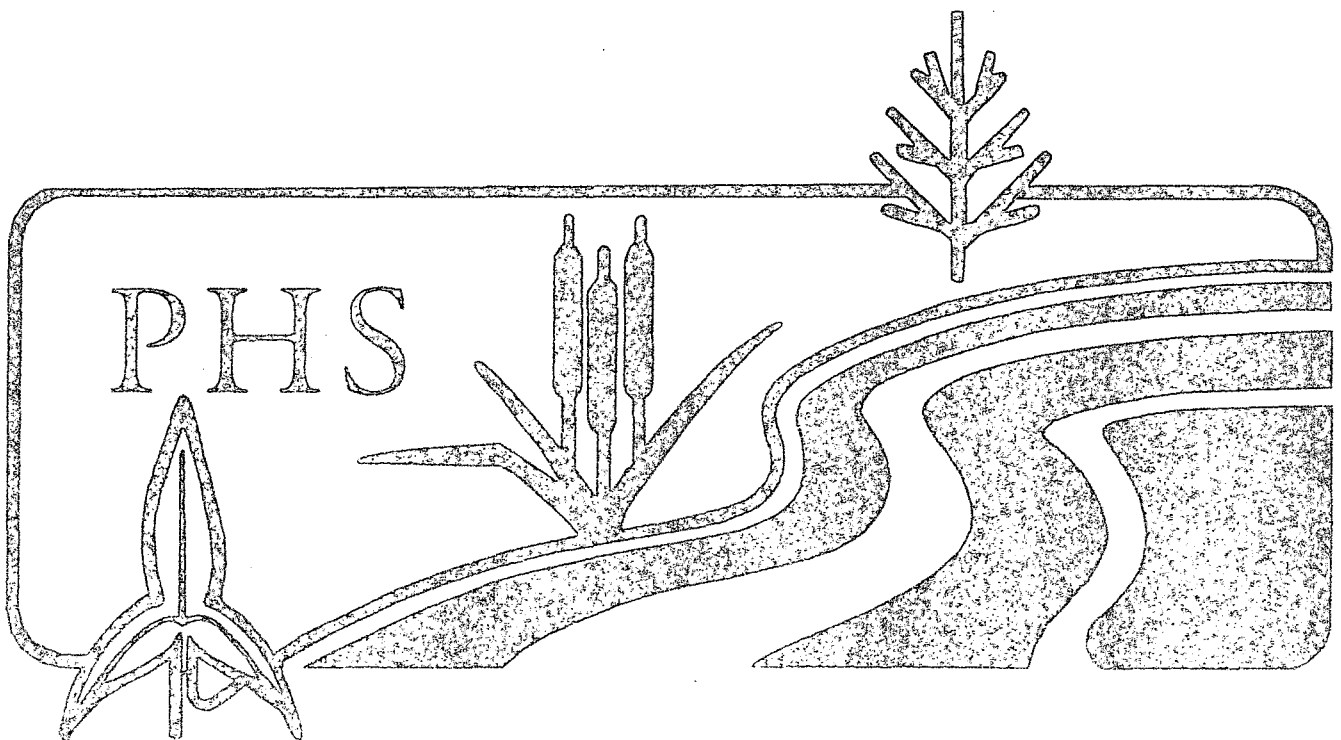
Comments:
 Off-site assessment. Two apparently isolated wetlands located in a forested area (though there appear to be no trees in the wetland). With sufficient hydrology these wetlands appear to overflow into the roadside ditch east of Second Avenue.

Adjacent upland species: *Alnus rubra*, *Picea sitchensis*, *Rubus parviflorus*, *Gaultheria shallon*, *Sambucus racemosa*, *Polystichum munitum*

COWARDIN CODES:	E2FO = estuarine forested	E2SS = estuarine scrub shrub	E2EM = estuarine emergent
PFO = palustrine forested	PSS = palustrine scrub-shrub	PEM = palustrine emergent	POW = palustrine open water
HGM CODES:	EFB = Estuarine Fringe Embayment	EFR = Estuarine Fringe Riverine	RFT = Riverine Flow Through
RI = River Impounding	LFH = Lacustrine Fringe Headwater	LFV = Lacustrine Fringe Valley	DB = Depressional Bog
DA- Depressional Alkaline	DO = Depressional Outflow	DCP = Depressional Closed Permanent	DCNP = Depressional Nonpermanent
	S = Slope	FL = Flats	

Appendix C

Wetland Determination Data Forms



DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 17, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: ARC - 1 - 1
 Plot Location: Taken in NW portion of easternmost wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover
 1. _____
 2. _____
 3. _____

Herb Stratum: Total Plot Cover: 112 50% 56 20% 22.4 Status/Raw % Cover
 1. Lycopodium alpinum* FAC 35
 2. Petasites palmatus FAC 10
 3. Juncus effusus FACW 10
 4. Carex obnupta OBL 20
 5. Cardamine oligosperma FAC 2
 6. Athyrium filix-femina FAC 10
 7. Oenanthe sarmentosa* OBL 25
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum: Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-4</u>	<u>10YR 2/1</u>			<u>Sandy Loam</u>
<u>4-15</u>	<u>7.5YR 3/2</u>	<u>7.5YR 3/4 common / medium / distinct</u>		

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 8"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 17, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: Upland Plot #: ARC - 2 - 2
 Plot Location: NE portion of ARC-2 wetland. Taken north of the drainage.
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 25 50% 12.5 20% 5
 Status/Raw % Cover
 1. Tsuga heterophylla* **FACU-** 25
 2. _____
 3. _____
Herb Stratum
 Total Plot Cover: 2 50% 1 20% 0.4
 Status/Raw % Cover
 1. Equisetum arvense* **FAC** 2
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum
 Total Plot Cover: 109 50% 54.5 20% 21.8
 Status/Raw % Cover
 1. Gaultheria shallon* **FACU** 100
 2. Vaccinium parvifolium **UPL** 5
 3. Vaccinium ovatum **UPL** 2
 4. Rubus spectabilis **FAC+** 2
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 33%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO X Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-13</u>	<u>7.5YR 3/1</u>			<u>Sandy Clay Loam</u>
<u>13-15</u>	<u>2.5YR 4/3</u>			<u>Sand</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES _____ NO X Comments: moist soils, not saturated

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 17, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: ARC - 2 - 3
 Plot Location: NE portion of ARC-2 wetland.
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 10 50% 5 20% 2
 Status/Raw % Cover
 1. Thuja plicata* FAC 10
 2. _____
 3. _____

Herb Stratum:
 Total Plot Cover: 77 50% 38.5 20% 15.4
 Status/Raw % Cover
 1. Petasites palmatus* FAC 15
 2. Lysichiton americanum* OBL 15
 3. Athyrium filix-femina* FAC 15
 4. Tolmiea menziesii FAC 10
 5. Claytonia perfoliata FAC 2
 6. Geranium robertianum UPL 10
 7. Carex deweyana FACU 5
 8. Carex obnupta OBL 5
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum:
 Total Plot Cover: 15 50% 7.5 20% 3
 Status/Raw % Cover
 1. Gaultheria shallon* FACU 15
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 80%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-5</u>	<u>10YR 3/2</u>			<u>Sandy Loam</u>
<u>5-15</u>	<u>10YR 3/2</u>	<u>10YR 4/6 common / medium / prominent</u>		<u>Sandy Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in 3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 6"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: May 16, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: ARC - 3 - 4
 Plot Location: In wetland west of Woodland Heights.
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 0 50% 0 20% 0
 Status/Raw % Cover

Herb Stratum:
 Total Plot Cover: 70 50% 35 20% 14
 Status/Raw % Cover

1. _____	1. <u><i>Lysichiton americanum*</i></u>	<u>OBL</u>	<u>35</u>
2. _____	2. <u><i>Athyrium filix-femina*</i></u>	<u>FAC</u>	<u>20</u>
3. _____	3. <u><i>Blechnum spicant</i></u>	<u>FAC+</u>	<u>5</u>
	4. <u><i>Polystichum munitum</i></u>	<u>FACU</u>	<u>10</u>
	5. _____		
	6. _____		
	7. _____		
	8. _____		
	9. _____		
	10. _____		
	11. _____		
	12. _____		

Sapling/Shrub Stratum:
 Total Plot Cover: 35 50% 17.5 20% 7
 Status/Raw % Cover

1. <u><i>Sambucus racemosa*</i></u>	<u>FACU</u>	<u>10</u>
2. <u><i>Rubus spectabilis*</i></u>	<u>FAC+</u>	<u>10</u>
3. <u><i>Lonicera involucrata*</i></u>	<u>FAC+</u>	<u>15</u>
4. _____		
5. _____		

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 80%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-8</u>	<u>7.5YR 2.5/1</u>			
<u>9-16</u>	<u>5Y 5/1</u>	<u>10YR 5/8 common / coarse / prominent</u>		<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: >16"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: drainage flows down slope into larger drainage

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: May 15, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: Upland Plot #: ARC - 3 - 5
 Plot Location: Taken south of ARC-3 wetland west of Woodland Heights.

Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: _____ Herb Stratum: _____
 Total Plot Cover: 90 50% 45 20% 18 Total Plot Cover: 25 50% 12.5 20% 5
 Status/Raw % Cover Status/Raw % Cover

- | | | | | | |
|--------------------------------------|--------------|-----------|---|-------------|-----------|
| 1. <u><i>Tsuga heterophylla</i>*</u> | <u>FACU-</u> | <u>90</u> | 1. <u><i>Polystichum munitum</i>*</u> | <u>FACU</u> | <u>15</u> |
| 2. _____ | | | 2. <u><i>Pteridium aquilinum</i>*</u> | <u>FACU</u> | <u>5</u> |
| 3. _____ | | | 3. <u><i>Maianthemum dilatatum</i>*</u> | <u>FAC</u> | <u>5</u> |
| | | | 4. _____ | | |

Sapling/Shrub Stratum: _____
 Total Plot Cover: 60 50% 30 20% 12
 Status/Raw % Cover

- | | | | |
|--------------------------------------|-------------|-----------|-----------|
| 1. <u><i>Gaultheria shallon</i>*</u> | <u>FACU</u> | <u>40</u> | 8. _____ |
| 2. <u><i>Rubus spectabilis</i>*</u> | <u>FAC+</u> | <u>20</u> | 9. _____ |
| 3. _____ | | | 10. _____ |
| 4. _____ | | | 11. _____ |
| 5. _____ | | | 12. _____ |

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 33%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO X Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-12</u>	<u>10YR 3/3</u>			<u>Silt Loam</u>
<u>12-15</u>	<u>2.5Y 3/3</u>			<u>Silty Clay Loam</u>

Hydric Soil Indicators:
 Histosol Concretions/Nodules (w/in3"; >2mm)
 Histic Epipedon High organic content in surface (in Sandy Soils)
 Sulfidic Odor Organic streaking (in Sandy Soils)
 Reducing Conditions (tests positive) Organic pan (in Sandy Soils)
 Gleyed or low chroma colors and/or redox features Listed on Hydric Soils List (and soil profile matches)
 within 10" of surface Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 Supplemental indicator (e.g. NRCS field Indicator): _____
 Other (explain in comments) _____

Criteria Met? YES _____ NO X Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

Primary Hydrology Indicators: _____ Secondary Hydrology Indicators (2 or more required): _____
 Inundated Oxidized Root Channels (upper 12")
 Saturated in upper 12 inches Water-stained leaves
 Water Marks Local Soil Survey Data
 Drift Lines FAC-Neutral Test
 Sediment Deposits Other: _____
 Drainage Patterns

Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: July 24, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE/ME
 Plant Community: Upland Plot #: ARC - 3 - 6
 Plot Location: Taken north of ARC-3 wetland east of Woodland Heights.
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

<u>Tree Stratum:</u>				<u>Herb Stratum</u>							
Total Plot Cover:	<u>35</u>	50%	<u>17.5</u>	20%	<u>7</u>	Total Plot Cover:	<u>51</u>	50%	<u>25.5</u>	20%	<u>10.2</u>
				Status/Raw % Cover						Status/Raw % Cover	
1.	<u><i>Picea sitchensis</i></u>			<u>FAC</u>	<u>5</u>	1.	<u><i>Vaccinium parvifolium*</i></u>			<u>UPL</u>	<u>10</u>
2.	<u><i>Alnus rubra*</i></u>			<u>FAC</u>	<u>15</u>	2.	<u><i>Equisetum arvense</i></u>			<u>FAC</u>	<u>1</u>
3.	<u><i>Thuja plicata*</i></u>			<u>FAC</u>	<u>15</u>	3.	<u><i>Athyrium filix-femina*</i></u>			<u>FAC</u>	<u>10</u>
						4.	<u><i>Polystichum munitum*</i></u>			<u>FACU</u>	<u>20</u>
						5.	<u><i>Blechnum spicant*</i></u>			<u>FAC+</u>	<u>10</u>
						6.					
						7.					
						8.					
						9.					
						10.					
						11.					
						12.					

Sapling/Shrub Stratum
 Total Plot Cover: 20 50% 10 20% 4
 Status/Raw % Cover

1.	<u><i>Gaultheria shallon*</i></u>	<u>FACU</u>	<u>10</u>
2.	<u><i>Vaccinium parvifolium*</i></u>	<u>UPL</u>	<u>10</u>
3.			
4.			
5.			

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 50%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO X Comments: Ground cover is 50% moss in plot.

SOILS

Map Unit Name: Grindbrook silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-15"</u>	<u>7.5YR 2.5/2</u>			<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES _____ NO X Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: July 24, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE/ME
 Plant Community: PFO Plot #: ARC - 3 - 7
 Plot Location: Taken in ARC-3 wetland east of Woodland Heights.
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 30 50% 15 20% 6 Status/Raw % Cover
 1. Ainus rubra* FAC 20
 2. Tsuga heterophylla* FACU- 10
 3. _____
Herb Stratum: Total Plot Cover: 100 50% 50 20% 20 Status/Raw % Cover
 1. Maianthemum dilatatum* FAC 30
 2. Oenanthe sarmentosa OBL 10
 3. Lysichiton americanum* OBL 60
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum: Total Plot Cover: 20 50% 10 20% 4 Status/Raw % Cover
 1. Rubus spectabilis* FAC+ 20
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 80%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Grindbrook silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
0-9"	10YR 2/2			Loam
9-16"	10YR 3/1			Sandy Clay Loam

Hydric Soil Indicators:

Histosol
 Histic Epipedon
 Sulfidic Odor
 Reducing Conditions (tests positive)
 Gleyed or low chroma colors and/or redox features within 10" of surface
 Concretions/Nodules (w/in3"; >2mm)
 High organic content in surface (in Sandy Soils)
 Organic streaking (in Sandy Soils)
 Organic pan (in Sandy Soils)
 Listed on Hydric Soils List (and soil profile matches)
 Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 Supplemental indicator (e.g. NRCS field Indicator): _____
 Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 6" Depth to free water: >16"

Primary Hydrology Indicators:

Inundated
 X Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 X Drainage Patterns

Secondary Hydrology Indicators (2 or more required):

Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch cape Date: April 17, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PFO Plot #: ARC - 5 - 8
 Plot Location: In the southern portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 55 50% 27.5 20% 11
 Status/Raw % Cover
 1. Salix hookeriana* **FACW-** 40
 2. Alnus rubra* **FAC** 15
 3. _____
Herb Stratum
 Total Plot Cover: 115 50% 57.5 20% 23
 Status/Raw % Cover
 1. Gaultheria shallon **FACU** 10
 2. Hedera helix* **UPL** 70
 3. Polystichum munitum **FACU** 10
 4. Carex obnupta **OBL** 10
 5. Oenanthe sarmentosa **OBL** 2
 6. Petasites palmatus **FAC** 3
 7. Juncus effusus **FACW** 10
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum
 Total Plot Cover: 25 50% 12.5 20% 5
 Status/Raw % Cover
 1. Rubus discolor* **FACU** 5
 2. Lonicera involucrata* **FAC+** 20
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 60%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Humitropepts-Tropaquepts complex Drainage Class: Well drained to moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-15</u>	<u>10YR 3/2</u>	<u>10YR 4/6 many / medium / prominent</u>		<u>Sandy Clay Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 6" Depth to free water: 11"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 17, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: ARC - 5 - 9
 Plot Location: South of wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y N If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 40 50% 20 20% 8
 Status/Raw % Cover
 1. Picea sitchensis* **FAC** 40
 2. _____
 3. _____

Herb Stratum:
 Total Plot Cover: 45 50% 22.5 20% 9
 Status/Raw % Cover
 1. Maianthemum dilatatum* **FAC** 25
 2. Carex obnupta **OBL** 5
 3. Equisetum arvense* **FAC** 15
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum:
 Total Plot Cover: 31 50% 15.5 20% 6.2
 Status/Raw % Cover
 1. Gaultheria shallon* **FACU** 30
 2. Rubus spectabilis **FAC+** 1
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 75%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO Comments: _____

SOILS

Map Unit Name: Humitropepts-Tropaquepts complex Drainage Class: Well drained to moderately well drained
 On Hydric Soils List? Y N X Has Hydric Inclusions: Y X N

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-1</u>	<u>Duff</u>			
<u>1-13</u>	<u>10YR 2/2</u>			<u>Sandy Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES NO X Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >13" Depth to free water: >13"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES NO X Comments: _____

DETERMINATION

WETLAND? YES NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 13, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: Upland Plot #: ARC - 11 - 10
 Plot Location: Taken on tax lot 800, East of Highway 101, north of ARC-11

Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation- _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 100 50% 50 20% 20 Status/Raw % Cover
Herb Stratum: Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover

- | | |
|--|-----------|
| 1. <u>Picea sitchensis*</u> <u>FAC</u> <u>60</u> | 1. _____ |
| 2. <u>Tsuga heterophylla*</u> <u>FACU-</u> <u>40</u> | 2. _____ |
| 3. _____ | 3. _____ |
| 4. _____ | 4. _____ |
| 5. _____ | 5. _____ |
| 6. _____ | 6. _____ |
| 7. _____ | 7. _____ |
| 8. _____ | 8. _____ |
| 9. _____ | 9. _____ |
| 10. _____ | 10. _____ |
| 11. _____ | 11. _____ |
| 12. _____ | 12. _____ |

Sapling/Shrub Stratum
 Total Plot Cover: 95 50% 47.5 20% 19 Status/Raw % Cover

- | |
|---|
| 1. <u>Gaultheria shallon*</u> <u>FACU</u> <u>90</u> |
| 2. <u>Vaccinium parvifolium</u> <u>UPL</u> <u>5</u> |
| 3. _____ |
| 4. _____ |
| 5. _____ |

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 33%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO X Comments: Ground cover is 70% moss in plot.

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y _____ N X

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-1</u>	<u>Duff</u>			
<u>0-16</u>	<u>10YR 2/2</u>			<u>Silt Loam</u>

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm) |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High organic content in surface (in Sandy Soils) |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic streaking (in Sandy Soils) |
| <input type="checkbox"/> Reducing Conditions (tests positive) | <input type="checkbox"/> Organic pan (in Sandy Soils) |
| <input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface | <input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches) |
| | <input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration) |
| | <input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____ |
| | <input type="checkbox"/> Other (explain in comments) _____ |

Criteria Met? YES _____ NO X Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >16" Depth to free water: >16"

- | | |
|---|---|
| Primary Hydrology Indicators: | Secondary Hydrology Indicators (2 or more required): |
| <input type="checkbox"/> Inundated | <input type="checkbox"/> Oxidized Root Channels (upper 12") |
| <input type="checkbox"/> Saturated in upper 12 inches | <input type="checkbox"/> Water-stained leaves |
| <input type="checkbox"/> Water Marks | <input type="checkbox"/> Local Soil Survey Data |
| <input type="checkbox"/> Drift Lines | <input type="checkbox"/> FAC-Neutral Test |
| <input type="checkbox"/> Sediment Deposits | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Drainage Patterns | |

Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: ARC - 11 - 11
 Plot Location: Taken on tax lot 800. East of Highway 101 in northern tip of ARC-11
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover
 Herb Stratum: Total Plot Cover: 145 50% 72.5 20% 29 Status/Raw % Cover

- | | |
|----------|--|
| 1. _____ | 5. <u>Blechnum spicant*</u> FAC+ <u>30</u> |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| | 8. <u>Athyrium filix-femina</u> FAC <u>10</u> |
| | 9. <u>Oenanthe sarmentosa*</u> OBL <u>40</u> |
| | 10. <u>Carex obnupta*</u> OBL <u>60</u> |
| | 11. _____ |
| | 12. <u>Stachys cooleyae</u> FACW <u>5</u> |
- Septling/Shrub Stratum: Total Plot Cover: 15 50% 7.5 20% 3 Status/Raw % Cover
- | |
|--|
| 1. <u>Rubus spectabilis*</u> FAC+ <u>10</u> |
| 2. <u>Sambucus racemosa*</u> FACU <u>5</u> |
| 3. _____ |
| 4. _____ |
| 5. _____ |

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 80%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ X NO _____ Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
0-1	Duff			
1-8	7.5YR 3/2			Silt Loam
8-16	7.5YR 4/1			Silty Clay Loam

Hydric Soil Indicators:

- | | |
|---|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm) |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High organic content in surface (in Sandy Soils) |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic streaking (in Sandy Soils) |
| <input type="checkbox"/> Reducing Conditions (tests positive) | <input type="checkbox"/> Organic pan (in Sandy Soils) |
| <input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface | <input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches) |
| | <input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration) |
| | <input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____ |
| | <input type="checkbox"/> Other (explain in comments) _____ |

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 22"

Primary Hydrology Indicators:

- Inundated
- Saturated in upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns

Secondary Hydrology Indicators (2 or more required):

- Oxidized Root Channels (upper 12")
- Water-stained leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: ARC - 11 - 12
 Plot Location: Taken in platted ROW of First Street just north of Hug Point Avenue
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

<u>Tree Stratum:</u>	Total Plot Cover: <u>0</u> 50% <u>0</u> 20% <u>0</u>	<u>Herb Stratum</u>	Total Plot Cover: <u>80</u> 50% <u>40</u> 20% <u>16</u>
	Status/Raw % Cover		Status/Raw % Cover
1. _____		1. <u>Lysichiton americanum*</u>	<u>OBL 30</u>
2. _____		2. <u>Athyrium filix-femina</u>	<u>FAC 10</u>
3. _____		3. <u>Blechnum spicant</u>	<u>FAC+ 10</u>
		4. <u>Montia linearis*</u>	<u>NI 15</u>
		5. <u>Stachys cooleyae*</u>	<u>FACW 15</u>
		6. _____	
		7. _____	
		8. _____	
		9. _____	
		10. _____	
		11. _____	
		12. _____	

Sapling/Shrub Stratum
 Total Plot Cover: 10 50% 5 20% 2
 Status/Raw % Cover

1. <u>Rubus spectabilis*</u>	<u>FAC+ 10</u>
2. _____	
3. _____	
4. _____	
5. _____	

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 75%
 Other Hydrophytic Vegetation Indicators: _____
 Criteria Met? YES X NO _____ Comments: Ground cover is 80% moss in plot.

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-2</u>	<u>10YR 3/2</u>			<u>Loam</u>
<u>3-16</u>	<u>10YR 5/1</u>			<u>Sandy Clay Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 21"

Primary Hydrology Indicators:

<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input checked="" type="checkbox"/> X Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> X Drainage Patterns	

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: ARC - 11 - 13
 Plot Location: Taken in platted ROW of First Street just north of Hug Point Avenue
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 20 50% 10 20% 4 Status/Raw % Cover
 Herb Stratum: Total Plot Cover: 50 50% 25 20% 10 Status/Raw % Cover

- | | |
|--|--|
| 1. <u>Picea sitchensis*</u> <u>FAC</u> <u>10</u> | 1. <u>Blechnum spicant*</u> <u>FAC+</u> <u>20</u> |
| 2. <u>Tsuga heterophylla*</u> <u>FACU-</u> <u>10</u> | 2. <u>Montia linearis</u> <u>NI</u> <u>5</u> |
| 3. _____ | 3. <u>Athyrium filix-femina</u> <u>FAC</u> <u>5</u> |
| | 4. <u>Polystichum munitum*</u> <u>FACU</u> <u>20</u> |
| | 5. _____ |
| | 6. _____ |
| | 7. _____ |
| | 8. _____ |
| | 9. _____ |
| | 10. _____ |
| | 11. _____ |
| | 12. _____ |

Sapling/Shrub Stratum: Total Plot Cover: 20 50% 10 20% 4 Status/Raw % Cover
 1. Gaultheria shallon* FACU 20
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 40%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO X Comments: Ground cover is 90% moss in plot.

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-2</u>	<u>2.5YR 2.5/1</u>	<u>2.5YR 3/6 few / coarse / prominent</u>		<u>Silt Loam</u>
<u>2-9</u>	<u>10YR 4/4</u>			

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Reducing Conditions (tests positive)
 Gleyed or low chroma colors and/or redox features within 10" of surface
 Concretions/Nodules (w/in3"; >2mm)
 High organic content in surface (in Sandy Soils)
 Organic streaking (in Sandy Soils)
 Organic pan (in Sandy Soils)
 Listed on Hydric Soils List (and soil profile matches)
 Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 Supplemental indicator (e.g. NRCS field Indicator): _____
 Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

Primary Hydrology Indicators: Inundated Saturated in upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns
 Secondary Hydrology Indicators (2 or more required): Oxidized Root Channels (upper 12") Water-stained leaves Local Soil Survey Data FAC-Neutral Test Other: _____

Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 13, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: ARC - 13 - 14
 Plot Location: Northeast of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y N If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 15 50% 7.5 20% 3
 Status/Raw % Cover
 1. Picea sitchensis* FAC 15
 2. _____
 3. _____

Herb Stratum:
 Total Plot Cover: 56 50% 28 20% 11.2
 Status/Raw % Cover
 1. Polystichum munitum* FACU 25
 2. Stachys cooleyae* FACW 8
 3. Blechnum spicant FAC+ 5
 4. Montia linearis* NI 8
 5. Luzula parviflora FAC- 5
 6. Athyrium filix-femina FAC 5
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum:
 Total Plot Cover: 10 50% 5 20% 2
 Status/Raw % Cover
 1. Gaultheria shallon* FACU 10
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 40%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO Comments: _____

SOILS

Map Unit Name: Kloutchie-Necanicum complex Drainage Class: Well drained
 On Hydric Soils List? Y _____ N Has Hydric Inclusions: Y _____ N

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-1</u>	<u>Duff</u>			
<u>1-17</u>	<u>7.5YR 2.5/2</u>			<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES _____ NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >17" Depth to free water: >17"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES _____ NO Comments: _____

DETERMINATION

WETLAND? YES _____ NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 13, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: forested wetland Plot #: ARC - 13 - 15
 Plot Location: In the portion of the wetland located within the right-of-way of Arch Cape Avenue
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 5 50% 2.5 20% 1 Status/Raw % Cover
 1. Picea sitchensis* **FAC** 5
 2. _____
 3. _____

Herb Stratum
 Total Plot Cover: 95 50% 47.5 20% 19 Status/Raw % Cover
 1. Lysichiton americanum **OBL** 10
 2. Carex obnupta* **OBL** 80
 3. Athyrium filix-femina **FAC** 5
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____

Sapling/Shrub Stratum
 Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover
 1. _____
 2. _____
 3. _____
 4. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Kloutchie-Necanicum complex Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y _____ N X

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-5</u>	<u>5YR 2.5/1</u>			<u>Muck</u>
<u>5-14</u>	<u>10YR 4/2</u>			<u>Loam</u>
<u>14-18</u>	<u>2.5YR 7/2</u>	<u>10%</u>		<u>Clay Loam</u>
<u>14-18</u>	<u>10YR 5/8</u>	<u>45%</u>		<u>Clay Loam</u>
<u>14-18</u>	<u>10YR6/8</u>	<u>45%</u>		<u>Clay Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 0"

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

<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input checked="" type="checkbox"/> X Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> X Drainage Patterns	

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 18, 2008 File #: 4014
 Project/Contact: Arch Cape Det. By: SE
 Plant Community: PFO Plot #: ARC - 12 - 16
 Plot Location: In the east-central portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 115 50% 57.5 20% 23 Status/Raw % Cover
 1. *Alnus rubra** FAC 70
 2. *Picea sitchensis* FAC 15
 3. *Malus fusca** FACW 30

Herb Stratum:
 Total Plot Cover: 125 50% 62.5 20% 25 Status/Raw % Cover
 1. *Carex obnupta** OBL 60
 2. *Lysichiton americanum** OBL 35
 3. *Oenanthe sarmentosa** OBL 25
 4. *Athyrium filix-femina* FAC 2
 5. *Polystichum munitum* FACU 3
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum:
 Total Plot Cover: 35 50% 17.5 20% 7 Status/Raw % Cover
 1. *Rubus spectabilis** FAC+ 25
 2. *Lonicera involucrata* FAC+ 5
 3. *Oemleria cerasiformis* FACU 5
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Mues silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-7</u>	<u>10YR 3/3</u>	<u>7.5YR 3/4 common / medium / distinct</u>		<u>Silt Loam</u>
<u>7-14</u>	<u>10YR 3/2</u>	<u>7.5YR 3/4 common / medium / prominent</u>		<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 4"

Primary Hydrology Indicators:
 Inundated
 X Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 X Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 17, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: ARC - 12 - 17
 Plot Location: Upslope, and east of the wetland, within Highway 101 ROW
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 23 50% 11.5 20% 4.6 Status/Raw % Cover
 1. Pinus contorta* FAC 20
 2. Crataegus douglasii FAC 3
 3. _____
Herb Stratum: Total Plot Cover: 90 50% 45 20% 18 Status/Raw % Cover
 1. Polystichum munitum FACU 5
 2. Hedera helix* UPL 85
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 67%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Mues silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____
 Depth Range of Horizon: 0-15 Matrix Color: 7.5YR 2.5/5 Redox Concentrations* _____ Redox Depletions* _____ Texture: Clay Loam
 *abund./size/contrast/color/location (matrix or pores/peds)

Hydric Soil Indicators:
 Histosol Concretions/Nodules (w/in3"; >2mm)
 Histic Epipedon High organic content in surface (in Sandy Soils)
 Sulfidic Odor Organic streaking (in Sandy Soils)
 Reducing Conditions (tests positive) Organic pan (in Sandy Soils)
 Gleyed or low chroma colors and/or redox features Listed on Hydric Soils List (and soil profile matches)
 within 10" of surface Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 Supplemental indicator (e.g. NRCS field Indicator): _____
 Other (explain in comments) _____

Criteria Met? YES _____ NO X Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available
 Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"
 Primary Hydrology Indicators: Inundated Saturated in upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns
 Secondary Hydrology Indicators (2 or more required): Oxidized Root Channels (upper 12") Water-stained leaves Local Soil Survey Data FAC-Neutral Test Other: _____

Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 17, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: Upland Plot #: ARC - 13 - 18
 Plot Location: North of the northern portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 110 50% 55 20% 22
 Status/Raw % Cover
 1. *Alnus rubra** FAC 70
 2. *Pinus contorta** FAC 40
 3. _____
Herb Stratum:
 Total Plot Cover: 125 50% 62.5 20% 25
 Status/Raw % Cover
 1. *Carex obnupta** OBL 90
 2. *Polystichum munitum** FACU 25
 3. *Stachys cooleyae* FACW 5
 4. *Athyrium distentifolium* FAC 5
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____
Sapling/Shrub Stratum:
 Total Plot Cover: 15 50% 7.5 20% 3
 Status/Raw % Cover
 1. *Sambucus racemosa** FACU 15
 2. _____
 3. _____
 4. _____
 5. _____
 Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 60%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Grindbrook silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-14</u>	<u>10YR 3/3</u>			<u>Sandy Clay Loam</u>
<u>14-18</u>	<u>2.5Y 3/3</u>			<u>Sandy Clay Loam</u>

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Reducing Conditions (tests positive)
 Gleyed or low chroma colors and/or redox features within 10" of surface
 Concretions/Nodules (w/in 3"; >2mm)
 High organic content in surface (in Sandy Soils)
 Organic streaking (in Sandy Soils)
 Organic pan (in Sandy Soils)
 Listed on Hydric Soils List (and soil profile matches)
 Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 Supplemental indicator (e.g. NRCS field indicator): _____
 Other (explain in comments) _____
 Criteria Met? YES _____ NO X Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available
 Field Data
 Depth of inundation: _____ Depth to Saturation: >18" Depth to free water: >18"
Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns
Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____
 Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 18, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PFO Plot #: ARC - 13 - 19
 Plot Location: In the north eastern portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:	Total Plot Cover: <u>80</u> 50% <u>40</u> 20% <u>16</u>	Herb Stratum	Total Plot Cover: <u>110</u> 50% <u>55</u> 20% <u>22</u>
	Status/Raw % Cover		Status/Raw % Cover
1. <u><i>Picea sitchensis*</i></u>	<u>FAC</u> <u>40</u>	1. <u><i>Carex obnupta*</i></u>	<u>OBL</u> <u>80</u>
2. <u><i>Alnus rubra*</i></u>	<u>FAC</u> <u>40</u>	2. <u><i>Polystichum munitum</i></u>	<u>FACU</u> <u>10</u>
3. _____		3. <u><i>Stachys cooleyae</i></u>	<u>FACW</u> <u>5</u>
		4. <u><i>Oenanthe sarmentosa</i></u>	<u>OBL</u> <u>5</u>
		5. <u><i>Montia linearis</i></u>	<u>NI</u> <u>10</u>
		6. _____	
		7. _____	
		8. _____	
		9. _____	
		10. _____	
		11. _____	
		12. _____	

Sapling/Shrub Stratum
 Total Plot Cover: 5 50% 2.5 20% 1
 Status/Raw % Cover

1. <u><i>Rubus spectabilis*</i></u>	<u>FAC+</u> <u>5</u>
2. _____	
3. _____	
4. _____	
5. _____	

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES NO Comments: _____

SOILS

Map Unit Name: Grindbrook silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y N Has Hydric Inclusions: Y N

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-4</u>	<u>10YR 2/2</u>			
<u>4-16</u>	<u>7.5YR 4/1</u>	<u>5YR 4/6 common / coarse / prominent</u>		<u>Sandy Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histic soil	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >16" Depth to free water: >16"

Primary Hydrology Indicators:	Secondary Hydrology Indicators (2 or more required):
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input type="checkbox"/> Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Drainage Patterns	

Criteria Met? YES NO Comments: _____

DETERMINATION

WETLAND? YES NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: July 24, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PFO Plot #: ARC - 13 - 20
 Plot Location: Taken in platted ROW of an unnamed road, central portion of wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 105 50% 52.5 20% 21
 Status/Raw % Cover
 1. Alnus rubra* FAC 95
 2. Picea sitchensis FAC 10
 3. _____
Herb Stratum
 Total Plot Cover: 95 50% 47.5 20% 19
 Status/Raw % Cover
 1. Carex obnupta* OBL 90
 2. Athyrium filix-femina FAC 5
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum
 Total Plot Cover: 10 50% 5 20% 2
 Status/Raw % Cover
 1. Sambucus racemosa* FACU 10
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 67%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Mues silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-7"</u>	<u>7.5YR 2.5/3</u>			<u>Silty Clay Loam</u>
<u>7-15"</u>	<u>7.5YR 4/2</u>	<u>7.5YR 4/6 common / coarse / prominent</u>		<u>Silty Clay Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: No paired data point because adjacent upland is road fill slope for Highway 101.

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: July 24, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: Upland Plot #: ARC - 13 - 21
 Plot Location: Taken in platted right-of-way (ROW) of Walsh Avenue
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil X Hydrology _____ been significantly disturbed?
 Explain: Fill along the Walsh Ave ROW was brought in decades ago.

VEGETATION

<u>Tree Stratum:</u>				<u>Herb Stratum</u>								
Total Plot Cover:	<u>90</u>	50%	<u>45</u>	20%	<u>18</u>	Total Plot Cover:	<u>120</u>	50%	<u>60</u>	20%	<u>24</u>	
				Status/Raw % Cover						Status/Raw % Cover		
1.	<u><i>Alnus rubra*</i></u>				<u>FAC</u>	<u>90</u>	1.				<u>OBL</u>	<u>90</u>
2.	_____						2.	<u><i>Polystichum munitum</i></u>			<u>FACU</u>	<u>10</u>
3.	_____						3.	<u><i>Oenanthe sarmentosa</i></u>			<u>OBL</u>	<u>5</u>
							4.	<u><i>Stachys cooleyae</i></u>			<u>FACW</u>	<u>5</u>
							5.	<u><i>Oxalis oregana</i></u>			<u>UPL</u>	<u>10</u>
							6.	_____				
							7.	_____				
							8.	_____				
							9.	_____				
							10.	_____				
							11.	_____				
							12.	_____				

Sapling/Shrub Stratum
 Total Plot Cover: 10 50% 5 20% 2
 Status/Raw % Cover
 1. *Sambucus racemosa** FACU 10
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 67%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Mues silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-5"</u>	<u>7.5YR 2.5/2</u>			<u>Silt Loam</u>
<u>5-16"</u>	<u>7.5YR 5/8</u>			<u>Sandy Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input checked="" type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input checked="" type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: water district reports several feet of spring flooding

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >16" Depth to free water: >16"

Primary Hydrology Indicators:	Secondary Hydrology Indicators (2 or more required):
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input type="checkbox"/> Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Drainage Patterns	

Criteria Met? YES X NO _____ Comments: water district reports several feet of spring flooding

DETERMINATION

WETLAND? YES X NO _____ Comments: This pit is typical of conditions within the platted limits of the Walsh Avenue ROW. The ROW is only slightly higher in elevation than adjoining areas. Conditions north and south of the right-of-way indicate that this entire area is subject to seasonal inundation.

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: July 24, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE/ME
 Plant Community: PFO Plot #: ARC - 13 - 22
 Plot Location: Taken in platted ROW of Park Street
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 100 50% 50 20% 20
 Status/Raw % Cover
 1. *Tsuga heterophylla** FACU- 40
 2. *Alnus rubra** FAC 60
 3. _____
Herb Stratum
 Total Plot Cover: 125 50% 62.5 20% 25
 Status/Raw % Cover
 1. *Carex obnupta** OBL 50
 2. *Stachys cooleyae** FACW 40
 3. *Oenanthe sarmentosa* OBL 15
 4. *Athyrium filix-femina* FAC 5
 5. *Polystichum munitum* FACU 10
 6. *Ranunculus repens* FACW 5
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____
Sapling/Shrub Stratum
 Total Plot Cover: 20 50% 10 20% 4
 Status/Raw % Cover
 1. *Sambucus racemosa** FACU 10
 2. *Picea sitchensis** FAC 10
 3. _____
 4. _____
 5. _____
 Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 67%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Mues silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-7"</u>	<u>10YR 3/2</u>	<u>7.5YR 4/4 common / coarse / prominent</u>		<u>Silt Loam</u>
<u>7-13"</u>	<u>10YR 3/2</u>	<u>10YR 3/6 common / coarse / prominent</u>		<u>Silt Loam</u>

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Reducing Conditions (tests positive)
 X Gleyed or low chroma colors and/or redox features within 10" of surface
 Concretions/Nodules (w/in3"; >2mm)
 High organic content in surface (in Sandy Soils)
 Organic streaking (in Sandy Soils)
 Organic pan (in Sandy Soils)
 Listed on Hydric Soils List (and soil profile matches)
 Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 Supplemental indicator (e.g. NRCS field Indicator): _____
 Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available
 Field Data
 Depth of inundation: _____ Depth to Saturation: >13" Depth to free water: >13"
Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 X Drainage Patterns
Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: No paired data point because adjacent upland is road fill slope for Highway 101.

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 13, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: Upland Plot #: ARC - 13 - 23
 Plot Location: North of the eastern portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ if no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 95 50% 47.5 20% 19
 Status/Raw % Cover
 1. Alnus rubra* FAC 95
 2. _____
 3. _____

Herb Stratum
 Total Plot Cover: 115 50% 57.5 20% 23
 Status/Raw % Cover
 1. Polystichum munitum* FACU 25
 2. Poa sp. FAC/UPL 5
 3. Phalaris arundinacea* FACW 50
 4. Stachys cooleyae FACW 5
 5. Ranunculus repens FACW 10
 6. Carex obnupta OBL 20
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum
 Total Plot Cover: 37 50% 18.5 20% 7.4
 Status/Raw % Cover
 1. Sambucus racemosa FACU 5
 2. Rubus discolor FACU 2
 3. Rubus laciniatus FACU+ 5
 4. Rubus spectabilis* FAC+ 25
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 75%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES NO _____ Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N Has Hydric Inclusions: Y N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-15</u>	<u>10YR 3/3</u>			<u>Sandy Clay Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES _____ NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES _____ NO Comments: _____

DETERMINATION

WETLAND? YES _____ NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: ARC - 13 - 24
 Plot Location: In the central eastern portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ if no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:	Total Plot Cover: <u>0</u> 50% <u>0</u> 20% <u>0</u>	Herb Stratum	Total Plot Cover: <u>145</u> 50% <u>72.5</u> 20% <u>29</u>
	Status/Raw % Cover		Status/Raw % Cover
1. _____		1. <u>Carex obnupta*</u>	OBL 60
2. _____		2. <u>Equisetum arvense</u>	FAC 3
3. _____		3. <u>Ranunculus repens*</u>	FACW 25
		4. <u>Glyceria occidentalis</u>	OBL 5
Sapling/Shrub Stratum	Total Plot Cover: <u>0</u> 50% <u>0</u> 20% <u>0</u>	5. <u>Poa sp.</u>	FAC/UPL 15
	Status/Raw % Cover	6. <u>Stachys cooleyae</u>	FACW 2
1. _____		7. <u>Oenanthe sarmentosa*</u>	OBL 25
2. _____		8. <u>Phalaris arundinacea</u>	FACW 10
3. _____		9. _____	
4. _____		10. _____	
5. _____		11. _____	
		12. _____	

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES NO _____ Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N Has Hydric Inclusions: Y N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-5</u>	<u>5YR 2.5/1</u>			<u>Silt Loam</u>
<u>5-16</u>	<u>5YR 2.5/1 30%</u>			<u>Silt Loam</u>
<u>5-16</u>	<u>5YR 3/2 70%</u>	<u>5YR 4/6 common / medium / prominent</u>		<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 10"

Primary Hydrology Indicators:	Secondary Hydrology Indicators (2 or more required):
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input checked="" type="checkbox"/> Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Drainage Patterns	

Criteria Met? YES NO _____ Comments: _____

DETERMINATION

WETLAND? YES NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: ARC - 15 - 25
 Plot Location: Northeast of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 10 50% 5 20% 2 Status/Raw % Cover
 Herb Stratum: Total Plot Cover: 100 50% 50 20% 20 Status/Raw % Cover

- | | |
|--|---|
| 1. <u>Tsuga heterophylla*</u> FACU- <u>10</u> | 1. <u>Athyrium filix-femina</u> FAC <u>15</u> |
| 2. _____ | 2. <u>Sambucus racemosa</u> FACU <u>10</u> |
| 3. _____ | 3. <u>Heuchera sp.*</u> FAC <u>20</u> |
| | 4. <u>Polystichum munitum*</u> FACU <u>20</u> |
| | 5. <u>Montia linearis</u> NI <u>10</u> |
| | 6. <u>Maianthemum dilatatum*</u> FAC <u>20</u> |
| | 7. <u>Vaccinium parvifolium</u> UPL <u>5</u> |
| | 8. _____ |
| | 9. _____ |
| | 10. _____ |
| | 11. _____ |
| | 12. _____ |

Sapling/Shrub Stratum: Total Plot Cover: 5 50% 2.5 20% 1 Status/Raw % Cover
 Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 40%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO X Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-5</u>	<u>Duff</u>			
<u>5-15</u>	<u>5YR 3/3</u>			<u>Silt Loam</u>

- Hydric Soil Indicators:
- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm) |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High organic content in surface (in Sandy Soils) |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic streaking (in Sandy Soils) |
| <input type="checkbox"/> Reducing Conditions (tests positive) | <input type="checkbox"/> Organic pan (in Sandy Soils) |
| <input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface | <input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches) |
| | <input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration) |
| | <input type="checkbox"/> Supplemental indicator (e.g. NRCS field indicator): _____ |
| | <input type="checkbox"/> Other (explain in comments) _____ |

Criteria Met? YES _____ NO X Comments: _____

HYDROLOGY

Recorded Data: _____ Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other X No Recorded Data Available

Field Data: Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

- | | |
|---|---|
| Primary Hydrology Indicators: | Secondary Hydrology Indicators (2 or more required): |
| <input type="checkbox"/> Inundated | <input type="checkbox"/> Oxidized Root Channels (upper 12") |
| <input type="checkbox"/> Saturated in upper 12 inches | <input type="checkbox"/> Water-stained leaves |
| <input type="checkbox"/> Water Marks | <input type="checkbox"/> Local Soil Survey Data |
| <input type="checkbox"/> Drift Lines | <input type="checkbox"/> FAC-Neutral Test |
| <input type="checkbox"/> Sediment Deposits | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Drainage Patterns | |

Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 13, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: PFO Plot #: ARC - 15 - 26
 Plot Location: In the southwest portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 90 50% 45 20% 18
 Status/Raw % Cover
 1. Alnus rubra* FAC 30
 2. Picea sitchensis* FAC 30
 3. Tsuga heterophylla* FACU- 30

Herb Stratum
 Total Plot Cover: 136 50% 68 20% 27.2
 Status/Raw % Cover
 1. Athyrium filix-femina* FAC 60
 2. Oenanthe sarmentosa* OBL 50
 3. Lysichiton americanum OBL 5
 4. Ranunculus repens FACW 10
 5. Equisetum arvense FAC 1
 6. Maianthemum dilatatum FAC 5
 7. Phalaris arundinacea FACW 5
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum
 Total Plot Cover: 26 50% 13 20% 5.2
 Status/Raw % Cover
 1. Sambucus racemosa* FACU 15
 2. Rubus discolor FACU 5
 3. Vaccinium parvifolium UPL 5
 4. Rubus spectabilis FAC+ 1
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 67%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
0-10	10YR 3/3			Sandy Loam
(50%) 10-13	10YR 3/3			Sandy Loam
(50%) 10-13	10YR 3/2	10YR 3/4 common/medium/distinct		Sandy Loam
13-16	10YR 3/2	10YR 3/4 common/medium/distinct		Sandy Loam

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Reducing Conditions (tests positive)
 X Gleyed or low chroma colors and/or redox features within 10" of surface
 Concretions/Nodules (w/in3"; >2mm)
 High organic content in surface (in Sandy Soils)
 Organic streaking (in Sandy Soils)
 Organic pan (in Sandy Soils)
 Listed on Hydric Soils List (and soil profile matches)
 Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 Supplemental indicator (e.g. NRCS field Indicator): _____
 Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 6" Depth to free water: 20"

Primary Hydrology Indicators:
 Inundated
 X Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 X Drainage Patterns
Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 18, 2008 File #: 4014
 Project/Contact: Arch Cape LW Det. By: SE
 Plant Community: PEM Plot #: ARC - 14 - 27
 Plot Location: In the central portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover
Herb Stratum Total Plot Cover: 105 50% 52.5 20% 21 Status/Raw % Cover

- | | |
|-----------|---|
| 1. _____ | 5. <u>Carex obnupta*</u> OBL <u>100</u> |
| 2. _____ | 6. <u>Lysichiton americanum</u> OBL <u>5</u> |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |
| 5. _____ | 9. _____ |
| 6. _____ | 10. _____ |
| 7. _____ | 11. _____ |
| 8. _____ | 12. _____ |
| 9. _____ | |
| 10. _____ | |
| 11. _____ | |
| 12. _____ | |

Sapling/Shrub Stratum
 Total Plot Cover: 10 50% 5 20% 2 Status/Raw % Cover
 1. Lonicera involucrata* **FAC+** 10
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES NO Comments: _____

SOILS

Map Unit Name: Tropofluvents Drainage Class: Moderately well drained to excessively well drained
 On Hydric Soils List? Y N Has Hydric Inclusions: Y N

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
0-7	10YR 3/2	7.5YR 3/4 (organic streaking)		Sand
7-14	7.5YR 2.5/1			Sand

- Hydric Soil Indicators:**
- | | |
|---|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm) |
| <input type="checkbox"/> Histic Epipedon | <input checked="" type="checkbox"/> High organic content in surface (in Sandy Soils) |
| <input type="checkbox"/> Sulfidic Odor | <input checked="" type="checkbox"/> Organic streaking (in Sandy Soils) |
| <input type="checkbox"/> Reducing Conditions (tests positive) | <input type="checkbox"/> Organic pan (in Sandy Soils) |
| <input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface | <input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches) |
| | <input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration) |
| | <input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____ |
| | <input type="checkbox"/> Other (explain in comments) _____ |

Criteria Met? YES NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 4"

- | | |
|--|---|
| Primary Hydrology Indicators: | Secondary Hydrology Indicators (2 or more required): |
| <input type="checkbox"/> Inundated | <input type="checkbox"/> Oxidized Root Channels (upper 12") |
| <input checked="" type="checkbox"/> Saturated in upper 12 inches | <input type="checkbox"/> Water-stained leaves |
| <input type="checkbox"/> Water Marks | <input type="checkbox"/> Local Soil Survey Data |
| <input type="checkbox"/> Drift Lines | <input type="checkbox"/> FAC-Neutral Test |
| <input type="checkbox"/> Sediment Deposits | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Drainage Patterns | |

Criteria Met? YES NO Comments: _____

DETERMINATION

WETLAND? YES NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: April 18, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: ARC - 14 - 28
 Plot Location: Southeast of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 15 50% 7.5 20% 3 Status/Raw % Cover
 1. Alnus rubra* FAC 15
 2. _____
 3. _____
 Sapling/Shrub Stratum Total Plot Cover: 28 50% 14 20% 5.6 Status/Raw % Cover
 1. Rubus discolor FACU 3
 2. Rubus spectabilis* FAC+ 10
 3. Sambucus racemosa* FACU 15
 4. _____
 5. _____
 Herb Stratum Total Plot Cover: 92 50% 46 20% 18.4 Status/Raw % Cover
 1. Polystichum munitum* FACU 15
 2. Oxalis oregana* UPL 40
 3. Viola langsdorfii FACW 5
 4. Carex obnupta* OBL 15
 5. Oenanthe sarmentosa OBL 5
 6. Cardamine oligosperma FAC 5
 7. Galium aparine FACU 2
 8. Hydrophyllum tenuipes NI 5
 9. _____
 10. _____
 11. _____
 12. _____
 Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 50%
 Other Hydrophytic Vegetation Indicators: _____
 Criteria Met? YES _____ NO X Comments: _____

SOILS

Map Unit Name: Tropofluvents Drainage Class: Moderately well drained to excessively well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y _____ X _____ N _____
 Depth Range of Horizon: 0-15 Matrix Color: 7.5YR 3/3 Redox Concentrations* _____ Redox Depletions* _____ Texture: Sand
*abund./size/contrast/color/location (matrix or pores/peds)

Hydric Soil Indicators:
 _____ Histosol _____ Concretions/Nodules (w/in3"; >2mm)
 _____ Histic Epipedon _____ High organic content in surface (in Sandy Soils)
 _____ Sulfidic Odor _____ Organic streaking (in Sandy Soils)
 _____ Reducing Conditions (tests positive) _____ Organic pan (in Sandy Soils)
 _____ Gleyed or low chroma colors and/or redox features _____ Listed on Hydric Soils List (and soil profile matches)
 _____ within 10" of surface _____ Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 _____ Supplemental indicator (e.g. NRCS field Indicator): _____
 _____ Other (explain in comments) _____
 Criteria Met? YES _____ NO X Comments: _____

HYDROLOGY

Recorded Data _____ Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other X No Recorded Data Available
 Field Data _____
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"
 Primary Hydrology Indicators: _____ Inundated _____
 _____ Saturated in upper 12 inches _____
 _____ Water Marks _____
 _____ Drift Lines _____
 _____ Sediment Deposits _____
 _____ Drainage Patterns _____
 Secondary Hydrology Indicators (2 or more required): _____ Oxidized Root Channels (upper 12") _____
 _____ Water-stained leaves _____
 _____ Local Soil Survey Data _____
 _____ FAC-Neutral Test _____
 _____ Other: _____
 Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: July 24, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE/ME
 Plant Community: Upland Plot #: ARC -16 - 29
 Plot Location: Taken in platted ROW of Anvil Rock Street
 Recent Weather: _____
 Do normal environ. conditions exist? Y N If no, explain: _____
 Has Vegetation Soil Hydrology been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:			Herb Stratum				
Total Plot Cover:	<u>10</u>	50% <u>5</u>	20% <u>2</u>	Total Plot Cover:	<u>80</u>	50% <u>40</u>	20% <u>16</u>
Status/Raw % Cover				Status/Raw % Cover			
1.	<u><i>Alnus rubra*</i></u>	<u>FAC</u>	<u>10</u>	1.	<u><i>Stachys cooleyae</i></u>	<u>FACW</u>	<u>5</u>
2.	_____	_____	_____	2.	<u><i>Polystichum munitum*</i></u>	<u>FACU</u>	<u>20</u>
3.	_____	_____	_____	3.	<u><i>Athyrium filix-femina</i></u>	<u>FAC</u>	<u>15</u>
				4.	<u><i>Carex obnupta*</i></u>	<u>OBL</u>	<u>40</u>
				5.	_____	_____	_____
Sapling/Shrub Stratum							
Total Plot Cover:	<u>45</u>	50% <u>22.5</u>	20% <u>9</u>				
Status/Raw % Cover							
1.	<u><i>Sambucus racemosa*</i></u>	<u>FACU</u>	<u>25</u>				
2.	<u><i>Rubus spectabilis*</i></u>	<u>FAC+</u>	<u>20</u>				
3.	_____	_____	_____				
4.	_____	_____	_____				
5.	_____	_____	_____				

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 60%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y N Has Hydric Inclusions: Y X N

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-17"</u>	<u>10YR 3/3</u>			<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in 3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >17" Depth to free water: >17"

Primary Hydrology Indicators:	Secondary Hydrology Indicators (2 or more required):
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input type="checkbox"/> Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Drainage Patterns	

Criteria Met? YES NO Comments: _____

DETERMINATION

WETLAND? YES NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PFO Plot #: ARC - 16 - 30
 Plot Location: Taken in platted ROW of Park Street
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ if no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 60 50% 30 20% 12
 Status/Raw % Cover
 1. *Alnus rubra** FAC 30
 2. *Picea sitchensis** FAC 30
 3. _____
Herb Stratum
 Total Plot Cover: 145 50% 72.5 20% 29
 Status/Raw % Cover
 1. *Lysichiton americanum** OBL 30
 2. *Oenanthe sarmentosa* OBL 15
 3. *Polystichum munitum* FACU 2
 4. *Carex obnupta** OBL 75
 5. *Oxalis oregana* UPL 3
 6. *Athyrium filix-femina* FAC 10
 7. *Maianthemum dilatatum* FAC 5
 8. *Equisetum arvense* FAC 5
 9. _____
 10. _____
 11. _____
 12. _____
Sapling/Shrub Stratum
 Total Plot Cover: 0 50% 0 20% 0
 Status/Raw % Cover
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES NO _____ Comments: _____

SOILS

Map Unit Name: Grindbrook silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N Has Hydric Inclusions: Y N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-16</u>	<u>7.5YR 3/1</u>	<u>7.5YR 3/3 common / few / distinct</u>		<u>Sandy Loam</u>

Hydric Soil Indicators:
 Histosol
 Histic Epipedon
 Sulfidic Odor
 Reducing Conditions (tests positive)
 Gleyed or low chroma colors and/or redox features within 10" of surface
 Concretions/Nodules (w/in 3"; >2mm)
 High organic content in surface (in Sandy Soils)
 Organic streaking (in Sandy Soils)
 Organic pan (in Sandy Soils)
 Listed on Hydric Soils List (and soil profile matches)
 Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 Supplemental indicator (e.g. NRCS field Indicator): _____
 Other (explain in comments) _____

Criteria Met? YES NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other No Recorded Data Available
 Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 16"
Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns
Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES NO _____ Comments: flowing water in adjacent areas

DETERMINATION

WETLAND? YES NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: July 24, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE/ME
 Plant Community: PFO Plot #: ARC - 16 - 31
 Plot Location: Taken in platted ROW of First Street
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 100 50% 50 20% 20
 Status/Raw % Cover
 1. *Alnus rubra** FAC 20
 2. *Tsuga heterophylla** FACU- 70
 3. *Picea sitchensis* FAC 10

Herb Stratum:
 Total Plot Cover: 100 50% 50 20% 20
 Status/Raw % Cover
 1. *Lysichiton americanum** OBL 70
 2. *Athyrium filix-femina* FAC 5
 3. *Carex obnupta** OBL 25
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum:
 Total Plot Cover: 0 50% 0 20% 0
 Status/Raw % Cover
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 75%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
0-6"	7.5YR 2.5/1			Loam
6-10"	10YR 3/2			Loam
10-13"	2.5Y 3/1			Silt Loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: >13"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: July 24, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE/ME
 Plant Community: Upland Plot #: ARC - 16 - 32
 Plot Location: Taken in platted ROW of First Street
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 10 50% 5 20% 2 Status/Raw % Cover
Herb Stratum: Total Plot Cover: 67 50% 33.5 20% 13.4 Status/Raw % Cover

- | | |
|--|--|
| 1. <u><i>Tsuga heterophylla</i>*</u> FACU- 10 | 1. <u><i>Polystichum munitum</i>*</u> FACU 40 |
| 2. _____ | 2. <u><i>Maianthemum dilatatum</i></u> FAC 5 |
| 3. _____ | 3. <u><i>Blechnum spicant</i>*</u> FAC+ 20 |
| | 4. <u><i>Athyrium filix-femina</i></u> FAC 2 |

Sapling/Shrub Stratum: Total Plot Cover: 28 50% 14 20% 5.6 Status/Raw % Cover

- | | |
|--|-----------|
| 1. <u><i>Gaultheria shallon</i>*</u> FACU 5 | 5. _____ |
| 2. <u><i>Rubus spectabilis</i>*</u> FAC+ 10 | 6. _____ |
| 3. <u><i>Sambucus racemosa</i>*</u> FACU 8 | 7. _____ |
| 4. <u><i>Vaccinium parvifolium</i></u> UPL 2 | 8. _____ |
| 5. <u><i>Menziesia ferruginea</i></u> FACU+ 3 | 9. _____ |
| | 10. _____ |
| | 11. _____ |
| | 12. _____ |

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 33%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO Comments: Ground cover is 15% moss in plot

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N Has Hydric Inclusions: Y N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-16"</u>	<u>7.5YR 2/2</u>	<u>50%</u>		<u>Silt Loam</u>
<u>0-16"</u>	<u>7.5YR 4/6</u>	<u>50%</u>		<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES NO _____ Comments: _____

HYDROLOGY

Recorded Data: _____ Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other No Recorded Data Available

Field Data: Depth of inundation: _____ Depth to Saturation: >16" Depth to free water: >16"

Primary Hydrology Indicators: _____ Inundated _____ Saturated in upper 12 inches _____ Water Marks _____ Drift Lines _____ Sediment Deposits _____ Drainage Patterns _____

Secondary Hydrology Indicators (2 or more required): _____ Oxidized Root Channels (upper 12") _____ Water-stained leaves _____ Local Soil Survey Data _____ FAC-Neutral Test _____ Other: _____

Criteria Met? YES _____ NO Comments: _____

DETERMINATION

WETLAND? YES _____ NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: PFO Plot #: ARC - 16 - 33
 Plot Location: Taken in platted ROW
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 105 50% 52.5 20% 21 Status/Raw % Cover
 Herb Stratum: Total Plot Cover: 95 50% 47.5 20% 19 Status/Raw % Cover

- | | |
|---|---|
| 1. <u>Tsuga heterophylla</u> FACU- <u>20</u> | 1. <u>Lysichiton americanum*</u> OBL <u>35</u> |
| 2. <u>Alnus rubra*</u> FAC <u>35</u> | 2. <u>Oenanthe sarmentosa*</u> OBL <u>40</u> |
| 3. <u>Thuja plicata*</u> FAC <u>50</u> | 3. <u>Cardamine angulata</u> FACW <u>10</u> |
| | 4. <u>Blechnum spicant</u> FAC+ <u>2</u> |
| | 5. <u>Equisetum arvense</u> FAC <u>3</u> |
| | 6. <u>Vaccinium parvifolium</u> UPL <u>5</u> |
| | 7. _____ |
| | 8. _____ |
| | 9. _____ |
| | 10. _____ |
| | 11. _____ |
| | 12. _____ |

Sapling/Shrub Stratum
 Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Grindbrook silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-7"</u>	<u>10YR 2/2</u>			<u>Loam</u>
<u>7-13"</u>	<u>10YR2/1</u>			<u>Loam</u>

Hydric Soil Indicators:

- | | |
|---|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm) |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High organic content in surface (in Sandy Soils) |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic streaking (in Sandy Soils) |
| <input type="checkbox"/> Reducing Conditions (tests positive) | <input type="checkbox"/> Organic pan (in Sandy Soils) |
| <input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface | <input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches) |
| | <input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration) |
| | <input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____ |
| | <input type="checkbox"/> Other (explain in comments) _____ |

Criteria Met? YES X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0 Depth to free water: 3"

- | | |
|--|---|
| <input type="checkbox"/> Inundated | <input type="checkbox"/> Oxidized Root Channels (upper 12") |
| <input checked="" type="checkbox"/> Saturated in upper 12 inches | <input type="checkbox"/> Water-stained leaves |
| <input type="checkbox"/> Water Marks | <input type="checkbox"/> Local Soil Survey Data |
| <input type="checkbox"/> Drift Lines | <input type="checkbox"/> FAC-Neutral Test |
| <input type="checkbox"/> Sediment Deposits | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Drainage Patterns | |

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: ARC - 16 - 34
 Plot Location: Taken in platted ROW
 Recent Weather: _____
 Do normal environ. conditions exist? Y N If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 10 50% 5 20% 2
 Status/Raw % Cover

1. *Thuja plicata** FAC 10
2. _____
3. _____

Herb Stratum
 Total Plot Cover: 85 50% 42.5 20% 17
 Status/Raw % Cover

1. *Blechnum spicant** FAC+ 30
2. *Montia linearis** NI 20
3. *Polystichum munitum* FACU 15
4. *Luzula parviflora** FAC- 20
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

Sapling/Shrub Stratum
 Total Plot Cover: 27 50% 13.5 20% 5.4
 Status/Raw % Cover

1. *Vaccinium ovatum** UPL 5
2. *Menziesia ferruginea** FACU+ 5
3. *Rubus ursinus* FACU 2
4. *Gaultheria shallon** FACU 15
5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 29%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES NO Comments: Ground cover is 90% moss in plot.

SOILS

Map Unit Name: Grindbrook silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y N Has Hydric Inclusions: Y N

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-4</u>	<u>Duff</u>			
<u>5-15</u>	<u>7.5YR 2.5/2</u>			<u>Silt Loam</u>

- Hydric Soil Indicators:**
- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions/Nodules (w/in 3"; >2mm) |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High organic content in surface (in Sandy Soils) |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic streaking (in Sandy Soils) |
| <input type="checkbox"/> Reducing Conditions (tests positive) | <input type="checkbox"/> Organic pan (in Sandy Soils) |
| <input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface | <input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches) |
| | <input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration) |
| | <input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____ |
| | <input type="checkbox"/> Other (explain in comments) _____ |

Criteria Met? YES NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

- Primary Hydrology Indicators:**
- | | |
|---|---|
| <input type="checkbox"/> Inundated | <input type="checkbox"/> Oxidized Root Channels (upper 12") |
| <input type="checkbox"/> Saturated in upper 12 inches | <input type="checkbox"/> Water-stained leaves |
| <input type="checkbox"/> Water Marks | <input type="checkbox"/> Local Soil Survey Data |
| <input type="checkbox"/> Drift Lines | <input type="checkbox"/> FAC-Neutral Test |
| <input type="checkbox"/> Sediment Deposits | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Drainage Patterns | |

Criteria Met? YES NO Comments: _____

DETERMINATION

WETLAND? YES NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: ARC - 16 - 35
 Plot Location: Taken in platted ROW of Tyler Avenue
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

<u>Tree Stratum:</u>			<u>Herb Stratum</u>		
Total Plot Cover:	<u>35</u>	50% <u>17.5</u>	20% <u>7</u>	Total Plot Cover:	<u>84</u>
			Status/Raw % Cover		50% <u>42</u>
					20% <u>16.8</u>
					Status/Raw % Cover
1.	<u><i>Picea sitchensis</i>*</u>	<u>FAC</u>	<u>20</u>	1.	<u><i>Polystichum munitum</i>*</u>
2.	<u><i>Alnus rubra</i>*</u>	<u>FAC</u>	<u>15</u>	2.	<u><i>Blechnum spicant</i>*</u>
3.	_____	_____	_____	3.	<u><i>Geranium robertianum</i></u>
				4.	<u><i>Luzula parviflora</i></u>
				5.	_____
				6.	_____
				7.	_____
				8.	_____
				9.	_____
				10.	_____
				11.	_____
				12.	_____

Sapling/Shrub Stratum
 Total Plot Cover: 6 50% 3 20% 1.2
 Status/Raw % Cover

1.	<u><i>Sambucus racemosa</i>*</u>	<u>FACU</u>	<u>5</u>
2.	<u><i>Rubus ursinus</i></u>	<u>FACU</u>	<u>1</u>
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 60%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES NO Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y N Has Hydric Inclusions: Y N

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-1</u>	<u>7.5YR 3/2</u>			<u>Sandy Loam</u>
<u>1-5</u>	<u>10YR 4/4</u>	<u>50%</u>		<u>Loamy Sand</u>
<u>1-5</u>	<u>2.5Y 5/5</u>	<u>50%</u>		<u>Loamy Sand</u>
<u>5-16</u>	<u>10YR 4/4</u>			<u>Loamy Sand</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >16" Depth to free water: >16"

Primary Hydrology Indicators:

<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input type="checkbox"/> Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Drainage Patterns	

Criteria Met? YES NO Comments: _____

DETERMINATION

WETLAND? YES NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: June 12, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: ARC - 16 - 36
 Plot Location: Taken in platted ROW of Tyler Avenue

Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover
Herb Stratum: Total Plot Cover: 128 50% 64 20% 25.6 Status/Raw % Cover

- | | |
|----------|---|
| 1. _____ | 5. <u>Oenanthe sarmentosa*</u> OBL <u>60</u> |
| 2. _____ | 6. <u>Ranunculus repens*</u> FACW <u>25</u> |
| 3. _____ | 7. <u>Juncus effusus</u> FACW <u>3</u> |
| | 8. <u>Scutellaria galericulata</u> OBL <u>10</u> |
| | 9. <u>Tellima grandiflora</u> UPL <u>5</u> |
| | 10. <u>Carex obnupta</u> OBL <u>5</u> |
| | 11. <u>Equisetum arvense</u> FAC <u>2</u> |
| | 12. <u>Agrimonia striata</u> FACU <u>10</u> |
| | 13. <u>Montia linearis</u> NI <u>3</u> |
| | 14. <u>Athyrium filix-femina</u> FAC <u>5</u> |
| | 15. _____ |
| | 16. _____ |

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ X X NO _____ Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
0-4	2.5Y 3/1			Sandy Loam
4-7	2.5Y 3/3	80%		Sandy Loam
4-7	5Y 4/3	20%		Sandy Loam
7-11	2.5Y 3/3			Sandy Clay
11-14	10YR 3/6			Silt Loam

Hydric Soil Indicators:
 _____ Histosol
 _____ Histic Epipedon
 _____ Sulfidic Odor
 _____ Reducing Conditions (tests positive)
X Gleyed or low chroma colors and/or redox features within 10" of surface
 _____ Concretions/Nodules (w/in3"; >2mm)
 _____ High organic content in surface (in Sandy Soils)
 _____ Organic streaking (in Sandy Soils)
 _____ Organic pan (in Sandy Soils)
 _____ Listed on Hydric Soils List (and soil profile matches)
 _____ Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
 _____ Supplemental indicator (e.g. NRCS field Indicator): _____
 _____ Other (explain in comments) _____

Criteria Met? YES _____ X X NO _____ Comments: _____

HYDROLOGY

Recorded Data
 _____ Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: _____ Depth to free water: _____

Primary Hydrology Indicators:
 _____ Inundated
 _____ Saturated in upper 12 inches
 _____ Water Marks
 _____ Drift Lines
 _____ Sediment Deposits
X Drainage Patterns
Secondary Hydrology Indicators (2 or more required):
 _____ Oxidized Root Channels (upper 12")
 _____ Water-stained leaves
 _____ Local Soil Survey Data
 _____ FAC-Neutral Test
 _____ Other: _____

Criteria Met? YES _____ X X NO _____ Comments: _____

DETERMINATION

WETLAND? YES _____ X X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 15, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: PSS/PEM Plot #: COV - 1 - 37
 Plot Location: In the southwestern portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover
 1. _____
 2. _____
 3. _____

Herb Stratum
 Total Plot Cover: 65 50% 32.5 20% 13 Status/Raw % Cover
 1. Carex obnupta* **OBL** 50
 2. Scirpus validus **OBL** 5
 3. Typha latifolia **OBL** 10
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum
 Total Plot Cover: 50 50% 25 20% 10 Status/Raw % Cover
 1. Lonicera involucrata* **FAC+** 30
 2. Spiraea douglasii **FACW** 5
 3. Potentilla anserina* **OBL** 15
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO _____ Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-16</u>	<u>7.5YR 2.5/3</u>	<u>10YR 3/6 common / medium / distinct</u>		<u>Sandy Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input checked="" type="checkbox"/> High organic content in surface (in Sandy Soils)
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO _____ Comments: very high organic content; peat-like soils

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: 3"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES X NO _____ Comments: _____

DETERMINATION

WETLAND? YES X NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 15, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: Upland Plot #: COV - 1 - 38
 Plot Location: South of the southwestern portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover
 1. _____
 2. _____
 3. _____

Herb Stratum:
 Total Plot Cover: 9 50% 4.5 20% 1.8 Status/Raw % Cover
 1. Echinocystis lobata **FACU** 1
 2. Petasites palmatus* **FAC** 5
 3. Oenanthe sarmentosa **OBL** 1
 4. Vicia sativa* **UPL** 2
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum:
 Total Plot Cover: 110 50% 55 20% 22 Status/Raw % Cover
 1. Salix hookeriana* **FACW-** 40
 2. Gaultheria shallon* **FACU** 70
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 50%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N Has Hydric Inclusions: Y N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-2</u>	<u>10YR 3/3</u>	<u>25%</u>		<u>Sandy Loam</u>
		<u>75% Roots/organics</u>		
<u>2-15</u>	<u>10YR 3/3</u>			<u>Sandy Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES _____ NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES _____ NO Comments: _____

DETERMINATION

WETLAND? YES _____ NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 15, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: COV - 1 - 39
 Plot Location: In the eastern most portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:				Herb Stratum							
Total Plot Cover:	<u>5</u>	50%	<u>2.5</u>	20%	<u>1</u>	Total Plot Cover:	<u>90</u>	50%	<u>45</u>	20%	<u>18</u>
Status/Raw % Cover						Status/Raw % Cover					
1.	<u><i>Alnus rubra*</i></u>			<u>FAC</u>	<u>5</u>	1.	<u><i>Juncus tenuis*</i></u>			<u>FACW-</u>	<u>20</u>
2.	_____					2.	<u><i>Ranunculus repens*</i></u>			<u>FACW</u>	<u>15</u>
3.	_____					3.	<u><i>Tanacetum vulgare</i></u>			<u>NI</u>	<u>10</u>
						4.	<u><i>Lotus purshiana*</i></u>			<u>UPL</u>	<u>15</u>
Sapling/Shrub Stratum											
Total Plot Cover:	<u>5</u>	50%	<u>2.5</u>	20%	<u>1</u>	5.	<u><i>Equisetum arvense</i></u>			<u>FAC</u>	<u>5</u>
Status/Raw % Cover						6.	<u><i>Petasites palmatus</i></u>			<u>FAC</u>	<u>5</u>
1.	<u><i>Gaultheria shallon*</i></u>			<u>FACU</u>	<u>5</u>	7.	<u><i>Digitalis purpurea</i></u>			<u>FACU</u>	<u>5</u>
2.	_____					8.	<u><i>Athyrium filix-femina</i></u>			<u>FAC</u>	<u>5</u>
3.	_____					9.	<u><i>Carex obnupta</i></u>			<u>OBL</u>	<u>10</u>
4.	_____					10.	_____				
5.	_____					11.	_____				
						12.	_____				

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 60%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y N X Has Hydric Inclusions: Y X N

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-16</u>	<u>7.5YR 2.5/1</u>			<u>Sandy Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 5" Depth to free water: >16"

Primary Hydrology Indicators:	Secondary Hydrology Indicators (2 or more required):
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input checked="" type="checkbox"/> Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Drainage Patterns	

Criteria Met? YES X NO Comments: bedrock close to the surface causing wet along slope

DETERMINATION

WETLAND? YES X NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 15, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: COV - 1 - 40
 Plot Location: South of the eastern portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 10 50% 5 20% 2 Status/Raw % Cover
 Herb Stratum: Total Plot Cover: 30 50% 15 20% 6 Status/Raw % Cover

- | | |
|--|---|
| 1. <u><i>Alnus rubra*</i></u> <u>FAC</u> <u>10</u> | 1. <u><i>Polystichum munitum*</i></u> <u>FACU</u> <u>10</u> |
| 2. _____ | 2. <u><i>Heracleum lanatum*</i></u> <u>FAC+</u> <u>5</u> |
| 3. _____ | 3. <u><i>Cardamine oligosperma*</i></u> <u>FAC</u> <u>5</u> |
| | 4. <u><i>Digitalis purpurea*</i></u> <u>FACU</u> <u>5</u> |
| | 5. <u><i>Tanacetum vulgare*</i></u> <u>NI</u> <u>5</u> |
| | 6. _____ |
| | 7. _____ |
| | 8. _____ |
| | 9. _____ |
| | 10. _____ |
| | 11. _____ |
| | 12. _____ |

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 44%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO X Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-8</u>	<u>7.5YR 3/3</u>			<u>Sandy Loam</u>
<u>8-12</u>	<u>10YR 3/4</u>			<u>Silt Loam</u>

- Hydric Soil Indicators:
- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm) |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High organic content in surface (in Sandy Soils) |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic streaking (in Sandy Soils) |
| <input type="checkbox"/> Reducing Conditions (tests positive) | <input type="checkbox"/> Organic pan (in Sandy Soils) |
| <input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface | <input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches) |
| | <input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration) |
| | <input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____ |
| | <input type="checkbox"/> Other (explain in comments) _____ |

Criteria Met? YES _____ NO X Comments: refusal below 12" due to rocks

HYDROLOGY

Recorded Data: _____
 Recorded Data Available _____ Aerial Photos _____ Stream gauge _____ Other X No Recorded Data Available

Field Data: _____
 Depth of inundation: _____ Depth to Saturation: >12" Depth to free water: >12"

- | | |
|---|---|
| Primary Hydrology Indicators: | Secondary Hydrology Indicators (2 or more required): |
| <input type="checkbox"/> Inundated | <input type="checkbox"/> Oxidized Root Channels (upper 12") |
| <input type="checkbox"/> Saturated in upper 12 inches | <input type="checkbox"/> Water-stained leaves |
| <input type="checkbox"/> Water Marks | <input type="checkbox"/> Local Soil Survey Data |
| <input type="checkbox"/> Drift Lines | <input type="checkbox"/> FAC-Neutral Test |
| <input type="checkbox"/> Sediment Deposits | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Drainage Patterns | |

Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 15, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: COV - 2 - 41
 Plot Location: In the southeastern portion of the wetland

Recent Weather: _____
 Do normal environ. conditions exist? Y X N If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 15 50% 7.5 20% 3 Status/Raw % Cover
 Herb Stratum: Total Plot Cover: 82 50% 41 20% 16.4 Status/Raw % Cover

- | | |
|--|--|
| 1. <u><i>Alnus rubra*</i></u> <u>FAC</u> <u>15</u> | 1. <u><i>Carex obnupta*</i></u> <u>OBL</u> <u>55</u> |
| 2. _____ | 2. <u><i>Oenanthe sarmentosa</i></u> <u>OBL</u> <u>10</u> |
| 3. _____ | 3. <u><i>Tellima grandiflora</i></u> <u>UPL</u> <u>2</u> |
| | 4. <u><i>Juncus tenuis</i></u> <u>FACW-</u> <u>5</u> |
| | 5. <u><i>Athyrium filix-femina</i></u> <u>FAC</u> <u>5</u> |
| | 6. <u><i>Montia linearis</i></u> <u>NI</u> <u>5</u> |
| | 7. _____ |
| | 8. _____ |
| | 9. _____ |
| | 10. _____ |
| | 11. _____ |
| | 12. _____ |

Sapling/Shrub Stratum
 Total Plot Cover: 5 50% 2.5 20% 1 Status/Raw % Cover

- | |
|--|
| 1. <u><i>Rubus spectabilis*</i></u> <u>FAC+</u> <u>5</u> |
| 2. _____ |
| 3. _____ |
| 4. _____ |
| 5. _____ |

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y N Has Hydric Inclusions: Y N

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-5</u>	<u>10YR 3/1</u>			<u>Silty Clay Loam</u>
<u>5-16</u>	<u>10YR 4/1</u>	<u>10YR 3/6 few / fine / prominent</u>		<u>Silty Clay Loam</u>

- Hydric Soil Indicators:
- | | |
|---|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm) |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High organic content in surface (in Sandy Soils) |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic streaking (in Sandy Soils) |
| <input type="checkbox"/> Reducing Conditions (tests positive) | <input type="checkbox"/> Organic pan (in Sandy Soils) |
| <input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface | <input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches) |
| | <input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration) |
| | <input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____ |
| | <input type="checkbox"/> Other (explain in comments) _____ |

Criteria Met? YES X NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >16" Depth to free water: >16"

- Primary Hydrology Indicators: Inundated Saturated in upper 12 inches Water Marks Drift Lines Sediment Deposits Drainage Patterns
- Secondary Hydrology Indicators (2 or more required): Oxidized Root Channels (upper 12") Water-stained leaves Local Soil Survey Data FAC-Neutral Test Other: _____

Criteria Met? YES X NO Comments: _____

DETERMINATION

WETLAND? YES X NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 15, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: COV - 2 - 42
 Plot Location: South of the southeastern portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

<u>Tree Stratum:</u>				<u>Herb Stratum</u>							
Total Plot Cover:	<u>15</u>	50%	<u>7.5</u>	20%	<u>3</u>	Total Plot Cover:	<u>50</u>	50%	<u>25</u>	20%	<u>10</u>
				Status/Raw % Cover						Status/Raw % Cover	
1.	<u><i>Picea sitchensis*</i></u>			<u>FAC</u>	<u>15</u>	1.	<u><i>Polystichum munitum*</i></u>			<u>FACU</u>	<u>35</u>
2.	_____					2.	<u><i>Blechnum spicant</i></u>			<u>FAC+</u>	<u>5</u>
3.	_____					3.	<u><i>Carex obnupta</i></u>			<u>OBL</u>	<u>5</u>
						4.	<u><i>Carex densa</i></u>			<u>OBL</u>	<u>5</u>
						5.	_____				
<u>Sapling/Shrub Stratum</u>											
Total Plot Cover:	<u>40</u>	50%	<u>20</u>	20%	<u>8</u>						
				Status/Raw % Cover							
1.	<u><i>Rubus spectabilis</i></u>			<u>FAC+</u>	<u>5</u>						
2.	<u><i>Gaultheria shallon*</i></u>			<u>FACU</u>	<u>35</u>						
3.	_____										
4.	_____										
5.	_____										

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 33%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO X Comments: Ground cover of 60% moss in plot.

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-1</u>	<u>Duff</u>			
<u>1-15</u>	<u>7.5YR 3/3</u>			<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES _____ NO X Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

Primary Hydrology Indicators:	Secondary Hydrology Indicators (2 or more required):
<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input type="checkbox"/> Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Drainage Patterns	

Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 15, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: PEM Plot #: COV - 3 - 43
 Plot Location: In the western portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 70 50% 35 20% 14
 Status/Raw % Cover
 1. *Alnus rubra** FAC 60
 2. *Abies grandis* FACU- 10
 3. _____

Herb Stratum:
 Total Plot Cover: 110 50% 55 20% 22
 Status/Raw % Cover
 1. *Polystichum munitum* FACU 10
 2. *Oenanthe sarmentosa* OBL 10
 3. *Montia linearis* NI 20
 4. *Stachys cooleyae** FACW 60
 5. *Petasites palmatus* FAC 10
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum:
 Total Plot Cover: 0 50% 0 20% 0
 Status/Raw % Cover
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES NO Comments: _____

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y N Has Hydric Inclusions: Y N

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-6</u>	<u>10YR 3/2</u>			<u>Sandy Loam</u>
<u>6-14</u>	<u>2.5Y 3/1</u>	<u>2.5Y 3/4 few / medium / distinct</u>		<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: >14"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES NO Comments: Pit taken adjacent to drainage

DETERMINATION

WETLAND? YES NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 16, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Upland Plot #: COV - 3 - 44
 Plot Location: South of the western portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y X N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 30 50% 15 20% 6
 Status/Raw % Cover
 1. Picea sitchensis* FAC 30
 2. _____
 3. _____

Herb Stratum:
 Total Plot Cover: 32 50% 16 20% 6.4
 Status/Raw % Cover
 1. Montia linearis* NI 30
 2. Athyrium filix-femina FAC 2
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum:
 Total Plot Cover: 0 50% 0 20% 0
 Status/Raw % Cover
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 50%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES _____ NO X Comments: Ground cover 90% moss in plot.

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y _____ N X Has Hydric Inclusions: Y X N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-1</u>	<u>Duff/Moss</u>			
<u>1-7</u>	<u>7.5YR 2.5/3</u>			<u>Silt Loam</u>
<u>7-15</u>	<u>7.5 YR 2.5/3</u>	<u>7.5YR 4/6 common / coarse / prominent</u>		<u>Silt Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES _____ NO X Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >15" Depth to free water: >15"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES _____ NO X Comments: _____

DETERMINATION

WETLAND? YES _____ NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 15, 2008 File #: 4014
Project/Contact: Arch Cape LWI Det. By: ME
Plant Community: Upland Plot #: COV - 4 - 45
Plot Location: East of the eastern portion of the wetland

Recent Weather:
Do normal environ. conditions exist? Y X N If no, explain:
Has Vegetation Soil Hydrology been significantly disturbed?
Explain:

VEGETATION

Tree Stratum: Total Plot Cover: 15 50% 7.5 20% 3 Status/Raw % Cover
Herb Stratum: Total Plot Cover: 20 50% 10 20% 4 Status/Raw % Cover

- 1. Alnus rubra* FAC 15
2.
3.
1. Montia linearis* NI 20
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

Sapling/Shrub Stratum
Total Plot Cover: 0 50% 0 20% 0 Status/Raw % Cover

- 1.
2.
3.
4.
5.

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 50%
Other Hydrophytic Vegetation Indicators:

Criteria Met? YES NO X Comments: Ground cover of 90% moss in plot.

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
On Hydric Soils List? Y N X Has Hydric Inclusions: Y X N

Table with 5 columns: Depth Range of Horizon, Matrix Color, Redox Concentrations*, Redox Depletions*, Texture. Rows include 0-9 10YR 3/3 Silt Loam and 9-16 10YR 4/4 Silty Clay Loam.

- Hydric Soil Indicators:
Histosol
Histic Epipedon
Sulfidic Odor
Reducing Conditions (tests positive)
Gleyed or low chroma colors and/or redox features within 10" of surface
Concretions/Nodules (w/in3"; >2mm)
High organic content in surface (in Sandy Soils)
Organic streaking (in Sandy Soils)
Organic pan (in Sandy Soils)
Listed on Hydric Soils List (and soil profile matches)
Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
Supplemental indicator (e.g. NRCS field Indicator):
Other (explain in comments)

Criteria Met? YES NO X Comments:

HYDROLOGY

Recorded Data
Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
Depth of inundation: Depth to Saturation: >16" Depth to free water: >16"

- Primary Hydrology Indicators: Inundated, Saturated in upper 12 inches, Water Marks, Drift Lines, Sediment Deposits, Drainage Patterns
Secondary Hydrology Indicators (2 or more required): Oxidized Root Channels (upper 12"), Water-stained leaves, Local Soil Survey Data, FAC-Neutral Test, Other:

Criteria Met? YES NO X Comments:

DETERMINATION

WETLAND? YES NO X Comments:

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 15, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: PEM Plot #: COV - 4 - 46
 Plot Location: In the eastern portion of the wetland

Recent Weather: _____
 Do normal environ. conditions exist? Y X N If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

<u>Tree Stratum:</u>			<u>Herb Stratum:</u>				
Total Plot Cover:	<u>0</u>	50% <u>0</u>	20% <u>0</u>	Total Plot Cover:	<u>80</u>	50% <u>40</u>	20% <u>16</u>
			Status/Raw % Cover				Status/Raw % Cover
1.	_____			1.	<u>Carex obnupta*</u>	<u>OBL</u>	<u>30</u>
2.	_____			2.	<u>Athyrium filix-femina*</u>	<u>FAC</u>	<u>10</u>
3.	_____			3.	<u>Polystichum munitum*</u>	<u>FACU</u>	<u>10</u>
				4.	<u>Blechnum spicant</u>	<u>FAC+</u>	<u>5</u>
				5.	<u>Oenanthe sarmentosa*</u>	<u>OBL</u>	<u>10</u>
				6.	<u>Lysichiton americanum</u>	<u>OBL</u>	<u>8</u>
				7.	<u>Cardamine angulata</u>	<u>FACW</u>	<u>2</u>
				8.	<u>Montia linearis</u>	<u>NI</u>	<u>5</u>
				9.	_____		
				10.	_____		
				11.	_____		
				12.	_____		

Sapling/Shrub Stratum

Total Plot Cover: 10 50% 5 20% 2
 Status/Raw % Cover

1. Rubus spectabilis* FAC+ 10
 2. _____
 3. _____
 4. _____
 5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 80%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO Comments: Ground cover of 50% moss in plot.

SOILS

Map Unit Name: Skipanon gravelly silt loam Drainage Class: Well drained
 On Hydric Soils List? Y N Has Hydric Inclusions: Y N

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-4</u>	<u>10YR 2/2</u>			
<u>4-15</u>	<u>2.5Y 3/1</u>			<u>Sandy Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES X NO Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0" Depth to free water: >14"

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

<input type="checkbox"/> Inundated	<input type="checkbox"/> Oxidized Root Channels (upper 12")
<input checked="" type="checkbox"/> Saturated in upper 12 inches	<input type="checkbox"/> Water-stained leaves
<input type="checkbox"/> Water Marks	<input type="checkbox"/> Local Soil Survey Data
<input type="checkbox"/> Drift Lines	<input type="checkbox"/> FAC-Neutral Test
<input type="checkbox"/> Sediment Deposits	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Drainage Patterns	

Criteria Met? YES X NO Comments: _____

DETERMINATION

WETLAND? YES X NO Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Arch Cape Date: May 16, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: ME
 Plant Community: Riparian forest Plot #: COV - 10 - 47
 Plot Location: Northwest of the central portion of the wetland

Recent Weather: _____
 Do normal environ. conditions exist? Y X N If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 35 50% 17.5 20% 7
 Status/Raw % Cover

1. *Alnus rubra** FAC 10
2. *Picea sitchensis** FAC 25
3. _____

Herb Stratum:
 Total Plot Cover: 65 50% 32.5 20% 13
 Status/Raw % Cover

1. *Equisetum arvense** FAC 25
2. *Athyrium filix-femina* FAC 10
3. *Hypochaeris radicata** FACU 15
4. *Montia linearis* NI 5
5. *Galium aparine* FACU 5
6. *Luzula parviflora* FAC- 5
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

Sapling/Shrub Stratum:
 Total Plot Cover: 35 50% 17.5 20% 7
 Status/Raw % Cover

1. *Rubus spectabilis* FAC+ 5
2. *Gaultheria shallon** FACU 30
3. _____
4. _____
5. _____

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 60%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES X NO Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y N Has Hydric Inclusions: Y X N

Depth Range of Horizon	Matrix Color	Redox Concentrations* <small>*abund./size/contrast/color/location (matrix or pores/peds)</small>	Redox Depletions*	Texture
<u>0-1</u>	<u>Duff</u>			
<u>1-9</u>	<u>10YR 4/3</u>			<u>Silty Clay Loam</u>
<u>9-14</u>	<u>10YR 6/3 50%</u>			<u>Sandy Clay Loam</u>
<u>9-14</u>	<u>10YR 5/3 50%</u>	<u>10YR 5/8 common / coarse / prominent</u>		<u>Sandy Clay Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in3"; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES NO X Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other X No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >14" Depth to free water: >14"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES NO X Comments: _____

DETERMINATION

WETLAND? YES NO X Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 16, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: PFO Plot #: COV - 10 - 48
 Plot Location: In the west-central portion of the wetland
 Recent Weather: _____
 Do normal environ. conditions exist? Y N _____ If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum:
 Total Plot Cover: 20 50% 10 20% 4
 Status/Raw % Cover
 1. *Alnus rubra** FAC 20
 2. _____
 3. _____

Herb Stratum
 Total Plot Cover: 98 50% 49 20% 19.6
 Status/Raw % Cover
 1. *Equisetum arvense* FAC 5
 2. *Carex obnupta** OBL 75
 3. *Blechnum spicant* FAC+ 3
 4. *Athyrium filix-femina* FAC 10
 5. *Lysichiton americanum* OBL 5
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____

Sapling/Shrub Stratum
 Total Plot Cover: 65 50% 32.5 20% 13
 Status/Raw % Cover
 1. *Alnus rubra** FAC 20
 2. *Pinus contorta* FAC 10
 3. *Rubus spectabilis** FAC+ 20
 4. *Rubus discolor* FACU 5
 5. *Gaultheria shallon* FACU 10

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES NO _____ Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y _____ N Has Hydric Inclusions: Y N _____

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-4</u>	<u>10YR 2/2</u>			<u>Loam</u>
<u>4-8</u>	<u>10Y 4/1</u>	<u>10YR 4/6 common / coarse / prominent</u>		<u>Silty Clay Loam</u>
<u>8-13</u>	<u>5GY 4/1</u>	<u>10YR 4/6 common / coarse / prominent</u>		<u>Sandy Loam</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions/Nodules (w/in ³ ; >2mm)
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High organic content in surface (in Sandy Soils)
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic streaking (in Sandy Soils)
<input type="checkbox"/> Reducing Conditions (tests positive)	<input type="checkbox"/> Organic pan (in Sandy Soils)
<input checked="" type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface	<input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches)
	<input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration)
	<input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____
	<input type="checkbox"/> Other (explain in comments) _____

Criteria Met? YES NO _____ Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: 0-5" Depth to free water: >13"

Primary Hydrology Indicators:
 Inundated
 Saturated in upper 12 inches
 Water Marks
 Drift Lines
 Sediment Deposits
 Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
 Oxidized Root Channels (upper 12")
 Water-stained leaves
 Local Soil Survey Data
 FAC-Neutral Test
 Other: _____

Criteria Met? YES NO _____ Comments: soils below 5" are dense and moist but not saturated

DETERMINATION

WETLAND? YES NO _____ Comments: _____

DEPARTMENT OF STATE LANDS WETLAND DETERMINATION DATA FORM

County: Clatsop City: Cove Beach Date: May 16, 2008 File #: 4014
 Project/Contact: Arch Cape LWI Det. By: SE
 Plant Community: Upland Plot #: COV - 10 - 50
 Plot Location: South of the southwestern portion of the wetland
 Recent Weather: _____

Do normal environ. conditions exist? Y **X** N If no, explain: _____
 Has Vegetation _____ Soil _____ Hydrology _____ been significantly disturbed?
 Explain: _____

VEGETATION

Tree Stratum: Total Plot Cover: 40 50% 20 20% 8 Status/Raw % Cover
Herb Stratum: Total Plot Cover: 101 50% 50.5 20% 20.2 Status/Raw % Cover

- | | |
|---|---|
| 1. <u><i>Alnus rubra*</i></u> <u>FAC</u> <u>20</u> | 1. <u><i>Anthoxanthum odoratum*</i></u> <u>FACU</u> <u>40</u> |
| 2. <u><i>Pinus contorta*</i></u> <u>FAC</u> <u>20</u> | 2. <u><i>Lotus corniculatus*</i></u> <u>FAC</u> <u>30</u> |
| 3. _____ | 3. <u><i>Plantago lanceolata</i></u> <u>FAC</u> <u>1</u> |
| | 4. <u><i>Festuca sp.</i></u> <u>FAC</u> <u>20</u> |
| <u>Sapling/Shrub Stratum</u> | 5. <u><i>Leontodon nudicaulis</i></u> <u>UPL</u> <u>5</u> |
| Total Plot Cover: <u>45</u> 50% <u>22.5</u> 20% <u>9</u> Status/Raw % Cover | 6. <u><i>Juncus effusus</i></u> <u>FACW</u> <u>5</u> |
| 1. <u><i>Rubus discolor</i></u> <u>FACU</u> <u>5</u> | 7. _____ |
| 2. <u><i>Tsuga heterophylla*</i></u> <u>FACU-</u> <u>20</u> | 8. _____ |
| 3. <u><i>Alnus rubra*</i></u> <u>FAC</u> <u>15</u> | 9. _____ |
| 4. <u><i>Pinus contorta</i></u> <u>FAC</u> <u>5</u> | 10. _____ |
| 5. _____ | 11. _____ |
| | 12. _____ |

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 60%
 Other Hydrophytic Vegetation Indicators: _____

Criteria Met? YES **X** NO Comments: _____

SOILS

Map Unit Name: Walluski silt loam Drainage Class: Moderately well drained
 On Hydric Soils List? Y N **X** Has Hydric Inclusions: Y **X** N

Depth Range of Horizon	Matrix Color	Redox Concentrations* *abund./size/contrast/color/location (matrix or pores/peds)	Redox Depletions*	Texture
<u>0-4</u>	<u>10YR 3/2</u>			<u>Silt Loam</u>
<u>4-16</u>	<u>10YR 4/4</u>			<u>Silt Loam</u>

- Hydric Soil Indicators:**
- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions/Nodules (w/in ³ ; >2mm) |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High organic content in surface (in Sandy Soils) |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic streaking (in Sandy Soils) |
| <input type="checkbox"/> Reducing Conditions (tests positive) | <input type="checkbox"/> Organic pan (in Sandy Soils) |
| <input type="checkbox"/> Gleyed or low chroma colors and/or redox features within 10" of surface | <input type="checkbox"/> Listed on Hydric Soils List (and soil profile matches) |
| | <input type="checkbox"/> Meets hydric soils criteria 3 or 4 (ponded or flooded for long duration) |
| | <input type="checkbox"/> Supplemental indicator (e.g. NRCS field Indicator): _____ |
| | <input type="checkbox"/> Other (explain in comments) _____ |

Criteria Met? YES NO **X** Comments: _____

HYDROLOGY

Recorded Data
 Recorded Data Available Aerial Photos Stream gauge Other **X** No Recorded Data Available

Field Data
 Depth of inundation: _____ Depth to Saturation: >16" Depth to free water: >16"

- | | |
|---|---|
| Primary Hydrology Indicators: | Secondary Hydrology Indicators (2 or more required): |
| <input type="checkbox"/> Inundated | <input type="checkbox"/> Oxidized Root Channels (upper 12") |
| <input type="checkbox"/> Saturated in upper 12 inches | <input type="checkbox"/> Water-stained leaves |
| <input type="checkbox"/> Water Marks | <input type="checkbox"/> Local Soil Survey Data |
| <input type="checkbox"/> Drift Lines | <input type="checkbox"/> FAC-Neutral Test |
| <input type="checkbox"/> Sediment Deposits | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Drainage Patterns | |

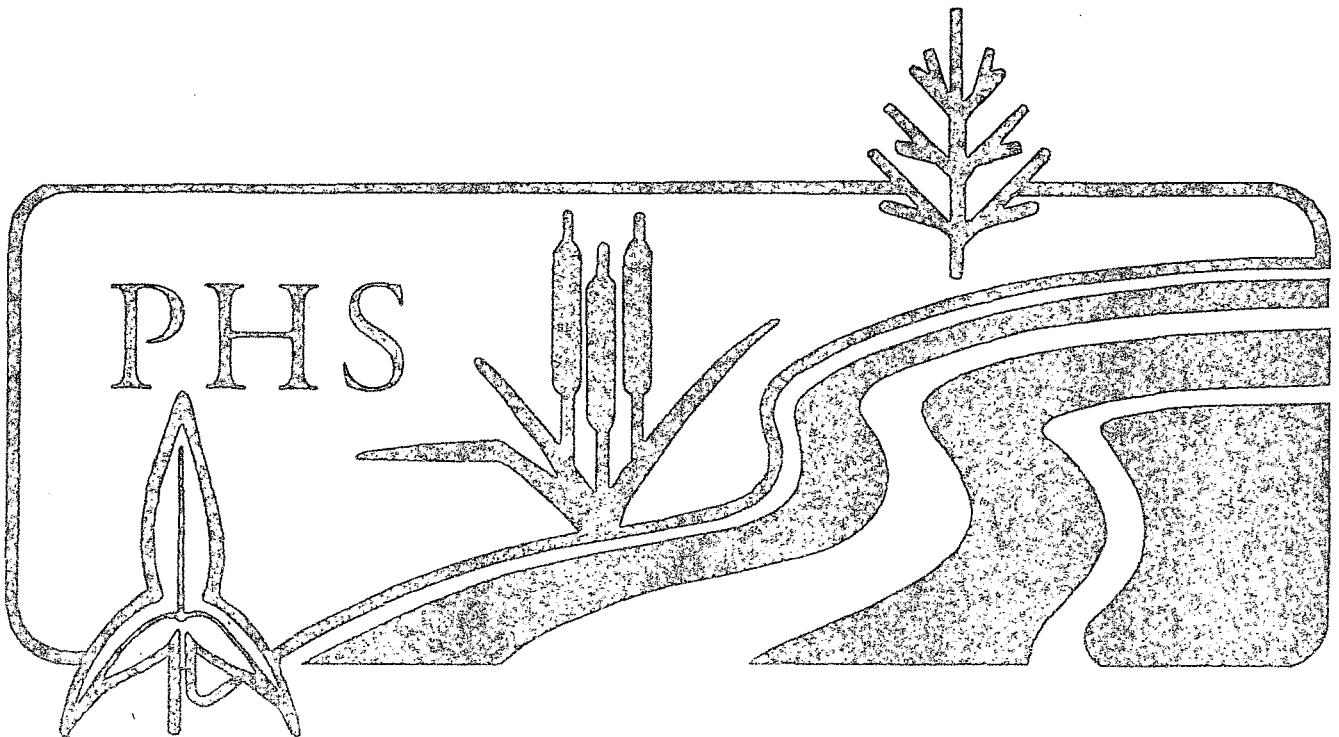
Criteria Met? YES NO **X** Comments: _____

DETERMINATION

WETLAND? YES NO **X** Comments: _____

Appendix D

OFWAM Data and Results



Oregon Freshwater Wetland Assessment Methodology

(Revised Edition, April 1996)

Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-1
Project Location:	Arch Cape	Wetland Type(s):	PFO, PSS
Date(s) of field work:	4/17/2008	Approx. Area (acres):	0.23
Onsite Assessment?:	Yes	Investigator(s):	SE / ME
Wetland Location:	West of Highway 101, between Carnahan and Poppe Lane		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1		Q-1	C	Q-1	A	Q-1	B
Q-2	A	Q-2		Q-2	A	Q-2	A	Q-2	B
Q-3	B	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	C	Q-4	A
Q-5	B	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	A	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	A		
Q-8	C								
Q-9A									
Q-9B	B								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is intact
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	B
Q-2	B	Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	C	Q-3	A
Q-4	C	Q-4	C	Q-4	B	Q-4	B
Q-5B	B	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	B

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-1
Location:	Arch Cape	Approx. Area (acres):	0.23
Date:	4/17/2008	Wetland Types(s):	PFO, PSS
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is between 10% and 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Less than 0.5 acre but connected to other waters	
	Wetland floods/ponds in growing season	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is intact		
Rationale:	Wetland is within 100 year floodplain	Dominated by woody vegetation	
	Wetland floods/ponds in growing season	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is less than 0.5 acres	
	Primary water source is groundwater	Wetland buffer is between 10% and 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	No access or observation of other habitats		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be pleasing		
Rationale:	Two Cowardin classes visible	Wetland surrounded by landscaped areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Continuous traffic and natural noises occur	

Oregon Freshwater Wetland Assessment Methodology

(Revised Edition, April 1996)

Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-2
Project Location:	Arch Cape	Wetland Type(s):	PFO, PSS, PEM
Date(s) of field work:	4/17/2008	Approx. Area (acres):	0.33
Onsite Assessment?:	for the small wetland west	Investigator(s):	SE / ME
Wetland Location:	East of Highway 101, North of Buena Vista Drive		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	A	Q-1	A	Q-1	B	Q-1	B
Q-2	A	Q-2	B	Q-2	C	Q-2	C	Q-2	B
Q-3	B	Q-3	B	Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	C	Q-4	A
Q-5	A	Q-5	C	Q-5	A	Q-5	A	Q-5	A
Q-6	A	Q-6	B	Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	B								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Wetland's fish habitat function is impacted or degraded
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is lost or not present
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1	B	Q-1	A	Q-1	A
Q-2	A	Q-2	A	Q-2	C	Q-2	B
Q-3	A	Q-3	B	Q-3	A	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	B
Q-5B	B	Q-5	A	Q-5	B	Q-5	A
Q-6	B	Q-6	A	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has moderate potential for enhancement
Education	Wetland has potential for educational use
Recreation	Wetland provides recreational opportunities
Aesthetic Quality	Wetland is considered to be moderately pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-2
Location:	Arch Cape	Approx. Area (acres):	0.33
Date:	4/17/2008	Wetland Types(s):	PFO, PSS, PEM
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is between 10% and 40%	
Result:	Wetland's fish habitat function is impacted or degraded		
Rationale:	More than 75% of the stream is shaded	No adjacent Water Quality Limited streams	
	Only portions of stream are modified	Adjacent land is mostly developed	
	10-25% of stream has instream structures	Warmwater fish present in stream	
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is surface flow	Less than 0.5 acre but connected to other waters	
	Wetland does not flood or pond	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is lost or not present		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Wetland does not flood or pond	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has moderate potential for enhancement		
Rationale:	One or more functions lost/not present	Wetland is less than 0.5 acres	
	Primary water source is surface flow	Wetland buffer is between 10% and 40%	
	Flow into wetland is not restricted	Potentially sensitive to future impacts	
Result:	Wetland has potential for educational use		
Rationale:	Result is culverted twice. The downstream portion of the channel	Maintained public access within 250 feet	
	No visible hazards to public	Wetland is limited mobility accessible	
	Public access to other habitats exist		
Result:	Wetland provides recreational opportunities		
Rationale:	Maintained public access within 250 feet	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	Maintained trails, viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be moderately pleasing		
Rationale:	More than two Cowardin classes are visible	Wetland surrounded by landscaped areas	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

Oregon Freshwater Wetland Assessment Methodology

(Revised Edition, April 1996)

Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-3
Project Location:	Arch Cape	Wetland Type(s):	PEM, PFO
Date(s) of field work:	4/17/08, 4/18/08, 5/16/08	Approx. Area (acres):	0.40
Onsite Assessment?:	Yes	Investigator(s):	SE / ME
Wetland Location:	East & west of Woodland Heights, within & south of Spruce St. ROW		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	A	Q-1	C	Q-1	B	Q-1	B
Q-2	C	Q-2	B	Q-2	C	Q-2	C	Q-2	B
Q-3	B	Q-3	A	Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	C	Q-4	A
Q-5	A	Q-5	C	Q-5	A	Q-5	C	Q-5	A
Q-6	A	Q-6	C	Q-6	C	Q-6	A	Q-6	C
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Wetland's fish habitat function is impacted or degraded
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is lost or not present
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1	C	Q-1	C	Q-1	B
Q-2	B	Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	B	Q-3	C
Q-4	C	Q-4	B	Q-4	B	Q-4	A
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has moderate potential for enhancement
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be moderately pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-3
Location:	Arch Cape	Approx. Area (acres):	0.40
Date:	4/17/08, 4/18/08, 5/16/08	Wetland Types(s):	PEM, PFO
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Herbaceous vegetation, no ponding	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Wetland's fish habitat function is impacted or degraded		
Rationale:	More than 75% of the stream is shaded	No adjacent Water Quality Limited streams	
	Only portions of stream are modified	Adjacent land is mostly developed	
	>25% of stream has instream structures	Stream does not contain fish	
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Less than 0.5 acre but connected to other waters	
	Wetland does not flood or pond	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is lost or not present		
Rationale:	Wetland is not within 100 year floodplain	Herbaceous vegetation, no ponding	
	Wetland does not flood or pond	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Herbaceous vegetation, no ponding	
Result:	Wetland has moderate potential for enhancement		
Rationale:	One or more functions lost/not present	Wetland is less than 0.5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	Other habitats can be observed not accessed		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	Unmaintained trails, viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be moderately pleasing		
Rationale:	Two Cowardin classes visible	Wetland surrounded by natural areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

Oregon Freshwater Wetland Assessment Methodology

(Revised Edition, April 1996)

Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-4
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	10/1/2008	Approx. Area (acres):	0.28
Onsite Assessment?:	Yes	Investigator(s):	SE / ME
Wetland Location:	Between Cedar St. and Hemlock St; east of Woodland Heights Rd.		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2		Q-2	B	Q-2	B	Q-2	B
Q-3	C	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	B	Q-4	A
Q-5	A	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	A	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	B								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	B
Q-2	B	Q-2	B	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	C	Q-3	A
Q-4	C	Q-4	C	Q-4	B	Q-4	A
Q-5B	B	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be moderately pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI		Wetland:	ARC-4
Location:	Arch Cape	Approx. Area (acres):	0.28	
Date:	10/1/2008	Wetland Types(s):	PFO	
Result:	Wetland provides habitat for some wildlife species			
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams		
	Dominated by woody vegetation	Adjacent land is mostly developed		
	Less than 0.5 acres of open water	Wetland buffer is between 10% and 40%		
Result:	Fish habitat was not assessed for this wetland			
Rationale:				
Result:	Wetland's water-quality function is impacted or degraded			
Rationale:	Primary water source is groundwater	Less than 0.5 acre but connected to other waters		
	Can't determine if wetland floods or ponds	Adjacent land is mostly developed		
	High wetland vegetation cover	No adjacent Water Quality Limited streams		
Result:	Wetland's hydrologic control is impacted or degraded			
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation		
	Can't determine if wetland floods or ponds	Development downslope of wetland		
	Minor restrictions slow down the water	Development upslope of wetland		
Result:	Wetland is potentially sensitive to future impacts			
Rationale:	Stream not modified	Adjacent land is mostly developed		
	Water not taken out	Adjacent zoning is primarily development		
	No adjacent Water Quality Limited streams	Dominated by woody vegetation		
Result:	Wetland has high enhancement potential			
Rationale:	Wetland functions are impacted or degraded	Wetland is less than 0.5 acres		
	Primary water source is groundwater	Wetland buffer is between 10% and 40%		
		Potentially sensitive to future impacts		
Result:	Wetland site is not appropriate for educational use			
Rationale:	No access allowed to wetland	No access point to wetland exists		
	1 or 2 visible safety hazards	Wetland is not limited mobility accessible		
	No access or observation of other habitats			
Result:	Wetland is not appropriate or does not provide rec. opportunities			
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife		
	No boat launching can be developed	No fishing is allowed		
	No trails or viewing areas exist	No hunting is allowed		
Result:	Wetland is considered to be moderately pleasing			
Rationale:	Two Cowardin classes visible	Wetland surrounded by natural areas		
	25 - 50% of wetland can be seen	Natural odors present at wetland		
	No visual detractors are present	Some traffic and natural noises are present		

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-5
Project Location:	Arch Cape	Wetland Type(s):	PSS
Date(s) of field work:	4/17/2008	Approx. Area (acres):	0.11
Onsite Assessment?:	Yes	Investigator(s):	SE / ME
Wetland Location:	West of Highway 101, South of Shark Creek Lane		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	A
Q-2	A	Q-2		Q-2	C	Q-2	C	Q-2	A
Q-3	C	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	C	Q-4	A	Q-4	A
Q-5	B	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	B	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	C								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is lost or not present
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	C	Q-3	C
Q-4	C	Q-4	C	Q-4	B	Q-4	B
Q-5B	C	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has little enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-5
Location:	Arch Cape	Approx. Area (acres):	0.11
Date:	4/17/2008	Wetland Type(s):	PSS
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is less than 10%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is lost or not present		
Rationale:	Primary water source is groundwater	Isolated from other wetlands	
	Wetland does not flood or pond	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Wetland does not flood or pond	Development downslope of wetland	
	Flow out of wetland is restricted	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed	
	Water is taken out or isolated wetland	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has little enhancement potential		
Rationale:	One or more functions lost/not present	Wetland is less than 0.5 acres	
	Primary water source is groundwater	Wetland buffer is less than 10%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	No access or observation of other habitats		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by landscaped areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-6
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	7/24/2008	Approx. Area (acres):	0.33
Onsite Assessment?:	No	Investigator(s):	ME/SE
Wetland Location:	East of Highway 101, South of Shark Creek Lane		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1	A	Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2	A	Q-2	B	Q-2	B	Q-2	B
Q-3	B	Q-3	B	Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	C	Q-4	C
Q-5	A	Q-5	A	Q-5	C	Q-5	A	Q-5	A
Q-6	B	Q-6	C	Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	A								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides diverse wildlife habitat
Fish Habitat	Wetland's fish habitat function is intact
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1		Q-1	C	Q-1	C	Q-1	C
Q-2		Q-2	A	Q-2	C	Q-2	C
Q-3		Q-3	A	Q-3	C	Q-3	A
Q-4		Q-4	B	Q-4	A	Q-4	A
Q-5B		Q-5	C	Q-5	B	Q-5	B
Q-6		Q-6	B	Q-6	B	Q-6	B

Results:

Enhancement Potential	Due to diverse wildlife habitat, this wetland cannot be enhanced
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-6
Location:	Arch Cape	Approx. Area (acres):	0.33
Date:	7/24/2008	Wetland Types(s):	PFO
Result:	Wetland provides diverse wildlife habitat		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is primarily open space	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Wetland's fish habitat function is intact		
Rationale:	More than 75% of the stream is shaded	No adjacent Water Quality Limited streams	
	Stream is in a natural channel	Adjacent land is primarily open space	
	10-25% of stream has instream structures	Stream does not contain fish	
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Less than 0.5 acre but connected to other waters	
	Can't determine if wetland floods or ponds	Adjacent land is primarily open space	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Can't determine if wetland floods or ponds	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is primarily open space	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Due to diverse wildlife habitat, this wetland cannot be enhanced		
Rationale:			
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	Other habitats can be observed not accessed		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides diverse wildlife habitat	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas	
	Less than 25% of wetland can be seen	Unpleasant odors are present sometimes	
	No visual detractors are present	Continuous traffic and natural noises occur	

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(Revised Edition, April 1996)

Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-7
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	7/24/2008	Approx. Area (acres):	0.89
Onsite Assessment?:	No	Investigator(s):	SE / ME
Wetland Location:	East of Highway 101, North and south of Upland Drive		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2		Q-2	B	Q-2	B	Q-2	B
Q-3	C	Q-3		Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	A	Q-4	C
Q-5	B	Q-5		Q-5	C	Q-5	A	Q-5	A
Q-6	B	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	A								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	A	Q-2	C	Q-2	C
Q-3		Q-3	B	Q-3	B	Q-3	A
Q-4	B	Q-4	B	Q-4	B	Q-4	A
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	B

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-7
Location:	Arch Cape	Approx. Area (acres):	0.89
Date:	7/24/2008	Wetland Types(s):	PFO
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is primarily open space	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Can't determine if wetland floods or ponds	Adjacent land is primarily open space	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Can't determine if wetland floods or ponds	Development downslope of wetland	
	Flow out of wetland is restricted	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is primarily open space	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is between 0.5 and 5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	Difficult to identify the wetland boundary because access is restricted	Wetland is not limited mobility accessible	
	Other habitats can be observed not accessed		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	Unmaintained trails, viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas	
	Less than 25% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Continuous traffic and natural noises occur	

Oregon Freshwater Wetland Assessment Methodology

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-8
Project Location:	Arch Cape	Wetland Type(s):	PFO, PSS
Date(s) of field work:	4/18/2008	Approx. Area (acres):	3.54
Onsite Assessment?:	No	Investigator(s):	SE / ME
Wetland Location:	West of Highway 101, North and south of Cottage Way & Ocean Road		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	A	Q-1	C	Q-1	A	Q-1	A
Q-2	A	Q-2	B	Q-2	B	Q-2	B	Q-2	B
Q-3	A	Q-3	B	Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	C	Q-4	A
Q-5	B	Q-5	C	Q-5	A	Q-5	A	Q-5	A
Q-6	A	Q-6	C	Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	A		
Q-8	C								
Q-9A									
Q-9B	C								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Wetland's fish habitat function is impacted or degraded
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is intact
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	A
Q-2	B	Q-2	A	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	C	Q-3	C
Q-4	B	Q-4	C	Q-4	B	Q-4	C
Q-5B	C	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	A	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-8
Location:	Arch Cape	Approx. Area (acres):	3.54
Date:	4/18/2008	Wetland Type(s):	PFO, PSS
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is less than 10%	
Result:	Wetland's fish habitat function is impacted or degraded		
Rationale:	More than 75% of the stream is shaded	No adjacent Water Quality Limited streams	
	Only portions of stream are modified	Adjacent land is mostly developed	
	10-25% of stream has instream structures	Stream does not contain fish	
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Can't determine if wetland floods or ponds	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is intact		
Rationale:	Wetland is within 100 year floodplain	Dominated by woody vegetation	
	Can't determine if wetland floods or ponds	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is between 0.5 and 5 acres	
	Primary water source is groundwater	Wetland buffer is less than 10%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is limited mobility accessible	
	No access or observation of other habitats		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	More than two Cowardin classes are visible	Wetland surrounded by development	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

Oregon Freshwater Wetland Assessment Methodology

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-9
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	10/1/2008	Approx. Area (acres):	0.66
Onsite Assessment?:	No	Investigator(s):	SE / ME
Wetland Location:	East of Highway 101; North of Ocean Road		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2		Q-2	B	Q-2	B	Q-2	B
Q-3	C	Q-3		Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	C	Q-4	A
Q-5	A	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	A	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	B								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	B	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	C	Q-3	A
Q-4	B	Q-4	B	Q-4	B	Q-4	A
Q-5B	B	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	B

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be moderately pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-9
Location:	Arch Cape	Approx. Area (acres):	0.66
Date:	10/1/2008	Wetland Type(s):	PFO
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is between 10% and 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Can't determine if wetland floods or ponds	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Can't determine if wetland floods or ponds	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is between 0.5 and 5 acres	
	Primary water source is groundwater	Wetland buffer is between 10% and 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	1 or 2 visible safety hazards	Wetland is not limited mobility accessible	
	Other habitats can be observed not accessed		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be moderately pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Continuous traffic and natural noises occur	

Oregon Freshwater Wetland Assessment Methodology

(Revised Edition, April 1996)

Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-10
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	4/18/2008	Approx. Area (acres):	0.14
Onsite Assessment?:	No	Investigator(s):	ME / SE
Wetland Location:	Located south of Markum Road, within and east of Cannon Street		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	A	Q-1	A
Q-2	A	Q-2		Q-2	B	Q-2	B	Q-2	A
Q-3	C	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	C	Q-4	C	Q-4	A
Q-5	B	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	B	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	A		
Q-8	C								
Q-9A									
Q-9B	C								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is intact
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	A	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	C	Q-3	C
Q-4	C	Q-4	C	Q-4	B	Q-4	C
Q-5B	C	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has moderate potential for enhancement
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-10
Location:	Arch Cape	Approx. Area (acres):	0.14
Date:	4/18/2008	Wetland Types(s):	PFO
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is less than 10%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Isolated from other wetlands	
	Can't determine if wetland floods or ponds	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is intact		
Rationale:	Wetland is within 100 year floodplain	Dominated by woody vegetation	
	Can't determine if wetland floods or ponds	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed	
	Water is taken out or isolated wetland	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has moderate potential for enhancement		
Rationale:	Wetland functions are impacted or degraded	Wetland is less than 0.5 acres	
	Primary water source is groundwater	Wetland buffer is less than 10%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	No access or observation of other habitats		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by development	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-11
Project Location:	Arch Cape	Wetland Type(s):	PEM, PFO
Date(s) of field work:	6/13/2008	Approx. Area (acres):	1.10
Onsite Assessment?:	Yes	Investigator(s):	SE / ME
Wetland Location:	East of Highway 101, North and south of Hug Point Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	A	Q-1	C	Q-1	B	Q-1	B
Q-2	B	Q-2	A	Q-2	A	Q-2	A	Q-2	B
Q-3	B	Q-3	B	Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	C	Q-4	C
Q-5	A	Q-5	A	Q-5	C	Q-5	B	Q-5	A
Q-6	A	Q-6	C	Q-6	C	Q-6	A	Q-6	B
Q-7	A					Q-7	C		
Q-8	A								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides diverse wildlife habitat
Fish Habitat	Wetland's fish habitat function is intact
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1		Q-1	C	Q-1	C	Q-1	B
Q-2		Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	A	Q-3	C	Q-3	A
Q-4		Q-4	B	Q-4	A	Q-4	A
Q-5B		Q-5	C	Q-5	B	Q-5	A
Q-6		Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Due to diverse wildlife habitat, this wetland cannot be enhanced
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-11
Location:	Arch Cape	Approx. Area (acres):	1.10
Date:	6/13/2008	Wetland Types(s):	PEM, PFO
Result:	Wetland provides diverse wildlife habitat		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Herbaceous vegetation & ponding	Adjacent land is primarily open space	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Wetland's fish habitat function is intact		
Rationale:	More than 75% of the stream is shaded	No adjacent Water Quality Limited streams	
	Stream is in a natural channel	Adjacent land is primarily open space	
	10-25% of stream has instream structures	Stream does not contain fish	
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Wetland floods/ponds in growing season	Adjacent land is primarily open space	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Herbaceous vegetation & ponding	
	Wetland floods/ponds in growing season	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Herbaceous vegetation & ponding	
Result:	Due to diverse wildlife habitat, this wetland cannot be enhanced		
Rationale:			
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	Other habitats can be observed not accessed		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides diverse wildlife habitat	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be pleasing		
Rationale:	Two Cowardin classes visible	Wetland surrounded by natural areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Some traffic and natural noises are present	

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(Revised Edition, April 1996)

Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-12
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	4/18/2008	Approx. Area (acres):	1.78
Onsite Assessment?:	Yes	Investigator(s):	ME / SE
Wetland Location:	West of Highway 101, North and south of Arch Cape Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	A	Q-1	B
Q-2	A	Q-2		Q-2	A	Q-2	A	Q-2	B
Q-3	C	Q-3		Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	A	Q-4	A
Q-5	A	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	A	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	A		
Q-8	C								
Q-9A									
Q-9B	C								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is intact
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	B	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	C	Q-3	A
Q-4	B	Q-4	C	Q-4	B	Q-4	B
Q-5B	C	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	B

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be moderately pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-12
Location:	Arch Cape	Approx. Area (acres):	1.78
Date:	4/18/2008	Wetland Types(s):	PFO
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is less than 10%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Wetland floods/ponds in growing season	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is intact		
Rationale:	Wetland is within 100 year floodplain	Dominated by woody vegetation	
	Wetland floods/ponds in growing season	Development downslope of wetland	
	Flow out of wetland is restricted	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is between 0.5 and 5 acres	
	Primary water source is groundwater	Wetland buffer is less than 10%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	1 or 2 visible safety hazards	Wetland is not limited mobility accessible	
	No access or observation of other habitats		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be moderately pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by landscaped areas	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Continuous traffic and natural noises occur	

Oregon Freshwater Wetland Assessment Methodology

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-13
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	4/18, 6/12, & 7/24, 2008	Approx. Area (acres):	13.20
Onsite Assessment?:	Partial	Investigator(s):	ME / SE
Wetland Location:	East of Highway 101, South of Ocean View and North of Webb Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2		Q-2	A	Q-2	A	Q-2	B
Q-3	A	Q-3		Q-3	A	Q-3	A	Q-3	C
Q-4	C	Q-4		Q-4	A	Q-4	B	Q-4	C
Q-5	A	Q-5		Q-5	C	Q-5	A	Q-5	A
Q-6	A	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	A								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides diverse wildlife habitat
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is intact
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1		Q-1	A	Q-1	B	Q-1	C
Q-2		Q-2	A	Q-2	C	Q-2	C
Q-3		Q-3	A	Q-3	C	Q-3	A
Q-4		Q-4	A	Q-4	A	Q-4	A
Q-5B		Q-5	B	Q-5	B	Q-5	A
Q-6		Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Due to diverse wildlife habitat, this wetland cannot be enhanced
Education	Wetland has educational uses
Recreation	Wetland has the potential to provide recreational activities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-13
Location:	Arch Cape	Approx. Area (acres):	13.20
Date:	4/18, 6/12, & 7/24, 2008	Wetland Types(s):	PFO
Result:	Wetland provides diverse wildlife habitat		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is primarily open space	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is less than 0.5 acres	
	Wetland floods/ponds in growing season	Adjacent land is primarily open space	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is intact		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Wetland floods/ponds in growing season	Development downslope of wetland	
	Minor restrictions slow down the water	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is primarily open space	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Due to diverse wildlife habitat, this wetland cannot be enhanced		
Rationale:			
Result:	Wetland has educational uses		
Rationale:	Wetland is open to the public	Unmaintained public access within 250 feet	
	No visible hazards to public	Wetland is not limited mobility accessible	
	Public access to other habitats exist		
Result:	Wetland has the potential to provide recreational activities		
Rationale:	Unmaintained public access within 250 feet	Wetland provides diverse wildlife habitat	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas	
	Less than 25% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Some traffic and natural noises are present	

Oregon Freshwater Wetland Assessment Methodology

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-14
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	4/18/2008	Approx. Area (acres):	0.05
Onsite Assessment?:	Yes	Investigator(s):	ME / SE
Wetland Location:	East of Highway 101, South of Webb Avenue, East of Park Street		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	A
Q-2	A	Q-2		Q-2	A	Q-2	A	Q-2	A
Q-3	C	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	C	Q-4	A	Q-4	A
Q-5	B	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	B	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	A		
Q-8	C								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is intact
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	C	Q-3	A
Q-4	C	Q-4	C	Q-4	B	Q-4	A
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-14
Location:	Arch Cape	Approx. Area (acres):	0.05
Date:	4/18/2008	Wetland Types(s):	PFO
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Isolated from other wetlands	
	Wetland floods/ponds in growing season	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is intact		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Wetland floods/ponds in growing season	Development downslope of wetland	
	Flow out of wetland is restricted	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed	
	Water is taken out or isolated wetland	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is less than 0.5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	No access or observation of other habitats		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-15
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	6/12/08 & 6/13/08	Approx. Area (acres):	0.02
Onsite Assessment?:	Yes	Investigator(s):	ME / SE
Wetland Location:	Northeast of corner of 2nd Street and Webb Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	A
Q-2	A	Q-2		Q-2	B	Q-2	B	Q-2	A
Q-3	C	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	C	Q-4	A	Q-4	A
Q-5	B	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	B	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	A		
Q-8	C								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is intact
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	B	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	C	Q-3	B
Q-4	C	Q-4	C	Q-4	B	Q-4	B
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-15
Location:	Arch Cape	Approx. Area (acres):	0.02
Date:	6/12/08 & 6/13/08	Wetland Types(s):	PFO
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Isolated from other wetlands	
	Can't determine if wetland floods or ponds	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is intact		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Can't determine if wetland floods or ponds	Development downslope of wetland	
	Flow out of wetland is restricted	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed	
	Water is taken out or isolated wetland	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is less than 0.5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	1 or 2 visible safety hazards	Wetland is not limited mobility accessible	
	No access or observation of other habitats		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by landscaped areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can be removed	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	ARC-16
Project Location:	Arch Cape	Wetland Type(s):	PFO
Date(s) of field work:	6/12/2008 & 7/24/08	Approx. Area (acres):	6.43
Onsite Assessment?:	Yes for portions	Investigator(s):	ME / SE
Wetland Location:	E of Highway 101, S of Arch Cape Creek, and within platted Tyler Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1	A	Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2	A	Q-2	A	Q-2	A	Q-2	B
Q-3	C	Q-3	C	Q-3	A	Q-3	A	Q-3	C
Q-4	C	Q-4	A	Q-4	A	Q-4	C	Q-4	C
Q-5	A	Q-5	A	Q-5	C	Q-5	A	Q-5	A
Q-6	A	Q-6	A	Q-6	C	Q-6	C	Q-6	A
Q-7	A					Q-7	C		
Q-8	A								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Wetland's fish habitat function is intact
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	A	Q-2	C	Q-2	C
Q-3		Q-3	A	Q-3	B	Q-3	A
Q-4	A	Q-4	C	Q-4	B	Q-4	A
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	B

Results:

Enhancement Potential	Wetland has moderate potential for enhancement
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	ARC-16
Location:	Arch Cape	Approx. Area (acres):	6.43
Date:	6/12/2008 & 7/24/08	Wetland Types(s):	PFO
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is primarily open space	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Wetland's fish habitat function is intact		
Rationale:	More than 75% of the stream is shaded	No adjacent Water Quality Limited streams	
	Stream is in a natural channel	Adjacent land is primarily open space	
	<10% of stream has instream structures	Salmon and/or trout present in stream	
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is more than 5 acres in size	
	Wetland floods/ponds in growing season	Adjacent land is primarily open space	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Wetland floods/ponds in growing season	Open space downslope of wetland	
	Water has unrestricted flow out of wetland	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is primarily open space	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has moderate potential for enhancement		
Rationale:	One or more functions lost/not present	Wetland is greater than 5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	No access or observation of other habitats		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	Unmaintained trails, viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas	
	Less than 25% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Continuous traffic and natural noises occur	

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Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-1
Project Location:	Cove Beach	Wetland Type(s):	PSS, PEM, PUB
Date(s) of field work:	5/15/2008	Approx. Area (acres):	4.36
Onsite Assessment?:	Yes	Investigator(s):	ME/SE
Wetland Location:	North of Clatsop Avenue, east and west of 1st and 2nd Avenues		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	B	Q-1	C	Q-1	A	Q-1	A
Q-2	A	Q-2	A	Q-2	A	Q-2	A	Q-2	B
Q-3	B	Q-3	C	Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	A	Q-4	A
Q-5	A	Q-5	C	Q-5	A	Q-5	A	Q-5	A
Q-6	B	Q-6	B	Q-6	C	Q-6	C	Q-6	A
Q-7	A					Q-7	A		
Q-8	C								
Q-9A									
Q-9B	B								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Wetland's fish habitat function is impacted or degraded
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is intact
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	A	Q-1	B	Q-1	A
Q-2	B	Q-2	B	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	B	Q-3	A
Q-4	B	Q-4	A	Q-4	B	Q-4	A
Q-5B	B	Q-5	B	Q-5	A	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland has potential for educational use
Recreation	Wetland has the potential to provide recreational activities
Aesthetic Quality	Wetland is considered to be pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-1
Location:	Cove Beach	Arch Cape	4.36
Date:	5/15/2008	Wetland Types(s):	PSS, PEM, PUB
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is between 10% and 40%	
Result:	Wetland's fish habitat function is impacted or degraded		
Rationale:	< 20% of shoreline is shaded	No adjacent Water Quality Limited streams	
	Pond does not have both deep & shallow water	Adjacent land is mostly developed	
	> 25% of pond has cover objects	Pond contains other fish species	
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Wetland floods/ponds in growing season	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is intact		
Rationale:	Wetland is within 100 year floodplain	Dominated by woody vegetation	
	Wetland floods/ponds in growing season	Open space downslope of wetland	
	Flow out of wetland is restricted	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is between 0.5 and 5 acres	
	Primary water source is groundwater	Wetland buffer is between 10% and 40%	
		Potentially sensitive to future impacts	
Result:	Wetland has potential for educational use		
Rationale:	Wetland is open to the public	Unmaintained public access within 250 feet	
	1 or 2 visible safety hazards	Wetland is not limited mobility accessible	
	Public access to other habitats exist		
Result:	Wetland has the potential to provide recreational activities		
Rationale:	Unmaintained public access within 250 feet	Wetland provides habitat for some wildlife	
	No boat launching can be developed	Fishing is allowed	
	Unmaintained trails, viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be pleasing		
Rationale:	More than two Cowardin classes are visible	Wetland surrounded by natural areas	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-2
Project Location:	Cove Beach	Wetland Type(s):	PFO, PEM
Date(s) of field work:	5/15/2008	Approx. Area (acres):	1.31
Onsite Assessment?:	Onsite	Investigator(s):	ME/SE
Wetland Location:	North and south of Clatsop Street.		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1		Q-1	C	Q-1	B	Q-1	A
Q-2	A	Q-2		Q-2	A	Q-2	A	Q-2	B
Q-3	B	Q-3		Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	C	Q-4	A
Q-5	B	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	A	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	B	Q-1	C	Q-1	B
Q-2	B	Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	C	Q-3	C
Q-4	B	Q-4	A	Q-4	B	Q-4	A
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	A	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland has potential for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be moderately pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-2
Location:	Cove Beach	Approx. Area (acres):	1.31
Date:	5/15/2008	Wetland Types(s):	PFO, PEM
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Wetland floods/ponds in growing season	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Wetland floods/ponds in growing season	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is between 0.5 and 5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland has potential for educational use		
Rationale:	Wetland access by landowner permission	No access point to wetland exists	
	Logically connected to wetland COV-1 located to t	Wetland is limited mobility accessible	
	Public access to other habitats exist		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be moderately pleasing		
Rationale:	Two Cowardin classes visible	Wetland surrounded by natural areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-3
Project Location:	Cove Beach	Wetland Type(s):	PFO
Date(s) of field work:	5/16/2008	Approx. Area (acres):	0.06
Onsite Assessment?:	Yes	Investigator(s):	ME/SE
Wetland Location:	West of Highway 101, North of Cove Beach Road		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2		Q-2	C	Q-2	C	Q-2	B
Q-3	B	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	C	Q-4	C
Q-5	B	Q-5		Q-5	C	Q-5	A	Q-5	C
Q-6	B	Q-6		Q-6	C	Q-6	C	Q-6	A
Q-7	A					Q-7	C		
Q-8	A								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides diverse wildlife habitat
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is lost or not present
Hydrologic Control	Wetland's hydrologic control function is lost or not present
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1		Q-1	B	Q-1	C	Q-1	C
Q-2		Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	A	Q-3	C	Q-3	A
Q-4		Q-4	B	Q-4	A	Q-4	A
Q-5B		Q-5	C	Q-5	B	Q-5	A
Q-6		Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Due to diverse wildlife habitat, this wetland cannot be enhanced
Education	Wetland has potential for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-3
Location:	Cove Beach	Approx. Area (acres):	0.06
Date:	5/16/2008	Wetland Types(s):	PFO
Result:	Wetland provides diverse wildlife habitat		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is primarily open space	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Rationale:			
Rationale:			
Result:	Wetland's water-quality function is lost or not present		
Rationale:	Primary water source is groundwater	Less than 0.5 acre but connected to other waters	
	Wetland does not flood or pond	Adjacent land is primarily open space	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is lost or not present		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Wetland does not flood or pond	Open space downslope of wetland	
	Water has unrestricted flow out of wetland	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is primarily open space	
	Water not taken out	Adjacent zoning is mostly open space	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Due to diverse wildlife habitat, this wetland cannot be enhanced		
Rationale:			
Rationale:			
Rationale:			
Result:	Wetland has potential for educational use		
Rationale:	Wetland access by landowner permission	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	Other habitats can be observed not accessed		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides diverse wildlife habitat	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-4
Project Location:	Cove Beach	Wetland Type(s):	PFO
Date(s) of field work:	5/15/2008	Approx. Area (acres):	0.24
Onsite Assessment?:	Yes	Investigator(s):	ME/SE
Wetland Location:	North of Cove Beach Road on Water District property.		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2		Q-2	A	Q-2	A	Q-2	B
Q-3	C	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	B	Q-4	C
Q-5	A	Q-5		Q-5	C	Q-5	A	Q-5	C
Q-6	A	Q-6		Q-6	C	Q-6	C	Q-6	A
Q-7	A					Q-7	C		
Q-8	A								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	B	Q-1	A	Q-1	C
Q-2	B	Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	B	Q-3	C
Q-4	C	Q-4	B	Q-4	B	Q-4	A
Q-5B	A	Q-5	A	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland has potential for educational use
Recreation	Wetland has the potential to provide recreational activities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-4
Location:	Cove Beach	Approx. Area (acres):	0.24
Date:	5/15/2008	Wetland Types(s):	PFO
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is primarily open space	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is less than 0.5 acre	
	Wetland floods/ponds in growing season	Adjacent land is primarily open space	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Wetland floods/ponds in growing season	Open space downslope of development	
	Minor restrictions slow down the water	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is primarily open space	
	Water not taken out	Adjacent zoning is mostly open space	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is less than 0.5 acre	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland has potential for educational use		
Rationale:	Wetland access by landowner permission	Maintained public access within 250 feet	
	No visible hazards to public	Wetland is not limited mobility accessible	
	Other habitats can be observed not accessed		
Result:	Wetland has the potential to provide recreational activities		
Rationale:	Maintained public access within 250 feet	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	Unmaintained trails, viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-5
Project Location:	Cove Beach	Wetland Type(s):	PEM, PUB
Date(s) of field work:	5/15/2008	Approx. Area (acres):	0.37
Onsite Assessment?:	No	Investigator(s):	ME/SE
Wetland Location:	Located north of Ocean Way, east of 2nd Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	B	Q-1	A
Q-2	B	Q-2	C	Q-2	A	Q-2	A	Q-2	B
Q-3	C	Q-3	B	Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	C	Q-4	A
Q-5	A	Q-5	C	Q-5	A	Q-5	B	Q-5	A
Q-6	B	Q-6	C	Q-6	C	Q-6	A	Q-6	B
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	B								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Wetland's fish habitat function is impacted or degraded
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	B
Q-2	B	Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	C	Q-3	A
Q-4	B	Q-4	B	Q-4	B	Q-4	B
Q-5B	B	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-5
Location:	Cove Beach	Approx. Area (acres):	0.37
Date:	5/15/2008	Wetland Types(s):	PEM, PUB
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Herbaceous vegetation & ponding	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is between 10% and 40%	
Result:	Wetland's fish habitat function is impacted or degraded		
Rationale:		No adjacent Water Quality Limited streams	
		Adjacent land is mostly developed	
		Pond does not contain fish	
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Wetland floods/ponds in growing season	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Herbaceous vegetation & ponding	
	Wetland floods/ponds in growing season	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Herbaceous vegetation & ponding	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is between 0.5 and 5 acres	
	Primary water source is groundwater	Wetland buffer is between 10% and 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	Other habitats can be observed not accessed		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be pleasing		
Rationale:	Two Cowardin classes visible	Wetland surrounded by landscaped areas	
	>50% of wetland can be seen	Natural odors present at wetland	
	No visual detractors are present	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-6
Project Location:	Cove Beach	Wetland Type(s):	PEM
Date(s) of field work:	5/15/2008	Approx. Area (acres):	0.14
Onsite Assessment?:	No	Investigator(s):	ME/SE
Wetland Location:	South of Waring Street, East of First Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1		Q-1	C	Q-1	B	Q-1	B
Q-2	C	Q-2		Q-2	C	Q-2	C	Q-2	B
Q-3	C	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	C	Q-4	A
Q-5	A	Q-5		Q-5	A	Q-5	C	Q-5	A
Q-6	A	Q-6		Q-6	C	Q-6	A	Q-6	C
Q-7	A					Q-7	A		
Q-8	C								
Q-9A									
Q-9B	B								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control function is lost or not present
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	C	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	C
Q-5B	B	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	A	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has moderate potential for enhancement
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-6
Location:	Cove Beach	Approx. Area (acres):	0.14
Date:	5/15/2008	Wetland Types(s):	PEM
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Herbaceous vegetation, no ponding	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is between 10% and 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is less than 0.5 acre	
	Wetland does not flood or pond	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is lost or not present		
Rationale:	Wetland is not within 100 year floodplain	Herbaceous vegetation, no ponding	
	Wetland does not flood or pond	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Herbaceous vegetation, no ponding	
Result:	Wetland has moderate potential for enhancement		
Rationale:	One or more functions lost/not present	Wetland is less than 0.5 acre	
	Primary water source is groundwater	Wetland buffer is between 10% and 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is limited mobility accessible	
	Public access to other habitats exist		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by development	
	>50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-7
Project Location:	Cove Beach	Wetland Type(s):	PSS
Date(s) of field work:	5/16/2008	Approx. Area (acres):	0.26
Onsite Assessment?:	No	Investigator(s):	ME/SE
Wetland Location:	North of Richmond Street, west of 2nd Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1	B	Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2	A	Q-2	C	Q-2	C	Q-2	B
Q-3	C	Q-3	A	Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4	A	Q-4	C	Q-4	C	Q-4	A
Q-5	A	Q-5	C	Q-5	A	Q-5	A	Q-5	A
Q-6	B	Q-6	C	Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Wetland's fish habitat function is impacted or degraded
Water Quality	Wetland's water-quality function is lost or not present
Hydrologic Control	Wetland's hydrologic control function is lost or not present
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	B	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	A	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	C	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	A
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has moderate potential for enhancement
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is not aesthetically pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-7
Location:	Cove Beach	Approx. Area (acres):	0.26
Date:	5/16/2008	Wetland Types(s):	PSS
Result:	Wetland provides habitat for some wildlife species		
Rationale:	One Cowardin class with > 5 species	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Wetland's fish habitat function is impacted or degraded		
Rationale:	50-75% of stream is shaded	No adjacent Water Quality Limited streams	
	Stream is in a natural channel	Adjacent land is mostly developed	
	>25% of stream has instream structures	Stream does not contain fish	
Result:	Wetland's water-quality function is lost or not present		
Rationale:	Primary water source is groundwater	Isolated from other wetlands	
	Wetland does not flood or pond	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control function is lost or not present		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Wetland does not flood or pond	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has moderate potential for enhancement		
Rationale:	One or more functions lost/not present	Wetland is less than 0.5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	Public access to other habitats exist		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is not aesthetically pleasing		
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-8
Project Location:	Cove Beach	Wetland Type(s):	PEM
Date(s) of field work:	5/16/2008	Approx. Area (acres):	0.03
Onsite Assessment?:	No	Investigator(s):	ME/SE
Wetland Location:	Located north of Richmond Street, West of 2nd Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	C	Q-1		Q-1	C	Q-1	B	Q-1	A
Q-2	C	Q-2		Q-2	B	Q-2	B	Q-2	A
Q-3	C	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	C	Q-4	A	Q-4	A
Q-5	B	Q-5		Q-5	A	Q-5	C	Q-5	A
Q-6	B	Q-6		Q-6	C	Q-6	A	Q-6	C
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	C
Q-2	B	Q-2	A	Q-2	C	Q-2	A
Q-3		Q-3	B	Q-3	C	Q-3	A
Q-4	C	Q-4	B	Q-4	B	Q-4	A
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI		Wetland:	COV-8
Location:	Cove Beach	Approx. Area (acres):		0.03
Date:	5/16/2008	Wetland Types(s):		PEM
Result:	Wetland provides habitat for some wildlife species			
Rationale:	One Class with less than 5 species	No adjacent Water Quality limited streams		
	Herbaceous vegetation, no ponding	Adjacent land is mostly developed		
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%		
Result:	Fish habitat was not assessed for this wetland			
Rationale:				
Result:	Wetland's water-quality function is impacted or degraded			
Rationale:	Primary water source is groundwater	Isolated from other wetlands		
	Can't determine if wetland floods or ponds	Adjacent land is mostly developed		
	High wetland vegetation cover	No adjacent Water Quality Limited streams		
Result:	Wetland's hydrologic control is impacted or degraded			
Rationale:	Wetland is not within 100 year floodplain	Herbaceous vegetation, no ponding		
	Can't determine if wetland floods or ponds	Development downslope of wetland		
	Flow out of wetland is restricted	Open space upslope of wetland		
Result:	Wetland is potentially sensitive to future impacts			
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed		
	Water is taken out or isolated wetland	Adjacent zoning is primarily development		
	No adjacent Water Quality Limited streams	Herbaceous vegetation, no ponding		
Result:	Wetland has high enhancement potential			
Rationale:	Wetland functions are impacted or degraded	Wetland is less than 0.5 acres		
	Primary water source is groundwater	Wetland buffer is greater than 40%		
		Potentially sensitive to future impacts		
Result:	Wetland site is not appropriate for educational use			
Rationale:	No access allowed to wetland	No access point to wetland exists		
	No visible hazards to public	Wetland is not limited mobility accessible		
	Other habitats can be observed not accessed			
Result:	Wetland is not appropriate or does not provide rec. opportunities			
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife		
	No boat launching can be developed	No fishing is allowed		
	No trails or viewing areas exist	No hunting is allowed		
Result:	Wetland is considered to be pleasing			
Rationale:	One Cowardin class is visible	Wetland surrounded by natural areas		
	>50% of wetland can be seen	Natural odors present at wetland		
	No visual detractors are present	Some traffic and natural noises are present		

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Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-9
Project Location:	Arch Cape	Wetland Type(s):	PSS, PEM
Date(s) of field work:	5/16/2008	Approx. Area (acres):	0.87
Onsite Assessment?:	No	Investigator(s):	ME/SE
Wetland Location:	South of Richmond Street, East and west of First Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1		Q-1	C	Q-1	B	Q-1	B
Q-2	A	Q-2		Q-2	B	Q-2	B	Q-2	B
Q-3	B	Q-3		Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4		Q-4	B	Q-4	C	Q-4	A
Q-5	A	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	A	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	A		
Q-8	C								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	B
Q-2	B	Q-2	A	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	C	Q-3	C
Q-4	B	Q-4	A	Q-4	B	Q-4	B
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	A	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be moderately pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-9
Location:	Arch Cape	Approx. Area (acres):	0.87
Date:	5/16/2008	Wetland Types(s):	PSS, PEM
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Can't determine if wetland floods or ponds	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Can't determine if wetland floods or ponds	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is between 0.5 and 5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is limited mobility accessible	
	Public access to other habitats exist		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be moderately pleasing		
Rationale:	Two Cowardin classes visible	Wetland surrounded by landscaped areas	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

Oregon Freshwater Wetland Assessment Methodology

(Revised Edition, April 1996)

Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-10
Project Location:	Cove Beach	Wetland Type(s):	PSS, PEM
Date(s) of field work:	5/16/2008	Approx. Area (acres):	1.28
Onsite Assessment?:	Yes	Investigator(s):	ME/SE
Wetland Location:	East of second Avenue, south and north of Richmond Street		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	A	Q-1	C	Q-1	B	Q-1	B
Q-2	C	Q-2	B	Q-2	A	Q-2	A	Q-2	B
Q-3	B	Q-3	B	Q-3	A	Q-3	B	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	C	Q-4	A
Q-5	A	Q-5	C	Q-5	A	Q-5	C	Q-5	A
Q-6	A	Q-6	C	Q-6	C	Q-6	A	Q-6	C
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Wetland's fish habitat function is impacted or degraded
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	A	Q-1	B	Q-1	A
Q-2	B	Q-2	A	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	C	Q-3	C
Q-4	B	Q-4	A	Q-4	B	Q-4	B
Q-5B	A	Q-5	B	Q-5	B	Q-5	A
Q-6	B	Q-6	A	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland has educational uses
Recreation	Wetland has the potential to provide recreational activities
Aesthetic Quality	Wetland is considered to be moderately pleasing

Oregon Freshwater Wetland Assessment Methodology

Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-10
Location:	Cove Beach	Approx. Area (acres):	1.28
Date:	5/16/2008	Wetland Types(s):	PSS, PEM
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Herbaceous vegetation, no ponding	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Wetland's fish habitat function is impacted or degraded		
Rationale:	More than 75% of the stream is shaded	No adjacent Water Quality Limited streams	
	Only portions of stream are modified	Adjacent land is mostly developed	
	10-25% of stream has instream structures	Stream does not contain fish	
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Wetland is between 0.5 and 5 acres	
	Wetland floods/ponds in growing season	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Herbaceous vegetation, no ponding	
	Wetland floods/ponds in growing season	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Development upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream not modified	Adjacent land is mostly developed	
	Water not taken out	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is between 0.5 and 5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland has educational uses		
Rationale:	Wetland is open to the public	Unmaintained public access within 250 feet	
	No visible hazards to public	Wetland is limited mobility accessible	
	Public access to other habitats exist		
Result:	Wetland has the potential to provide recreational activities		
Rationale:	Unmaintained public access within 250 feet	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be moderately pleasing		
Rationale:	More than two Cowardin classes are visible	Wetland surrounded by landscaped areas	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

Oregon Freshwater Wetland Assessment Methodology

(Revised Edition, April 1996)

Wetland Assessment Summary Sheet



Pacific Habitat Services, Inc.

Project Name:	Arch Cape LWI	Wetland:	COV-11
Project Location:	Cove Beach	Wetland Type(s):	PSS, PEM
Date(s) of field work:	5/16/2008	Approx. Area (acres):	0.05
Onsite Assessment?:	No	Investigator(s):	ME/SE
Wetland Location:	North of Columbia Street, east of Second Avenue		

Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1		Q-1	C	Q-1	B	Q-1	A
Q-2	A	Q-2		Q-2	B	Q-2	B	Q-2	A
Q-3	B	Q-3		Q-3	A	Q-3	C	Q-3	C
Q-4	C	Q-4		Q-4	C	Q-4	C	Q-4	A
Q-5	A	Q-5		Q-5	A	Q-5	A	Q-5	A
Q-6	A	Q-6		Q-6	C	Q-6	A	Q-6	A
Q-7	A					Q-7	C		
Q-8	C								
Q-9A									
Q-9B	A								

Results:

Wildlife Habitat	Wetland provides habitat for some wildlife species
Fish Habitat	Fish habitat was not assessed for this wetland
Water Quality	Wetland's water-quality function is impacted or degraded
Hydrologic Control	Wetland's hydrologic control is impacted or degraded
Sensitivity to Impact	Wetland is potentially sensitive to future impacts

Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q	A	Q	A	Q	A	Q	A
Q-1	A	Q-1	C	Q-1	C	Q-1	B
Q-2	B	Q-2	A	Q-2	C	Q-2	B
Q-3		Q-3	B	Q-3	C	Q-3	C
Q-4	C	Q-4	A	Q-4	B	Q-4	A
Q-5B	A	Q-5	C	Q-5	B	Q-5	A
Q-6	B	Q-6	B	Q-6	B	Q-6	A

Results:

Enhancement Potential	Wetland has high enhancement potential
Education	Wetland site is not appropriate for educational use
Recreation	Wetland is not appropriate or does not provide rec. opportunities
Aesthetic Quality	Wetland is considered to be moderately pleasing

Oregon Freshwater Wetland Assessment Methodology

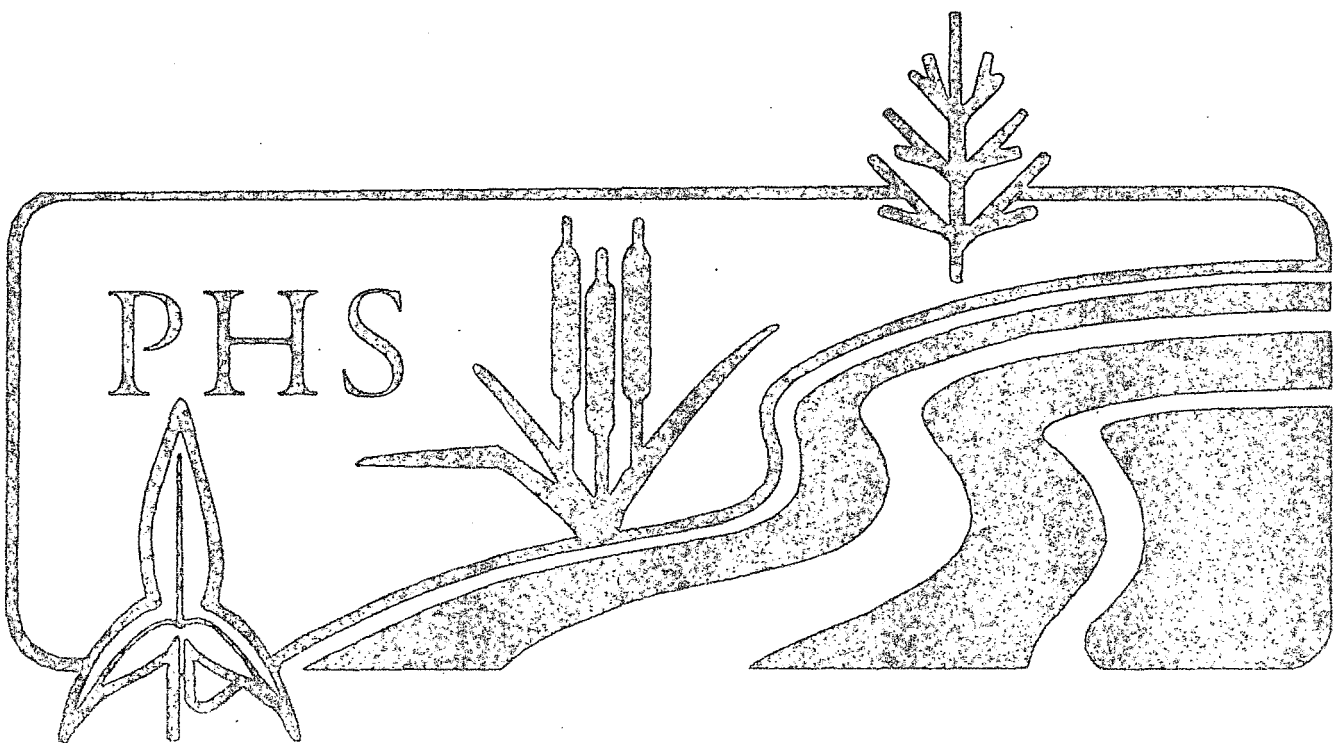
Functions and Conditions Summary Sheet



Project:	Arch Cape LWI	Wetland:	COV-11
Location:	Cove Beach	Approx. Area (acres):	0.05
Date:	5/16/2008	Wetland Types(s):	PSS, PEM
Result:	Wetland provides habitat for some wildlife species		
Rationale:	More than one Cowardin class	No adjacent Water Quality limited streams	
	Dominated by woody vegetation	Adjacent land is mostly developed	
	Less than 0.5 acres of open water	Wetland buffer is greater than 40%	
Result:	Fish habitat was not assessed for this wetland		
Rationale:			
Rationale:			
Result:	Wetland's water-quality function is impacted or degraded		
Rationale:	Primary water source is groundwater	Isolated from other wetlands	
	Can't determine if wetland floods or ponds	Adjacent land is mostly developed	
	High wetland vegetation cover	No adjacent Water Quality Limited streams	
Result:	Wetland's hydrologic control is impacted or degraded		
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation	
	Can't determine if wetland floods or ponds	Development downslope of wetland	
	Water has unrestricted flow out of wetland	Open space upslope of wetland	
Result:	Wetland is potentially sensitive to future impacts		
Rationale:	Stream modified or isolated wetland	Adjacent land is mostly developed	
	Water is taken out or isolated wetland	Adjacent zoning is primarily development	
	No adjacent Water Quality Limited streams	Dominated by woody vegetation	
Result:	Wetland has high enhancement potential		
Rationale:	Wetland functions are impacted or degraded	Wetland is less than 0.5 acres	
	Primary water source is groundwater	Wetland buffer is greater than 40%	
		Potentially sensitive to future impacts	
Result:	Wetland site is not appropriate for educational use		
Rationale:	No access allowed to wetland	No access point to wetland exists	
	No visible hazards to public	Wetland is not limited mobility accessible	
	Public access to other habitats exist		
Result:	Wetland is not appropriate or does not provide rec. opportunities		
Rationale:	No access point to wetland exists	Wetland provides habitat for some wildlife	
	No boat launching can be developed	No fishing is allowed	
	No trails or viewing areas exist	No hunting is allowed	
Result:	Wetland is considered to be moderately pleasing		
Rationale:	Two Cowardin classes visible	Wetland surrounded by natural areas	
	25 - 50% of wetland can be seen	Natural odors present at wetland	
	Visual detractors present, can't be removed	Some traffic and natural noises are present	

Appendix E

Locally Significant Wetland Determination Sheets



Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-1
Project Location:	Arch Cape	Approx. Area (acres):	0.23
Date:	4/17/2008	Wetland Types(s):	PFO, PSS

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?	Yes	
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		Yes

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-2
Project Location:	Arch Cape	Approx. Area (acres):	0.33
Date:	4/17/2008	Wetland Types(s):	PFO, PSS, PEM

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or ARC-2 includes wetlands immediately adjacent to Austin Creek, as well as off-channel?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-3
Project Location:	Arch Cape	Approx. Area (acres):	0.4
Date:	4/17/08, 4/18/08, 5/16/08	Wetland Types(s):	PEM, PFO

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-4
Project Location:	Arch Cape	Approx. Area (acres):	0.28
Date:	10/1/2008	Wetland Types(s):	PFO

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-5
Project Location:	Arch Cape	Approx. Area (acres):	0.11
Date:	4/17/2008	Wetland Types(s):	PSS

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function</i> intact ?		No
3 Is the wetland's <i>water quality function</i> intact ?		No
4 Is the wetland's <i>hydrologic control function</i> intact ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function</i> intact, or impacted or degraded ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function</i> intact, or impacted or degraded ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat</i> or <i>habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria; Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-6
Project Location:	Arch Cape	Approx. Area (acres):	0.33
Date:	7/24/2008	Wetland Types(s):	PFO

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?	Yes	
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		Yes

Optional Locally Significant Wetland Criteria : local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-7
Project Location:	Arch Cape	Approx. Area (acres):	0.89
Date:	7/24/2008	Wetland Types(s):	PFO

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria : This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Off-site assessment. Used best professional judgement along with aerial photo inter-mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria : local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-8
Project Location:	Arch Cape	Approx. Area (acres):	3.54
Date:	4/18/2008	Wetland Types(s):	PFO, PSS

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria : This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?	Yes	
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		Yes

Optional Locally Significant Wetland Criteria : local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-9
Project Location:	Arch Cape	Approx. Area (acres):	0.66
Date:	10/1/2008	Wetland Types(s):	PFO

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria : local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-10
Project Location:	Arch Cape	Approx. Area (acres):	0.14
Date:	4/18/2008	Wetland Types(s):	PFO

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?	Yes	
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		Yes

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-11
Project Location:	Arch Cape	Approx. Area (acres):	1.1
Date:	6/13/2008	Wetland Types(s):	PEM, PFO

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?	Yes	
2 Is the wetland's <i>fish habitat function intact</i> ?	Yes	
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied?		Yes

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-12
Project Location:	Arch Cape	Approx. Area (acres):	1.78
Date:	4/18/2008	Wetland Types(s):	PFO

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?	Yes	
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		Yes

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-13
Project Location:	Arch Cape	Approx. Area (acres):	13.2
Date:	4/18, 6/12, & 7/24, 2008	Wetland Types(s):	PFO

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria : This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?	Yes	
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?	Yes	
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		Yes

Optional Locally Significant Wetland Criteria : local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-14
Project Location:	Arch Cape	Approx. Area (acres):	0.05
Date:	4/18/2008	Wetland Types(s):	PFO

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria : This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?	Yes	
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		Yes

Optional Locally Significant Wetland Criteria : local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-15
Project Location:	Arch Cape	Approx. Area (acres):	0.02
Date:	6/12/08 & 6/13/08	Wetland Types(s):	PFO

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?	Yes	
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		Yes

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	ARC-16
Project Location:	Arch Cape	Approx. Area (acres):	6.43
Date:	6/12/2008 & 7/24/08	Wetland Types(s):	PFO

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria : This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?	Yes	
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?	Yes	
Mandatory Locally Significant Wetland criteria satisfied ?		Yes

Optional Locally Significant Wetland Criteria : local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Locally Significant Wetland

Goal 17 Significant Wetland (Major Marsh) Criteria



Project Name:	Arch Cape LWI	Wetland Code:	COV-1
Project Location:	Cove Beach	Approx. Area (acres):	4.36
Date:	5/15/2008	Wetland Types(s):	PSS, PEM, POW

Exclusions: A wetland cannot be designated as a major marsh if the answer to any of the criteria below is "Yes".

YES NO

- 1 Is this wetland artificially created entirely from upland and:
 - a. created for the purpose of controlling, storing, or maintaining storm water
 - b. is used for active surface mining or as a log pond
 - c. is a ditch without a free and open connection to natural waters of the state
 - d. is less than 1 acre and created unintentionally from irrigation or construction
 - e. created for the purpose of wastewater treatment, farm watering, sediment settling, cooling industrial water, or a golf hazard
- 2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)
- 3 Is the wetland or a portion of the wetland designated as a dredge spoils site in the comprehensive plan?
- 4 Is the wetland or a portion of the wetland designated as a water dependant use in the comprehensive plan?

	No
	No
	No
	No

	No
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	No
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	No
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	No
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EXCLUSION CRITERIA SATISFIED?	No
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Goal 17 Significant Wetland (Major Marsh) Criteria: A wetland is considered to be a major marsh if "Yes" is the answer to any of the criteria below.

- 1 Does the wetland provide diverse wildlife habitat?
- 2 Is the wetland's fish habitat function intact?
- 3 Is the wetland's water quality function intact?
- 4 Is the wetland's hydrologic control function intact and is the wetland within the 100-year floodplain?
- 5 Does the wetland have a direct surface water connection to the a water body listed by DEQ as a water quality limited water body (303(d) list) and is the wetland's water quality function intact, or impacted or degraded?
- 6 Does the wetland contain a rare plant community?
- 7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?
- 8 Does the wetland have a direct surface water connection to the Arch Cape Creek, Austin Creek, or Pacific Ocean (water body mapped by ODFW as *essential indigenous anadromous salmonid habitat*) or is the wetland mapped as a significant habitat site on the *Oregon Estuary Plan*?

Yes	
	No
	No

Yes	
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	No
	No

	No
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	No
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Major Marsh

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-2
Project Location:	Cove Beach	Approx. Area (acres):	1.31
Date:	5/15/2008	Wetland Types(s):	PFO, PEM

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Partial off-site assessment. Wetland is located in a developing residential area. The mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-3
Project Location:	Cove Beach	Approx. Area (acres):	0.06
Date:	5/16/2008	Wetland Types(s):	PFO

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?	Yes	
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied?		Yes

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied?		No

Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-4
Project Location:	Cove Beach	Approx. Area (acres):	0.24
Date:	5/15/2008	Wetland Types(s):	PFO

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-5
Project Location:	Cove Beach	Approx. Area (acres):	0.37
Date:	5/15/2008	Wetland Types(s):	PEM, PUB

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-6
Project Location:	Cove Beach	Approx. Area (acres):	0.14
Date:	5/15/2008	Wetland Types(s):	PEM

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-7
Project Location:	Cove Beach	Approx. Area (acres):	0.26
Date:	5/16/2008	Wetland Types(s):	PSS

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria : This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria : local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-8
Project Location:	Cove Beach	Approx. Area (acres):	0.03
Date:	5/16/2008	Wetland Types(s):	PEM

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-9
Project Location:	Arch Cape	Approx. Area (acres):	.087
Date:	5/16/2008	Wetland Types(s):	PSS, PEM

Exclusions : This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied ?		No

Mandatory Locally Significant Wetland Criteria: Red Alder, Field Horsetail, Salmonberry, Subarctic Lady Fern

1 Does the wetland provide <i>diverse wildlife habitat</i> ?	Soft Rush	No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria : local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-10
Project Location:	Cove Beach	Approx. Area (acres):	1.28
Date:	5/16/2008	Wetland Types(s):	PSS, PEM

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Locally Significant Wetlands Criteria

ORS 197.279 (3)(b) and OAR 141-086-300 et seq.



Project Name:	Arch Cape LWI	Wetland:	COV-11
Project Location:	Cove Beach	Approx. Area (acres):	0.05
Date:	5/16/2008	Wetland Types(s):	PSS, PEM

Exclusions: This wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".

1 Is this wetland artificially created entirely from upland and:		No
a. created for the purpose of controlling, storing, or maintaining stormwater		No
b. is used for active surface mining or as a log pond		No
c. is a ditch without a free and open connection to natural waters of the state		No
d. is less than 1 acre and created unintentionally from irrigation or construction		No
e. created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard		No
2 Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)		No
Exclusion criteria satisfied?		No

Mandatory Locally Significant Wetland Criteria: This wetland is locally significant if "Yes" is the answer to any of the criteria below.

1 Does the wetland provide <i>diverse wildlife habitat</i> ?		No
2 Is the wetland's <i>fish habitat function intact</i> ?		No
3 Is the wetland's <i>water quality function intact</i> ?		No
4 Is the wetland's <i>hydrologic control function intact</i> ?		No
5 Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) <u>and</u> is the wetland's <i>water quality function intact, or impacted or degraded</i> ?		No
6 Does the wetland contain a rare plant community?		No
7 Is the wetland inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered?		No
8 Does the wetland have a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids <u>and</u> is the wetland's <i>fish habitat function intact, or impacted or degraded</i> ?		No
Mandatory Locally Significant Wetland criteria satisfied ?		No

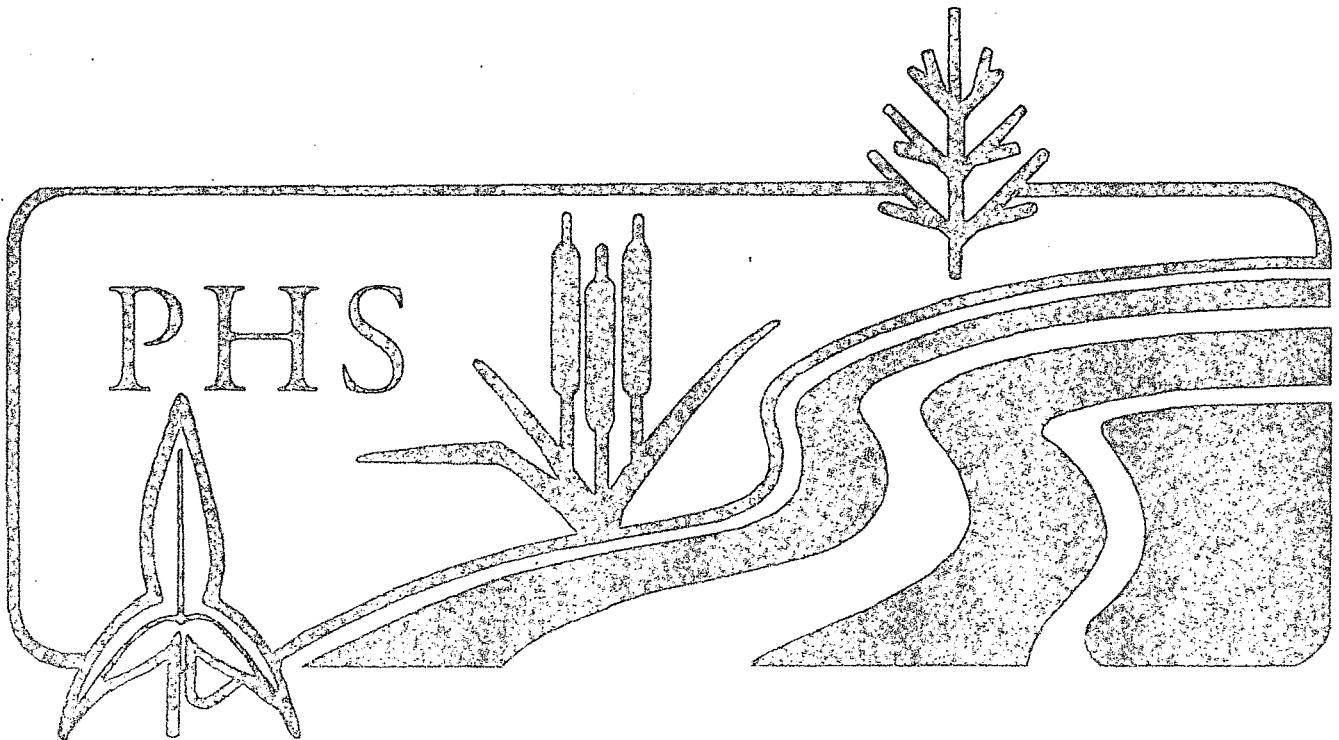
Optional Locally Significant Wetland Criteria: local governments may identify a wetland as significant if "Yes" is the answer to the criteria below.

1 Does the wetland represent a locally unique native plant community <u>and</u> provides <i>diverse wildlife habitat or habitat for some species</i> <u>or</u> has a <i>intact, or impacted or degraded fish habitat function</i> <u>or</u> has a <i>intact, or impacted or degraded water quality function</i> <u>or</u> has a <i>intact, or impacted or degraded hydrologic control function</i> .		No
2 Is the wetland publicly owned and used by a school or organization <u>and</u> does the wetland provide <i>educational uses</i> ?		No
Optional Locally Significant Wetland criteria satisfied ?		No

Does not satisfy the criteria, Not a Locally Significant Wetland

Appendix F

Summary Table and OFWAM Field Forms



WETLAND CHARACTERIZATION - WATERSHED SETTING

QUESTIONS 1-14*
OFWAM

Drainage Basin / Watershed Name	Square Miles	Average Slope	Stream Flow Modified	Active Irrigation or Diking Upstream	Dominant Land Use (Upstream)	Streams/Water Quality Limited	Non-Point Sources	Fisheries	S/T/E Fish Species	Wildlife Species	S/T/E Plant or Wildlife Species	Natural Corridor /Fish & Wildlife	Landscape Features/ Both Ends Corridor
Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10	Q.11	Q.12	Q.13	Q.14
North Coast / Arch Cape Creek (and other small coastal tributaries)	0.73	Highly variable. 1-3 % near the ocean. 15-25% in eastern hillsides	A. tributaries modified	b. No	d. Forested or natural area	b. none	A. no data	a. cold water species; cutthroat b. warm water species c. anadromous species; Oregon Coast Coho salmon d. wild population	a. Yes Arch Cape Cr up to falls; Asbury Cr up to Hwy 101	a. migratory birds b. big game; elk c. nesting birds	C. unknown	Wildlife – a. there are contiguous natural areas that allow species movement Fish – c. the habitat is fragmented and there are barriers to species movement	b. one end has a natural habitat area and the other end is developed (Arch Cape and Cove Beach communities)

* Except for questions that specifically request information beyond the assessment area, all questions were assessed for those portions of the watersheds located within the Arch Cape LWI Project Boundary.

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-1

Watershed Setting: (Questions 1-14)

See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	A	Q-48	C
2	-	2				Q-38	C	Q-49	B
3	B	3	C	Q	A	Q-39	/	Q-50	B
4	C	4	A	Q-30		Q-40	B	Aesthetics	
5	A	Q-22	A	Q-31	/	Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32	/			Q	A
Q-17	C	Q-24	B	Lakes and Ponds		Q-41	C	Q-52	
Q-18	B	Q-25	NA			Q	A	Q-42	A
Q-19	A	Q-26	B	Q-33		Q-43	B	Q-54	
Q-20		Q-27	A	Q-34	/	Q-44	C	Q-55	
1	A	Q-28	D	Q-35	/	Q-45	B	Q-56	
2	-					Q-46	C	Q-57	
3	B							Q-58	
4	C								
5	A								

15-5A = ocean

20-5A = ocean

37 - sediment deposits

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-2

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	B X	Q-36	A	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	C	Q-48	A
2	-	2	D			Q-38	C	Q-49	B
3	B	3	C			Q	A	Q-39	A
4	C	4	B	Q-30	A	Q-40	B	Aesthetics	
5	A	Q-22	A	Q-31	A	Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32	B			Q	A
Q-17	C	Q-24	B	Lakes and Ponds		Q-41	B	Q-52	
Q-18	A	Q-25	✓			Q	A	Q-42	A
Q-19	B	Q-26	B	Q-33		Q-43	A	Q-54	
Q-20		Q-27	A	Q-34		Q-44	A	Q-55	
1	A	Q-28	D	Q-35		Q-45	A	Q-56	
2	-					Q-46	A	Q-57	
3	B							Q-58	
4	C								
5	A								

15- 5A = OCEAN

20- 5A = ocean

43- wetland associated with stream; forest land contiguous to with

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-3

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	C	Q-48	B
2	-	2	A			Q-38	C	Q-49	B
3	C	3				Q	A	Q-39	NA
4	B	4	C	Q-30	B	Q-40	B	Aesthetics	
5	-	Q-22	A	Q-31	BA	Public Access to Wetland Site			
Q-16	A	Q-23	C	Q-32	A			Q	A
Q-17	C	Q-24	B	Lakes and Ponds		Q-41	C	Q-52	
Q-18	A	Q-25	/			Q	A	Q-42	A
Q-19	B	Q-26	A	Q-33		Q-43	A	Q-54	
Q-20		Q-27	A	Q-34	/	Q-44	B	Q-55	/
1	A	Q-28	D	Q-35	/	Q-45	B	Q-56	/
2	-					Q-46	C	Q-57	/
3	-							Q-58	
4	C								
5	-								

43 - wetland associated w/ headwaters of a drainage

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-5

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	C	Q-48	C
2	-	2				Q-38	A	Q-49	B
3	B	3	A	Q	A	Q-39	NA	Q-50	B
4	C	4		Q-30		Q-40	A	Asthetics	
5	A	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32				Q	A
Q-17	C	Q-24	C	Lakes and Ponds		Q-41	C	Q-52	
Q-18	B	Q-25	/			Q-42	A	Q-53	
Q-19	B	Q-26	C	Q	A	Q-43	B	Q-54	
Q-20		Q-27	B	Q-33		Q-44	C	Q-55	
1	-	Q-28	D	Q-34	/	Q-45	B	Q-56	
2	-			Q-35	/	Q-46	C	Q-57	
3	-							Q-58	
4	C								
5	A								

15-5A = ocean

20-5A = ocean

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-6

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	B	Q-48	C
2	-	2				Q-38	C	Q-49	B
3	B	3				Q-39		Q-50	B
4	C	4	A	Q-30	A	Q-40	B	Aesthetics	
5	-	Q-22	A	Q-31	A	Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32	B			Q	A
Q-17	C	Q-24	B	Lakes and Ponds		Q-41	C	Q-52	
Q-18	A	Q-25	/			Q-42	A	Q-53	
Q-19	B	Q-26	A	Q	A	Q-43	A	Q-54	
Q-20		Q-27	B	Q-33	A	Q-44	B	Q-55	
1	-	Q-28	D	Q-34	B	Q-45	B	Q-56	
2	-			Q-35	A	Q-46	C	Q-57	
3	-							Q-58	
4	C								
5	-								

43 extensively forested to east; wetland abuts Asbury Creek

Q's 30-32 - not answered because wetland does not have an unimpeded surface water connection to stream

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-7

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	<	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	B	Q-48	B
2	-	2				Q-38	C	Q-49	B
3	C	3				Q-39	NA	Q-50	B
4	B	4	A	Q-30		Q-40	D	Aesthetics	
5	-	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32	/			Q	A
Q-17	B	Q-24	C	Lakes and Ponds		Q-41	C	Q-52	/
Q-18	B	Q-25	/			Q	A	Q-42	A
Q-19	B	Q-26	A	Q-33		Q-43	A	Q-54	/
Q-20		Q-27	AB	Q-34	/	Q-44	B	Q-55	/
1	-	Q-28	D	Q-35	/	Q-45	B	Q-56	/
2	-					Q-46	C	Q-57	/
3	-							Q-58	
4	C								
5	-								

43 - Extensively forested to north and east

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-B

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	B	1		Streams connected to the Wetland		Q-37	B	Q-48	C
2	-	2				Q-38	C	Q-49	B
3	A	3	B	Q	A	Q-39	MA	Q-50	B
4	B	4	C	Q-30	B	Q-40	A	Aesthetics	
5	B	Q-22	A	Q-31	A	Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32	B			Q	A
Q-17	B	Q-24	B	Lakes and Ponds		Q-41	C	Q-52	
Q-18	B	Q-25	✓			Q-42	A	Q-53	
Q-19	A	Q-26	C	Q	A	Q-43	A	Q-54	
Q-20		Q-27	A	Q-33		Q-44	C	Q-55	
1	-	Q-28	D	Q-34	✓	Q-45	A	Q-56	
2	-			Q-35	✓	Q-46	C	Q-57	
3	-							Q-58	
4	C								
5	B								

15-5B = ocean
20-5B = ocean

43 wetland includes several drainages

~~Q-30-32 not answered; drainages in wetland do not~~

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-10

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	B	Q-48	C
2	-	2				Q-38	C	Q-49	B
3	-	3				Q-39	NA	Q-50	B
4	C	4	A	Q-30		Q-40	NA	Aesthetics	
5	B	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32	/			Q	A
Q-17	C	Q-24	C	Lakes and Ponds		Q-41	C	Q-52	
Q-18	B	Q-25	/			Q-42	A	Q-53	
Q-19	A	Q-26	C	Q	A	Q-43	B	Q-54	
Q-20		Q-27	B	Q-33		Q-44	C	Q-55	
1	-	Q-28	D	Q-34	/	Q-45	B	Q-56	
2	-			Q-35	/	Q-46	C	Q-57	
3	-							Q-58	
4	C								
5	B								

15-5B = Ocean
20-5B = Ocean

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-11

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	B	1		Streams connected to the Wetland		Q-37	A	Q-48	C
2	-	2	A			Q-38	C	Q-49	B
3	C	3		Q	A	Q-39	NA	Q-50	B
4	B	4	C	Q-30	A	Q-40	B	Aesthetics	
5	-	Q-22	A	Q-31	A	Public Access to Wetland Site			
Q-16	A	Q-23	B	Q-32	B			Q	A
Q-17	B	Q-24	B	Lakes and Ponds		Q-41	C	Q-52	
Q-18	A	Q-25	/			Q	A	Q-42	A
Q-19	B	Q-26	A	/		Q-43	A	Q-54	
Q-20		Q-27	A			Q-33		Q-44	B
1	-	Q-28	D	Q-34		Q-45	B	Q-56	
2	-			Q-35		Q-46	C	Q-57	
3	-							Q-58	
4	C								
5	-								

43- wetland is associated w/ head waters of drainages that extend into mature forested areas to the east

37 - surface scars, sediment deposits

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-12

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	A	Q-48	C
2	-	2				Q-38	A	Q-49	B
3	A	3		Q	A	Q-39	NA	Q-50	B
4	C	4	A	Q-30		Q-40	B	Aesthetics	
5	A	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32	/			Q	A
Q-17	B	Q-24	C	Lakes and Ponds		Q-41	C	Q-52	X
Q-18	A	Q-25	/			Q-42	B	Q-53	
Q-19	A	Q-26	C	Q	A	Q-43	B	Q-54	
Q-20		Q-27	A	Q-33	/	Q-44	C	Q-55	
1	-	Q-28	D	Q-34	/	Q-45	B	Q-56	
2	-			Q-35	/	Q-46	C	Q-57	
3	-							Q-58	
4	C								
5	A								

15-5A = OCEAN

20-5A = OCEAN

37 - surface to land, sediment deposits

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-13

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	A	Q-48	C
2	-	2				Q-38	B	Q-49	B
3	A	3		Q	A	Q-39	NA	Q-50	B
4	C	4	A	Q-30		Q-40	B	Aesthetics	
5	-	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32				Q	A
Q-17	A	Q-24	A	Lakes and Ponds		Q-41	A	Q-52	
Q-18	A	Q-25	-			Q-42	A	Q-53	
Q-19	B	Q-26	A	Q	A	Q-43	A	Q-54	
Q-20		Q-27	A	Q-33		Q-44	A	Q-55	
1	-	Q-28	D	Q-34		Q-45	B	Q-56	
2	-			Q-35		Q-46	B	Q-57	
3	-							Q-58	
4	C								
5	-								

43- Extensively forested throughout, and around wetland (though development is now encroaching)

37- surface scum, sediment deposits, sediment stains on trees

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-14

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	A	Q-48	C
2	-	2	C			Q-38	A	Q-49	B
3	-	3				Q	A	Q-39	NA
4	C	4	A	Q-30		Q-40	A	Asthetics	
5	-	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	BA	Q-32				Q	A
Q-17	C	Q-24	C	Lakes and Ponds		Q-41	C	Q-52	
Q-18	B	Q-25	-			Q-42	A	Q-53	
Q-19	B	Q-26	A	Q	A	Q-43	B	Q-54	
Q-20		Q-27	CB	Q-33		Q-44	C	Q-55	
1	-	Q-28	D	Q-34		Q-45	B	Q-56	
2	-			Q-35		Q-46	C	Q-57	
3	-							Q-58	
4	C								
5	-								

37 - sediment stains on trees, sediment deposits

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: ARC-16

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	CA	Q-36	C	Q-47	C
1	B	1		Streams connected to the Wetland		Q-37	CA	Q-48	B
2	-	2			Q-38	C	Q-49	B	
3	A	3			Q	A	Q-39	MA	Q-50
4	B	4	A	Q-30	A	Q-40	B	Asthetics	
5	A	Q-22	A	Q-31	A	Public Access to Wetland Site			
Q-16	C	Q-23	A	Q-32	C			Q	A
Q-17	A	Q-24	C	Lakes and Ponds		Q	A	Q-51	
Q-18	A	Q-25	/			Q-41	C	Q-52	/
Q-19	B	Q-26	A	Q	A	Q-42	A	Q-53	/
Q-20		Q-27	A	Q-33	/	Q-43	A	Q-54	/
1	-	Q-28	D	Q-34	/	Q-44	C	Q-55	/
2	-			Q-35	/	Q-45	B	Q-56	/
3	-					Q-46	C	Q-57	/
4	C							Q-58	/
5	A								

15-5A = ocean

20-5A = ocean

43- Extensively forested throughout wetland and to south; north wetland boundary is Arch Cape Creek.

37- observed ponding

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: CoV-1 Marsh

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	B C	Q-36	C	Q-47	C
1	B	1	C	Streams connected to the Wetland		Q-37	A	Q-48	B
2	-	2	C			Q-38	A	Q-49	A
3	-	3	C			Q	A	Q-39	NA
4	B	4		Q-30	A	Q-40	A	Aesthetics	
5	B	Q-22	A	Q-31	B	Public Access to Wetland Site			
Q-16	C	Q-23	A	Q-32	C			Q	A
Q-17	B	Q-24	B	Lakes and Ponds		Q-41	A	Q-52	X
Q-18	A B	Q-25				Q-42	B	Q-53	
Q-19	A	Q-26	B	Q	A	Q-43	A	Q-54	
Q-20		Q-27	B	Q-33	B	Q-44	A	Q-55	
1	A	Q-28	C	Q-34	C	Q-45	B	Q-56	
2	-			Q-35	A	Q-46	B	Q-57	
3	-							Q-58	
4	C								
5	B								

15-5B = ocean

20-5B = ocean

43: wetland includes pond/marsh

37 - sediment stains on trees, drift lines, surface scour. B sediment deposits

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: CON-2

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	B	1		Streams connected to the Wetland		Q-37	A	Q-48	C
2	-	2	C			Q-38	C	Q-49	B
3	-	3				Q	A	Q-39	NA
4	C	4	A	Q-30		Q-40	A	Aesthetics	
5	-	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32				Q	A
Q-17	B	Q-24	B	Lakes and Ponds		Q-41	B	Q-51	
Q-18	B	Q-25	/			Q-42	A	Q-52	/
Q-19	B	Q-26	A	Q	A	Q-43	B	Q-53	/
Q-20		Q-27	A	Q-33	/	Q-44	A	Q-54	/
1	A	Q-28	D	Q-34	/	Q-45	A	Q-55	/
2	-			Q-35	/	Q-46	C	Q-56	/
3	-							Q-57	/
4	C							Q-58	/
5	-								

37 - sediment deposits, surface scar.

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: Cov-3

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	C	1		Streams connected to the Wetland		Q-37	C	Q-48	C
2	-	2				Q-38	C	Q-49	B
3	-	3				Q	A	Q-39	NA
4	A	4	A	Q-30		Q-40	B	Aesthetics	
5	-	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	C	Q-23	CA	Q-32				Q	A
Q-17	C	Q-24	B	Lakes and Ponds		Q-41	B	Q-51	
Q-18	B	Q-25	/			Q-42	A	Q-52	
Q-19	B	Q-26	A	Q	A	Q-43	A	Q-53	
Q-20		Q-27	B	Q-33		Q-44	B	Q-54	
1	C	Q-28	D	Q-34		Q-45	B	Q-55	
2	-			Q-35		Q-46	C	Q-56	
3	-							Q-57	
4	A							Q-58	
5	/								

43. wetland in forested conservation area

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: COV-4

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	C	1		Streams connected to the Wetland		Q-37	A	Q-48	B
2	-	2				Q-38	B	Q-49	B
3	-	3				Q	A	Q-39	NA
4	A	4	A	Q-30		Q-40	B	Aesthetics	
5	-	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32				Q	A
Q-17	C	Q-24	C	Lakes and Ponds		Q-41	B	Q-52	
Q-18	A	Q-25				Q-42	A	Q-53	
Q-19	B	Q-26	A	Q	A	Q-43	A	Q-54	
Q-20		Q-27	A	Q-33		Q-44	B	Q-55	
1	C	Q-28	D	Q-34		Q-45	B	Q-56	
2	-			Q-35		Q-46	A	Q-57	
3	-							Q-58	
4	A								
5									

A. wetland at western edge of forested conservation area

37 - surface scum

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: Cov-5

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	B	1	D	Streams connected to the Wetland		Q-37	A	Q-48	C
2	-	2	A			Q-38	C	Q-49	B
3	A	3		Q	A	Q-39	NA	Q-50	B
4	B	4		Q-30		Q-40	A	Aesthetics	
5	-	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	B	Q-32				Q	A
Q-17	C B	Q-24	C	Lakes and Ponds		Q-41	C	Q-52	
Q-18	A	Q-25	/			Q-42	A	Q-53	
Q-19	B	Q-26	B	Q	A	Q-43	B	Q-54	
Q-20		Q-27	B	Q-33		Q-44	B	Q-55	
1	C	Q-28	D	Q-34		Q-45	B	Q-56	
2	-			Q-35		Q-46	C	Q-57	
3	-							Q-58	
4	B								
5	-								

37 - surface ocean

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: Cor-6

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	C	Q-48	C
2	-	2	A			Q-38	C	Q-49	B
3	-	3		Q	A	Q-39	NA	Q-50	B
4	C	4		Q-30		Q-40	B	Aesthetics	
5	A	Q-22	BA	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	C	Q-32				Q	A
Q-17	C	Q-24	C	Lakes and Ponds		Q	A	Q-51	
Q-18	A	Q-25	/			Q-41	C	Q-52	
Q-19	B	Q-26	B	Q	A	Q-42	A	Q-53	
Q-20		Q-27	A	Q-33		Q-43	B	Q-54	
1	-	Q-28	D	Q-34		Q-44	A	Q-55	
2	-			Q-35		Q-45	A	Q-56	
3	-					Q-46	C	Q-57	
4	C							Q-58	
5	A								

15-5A = Ocean
20-5A = ocean

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: Gov-7

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	C	Q-48	C
2	-	2				Q-38	C	Q-49	B
3	-	3	A	Q	A	Q-39	NA	Q-50	B
4	C	4		Q-30	A	Q-40	B	Aesthetics	
5	-	Q-22	A	Q-31	B	Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32	A			Q	A
Q-17	C	Q-24	C	Lakes and Ponds		Q-41	C	Q-52	
Q-18	A	Q-25	/			Q-42	A	Q-53	
Q-19	B	Q-26	A	Q	A	Q-43	A	Q-54	
Q-20		Q-27	BA	Q-33		Q-44	A	Q-55	
1	A	Q-28	D	Q-34		Q-45	B	Q-56	
2	-			Q-35		Q-46	C	Q-57	
3	-							Q-58	
4	C								
5	-								

43. Wetland ~~located at~~ includes head water trib to Mason Creek

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: Cov-9

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	A	1		Streams connected to the Wetland		Q-37	B	Q-48	C
2	-	2	C			Q-38	C	Q-49	B
3	-	3	b			Q	A	Q-39	-
4	C	4		Q-30	/	Q-40	B	Aesthetics	
5	A	Q-22	A	Q-31	/	Public Access to Wetland Site			
Q-16	A	Q-23	A	Q-32	/			Q	A
Q-17	B	Q-24	B	Lakes and Ponds				Q-52	/
Q-18	A	Q-25	NA					Q-41	C
Q-19	B	Q-26	A	Q	A	Q-42	A	Q-54	/
Q-20		Q-27	A	Q-33	/	Q-43	B	Q-55	/
1	-	Q-28	D	Q-34	/	Q-44	A	Q-56	/
2	-			Q-35	/	Q-45	A	Q-57	/
3	-					Q-46	C	Q-58	/
4	C								
5	A								

15-5A = ocean
20-5A = ocean

Wetland Characterization -- Field Form



Project Name: Arch Cape Local Wetland Inventory

Wetland Code: COV-10

Watershed Setting: (Questions 1-14) See Attached Table

Wetland Structure and Relation to Surrounding Landscape		Wetland Habitat		Fisheries Habitat		Wetland Hydrology		Recreation	
Q	A	Q	A	Q	A	Q	A	Q	A
Q-15		Q-21		Q-29	C	Q-36	C	Q-47	C
1	B	1		Streams connected to the Wetland		Q-37	A	Q-48	C
2	-	2	b			Q-38	C	Q-49	B
3	-	3	C	Q	A	Q-39	NA	Q-50	B
4	C	4		Q-30		Q-40	B	Aesthetics	
5	-	Q-22	A	Q-31		Public Access to Wetland Site			
Q-16	A	Q-23	C	Q-32				Q	A
Q-17	B	Q-24	B	Lakes and Ponds		Q-41	A	Q-52	
Q-18	A	Q-25				Q	A	Q-42	A
Q-19	B	Q-26	A	Q-33		Q-43	A	Q-54	
Q-20		Q-27	A	Q-34		Q-44	A	Q-55	
1	B	Q-28	D	Q-35		Q-45	A	Q-56	
2	-					Q-46	B	Q-57	
3	-							Q-58	
4	C								
5	-								

43. Wetland includes seasonal drainage channels

37 - surface scour and sediment deposits

