# **Wetland Delineation Report**

**Rivergate Mitigation Project, Port of Portland** 

Portland, Oregon

**July 2001** 



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# Wetland Delineation Report

Rivergate Mitigation Project Port of Portland

# Portland, Oregon

Prepared for:

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**July 2001** 

### PREFACE

This report has been prepared for the exclusive use of the Port of Portland, the David Evans and Associates, Inc. (DEA) project team, and reviewing agency representatives. In preparing this report, DEA has used the site information referenced herein. Findings reported herein are based on information gathered in the field at the time of investigation, our understanding of the US Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987), and DEA's understanding of federal, state, and local regulations governing wetlands.

The wetland boundaries and classifications described in this document represent the best professional judgment of our staff. The decisions were based on the circumstances and site conditions at the time of the field investigation. Final verification of wetland delineations is made by the appropriate federal, state, and local jurisdictions. Prior to final design or any construction activities, all appropriate regulatory agencies should be contacted to verify the findings of this report and to obtain appropriate approvals and permits.

This report documents the investigation, best professional judgement and conclusions of the investigator. It should be considered a Preliminary Jurisdictional Determination and used at your own risk until it has been reviewed and approved in writing by the Oregon Division of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

## **EXECUTIVE SUMMARY**

David Evans and Associates, Inc. (DEA) conducted an on-site wetland delineation on July 11, 2001 for the Port of Portland, on lands adjacent to the Columbia Slough, Portland, Oregon. The delineation was performed in support of the Port of Portland's Rivergate Mitigation project. The project is located on the Rivergate District's Leadbetter Peninsula adjacent to the Columbia Slough and Bybee Lake in Township 2 North, Range 1 West, Section 25, Willamette Meridian (Figure 1).

The study area for this wetland delineation was located along the east bank and flood-bench of the Columbia Slough, starting approximately 100 feet north of the BNSF Railroad bridge crossing of the slough, and ending approximately 1.25 miles to the south (upstream), where a major fork in the slough occurs. The delineation focused on the flood-bench, up to and including the edge of adjacent fill slopes associated with historic development activities.

The purpose of this delineation is to determine the presence, location, and size of wetlands and other waters of the United States (U.S.) as defined under Section 404 of the Clean Water Act. Once verified by the appropriate agencies, this report will allow the City to accurately understand specific impacts to wetlands and other waters of the U.S. associated with the proposed project.

The wetland investigation was conducted using the routine on-site determination method described in the US Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). This method requires the presence of hydrophytic vegetation, hydric soils, and positive wetland hydrology in wetland determinations. Plant communities, soils, and hydrology were assessed at 10 data sample plots.

The majority of the flood bench was identified as jurisdictional wetland. The area north of the BNSF Railroad bridge crossing was determined to be upland. A small portion of the flood bench, just south of the BNSF Railroad bridge crossing was also determined to be upland.

Wetlands and other waters of the state are under the jurisdiction of both the Oregon Division of State Lands (DSL) and US Army Corps of Engineers (USACE). Both agencies will make the final determination of jurisdictional wetland limits. Prior to final design or any construction, DSL and USACE should be contacted to verify the findings of this report and to obtain appropriate approvals and permits.

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# **INTRODUCTION**

David Evans and Associates, Inc. (DEA) conducted an on-site wetland delineation on July 11, 2001 for the Port of Portland, on lands adjacent to the Columbia Slough, Portland, Oregon. The delineation was performed in support of the Port of Portland's Rivergate Mitigation project. Specifically, the delineation covers the area in which a proposed hiking trail would be located. The trail would be constructed in accordance with Metro's 40-Mile Loop Master Plan and the City of Portland. The project is located on the Rivergate District's Leadbetter Peninsula adjacent to the Columbia Slough and Bybee Lake in Township 2 North, Range 1 West, Section 25, Willamette Meridian (Figure 1).

The study area for this wetland delineation was located along the east bank and flood-bench of the Columbia Slough, starting approximately 100 feet north of the BNSF Railroad bridge crossing of the slough, and ending approximately 1.25 miles to the south (upstream), where a major fork in the slough occurs. The delineation focused on the flood-bench, up to and including the edge of adjacent fill slopes associated with historic development activities.

The purpose of this delineation is to determine the presence, location, and size of wetlands and other waters of the United States (U.S.) as defined under Section 404 of the Clean Water Act. Once verified by the appropriate agencies, this report will allow the City to accurately understand specific impacts to wetlands and other waters of the U.S. associated with the proposed project.

## SITE DESCRIPTION

The project site is located along the east flood bench of the Columbia Slough, on Pearcy Island. Within the vicinity of the proposed project most of Pearcy Island has been covered with up to 30 plus feet of sandy fill material associated with historic development activities. This fill is located along the eastern edge of most of the project study area. The exception to this is along the southern quarter of the site, which lacks this fill. No development has occurred on the fills immediately abutting the project area, with the exception of the BNSF Railroad Bridge crossing of the slough, located at the northern end of the study area.

Between the open channel of the slough and the historic fill, the northern three fourths of the project study area consists of a vegetated flood bench approximately 150 to 200 feet wide. A natural levee has formed along the eastern bank of the slough. Elevations directly along the bank range between 12 to 16 feet (NGVD). Elevations on the flood-bench, behind the natural levee, are generally 1 to 3 feet below those found at corresponding points along the levee. In the southern quarter of the project study area, where there is no fill material, the flood bench gradually dips, rises, and then dips again as it gently grades into the shoreline of Bybee Lake. Elevations are similar to those previously mentioned.

Vegetation along the flood-bench consisted of two plant communities. The first community was a forested community dominated by black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), Oregon ash (*Fraxinus latifolia*), Pacific willow (*Salix lasiandra*), and Scouler's

willow (*Salix scouleriana*). The second plant community was a herbaceous community dominated solely by reed canarygrass (*Phalaris arundinacea*). The forested community was generally found in the higher elevation areas including alongside the lower portions of the fill slopes. The herbaceous community was generally located in lower lying depressional areas behind the natural levee. Vegetation on top of the historic fill consisted of a mix of weedy herbaceous species.

## **METHODS**

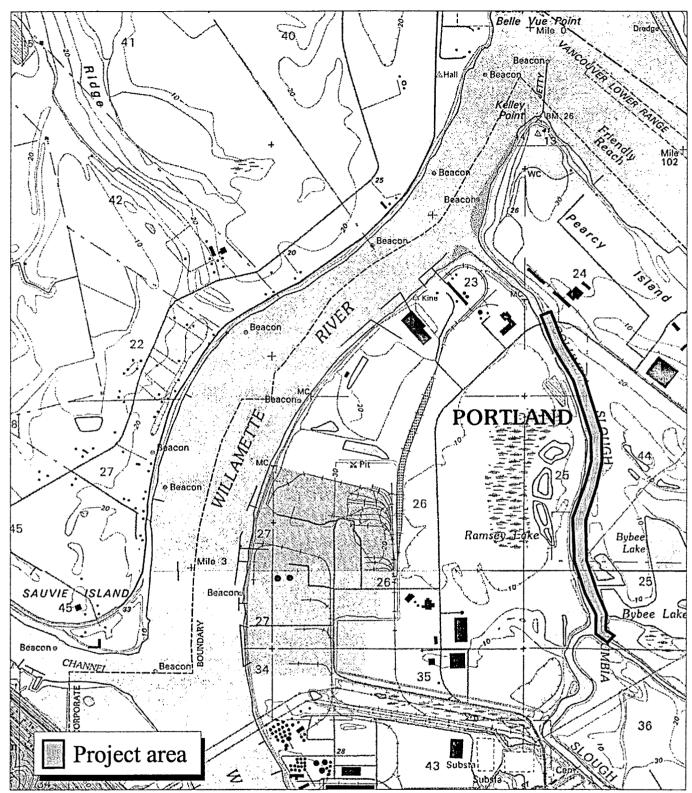
#### PRELIMINARY RESOURCE REVIEW

A review of preliminary resource materials, including National Wetlands Inventory (NWI) map (Figure 2) for identification of possible wetlands and Soil Conservation Service (SCS) soil series maps (Figure 4) for location of possible hydric soils, was conducted prior to the field work. The materials reviewed included:

- Linnton, Oregon and, Sauvie Island, Oregon-Washington, 7.5 minute Quadrangles, U.S. Geological Survey (USGS), 1990.
- Linnton, Oregon and, Sauvie Island, Oregon-Washington, NWI, U.S. Department of the Interior, Fish and Wildlife Service, 1989.
- Soil Survey of Multnomah County, Oregon, U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS), 1983.

#### **FIELD METHODS**

In performing the fieldwork, the objective was to identify the location of wetlands occurring within the project area. Wetland areas were delineated using the routine on-site method described in the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987). This method requires an area to possess a prevalence of hydrophytic vegetation, hydric soils, and wetland hydrology. Normal circumstances exist on site and therefore positive indicators of each of these three parameters must be present for an area to satisfy the criteria for jurisdictional wetlands.



Source: USGS 7.5 minute Quandrangle, Linnton and Sauvie Island, Oregon, 1990

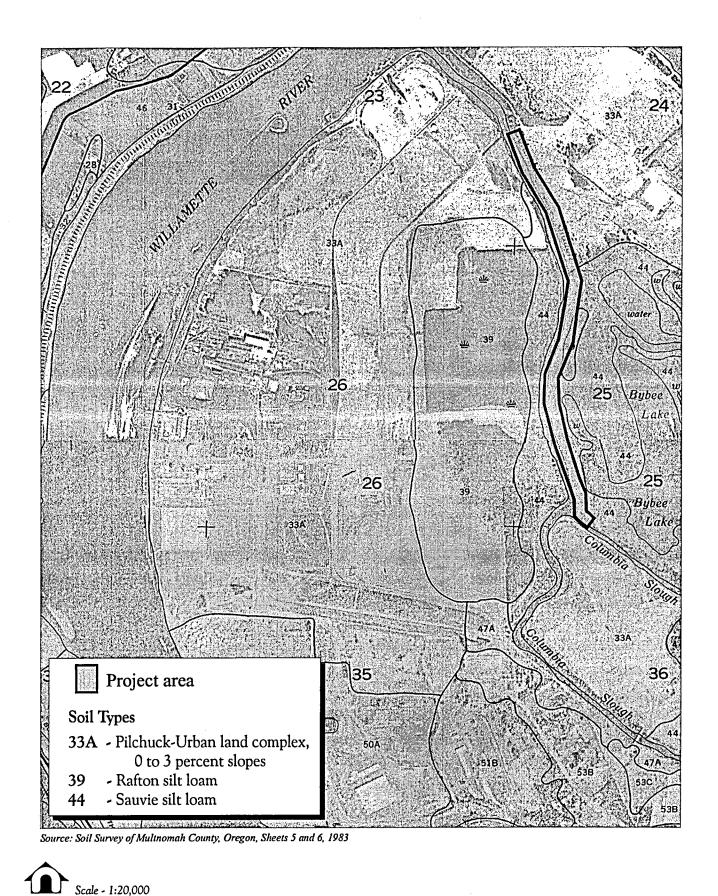
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**RIVERGATE MITIGATION PROJECT** 

Figure 1 Vicinity

PORTLAND, OREGON



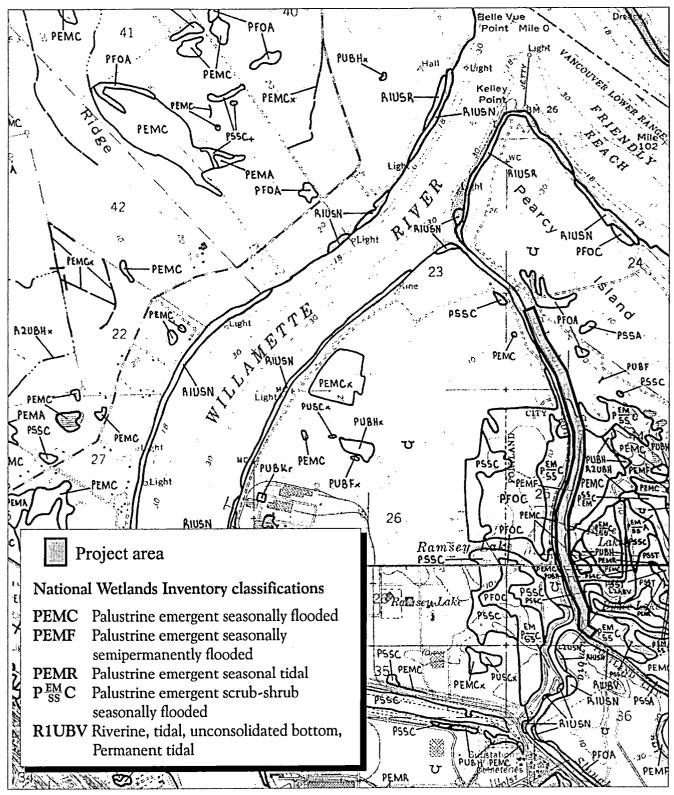


**RIVERGATE MITIGATION PROJECT** 

Figure 2 Soil Survey

PORTLAND, OREGON





Source: NWI, Linnton and Sauvie Island, Oregon, 1981

Scale - 1:24,000
RIVERGATE MITIGATION PROJECT
Wetlan

Figure 3 National Wetlands Inventory

PORTLAND, OREGON



# Hydrology

Data on hydrology should be collected during the early growing season (March through early May in the project area). Otherwise, wetland hydrology is determined using field indicators. Field indicators of wetland hydrology are divided into two categories: primary and secondary. Primary indicators include visual observation of inundation or saturation within 12 inches of the surface during the growing season, evidence of wetland drainage patterns, drift lines, sediment deposits, and water marks on woody vegetation or other fixed objects such as fence posts. Secondary field indicators include the presence of oxidized rhizospheres (rust-colored channels around living roots or along old roots) in the upper 12 inches, water-stained vegetation, morphological plant adaptations, and local soil survey data. At each sample plot the surrounding area was examined for the presence of primary and secondary indicators of wetland hydrology. One primary or two secondary indicators must be present for an area to be considered to have wetland hydrology.

## Soils

The project site was examined for the presence of hydric soils. Hydric soils are soils that are saturated, flooded, or ponded long enough (usually a week or more) during the growing season to develop anaerobic conditions in the upper part (Environmental Laboratory, 1987). Typical field indicators of hydric conditions include organic layers (hystic epipidons), gleying (gray soil colors), and low soil chromas (intensity of the soil hue) with or without redoximorphic features (mottles). Low soil chroma and mottles are indicators of reduced soil conditions caused by anaerobic, wet environments. Mottles indicate a fluctuating water table. Local Natural Resource Conservation Service (NRCS) offices and the National Technical Committee for Hydric Soils (NTCHS) have published complete lists of hydric soils series. Local NRCS determinations take precedence over the NTCHS. The *Soil Survey of Multnomah County, Oregon* (USDA, 1983) was consulted prior to fieldwork to determine if hydric soils are mapped for the site.

Soil pits were dug to an average depth of 14 inches at each sample location. Soil at a depth of between four and 12 inches was analyzed for color using the *Munsell Soil Color Chart* (Munsell Color, 1990). Soil color is based on hue, value, and chroma. Prescribed methods require a "colormetric" determination immediately below the "A" horizon, or ten inches, whichever is less. A hydric mineral soil will usually have either a matrix chroma of 2 or less in soils with redoximorphic features, or a matrix chroma of 1 in soils without redoximorphic features.

## Vegetation

The U.S. Fish and Wildlife Service (FWS) has classified vegetation according to its frequency of occurrence in wetlands (FWS, 1988). Many plant species have been given wetland indicator status of either obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), or upland (UPL) based on their probabilities for occurring in wetlands. For each of the three facultative plant indicator categories, the Region 9 list uses a

plus (+) sign to denote the affinity of a particular species for a slightly more hydrophytic habitat. Similarly, a minus (-) sign indicates a plant species with a preference for a less hydrophytic habitat. Table 1 provides the definitions of plant indicators used to determine wetland status.

Indicator Symbol	Indicator Status	Definition
OBL	Obligate	Species that occur almost always (estimated probability >99%) in wetlands under natural conditions.
FACW	Facultative wetland	Species that occur in wetlands (estimated probability 67 to 99%), but occasionally are found in non-wetlands.
FAC	Facultative	Species that are equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%).
FACU	Facultative upland	Species that usually occur in non-wetlands (estimated probability 67-99%), but occasionally are found in wetlands.
UPL	Upland	Species that occur almost always in non-wetlands under normal conditions (estimated probability >99%).
NI	No indicator	Species for which insufficient information was available to determine an indicator status.

 Table 1: Plant Indicators Used To Determine Wetland Status

Source: National List of Plant Species that Occur in Wetlands: Northwest (Region 9) (Reed, 1988).

Vegetation plots were established in areas of typical homogeneous vegetation, and all plant species observed were identified (Hitchcock and Cronquist, 1973; Reed, 1988). Percent cover of all plant species identified was estimated. Dominant species are those species in each stratum (tree, shrub, and herb layer) that, when ranked in descending order of estimated percent areal coverage and cumulatively totaled, immediately exceed 50 percent of the total coverage. Additionally, any species comprising at least 20 percent of the total coverage for their respective stratum was also considered dominant. When more than 50 percent of the dominant plant species have an indicator status of OBL, FACW, FAC (excluding FAC-), the area is considered to support hydrophytic vegetation.

#### Field Data Documentation

Data sheets were completed at each sample plot documenting the vegetation, soils and hydrology. Sample plots were chosen that would best define the boundary between wetland and upland areas. The data sheets for the sample plots are included in Appendix A.

Areas in which wetland hydrology, hydric soils and hydrophytic vegetation are all simultaneously present would likely be considered wetlands by the US Army Corps of Engineers (USACE) or Oregon Division of State Lands (DSL).

#### RESULTS

#### PRELIMINARY RESOURCE REVIEW

#### Soils

The Soil Survey of Multnomah County, Oregon (USDA, 1983) identifies three soil series within the project area (Figure 2). The three soil series are Pilchuk-Urban land complex, 0 to 3 percent slopes (mapping unit 33A), Rafton silt loam (mapping unit 39), and Sauvie silt loam (mapping unit 44). These mapping units are described in the following section.

#### Pilchuk-Urban land complex, O to 3 percent slopes

This complex consists of excessively drained soil on flood plains of the Columbia and Willamette Rivers. The soil formed in sandy alluvium or sandy dredge spoils. In most areas of this complex the soils have been graded, cut, filled, or otherwise disturbed. About 15 percent of this complex are areas of Pilchuck soils that are relatively undisturbed. These soils typically have a surface layer of very dark grayish-brown (10YR 3/2) sand about 12 inches thick. The underlying material is dark grayish-brown (10YR 4/2) sand to a depth of 60 inches or more. About 35 percent of the complex is comprised of sandy dredge spoils 20 feet or more in depth that has been deposited over Moag, Rafton , and Sauvie soils. The water table is at a depth of 2 to 4 feet from November through April. Another 35 percent of this complex is urban land. The remaining 15 percent of this complex consists of inclusions of Moag, Rafton Faloma, and Sauvie soils. In areas of Pilchuk soils where vegetation has become established, dominant vegetation consists of black cottonwood, willow, trailing blackberry (*Rubus ursinus*), forbs, and grasses.

Pilchuk-Urban land complex, O to 3 percent slopes, is not listed as a hydric soil by the Multnomah County NRCS or the NTCHS. However, inclusions of Moag, Rafton, Faloma, and Sauvie soils, are listed as hydric soils by the Multnomah County NRCS or the NTCHS.

#### Rafton silt loam

Rafton silt loam is a deep, very poorly drained soil that formed in the broad floodplains along the Columbia River. Parent material is recently deposited silty alluvium (fragments of rock material transported and deposited by running water) and some intermixed volcanic ash. Slopes range from 0 to 2 percent and elevation is 10 to 20 feet. In a typical profile, the surface layer is a dark grayish-brown (10YR 4/2) silt loam about 9 inches thick with yellowish-red (5YR 4/8 and 5/8) mottles. The subsoil is composed of two layers. The upper subsoil is grayish-brown (10YR 5/2) silt loam between 9 and 21 inches depth with yellowish-red (5YR 4/3) and gray (10YR 5/1) silt loam with yellowish-red (5YR 4/8) mottles. The lower subsoil, between 21 and 40 inches depth, is a variegated brown (10YR 4/3) and gray (10YR 5/1) silt loam with yellowish-red (5YR 4/8) mottles. The substratum, between 40 and 60 inches depth, is a dark grayish-brown (10YR 4/2) silt loam with reddish-brown 5YR 4/4), yellowish red (5YR 4/8) and red (2.5YR 4/6) mottles. Native vegetation is black cottonwood, willow, common snowberry *(Symphoricarpos alba)*, roses *(Rosa sp.)*, sedges *(Carex sp.)*, cattail *(Typha latifolia)*, and

grasses. Permeability is moderate and these soils have low shrink-swell potential. Runoff is very slow and the hazard of erosion from overflow is high. Rafton soils are frequently (more often than once every two years) flooded from December through June and the water table is within a depth of 12 inches from December through July.

Included in the Rafton series are areas of Moag, Pilchuck, and Sauvie soils which can occupy as much as 10 percent of this mapping unit. Rafton, and the inclusions of Moag and Sauvie, are listed as hydric soils by the Multnomah County NRCS or the NTCHS. Pilchuck is not a hydric soil.

#### Sauvie silt loam

The Sauvie silt loam is a deep, poorly drained soil that formed in silty alluvium on convex areas of floodplains along the Columbia River. Parent material is recent alluvium (rock fragments transported and deposited by flowing water), with some volcanic ash. Slopes range from 0 to 2 percent and elevation is 10 to 20 feet. In a representative profile the surface layer is a very dark grayish-brown (10YR 3/2) silt loam about 15 inches thick with brown (7.5YR 4/4) mottles between 6 to 10 inches depth. The subsoil is a very dark grayish-brown (10YR 3/1) silty clay loam between 15 and 39 inches depth with brown (7.5YR 4/4) mottles. The substratum, between 39 and 60 inches depth, is a dark grayish-brown (10YR 4/2) fine sandy loam with brown (7.5YR 4/4) and reddish-brown (5YR 4/4) mottles. Native vegetation is black cottonwood, Oregon white oak (*Quercus garryana*), Oregon ash, willows, common snowberry, trailing blackberry, roses, forbs, and grasses. Permeability is moderately slow and these soils have low to moderate shrink-swell potential. Runoff is slow and the hazard of erosion from overflow is high. Sauvie soils are frequently flooded between December and June. Apparent high water tables (0 to 1.0 feet deep) can occur from May through June. An apparent water table is a seasonal water table suggested by mottles and concretions in the soil.

Included in the Sauvie series are areas of Moag, protected Sauvie silty clay loam, Rafton, and Pilchuck soils which can occupy as much as 10 percent of this mapping unit. Sauvie, and inclusions of Moag and the Rafton series are listed as hydric soils by the Multnomah County NRCS or the NTCHS. Sauvie silty clay loam, protected, and Pilchuck are not hydric soils.

#### National Wetlands Inventory

Analysis of the Sauvie-Island, Oregon-Washington, and Linnton, Oregon, National Wetlands Inventory Quad Maps (NWI) shows the following wetlands mapped within the project study area: palustrine emergent/scrub-shrub, seasonally flooded (PEM/SSC); and, palustrine emergent, semipermanently flooded (PEMF). These wetlands were mapped along the southern three fourths of the project study area. The open channel of the slough is mapped as a riverine, tidal, unconsolidated bottom, permanent-tidal wetland (R1UBV).

### FIELD RESULTS

The on-site wetland delineation was conducted on July 11, 2001. Hydrology, soils, and plant communities were assessed at 10 data sample plots (Figure 4). Data sheets containing plot information are included in Appendix A. Results of the field investigation are presented below.

#### Wetland Plots (Plots 2, 4, 6, 8, and 9)

Plots 2, 4, 6, 8, and 9 were identified as jurisdictional wetlands as they all contained a hydrophytic plant community, wetland hydrology, and hydric soils. Plots 2, 4, 6, and 8 were located on the flood bench near the base of the fill slope. Plot 9 was located on the natural levee associated with the flood bench and adjacent to the open channel of the Columbia Slough.

#### Vegetation

Vegetation along the flood-bench, including the natural levee, consisted of two plant communities. The first community was a forested community dominated by black cottonwood (FAC), Oregon ash (FACW), Pacific willow (FACW+), and Scouler's willow (FAC). The second plant community, represented by Plot 8, was a herbaceous community dominated solely by reed canarygrass (FACW). The forested community was generally found in the higher elevation areas including alongside the lower portions of the fill slopes and along the natural levee. The herbaceous community was generally located in lower lying depressional areas behind the natural levee.

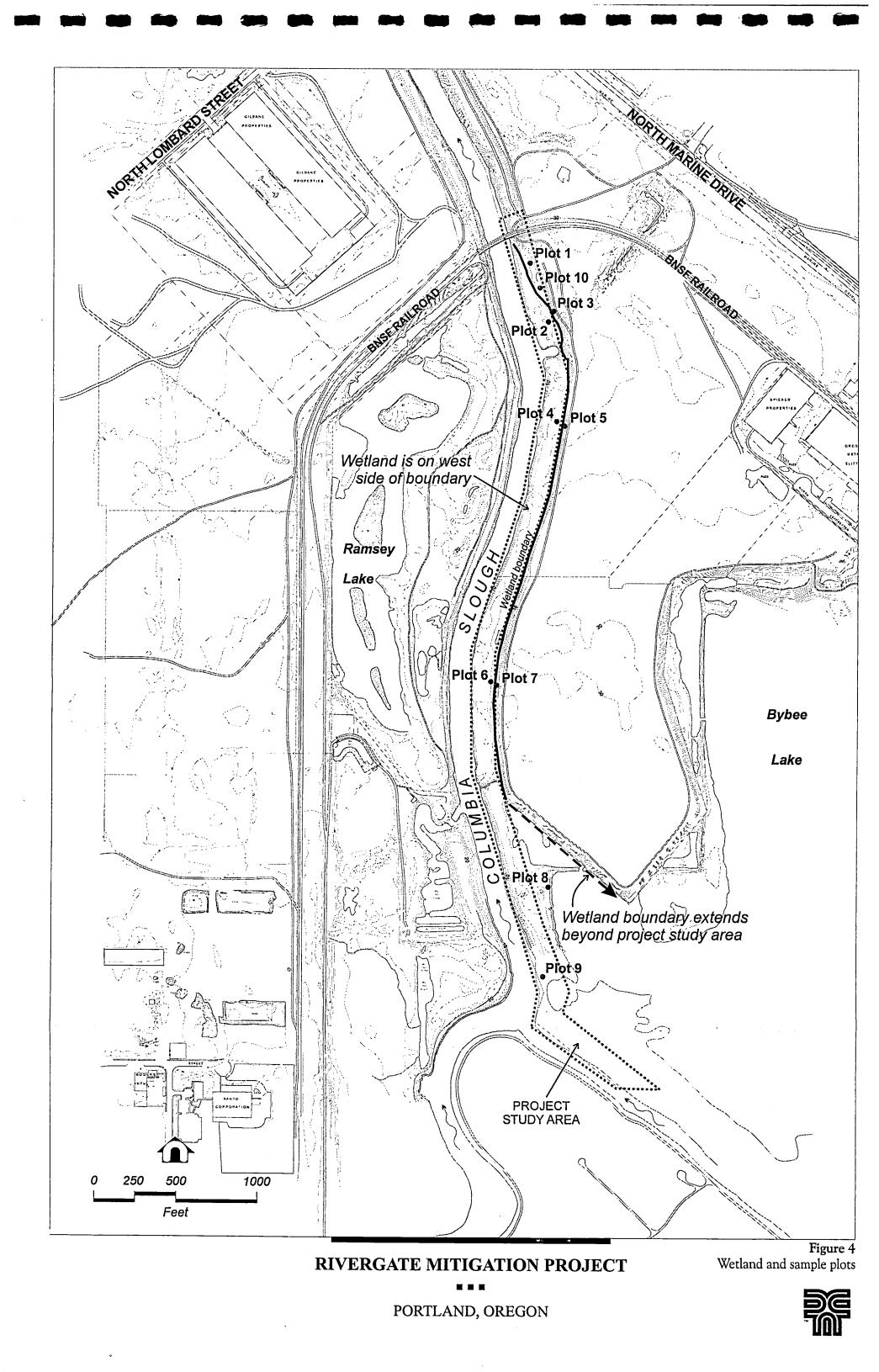
Plots 2, 4, 6, and 9 represent the forested community; however, it should be noted that these plots were located near the edge of this community and so the data sheets also reflect the presence of the adjacent herbaceous community. Under full forest canopy the percent cover of the herbaceous layer was generally much less than that reflected by the data sheets. The data sheets also do not reflect the presence of black cottonwood, which was noted at similar elevations as Plots 2, 4, 6, and 9.

Both plant communities (Plots 2, 4, 6, 8, and 9) met the criteria for a hydrophytic plant community.

## Hydrology

Evidence of hydrology consisted of drift lines occurring up to two feet up the side of several tree trunks within the project study area. The upper extent of the height of the drift lines corresponds approximately with elevation 16 feet (NGVD). Wetland drainage patterns were also evident in the form of scour marks and the lack of persistent woody vegetation within the depressional areas along the flood bench. At the time of the site visit, conducted well past the early growing season, soils were not saturated and no surface water was evident in the study area.

Based on the above evidence, wetland hydrology was present at Plots 2, 4, 6, 8, and 9.



#### Soils

Soils at Plots 2, 4, 6, 8, and 9 were all similar in character to each other. Soil color from 0 to 12 inches was generally a very dark gray or very dark grayish-brown (10YR 3/1 or 3/2) and contained common to abundant yellowish-brown to reddish-brown (10YR 5/8 to 5YR 4/4) mottles. Soil texture was clay loam. Plot 2 contained a dark grayish-brown (10YR 4/2) sandy layer in the upper 8 inches that contained no mottles. Below 8 inches, soils were similar to those described previously.

Soils at Plots 2, 4, 6, 8, and 9 were determined to be hydric soils.

## Upland Plots (Plots 1, 3, 5, 7, 10)

Plots 1, 3, 5, 7, and 10 were identified as upland. A hydrophytic plant community was identified in most of these plots; however, all of these plots lacked wetland hydrology and hydric soils. Plots 3, 5, and 7 were located along the upper half of the fill slope. Plots 1 and 10 were located below the edge of the fill slope, but behind what appears to be an old manmade berm located between the fill slope and the open channel of the slough.

### Vegetation

Vegetation at Plots 1, 5, 7, and 10 consisted of a mix of hydrophytic and non-hydrophytic species. Overall, the plant community represented by these plots was similar to the forested plant community described in the section for wetland plots, with the exception of some non-hydrophytic species present in the understory. Dominant tree and shrub species consisted of black cottonwood, Oregon ash, Pacific willow, Scouler's willow, Himalayan blackberry (*Rubus discolor*, FACU), trailing blackberry (*Rubus ursinus*, FACU), and gooseberry (*Ribes divaricatum*, FAC). Dominant herbaceous species consisted of an unidentified species of goldenrod (*Solidago* sp.), common horsetail (*Equisetum hyemale*, FACW), and reed canarygrass.

Plot 3 was located in an open area along the fill slope containing upland weedy species. Dominant vegetation consisted of goldenrod, and common St. John's wort (*Hypericum perforatum*, UPL).

The plant community represented by Plots 1, 5, 7, and 10 met the criteria for a hydrophytic plant community. The plant community represented by Plot 3 did not meet the criteria for a hydrophytic plant community.

## Hydrology

No evidence of wetland hydrology was present at Plots 1, 3, 5, 7, and 10. Soils located along the fill slope, Plots 3, 5, and 7, consist of fine sand, which is well drained. Soils at Plots 1 and 10 also consisted of fine sand, which likely has eroded off of the edge of fill. No organic layer or organic streaking was evident in any of the above plots.

Based on the above evidence, wetland hydrology was not present at Plots 1, 3, 5, 7, and 10.

Soils

Soils at Plots 1, 3, 5, 7, and 10 were a dark grayish-brown (2.5Y 4/2) fine sand. No signs of hydric soil conditions (i.e. mottling, organic streaking, build up of an organic layer, etc.) were present. These soils are well drained.

Soils at Plots 1, 3, 5, 7, and 10 were non-hydric.

# **DETERMINATION OF WETLAND BOUNDARY**

A majority of the sample plots were set up as paired upland and wetland plots in order to determine the boundary of the jurisdictional wetland within the project study area. All of the plots used in this delineation contained a hydrophytic plant community, with the exception of Plot 3. Because of this, vegetation was not used as the primary determinant of where the wetland boundary should be set. However, in some places along the fill slope there was a notable change in the composition of herbaceous species associated with a change in elevation. This change generally occurred around the 16 to 18 foot elevation mark. Hydrophytic herbaceous species (i.e. reed canarygrass) were located below these elevations and non-hydrophytic species (i.e. common St. John's wort [Plot 3]) were located above these elevations.

The wetland boundary within the study area was determined primarily from the presence/absence of wetland hydrology and hydric soil indicators. Watermarks noted at the approximately 16 foot elevation were used to define the upper limit of wetland hydrology in most places. It was determined that in some areas along the side of the fill slope, wetland hydrology may occur slightly higher due to seepage –up to the 18 foot elevation mark. This determination was based on soils evidence that showed hydric soils occuring up to this elevation. The wetland boundary was generally flagged between the 16 and 18 foot elevations. The line was adjusted slightly upward or downward based on the presence/absence of hydric soils. The presence/absence of hydric soils was determined based on information collected at the ten documented sample plots as well as many additional undocumented soil plots taken along the project route. The wetland boundary was flagged and professionally land surveyed.

The boundary delineation resulted in the majority of the flood bench being identified as jurisdictional wetland. The area north of the BNSF Railroad bridge crossing consisted of riprap and other construction fills sparsely vegetated with upland weedy species. This area was determined to be upland. A small portion of the flood bench, just south of the BNSF Railroad bridge crossing was also determined to be upland. This area was located between the edge of the fill slope and what appears to be an old manmade berm. The berm likely limits flooding of this area, as no signs of wetland hydrology or hydric soils were present here (Plots 1 and 10).

# **REGULATORY REQUIREMENTS AND IMPLICATIONS**

Several federal, state, and local laws regulate development in and around wetlands and other waters of the United States. Agencies having jurisdiction over development impacts associated with on-site wetlands and other waters of the U.S. include DSL and USACE. Wetland boundaries delineated by DEA are subject to verification and approval by these agencies. **Prior to final design or any construction, DSL and USACE should be contacted to verify the findings of this report and to obtain appropriate approvals and permits.** 

If wetland impacts are unavoidable, the project will require permits from DSL and USACE. DSL requires a permit when the total removal or fill from a water of the state, including wetlands, is equal to or exceeds 50 cubic yards (zero cubic yards for most activities in water bodies mapped as essential salmonid habitat). As a condition of receiving a Removal/Fill permit, DSL will require replacing wetland acreage and functions lost due to construction impacts.

USACE administers Section 404 of the federal Clean Water Act, which regulates discharge of fill material into waters of the United States, including wetlands. USACE presumes that other upland alternatives for development are available until the applicant clearly demonstrates otherwise. Filling of wetlands is not permitted in documented habitat for listed endangered, threatened, or sensitive plant or animal species.

# PREPARERS AND CONTRIBUTORS

Ethan Rosenthal, DEA Natural Resource Specialist, and Phil Rickus, DEA Ecologist, conducted the on-site delineation. Mr. Rosenthal is the author of this report. Kevin O'Hara, DEA Senior Ecologist, provided Total Quality Management reviews.

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# APPENDIX A

# Wetland Delineation Data Forms

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MAO3 ATAD

emo <sup>3</sup> stsD 9lqmsx3 bns Ansl8 :8 xibn9qqA SOQ.1_T33H2ATAQ/NOITA3NIJ3D QNAJT3W 616/2OO000X4O4/4/TO	∃lorqi:o
	Remarks:
ic Vegetation Present? X Yes No Varology Present? Yes X No Is this Sampling Point Within a Wetland? Yes X No Is Present? Yes X No Is Present?	Wetland H
Sandy soils with no significant organic layer or organic streaking. Crushed rock found in upper 8 inches.	:сұлетәЯ
I Indicators: I Indicators: Concretions C	itsiH ItsiH
es) Horizon (Munsell Moist) (Munsell Moist) (Munsell Moist) (Munsell Moist) (Munsell Moist) (Munsell Moist) (Size/Contrast Texture, Concretions, Structure, etc. [Fine sand	Depth (inche
	SOILS
Orded Data (describe in Remarks)     Wetland Hydrology Indicators:     Secondary Indicators (2 or more required):       Primary Indicators:     Drift Lines     Drift Lines       Otsee Water:     NA     Mater Marks       Orded Data (describe in Remarks)     Wetland Hydrology Indicators:     Secondary Indicators (2 or more required):       Primary Indicators:     Drift Lines     Drift Lines       Other (explain in remarks)     Drift Lines       Other Water:     NA       Other (explain in remarks)       Officer Solits:     Drift Lines       Drift Lines     Drift Lines       Officer Water:     NA       Officer Water:     NA       Officer Solits:     Drift Lines       Drift Lines     Drift Lines       Drift Solits:     Drift Cines       Drift Solits:     Drift Cines	Record Depth to Depth to Depth to Depth to Remarks:
OGY       Wetland Hydrology Indicators:       Secondary Indicators (2 or more required):         Orded Data (describe in Remarks)       Wetland Hydrology Indicators:       Secondary Indicators (2 or more required):         Primary Indicators       Saturated in Upper 12:       Water-Stained Leaves         Primary Indicators       Saturated in Upper 12:       Mater-Stained Leaves         Primary Indicators       Mater-Stained Leaves       Diff Lines         Primary Indicators       Diff Lines       Diff Lines         Primary Indicators       Diff Lines       Diff Lines         Primary Indicators       Diff Lines       Diff Reactors         Primary Indicators       Primary Indicators       Diff Reactors         Primary Indicators       Diff Reactors       Diff Reactors         Printer       Prima	Percent of Depth to Depth to Depth to Percent of Remarks: Rubu Recont of Remarks:
Jant Species*       Percent       Stratum       Indicator       Derivant       Stratum       Indicator         Juits Dataminera       50       T       FAC       8       9       1 <td>Percent of Depth to Depth to Depth to Percent of Remarks: Rubu Recont of Remarks:</td>	Percent of Depth to Depth to Depth to Percent of Remarks: Rubu Recont of Remarks:
Jant Species*       Percent       Stratum       Indicator       Derivant       Stratum       Indicator         Julis Distamilera       50       T       FAC       8       30       5       FAC       9         Viluida       30       5       FAC       10       30       5       FAC       10         Although marked as a dominant, Solidago sp. was not included in the calculation of percent dominant species since its indicators (2 or more required):       Julicators       Secondary Indicators       Secondary Indicators (2 or more required):         Dominant Species that are OBL, FACW or FAC (excluding FAC-):       100%       11       Dominant Species since its indicators (2 or more required):         Dominant Species that are OBL, FACW or FAC (excluding FAC-):       100%       11       Dominant Species since its indicators (2 or more required):         Dominant Species that are OBL, FACW or FAC       5       H       UNK       14       Dominant Species since its indicators (2 or more required):         Dominant Lake, or Tide Gauge       5       H       UNK       14       Dominant Species since its indicators (2 or more required):         Dominant Lake, or Tide Gauge       5       H       Drinant Depcies       Mater (2 or more required):         Dominant Depcies that available       Primary Hudicabors:       100%       Dottintent (2 or m	Sthe site:       Sthes at F       Sthes a F

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Form			(19	987 COE								
Project Site: Applicant/Ow		ivergate Mitigation I	Project		·····	<u>.</u>		Date: County:		11, 2001 Inomah		
Investigator:		than Rosenthal						State:	Ore	gon		
Is the site signif	ficantly distu	exist on the site? Irbed (Atypical Situation Area? <i>(if needed, exp</i>		erse)	X Yes Yes Yes	X	No No No	Community ID: Transect ID: Plot ID:	Plot	2		
VEGETATIO							· · · · · ·					
Dominant Plant Sp			Percent	Stratum	Indicator	Domina	nt Plant Spe	cies		Percent	Stratum	Indicator
1 * Salix lucio			25	Υ	FACW+	8						
2 * Salix lucio 3 * Cornus st			5	S S	FACW+ FACW	9						╂-────
4 * Phalaris a	arundinacea		100	Й	FACW	11						
5 6						12 13						
7				I		14						<u> </u>
Remarks:	linant Speci	es that are OBL, FAC			-AC-J. I	0%						
HYDROLOG	Y					<u></u>						
Recorded Stream Aerial I Other	d Data (desc n, Lake, or T Photograph ded data ava ons:	s ailable	(ln.)		X Satur Wate X Drift Sedir	<i>itors:</i> dated rated in L r Marks Lines ment Dep	, Ipper 12 in	ches	Wa Loc FA	Indicators (2 idized Root ater-Stained cal Soil Surv C-Neutral Te ner (explain	Channels in Leaves ey Data est	
Depth to Free Depth to Sat	e Water in F urated Soil:		(In.) (In.)	tree trunk.	Drair	age Patt	ers in Wetl	ands				
Depth to Free Depth to Sat	e Water in F aurated Soil: Drift lines no	>14	(In.)		Drair		ers in Wet	Drainage Class				Circle
Depth to Free Depth to Sat Remarks: C SOILS	e Water in F urated Soil: Drift lines no	>14	(In.)				ers in Wetl				уре? Үе	
Depth to Free Depth to Sati Remarks: C SOILS Map Unit Name Taxonomy (Sub	e Water in F urated Soil: Drift lines no e (series and ogroup):	>14 oted approximately 2 ft I Phase): Pilchuk-U 	(In.) up side of I	complex, C	) to 3 percer Mottle Colors	nt slopes	Mott	Drainage Class Field Observa	tions Confin	m Mapped T		es No
Depth to Free Depth to Sati Remarks: [ SOILS Map Unit Name Taxonomy (Sub Depth (inches) 0 to 8	e Water in F urated Soil: Drift lines no	i Phase): Pilchuk-U Matrix Color (Munsell Mois 10YR 4/2	(In.) up side of I	complex, 0 (A No mottle	) to 3 percer Mottle Colors Munsell Moist)	nt slopes	Mott	Drainage Class Field Observa e Abundance/ ze/Contrast	tions Confin Tex Sandy loa	m Mapped T dure, Concreti m, with crus	ons, Structure	es No
Depth to Free Depth to Sati Remarks: C SOILS Map Unit Name Taxonomy (Sub Depth (inches) 0 to 8	e Water in F urated Soil: Drift lines no e (series and ogroup):	>14 oted approximately 2 ft d Phase): Pilchuk-U Matrix Color (Munsell Mois	(In.) up side of I	complex, C	) to 3 percer Mottle Colors Munsell Moist)	nt slopes	Mott	Drainage Class Field Observa	tions Confir	m Mapped T dure, Concreti m, with crus	ons, Structure	es No
Depth to Free Depth to Sati Remarks: [ SOILS Map Unit Name	e Water in F urated Soil: Drift lines no e (series and ogroup):	i Phase): Pilchuk-U Matrix Color (Munsell Mois 10YR 4/2	(In.) up side of I	complex, 0 (A No mottle	) to 3 percer Mottle Colors Munsell Moist)	nt slopes	Mott	Drainage Class Field Observa e Abundance/ ze/Contrast	tions Confin Tex Sandy loa	m Mapped T dure, Concreti m, with crus	ons, Structure	es No
Depth to Free Depth to Sati Remarks: D SOILS Map Unit Name Taxonomy (Sub Depth (inches) 0 to 8 8 to 12 Hydric Soil Indic Histosol Histoc Epi Sulfidic O	e Water in F urated Soil: Drift lines no e (series and ogroup): Horizon Horizon cators:	i Phase): Pilchuk-U Matrix Color (Munsell Mois 10YR 4/2 10YR 3/2	(In.)	complex, 0 (A No mottle 5YR 4/6 educing Cd leyed or Lo oncretions	0 to 3 percer Mottle Colors Munsell Moist) 25 onditions pow-Chroma	nt slopes	Mott Si Commor	Drainage Class Field Observa e Abundance/ ze/Contrast	tions Confir Tex Sandy loa Sandy loa Sandy loa I Hydric Soi I Hydric Soi I Hydric Soils I	m Mapped T m, with crus m ace Layer in Is List	ons, Structure hed rock	es No
Depth to Free Depth to Sati Remarks: D SOILS Map Unit Name Taxonomy (Sub Depth (inches) 0 to 8 8 to 12 Hydric Soil Indic Histosol Histosol Sulfidic O Aquic Moi	e Water in F urated Soil: Drift lines no e (series and ogroup): Horizon Horizon cators:	i Phase): Pilchuk-U Matrix Color (Munsell Mois 10YR 4/2 10YR 3/2	(In.)	complex, 0 (N No mottle 5YR 4/6 educing Cd leyed or Lo oncretions	0 to 3 percer Mottle Colors Munsell Moist) PS onditions ow-Chroma	nt slopes	Mott Si Commor	Drainage Class Field Observa e Abundance/ ze/Contrast distinct h, distinct High Organic Con Listed on Nationa Listed on Local H	tions Confir Tex Sandy loa Sandy loa Sandy loa I Hydric Soi I Hydric Soi I Hydric Soils I	m Mapped T m, with crus m ace Layer in Is List	ons, Structure hed rock	es No
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Depth to Free Depth to Sati Remarks: C SOILS Map Unit Name Taxonomy (Sub Depth (inches) 0 to 8 8 to 12 Hydric Soil Indic Histosol Histic Epi Sulfidic O Aquic Moi Remarks: WETLAND D Hydrophytic Vee Wetland Hydrol	e Water in F urated Soil: Drift lines no e (series and group): Horizon Horizon cators: ipedon dor isture Regir PETERMIN getation Pre ogy Presen esent?		(In.) up side of I Irban Land ( Irban Land ( Irban Land ( R X G C O	complex, 0 (N No mottle 5YR 4/6 educing Co leyed or Lo oncretions rganic Stre	0 to 3 percer Mottle Colors Munsell Moist) 28 onditions pw-Chroma eaking in Sa No Is the No State	nt slopes		Drainage Class Field Observa e Abundance/ ze/Contrast , distinct High Organic Con Listed on Nationa Listed on Local H Other (explain in	tions Confir Tex Sandy loa Sandy loa Sandy loa Sandy loa I Hydric Soi I Hydric Soils L remarks)	m Mapped T ture, Concreti m, with crus m ace Layer in Is List .ist	ons, Structure hed rock	es No

O:VPROJECTVPVPOPX0000-0090VDOCS\919 WETLAND DELINEATION/DATASHEET\_2.DOC

Appendix B: Blank and Example Data Forms

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Incloset Citor	Dheren	a Mitimatine	Droiset						Date:	tink	11, 2001		
Project Site: applicant/Owner:	Rivergat	e Mitigation	rioject						County:		tnomah		
ivestigator:	Ethan R	osenthal							State:	Ore			
Normal Circumsta	nces exist on	the site?			x	Yes	1	i No	Community ID:				
the site significantly			on)?	⊦	<u> </u>	Yes	X	No	Transect ID:				-
Area a Potential Pr				erse)		Yes	X	No	Plot ID:	Plot	3		
EGETATION										. <u></u>			
minant Plant Species*			Percent	Stratum	Indic		Dominar	nt Plant Spe	cies		Percent	Stratum	Indica
* Rubus discolor			10 25	S H	FACI UPL	<u> </u>	8						
* Hypericum perfo * Solidago sp.	ratum		25	<u> </u>	UNK		10						-
*Unidentified gras	s		10	н	UNK		11						
Bare ground			30				12			·			
			<u> </u>	<u> </u>	1		14				1		
rcent of Dominant						0%			ded in the calculation				
	<u></u>							-	u	······	<u></u>		
(DROLOGY	<del></del>						مد بر و و و						
Recorded Data							ndicato	rs:		<b>.</b>	·		
Stream, Lake		ıge			rimary I	<i>ndicato</i> Inundal			, I		Indicators (2 idized Root		
Aerial Photog	Jiapiis							pper 12 in	ches		ater-Stained		. opper
No recorded da	ta available					Water I	Marks	•••		Lo	cal Soil Surv	vey Data	
eld Observations:	-			7		Drift Lir		aaite			C-Neutral To		
Depth of Surface V Depth to Free Wat		NA	(ln.) (ln.)	-			ent Dep		ande	0	ner (explain	ui remarks)	l
								are in Wet					
Depth to Saturated		•14	(in.)			Diama	je Patte	ers in Wetl	anus				
Depth to Saturated	I Soil: _>	•14	(ln.)	ponding,					rganic streaking in :	soils, etc.).			
Depth to Saturated emarks: No sig OILS lap Unit Name (serie	I Soil:	•14 hydrology pre	(ln.)		sedime	ent depo	osits, di		rganic streaking in s	excessively			
Depth to Saturated emarks: No sig OILS ap Unit Name (serie	I Soil:	hydrology pre	(In.) sent (i.e. no	complex, C	sedime	ent depo	osits, di	ift lines, o	rganic streaking in a Drainage Class: Field Observa	excessively		Type? Y	Circle es
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Depth to Saturated emarks: No sig OILS ap Unit Name (serie axonomy (Subgroup opth (inches) Hori	I Soil: Ins of wetland Ins and Phase ):	<ul> <li>14</li> <li>hydrology pre</li> <li>): Pilchuk-L</li> <li>Matrix Color (Munsell Mois</li> </ul>	(In.) sent (i.e. no	complex, C	sedime ) to 3 p Mottle Co Munsell I	ent depe ercent s	osits, di	ift lines, o	rganic streaking in Drainage Class: Field Observa le Abundance/	excessivel tions Confin	m Mapped T		es
Depth to Saturated emarks: No sig DILS ap Unit Name (serie exonomy (Subgroup opth (inches) Hori	I Soil: ns of wetland ss and Phase ): zon	<ul> <li>14</li> <li>hydrology pre</li> <li>): Pilchuk-L</li> <li>Matrix Color (Munsell Mois</li> </ul>	(In.) sent (i.e. no	complex, C	sedime ) to 3 p Mottle Co Munsell I	ent depe ercent s	osits, di	ift lines, o	rganic streaking in Drainage Class: Field Observa le Abundance/	excessivel tions Confin	m Mapped T		es
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Depth to Saturated emarks: No sig DILS ap Unit Name (serie xonomy (Subgroup pth (inches) Hori o 12 pth (inches) Hori o 12 dric Soil Indicators Histosol Histosol Histoc Epipedor Sulfidic Odor Aquic Moisture	I Soil: >	hydrology pre	(In.) sent (i.e. no Irban Land d it) it) Re Gi Gi Co	complex, C	ondition ow-Chr	ercent s olors Moist)	slopes	Mott	Iganic streaking in a Drainage Class: Field Observa le Abundance/ ize/Contrast	excessively tions Confir Fine sand	m Mapped T kture, Concret	tions, Structur	re, etc.
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# DATA FORM ROUTINE WETLAND DETERMINATION (1987 COE Wetlands Delineation Manual)

Form			•		. Wedands						
Project Site: Applicant/Ow	mer:	ivergate Mitigation	Project					Date: County:	July 11, 2001 Multnomah		
Investigator:	E	than Rosenthal						State:	Oregon		
Do Normal Circ	umstances	exist on the site?			X Yes	\$	No	Community ID:			
Is the site signif	ficantly distu	irbed (Atypical Situatio	on)?	Ì	Yes	3 X	No	Transect ID:			
Is Area a Poten	tial Problem	Area? (if needed, exp	olain on rev	/erse)	Yes	3 X	No	Plot ID:	Plot 4		
VEGETATIO	N									-	
Dominant Plant Sp	pecies*		Percent	Stratum	Indicator	Domina	nt Plant Spe	cies	Percent	Stratum	Indicator
1 * Salix lucio			25	T	FACW+	8					
2 * Salix lucio 3 * Phalaris a	da arundinacea		25 95	S H	FACW+	9 10					
4		· · · · · · · · · · · · · · · · · · ·				11					
5						12				+	
7						13					
Percent of Dom	ninant Speci	es that are OBL, FAC	N or FAC (	excluding	FAC-): 10	00%		,		• • • • • •	_
Remarks:		····									
HYDROLOG	Y										
		ribe in Remarks)		Wetla	nd Hydrolog	y Indicat	ors:				
Stream	n, Lake, or 1	ide Gauge			rimary Indica	ators:		5	Secondary Indicators (		
	Photograph	S				ated		.	Oxidized Root		n Upper 12"
Other	ded data av	ailabla				rated in l er Marks	Jpper 12 in	ches ·	Water-Stained Local Soil Sur		
Field Observation						Lines		-	FAC-Neutral 1		
Depth of Sur		NA	(ln.)			ment Dep	osits		Other (explain		
Depth to Fre			(In.)				ers in Wetl	ands			
Depth to Sat	turated Soil:	>14	(ln.)								
Remarks: [	Drift lines no	ted approximately 2 ft	base of tr	e trunk							
Remarks.	Dintines in	ned approximately 2 in		Se u unik.							
SOILS											
Map Unit Name		Dhase), Dilabult 1	labon Lond	an malay d	0 to 3 percer			Desingen Classe	excessively drained		Circle
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Depth (inches)	Horizon	(Munsell Mois	t)		Munsell Moist)			ze/Contrast	Texture, Concre	tions, Structur	e, etc.
0 to 12		10YR 4/1		5YR 4/4			Abundar	t distinct	Clay loam		
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l							l	I			
Hydric Soil India	cators:										
Histosol				leducing C					tent in Surface Layer i	n Sandy Soi	S
Histic Epi					.ow-Chroma	Colors		Listed on National			
Sulfidic O	oaor Disture Regin	70		Concretions	s eaking In Sa	ndy Soile	.  i	Listed on Local Hy Other (explain in r			
	iotare rtegli						·				
Remarks:				_							·
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Hydrophytic Vo	aptation D-	sent?	X Ye		No ist	hie Com-	ling Point V	Vithin a Wetland?	X Yes	No	
Hydrophytic Ve Wetland Hydrol			X Ye		NO IST NO	ins samp	ang Point V	wann a welland?		NU	
Hydric Soils Pre		••	X Ye		No						
		oneiderod wolload									
Remarks:	This plot is (	considered wetland.									
								•			
01000 15000		0-0090\!DOCS\919 W	ETLAND D	ELINEATI	ONIDATASH		200		Appendix B: Blank a	and Example	Data Forms
U.PROJECT	a 0/ X000					·					

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Project Site:	9	ivergate Mitigation	Project					Date:	.tob	/ 11, 2001		
pplicant/Own								County:		Itnomah		
vestigator:		than Rosenthal						State:		gon		
		exist on the site?		·	V   V		L Ne	Comprish 10				
		exist on the site? urbed (Atypical Situatio	n)2	Ļ	X Yes Yes	-x-	No No	Community ID: Transect ID:	<u> </u>			
-	-	n Area? <i>(if needed, ex</i>		ersei	Yes	1 x		Plot ID:	Plo	t 5		
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Iominant Plant Sp	oecies*		Percent	Stratum	Indicator	Dominan	nt Plant Spe	cies		Percent	Stratum	Indic
* Salix scou			30	Т	FAC	8						
2 * Salix lucid * Rubus dise			30 20	T S	FACW+	9						
4 • Equisetum			65	— й —	FACW	11						
5						12						
5 7		······································			<u> </u>	13						1
Percent of Domi	inant Speci	es that are OBL, FAC	N or FAC (e	xcluding F	AC-): 75%							
Remarks:												
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		cribe in Remarks)			nd Hydrology		rs:			1		
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Other	nolograph	ъ .					pper 12 in	ches		ater-Stained I		opper
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ield Observatio	ons:		••••••••••••••••••••••••••••••••••••••	7 E	Drift Li	ines			F/	C-Neutral Te	st	
Depth of Surf			(In.)			ent Depo			O	her (explain i	n remarks)	
Lionth to Eror		Pit: >14	(ln.)		I Droino							
Depth to Free Depth to Satu					Diama	ige rate	ers in Wetl	anos				
Depth to Satu	urated Soil:		(ln.)	ponding,					soils, etc.).			
Depth to Satu Remarks: N SOILS	urated Soil: No signs of	>14 wetland hydrology pre	(In.) sent (i.e. no			posits, dri		rganic streaking in Drainage Class	s: excessive			Circl
Depth to Satu Remarks: N SOILS Map Unit Name	urated Soil: No signs of (series and	>14 wetland hydrology pre J Phase):Pilchuk-U	(In.) sent (i.e. no	complex, 0	sediment dep	posits, dri	ift lines, o	rganic streaking in Drainage Class Field Observa	s: excessive		/pe? Ye	
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Form		(1987 C	OE Wetla	ands De	lineat	ion Manı	ial)				
Project Site: Applicant/Owner:	Rivergate Mitigation	Project			<b></b>		Date: County:	July Mult	11, 2001 nomah		
Investigator:	Ethan Rosenthal						State:	Oreg	jon		
• •	ices exist on the site? disturbed (Atypical Situation blem Area? <i>(if needed, ex</i>	•	X	Yes Yes Yes	X X	No No No	Community ID: Transect ID: Plot ID:	Plot	6		
	<u> </u>						<u> </u>				
VEGETATION Dominant Plant Species*		Percent Stra	atum India	ator D	ominar	t Plant Spe	rios		Percent	Stratum	Indicator
1 * Fraxinus latifolia		25	T FAC		8				1 0/0011		
2 * Salix hookeriana	· · · · · · · · · · · · · · · · · · ·	15	S FAC		9		····		İ		
3 Rosa pisocarpa 4 * Phalaris arundina			S FAC		10					<u> </u>	
5 Dipsacus sylvestris			H FAC		12						
6 7					13						<u> </u>
	pecies that are OBL, FAC	W or FAC (exclud	ling FAC-)	100%			····		I	I	1
Remarks:											
HYDROLOGY		······································							······		
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SOILS Map Unit Name (serie		it loam	· · · · · · · · · · · · · · · · · · ·				Drainage Class: ex Field Observatior			vpe?	Circle
Taxonomy (Subgroup)	Matrix Colo		Mottle C	olors		Mott	le Abundance/	is contain	i wappeu i	Aber C	
Depth (inches) Horiz	on (Munsell Mois	st)	(Munsell			Si	ze/Contrast		ture, Concreti	ions, Structure	, etc.
D to 12	10YR 4/1	5YR	4/4			Abundar	t distinct C	lay loam			
				·							
			•••••			· <u>·</u> · · · · · · · · · · · · · · · · · ·					
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor Aquic Moisture I	Regime	X Gleyed Concret	ng Conditio or Low-Ch tions c Streaking	roma Col			High Organic Conter Listed on National H Listed on Local Hydr Other (explain in ren	ydric Soil ic Soils L	s List	Sandy Soils	3
Remarks:											
WETLAND DETER	MINATION				5						
Hydrophytic Vegetatio Wetland Hydrology Pr Hydric Soils Present?		X Yes X Yes X Yes	No No No	Is this :	Sampli	ng Point V	Vithin a Wetland?	X Yes	3 <u> </u>	No	
Remarks: This plo	t is considered wetland.					-	· ·				
O:\PROJECT\P\POPX	0000-0090\!DOCS\919 W	ETLAND DELINE	ATION/DA	TASHEE	T_6.D	OC		Appendix	B: Blank a	nd Example	Data Fon

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roject Site:	Riv	ergate Mitigatior	n Project					Date:		11, 2001		
pplicant/Owner:								County:		tnomah		
vestigator:	Eth	an Rosenthal						State:	Ore	gon		
o Normal Circumstar					X Yes		No	Community ID:				
the site significantly Area a Potential Pro				(ama)	Yes Yes	X	No No	Transect ID: Plot ID:	Plot	7		
Area a Potential Pro	Dolem P	viear (ii needed, e			165		] 110			. /		
EGETATION												
minant Plant Species*			Percent	Stratum	Indicator		nt Plant Spe	cies		Percent	Stratum	Indica
* Salix lucida * Rubus discolor			10	S S	FACW	8						
* Solidago sp.		······	10	н	UNK	10						
*Unidentified grass	5		15	н	UNK	11						
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YDROLOGY											, <u> </u>	
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Aerial Photog Other	irapns						pper 12 in	iches		ater-Stained		opper
No recorded dat	ta avail	able			Water	Marks			Loi	cat Soit Surv	ey Data	
eld Observations: Depth of Surface W	lator	NA	/In )	-    -	Drift L	ines ent Depo	neite			C-Neutral Te ner (explain i		
LIPDID OF SUITACE M	valer.	NA	(ln.)	1 1	i Seum	ен рер	วงแจ		L 0"	ici (exhiait)	птепака)	
	er in Pit		` ` `		Draina	ige Patte	ers in Wet	lands				
Depth to Free Wate Depth to Saturated			(ln.) (ln.)		Draina	ige Patte	ers in Wet	lands				
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Form Project Site: Applicant/Owner:	Rivergate Mitigation	Project				······································	Date: County:	_July Mult	11, 2001 nomah			
Investigator:	Ethan Rosenthal						State:	Oregon				
	ces exist on the site? disturbed (Atypical Situatio blem Area? <i>(if needed, ex</i>		erse)	X Yes Yes X Yes X		No No No	Community ID: Transect ID: Plot ID:	Plot	Plot 8			
VEGETATION							_ <u></u>					
Dominant Plant Species*		Percent	Stratum	Indicator	Domin	ant Plant Spe	cies		Percent	Stratum	Indicator	
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3					10						<u> </u>	
5			<u> </u>		11 12							
6 7					13 14							
	pecies that are OBL, FAC	N or FAC (e:	xcluding F	AC-): 10	0%				•••••		1	
Remarks:									-			
HYDROLOGY												
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SOILS Map Unit Name (series Faxonomy (Subgroup):		It loam					Drainage Class: e Field Observatio			/pe? (Ye	Circle	
	Matrix Color			Aottie Colors			e Abundance/					
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Remarks: This plo	t is considered wetland.											
0:\PROJECT\P\POPX	0000-0090\!DOCS\919 Wi	ETLAND DE	LINEATIO	NDATASH	EET_8.	poc		Appendix	B: Blank an	d Example	Data Fon	

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Project Site:	Rivergate Mitigation	Date:		July 11, 2001 Multnomah Oregon									
Applicant/Owner: nvestigator:	Ethan Rosenthal	County: State:											
	ces exist on the site?	Community ID:											
	disturbed (Atypical Situat	tion)?	ł	X Yes Yes X		X	No No	Transect ID:					
s Area a Potential Pro	blem Area? (if needed, e	xplain on rever	rse)	Yes X		X	No	Plot ID:	_Plot	Plot 9			
/EGETATION	• • • • • • • • • • • • • • • • • • •						<u> </u>						
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5						12				<u> </u>			
5 7		++	· · · ·	+		13 14					<u> </u>		
Percent of Dominant S	Species that are OBL, FAC	CW or FAC (ex	cluding F	AC-):	100%	6							
Remarks:													
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Other	iapiis .						pper 12 in	ches	Wa	ter-Stained	Leaves	- Spher	
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Project Site:		Rivergate Mitigation	Project		Date:		July 11, 2001						
Applicant/Owner: Investigator:			······		County:	<u>_</u>	Multnomah						
		Ethan Rosenthal	State:		Oregon								
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		turbed (Atypical Situati m Area? <i>(if needed, ex</i>		verse)	Yes		No No	Plot ID:	Ē	Plot 10			
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EGETATIO	DN												
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* Rubus d	discolor		15	S	FACU	10							_
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* Phalaris	arundinacea		15	н	FACW	13							
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ercent of Don emarks:	minant ope		W UI FAG (	excluding	-AC-J. 60					·		<u> </u>	
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Depth of Su			(In.)	ΙË		nent Depo		landa		Other (exp	lain in rema	rks)	
Depth to Fre	oo water in	Pit: >14											
			(in.)	L		age Patte	rs in wet	lanus					
Depth to Sa	aturated So		(ln.)	o ponding,		-			n soils, etc	.).			-
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