SOUTH DESCHUTES COUNTY LOCAL WETLAND INVENTORY REPORT

Prepared for
Deschutes County

June 2011

Funded by:
Oregon Watershed Enhancement Board
Deschutes River Mitigation and Enhancement Program

ESA Adolfson

Paul Adamus
Harper Houf Peterson Righellis Inc.

This Page Intentionally Left Blank

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 OVERVIEW OF THE INVENTORY PROCESS 1
1.2 PUBLIC INVOLVEMENT 2

2.0 STUDY AREA AND LANDSCAPE SETTING 3

3.0 METHODS 4
3.1 PRELIMINARY MAPPING AND RESEARCH 4
3.2 REQUIRED INFORMATION SOURCES 4
3.3 WETLAND DETERMINATIONS 5
3.3.1 On-site Determinations 5
3.3.2 Off-site Determinations 5
3.4 FIELD MAPPING AND DATA COLLECTION 6
3.4.1 Wetlands 6
3.4.2 Probable Wetlands 8
3.4.3 Wetland/Upland Mosaics 8
3.4.4 Sample Plots 9
3.4.5 Guidance on How to Find Sample Plot Data and Other Information 9
3.5 OVERVIEW OF OREGON RAPID WETLAND ASSESSMENT PROTOCOL 9
3.5.1 ORWAP Methods 11

4.0 RESULTS 12
4.1 WETLANDS 12
4.2 DEEPWATER HABITAT 13
4.3 ARTIFICIALLY CREATED WETLANDS 13
4.4 SUMMARY OF PROBABLE WETLANDS (PWS) 13
4.5 ORWAP RESULTS 13
4.6 GOAL 6 WATER QUALITY RESOURCES 16

5.0 LIMITATIONS 17

6.0 LITERATURE CITATIONS 18

ATTACHMENT 1 - SOUTH DESCHUTES COUNTY LOCAL WETLAND INVENTORY

LIST OF APPENDICES

Appendix A: Figures A-1
Figure 1 Vicinity Map
Figures 2.1 to 2.7 National Wetland Inventory Maps
Figures 3.1 to 3.7 Soils Maps
Appendix B: Staff Qualifications B-1
Appendix C: Wetland Determination Forms C-1
Appendix D: Wetland Summary Sheets D-1
Appendix E: Cowardin Glossary of Terms E-1
Appendix F: ORWAP Raw Data F-1
Appendix G: ORWAP Glossary and Summary Scores, Tables G1 to G4 ..... G-1
Appendix H. Overview of Groundwater Quality H-1

LIST OF TABLES

Table 1. Summary of Wetlands in the South Deschutes County LWI 12

Table 2. Summary Statistics for Function Scores of South Deschutes County Wetlands (n=114)..... 14

Table 3. Summary Statistics for Value Scores of South Deschutes County Wetlands (n=114)..... 15

1.0 INTRODUCTION

The South Deschutes County Local Wetland Inventory (LWI) has been prepared and funded through an Oregon Watershed Enhancement Board (OWEB) Technical Assistance Grant which also leverages funding from the Deschutes River Mitigation and Enhancement program. ESA Adolfson (ESA) has prepared this report and mapping with technical assistance by Deschutes County and Oregon Department of State Lands (DSL). ESA was assisted in the field inventory by Paul Adamus and Harper Houf Peterson Righellis Inc., (HHPR). As requested by the County, Paul Adamus also provided technical expertise in the use of the Oregon Rapid Wetland Assessment Protocol (ORWAP).

Local wetland inventories are used by local governments to identify water resources during comprehensive plan development to meet statewide planning goals. The South Deschutes County Local Wetland Inventory (LWI) will allow the County to better identify potential wetland areas that provide important water quality functions and identify areas where development will avoid or minimize impacts to those wetlands. The LWI will also help identify areas where restoration projects may improve water quality and other wetland functions. Similarly the LWI may assist landowners in planning for potential project permitting for development of a property. Most impacts to wetlands and streams are regulated by DSL and the U.S. Army Corps of Engineers (Corps) and usually require an approved wetland delineation report as well as permits prior to site development. This inventory did not include wetland delineations or detailed studies necessary to support permitting of a specific project.

LWI requirements are outlined in the LWI Rule (Oregon Administrative Rule [OAR] 141-086-0180 through 141-086-0240).

1.1 Overview of the Inventory Process

The LWI process involves survey, identification and mapping of all wetland areas larger than 0.5 acre that occur within a defined study area. For the South Deschutes County LWI, the study area covers 18,937 acres from Sunriver to south of LaPine (Figure 1, Appendix A). This is the largest LWI that has been completed in Oregon to date. A local wetland inventory is also a refinement of the National Wetland Inventory (NWI), which was a national effort undertaken by the U.S. Fish and Wildlife Service in the 1980s. The NWI shows the likely location of wetlands across the nation; however, these maps are not as accurate as LWIs because they were derived from high altitude images of the landscape and are based on imagery from the 1980s.

Deschutes County (County), citizens, wetland scientists from ESA, and the Oregon Department of State Lands (DSL) have all played a role in the inventory process for South Deschutes County. The County began the effort by scheduling a public meeting to inform citizens of the LWI and by obtaining permission from landowners to allow wetland scientists to access private property. ESA compiled existing data on wetlands including NWI maps, aerial photos and soils maps, and then conducted field observations to confirm the information sources. Where needed and where property access was

permitted, ESA collected data on the vegetation, soils, and hydrology of a parcel to determine if the area is or is not a wetland. ESA also assessed the functions and values of the wetlands using the ORWAP. DSL reviewed the draft LWI to ensure it was conducted according to state standards and to provide quality control/quality assurance.

The final LWI consists of a set of maps that show the approximate location of wetlands and streams, and descriptive information about the wetlands and the main functions they provide. Functions that are evaluated include wildlife habitat quality, contribution to fish habitat or water quality improvement, and floodwater retention capability. Every attempt was made to map wetlands correctly on parcels and to map wetland boundaries to an accuracy of at least 5 meters (m) or 16.4 feet. There may be areas where the boundary is less accurate, especially on large tracts with few geographic reference points, and areas where property access was denied.

Ultimately, the LWI will replace the National Wetland Inventory (NWI) map for South Deschutes County and improve the accuracy in the identification of jurisdictional wetland characteristics in the upper Deschutes Basin. Upon approval of this report and mapping, Deschutes County will formally adopt the LWI into its Comprehensive Plan and Goal 6 Inventory.

Staff members who participated in the South Deschutes County LWI include the following wetland scientists from ESA: John Gordon, Sarah Hartung, Alison Sigler, Aaron Booy, Rosemary Baker, and Adam Merrill. In addition, the project team included local wetland scientists Paul Adamus and Alessandra Capretti from HHPR. Project principals from ESA include Tom McGuire, Cathie Conolly, and Teresa Vanderburg. All field staff received training from Paul Adamus in the ORWAP methods prior to field investigations. Refer to Appendix B for a complete list of staff qualifications and experience.

1.2 Public Involvement

The County organized the public involvement efforts for this project. Letters describing the project and seeking property access permission were sent to all property owners whose tax lots intercepted hydric soil layers and/or NWI-mapped wetlands and streams, or whose tax lots showed soil saturation (darker areas) indicative of wetlands in the aerial photographs. Access permission was granted to 1,286 of 4,652 properties within the study area, for a permission rate of 28 percent.

A public open house was held at Sunriver on March 16, 2010, at the Three Rivers Elementary School, 56900 Enterprise Drive. Approximately 100 members of the public attended the meeting.

The County conducted a second public meeting on November 16, 2010, to present the draft LWI results. The County will also schedule and facilitate a public meeting to present the final LWI results in 2011. Dates, times, and locations for these future meetings will be determined by the County.

2.0 STUDY AREA AND LANDSCAPE SETTING

The South Deschutes County study area is located in south central Deschutes County in the Upper Deschutes River sub-watershed (Figure 1, Appendix A). The study area covers 18,937 acres. This is the largest LWI that has been undertaken in the state. The Upper Deschutes River sub-watershed is within the U.S. Geological Survey eight-digit hydrologic unit codes (HUC) 17070301 and 17070302, and includes portions of the Deschutes River, Little Deschutes River, and Fall River. The Fall River and the Little Deschutes River flow into the Deschutes River near Three Rivers, Oregon. The Deschutes River flows north into the Columbia River.

Deschutes County is situated between the Cascades Mountains to the west and the high desert to the east. Deschutes County's land use consists mostly of forested land at higher elevations and agricultural and rural residential land at the lower elevations. The forested land tends to be fragmented and is dominated by lodgepole pine (*Pinus contorta*) with some ponderosa pine (*Pinus ponderosa*) (Franklin and Dyrness, 1988). The study area terrain is mostly flat, characteristic of wide floodplains, and is predominantly publicly-owned national forest land with scattered privately held farms, ranches, and housing tracts. Irrigated agriculture is used to produce hay and provide pasture. In recent years, Deschutes County has been one of the fastest growing counties in Oregon.

Little Lava Lake is the headwaters of the Deschutes River and is located northwest of La Pine. Most of the water in the Upper Deschutes is diverted for irrigation and two reservoirs are located upstream from the study area. Wetlands located on these large river systems tend to be wetland/upland mosaics dominated by only a few wetland plant species. Common wetland species include water sedge (*Carex aquatilis*), Nebraska sedge (*Carex nebrascensis*), narrowleaf willow (*Salix exigua*), grey alder (*Alnus incana*) and lodgepole pine (*Pinus contorta*).

Weather in and around Deschutes County consists of cold winters with snow and hot, dry summers, typical of the High Lava Plains physiographic province (Franklin and Dyrness, 1988). The growing season is short and day and night temperature fluctuations can be great.

3.0 METHODS

The Local Wetland Inventory process is described in OAR 141-086-0180 through 141-086-0240. Methods used to inventory wetland resources in the South Deschutes County study area are in conformity with these state rules. However, due to the extensive area covered by the South Deschutes LWI, DSL has agreed to the presentation of the inventory information on maps at a one inch to 660 foot (1" = 660') scale instead of the standard 1" = 200' scale. Also due to the large scale of this LWI, Cowardin habitat classes greater than 0.5 acre within a wetland were mapped as separate polygons, instead of those greater than 0.25 acre in size as written in the OARs. This adjustment to the methods was approved by DSL and the County.

3.1 Preliminary Mapping and Research

Preliminary mapping and research was completed prior to field investigations to determine which sites within the study area were likely to contain wetlands. The County compiled preliminary wetland maps based on NWI mapped wetlands (Figures 2.1 to 2.7 in Appendix A). The County also provided wetland delineations obtained from DSL. ESA reviewed and expanded the preliminary wetland mapping provided by the County based on existing wetland delineation data and a review of aerial photographs, soil survey maps (Figures 3.1 to 3.7, Appendix A), and topographic mapping. These preliminary wetland maps were used to determine which residents to contact for access permission.

ESA identified and recommended tax lots to which access should be requested for conducting wetland field work. The County sent access requests to the owners of those tax lots and then provided preliminary maps indicating the lots where access was granted.

3.2 Required Information Sources

The South Deschutes County LWI is based on several sources of information, including the following GIS data layers and technical documents:

- Geographic Information Systems (GIS) layers of:
    - Aerial digital imagery (Deschutes County, 2010);
    - LWI study area (Deschutes County, 2010);
    - Tax lot access permissions (Deschutes County, 2010);
    - Tax lots (Deschutes County);
    - Potential wetlands (ESA, 2010);
    - Wetland assessment units (ESA, 2010);
    - La Pine/Wickiup Junction Local Wetland Inventory (DSL, 1996);National Wetlands Inventory (NWI), (U.S. Fish and Wildlife Service, 2009);
    - Soil Survey of Upper Deschutes River Area, Oregon (NRCS, 1992);

  - Streams (Deschutes County, 2007);
  - Rivers (Deschutes County, 2006); and
  - Public Land Survey System reference grids (Deschutes County, 2005)
- DSL existing wetland delineations/determinations (various citations).
- USGS quadrangle maps including: La Pine, Finley Butte, Anns Butte, Pistol Butte, Round Mountain, Masten Butte and Wickiup Dam.

Other information sources used to develop the LWI include local landowner knowledge.

3.3 Wetland Determinations

Wetland determinations were made for all wetlands based on either on-site or off-site investigations, depending on access permission. Refer to Appendix C for the Wetland Determination Forms.

3.3.1 On-site Determinations

For parcels with access permission, on-site determinations were made according to the Corps 1987 Manual (Environmental Laboratory, 1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Corps, 2010) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Corps, 2008). During the first week of field work (May 3 to 7, 2010) field crews utilized the Arid West Supplement when conducting investigations. However, after speaking with DSL scientists who have worked in the Deschutes area, ESA was directed to instead use the Western Mountains Supplement. All data collected after May, including field investigations conducted on June 21 through 25 and August 9 and 10, 2010, were collected using the Western Mountains, Valleys, and Coast Regional Supplement.

Determinations were made on parcels that were judged to have wetlands or wetland characteristics based on preliminary mapping and research efforts. Sample plots were established to document typical vegetation, soil, and hydrology characteristics and to determine the approximate location of the wetland boundary.

3.3.2 Off-site Determinations

ESA did not enter properties where property owners denied access. For those parcels, off-site determinations were made by observing site characteristics from adjacent public rights-of-way (e.g. public streets or sidewalks) or from nearby parcels with access permission. Where feasible, sample plots were established in road rights-of-way and labeled “off-site” to characterize wetland conditions for adjacent parcels where site access was denied by the property owner. Along several waterways (e.g. the Deschutes River and the Little Deschutes River), we were able to observe a number of inaccessible wetlands from parcels on the opposite shoreline where ESA was granted access. Binoculars were used to observe many of these inaccessible wetlands. Field observations

of hydrology and vegetation were assessed in combination with existing data such as published soil survey data, NWI maps and/or known DSL delineations, landscape setting, aerial photography, and staff experience. Positive off-site field observations of wetland hydrology were assessed by noting evidence of soil saturation (i.e. glistening on the surface or shallow inundation) in the wetland using the naked eye and/or binoculars.

Some wetlands could not be observed in the field from any vantage point due to lack of access to adjacent parcels, lack of public roads and/or unsafe road conditions (lack of shoulders). In these cases, where we lacked "visual access" ESA staff relied upon aerial imagery and observations of the general landscape to determine wetland boundaries. Sample plot data were not created for wetlands that could not be observed or accessed.

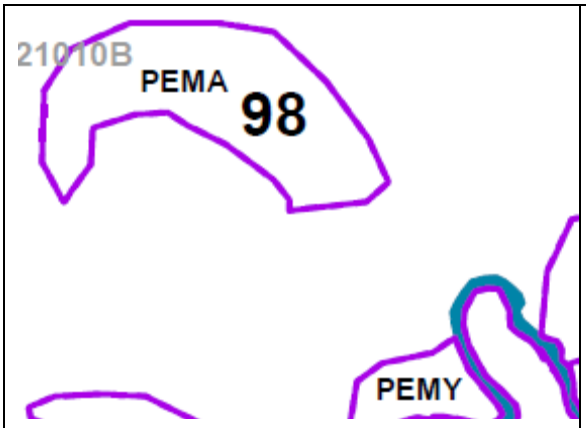
3.4 Field Mapping and Data Collection

All field data were collected and recorded using hand-held Trimble Yuma, Global Positioning System/Geographic Information System (GPS/GIS) data recorders. Prior to field investigations, aerial imagery and shapefiles of the study area were loaded onto the GPS units for reference in the field. The GPS/GIS units enabled field crews to digitize wetland boundaries in ArcPad and edit existing wetland boundaries as necessary, based on observations. Trimble GPS units were also used to map probable wetlands, mark artificial wetlands, and identify locations of sample plots and streams. Other information recorded on the GPS/GIS units includes field notes and wetland delineation/determination data on digital data forms. After the field work, data were uploaded onto a desktop computer for viewing and final editing.

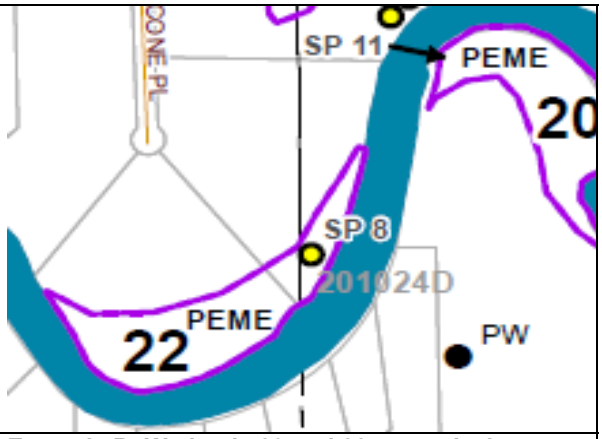
3.4.1 Wetlands

Wetland boundaries were mapped per OAR 141-086-0210 with an accuracy target of 5 m (16.4 feet) on sites where property access was obtained. The actual accuracy may be less for some wetlands that could not be visually confirmed in the field due to lack of access permission or lack of visual access from nearby roads. Wetlands greater than or equal to 0.5 acre were assigned a unique identification code (1, 2, 3, etc) generally from north to south within the study area. Wetlands were given unique numeric identifiers, with some exceptions, according to the following criteria:

- The wetland is separate from other wetland areas and lies further than 50 feet away from another wetland (Example A).
- The wetland is located on one side or the other of the Deschutes River (Example B). The Deschutes River is on average wider than 100 feet and wetlands that occurred on both sides of the channel were generally labeled as separate features.
- The wetland is a continuous feature that encompasses both sides of one of the smaller river or stream systems within the study area, including the Fall River, Little Deschutes River, Paulina Creek, and Long Prairie Slough (Examples C and D). These rivers and streams are on average less than 50 feet in width and wetlands that occurred on both sides of one of these channels were generally labeled as the same wetland.

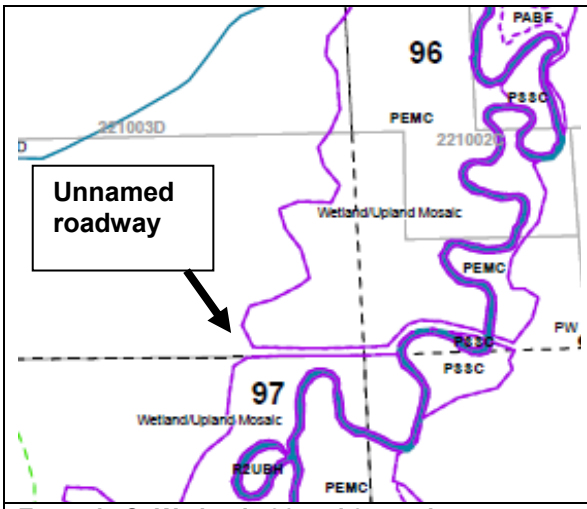


Example A: Wetland 98 is greater than 0.5 acre and not within 50 feet of another wetland.

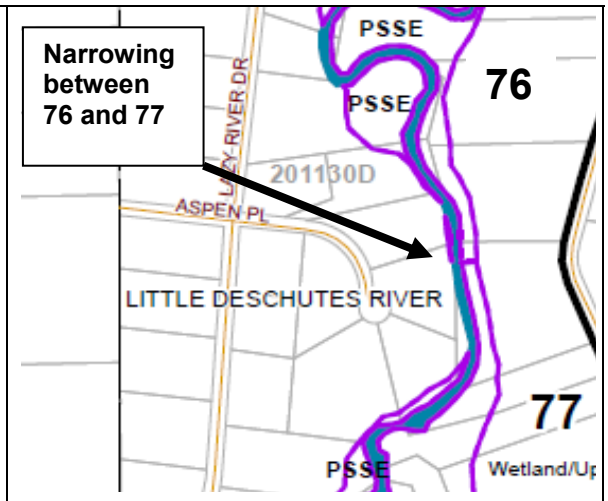


Example B: Wetlands 20 and 22 are typical features along the Deschutes River.

Wetlands 96 and 97 (Example C) are typical features of the Little Deschutes River floodplain that contain relic and current oxbows as well as upland hummocks. The breaks between these large, continuous features were often roadways or a narrowing of the feature.

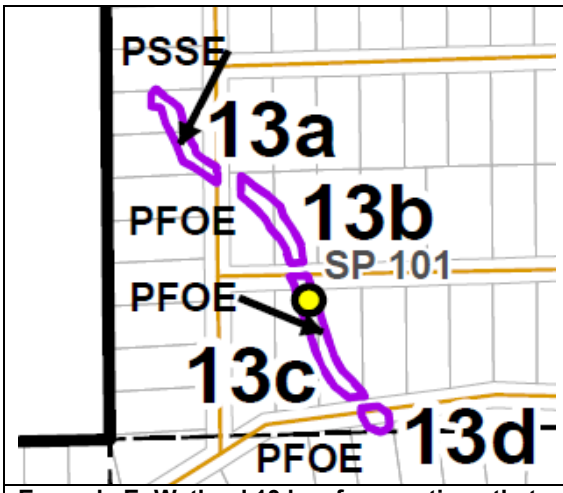


Example C: Wetlands 96 and 97 are large features along the Little Deschutes River and are separated by an unnamed road.

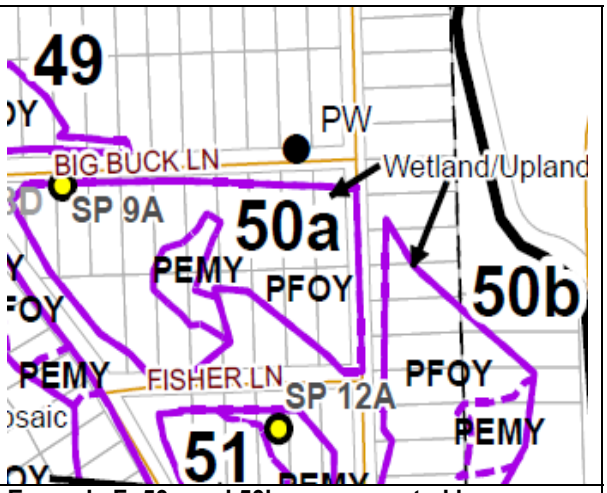


Example D: The dividing point between wetlands 76 and 77 is a narrowing east of Aspen Place.

Wetlands that were separated by a roadway and that were deemed hydrologically connected were assigned a letter after the unique numeric identifier to indicate the wetlands were considered sections of one wetland unit (Examples E and F).



Example E: Wetland 13 has four sections that are separated by roadways but hydrologically connected via culverts.



Example F: 50a and 50b are connected by a culvert, but no culvert was observed between 49 and 50a-b or 51 and 50a-b. Wetlands 49 and 51 are more than 50 feet away from 50a-b.

Wetlands that extend beyond the study area boundary were digitized to reflect only the area within the study limits. In some cases a wetland extends in and out of the study area resulting in two or more seemingly separate polygons; however, these polygons are considered one unit since they were on-site portions of a larger off-site wetland. Previously delineated or determined DSL wetland delineations within the study area were field verified and edited if the current size was found to be different from the recorded size.

3.4.2 Probable Wetlands

Areas that appeared to meet wetland criteria but were less than 0.5 acre within the study area were digitized as a point and recorded as a "probable wetland" (PW), as defined by OAR 141-086-0200. In some cases, a PW represents a small portion of a larger wetland that is located outside of the study area.

3.4.3 Wetland/Upland Mosaics

Wetlands with upland inclusions were identified on the maps as "wetland/upland mosaics." Wetland/upland mosaics are classified as a "landscape where wetland and non-wetland components are too closely associated to be easily delineated or mapped separately." Also the microtopography consists of, "ridges and hummocks supporting non-hydrophytic species are often interspersed throughout a wetland matrix having clearly hydrophytic vegetation, hydric soils, and wetland hydrology," (Corps, 2010).

A majority of the wetland/upland mosaics occurred on the floodplains of the Deschutes River, Little Deschutes River Fall River, Long Prairie Slough, and Paulina Creek. In most cases, we had minimal field access to these large wetland mosaic features. However, we observed an interspersion of wetland and upland habitats in each of the floodplain areas. In other cases a wetland was considered a mosaic due to uneven

excavation and fill within a degraded wetland. Aerial imagery was used in conjunction with field investigations to aid in determinations of wetland/upland mosaic conditions. Site-specific causes for designation as a wetland/upland mosaic are provided on the wetland summary sheets (Appendix D).

3.4.4 Sample Plots

Sample plots (SP) were established for each wetland (except wetlands on file with DSL) and for areas that appeared to have wetland characteristics. There were several deviations from this method related to wetland size. When there were many wetlands within a small area and the wetlands exhibited similar wetland characteristics, one sample plot was used to represent characteristics in all of the wetlands. Additional sample plots were established in larger wetlands when necessary to describe variable habitats. Sample plots located in upland areas were established based on the original assessment units to confirm that upland conditions were present. Refer to Appendix C for wetland determination forms. Sample plots were not established for wetlands for which no access was granted if these wetlands were not visually accessible from rights-of-way.

3.4.5 Guidance on How to Find Sample Plot Data and Other Information

For landowners and other users interested in finding sample plot data for a particular parcel, use the following steps:

Step 1) Go to the Local Wetland Inventory Index Maps and the appropriate location based on the sub-area maps (e.g. Map B.2).

Step 2) Pull-up the sub-area map (e.g. B.2) to identify the unique wetland code (in this example Wetland 5) and corresponding sample plot number(s) (e.g. SP 201).

Step 3) Using the sample plot number (e.g. SP 201), find the corresponding wetland determination form in Appendix C based on that sampling point (e.g. SP 201).

The sample plot symbol (SP 201) on Map B.2 is located in the right-of-way because access permission was not granted for the parcel and observations of the wetland were made from the side of the road.

The property owner or interested user may also obtain additional wetland information by reviewing the corresponding Wetland Summary Sheet from Appendix D. In this example, one would look for Wetland Code 5 for the appropriate Wetland Summary Sheet.

3.5 Overview of Oregon Rapid Wetland Assessment Protocol

The functions and values of each wetland in the study area were assessed using ORWAP. The ORWAP was developed to rapidly and qualitatively assess the functions and values of all types of wetlands throughout the state of Oregon. ORWAP is intended to be completed by wetland professionals and was designed for planning and educational purposes. The methodology, as outlined in The Manual to the Oregon Rapid Wetland

Assessment Protocol (version 2.0) (Adamus et al., 2009), consists of a series of questions with multiple-choice responses. The questions cover a wide variety of features that can be observed rapidly when visiting a wetland or in some cases, obtained from aerial imagery or other sources. These particular questions were designed to correlate with the relative levels of various functions that a wetland can perform and the values associated with those functions. After a user answers all the questions, ORWAP uses the responses to automatically compute a score for each function and its value.

"Functions" are actions that wetlands naturally perform, like hold floodwater, purify stormwater runoff, and provide waterfowl habitat (to name a few). Not all wetlands perform the same function equally. For example, some wetlands provide thermoregulation (i.e. temperature control), while others do not. The responses to ORWAP provide a relative index to quantify how well a wetland performs a given function. For example, water storage (if that function occurs in a given wetland) may be valued much more highly if buildings downstream are at risk of river flooding, because storage of water in wetlands located upstream can lessen the risk of those buildings being flooded. In contrast, the value of the wetland's flood storage function might be considered less if there are no buildings downstream.

Thus, as long as a function is being performed at some minimum level, its function and value scores are independent of each other. Function scores are mostly driven by physical and biological features in and around a wetland. In contrast, value scores are driven in by socioeconomic features located upslope and/or downslope of the wetland, or in some cases depend on whether social institutions have assigned a special designation to the particular wetland, its species, or the wetland type.

ORWAP evaluates each wetland for the following functions and values:

1) water storage (WS),
2) sediment retention and stabilization (SR),
3) phosphorous retention (PR),
4) nitrate removal (NR),
5) thermoregulation (T),
6) carbon sequestration (CS),
7) organic matter export (OE),
8) aquatic invertebrate habitat (INV),
9) anadromous (FA) and non-anadromous fish habitat (FR),
10) amphibian and reptile habitat (AM),
11) waterbird habitat including feeding (WBF) and breeding (WBN),
12) songbird, raptor, and mammal habitat (SBM),
13) pollinator habitat (POL),
14) native plant diversity (PD),
15) wetland sensitivity, (Sens)
16) wetland ecological condition, (Cond)
17) wetland stressors, (Stress)
18) public recognition and use (PUv), and
19) provisioning services (PSv).

ORWAP scores for both functions and values are expressed on a scale of zero to 10. However the range of scores for each function or value across a group of assessed wetlands will vary. While ideally or theoretically each function or value score may range from zero to ten actual real world conditions may rarely combine to result in scores that cover the entire range.

Because of the diversity of functions and values and the sometimes contradictory factors that control them, no "overall" or "average" wetland score is given. While ideally or theoretically each function or value score may range from zero to 10, actual real world conditions may rarely combine to result in scores that cover the entire theoretical range. Individual function or value scores may be compared relative to that particular function or value score across the assessed wetlands. This provides a relative basis to distinguish among assessed wetlands but the scores should not be interpreted on an absolute scale of zero to ten, nor as a direct comparison or ranking between functions or values.

It is rare for any given wetland to be considered "perfect" for any single function, let alone for all or most of the 16 separate functions in the ORWAP methodology. To get an idea how wetlands in Oregon generally score for functions and values, a user can compare scores from a particular wetland with those from scores calculated for 221 wetlands of all types throughout Oregon during ORWAP field testing. The state-wide results are summarized in the excel spreadsheet ORWAP_SuppInfo file, AllSites tab, availablefrom the DSL web site: http://www.oregonstatelands.us/DSL/WETLAND/or_wet_prot.shtml. Navigate to the ORWAP Supplemental Information link to open or download the file.

A common misperception is that only pristine or unaltered wetlands are highly functioning. Although it is true that pristine wetlands usually provide valuable functions, other wetlands can also be highly functioning. For example, impounding water by placing small berms or dikes in an otherwise unaltered but seasonally dry wetland may enhance water storage functions and habitat for nesting waterfowl, although perhaps at some cost to other wetland functions such as anadromous fish habitat.

3.5.1 ORWAP Methods

A majority of wetland assessments were completed during the May 2010 field visit. All wetlands with access permission were assessed on-site. When permission was not granted, wetlands were assessed off-site with visual access from a public right-of-way or adjacent parcels in combination with aerial imagery. In cases where no public or view access existed, wetlands were assessed using current aerial photographs and other existing data compiled for the LWI as well as the wetland scientists' experience with similar conditions.

After field efforts were completed, the data were entered into an ORWAP template spreadsheet, which contains formulas that simultaneously process and display data from all 114 wetlands.

4.0 RESULTS

4.1 Wetlands

ESA identified and recorded 114 wetlands within the study area totaling 3,459 acres. Summaries of the 114 mapped wetlands and tax lots for each wetland are provided in Appendix D. Acreages for each wetland are presented in Table 1. Additionally, 71 probable wetlands (PW) and 29 artificial wetlands were identified and mapped for the study area. Refer to Attachment 1 for the LWI index and individual maps. A glossary of terms to aid in review of the LWI maps is provided in Appendix E.

Table 1. Summary of Wetlands in the South Deschutes County LWI

Wetland Code	Size (acres)	Wetland Code	Size (acres)
1	3.5	58	0.9
2	1.0	59	2.2
3	12.7	60	3.9
4	2.2	61	2.1
5	8.0	62	3.1
6a-b	0.6	63	10.4
7	0.7	64	2.0
8	1.1	65	0.7
9	6.8	66	1.4
10	9.2	67	0.8
11	3.8	68	0.3
12	2.2	69	39.1
13a-d	0.7	70	0.6
14	9.8	71a-b	0.5
15	4.3	72	0.9
16	2.0	73	46.8
17	2.5	74a-c	94.9
18	10.7	75	0.7
19	2.3	76	72.7
20	3.7	77	23.4
21	7.8	78	0.5
22	4.5	79	142.2
23	1.1	80	91.6
24	3.0	81	17.3
25	5.0	82	10.4
26a-b	2.5	83	93.7
27a-c	12.1	84	7.9
28a-b	1.8	85	32.0
29a-c	5.8	86	95.2
30	1.7	87a-b	41.1
31	0.8	88	1.4
32	1.4	89	85.0
33	3.7	90	65.5
34	4.3	91	2.9
35	2.5	92a-b	48.8
36	2.4	93a-b	340.0

Wetland Code	Size (acres)	Wetland Code	Size (acres)
37	1.9	94	104.1
38	2.3	95	69.1
39	1.8	96	82.3
40	3.5	97	64.3
41	34.0	98	7.7
42	34.8	99	232.7
43a-e	32.3	100a-b	15.0
44	12.3	101	1.2
45	21.0	102	2.3
46	25.3	103a-b	200.4
47	2.8	104a-b	1.2
48	27.4	105	97.2
49	1.5	106	159.3
50a-c	14.8	107	100.4
51	3.4	108	48.0
52	2.4	109	112.8
53	4.2	110	221.0
54	36.8	111	8.6
55	4.0	112	15.3
56	8.5	113	78.0
57	0.9	114	31.0
		TOTAL	3,458.9

4.2 Deepwater Habitat

There is no deepwater habitat within the South Deschutes County study area.

4.3 Artificially Created Wetlands

Twenty-nine (29) artificially created wetlands were found in the study area; three stormwater treatment ponds, two irrigation channels, two excavated ponds, three golf course ponds, two fish hatchery ponds, one landscape pond, eleven stock ponds, two dammed ponds, and three other ponds. Artificially created wetlands may or may not be state or federally jurisdictional.

4.4 Summary of Probable Wetlands (PWs)

Seventy-one (71) probable wetlands (PWs) were mapped within the study area. Probable wetlands appeared to have wetland characteristics but were either less than 0.50 acre or were small and of an undetermined size. PWs may or may not be state or federally jurisdictional.

4.5 ORWAP Results

ORWAP summary statistics are presented in Table 2 (functions) and Table 3 (values) below. The median of a list of numbers can be found by arranging all the observations

from lowest value to highest value and selecting the number in the middle position. If there is an even number of observations, the median is defined as the average of the two middle values. The 75th percentile is the score for which 75 percent of the wetlands scored lower and only 25 percent higher. The 90th percentile is the score for which 90 percent of the wetlands scored lower and only 10 percent higher. ORWAP raw data results for wetlands in the study area are located in Appendix F. Summary scores for the individual site functions and values are shown in Appendix G.

The summary statistics indicate that most wetlands in the Upper Deschutes are currently capable of performing all functions commonly attributed to wetlands except for Anadromous Fish Habitat and Waterbird Nesting Habitat (Table 2). Lack of the former is due simply to lack of access to the project area by anadromous fish, and lack of the latter is due to scarcity of large wetlands that remain ponded throughout the summer. Waterbirds do nest in riverine wetlands along the Deschutes River within the study area, but even this nesting is very limited.

Table 2. Summary Statistics for Function Scores of South Deschutes County Wetlands (n=114)

Functions	Median	Min	Max	75TH percentile	90 TH percentile
Water Storage & Delay (WS)	2.52	0.00	6.00	3.05	3.70
Sediment Retention & Stabilization (SR)	4.40	2.58	10.00	5.08	6.47
Phosphorus Retention (PR)	4.47	1.94	10.00	4.88	7.74
Nitrate Removal & Retention (NR)	3.85	2.81	10.00	4.54	5.43
Thermoregulation (T)	3.00	0.00	5.83	3.61	4.42
Carbon Sequestration (CS)	2.24	1.41	3.95	2.39	2.78
Organic Matter Export (OE)	**6.61**	**0.00**	**8.58**	**7.12**	**7.60**
Aquatic Invertebrate Habitat (INV)	**4.82**	**2.68**	**7.07**	**5.34**	**5.85**
Anadromous Fish Habitat (FA)	0.00	0.00	0.00	0.00	0.00
Non-anadromous Fish Habitat (FR)	3.25	0.58	7.69	4.26	4.77
Amphibian & Reptile Habitat (AM)	3.72	1.83	6.87	4.10	5.90
Waterbird Feeding Habitat (WBF)	3.93	2.15	5.98	4.33	4.63
Waterbird Nesting Habitat (WBN)	0.00	0.00	5.51	2.09	4.26
Songbird, Raptor, & Mammal Habitat (SBM)	3.98	2.14	5.79	4.84	5.15
Pollinator Habitat (POL)	**5.79**	**3.19**	**7.36**	**6.52**	**7.05**
Native Plant Diversity (PD)	4.49	2.63	5.58	4.89	5.16

Note: Functions with a high median score are shown in **bold.**

High scoring functions include: Organic Matter Export, Aquatic Invertebrate Habitat, and Pollinator Habitat. Some functions show relatively little variation among the project wetlands (e.g., Carbon Sequestration, Native Plant Diversity), while others vary considerably (e.g., Nitrate Removal, Organic Matter Export).

Table 3 includes a summary of the values scores for the 114 wetlands evaluated.

Table 3. Summary Statistics for Value Scores of South Deschutes County Wetlands (n=114)

Values	Median	Min	Max	75TH percentile	90 TH percentile
Water Storage & Delay (WS)	**6.46**	**1.25**	**7.29**	**6.46**	**7.29**
Sediment Retention & Stabilization (SR)	6.09	3.25	8.19	7.44	7.83
Phosphorus Retention (PR)	**6.18**	**3.03**	**6.99**	**6.51**	**6.68**
Nitrate Removal & Retention (NR)	5.12	3.37	5.75	5.35	5.56
Thermoregulation (T)	3.33	0.00	3.33	3.33	3.33
Aquatic Invertebrate Habitat (INV)	**7.00**	**3.54**	**7.69**	**7.00**	**7.00**
Anadromous Fish Habitat (FA)	3.93	2.15	5.98	4.33	4.60
Non-anadromous Fish Habitat (FR)	3.33	1.75	7.48	6.95	7.14
Amphibian & Reptile Habitat (AM)	4.00	0.67	7.33	4.00	7.33
Waterbird Feeding Habitat (WBF)	6.00	0.67	10.00	6.00	10.00
Waterbird Nesting Habitat (WBN)	4.00	0.50	7.33	4.00	5.50
Songbird, Raptor, & Mammal Habitat (SBM)	6.00	1.00	6.00	6.00	6.00
Pollinator Habitat (POL)	1.94	0.00	10.00	10.00	10.00
Native Plant Diversity (PD)	6.00	2.91	6.87	6.00	6.23
Public Use & Access (PUv)	1.67	0.00	4.00	2.33	3.33
Provisioning Services (PSv)	0.00	0.00	2.00	2.00	2.00
Ecological Condition (Cond)	5.10	2.16	7.41	5.73	6.90

Note: Values with a high median score are shown in **bold.**

The functions which ORWAP indicates are currently of highest *value* in the project area are:

- Aquatic Invertebrate Habitat,
- Water Storage & Delay, and
- Phosphorus Retention.

The value of some functions varies little among the project wetlands (Nitrate Removal & Retention) while the value of others shows large spatial variation (Amphibian and Reptile Habitat, Waterbird Feeding Habitat).

4.6 Goal 6 Water Quality Resources

Several considerations are pertinent to deciding which wetland sites identified in the South Deschutes County LWI could be candidates for a Goal 6 Water Quality Resource (WQR) designation:

1. Which function or functions should be the basis for this designation? Should all functions be weighted equally?
2. To what extent should the current *values* of these functions be considered?
3. What should be the score threshold(s) that determines whether a particular site should be nominated as a Goal 6 Water Quality Resource?

ESA recommends that the Nitrate Removal function of wetlands be used as one of the principal determinants of site nomination for Goal 6 Water Quality Resource protection, with other functions used as secondary determinants, because nitrate contamination has been identified as a primary concern in the project area (Hinkle et al., 2007). Refer to the discussion on groundwater quality in Appendix H for more information. Specifically, we recommend that Goal 6 Water Quality Resources be those sites that meet any of the following three criteria:

Criterion 1. Nitrate Removal (NR) function score is equal to or greater than the 90th percentile of the scores for this function among all wetlands in the project area (i.e., 5.43); AND/**OR**

Criterion 2. Nitrate Removal (NR) function score is equal to or greater than the 75th percentile of the scores for this function among all wetlands in the project area (i.e., 4.54), AND the NR value score of the site is greater than the 75th percentile of the NR value score among all wetlands in the project area (i.e., 5.35); AND/**OR**

Criterion 3. The wetland's score for at least 3 other wetland functions are greater than or equal to the 90th percentile for those functions in the project area.

Based upon the above criteria, the analysis results in the following wetlands potentially designated as a WQR wetland in South Deschutes County:

1. Sites that meet Criterion 1 (12 sites): 3, 10, 13a-d, 21, 23, 26a-b, 27a-c, 28a-b, 29a-c, 75, 98, and 103a-b;

2. Sites that meet Criterion 2 (5 sites): 23, 36, 88, 105, and 106;

3. Sites that meet Criterion 3 (18 sites): 42, 63, 64, 65, 66, 67, 68, 69, 81, 82, 83, 84, 93a-b, 100a-b, 102, 109, 111, and 113. A summary of the high scoring

functions for the wetlands that meet Criterion 3 is provided in Table G4, Appendix G.

Application of these three criteria results in potential designation of 35 sites, which is 30 percent of all wetlands in study area.

Limitations of the ORWAP Analysis

Although ORWAP represents a significant technical advance over OFWAM (the method previously prescribed for use in Local Wetland Inventories in Oregon) and other methods for assessing wetland ecosystem services, like most rapid assessment tools, it does have several limitations. These are detailed in the ORWAP Manual (Adamus et al. 2009b), which may be found on-line at: http://www.oregonstatelands.us/DSL/WETLAND/or_wet_prot.shtml. The most significant limitations of ORWAP are:

1. ORWAP is not a mechanistic model of ecosystem processes and thus cannot be expected to account for many interactions and feedbacks among important variables. ORWAP uses only the variables that can be observed easily, but factors that control many functions are unobservable except with sophisticated equipment and long-term expensive sampling.

2. Like all rapid assessment methods for wetlands, ORWAP has not been validated against actual measures of the functions it estimates.

3. ORWAP is intended to simply be an estimate of function effectiveness averaged over an entire wetland assessment unit. For most functions, ORWAP does not account for wetland size, but size should be taken into account in some manner when proposing candidate sites (wetland assessment units) for WQR status. Determining the boundaries of wetland assessment units (not the boundary between wetland and upland) has a subjective component. Despite guidance in the ORWAP manual, decisions of whether and where to divide two hydrologically connected wetlands into multiple units for purposes of applying ORWAP are sometimes subjective.

5.0 LIMITATIONS

This report documents the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge and based upon the conditions observed during field work conducted in the spring and summer of 2010. Mapping provided should be considered a preliminary inventory map of wetlands and other waters and used for planning purposes only. A formal wetland delineation reviewed and approved by DSL is required for state removal-fill permits. Contact the DSL or Corps with any regulatory questions.

6.0 LITERATURE CITATIONS

Adamus, P., J. Morlan, and K. Verble. 2009. *Manual for the Oregon Rapid Wetland Assessment Protocol (ORWAP).* Version 2.0. Oregon Dept. of State Lands, Salem, OR. http://oregonstatelands.us/DSL/WETLAND/or_wet_prot.shtml

Adamus, P., J. Morlan, and K. Verble. 2009. *Oregon Rapid Wetland Assessment Protocol (ORWAP): calculator spreadsheet, databases, and data forms.* Oregon Dept. of State Lands, Salem, OR. http://oregonstatelands.us/DSL/WETLAND/or_wet_prot.shtml

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31. U.S. Fish and Wildlife Service. ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28.Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Franklin, J. F. and C. T. Dyrness. 1988. *Natural Vegetation of Oregon and Washington*. Oregon State University Press. Corvallis, Oregon.

Google Earth. 2010. *Aerial imagery of the Deschutes County vicinity*. Available at: http://earth.google.com.

Hinkle, S.R., Morgan, D.S., Orzol, L.L., and Polette, D.J. 2007. *Ground water redox zonation near La Pine, Oregon—Relation to River Position within the Aquifer-Riparian Zone Continuum*. U.S. Geological Survey Scientific Investigations Report 2007–5239.

Natural Resources Conservation Service (NRCS). 1992. Oregon Soil Survey Data for Upper Deschutes River Area, Oregon., including parts of Deschutes, Jefferson, and Klamath, Counties Soil, Oregon. *Available:* http://www.or.nrcs.usda.gov/pnw_soil/or_data.html.Last updated: February 10, 2010. Accessed: March 20, 2011.

Oregon Department of Environmental Quality (DEQ). 2004/2006. *2004/2006 Section 303(d) List, Integrated Report*. Portland, Oregon. Available at: http://www.deq.state.or.us/wq/assessment/rpt0406/search.asp.Rempel, M., P. Adamus, and J. Kagan. 2009. *Oregon Wetlands Explorer: an internet tool for ORWAP wetland assessment support and data archiving.* Oregon State University Library and Institute for Natural Resources, Oregon State University, Corvallis, OR. http://oregonexplorer.info/wetlands/orwap/

Rich, Barbara et. al., *in collaboration with* Deschutes County Environmental Health Division, Oregon Department of Environmental Quality and US Geological Survey. Undated. *La Pine National Decentralized Wastewater Treatment Demonstration Project,* 1999 – 2005.

State of Oregon. 2010. Department of State Lands, Division 86, Wetland Conservation Plan. *Local Wetlands Inventory (LWI) Standards and Guidelines OAR 141-086-0180 through 141-086-0240*. Available: http://arcweb.sos.state.or.us/rules/OARS_100/OAR_141/141_086.html

State of Oregon. 1996. Department of State Lands, La Pine/Wickiup Junction Local Wetland Inventory. Compiled by Martin Sehott, Ph.D. and Jay Lorenz, Ph.D.

US Army Corps of Engineers (Corps). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).*

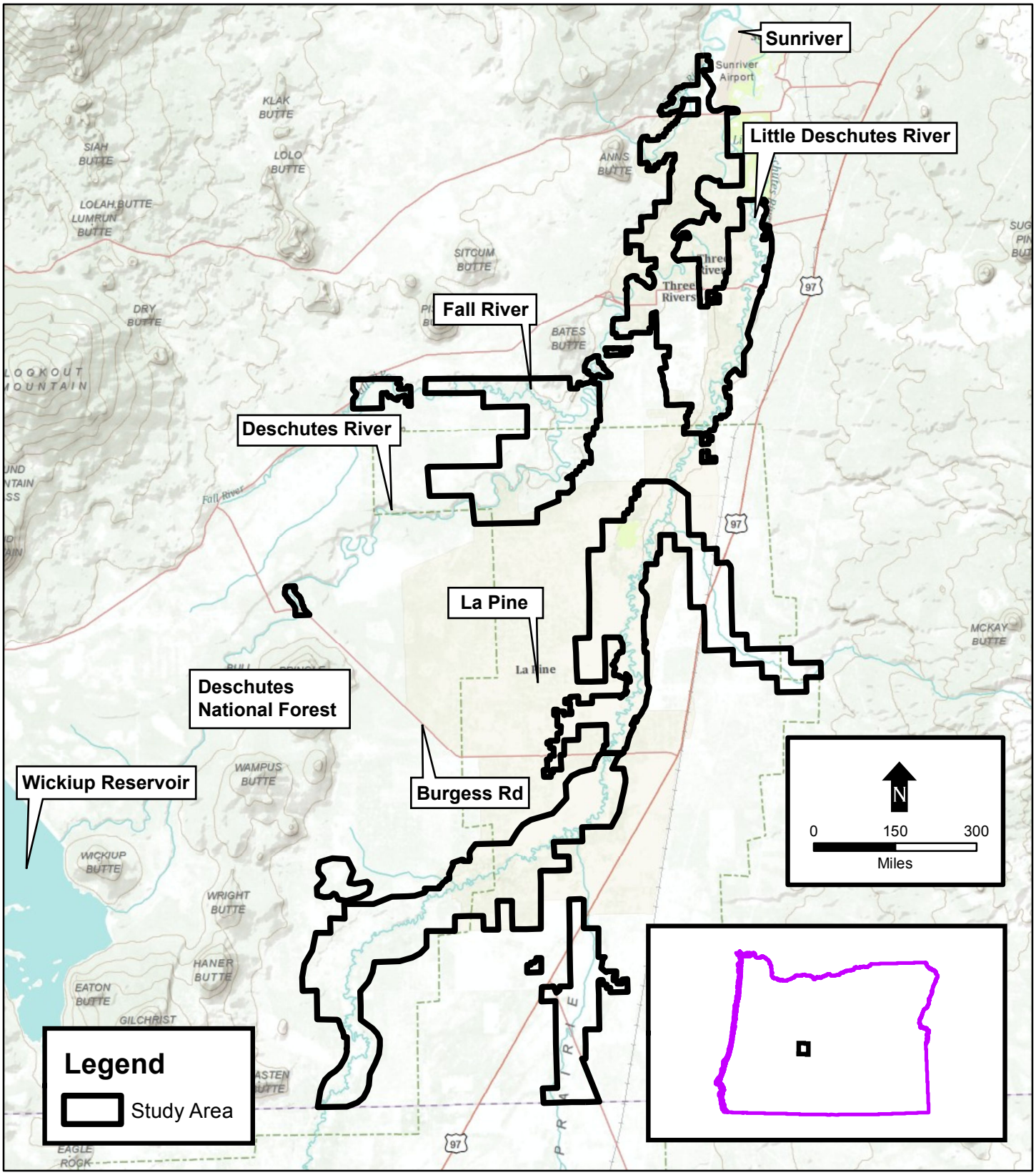
U.S. Army Corps of Engineers (Corps). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0),* ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Census. 2000. Search Deschutes County, Oregon Quick Facts. http://quickfacts.census.gov/qfd/states/41/41017.html. Last Updated: August 16, 2010. Accessed: September 27, 2010.

U.S. Fish and Wildlife Service (USFWS). 2010. *National Wetlands Inventory.* Available: http://www.fws.gov/wetlands/. Last updated: January 22, 2010. Accessed: April 2010.Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Geological Survey (USGS). 2007. *Ground Water Redox Zonation near La Pine, Oregon: Relation to River Position within the Aquifer-Riparian Zone Continuum,* Scientific Investigations Report 2007-5239,

APPENDIX A: FIGURES



SOURCE: ESRI, 2009. Deschutes County, 2010.

Note: The accuracy of the Study Area Boundary is dependent on the accuracy of the GIS data supplied by Deschutes County

Deschutes County Local Wetland Inventory. 209554

Figure 1

Deschutes County LWI Study Area Vicinity Map

Deschutes County, Oregon

Appendix A
Figure 2.1

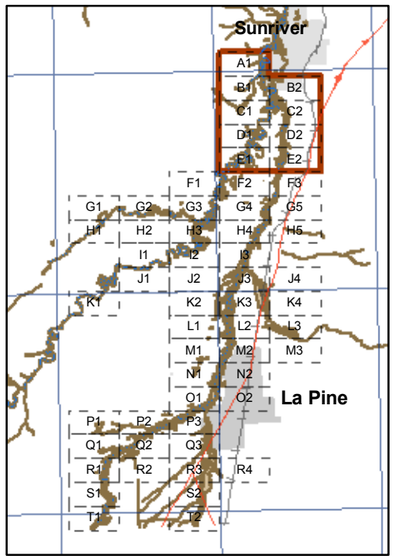
Deschutes County
National Wetland Inventory

1" = 2,750'

Legend

- Railroad
- Highway
- Local Wetland Inventory Map Index
- Local Wetland Inventory Study Area
- USGS Quadrangle
- National Wetland Inventory
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DESCHUTES COUNTY

DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750
Feet

Appendix A
Figure 2.2

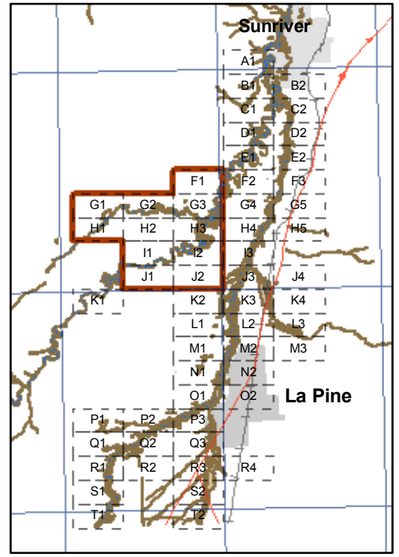
Deschutes County
National Wetland Inventory

1" = 2,750'

Legend

- Railroad
- Highway
- Local Wetland Inventory Map Index
- Local Wetland Inventory Study Area
- USGS Quadrangle
- National Wetland Inventory
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

Appendix A
Figure 2.3

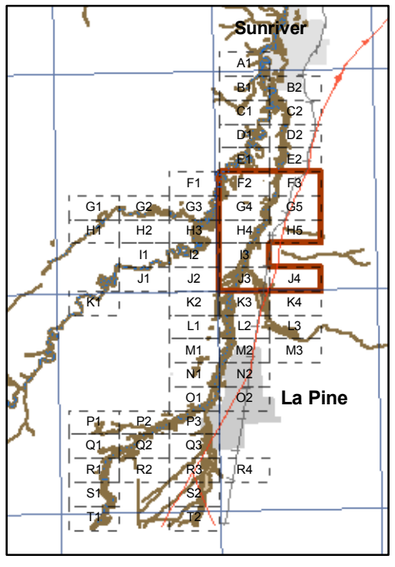
Deschutes County
National Wetland Inventory

1" = 2,750'

Legend

- Railroad
- Highway
- Local Wetland Inventory Map Index
- Local Wetland Inventory Study Area
- USGS Quadrangle
- National Wetland Inventory
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

Appendix A
Figure 2.4

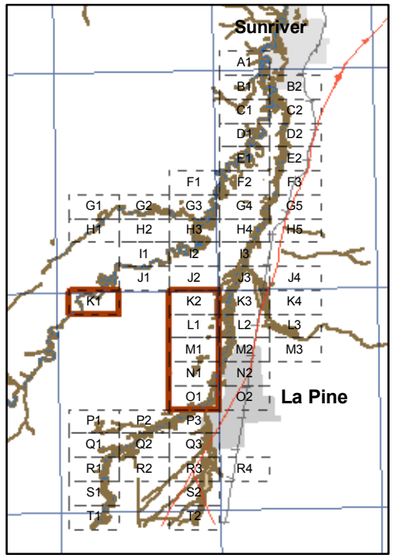
Deschutes County
National Wetland Inventory

1" = 2,750'

Legend

- Railroad
- Highway
- Local Wetland Inventory Map Index
- Local Wetland Inventory Study Area
- USGS Quadrangle
- National Wetland Inventory
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

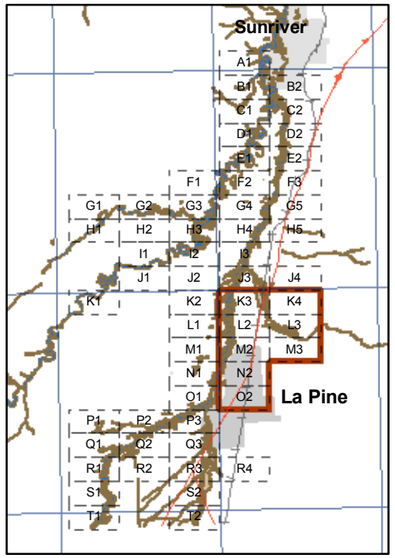
Appendix A
Figure 2.5

Deschutes County
National Wetland Inventory

Legend

- Railroad
- Highway
- Local Wetland Inventory Map Index
- Local Wetland Inventory Study Area
- USGS Quadrangle
- National Wetland Inventory
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DESCHUTES COUNTY

DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750
Feet

Appendix A
Figure 2.6

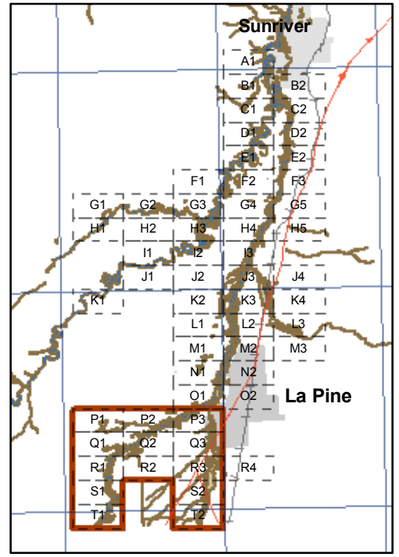
Deschutes County
National Wetland Inventory

1" = 2,750'

Legend

- Railroad
- Highway
- Local Wetland Inventory Map Index
- Local Wetland Inventory Study Area
- USGS Quadrangle
- National Wetland Inventory
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit
- County Boundary

Map Index
Local Wetland Study Area



DESCHUTES COUNTY

DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

Klamath County

Appendix A
Figure 2.7

Deschutes County
National Wetland Inventory

1" = 2,750'

City of
La Pine

Little Deschutes River

O1 O2 P2 P3 Q2 Q3 R2 R3 R4 S2 T2

PAULINA AVE · KIWA LN · FINDLEY DR · FOREMAN DR · 97 · MEMORIAL LN · VICTORY WAY · COACH RD · HUNTINGTON RD · HALE RD · RIM DR · RIVER DR · SHERRIE WAY · JACKPINE RD · ASH RD · FR RD · BIRCH RD · SALZER ST · 1ST ST · 2ND ST · 3RD ST · 4TH ST · 5TH ST · 6TH ST · PENDRA ST · WALKER ST · MORSON ST · BONNIE WAY · ASSEMBLY WAY · BOX WAY · DILLON WAY · HINKLE WAY · SLY DR · WILLIAM FOSS RD · WYATT DR · WHEELER RD · FINLEY BUTTE RD · REED RD · RUSSELL RD · EVANS WAY · WALLING LN · MITTS WAY · SILVER LAKE LN · PREBLE WAY · ANCHOR WAY · RILEY LN · HEATH DR · CASSIDY DR · RILEY DR · BETTY DR · BASSETT DR · SHAY LN · AL JEANNO · JORY RD · HANK RD · JUNIPER RD · WELCH RD · MITCHELL RD · SEED RD · RIVERLAND AVE · FESTIS AVE · DIANNE RD · PARKER RD · PIERCE RD · JACKPINE LOOP · ROUTE RD · MASTEN RD · WHITE BUCK AVE · WAYNE DR · S LAPINE DR · OX GLEN LOOP · DARLENE WAY · OLD ICE CAVE RD · POWER LINE RD · PHILLIPS WAY · FS 9750 · FS 2205 · FS 2210 · FS 22

(La Pine) (Finley Butte) (Masten Butte) (Moffitt Butte) (Finley Butte) (Moffitt Butte)

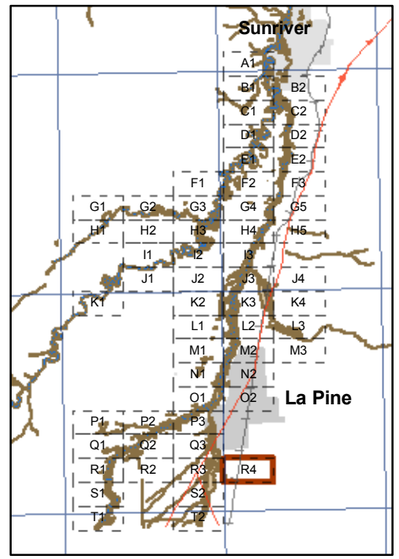
HWY 97 · HWY 31 · 97 · 31

Klamath County

Legend

- Railroad
- Highway
- Local Wetland Inventory Map Index
- Local Wetland Inventory Study Area
- USGS Quadrangle
- National Wetland Inventory
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit
- County Boundary

Map Index
Local Wetland Study Area



DESCHUTES COUNTY

DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

Appendix A
Figure 3

Deschutes County Soil Inventory
Soil Map Unit Legend

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
29A: Cryaquolls, 0 to 3 percent slopes	Cryaquolls	85	Flood plains	Yes	2B3
114C: Shanahan loamy coarse sand, 0 to 15 percent slopes	Shanahan Cryaquolls	90 1	Lava plains terraces	No Yes	 2B3
114D: Shanahan loamy coarse sand, 15 to 30 percent slopes	Shanahan	90	Hillslopes	No	
115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes	Shanahan, low Cryaquolls	90 1	Lava plains Terraces	No Yes	 2B3
130D: Steiger loamy coarse sand, high elevation, 15 to 30 percent slopes	Steiger, high elevation	85	Hillslopes	No	
130E: Steiger loamy coarse sand, high elevation, 30 to 50 percent slopes	Steiger, high elevation	85	Hillslopes	No	
144A: Sunriver sandy loam, 0 to 3 percent slopes	Sunriver Cryaquolls	85 8	Stream terraces Mountains	No Yes	 2B3
153A: Tutni loamy coarse sand, 0 to 3 percent slopes	Tutni Cryaquands, very poorly drained	85 5	Stream terraces Stream terraces	No Yes	 2B3
W: Water	Water	100		No	

Appendix A
Figure 3.1

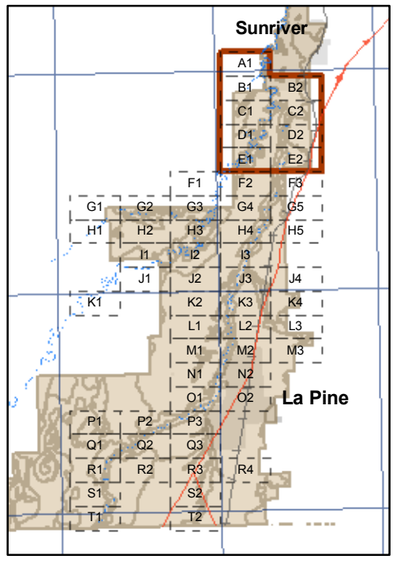
Deschutes County
Soil Inventory

1" = 2,750'

Legend

- Contour Line - 40' Interval
- Railroad
- Highway
- Local Wetland Inventory Map Index
- NRCS Soil Map Unit
- USGS Quadrangle
- Local Wetland Inventory Study Area
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

Appendix A
Figure 3.2

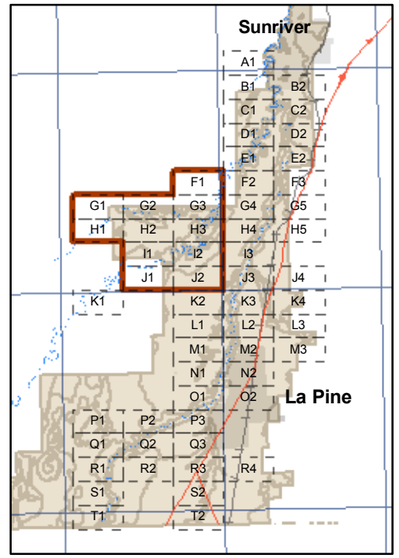
Deschutes County
Soil Inventory

1" = 2,750'

Legend

- Contour Line - 40' Interval
- Railroad
- Highway
- Local Wetland Inventory Map Index
- NRCS Soil Map Unit
- USGS Quadrangle
- Local Wetland Inventory Study Area
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

Appendix A
Figure 3.3

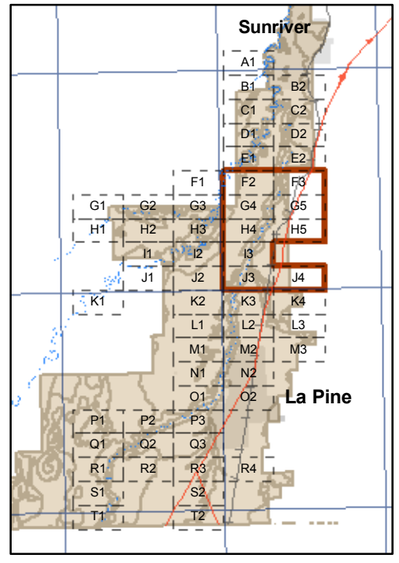
Deschutes County
Soil Inventory

1" = 2,750'

Legend

- Contour Line - 40' Interval
- Railroad
- Highway
- Local Wetland Inventory Map Index
- NRCS Soil Map Unit
- USGS Quadrangle
- Local Wetland Inventory Study Area
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DESCHUTES COUNTY

DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

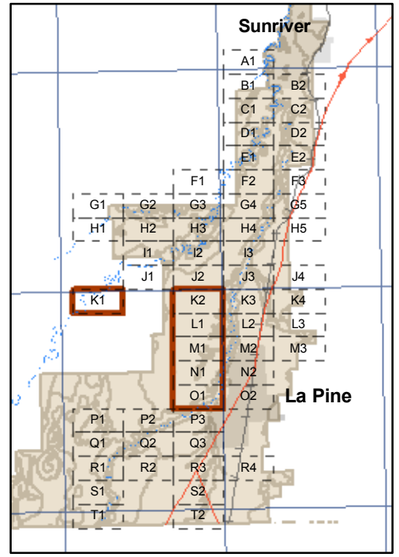
Appendix A
Figure 3.4

Deschutes County Soil Inventory

Legend

- Contour Line - 40' Interval
- Railroad
- Highway
- Local Wetland Inventory Map Index
- NRCS Soil Map Unit
- USGS Quadrangle
- Local Wetland Inventory Study Area
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

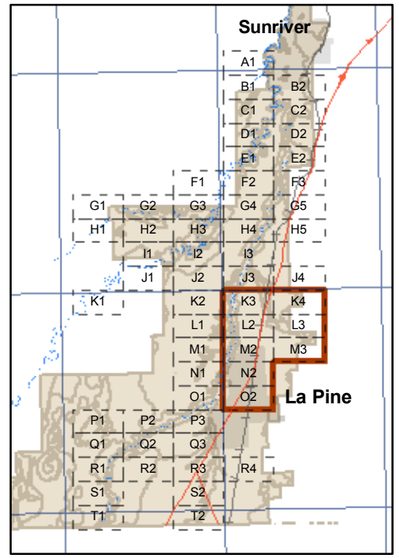
Appendix A
Figure 3.5

Deschutes County Soil Inventory

Legend

- Contour Line - 40' Interval
- Railroad
- Highway
- Local Wetland Inventory Map Index
- NRCS Soil Map Unit
- USGS Quadrangle
- Local Wetland Inventory Study Area
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit

Map Index
Local Wetland Study Area



DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

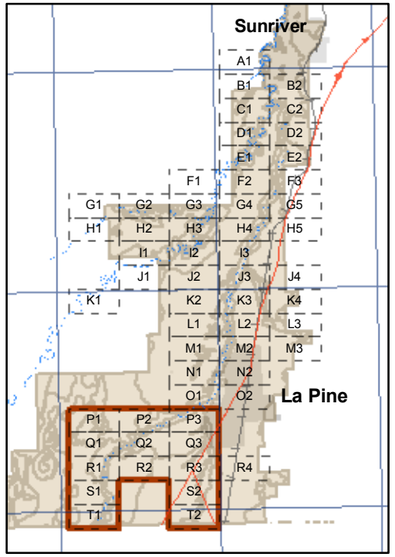
Appendix A
Figure 3.6

Deschutes County Soil Inventory

Legend

- Contour Line - 40' Interval
- Railroad
- Highway
- Local Wetland Inventory Map Index
- NRCS Soil Map Unit
- USGS Quadrangle
- Local Wetland Inventory Study Area
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit
- County Boundary

Map Index
Local Wetland Study Area



DESCHUTES COUNTY

DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

1" = 2,750'

Klamath County

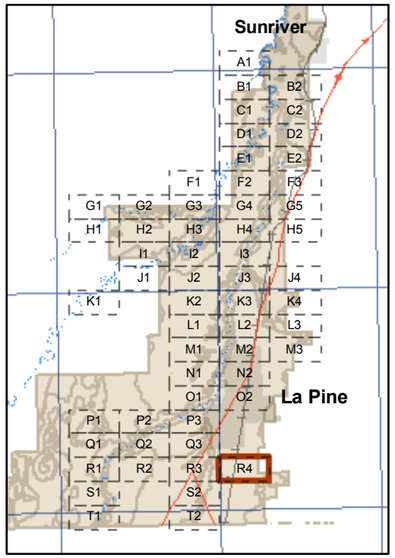
Appendix A
Figure 3.7

Deschutes County Soil Inventory

Legend

- Contour Line - 40' Interval
- Railroad
- Highway
- Local Wetland Inventory Map Index
- NRCS Soil Map Unit
- USGS Quadrangle
- Local Wetland Inventory Study Area
- River - National Hydrography Dataset
- Sunriver Unincorporated Community
- La Pine City Limit
- County Boundary

Map Index
Local Wetland Study Area



DESCHUTES COUNTY

DISCLAIMER:
The information on this map was derived from digital databases on Deschutes County's G.I.S. Care was taken in the creation of this map, but it is provided "as is". Deschutes County cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or the underlying records. There are no warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

April 19, 2011

0 1,875 3,750 Feet

APPENDIX B: STAFF QUALIFICATIONS

ESA Adolfson

CATHERINE CONOLLY, PWS

Wetlands Program Manager

Cathie brings over 20 years of experience in the environmental field to her role as Project Director for this project. She has experience with projects ranging from Environmental Assessments and Biological Assessments, to wetlands inventories, to Critical Areas Code updates. Cathie has managed large project teams including sub-consultants, and knows how to provide the oversight to bring projects in on time and in budget. She has provided quality control and assurance for projects over 10 years.

Education

M.S., Botany 1993, University of Washington

B.S., Botany 1984, University of Washington

B.S., Natural Science and Outdoor Education 1980, University of Vermont

Registrations/Certifications

Professional Wetland Scientist, Society of Wetland Scientists,

Certified Wetland Specialist, Pierce County

24-Hour Hazardous Materials Certification Program

Preferred Wetland Consultant, King County.

Washington Department of Transportation Biological Assessment Qualified Senior Author (February 2007)

Completed Western Washington Wetlands Rating System Training, Department of Ecology Coastal Training Program (October 2007)

21 Years Experience

Relevant Experience

Wetland Inventory, City of Newcastle, Washington. ***Project Manager*** Cathie is the project manager of this on-call environmental services contract. The first task was the preparation of a wetlands inventory for the City of Newcastle, which included air photo interpretation and ground-truthing. A representative sample of city wetlands were evaluated using the Washington State Department of Ecology Wetlands Rating System for Western Washington (2006). Thirty-five wetlands were identified in the City, and 16 were rated by both the current (2004) Washington Department of Ecology rating methodology and the 1993 rating methodology.

Pierce County Invasive Species and Lake Management Project. *Project Manager.* Cathie was manager of this project for Pierce County Water Programs. ESA Adolfson scientists and sub-consultants inventoried over 1,000 acres of Pierce County-owned properties to document the presence and approximate extent of invasive plant species, concentrating on aquatic, wetland, and riparian species. Site-specific information was collected on GPS units, and points and data entered into GIS; GIS information will be linked to an Access database. ESA Adolfson reviewed existing invasive species management requirements in a Regulatory Memorandum, and prepared a Gap Analysis.

Tacoma Open Space Habitat and Recreation Plan. *Project Manager.* Cathie was the project manager for this project for ESA Adolfson. ESA Adolfson scientists performed an inventory of open space lands in the City of Tacoma in support of the preparation of the Tacoma Open Space Habitat and Recreation Plan. The City of Tacoma has partnered with the Tahoma Audubon and the Cascade Land Conservancy, to form the "GreenTacoma Partnership" to coordinate City, non-profit, and volunteer efforts to protect and enhance open spaces within the City. Adolfson staff performed over 300 hours of field time studying open space lands in the city, collecting data on current conditions and use of open space lands, evaluating the restoration potential of the sites. Data was logged with GPS units that tied field data to locations.

Relevant Experience (Continued)

University of Washington Wetlands Science and Management Certificate Program. Cathie has served on the Advisory Board for this program since its inception (1995). The program was developed to provide a well-rounded education in wetlands issues to regulators, consultants, and concerned citizens. The year-long program provides college-level education in the science and policy implicit in wetlands science. Cathie has served as an instructor for Wetlands Functional Assessment (3 years) and Wetlands Field Botany (11 years). She has also served as advisor to students in the program each year in development of their practicum, where they implement their new skills and knowledge to perform a wetlands project.

Wetland Inventory, Swinomish Tribe, Washington. ***Project Manager.*** Cathie was project manager for this project. ESA Adolfson conducted a review of existing information and aerial photographs of wetland and stream resources on the Reservation. Cathie worked with the Tribal Community to identify priority sub-basins for immediate ground-truthing, and conducted field verification of estuarine wetlands (by boat) and freshwater wetlands on the approximately 3,000-acre reservation. She assessed the functions and values of the field-verified wetlands by the USFWS classification, and the Hydrogeomorphic (HGM) method. Cathie prepared overlay maps for digitizing in GIS and a technical report on findings.

City of Redmond Habitat Plan, King County, Washington. ***Project Manager*** Cathie was manager of this project to inventory and map wildlife habitat remaining in the City, documenting habitat changes from 1996 to 1999. ESA Adolfson developed a standardized rating system to characterize and evaluate habitat, and mapped the wildlife habitats in GIS. A technical report was prepared documenting the findings of the inventory and a policy review with recommendations for strengthening and implementing critical area policies and regulations. ESA Adolfson presented findings and recommendations at public open houses, citizen's advisory committee meetings, professional conferences, and at public hearings for the planning commission.

Projects Performed While Working For King County:

1990 Wetlands Inventory Update, King County, Washington. While working for King County, Washington, (area 2,126 square miles). Cathie conducted field verification of wetlands identified from air photos for the 1990 update for the King County Sensitive Areas Map Folio. She prepared mylar overlays on orthophotos including wetland boundaries and classifications for incorporation into county map database.

Puget Sound Wetlands and Stormwater Management Study, King County, Washington. Cathie was part of the team of scientists assessing the effects of urban stormwater on lowland Puget Sound wetlands over a 7-year period. She conducted botanical, wetland, and zoological field work.

TERESA H. VANDERBURG

Practice Lead, Biological Resources

Teresa has 20 years of experience in natural resource management and scientific analyses. She is the Practice Lead for the Biological Resources Group. Teresa is an experienced project manager and has managed environmental permits and mitigation planning for several large-scale public infrastructure projects, including the Seattle Public Utilities Tolt Water Supply Pipeline No. 2 in King County, and the North Fork Clover Creek Regional Detention Pond in Pierce County, Washington. She has reviewed and/or performed hundreds of wetland assessments, delineations, and wetland mitigation projects. Teresa's expertise also includes shoreline master plan (SMP) updates for eight cities and two counties in western Washington. She has also developed critical area ordinances using "best available science" for Tukwila, Kent, Burien, Kenmore, Gig Harbor, Sumner and Tacoma. Teresa also serves as an expert witness in hearings, trials and other legal proceedings. Teresa participated in a Local Government Wetland Advisory Team assisting Washington State Department of Ecology in development of management regulations for wetlands statewide. She also serves as a senior advisor to the University of Washington Wetlands Management Certificate program.

Education

M.S., Environmental Science, Washington State University

B.S., Biology, Eastern Kentucky University

20 Years of Experience

Registrations/Certifications

Jurisdictional Delineation of Wetlands in the Pacific Northwest, National Wetlands Science Training Cooperative (1990)

Certified Wetland Biologist, Pierce County (current)

Society of Wetland Scientists, Professional Wetland Scientist (PWS)

Professional Affiliations

Society of Wetland Scientists

Ecological Society of America

Senior Advisor for the UW Wetland Management Certificate Program

Relevant Experience

Clark County SMP Update, WA. ***Scientific Lead.*** Clark County and six cities therein are working together to update their SMPs. Clark County shorelines include significant waterbodies such as the Columbia River, Lewis River, Vancouver Lake and Washougal River. Teresa is the lead on the shoreline inventory and analysis report which was completed in Draft form for Ecology review in June 2010. Teresa has coordinated with the Technical Advisory Committee and Shoreline Stakeholder Advisory Committee on technical issues regarding shoreline jurisdiction, GIS analysis, scientific data and creation of the map folio. Three draft inventory reports were prepared and reviewed by stakeholders in the spring. Teresa has also supervised completion of the Draft Restoration Plan during this same time frame and coordinated completion of a summary table for development of the preliminary shoreline environment designations for the County.

City of Auburn Wetland and Stream Inventory, WA. ***Project Manager.*** Teresa conducted an inventory of stream and wetland resources on approximately 14,550 acres within the City limits of Auburn, Washington. The inventory updated information from an earlier wetland inventory. Work included comprehensive field reconnaissance work, wetland descriptions, stream classifications, GIS maps and associated metadata and a summary technical report. Historical permit information from approximately 90 historical permit files was incorporated into the GIS metadata and maps to allow the City to track past permit activities by parcel.

Relevant Experience (Continued)

Marysville UGA Wetland and Stream Inventory, WA. ***Project Manager.*** Teresa managed an extensive inventory of wetlands, streams, and habitat in an approximately 2,000-acre area in the Lakewood-Smokey Point region of Marysville's Urban Growth Area. The project was undertaken to evaluate lands to be annexed into the city for residential, commercial and industrial development. The study included wetland descriptions and functional evaluations, descriptions of stream habitat, documentation of fish presence or absence, and water quality testing. Other elements of the study included assessment of future build-out conditions within the planning sub-area and evaluating potential mitigation concepts. Prepared a wetland and stream inventory report, including field maps and habitat data, for review and approval by both the City of Marysville and the Washington Department of Ecology.

City of Kenmore Gap Analysis, Review of Endangered Species Act Compliance, WA. ***Scientific Lead.*** Teresa served as Task Lead for this "gap analysis" for the City of Kenmore to identify potential gaps and deficiencies in City codes, regulations, plans and policies in relation to the Endangered Species Act. This report will specifically address the local jurisdiction requirements in the Final 4(d) Rule by National Marine Fisheries Services (NMFS) for protecting and avoiding "take" of Puget Sound chinook and other federally-listed fish. ESA is reviewing sensitive areas ordinances, the Comprehensive Plan, stormwater regulations and road maintenance standards and practices for ESA compliance. Also part of this work is to review the Tri-County Proposal (King, Snohomish and Pierce Counties) for compliance with the 4(d) rule and discuss the differences between this proposal and Kenmore's current practices and plans. A list of recommendations for "next-step" items is currently being developed to guide the City in its response to NMFS regarding salmon protection and recovery.

PG& E Gas Transmission Pipeline Expansion, ID, WA, OR. ***Project Manager.*** Teresa managed technical studies for rare plants, wetlands, habitats, noxious weeds and stream crossings for a proposed 250-mile long natural gas transmission line expansion project. The project included expansion of the transmission pipeline right-of-way as well as upgrades to several Main Line Valves and Compressor Stations. The project extended from the Canadian border through Idaho, eastern Washington and eastern Oregon. Teresa managed data collection and field biologists tasked with the identification and mapping of rare plants, noxious weeds, wetland boundaries, and streambanks using hand held GPS units. In addition, rare plant locations were identified and marked as were noxious weeds and general vegetation habitat types. Work products included preparation of two resource reports to the Federal Energy Regulatory Commission (FERC) and a set of supporting maps documenting the location of biological and water resources in the project area.

ESA Adolfson

TOM MCGUIRE

Portland Office Director

Tom has over 20 years experience in environmental planning, resource management, policy development, and land use and environmental permitting. He has a diverse background and experience in all phases of natural resource evaluation and protection. Tom specializes in interpreting and writing complex land use and environmental planning regulations and has extensive experience working with Oregon Statewide Planning Goals, Washington Growth Management Act, NEPA, NPDES, FEMA, and ESA. Tom also has extensive experience conducting natural resource inventories and wildlife habitat assessments. He is an accomplished project manager with excellent working relationships with local, state, and federal agency staff in Oregon and Washington.

Education

Masters of Urban and Regional Planning, Emphasis in Environmental Planning, Portland State University (1989)

B.S., Geography—Environmental Studies, Minor in Plant Ecology, University of Iowa

20 Years of Experience·

Relevant Experience

Local Wetland Inventory for City of Lakeview, OR. *Project Manager*. Tom was ESA's project manager for a Local Wetland Inventory for the City of Lakeview, Oregon. The inventory included identifying and mapping wetlands within the urban growth boundary, wetland functional assessments, and designating significant wetlands as required by statewide land-use planning Goal 5. Tom worked with the City of Lakeview to develop a regulatory program for wetland protection in compliance with state requirements. He also attended public meetings and Planning Commission and City Council hearings.

Goal 5 Planning, Multnomah County Drainage District, Portland, OR. *Project Manager*. Tom worked with the Multnomah County Drainage District #1 and two other stakeholders, the Columbia Corridor Association and the Port of Portland, to determine possible approaches to Goal 5 compliance within the Columbia Slough Watershed. Tom helped the three stakeholders determine the most effective and efficient ways to reduce their compliance burden in the Metro Regional Goal 5 process and the compliance projects of the Cities of Portland, Fairview, Wood Village, Troutdale, and Gresham. Tom prepared an action plan detailing the options available, created a timeline, and recommended a course of action necessary for implementing the preferred compliance strategy.

Goal 5 Economic, Social, Environmental, and Energy (ESEE) analysis and program, Forest Grove, OR. *Project Manager*. Tom provided natural resources planning services related to the development of an economic analysis and regulatory program to comply with Oregon State Planning Goal 5 and to be consistent with the Tualatin Basin program. He first compiled information and performed a Geographic Information System (GIS) analysis for the economic, social, environmental, and energy (ESEE) analysis portion of the Goal 5 project. Tom assisted Forest Grove City staff in assessing site specific areas for adjustment of the Goal 5 "limit" decisions—looking at four sites in particular. He also worked with the City staff to develop codes and regulations for their Goal 5 program.

Relevant Experience (Continued)

Environmental Assessment and Permitting, Tualatin Valley Water District Water Supply Improvement Program, Clackamas and Washington Counties, OR. *Project Manager*. Tom was project manager for a project with the Tualatin Valley Water District to conduct an environmental screening of regional pipeline route alternatives. The project includes a new water distribution system pipeline, pump stations, and storage reservoirs and Tom led the effort to identify potential permits and their processes and timelines for each of the alternatives. Environmental issues in the Tualatin Valley that were addressed include potential stream and wetland crossings, local Goal 5 Environmental and Title 3 Water Quality Resource Area ordinances, and the presence of listed species in the vicinity of project construction. Potential land use issues were also evaluated for the full length of the corridor alternatives. Tom prepared a permit matrix identifying the regulatory permits necessary for construction of the various pipeline routes, the permit triggers, permit linkages, level of design needed for application, typical review times, overall schedule estimates, and potential permit obstacles. Results of the preliminary environmental screening were incorporated into the analysis of the alignment alternatives and documented in technical memoranda.

Portland Japanese Garden Master Plan, Portland, OR. *Project Manager*. Tom worked with the Portland Japanese Garden Association and a team of landscape architects to help prepare a comprehensive Master Plan to guide the future growth of the garden. Tom conducted a resource inventory and assessment of the project site that included plant communities, wildlife habitat, geology, soils, water features, and hazards. He also attended workshop and strategy sessions providing detail knowledge of the City of Portland land use and permitting requirements for expansion alternatives discussed. Tom provided technical memorandums covering the assessment of site resources and addressing sustainability and permitting issues for the final three alternatives.

Big Four Corners Management Plan, Bureau of Environmental Services, Portland, OR. *Project Manager*. Tom worked with the Bureau of Environmental Services (BES) to compile existing riparian, wetland, and upland habitat assessment and restoration materials into a comprehensive Big Four Corners Management Plan for a natural resource property purchased with Oregon Watershed Enhancement Board (OWEB) Acquisition Grant funding. Tom reviewed all relevant documents and wrote the management plan with emphasis on a summary of the site inventory and assessment, desired future ecological conditions, management recommendations, and a monitoring strategy. The management plan was submitted to OWEB by BES in October, 2007 to satisfy Acquisition Grant and Conservation Easement requirements.

ESA Adolfson

JOHN GORDON

Biological Resources Program Manager

John is a wetland biologist with over 12 years of experience. He has provided a full spectrum of wetland consulting services in Oregon, Washington, Idaho, Montana, Nevada and Utah. He is a project manager on multidisciplinary projects with wetland, Endangered Species Act and National Historic Preservation Act components. He has extensive experience working with clients in both the public and private sectors, and with natural resource agency scientists.

Education

B.S., Biology, Portland State University

Selected Training

U.S. Army Corps of Engineers Wetland Delineation Training, 1996.

Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, 2007.

Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, 2008.

Oregon Rapid Wetland Assessment Protocol, 2009.

Oregon Streamflow Duration Assessment Methodology, 2009.

Certified consultant for ODOT Biological Assessment Deliverables, 2007.

Certified ODOT CS3 Consultant, 2005.

Affiliations

Member, Society of Wetland Scientists.

Over 12 Years of Experience

Selected Relevant Experience

City of Klamath Falls Local Wetland Inventory and Riparian Assessment, Klamath Falls, Oregon. John was the project manager for the City of Klamath Falls Local Wetland Inventory (LWI) and Riparian Assessment. This is the largest LWI in the state, including parts of more than 60 Sections in the study area of over 23,000 acres. John met with City officials and staff from Oregon Department of State Lands (DSL), and made presentations at public meetings. He analyzed aerial photographs and other resources as required in Oregon Administrative Rules to locate probable wetlands for the preparation of preliminary wetland maps. John planned and scheduled work, supervised wetland staff in the field to collect accurate inventory data, and participated in all aspects of the inventory. He supervised staff in the office to analyze field data and produce LWI maps and reports, and provided QA/QC review. This LWI was approved and adopted by the City and DSL. It has been incorporated into Oregon's statewide wetland inventory.

City of Gresham Local Wetland Inventory, Gresham, Oregon. John was the project manager for the City of Gresham LWI, with a study area of about 15,000 acres. John met with City officials and DSL staff, and made presentations at public meetings. He analyzed resources specified in LWI rules to locate possible wetlands. He analyzed the sites using the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual to determine their wetland status. He supervised a staff of wetland scientists and cartographers on the project. John and his team evaluated the wetlands with the Oregon Freshwater Wetland Assessment Methodology (OFWAM) to make Locally Significant Wetland determinations, and prepared reports and maps to meet LWI standards. Both the City of Gresham and DSL approved and adopted this inventory.

Oregon Rapid Wetland Assessment Protocol (ORWAP). John was contracted by DSL to conduct preliminary testing of ORWAP on representative wetlands. John served on the DSL Technical Advisory Committee for the development of ORWAP. He received project-specific training from Dr. Paul Adamus, author of ORWAP, prior to conducting the work.

Relevant Experience (Continued)

City of Beaverton Local Wetland Inventory, Washington County, Oregon;
City of Vernonia Local Wetland Inventory, Columbia County, Oregon;
City of Clatskanie Local Wetland Inventory, Columbia County, Oregon;
City of Woodburn Local Wetland Inventory, Marion County, Oregon;
City of Silverton Local Wetland Inventory, Marion County, Oregon;
City of Oregon City Local Wetland Inventory, Clackamas County, Oregon.
On each of these LWIs, John used resources specified in LWI protocols to locate possible wetlands for preparation of preliminary wetland maps. He mapped wetlands and evaluated them with OFWAM to determine if they met standards for Locally Significant Wetlands. He prepared reports and worked with cartographers to prepare maps to meet LWI requirements. These inventories were approved by the respective cities and DSL.

Great Basin National Park Wetland and Riparian Inventory, Great Basin NP, Nevada. John mapped over 200 wetland and riparian sites on a 77,000-acre study area for this joint project between the U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) and the National Park Service. He produced a report for the National Park Service Water Resources Division, and the NWI.

Zion National Park Wetland and Riparian Inventory, Zion NP, Utah. John mapped and classified wetlands and riparian vegetation along 20 miles of the Virgin River in southwest Utah. He interpreted aerial photographs, USGS topographic maps, National Wetlands Inventory data and GPS equipment to identify and locate wetlands. He classified wetlands according to the Cowardin classification system.

Duck Valley Reservation Wetland Inventory, Duck Valley Reservation, Idaho and Nevada. John worked with a team of wetland scientists and tribal members to inventory approximately 10,000 acres of wetlands on 45,000 acres of the Shoshone – Paiute Duck Valley Reservation. He interpreted aerial photographs, soil survey maps, and topographic maps to determine the probable location of wetlands. He traversed the area to document wetland characteristics. This work was conducted to facilitate a Reservation wetland management plan.

Columbia River Wetland Mapping Project, Oregon and Washington. John performed wetland determinations on over 100 sites along the Columbia River downstream from Portland, Oregon and Vancouver, Washington. Using maps from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service National Wetland Inventory and hydric soil maps from the USDA Natural Resource Conservation Service, John analyzed the sites to determine their wetland status.

ESA Adolfson

SARAH C. HARTUNG

Wetlands Scientist

Sarah is a wetlands scientist with eleven years of consulting experience in Oregon and Washington. Her experience includes wetland determinations and delineations, botanical surveys, species-specific surveys, and joint wetland permit applications. Sarah has delineated hundreds of wetlands and has prepared delineation reports for several large-scale transportation projects in the Pacific Northwest. She brings a proven record of obtaining wetland permits from the Department of State Lands and the U.S. Army Corps of Engineers in a timely manner. Sarah also has extensive experience preparing wetland mitigation and habitat restoration plans.

Education

M.S., Avian Ecology, University of Illinois, Champaign-Urbana

B.A., Biology, Hamline University, St. Paul, Minnesota

Selected Training

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Oregon Streamflow Duration Assessment Method (OSDAM)

Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Valleys, Mountains and Coast Range

ODOT Certification for Preparing Biological Assessments

Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region

Advanced Soils Training

Affiliations

Member and Wetland Professional in Training, Society of Wetland Scientists

11 Years of Experience

Relevant Experience

ODOT – Highway 97 Improvement Project – Baseline Studies and Wetland Delineations, Deschutes and Klamath Counties, OR. ***Project Manager and Field Lead.*** Sarah managed this transportation project and was part of a subconsultant field crew to conduct environmental baseline surveys and wetland determinations for the Hwy 97 Improvement Project. ODOT proposed to repave Hwy 97 along a 15-mile corridor from south of LaPine to Creswell, replace failing culverts, install stormwater treatment facilities, and redesign transportation lanes in downtown Creswell. ESA reviewed existing data such as soil survey mapping, orthophoto aerial images of the site, and topographic mapping. Sarah led the field crew that conducted wetland determinations, botanical surveys, and assessed potential habitat for sensitive species. ESA mapped the locations of noxious weeds using Global Positioning Systems (GPS) and prepared technical memoranda for review by ODOT.

Highway 97 North of Bend, Oregon. ***Project Scientist.***
Sarah performed wetland and waterway scoping as well as wetland determinations for this ODOT project. ODOT is proposing to construct an alternate highway route to relieve congestion and reduce traffic accidents north of Bend. Sarah also mapped noxious weed locations throughout the project area. and assisted with writing memoranda documenting the findings of field investigations.

Lane County Sign Replacement Project. Lane County, OR. ***Project Manager and Wetland Scientist.*** Sarah served as project manager and field scientist for this large-scale transportation sign upgrade project. ODOT proposed to replace approximately 500 road signs along a 30-mile stretch of I-5 in Lane County to meet current FHWA readability standards. Sarah and another ESA wetland scientist determined the presence of wetlands within 25 feet of proposed sign locations based on existing data and field reconnaissance. Approximately 200 potential wetlands were identified. She conducted delineations at 10 sign locations with proposed impacts to wetlands and completed the joint permit application for approval from the U.S. Army Corps of Engineers (Corps). Sarah facilitated timely review of the JPA and assisted project engineers with construction specifications for avoiding impacts.

Relevant Experience (Continued)

ODOT – I-5 Bridges Vertical Improvements, Lane, Linn, and Marion Counties, OR. ***Project Manager and Field Lead.*** Sarah served as project manager and field crew leader for wetland field reconnaissance, wetland delineations, botanical surveys, and endangered species act documentation at eleven bridge overpasses along the I-5 corridor from south of Salem to Eugene, Oregon. ODOT proposes to increase the vertical clearance of the bridges, which will require extensive grading, repaving, and site restoration. Sarah and field technicians delineated approximately 45 wetlands and waterways at 11 bridge sites. Sarah prepared the delineation report and facilitated concurrence from the Department of State Lands (DSL). Sarah also prepared the joint permit application and facilitated approval from DSL and the Corps.

ODOT Region 3 Wetlands, Douglas and Josephine Counties, OR. ***Project Scientist.*** Sarah delineated wetlands, determined ordinary high water levels (OHWL) and assessed wetland functions for this highway improvement project. Sarah worked at two different sites: the Calapooya Creek Bridge on OR 138 to determine OHWL and to review a previous wetland delineation. At the Del Rio site, in Roseburg, Sarah delineated wetlands for the road realignment project and assessed the functions and values of over 20 wetlands using the judgmental method. Sarah prepared the wetland delineation report and assisted with the functional assessment report for the Del Rio Site.

ODOT Region 5 – US 730 Umatilla River Bridge Repair, Umatilla, OR; and US 26 Culvert Repairs Project, John Day, OR. ***Project Scientist*** **.** Sarah conducted data review, wetland and waterway scoping, wetland delinations, OHWL flagging, and report writing for these two transportation projects. For the Umatilla Bridge Project, Sarah and another ESA Adolfson scientist determined the presence of wetlands along the Umatilla River at the US 730 bridge crossing and prepared a scoping memorandum per ODOT's template to document the findings. The second project involves replacing and/or repairing four culverts along US 26 east of John Day to improve fish passage. Sarah assisted with wetland and waterway delineations along these four tributaries of the John Day River and prepared the delienation report for submittal to DSL. Sarah is currently coordinating with NMFS and ODOT to determine if the project would qualify for a programmatic biological opinion under SLOPES IV.

Frenchman Hills Wasteway Supplemental Feed Route Wetland Delineation, Quincy, Washington. ***Project Scientist.*** Sarah conducted wetland delineations along the Frenchman Hills Wasteway using the Arid West Supplement in support of a proposal to widen a culvert crossing. The culvert widening is part of Ecology and the Bureau of Reclamation's project to improve water delivery to the Potholes Reservoir. Sarah prepared a wetland delineation report for submittal to Ecology.

Local Wetland Inventory, Lakeview, OR. ***Project Scientist.*** Sarah assisted with the processing and quality control of field data for this wetland inventory in central Oregon. Sarah also assisted with preparing maps and finalizing the inventory for local and state approval.

ESA Adolfson

MIKE LEECH

Senior GIS Analyst

Mike is a Senior GIS Analyst with over 8 years of experience in GIS database development, analysis, management and cartography in natural resource management. He is an expert in design of GIS-linked MS Access databases for robust storage and retrieval of information. Mike is working with local cities and counties as they update their Shoreline Master Programs while also managing the GIS daily operations. He is adept at providing technical solutions to complex environmental problems using GIS. Mike has also developed a curriculum of intensive hands-on courses for the Northwest Environmental Training Center in areas of GIS software applications, spatial database development and information management. In addition, Mike also supports all of the GPS technology used by field staff in the Pacific Northwest region.

Education

M.S. Geography, Western Washington University 2006

Emphasis in Resource Conservation and Management

B.A. Biology, Indiana University 1996

B.A. Environmental Studies, Indiana University 1996

Affiliations/Activities

Association for American Geographers (AAG)

NW GIS Users Group

Relevant Skills

Database Development

GIS Manager

Modeler

Technical Lead

Natural Resource Policy

Public Outreach

Shoreline Planning

8 Years of Experience

Relevant Experience

ODOT Region 3 Wetlands, Douglas and Josephine Counties, Oregon. ***GIS Analyst.*** Mike provided GPS and GIS technical support for this project and also was responsible for preparing the maps and figures for the reports. Mike supported the field staff with Trimble GeoXT handheld GPS units and led the post-processing and conversion to GIS format. Mike also helped to deliver the digital data products to the ODOT R3 staff.

Shoreline Master Program Update, Pierce County, Washington. ***GIS Developer/Manager.*** Mike is coordinating GIS analysis and mapping to support Pierce County's SMP Update. He is also working with the County's Technical Advisory Group, made up of County staff, Department of Ecology staff, tribal representatives, and other stakeholders. As part of this project, Mike developed a web-based application using ArcGIS Server to support the technical document review process for the project team and includes over 80 data layers from a variety of sources. He has also prepared a series of landscape analysis maps to support the inventory and characterization. Mike has also attended and presented information to the shoreline technical advisory group as well as helped with the facilitation of the public working group meetings.

Disturbance Mapping Project, USACE, Walla Walla, Washington. ***GIS Manager/Database Developer.*** Mike is the GIS/Database Coordinator for the USACOE Walla Walla District Disturbance Mapping Project. Mike and his GIS support staff created a comprehensive database and GIS mapping system to depict areas of earth disturbance related to dam construction and related facilities. Mike is supervising other GIS staff in geo-referencing scanned historical documents and digitizing archaeological resources that may have been disturbed previously through excavation, shoreline erosion, or other construction activities. The final product delivered to the USACE was a robust GIS-linked Access database and a companion bound hard copy map atlas. Mike also prepared a hands-on training seminar with the project staff at the Walla Walla District office to demonstrate the applications of the digital data as it relates to on-current/on-going projects at the CORPs.

Relevant Experience (Continued)

Birch Bay Watershed Characterization and Restoration Prioritization, Whatcom County, Washington. ***GIS Analyst.*** Mike worked with project staff to develop and apply a watershed characterization approach that synthesizes the findings of ecosystem process and habitat diversity models with models of potential land use change within the within the Birch Bay watershed of Whatcom County. Mike assisted with adapting and applying remote sensing protocols for identifying and characterizing wetland and riparian conditions within the watershed. He has helped to support the build-out scenario models for the Birch Bay watershed to track potential development patterns and impacts within the watershed.

Northwest Environmental Training Center, Seattle, Washington. ***MS Access Database /GIS Instructor.*** Mike is also currently facilitating intensive hands-on courses for environmental professionals in areas of GIS software applications, spatial database development and information management. Mike has been responsible for developing training curriculum and lead instruction for MS Access 2003 Database Design and Management courses and on-going development of GIS Applications for Wildlife Biologists courses.

Salmon Fisheries Management Tool, Upper Skagit Indian Tribe, Sedro-Woolley, Washington. ***Database Developer/GIS Analyst.*** Mike worked closely with the Natural Resources & Fisheries staff to develop an in-season management tool based on 20 years of salmon catch data from the Skagit River for the Upper Skagit Indian Tribe. Mike developed an easy-to-use database and facilitated statistical analysis (linear regression modeling) for in-season updates to fisheries biologists. Mike also provided technical support, including training and comprehensive manuals for Microsoft Access databases and ArcGIS 9.x projects. He was responsible for the development of GIS-Linked MS Access databases for Public Works, Environmental Planning and Natural Resources Departments Other projects include CAD conversion of parcel data to GIS data, ortho-rectification of historical aerial photographs, and production of maps for grants and reports.

Mapping Plant Communities at the Alliance Level, Oʻahu Forest National Wildlife Refuge. ***Satellite Image Processor.*** Mike used high-resolution IKONOS satellite imagery to compare pixel and object-based methods for mapping plant communities and canopy-dominant invasive species on US Fish & Wildlife lands. Mike used several advanced remote sensing tools including object-oriented image analysis package eCognition to assess the changes in accuracy between the two approaches. The final product (GIS database) is currently being used as a management tool by resource mangers in the Oʻahu Forest National Wildlife Refuge.

ERIC SCHNIEWIND

Technical Associate

Mr. Schniewind has over 15 years of experience as a hydrogeologist and geologist specializing in soil and groundwater contamination studies, environmental remediation planning and implementation, and pre-acquisition site assessments. He has supervised and conducted numerous contaminated groundwater site assessments, field operations, and remediation system installation projects. His experience includes project management, analysis of laboratory results, site historical research, report preparation, and aquifer and well test analysis. In addition, Mr. Schniewind has been involved in fault hazard and landslide hazard studies. His general responsibilities include providing geological, hydrogeologic, geotechnical, hydrological, and hazardous materials technical support for NEPA and CEQA documents such as EIRs, EISs, and EAs.

Education

B.A., Geological Sciences, UC Santa Barbara

Relevant Experience

Sandy River Pipeline Project, Sandy River OR. ***Hazardous Materials Specialist and Hydrologist.*** Eric provided consultation of contaminated plume identified in tunneling spoils on large construction project immediately adjacent to the Sandy River. In addition, Eric provided technical assistance on retained dewatering water with constituents that were outside of discharge requirements. ESA Adolfson is currently providing construction monitoring for this long term construction project and enforcing required BMPs to protect water quality.

Grand Ronde, Road Construction, Grand Ronde, OR. ***Hazardous Materials Specialist and Hydrologist.*** Provided technical guidance and consultation services on contaminated soil characterization for excavated soils targeted for reuse on another site. Following local controversy on the potential presence of contaminants in excavated materials, Eric assisted in characterization of soils for potential presence of petroleum hydrocarbons. The construction project involved the widening of an existing local highway and requisite grading and earthwork activities while adhering to established BMPs.

Grand Ronde Elder Housing, Grand Ronde, OR. ***Hydrologist.*** Eric provided technical data on stormwater pollutants anticipated for proposed housing development. The project calls for converting a large area of pervious surfaces to impervious surfaces that would drain directly into a creek that is habitat for protected aquatic species. The initial work also included an evaluation of potential stormwater quality concerns during the construction phase.

Oak to Ninth Avenue Waterfront Development EIR. ***Geologist, Hydrologist, and Hazardous Materials Specialist.*** Analyzed subsurface soil stability, soil and groundwater quality, shoreline erosion potential, effects of dredged sediments for use as fill, and the presence of contaminated groundwater and potential impacts to the public. The project would redevelop this underutilized maritime industrial area along the Estuary and the Embarcadero in Oakland into a mixed use revitalized area. The issues analyzed in the EIR included redevopment on poorly engineered fill materials and Bay Muds, contaminated soils and groundwater from range of constituents, use of dredged materials as fill, and shoreline improvements to protect from erosion.

Relevant Experience (Continued)

Treasure Island Naval Base, Redevelopment Plan, *Hazardous Materials Specialist and Hydrogeologist.* Provided technical analysis of former naval base with long history of hazardous materials use. The base has been divided into separate areas determined by historical releases of wide range of contaminants. The proposed project will include development of wetland for treatment of stormwater runoff.

Lawrence Berkeley National Laboratory Building 51 and Bevatron Demolition Project, CEQA/NEPA analysis. *Geologist and Hydrologist.* Evaluated geologic, hydrologic, and hazardous materials related impacts for both the EIR and EA. The project entailed dismantling and removing the Bevatron particle accelerator, a facility listed on the National Register of Historic Places for its contribution to the development of the country's atomic energy program in the 1950s. Major environmental issues being analyzed include mitigation of significant impacts to historic resources, traffic and circulation associated with hauling of demolition materials through the city of Berkeley, handling and disposal of hazardous and radioactive materials, noise, air quality, public health and safety, visual quality and land use and planning.

Fairfield-Suisun Sewer District (FSSD) Sewer System and Treatment Plant Master Plan EIR. *Geologist.* Analyzed potential geological hazards for system-wide wastewater flow improvements. Elements included upgrading wastewater treatment plant, construction of new outfalls on soft Bay Muds, construction of new pipelines and expanding stormwater catch basin infrastructure. Provided analysis of potential impacts and mitigation measures to address numerous geologic hazards.

City of Eureka Balloon Tract EIR. *Geologist, Hydrologist, and Hazardous Materials Specialist.* Provided analysis for EIR on 43 acre Mixed Use project site located in the Coastal Zone. Former operations at the site included railroad car maintenance and repair and fueling of locomotives. Rail operations at the site included the use of Bunker C oil, diesel fuel, and gasoline. Environmental issues include soil and groundwater contamination from hazardous material releases, transportation, air quality, noise, biology, geology, and aesthetics.

Canyon Rock Quarry Expansion Project EIR. *Geologist and Hydrologist.* Analyzed and prepared Response to Comments relating to geology, hydrology and water quality concerns in the DEIR for the FEIR. Issues of the expansion included potential impacts to the groundwater supply and potential impacts to neighboring water supply wells, water quality impacts to the nearby creek, groundwater recharge, and adequacy of retention basins, as well as traffic, air quality, noise, and water quality (potential sedimentation into an adjacent creek).

ESA Adolfson

MICHELLE LENNOX

Project Scientist and GIS Analyst

Michelle has over ten years of professional experience supporting a variety of environmental projects. She has assisted with wetland delineations, wildlife surveys, and habitat assessments. Michelle has also prepared wetland delineation reports, environmental assessments, biological assessments, and other documents needed for permitting, including National Environmental Policy Act (NEPA) and Endangered Species Act compliance. She is experienced in data management, GIS analysis, and digital imaging.

Education

Graduate Certificate in Geographic Information Systems (GIS), Portland State University, Portland, Oregon

M.S., Biology, Towson University, Towson, Maryland

B.S., Marine Biology, University of Maryland, College Park, Maryland

10 Years of Experience

Environmental reviews and permitting

Wildlife surveys, habitat assessments, and wetland delineations

Restoration planning and monitoring

GIS analysis and remote sensing

Data compilation and management

Relevant Experience

Shoreline Master Program Update, Clark County, WA. ***GIS Analyst.*** Michelle is assisting with the GIS analysis and mapping to support Clark County's SMP Update. She has attended public meetings and has assisted the public in explaining how the shoreline boundaries were derived in GIS and helped them locate their properties to determine whether they are affected by shoreline planning area. Michelle will also create a series of landscape analysis maps to support the inventory and characterization.

ODOT Region 3 Wetlands, Douglas and Josephine Counties, OR. ***GIS Analyst.*** ESA delineated wetlands and waterways at three sites in ODOT Region 3, near Grants Pass and Roseburg. Michelle assisted in mapping over 100 delineated wetlands and waterways on this project and provided QA/QC for the mapping portion of the project. She also instructed staff on procedures for collecting GPS data using a handheld Trimble unit, and used this data to create GIS maps of the wetlands and waterways for all three project sites.

ODOT Highway 97, North of Bend, OR. ***GIS Analyst.*** Michelle assisted with mapping over 90 wetlands and waterways along Highways 97 and 20 north of Bend, for a proposed highway realignment project. She also conducted surveys for rare mammals within the area of potential impact (API). Michelle led the QA/QC effort for the GIS maps and figures to illustrate the location of waterways, wetlands, and noxious weeds in the API.

Elder Housing Wetland Delineation, Grand Ronde Tribal Housing Authority, Grand Ronde, OR. ***Project Manager.*** Michelle prepared a NEPA environmental assessment (EA) for the development of an approximately 10-acre site for elder housing facilities for the Confederated Tribes of Grand Ronde. The EA project includes preparation of an HUD Checklist and presentation of the final EA to the Bureau of Indian Affairs. Major issues addressed in the EA included wetlands and wildlife, transportation, cultural resources, and stormwater. Michelle was responsible for writing EA chapters, attending meetings, and coordinating with subconsultants.

Relevant Experience (Continued)

Orient Drive Wetland Permitting, Gresham, OR. ***Project Scientist.*** Michelle assisted with the re-flagging of a wetland resource at a property previously delineated by ESA. Phase II of the project included revising the wetland delineation report and assisting with preparation of a joint permit application for review by the Department of State Lands and the U.S. Army Corps of Engineers. Michelle coordinated with local agencies regarding wetland regulations affecting the site.

River Bend Wetland Delineation, Independence, OR. ***Project Scientist.*** Michelle conducted a delineation of wetlands within the area likely to be disturbed by mining, access roads, and the fish egress channel. Wetland boundaries were marked in the field with flagging.

ODOT I-5 Capitol Highway to the Willamette River Bridge Natural Resource Baseline Conditions and Biological Assessment, Clackamas, Multnomah, and Washington Counties, OR. ***Project Scientist.*** ODOT is proposing to widen shoulders along I-5 from Capitol Highway to the Willamette River Bridge and to construct several stormwater treatment facilities to treat new and existing impervious surface. To determine baseline conditions and potential project impacts, Michelle assisted with field review of the presence of wetlands, waterways, listed species habitat, and noxious weeds within the right-of-way of I-5 and helped prepare a technical memoranda summarizing the findings.

LC Construction Wetland Delineation, Oregon City, OR. ***Project Scientist.*** Michelle assisted with a wetland delineation in Oregon City collecting information on existing vegetation, soils, and hydrologic regime. Michelle compiled the findings in a wetland delineation report for review by Oregon City and the Department of State Lands.

Jordan Valley Airport Wetland Delineation, Jordan Valley, OR. ***Project Scientist.*** Michelle assisted with wetland delineation of a 23-acre site for a project proposing the construction of an emergency airport to service southeastern Oregon.

Commuter Rail Impact Assessment and Mitigation, Washington County, OR. ***Project Scientist.*** Michelle assisted with wetland delineations as part of the mitigation planning process for wetland impacts associated with a proposal to establish commuter rail service in Washington County.

Road Renovation EA, Grand Ronde, OR. ***Project Scientist.*** Michelle assisted with conducting wetland delineations in the vicinity of Grand Ronde Road between Highway 18 and Highway 22, collecting information on existing vegetation, soils, and hydrologic regime. She assisted with compiling the findings to help determine whether the past wetland documentation was still adequate for permitting purposes.

ESA Adolfson

ALISON SIGLER

Staff Scientist

Alison has five years of professional experience supporting environmental projects. She assists with wetland delineations and habitat assessments in Oregon, Washington and Idaho. She prepares biological assessments, wetland delineation reports, wetland functional assessment and impact reports, compensatory wetland mitigation reports, and other documents necessary for permitting. She has experience with data management, interpreting aerial photographs, creating maps, and GIS analysis.

Education

B.S., Biology, Washington State University, Pullman, Washington

Basic Wetland Delineation Training, Portland State University, Portland, Oregon

GIS for Natural Scientists, Portland State University, Portland, Oregon

5 years experience

Relevant Experience

Wetland Delineation Report and Buffer Assessment, Clackamas County, OR. ***Staff Scientist.*** Alison is assisting with a wetland delineation report of an industrial-zoned parcel in Clackamas County. A wetland delineation and buffer assessment is necessary for proposed expansion of the existing facility. Alison's contribution to the report includes reviewing and summarizing existing information, a site visit and photo documentation. The report is written following requirements from Oregon Department of State Lands and Clackamas County.

Draft Environmental Impact Statement (DEIS, Lane Transit District, Eugene, OR. ***Staff Scientist.*** Alison is assisting with a wetland inventory and functional assessment analysis of wetlands located along the project alternatives for this rapid bus transit (RBT) project. Lane Transit District is proposing to extend RBT into West Eugene to reduce congestion and promote economic development.

Compensatory Mitigation Plan Monitoring and Report Corvallis, OR. ***Staff Scientist.*** Alison conducted vegetation and woody species monitoring and compiled the annual monitoring report in support of Corvallis Station's compensatory wetland mitigation. Corvallis Station is a compensatory wetland mitigation site in its third year of monitoring. Tasks include identifying and assessing survival and cover of woody shrubs and vegetation, photo documentation, writing and editing the monitoring report. The report followed requirements set by Army Corps of Engineers and Oregon Department of State Lands.

ODOT Region 5 US 26 Culvert Repairs Project, Grant County, OR. ***Staff Scientist.*** Alison is preparing a biological assessment and assisting with preparation of a wetland delineation report required for the US 26 Culvert Repairs Project. This work involves replacing or upgrading four culverts on four streams in the Upper John Day River Basin, improving fish passage, stream flow and gradients. Tasks include collecting and summarizing background information and aiding in the determination of potential action areas and report drafting. Alison updated the following chapters of the Biological Assessment: Introduction, Environmental Baseline, and Natural History and Species Occurrence.

Relevant Experience (Continued)

Sandy River Conduit Relocation Construction Monitoring, Clackamas County, OR. ***Staff Scientist.*** The Portland Water Bureau is burying Conduits 2 and 4 of the City's drinking water system eighty feet below ground at the Sandy River crossing. As part of the construction monitoring over-sight provided by ESA, Alison is reviewing daily logs recorded by the Design-Builder to ensure compliance with environmental permits and approvals issued for the project, including a Removal-Fill permit, Section 404/Section 10 permit, and a Biological Opinion. She updates the bi-weekly monitoring report each month and periodically conducts site visits to evaluate environmental compliance.

Eastmoreland Golf Course Tree Inventory, Portland, OR. ***Staff Scientist.*** Alison is assisting with a comprehensive tree inventory which involves identifying species and measuring tree diameters on the Eastmoreland Golf Course. She is also assisting with the data processing and quality control of the data in GIS. The course was planted a century ago with native and non-native species. The goal of this inventory is to identify trees to remove for the purpose of improving play, improving air circulation in the tree canopy, and improving the overall health of the landscaping. ESA staff identified approximately 60 different tree species and surveyed over 1,300 trees using Global Positioning Systems (GPS).

Biological Assessment Survey for Pipeline Transmission. Mount Hood National Forest, OR. ***Staff Scientist.*** Alison assisted with wetland delineations; noxious weed and sensitive species surveys; wildlife habitat surveys in support of a biological assessment for a pipeline transmission project. She was responsible for field data collection and management. The project goal was to record ecological conditions of the potential natural gas pipeline corridor to determine project impacts.

GIS Mapping for Wild Salmon Conservation, Portland, OR. ***Staff Scientist.*** Alison created maps in GIS in support of salmon conservation non-profit research. She expanded and reorganized the GIS data server, reviewed and added metadata as needed and repaired missing data on existing maps.

Ground Truthing LiDAR Imagery. Cowlitz, Yakima and Skamania Counties, WA. ***Staff Scientist.*** Alison conducted field work ground truthing LiDAR imagery to check for image accuracy. Tasks included interpreting aerial photos and LiDAR imagery, collecting sample plot survey information including identifying and measuring trees and shrubs, reviewing and editing collected data superimposed on LiDAR imagery.

ESA Adolfson

ROSEMARY BAKER

Staff Wetland Ecologist/Botanist

Rosemary has a background in restoration, native plant conservation and landscaping. Rosemary has worked for several years in the restoration of a variety of local stream, wetland, and forested habitats in urban parks and natural areas in and around Washington. She specializes in identification of Washington native plants and invasive species. Rosemary has delineated wetlands in eastern and western Washington, and is experienced in wetland rating and assessment.

Education

B.S., Environmental Studies, The Evergreen State College, 2004

Wetland Science and Management Certificate, University of Washington, 2007

Professional Affiliations

EarthCorps 2005-2006

Washington Native Plant Society 2005-present

2 Years of Experience

Relevant Experience

King County Lands Invasive Plant Survey. King County, Washington. ***Primary Field Botanist****.* Rosemary managed daily field survey operations and logistics, site selection, field forms, and all data entry. The survey was conducted on 21,000 acres of county-owned properties that were deemed high-value conservation lands. Each habitat type i.e. closed forest, freshwater shoreline, etc. was evaluated for the percent presence of target invasive species, including county-listed noxious weeds. Surveyed data were entered in a database which county managers will use as a tool to better manage invasive species on high-value county owned lands.

Pierce County Invasive Species and Lake Management Project, Pierce County, Washington. ***Field Botanist.*** Rosemary assisted in field surveys during 2008. Data on weed presence and percent cover collected served as the basis for an invasive species management plan. Tasks performed included identification and coverage assessment of a variety of invasive plants and county listed noxious weeds, as well as documentation of hydrologic features and wildlife habitat suitability.

Redmond PSE Trail Phase 3 Trail Improvements, Redmond, Washington. ***Wetland Scientist.*** Rosemary delineated wetlands on City of Redmond property and prepared a Critical Areas Report including assessment of impacts for the Puget Sound Energy trail reroute.

D208519. Northeast Redmond Neighborhood Park Master Plan. ***Wetland Scientist***. Rosemary delineated wetlands and streams, characterized wildlife habitat areas, and assisted in preparation of a critical areas study. The undeveloped park, located in the City of Redmond, Washington, contains wetlands, a salmonid-bearing stream, and regulated wildlife habitat.

City of Kenmore On-Call 2008, Kenmore, Washington. ***Wetland Scientist.*** Rosemary reviewed permit submittals with regard to the City of Kenmore Critical Areas Code reviews for the City, as part of ESA's on-call contract with the City. Tasks included review of submitted documents for conformance with Kenmore Municipal Code, site visits to verify wetlands and boundaries, mitigation monitoring, and preparation of letters to the city regarding applicant's conformance with City code.

Relevant Experience (Continued)

Gentry Critical Area Permitting Assistance, King County, Washington. ***Wetland Scientist.*** Rosemary prepared both a conceptual wetland buffer enhancement plan and a planting plan for a private homeowner on Shady Lake in unincorporated King County.

Vintage I Office Park, Federal Way, Washington. ***Field Botanist.*** Rosemary assisted in the 2008 monitoring of stream buffer plantings installed installed on property adjacent to a tributary of Hyllebos Creek. She also assisted in assessing competitive bids for an additional planting, ordered plants, and helped manage installation logistics.

Japanese Gulch Trail, Mukilteo, Washington. ***Volunteer Coordinator.*** Rosemary assisted in managing a volunteer planting event within the City of Mukilteo. She helped with on-site event logistics, bare-root planting demonstrations and public safety. The city was required to mitigate impacts to a wetland for the installation of a pedestrian and biking trail within Japanese Gulch.

Experience Prior to Joining ESA Adolfson

Ravenna Park Wetland Restoration Project, Seattle, Washington. In alliance with the City's Green Seattle Partnership, and sponsor Washington Native Plant Society, Rosemary managed a wetland restoration in Ravenna Park at the 15th Ave Bridge. The site is a groundwater-fed sloped wetland at the base of the ravine draining into Ravenna Creek. Hummocks were constructed to establish longer term conifer survival and live stakes were installed in areas with Reed-canary grass. Rosemary's group continues to plant a diversity of native emergents and shrubs and remove invasives in the wetland.

ESA Adolfson

ADAM MERRILL

Watershed Scientist

Adam has over seven years of experience conducting and supporting a variety of biological and ecological studies. He regularly performs wetland delineations, wetland ratings, functional assessments, and prepares wetland reports and mitigation plans for permit applications. In addition, Adam has experience planning and prioritizing wetland and stream restoration activities at a watershed scale. Adam's knowledge and experience also includes stream habitat assessment, water quality monitoring, erosion and sediment control monitoring, forestry studies, and shoreline inventories. Adam is trained in the use of GPS technology and ArcGIS 9.3 software, and is skilled at using geospatial data to identify and analyze aquatic habitats.

Education

B.S., Environmental Science, Western Washington University, 2001

M.S., Resource Management, Central Washington University, *Expected Graduation Winter 2010*

Certifications

Certified Erosion and Sediment Control Lead (CESCL)

Fluvial Ordinary High Water Mark (OHWM) Certification

Washington State Wetland Rating System (Revised) Certification

Relevant Experience

Wetland identification, delineation, rating, functional assessment, mitigation

Shoreline inventories

Watershed characterization, planning, and restoration

Water Quality Monitoring

Stream Habitat Assessment

7 Years of Experience

Relevant ESA Adolfson Experience

I-405 Corridor Program Wetland Studies, King County, Washington. ESA Adolfson (ESA) was contracted with the Washington Department of Transportation (WSDOT) to conduct wetland investigation and mitigation development for multiple sections of the I-405 road improvements and Nickel projects in King County. The projects include: SR 169 to I-90 Renton to Bellevue Project, Kirkland Nickel Improvement Project, Bellevue Nickel Improvement Project, and Renton Nickel Improvement Project. Adam's duties have included wetland identification, delineation, functional assessment, and state and local rating for over 100 wetlands along approximately 25 miles of I-405. He has co-authored two discipline reports, two biology reports, and a mitigation plan in support of an Environmental Assessment and other environmental documentation.

Everett Riverfront Development, Everett, Washington. ESA is currently contracted to the city of Everett to provide technical and permitting assistance for a large, mixed-use redevelopment of a formally industrial site on the Snohomish River. Adam's duties included wetland delineation, rating, and functional assessment for several wetlands in the project area. In addition, Adam wrote technical memoranda analyzing the potential impacts to plants, animals, streams, and wetlands resulting from the public amenity improvement and environmental restoration phase of the project.

Union Hill Phase II Project, City of Redmond, Washington. ESA was contracted by the City of Redmond and INCA Engineers, Inc. to conduct an environmental study in support of the Union Hill Phase II Project, in the City of Redmond. The proposed road improvements will occur near Bear Creek, a Washington Department of Fish and Wildlife listed priority habitat. Adam was the lead biologist for the field study, which included a stream and wetlands survey and an assessment of fish and wildlife habitat. Adam also drafted the critical areas study, in accordance with City of Redmond's critical areas ordinance.

Relevant Experience (Continued)

Spanaway Creek Fish Passage Improvement Project, Pierce County, Washington. In support of a fish passage improvement project at Spanaway Creek in Pierce County, ESA conducted a wetland analysis and habitat assessment at the site of an existing dam on the creek at Bresemann Forest. Adam's duties included conducting wetland delineations, wetland ratings, and authoring the wetland portion of the critical areas study.

SR 522 Corridor Improvements, City Kenmore, Washington. At the request of the City of Kenmore and Butcher, Willis and Ratliff, Inc., ESA is conducting permitting support for the SR 522 Corridor Improvement project in the City of Kenmore, Washington. For this project, Adam has coordinated with the Army Corps of Engineers to permit the wetland impacts in the project area. He has also authored an environmental feasibility study for proposed intersection improvements near the project area. Adam also assisted the city in selecting a wetland mitigation site for the wetland impacts in the project area.

On-Call Projects for the cities of Kenmore, Newcastle, and Kent, Washington. ESA currently provides assistance to the City of Kenmore and the City of Kent planning departments through long-term on-call contracts. This work addresses wetlands, streams, and other sensitive areas and provides guidance to the cities in administering sections of their zoning codes. Adam has evaluated many wetland studies, stream determinations, and mitigation plans submitted to the cities of Kenmore, Newcastle, and Kent as part of proposed development applications.

Cathcart Custodial Transfer Site Wetland and Stream Reconnaissance, Snohomish County, Washington. Adam conducted a wetland and stream reconnaissance on the 200-acre Custodial Transfer Site in Snohomish County, Washington. The purpose of the study was to assist Snohomish County with future site planning. Adam was the lead biologist for the field work, and he drafted a technical memo detailing the findings of the wetland and stream reconnaissance.

Other Experience

Identification and Prioritization of Aquatic Habitat Restoration Projects at a Watershed Scale, Birch Bay, Washington To fulfill the thesis requirement for a M.S. degree in Resource Management at Central Washington University, Adam conducted a watershed-scale aquatic habitat restoration plan for the Birch Bay watershed, in western Whatcom County. Based upon a GIS analysis of existing data sources coupled with field verifications, Adam identified potential wetland and riparian restoration areas. He also developed a methodology for prioritizing these restoration areas, based upon their potential to provide wildlife habitat, floodwater attenuation, and water quality functions. Lastly, Adam suggested ecological restoration techniques for the identified areas, for the purpose of aiding future restoration planners in developing detailed, site-specific restoration plans.

AARON BOOY

Natural Resources Specialist

Aaron has five years of experience in both aquatic ecology and environmental planning. His knowledge of local, state and federal regulatory processes have contributed to a wide range of SEPA and NEPA documents, permit acquisition strategies, shoreline plans, and community land use planning efforts. Aaron is skilled in natural resource management and the use of science in developing environmental and land use policies. Aaron also has background in aquatic and fisheries science and brings an interdisciplinary approach to all of his planning projects. He has field experience in stream and riparian habitat surveys, wetland delineation, and water quality monitoring.

Education

B.S., Aquatic and Fisheries Science, University of Washington, Seattle

B.A., Design and Planning: Community and Environmental Planning University of Washington, Seattle

5 Years of Experience

Relevant Experience

McCormick Park Reconnaissance and Assessment, Duvall, WA. ***Project Manager.*** Aaron is the project manager for the City of Duvall's McCormick Park Reconnaissance and Assessment. He managed project scoping and in-field activities, including use of GPS equipment to inform the assessment and mapping of access and restoration opportunities within the McCormick Park area. The study area stretches across the City's Snoqualmie River shoreline, and includes unique environments and current land uses. Aaron's work on this project is informing planning for the shoreline area, including the SMP Update.

Hood Property Critical Areas Study, Snohomish County, WA. ***Wetlands Specialist.*** At the request of Mr. Hood, ESA conducted a critical areas study in support of a proposed single family residential development in unincorporated Snohomish County, Washington. Aaron's duties included conducting wetland and stream delineations, developing a conceptual mitigation plan for proposed stream buffer impacts, and drafting a Critical Areas Study per Snohomish County regulations.

City of Duvall On-Call Environmental Consultant, WA. ***Project Manager.*** ESA currently provides assistance to the City of Duvall planning department through a long-term on-call contract. This work addresses wetlands, streams, and other sensitive areas and provides guidance to the City in administering sections of the zoning code. As the Project Manager, Aaron manages receipt and tracking of submittals, site visits, and review for all submittals received. Aaron has evaluated wetland studies, stream determinations, and mitigation plans submitted to the City of Duvall as part of numerous proposed development applications, including assessment and review for the City's Public Works Department.

Relevant Experience (Continued)

Washington State Ferries, Hydrologic Monitoring and Modeling, Anacortes, WA. ***Project Scientist.*** ESA developed and implemented a detailed hydrologic monitoring plan for two significant wetland systems that surround the Washington State Ferries – Anacortes Terminal. Monitoring includes the installation of 12 piezometer nests, four continuous recording pressure transducers, and 2 continuous recording rain gauges. Aaron assists in conducting bi-monthly monitoring of the wetland system, which is currently in progress.

Everett Riverfront Development, WA. ***Biologist.*** ESA was contracted by the City of Everett to conduct an environmental study in support of the Everett Riverfront Development project, in the City of Everett. Aaron is a biologist for the large development project along the Snohomish River in the City of Everett, Washington covering over 100 acres. The project involved the delineation, rating, and functional assessment for over 20 wetlands and several streams, including Bigelow Creek. Ongoing work has included hydrologic monitoring and modeling of the wetland and stream systems in the project area.

Union Hill Road Phase II Project, Redmond, WA. ***Project Manager.*** ESA was contracted by the City of Redmond and INCA Engineers, Inc. to conduct an environmental study in support of the Union Hill Phase II Project, in the City of Redmond. The proposed road improvements will occur near Bear Creek, a Washington Department of Fish and Wildlife listed priority habitat. Aaron served as the Project Manager on the Union Hill – Phase II Project, which included client communication. He served as the primary author for the Mitigation Plan, SEPA Checklist, and the Permits Matrix. Aaron assisted in the field study as a biologist, which included a stream and wetlands survey and an assessment of fish and wildlife habitat.

City of Auburn SMP Update, WA. ***Project Scientist.*** Aaron assisted in the update of the City of Auburn's Shoreline Master Program. He authored chapters on freshwater shoreline natural resources for the Shoreline Inventory and Characterization Report, including wetlands, instream and riparian habitats, and critical wildlife habitat and species.

Cathcart Custodial Transfer Site and Bunk Foss Road Site Wetland and Stream Reconnaissance, Snohomish County, WA. ***Project Scientist.*** Aaron assisted in conducting a wetland and stream reconnaissance on the 60 total acre Woodinville Sites, the 200-acre Custodial Transfer Site and the 12-acre Bunk Foss Road Site in Snohomish County, Washington. The purpose of the study was to assist Snohomish County with future site planning. Aaron prepared the technical memos detailing the findings of the wetland and stream reconnaissance for the Woodinville Sites and Bunk Foss Road Site.

PAUL ADAMUS

Adamus Resource Assessment, Inc.

Dr. Paul Adamus is the author of ORWAP, the new tool of the Department of State Lands that assesses the relative capacity of wetlands to remove nitrate, as well as 15 other functions and values. While developing this he applied it to 220 wetlands throughout Oregon, including several he visited in the Upper Deschutes study area. For DSL, he has trained nearly 100 agency personnel and consultants in the use of ORWAP, and previously developed both of DSL's "hydrogeomorphic" (HGM) methods for assessing wetlands. In 2008 OWEB competitively selected Dr. Adamus to conduct ecological audits of their wetland projects in the Willamette Valley, for which he applied ORWAP and surveyed vegetation and soils at 60 sites. He has comprehensively assessed wetlands for Crater Lake National Park; for the Corvallis Natural Features Inventory; for Juneau, Alaska; and for Island County, Washington, where he drafted a local wetlands protection ordinance (subsequently adopted) that has been cited nationally for its innovative approach to buffer width determinations. He also designed and established the County's 5-year program for monitoring nitrate contamination of surface waters and statistically analyzed those data. He has twice been invited to testify on wetland matters to the U.S. Congress, and was chosen as the sole expert witness on major wetlands case in Michigan. He is best known as the author of WET (Wetland Evaluation Technique), developed originally for the Federal Highway Administration in the early 1980's, and used widely by federal agencies in the decade that followed. Over the past 35 years he has authored over 100 publications, many during the 10 years he was part of EPA's National Wetlands Research Program based in Corvallis. His research for EPA focused on cumulative impacts and the effects of excessive nutrients on wetland biological communities.

Education

Ph.D. Wildlife Science, Oregon State University, Corvallis
M.S. Biology (Aquatic), University of Utah, Salt Lake City
B.S. Wildlife Science, University of Maine, Orono

Current Positions

Adamus Resource Assessment, Inc., Corvallis, Oregon. Principal. 1997-present.
Oregon State University, Corvallis, Oregon (2002-present)
College of Oceanographic and Atmospheric Sciences, Assistant Professor (Courtesy)
Environmental Sciences Graduate Program (Water Resources)

Wetland Program Consultations

State/Tribe Wetland Program Consultation:
North Carolina (Dept. Environmental Management)
Illinois (Dept. of Conservation)
Maine (State Planning Office)
Washington (Dept. of Ecology)
Oregon (Dept. Environmental Quality, Department of State Lands)
Oklahoma
Michigan
Confederated Tribes of the Umatilla Indian Reservation

Regional Wetland Functional Assessment Projects:

Klamath Region (Lassen Volcanic & Crater Lakes National Parks)
Oregon Coast: HGM data collection, model development, and application
Willamette Valley, Oregon: HGM data collection, model development, and application
Juneau, Alaska: Wetlands Management Plan (the second such plan approved in the U.S.)
New Jersey (Hackensack Meadowlands, Raritan Estuary)
Salt Lake City, Utah: Wetlands Advanced Identification Project
Southern Maine: Wetlands Advanced Identification Project
Washington (Mill Creek Watershed): Special Area Management Plan
Washington (Puget Sound - Island County)

Selected Publications

Adamus, P., J. Morlan, and K. Verble. 2009. *Oregon Rapid Wetland Assessment Protocol (ORWAP): calculator spreadsheet, databases, and data forms.* Oregon Dept. of State Lands, Salem, OR. http://oregonstatelands.us/DSL/WETLAND/or_wet_prot.shtml

Willamette Partnership, Parametrix, and P.R. Adamus. 2009. *Crediting and Debiting of Ecosystem Services*. Counting on the Environment Project: http://www.willamettepartnership.org/ongoing-projects-and-activities/nrcs-conservation-innovations-grant-1/nrcs-conservation-innovations-grant

Adamus, P.R. and C.L. Bartlett. 2008. *Wetlands of Crater Lake National Park: An Assessment of Their Ecological Condition*. Natural Resource Technical Report NPS/KLMN/NRTR—2008/115. National Park Service, Fort Collins, CO. http://science.nature.nps.gov/im/units/klmn/Inventories/Adamus_Wetland/Adamus_Wetland.cfm

Adamus, P.R. 2007. *Best Available Science for Wetlands of Island County, Washington: Review of Published Literature.* Report to Island County Dept. of Planning & Community Development, Coupeville, WA. Internet: http://www.islandcounty.net/planning/criticalareas/wetlands/

Adamus, P.R., J. Burcar, K. Harma, C. Luerkens, A. Boscolo, J. Coleman, and M. Kershner. 2006. *Wetlands of Island County, Washington: Profile of Characteristics, Functions, and Health.* Report to Island County Dept. of Planning & Community Development, Coupeville, WA.Internet: http://www.islandcounty.net/planning/criticalareas/wetlands/Phase1_Complete-doc.pdf

Adamus, P.R. 2004. *Classification, Assessment, Monitoring, and Evaluation of Riverine and Palustrine Wetland Ecosystems.* Chapter 12 In: M. McKinstry (ed.). Wetland and Riparian Areas of the Intermountain West. University of Texas Press. http://www.utexas.edu/utpress/books/mckwet.html

Windham, L. and P.R. Adamus. 2004. *Analysis of nitrogen processing and other water quality functions of Phragmitis australis wetlands of the Raritan Estuary during summer 2003.* Report to PSS, Inc.

Adamus, P.R., J. Webster, C. Shippentower, S. O'Daniel, D.E. Williams, and S. Minthorn. 2002. *Umatilla River Floodplain and Wetlands: A Quantitative Characterization, Classification, and Restoration Concept.* Confederated Tribes of the Umatilla Indian Reservation, Pendleton, OR. http://www.umatilla.nsn.us/database/wetlands

Alessandra E. Capretti, WPIT — Wetland Specialist

Ms. Capretti is a wetland scientist and natural resource specialist with expertise in environmental permitting, wetland delineation, compensatory mitigation, habitat enhancement and restoration. She also manages multidisciplinary projects involving Endangered Species Act and National Historic Preservation Act components. She is actively involved in all aspects of fieldwork and uses the latest technology. Ms. Capretti provides knowledge and experience in supervising landscape contractors; developing erosion control measures; inspecting plant material; preparing monitoring and maintenance plans, as well as site monitoring. In addition, she has experience in preparing Phase I Environmental Site Assessments in the states of Oregon and Washington. Ms. Capretti actively keeps abreast of the latest local, state and federal rules and regulations affecting her work and has an excellent reputation of working with clients and agency representatives in providing creative, cost effective solutions to environmental, regulatory and permitting challenges.
Ms. Capretti is currently completing the coursework needed for her environmental engineering degree.

Continuing Education:

- GIS & Field GIS
- Basic Wetland Delineation
- NEPA
- Hydrogeomorphic Wetland Classification
- ESA I & ESA II
- Wetland Mitigation, Const. & Installation
- Advanced Soils & Hydrology for Delineators
- Basic Water Rights
- Wetland Plants of the Pacific Northwest
- Environmental Compliance: Integration, Project Permits
- Wetland Regulations & Mitigation Compliance
- Arid Western Regional Supplement Training
- Oregon Rapid Wetland Assessment Protocol (ORWAP)Training

Education:

B.S. Environmental Science,
Portland State University,
Minor, Environmental Engineering

Work History:

Total Years of Experience: 9
Years with HHPR: 6

Professional Affiliations:

Member of the Society of Wetland Scientists (SWS)

Member of American Society of Civil Engineers

Certifications:

- Wetland Professional in Training (WPIT)
- Professional Certificate in Wetland Mitigation & Restoration, Portland State University
- Professional Certificate in Wetland Delineation

Area of Expertise:

- Wetland Delineation/Permitting
- Natural Resource Assessment
- Environmental Review
- Mitigation Planning
- Permitting
- Agency Consultation

HHPR

Qualifications / Project Experience:

Founded in Portland in 1990, HHPR currently has offices in Bend, Clackamas, and Portland, Oregon; and Vancouver, Washington. HHPR's staff of over 75 employees includes licensed Professional Engineers, Landscape Architects, Environmental Specialist and Surveyors in addition to Certified Planners and Project Managers, Engineers-in-Training, Designers/CAD Specialists, and office support.

Many of our staff have public sector experience combined with successful years of providing consulting services. This balance of experience assures knowledge of what is required to provide efficient consulting services with an understanding of what is needed by our public clients.

Qualifications: Ms. Capretti has managed environmental projects throughout the Pacific Northwest, from the Pacific Coast to the High Desert Region in Oregon, providing consulting services and developing compliance programs for public and private clients. These projects have included performing wetland delineations/determinations and compensatory mitigation plans for school districts, industrial sites, commercial properties, county and city road widening projects. Ms. Capretti has written numerous Natural Resources Assessments for public and private entities for projects ranging in size from less than an acre to 80 acres.

Ms. Capretti has recent experience utilizing Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual: Arid Western Region Supplement. HHPR was contracted by Deschutes Valley Water District (DVWD) to perform a wetland delineation on the proposed crossing of Willow Creek for the installation of a 20 inch transmission waterline. Ms. Capretti performed all the fieldwork for the delineation of Willow Creek. Directed the mapping and surveying of the project creek crossing. She prepared exhibits and a report for submittal to DSL and ACOE.

Ms. Capretti continuing education pursuits within wetland delineation, permitting and field investigations results in accurate, consistent establishment of sensitive are boundaries based on current guidelines to obtain concurrence by permitting authorities.

APPENDIX C: WETLAND DETERMINATION FORMS

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** WILD RIVER/DESCHUTES **Sampling Date:** 03-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 1

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 23 T 21 S R 9 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7434 **Long.:** -121.6076 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
ONSITE AT WILD RIVER

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Spiraea douglasii	15	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus effusus	35	☑ 35.0%	FACW
2. Taraxacum officinale	10	☐ 10.0%	FACU
3. Veronica americana	10	☐ 10.0%	OBL
4. Poa palustris	25	☑ 25.0%	FAC
5. Salix sp.	5	☐ 5.0%	FACW
6. Agrostis sp.	15	☐ 15.0%	FAC
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	10	x 1 =	10
FACW species	55	x 2 =	110
FAC species	40	x 3 =	120
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	115 (A)		280 (B)

Prevalence Index = B/A = 2.435

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Salix sp. assumed FACW. Salix sp. and Agrostis sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100%					Sand	80% SAND WITH 20% SILT
3-6	10YR 3/2	70%					Silt Loam	30% SAND

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: BEDROCK

Depth (inches): 6

Hydric Soil Present? Yes ◉ No ○

Remarks:

SOILS ARE HYDRIC BASED ON PERSISTENT SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	3

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

SURFACE WATER WITHIN 2 FEET OF PLOT

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 21-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 01A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 18 T 21 S R 11 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °

Subregion (LRR): LRR A **Lat.:** 43.7543 **Long.:** -121.4672 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	10	☐ 10.0%	FACW
2. Juncus balticus	88	☑ 88.0%	FACW
3. Typha latifolia	2	☐ 2.0%	OBL
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	98	x 2 =	196
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		198 (B)

Prevalence Index = B/A = 1.980

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 01A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☑ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	1

Wetland Hydrology Present? Yes ◉ No ○

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

Aerial photo

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 03-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 2

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 31 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7978 **Long.:** -121.5722 **Datum:** NAD 83

Soil Map Unit Name: 115A: Shanahan loamy coarse sand, 0 to 3 percent slopes **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Salix sp.	20	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	85	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	85	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 15 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	85	x 1 =	85
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		125 (B)

Prevalence Index = B/A = 1.190

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Salix sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 2

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	3/2	95%	10YR	4/6	5%	C	PL	Loamy Sand	
3-20	10YR	4/1	100%						Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☑ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 21-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 2A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 18 T 21 S R 11 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7543 **Long.:** -121.4665 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	20	☑ 20.0%	FACW
2. Juncus balticus	80	☑ 80.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	100	**x 2 =**	200
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	100 **(A)**		200 **(B)**

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 2A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

SOILS ASSUMED HYDRIC BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Aerial photo

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 21-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 3A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 13 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Shoreline **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7550 **Long.:** -121.4862 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	20	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex nebrascensis	50	☑ 52.6%	OBL
2. Juncus nevadensis	30	☑ 31.6%	FACW
3. Rumex occidentalis	10	☐ 10.5%	FACW
4. Potentilla sp.	5	☐ 5.3%	FACW
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	95	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 5

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	**x 1 =**	70
FACW species	45	**x 2 =**	90
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	115	**(A)**	160 **(B)**

Prevalence Index = B/A = 1.391

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Potentilla sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 3A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5YR	3/1	95%	10YR	4/4	5%	C	M	Silt Loam	5% small rocks; dense roots
12-14	2.5YR	3/1	90%	10YR	3/4	10%	C	M	Sandy Clay Loam	w/silts and gravel

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type: extreme saturation

Depth (inches): 14

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	1
Water Table Present?	Yes ◉	No ○	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: Surface water present within 2 feet of soil pit.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 03-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 4

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 31 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7950 **Long.:** -121.5856 **Datum:** NAD 83

Soil Map Unit Name: 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Carex aquatilis	70	☑ 70.0%	OBL
2. Salix sp.	20	☑ 20.0%	FACW
3. Poa sp.	8	☐ 8.0%	FAC
4. Fragaria virginiana	2	☐ 2.0%	FACU
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	70	x 1 =	70
FACW species	20	x 2 =	40
FAC species	8	x 3 =	24
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	100 (A)		142 (B)

Prevalence Index = B/A = 1.420

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Salix sp. assumed FACW. Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 4

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-6	10YR	2/2	100%						Sandy Loam	DENSE ROOTS
6-18	10YR	2/2	100%						Sandy Loam	WITH GRAVEL,SATURATED

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

SOILS HYDRIC BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 21-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 4A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 14 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7606 **Long.:** -121.4890 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks:

WETLAND WITH PROBLEM SOILS. FILL MATERIAL WITHIN WETLAND IN SEVERAL POCKETS. SOILS COLOR VARIABLE THROUGHOUT IT, HEAVILY GRAZED AND TRAMPLED BY HORSES On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Potentilla sp.	10	☐ 10.0%	FACW
2. Poa sp.	25	☑ 25.0%	FAC
3. Trifolium repens	5	☐ 5.0%	FAC
4. Carex sp.	60	☑ 60.0%	FACW
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	70	**x 2 =**	140
FAC species	30	**x 3 =**	90
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	100 **(A)**		230 **(B)**

Prevalence Index = B/A = 2.300

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Poa sp. assumed FAC. Carex sp. and Potentilla sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 4A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR	2/1	100%						Sandy silt loam	DENSE ROOTS, VERY MOIST
7-16	10YR	5/2	95%	10YR	4/6	5%	C	PL	Sand	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

PROBLEM SOIL. THERE ARE POCKETS OF FILLED MATERIAL IN WETLAND.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	15
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	11

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 03-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 5

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 24 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8312 **Long.:** -121.4737 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** R2UBH

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	50	☑ 66.7%	OBL
2. Equisetum arvense	25	☑ 33.3%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	75	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 25 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	50	x 1 =	50
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	75 (A)		125 (B)

Prevalence Index = B/A = 1.667

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 5

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	2/2	100%						Loam	DENSE ROOTS
3-20	10YR	4/2	85%	7.5YR	4/6	15%	C	M	Silty Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 21-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 5A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 14 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7526 **Long.:** -121.4962 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	5	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus sp.	70	☑ 74.5%	FACW
2. Epilobium sp.	5	☐ 5.3%	FAC
3. Iris douglasiana	5	☐ 5.3%	FAC
4. Poa palustris	10	☐ 10.6%	FAC
5. Trifolium sp.	2	☐ 2.1%	FAC
6. Sidalcea sp.	2	☐ 2.1%	FACU
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	94	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 6

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	70	x 2 =	140	
FAC species	27	x 3 =	81	
FACU species	2	x 4 =	8	
UPL species	0	x 5 =	0	
Column Totals:	99	(A)	229	(B)

Prevalence Index = B/A = 2.313

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Trilfolium sp. assumed FAC. Sidalcea sp. assumed FACU.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 5A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR	2/1	100%						Silt Loam	
11-18	10YR	3/1	100%						Silty Clay	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 6

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 24 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8323 **Long.:** -121.4704 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	70	☑ 90.9%	OBL
2. Ranunculus repens	2	☐ 2.6%	FACW
3. Rumex crispus	5	☐ 6.5%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	77	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 23 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	70	x 1 =	70
FACW species	2	x 2 =	4
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	77 (A)		89 (B)

Prevalence Index = B/A = 1.156

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

RUMEX ROOTS, VEGETATIVE NOT PRESENT

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 6

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-2	10YR	2/2	100%						Silt Loam	
2-20	10YR	3/2	82%	10YR	4/6	10%	C	M	Silt Loam	2 types of redox
				10YR	5/6	2%	C	M		

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	6

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 21-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 6A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 14 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Lowland **Local relief (concave, convex, none):** flat **Slope:** 2.0% / 1.1 °

Subregion (LRR): LRR A **Lat.:** 43.7485 **Long.:** -121.4932 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	70	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	70	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus balticus	50	☑ 58.8%	FACW
2. Carex sp.	30	☑ 35.3%	FACW
3. Rumex occidentalis	5	☐ 5.9%	FACW
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	85	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 15

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	**x 1 =**	70
FACW species	85	**x 2 =**	170
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	155	**(A)**	240 **(B)**

Prevalence Index = B/A = 1.548

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Carex sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 6A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR	2/1	100%						muck	
2-20	10YR	3/1	20%						peat	mixed matrix, 2 layers
	10YR	3/2	80%						peat	mixed matrix

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- [x] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Muck Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1) (except in MLRA 1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- [ ] Salt Crust (B11)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Stunted or Stressed Plants (D1) (LRR A)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ( )	No (•)	Depth (inches):	
Water Table Present?	Yes (•)	No ( )	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes (•)	No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (•) No ( )

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 7

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 13 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8341 **Long.:** -121.4745 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** R2UBH

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex nebrascensis	75	☑ 93.8%	OBL
2. Carex aquatilis	5	☐ 6.3%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	80	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 20 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 7

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-6	10YR	3/2	100%						Silt	
6-13	10YR	4/2	100%						Silt	
13-20	10YR	3/2	95%	7.5YR	4/4	5%	C	PL	Silt	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON WETLAND HYDROLOGY INDICATORS. HAS CHARCOAL IN TRACE AMOUNTS THROUGH ENTIRE PROFILE.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	7

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 21-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 7A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 35 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.7968 **Long.:** -121.5008 **Datum:** NAD83

Soil Map Unit Name: W: Water **NWI classification:** PEMF

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
DIRT ROADS BLOCKED; COULD NOT ACCESS. OFF-SITE DATA PLOT

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	30	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	10	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus balticus	50	☑ 50.0%	FACW
2. Carex nebrascensis	10	☐ 10.0%	OBL
3. Carex aquatilis	40	☑ 40.0%	OBL
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	60	**x 1 =**	60
FACW species	50	**x 2 =**	100
FAC species	30	**x 3 =**	90
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	140	**(A)**	250 **(B)**

Prevalence Index = B/A = 1.786

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 7A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	1
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

SURFACE WATER ALONG WETLAND EDGE

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 8

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 24 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8235 **Long.:** -121.4766 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMF

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	100	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 8

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-12	10YR	3/2	100%						Silt	
12-20	10YR	4/2	95%	10YR	5/6	5%	C	PL	Silt	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☑ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 8A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 3 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Shoulder slope **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7801 **Long.:** -121.5122 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	15	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	5	☐ 5.0%	OBL
2. Poa sp.	65	☑ 65.0%	FAC
3. Juncus sp.	30	☑ 30.0%	FACW
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	**x 1 =**	20
FACW species	30	**x 2 =**	60
FAC species	75	**x 3 =**	225
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	125	**(A)**	305 **(B)**

Prevalence Index = B/A = 2.440

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Poa sp. assumed FAC and Juncus sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 8A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	1
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Aerial photo

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 9

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 24 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8259 **Long.:** -121.4767 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PABF

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

LARGE IRRIGATION COMPLEX
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	90	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 10 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 9

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	2/2	100%						Silt	DENSE ROOTS
3-18	7.5YR	2.5/1	100%						Muck	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- [x] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (LRR C)
- [ ] 1 cm Muck (A9) (LRR D)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Muck Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- [ ] 1 cm Muck (A9) (LRR C)
- [ ] 2 cm Muck (A10) (LRR B)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (●) No ( )

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (Nonriverine)
- [ ] Sediment Deposits (B2) (Nonriverine)
- [ ] Drift deposits (B3) (Noneriverine)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (Riverine)
- [ ] Sediment Deposits (B2) (Riverine)
- [ ] Drift Deposits (B3) Riverine)
- [ ] Drainage Patterns (B10)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

LARGE AREA OF SURFACE WATER ABOUT 15 FT AWAY

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 9A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 3 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7797 **Long.:** -121.5108 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
WETLAND DITCHED THROUGHOUT SITE, SEVERAL UPLAND AREAS INCLUDED AT ABOUT 10%
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	20	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	50	☑ 50.0%	FACW
2. Lupinus sp.	10	☐ 10.0%	FAC
3. Poa sp.	40	☑ 40.0%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	20	x 1 =	20
FACW species	50	x 2 =	100
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		300 (B)

Prevalence Index = B/A = 2.308

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. assumed to be FACW; Lupinus sp. and Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 9A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	2/1	100%						peat	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- [x] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Muck Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1) (except in MLRA 1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (●) No ( )

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- [ ] Salt Crust (B11)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Stunted or Stressed Plants (D1) (LRR A)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 10

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 24 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8258 **Long.:** -121.4754 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
OFF-SITE INVESTIGATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	100	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 10A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 3 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.7794 **Long.:** -121.5119 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus effusus	20	☑ 20.0%	FACW
2. Juncus balticus	20	☑ 20.0%	FACW
3. Carex sp.	10	☐ 10.0%	
4. Carex aquatilis	50	☑ 50.0%	OBL
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	**x 1 =**	50
FACW species	40	**x 2 =**	80
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	90	**(A)**	130 **(B)**

Prevalence Index = B/A = 1.444

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 10A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	2/1	100%						peaty loam	
4-14	10YR	2/1	100%						Silty Clay Loam	
14-20	10YR	3/1	100%						Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC BASED ON PERSISTENT SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	13
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

ditching along northern boundary, running east-west

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 11

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 24 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8258 **Long.:** -121.4754 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMF

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
OFF-SITE INVESTIGATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	100	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 11

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOIL BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 11A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 3 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7781 **Long.:** -121.5169 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	65	☑ 81.3%	OBL
2. Juncus balticus	15	☐ 18.8%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	80	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 20

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65	
FACW species	0	x 2 =	0	
FAC species	15	x 3 =	45	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	80	(A)	110	(B)

Prevalence Index = B/A = 1.375

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 11A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR	3/2	100%						peat	includes some duff
6-20	10YR	2/1	30						peat	2 matrix colors
	10YR	3/2	70%	10YR	3/4	10%	C	PL	Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- [x] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Muck Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1) (except in MLRA 1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- [ ] Salt Crust (B11)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Stunted or Stressed Plants (D1) (LRR A)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ( )	No (•)	Depth (inches):	
Water Table Present?	Yes ( )	No (•)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes (•)	No ( )	Depth (inches):	6

Wetland Hydrology Present? Yes (•) No ( )

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 12

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 26 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8175 **Long.:** -121.4896 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

OFF-SITE INVESTIGATION, COULD NOT ACCESS LOT FROM LAND

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	15	☑ 100.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	85	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	85	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 15 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	85	x 1 =	85
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		85 (B)

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 12

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 12A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 3 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.7780 **Long.:** -121.5086 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	10	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size:)			
1. Lupinus sp.	10	☐ 10.5%	FAC
2. Potentilla anserina ssp. pacifica	10	☐ 10.5%	UPL
3. Juncus balticus	75	☑ 78.9%	FACW
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	95	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 5

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	**x 1 =**	10
FACW species	75	**x 2 =**	150
FAC species	10	**x 3 =**	30
FACU species	0	**x 4 =**	0
UPL species	10	**x 5 =**	50
Column Totals:	105	**(A)**	240 **(B)**

Prevalence Index = B/A = 2.286

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Lupinus sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 12A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR	3/1	100%						peat	
5-20	10YR	2/1	100%						Silty Clay	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

top peat layer not thick enough to be A2 but exhibits primary characteristics of an A2 profile. Assumed hydric based on hydrology indicators.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 13

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 23 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8220 **Long.:** -121.4889 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:** PEMF

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	1	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	1	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex aquatilis	85	☑	85.0%	OBL
2. Juncus effusus	15	☐	15.0%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	85	x 1 =	85
FACW species	16	x 2 =	32
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	101 (A)		117 (B)

Prevalence Index = B/A = 1.158

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 13

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-6	10YR	4/2	100%						Silt	
6-20	10YR	3/2	85%	10YR	4/6	5%	C	PL	Silt Loam	2 types of redox
				5YR	3/4	10%	CS	M		pockets of sand

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	7

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 13A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 12 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °

Subregion (LRR): LRR A **Lat.:** 43.7714 **Long.:** -121.4795 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Carex aquatilis	40	☑ 43.5%	OBL
2. Juncus balticus	35	☑ 38.0%	FACW
3. Poa trivialis	10	☐ 10.9%	FACW
4. Sidalcea sp.	5	☐ 5.4%	FAC
5. Lupinus sp,	2	☐ 2.2%	FAC
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	92	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 8

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	**x 1 =**	40
FACW species	45	**x 2 =**	90
FAC species	7	**x 3 =**	21
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	92	**(A)**	151 **(B)**

Prevalence Index = B/A = 1.641

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Lupinus sp. and Sidalcea sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 13A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR	2/1	100%						Silt Loam	
9-20	10YR	4/2	60%	10YR	3/1	40%	D	M	Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 14

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 25 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8157 **Long.:** -121.4797 **Datum:** NAD 83

Soil Map Unit Name: 115A: Shanahan loamy coarse sand, 0 to 3 percent slopes **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE INVESTIGATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix sp.	30	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	30	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex aquatilis	75	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	75	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75	x 1 =	75
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		135 (B)

Prevalence Index = B/A = 1.286

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
25% open water, Salix sp. assumed FACW

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 14

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOIL BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	1
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Aerial photo

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 14A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 23 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.7405 **Long.:** -121.4917 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	30	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	30	= Total Cover	
Herb Stratum (Plot size:)			
1. Mentha pulegium	10	☐ 10.0%	OBL
2. Carex aquatilis	80	☑ 80.0%	OBL
3. Juncus balticus	10	☐ 10.0%	FACW
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	120	**x 1 =**	120
FACW species	10	**x 2 =**	20
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	130	**(A)**	140 **(B)**

Prevalence Index = B/A = 1.077

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 14A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR	3/2	100%						Clay Loam	
6-20	10YR	4/1	60%	5YR	4/6	38%	C	PL	Sandy Loam	2 types of redox features
				10YR	3/1	2%	D	M		

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	7

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 15

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 25 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8121 **Long.:** -121.4851 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PFOA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

PFO IN AN AREA THAT IS CURRENTLY BEING DRAINED BY SEVERAL DITCH LINES FOR FUTURE DEVELOPMENT
ON-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	15	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Spiraea douglasii	2	☐ 6.3%	FACW
2. Salix geyeriana	20	☑ 62.5%	
3. Betula glandulosa	10	☑ 31.3%	OBL
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	32	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus sp.	65	☑ 90.3%	FACW
2. Fragaria virginiana	5	☐ 6.9%	FACU
3. Equisetum arvense	2	☐ 2.8%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	72	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 28 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	67	x 2 =	134
FAC species	17	x 3 =	51
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	99	(A)	215 (B)

Prevalence Index = B/A = 2.172

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Juncus sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 15

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	2/2	100%						Loam	
3-18	10YR	3/1	70%	7.5YR	4/4	10%	C	M	Silty Clay Loam	ABOUT 5% CHARCOAL AND AT 13 INCHES SOME MED. GRAVELS
				10YR	7/1	20%	D	M		

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

SURFACE WATER ABOUT 4FT FROM PLOT

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 15A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 23 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.7400 **Long.:** -121.4987 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus balticus	60	☑ 60.0%	FACW
2. Carex aquatilis	20	☑ 20.0%	OBL
3. Iris sp.	20	☑ 20.0%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	60	x 2 =	120
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Iris sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 15A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC BASED ON HYDROLOGY INDICATORS.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 16

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 25 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8099 **Long.:** -121.4862 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Betula glandulosa	10	☑ 52.6%	OBL
2. Spiraea douglasii	5	☑ 26.3%	FACW
3. Rosa woodsii	2	☐ 10.5%	FACU
4. Ribes bracteosum	2	☐ 10.5%	FAC
5.	0	☐ 0.0%	
	19	= Total Cover	
Herb Stratum (Plot size:)			
1. Poa sp.	97	☑ 98.0%	FAC
2. Geum macrophyllum	2	☐ 2.0%	FACW
3.		☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	99	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	10	x 1 =	10
FACW species	7	x 2 =	14
FAC species	109	x 3 =	327
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	128 (A)		359 (B)

Prevalence Index = B/A = 2.805

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 16

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	3/2	100%					Loam	Duff layer w/grit & roots
3-20	10YR	3/1	100%					Silty Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soils assumed based on saturation

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

appears to be a perched water table

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 16A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 26 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Shoulder slope **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7255 **Long.:** -121.4971 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
LAWN, PLANTED WITH PINUS CONTORTA, MOWED VERY SHORT
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus sp.	45	☑ 69.2%	FACW
2. Festuca idahoensis	20	☑ 30.8%	FACU
3. Trifolium sp.	0	☐ 0.0%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	65	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 35

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	10	x 3 =	30
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	75 (A)		200 (B)

Prevalence Index = B/A = 2.667

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Juncus sp. assumed FACW and Trifolium sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 16A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	2/2	100%						Silt Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

dry, no moisture

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 07-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 17

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 26 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8119 **Long.:** -121.4927 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1. Pinus contorta	5	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	5	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1. Betula glandulosa	10	☑	33.3%	OBL
2. Salix geyeriana	20	☑	66.7%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	30	= Total Cover		
Herb Stratum (Plot size:)				
1. Carex nebrascensis	100	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	110	x 1 =	110
FACW species	20	x 2 =	40
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	135 (A)		165 (B)

Prevalence Index = B/A = 1.222

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 17

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	2/2	100%					Silt Loam	
3-8	10YR	3/3	100%					Peat	
8-20	10YR	2/1	50%					Silt Loam	some sand, 2 matrices
	10YR	2/2	50%						

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS BY SATURATION.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	10
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

SURFACE WATER ABOUT 2 INCHES DEEP AND 3 FT FROM PLOT.

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 17A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 35 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7142 **Long.:** -121.4951 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	20	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	= Total Cover	
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	70	☑ 70.0%	FACW
2. Carex aquatilis	20	☑ 20.0%	OBL
3. Juncus balticus	10	☐ 10.0%	FACW
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	**x 1 =**	40
FACW species	80	**x 2 =**	160
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	120	**(A)**	200 **(B)**

Prevalence Index = B/A = 1.667

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 17A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	3/2	100%						organics and loam	
4-8	10YR	3/1	90%	10YR	4/6	10%	C	PL	Loam	w/ organics
8-9	10YR	3/1	100%						Sand	
9-19	10YR	3/1	70%	10YR	4/6	30%	C	M	Sandy Loam	w/ organics

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	14
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 07-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 18

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 26 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8115 **Long.:** -121.4966 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
OFFSITE INVESTIGATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	10	☑ 100.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	65	☑ 72.2%	OBL
2. Carex nebrascensis	25	☑ 27.8%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 10 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

☑ **Dominance Test is > 50%**

☑ **Prevalence Index is ≤3.0** [1]

☐ **Morphological Adaptations** [1] **(provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 18

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOIL BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Aerial photo

Remarks:

Saturation visible from offsite and from aerial photo

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 18A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 27 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** convex **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7237 **Long.:** -121.5088 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
HEAVILY GRAZED BY RESIDENT CATTLE
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Gnaphalium sp.	10	☐ 13.3%	FAC
2. Juncus sp.	20	☑ 26.7%	FACW
3. Festuca sp.	40	☑ 53.3%	FAC
4. Poa sp.	5	☐ 6.7%	FAC
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	75	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 25

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	55	x 3 =	165
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	75 (A)		205 (B)

Prevalence Index = B/A = 2.733

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Poa sp., Gnaphalium sp. and Festuca sp. assumed FAC. Juncus sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 18A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR	2/1	100%						Loam	
11-20	10YR	4/1	100%						Sand	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 22-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 19A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 2 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7031 **Long.:** -121.5032 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	60	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	60	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	100	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	**x 1 =**	60
FACW species	100	**x 2 =**	200
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	160 **(A)**		260 **(B)**

Prevalence Index = B/A = 1.625

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Carex sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 19A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR	3/2	100%						peat	
6-20	10YR	2/1	100%						Silty Clay	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON PERSISTENT SATURATION. NOT THICK ENOUGH TO BE A HISTOSOL

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 23-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 20A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 34 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Lowland **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.7120 **Long.:** -121.5160 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
off-site; right of way; heavily grazed - horse pasture; PRAIRIE DOG BURROWS IN FIELD

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	30	☑ 30.0%	OBL
2. Poa trivialis	20	☑ 20.0%	FACW
3. Unidentified pasture grasses	50	☑ 50.0%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	**x 1 =**	30
FACW species	20	**x 2 =**	40
FAC species	50	**x 3 =**	150
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	100	**(A)**	220 **(B)**

Prevalence Index = B/A = 2.200

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. likely due to road run-off. Unidentified pasture grasses assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 20A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	3/2	100%						Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 23-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 21A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 9 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °

Subregion (LRR): LRR A **Lat.:** 43.6745 **Long.:** -121.5436 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PFOA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	20	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	100	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	120	**x 1 =**	120
FACW species	0	**x 2 =**	0
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	120	**(A)**	120 **(B)**

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 21A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR	2/1	85%	10YR	3/4	15%	C	M	Sandy Loam	
8-20	7.5YR	3/1	90%	7.5YR	3/4	10%	C	M	Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	14
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	8

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 23-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 22A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 15 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** convex **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.6671 **Long.:** -121.5107 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
IN RIGHT OF WAY, WETLAND IN GRAZED HORSE PASTURE
Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Claytonia perfoliata	10	☐ 10.9%	FAC
2. Capsella bursa-pastoris	15	☐ 16.3%	FACU
3. Carex sp.	55	☑ 59.8%	FACW
4. Carex nebrascensis	5	☐ 5.4%	OBL
5. Verbascum thapsus	5	☐ 5.4%	UPL
6. Myosotis sp.	2	☐ 2.2%	FACW
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	92	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 8

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	**x 1 =**	5
FACW species	57	**x 2 =**	114
FAC species	10	**x 3 =**	30
FACU species	15	**x 4 =**	60
UPL species	5	**x 5 =**	25
Column Totals:	92	**(A)**	234 **(B)**

Prevalence Index = B/A = 2.543

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. and Myosotis sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 22A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR	2/1	100%						MUCKY PEAT	
9-20	10YR	2/1	100%						Silty Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☑ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	9
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 23-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 23A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 16 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.6727 **Long.:** -121.5380 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PFOA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	60	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Amelanchier alnifolia	10	☑ 66.7%	FACU
2. Rosa sp.	5	☑ 33.3%	FAC
3.		☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	15	= Total Cover	
Herb Stratum (Plot size:)			
1. Equisetum sp.	5	☐ 5.5%	FAC
2. Trifolium sp.	10	☐ 11.0%	FAC
3. Frageria sp.	25	☑ 27.5%	FACU
4. Poa sp.	40	☑ 44.0%	FAC
5. Spiraea sp.	10	☐ 11.0%	FACW
6. Taraxacum officinale	1	☐ 1.1%	FACU
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	91	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 9

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	120	x 3 =	360
FACU species	36	x 4 =	144
UPL species	0	x 5 =	0
Column Totals:	166 (A)		524 (B)

Prevalence Index = B/A = 3.16

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Rosa sp., Equisetum sp., Trifolium sp. and Poa sp. assumed FAC. Spiraea sp. assumed FACW. Fragaria sp. assumed FACU.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 23A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR	2/1	100%						sandy silt loam	
3-5	10YR	3/1	100%						Clay Loam	
5-20	2.5Y	6/4	80%	5Y	6/6	20%	C	PL	Sandy Clay	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Soils assumed hydric based on hydrology indicator.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☑ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Landowner confirms there is early spring hydrology on-site.

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 23-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 24A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 17 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.6701 **Long.:** -121.5544 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	65	☑ 81.3%	OBL
2. Spiraea sp.	15	☐ 18.8%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	80	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	45	☑ 60.0%	FACW
2. Equisetum arvense	5	☐ 6.7%	FAC
3. Stellaria longifolia	20	☑ 26.7%	FACW
4. Galeopsis tetrahit	5	☐ 6.7%	UPL
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	75	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	**x 1 =**	65
FACW species	80	**x 2 =**	160
FAC species	5	**x 3 =**	15
FACU species	0	**x 4 =**	0
UPL species	5	**x 5 =**	25
Column Totals:	155	**(A)**	265 **(B)**

Prevalence Index = B/A = 1.710

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

50% HERB LAYER IS BARE GROUND AND OPEN WATER, Carex sp. and Spiraea sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 24A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR	3/2	100%						Peat	
7-20	2Y	3/1	85%	10YR	4/6	15%	C	M	Sandy Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☑ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	11
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

STANDING WATER ABOUT 4 FT AWAY

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 23-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 25A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 17 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.6733 **Long.:** -121.5535 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Achillea millefolium	5	☐ 6.3%	FACU
2. Trifolium sp.	5	☐ 6.3%	FAC
3. Carex aquatilis	40	☑ 50.0%	OBL
4. Juncus balticus	10	☑ 12.5%	FACW
5. Galeopsis tetrahit	10	☑ 12.5%	UPL
6. Stellaria longifolia	10	☑ 12.5%	FACW
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	80	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 20

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	40	x 1 =	40
FACW species	20	x 2 =	40
FAC species	15	x 3 =	45
FACU species	5	x 4 =	20
UPL species	10	x 5 =	50
Column Totals:	90 (A)		195 (B)

Prevalence Index = B/A = 2.167

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Trifolium sp. assumed to be FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 25A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR	3/1	100%						Clay Loam	
13-20	7.5YR	3/1	80%	10YR	4/1	20%	D	M	Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

SOIL IS SOMEWHAT MOIST

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 23-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 26A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 17 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** convex **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.6721 **Long.:** -121.5551 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PFOA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	45	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	45	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	98	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	98	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 2

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	**x 1 =**	45
FACW species	98	**x 2 =**	196
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	143	**(A)**	241 **(B)**

Prevalence Index = B/A = 1.685

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Carex sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 26A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR	2/1	100%						Clay Loam	
7-10	10YR	4/2	90%	10YR	2/1	10%	C	M	Silty Clay	Mn SOFT MASSES
10-12	2.5Y	3/2	100%						Sand	
12-16	2.5Y	5/3	100%						GRAVEL SMALL	BREAKS APART WHEN CRUSHED

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type: ROCK

Depth (inches): 16

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON HYDROLOGY.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	3

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 23-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 27A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 25 T 22 S R 9 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.6453 **Long.:** -121.5919 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	25	☑ 71.4%	OBL
2. Spiraea sp.	10	☑ 28.6%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	35	= Total Cover	
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	5	☐ 6.3%	FACW
2. Carex sp.	75	☑ 93.8%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	80	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 20

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	**x 1 =**	25
FACW species	90	**x 2 =**	180
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	115	**(A)**	205 **(B)**

Prevalence Index = B/A = 1.783

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Carex sp. and Spiraea sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 27A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	3/2	100%						Silty Sand	
4-20	10YR	3/1	80%	7.5YR	3/1	20%	C	M	Sandy Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 23-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 28A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 24 T 22 S R 9 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °

Subregion (LRR): LRR A **Lat.:** 43.6455 **Long.:** -121.5918 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	75	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	75	= Total Cover	
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	80	☑ 80.0%	FACW
2. Carex aquatilis	20	☑ 20.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	95	**x 1 =**	95
FACW species	80	**x 2 =**	160
FAC species	10	**x 3 =**	30
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	185	**(A)**	285 **(B)**

Prevalence Index = B/A = 1.541

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 28A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	2
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Assumed there was 2 inches of surface water at sample plot based on close visual field observations of wetland.

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 29A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 24 T 22 S R 9 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.6455 **Long.:** -121.5918 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	2	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	5	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	5	= Total Cover	
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	50	☑ 50.0%	FACW
2. Myosotis laxa	5	☐ 5.0%	OBL
3. Alopecurus pratensis	20	☑ 20.0%	FACW
4. Carex aquatilis	25	☑ 25.0%	OBL
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	35	x 1 =	35
FACW species	70	x 2 =	140
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	107 (A)		181 (B)

Prevalence Index = B/A = 1.692

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 29A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR	3/1	90%	10YR	3/4	10%	C	PL	Loam	
10-20	10YR	4/1	75%	10YR	3/6	25%	C	M	Silt Loam	w/ 20% fine sand

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

profile at 10-20 inches has concentrations in the pore linings too.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	10

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 30A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 18 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.6688 **Long.:** -121.5714 **Datum:** NAD83

Soil Map Unit Name: 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
Off-site sample plot

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	5	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	60	☑ 60.0%	FACW
2. Poa sp.	20	☑ 20.0%	FAC
3. Juncus balticus	20	☑ 20.0%	FACW
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		235 (B)

Prevalence Index = B/A = 2.238

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 30A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

ASSUME SATURATION BASED ON ROBUST AND VIBRANT GREEN GRASS

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 31A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 10 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7703 **Long.:** -121.5249 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
On-site, located in state park, no digging allowed without a state cultural resource permit.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	40	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	40	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	80	☑ 80.0%	FACW
2. Veratrum californicum	20	☑ 20.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	**x 1 =**	40
FACW species	100	**x 2 =**	200
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	140	**(A)**	240 **(B)**

Prevalence Index = B/A = 1.714

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 31A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC HYDRICS BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	1
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 32A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 10 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7703 **Long.:** -121.5248 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	5	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	10	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	80	☑ 80.0%	FACW
2. Juncus balticus	20	☑ 20.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	**x 1 =**	10
FACW species	100	**x 2 =**	200
FAC species	5	**x 3 =**	15
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	115	**(A)**	225 **(B)**

Prevalence Index = B/A = 1.957

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 32A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 33A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 10 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7723 **Long.:** -121.5183 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks:
Off-site determination. No digging allowed without a state cultural resource permit.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	5	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	60	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	60	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	70	☑ 70.0%	OBL
2. Juncus balticus	30	☑ 30.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	130	x 1 =	130
FACW species	30	x 2 =	60
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	165 (A)		205 (B)

Prevalence Index = B/A = 1.242

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 33A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 35A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 10 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7732 **Long.:** -121.5246 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** R2UBH

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	2	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	2	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	100	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	102	**x 1 =**	102
FACW species	0	**x 2 =**	0
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	102 **(A)**		102 **(B)**

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 35A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	0.25
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

SURFACE WATER ALONG WETLAND EDGE

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 36A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 10 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7739 **Long.:** -121.5238 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
On-site determination. No digging allowed without a state cultural resource permit.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	20	☑ 66.7%	OBL
2. Pinus contorta	10	☑ 33.3%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	30	= Total Cover	
Herb Stratum (Plot size:)			
1. Smilacina stellata	20	☑ 20.0%	FAC
2. Carex aquatilis	40	☑ 40.0%	OBL
3. Juncus balticus	20	☑ 20.0%	FACW
4. Poa trivialis	10	☐ 10.0%	FACW
5. Spiraea douglasii	10	☐ 10.0%	FACW
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	**x 1 =**	60
FACW species	40	**x 2 =**	80
FAC species	30	**x 3 =**	90
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	130	**(A)**	230 **(B)**

Prevalence Index = B/A = 1.769

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 36A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 37A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 10 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7746 **Long.:** -121.5260 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PFOC/PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	20	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	10	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	80	☑ 80.0%	FACW
2. Juncus balticus	20	☑ 20.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	**x 1 =**	10
FACW species	100	**x 2 =**	200
FAC species	20	**x 3 =**	60
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	130	**(A)**	270 **(B)**

Prevalence Index = B/A = 2.077

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 37A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	5	
Water Table Present?	Yes ○ No ◉	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 38A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 9 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7755 **Long.:** -121.5301 **Datum:** NAD83

Soil Map Unit Name: 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes **NWI classification:** PFOA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
On-site determination. No digging allowed without a state cultural resource permit.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	2	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Alnus incana	10	☐ 16.7%	FACW
2. Salix exigua	50	☑ 83.3%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	60	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	70	☑ 70.0%	FACW
2. Equisetum arvense	5	☐ 5.0%	FAC
3. Rumex uncinatus	10	☐ 10.0%	FACW
4. Poa sp.	15	☐ 15.0%	FAC
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	**x 1 =**	50
FACW species	90	**x 2 =**	180
FAC species	22	**x 3 =**	66
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	162	**(A)**	296 **(B)**

Prevalence Index = B/A = 1.827

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. assumed FACW. Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 38A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 39A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 9 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7752 **Long.:** -121.5299 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PSSC/PFOA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	5	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Alnus incana	10	☐ 16.7%	FACW
2. Salix exigua	50	☑ 83.3%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	60	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	80	☑ 80.0%	OBL
2. Juncus balticus	20	☑ 20.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	130	**x 1 =**	130
FACW species	30	**x 2 =**	60
FAC species	5	**x 3 =**	15
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	165	**(A)**	205 **(B)**

Prevalence Index = B/A = 1.242

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 39A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON HYDROLOGY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	2
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

SURFACE WATER ALONG WETLAND EDGE

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 40A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 3 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7772 **Long.:** -121.5142 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC/PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Alnus incana	10	☐ 19.6%	FACW
2. Pinus contorta	1	☐ 2.0%	FAC
3. Salix exigua	40	☑ 78.4%	OBL
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	51	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	80	☑ 80.0%	OBL
2. Poa sp.	20	☑ 20.0%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	120	**x 1 =**	120
FACW species	10	**x 2 =**	20
FAC species	21	**x 3 =**	63
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	151	**(A)**	203 **(B)**

Prevalence Index = B/A = 1.344

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 40A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

SOILS ASSUMED HYDRIC BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

SATURATION SEEN WITH BINOCULARS

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 41A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 3 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7834 **Long.:** -121.5141 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMA/PSSC/PFOA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Alnus incana	10	☑ 25.0%	FACW
2. Salix exigua	30	☑ 75.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	40	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	80	☑ 80.0%	OBL
2. Poa sp.	20	☑ 20.0%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	110	**x 1 =**	110
FACW species	10	**x 2 =**	20
FAC species	20	**x 3 =**	60
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	140	**(A)**	190 **(B)**

Prevalence Index = B/A = 1.357

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 41A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

SOILS ASSUMED HYDRIC BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Aerial photo

Remarks:

SATURATION SEEN WITH BINOCULARS

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 24-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 42A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 35 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.8046 **Long.:** -121.4956 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	50	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Rosa gymnocarpa	0	☐ 0.0%	FACU
2. Salix exigua	20	☑ 100.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	= Total Cover	
Herb Stratum (Plot size:)			
1. Fragaria virginiana	5	☑ 33.3%	FACU
2. Trifolium repens	10	☑ 66.7%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	15	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 85

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	20	x 1 =	20
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	85 (A)		220 (B)

Prevalence Index = B/A = 2.588

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

"Bare ground" was duff/leaf litter.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 42A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR	3/2	100%						Loam	
3-6	10YR	5/1	90%	10YR	3/4	10%	C	M	Loam	
6-8	10YR	8/2	80%	10YR	5/6	20%	C	M	Clay Loam	
8-20	10YR	7/2	60%	10YR	5/6	40%	C	M	Loamy Sand	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☑ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

LANDOWNER SAYS AREA IS SATURATED EARLIER IN SPRING AND SURFACE WATER IS PRESENT WHEN SNOWFALL IS GREATER. AREA HAS BEEN GETTING DRIER DUE TO LODGEPOLE PINE GROWTH AND PROLIFERATION.

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 25-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 43A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 35 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7995 **Long.:** -121.5009 **Datum:** NAD83

Soil Map Unit Name: Not available **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix exigua	60	☑ 85.7%	OBL
2. Alnus incana	10	☐ 14.3%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	70	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	70	☑ 73.7%	OBL
2. Juncus sp.	15	☐ 15.8%	FACW
3. Taraxacum officinale	5	☐ 5.3%	FACU
4. Ranunculus sp.	5	☐ 5.3%	FACW
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	95	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	130	**x 1 =**	130
FACW species	30	**x 2 =**	60
FAC species	0	**x 3 =**	0
FACU species	5	**x 4 =**	20
UPL species	0	**x 5 =**	0
Column Totals:	165	**(A)**	210 **(B)**

Prevalence Index = B/A = 1.273

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Juncus sp. and Ranunculus sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 43A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

SOILS ASSUMED HYDRIC BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Aerial photo

Remarks:

SATURATION SEEN WITH BINOCULARS

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 25-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 45A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 26 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.8094 **Long.:** -121.4946 **Datum:** NAD83

Soil Map Unit Name: Not available **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Alnus incana	5	☑ 25.0%	FACW
2. Salix exigua	15	☑ 75.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	75	☑ 88.2%	FACW
2. Phalaris arundinacea	10	☐ 11.8%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	85	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	**x 1 =**	15
FACW species	90	**x 2 =**	180
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	105	**(A)**	195 **(B)**

Prevalence Index = B/A = 1.857

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. assumed to be FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 45A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

SOILS ASSUMED HYDRIC BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 25-Jun-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 46A

Investigator(s): ALISON SIGLER, SARAH HARTUNG **Section, Township, Range:** S 26 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.8094 **Long.:** -121.4946 **Datum:** NAD83

Soil Map Unit Name: Not available **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	65	☑ 76.5%	FACW
2. Poa sp.	10	☐ 11.8%	FAC
3. Juncus sp.	10	☐ 11.8%	FACW
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	85	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		180 (B)

Prevalence Index = B/A = 2.118

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex sp. and Juncus sp. assumed to be FACW. Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: 46A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

SOILS ASSUMED HYDRIC BY SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Aerial photo

Remarks:

SATURATION SEEN WITH BINOCULARS

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 09-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 47A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 15 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.6603 **Long.:** -121.5117 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:
OFF-SITE DETERMINATION, SOIL PIT EXCAVATED IN THE ROAD RIGHT-OF-WAY AND REPRESENTS SITE CONDITIONS.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Rumex crispus	10	☐ 10.0%	FAC
2. Hordeum jubatum	10	☐ 10.0%	FAC
3. Elymus cinereus	80	☑ 80.0%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 47A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR	3/2	100%						Silt Loam	root mass
6-18	10YR	3/2	100%						Silty Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON PRIMARY WETLAND INDICATOR AND HYDROPHYTIC VEGETATION.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WATER MARKS ON VEGETATION

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 10-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 49A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 27 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.6326 **Long.:** -121.5146 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMF

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE DETERMINATION, SOIL PIT EXCAVATED IN THE ROAD RIGHT-OF-WAY AND REPRESENTS SITE CONDITIONS.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Rumex crispus	10	☐ 10.0%	FAC
2. Hordeum jubatum	10	☐ 10.0%	FAC
3. Elymus cinereus	80	☑ 80.0%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	0	**x 2 =**	0
FAC species	100	**x 3 =**	300
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	100	**(A)**	300 **(B)**

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 49A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR	3/1	100%						Silt Loam	
8-12	10YR	3/2	100%						Silty Clay Loam	
12-18	10YR	3/2	100%						Silty Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUME HYDRIC SOILS BASED ON WETLAND HYDROLOGY AND HYDROPHYTIC VEGETATION.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	5
Water Table Present?	Yes ◉	No ○	Depth (inches):	9
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WATER IN CHANNELS

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 10-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 50A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 27 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.6436 **Long.:** -121.5201 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

Two 8 inch culverts under highway and running water. Soil disturbed from road construction and past filling events.
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	5	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	5	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus effusus	40	☑ 42.1%	FACW
2. Equisetum hyemale	15	☐ 15.8%	FACW
3. Daucus carota	10	☐ 10.5%	UPL
4. Elymus cinereus	20	☑ 21.1%	FAC
5. Festuca idahoensis	10	☐ 10.5%	FACU
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	95	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 5

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	60	**x 2 =**	120
FAC species	20	**x 3 =**	60
FACU species	10	**x 4 =**	40
UPL species	10	**x 5 =**	50
Column Totals:	100	**(A)**	270 **(B)**

Prevalence Index = B/A = 2.700

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 50A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR	3/3	100%						Silt Loam	mostly road fill

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Assume hydric soils based on wetland hydrology.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	6	
Water Table Present?	Yes ◉ No ○	Depth (inches):	0	
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

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

Remarks:

WATER IN ROAD SIDE DITCH. DITCH RECEIVES OVERLAND FLOW/RUNOFF FROM ROAD.

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 10-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 51A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 27 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.6434 **Long.:** -121.5204 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
OFF-SITE DETERMINATION, SOIL PIT EXCAVATED IN THE ROAD RIGHT-OF-WAY TO REPRESENT NON-WETLAND CONDITIONS SOUTHWEST OF ROADWAY.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	20	☑ 25.0%	FAC
2. Salix geyeriana	60	☑ 75.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	5	☑ 71.4%	FACW
2. Pinus contorta	2	☑ 28.6%	FAC
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	7	= Total Cover	
Herb Stratum (Plot size:)			
1. Festuca idahoensis	15	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	15	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	22	x 3 =	66
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	102 (A)		256 (B)

Prevalence Index = B/A = 2.510

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 51A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR	3/3	100%						Silt Loam	with gravels
3-18	10YR	3/3	100%						Silt Loam	with gravels

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 10-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 52A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 27 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.6354 **Long.:** -121.5161 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PABFx

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE DETERMINATION, SOIL PIT EXCAVATED IN ROAD RIGHT-OF-WAY.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Festuca idahoensis	100	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
Pasture with horse and cattle grazing. Assessment area also looks like it is used as a hay crop.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 52A

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

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

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC BASED ON HYDROLOGY.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	6
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WATER IS DITCHED AND MOST LIKELY PIPED/DITCHED IN MOST PARTS OF THE ASSESSMENT AREA.

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 10-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 53A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 27 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.6343 **Long.:** -121.5156 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE DETERMINATION, SOIL PIT EXCAVATED IN THE ROAD RIGHT-OF-WAY AND REPRESENTS SITE CONDITIONS.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus effusus	50	☑ 55.6%	FACW
2. Festuca idahoensis	20	☑ 22.2%	FACU
3. Elymus cinereus	20	☑ 22.2%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 10

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	20	x 3 =	60
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	90 (A)		240 (B)

Prevalence Index = B/A = 2.667

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 53A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	3/1	100%						Silt Loam	roots
4-18	10YR	3/1	100%						Silt Loam	with gravels

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC SOILS BASED ON WETLAND HYDROLOGY INDICATORS AND HYDROPHYTIC VEGETATION.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	3
Water Table Present?	Yes ◉	No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 10-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 54A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 27 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.6333 **Long.:** -121.5151 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMF

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
OFF-SITE DETERMINATION, SOIL PIT EXCAVATED IN THE ROAD RIGHT-OF-WAY AND REPRESENTS SITE CONDITIONS.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Rumex crispus	10	☐ 10.0%	FAC
2. Hordeum jubatum	20	☑ 20.0%	FAC
3. Elymus cinereus	70	☑ 70.0%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Active grazing.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 54A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR	3/1	100%						Silt Loam	
8-12	10YR	3/2	100%						Silty Clay Loam	
12-18	10YR	3/2	100%						Silty Clay Loam	WITH COBBLES

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUMED HYDRIC BASED ON WETLAND HYDROLOGY INDICATORS AND HYDROPHYTIC VEGETATION.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	6
Water Table Present?	Yes ◉	No ○	Depth (inches):	3
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: Surface water present within 2 feet of soil pit.

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 10-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 55A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 34 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.6290 **Long.:** -121.5129 **Datum:** NAD83

Soil Map Unit Name: 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

OFF-SITE DETERMINATION. AGGRESSIVE DOGS NEARBY MADE IT DIFFICULT TO ASSESS SAMPLE PLOT. LODGEPOLE PINES FORMED A DENSE PATCH.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	20	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	0	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 100

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	20	x 3 =	60	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	20	(A)	60	(B)

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

100% LEAF LITTER.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 55A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

NO PIT DUG IN THE RIGHT OF WAY, ANGRY DOGS NEARBY.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 10-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 56A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 34 T 22 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR A **Lat.:** 43.6286 **Long.:** -121.5127 **Datum:** NAD83

Soil Map Unit Name: 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
OFF-SITE DETERMINATION, LIMITED PUBLIC VIEWING ACCESS.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	15	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	0	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	15 (A)		45 (B)

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 56A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

LIMITED ACCESS, COULD NOT DIG PIT IN RIGHT OF WAY

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

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

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 10-Aug-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 57A

Investigator(s): Alessandra Capretti **Section, Township, Range:** S 14 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 3.0% / 1.7 °

Subregion (LRR): LRR A **Lat.:** 43.7488 **Long.:** -121.4997 **Datum:** NAD83

Soil Map Unit Name: 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes **NWI classification:** PEMA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
OFF-SITE DETERMINATION

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Unidentified pasture grasses	80	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	80	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 20

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Unidentified pasture grasses assumed FAC. Pastured land.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 57A

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-1										no soil, root mass in this layer
1-6	10YR	3/3	100%						Loamy Sand	with silt and pebbles
6-18	10YR	3/3	100%						Loamy Sand	with silt and pebbles

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 03-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 100

Investigator(s): A. Booy, R. Baker, J. Gordon **Section, Township, Range:** S 13 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** none **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8383 **Long.:** -121.4740 **Datum:** NAD 83

Soil Map Unit Name: W: Water **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix sp.	10	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex sp.	96	☑ 96.0%	FACW
2. Geum macrophyllum	1	☐ 1.0%	FACW
3. Rumex acetosa	2	☐ 2.0%	UPL
4. Juncus balticus	1	☐ 1.0%	FACW
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	108	x 2 =	216
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	110 (A)		226 (B)

Prevalence Index = B/A = 2.055

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Salix sp. and Carex sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 100

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-5	10YR	2/2	100%					Silt Loam	
5-12	10YR	2/2	70%					Muck	2 different soils
5-12	10YR	4/3	30%					Clay Loam	
12-21	10YR	2/2	100%					Muck	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

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

- [x] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (LRR C)
- [ ] 1 cm Muck (A9) (LRR D)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Muck Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- [ ] 1 cm Muck (A9) (LRR C)
- [ ] 2 cm Muck (A10) (LRR B)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [x] Water Marks (B1) (Nonriverine)
- [ ] Sediment Deposits (B2) (Nonriverine)
- [ ] Drift deposits (B3) (Noneriverine)
- [ ] Surface Soil Cracks (B6)
- [x] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [x] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (Riverine)
- [ ] Sediment Deposits (B2) (Riverine)
- [ ] Drift Deposits (B3) Riverine)
- [ ] Drainage Patterns (B10)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ( ) No (•) Depth (inches):

Water Table Present? Yes (•) No ( ) Depth (inches): 22

Saturation Present? (includes capillary fringe) Yes (•) No ( ) Depth (inches): 12

Wetland Hydrology Present? Yes (•) No ( )

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

Remarks:

WATER TABLE AT 22 INCHES, HOWEVER EVIDENCE OF HIGHER WATER TABLE OBSERVED BY WATER MARKS AND OXIDIZED ROOTS

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Deschutes **Sampling Date:** 03-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 101

Investigator(s): AB/AM/JG/RB **Section, Township, Range:** S 13 T 20 S R 10 E

Landform (hillslope, terrace, etc.): flat **Local relief (concave, convex, none):** none **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 45.8422 **Long.:** -121.4749 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PSSC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

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

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	15	☐ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Prunus sp.	40	☑ 50.0%	FACU
2. Salix sp.	40	☑ 50.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	80	= Total Cover	
Herb Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	0	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 10Pinus contortaP **% Cover of Biotic Crust** 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	15	x 3 =	45
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	95 (A)		285 (B)

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: Prunus sp. assumed FACU and Salix sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 101

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-4	10YR	2/2	100%						Silt Loam	ROOTS, UNDECOMPOSED WOOD
4-8	10YR	3/1	100%						Silt	ROOTS, UNDECOMPOSED VEG MATERIAL
8-18	10YR	2/2	100%						Silt Loam	SAND POCKETS, CHARCOAL PLANT MATERIAL

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [x] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (LRR C)
- [ ] 1 cm Muck (A9) (LRR D)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Muck Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- [ ] 1 cm Muck (A9) (LRR C)
- [ ] 2 cm Muck (A10) (LRR B)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (●) No ( )

Remarks:

"Undecomposed" means the structure of the organic material is fibrous or unaltered.
The lowest layer (8-18") contains slowly decaying and burnt organic material.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (Nonriverine)
- [ ] Sediment Deposits (B2) (Nonriverine)
- [ ] Drift deposits (B3) (Noneriverine)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [x] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (Riverine)
- [ ] Sediment Deposits (B2) (Riverine)
- [ ] Drift Deposits (B3) Riverine)
- [ ] Drainage Patterns (B10)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches):	4

Wetland Hydrology Present? Yes (●) No ( )

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

SATURATION AT 4 INCHES, WATER TABLE AT 12 INCHES

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Deschutes **Sampling Date:** 04-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 102

Investigator(s): John Gordon, Adam Merrill **Section, Township, Range:** S 24 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8285 **Long.:** -121.4729 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMF

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks:
On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Scirpus americanus	60	☑ 60.0%	OBL
2. Juncus balticus	40	☑ 40.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	60	x 1 =	60
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		140 (B)

Prevalence Index = B/A = 1.400

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 102

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-9	10YR	2/1	100%						Muck	
9-15	10YR	2/1	100%						Silt	
15-20	10YR	3/1	100%						Silt	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☑ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 04-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 103

Investigator(s): John Gordon, Adam Merrill **Section, Township, Range:** S 33 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Shoreline **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7934 **Long.:** -121.5352 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1. Pinus contorta	5	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	5	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	40	☑	88.9%	
2. Betula glandulosa	5	☐	11.1%	OBL
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	45	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex aquatilis	50	☑	50.0%	OBL
2. Juncus ensifolius	50	☑	50.0%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	55	x 1 =	55
FACW species	50	x 2 =	100
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		170 (B)

Prevalence Index = B/A = 1.545

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 103

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-20	10YR	3/3	100%						

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

aquic moisture regime

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	10
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 104

Investigator(s): John Gordon, Adam Merrill **Section, Township, Range:** S 34 T 20 S R 10 E

Landform (hillslope, terrace, etc.): floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7921 **Long.:** -121.5196 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** R2UBH

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Fall River site. On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	15	☑ 60.0%	FACW
2. Betula glandulosa	10	☑ 40.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	25	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	80	☑ 88.9%	OBL
2. Carex nebrascensis	10	☐ 11.1%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	125 (A)		160 (B)

Prevalence Index = B/A = 1.280

Hydrophytic Vegetation Indicators:

☑ **Dominance Test is > 50%**

☑ **Prevalence Index is ≤3.0** [1]

☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
about 10% openwater

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 104

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-14	7.5YR	2.5/1	100%					organic	
14-20	7.5YR	3/2	100%					organic	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [x] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (LRR C)
- [ ] 1 cm Muck (A9) (LRR D)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Muck Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- [ ] 1 cm Muck (A9) (LRR C)
- [ ] 2 cm Muck (A10) (LRR B)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks:

Depths approximate; soil very wet and unconsolidated except 0-14" is very full of roots making extraction of sample difficult

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (Nonriverine)
- [ ] Sediment Deposits (B2) (Nonriverine)
- [ ] Drift deposits (B3) (Noneriverine)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (Riverine)
- [ ] Sediment Deposits (B2) (Riverine)
- [ ] Drift Deposits (B3) Riverine)
- [ ] Drainage Patterns (B10)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (•)	No ( )	Depth (inches):	1
Water Table Present?	Yes (•)	No ( )	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes (•)	No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (•) No ( )

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Surface water varies, to 2 inches deep to 1 inch near pit.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: Deschutes County **State:** OR **Sampling Point:** SP 106

Investigator(s): Alessandra Capretti, Adam Merrill **Section, Township, Range:** S 35 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8007 **Long.:** -121.5055 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	25	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	25	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex nebrascensis	40	☑	40.0%	OBL
2. Carex aquatilis	40	☑	40.0%	OBL
3. Juncus balticus	20	☑	20.0%	FACW
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	80	x 1 =	80
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	125 (A)		170 (B)

Prevalence Index = B/A = 1.360

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: sp106

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-4	10YR	3/3	80%	2.5YR	4/6	20%	C	M	Silt Loam	root mass
4-10	10YR	3/3	80%	2.5YR	4/6	20%	C	M	Silt Loam	
10-14	10YR	3/1	80%	2.5YR	4/6	20%	C	M	Loam	
14-20	10YR	3/3	80%	2.5YR	4/6	20%	C	M	Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON HYDROLOGY INDICATORS AND WETLAND VEGETATION.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	12

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: Deschutes County **State:** OR **Sampling Point:** SP 107

Investigator(s): Alessandra Capretti, Adam Merrill **Section, Township, Range:** S 35 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7978 **Long.:** -121.5029 **Datum:** NAD 83

Soil Map Unit Name: N/A **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	10	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	10	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex aquatilis	80	☑	80.0%	OBL
2. Carex nebrascensis	20	☑	20.0%	OBL
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		120 (B)

Prevalence Index = B/A = 1.091

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 107

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-6	10YR	3/4	100%						Silt Loam	gravelly, Thick root mass
6-20	10YR	3/2	100%						Silty Clay	gravelly

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

peraquic moisture regime

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	2
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: Deschutes County **State:** OR **Sampling Point:** SP 108

Investigator(s): Alessandra Capretti, Adam Merrill **Section, Township, Range:** S 35 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7945 **Long.:** -121.5034 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1. Pinus contorta	10	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	10	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Betula glandulosa	5	☑	100.0%	OBL
2. Salix geyeriana	0	☐	0.0%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	5	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Juncus balticus	50	☑	50.0%	FACW
2. Carex aquatilis	30	☑	30.0%	OBL
3. Carex nebrascensis	20	☑	20.0%	OBL
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	55	x 1 =	55
FACW species	50	x 2 =	100
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		185 (B)

Prevalence Index = B/A = 1.609

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 108

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	80%	2.5YR 4/6	20%	C	M		root mass
4-10	10YR 3/3	80%	2.5YR 4/6	20%	C	M		
10-20	10YR 3/1	80%	2.5YR 4/6	20%	C	M		

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON HYDROLOGY INDICATORS.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	12

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: Deschutes County **State:** OR **Sampling Point:** SP 109

Investigator(s): Alessandra Capretti, Adam Merrill **Section, Township, Range:** S 34 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7947 **Long.:** -121.5082 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Carex nebrascensis	50	☑ 50.0%	OBL
2. Carex aquatilis	50	☑ 50.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 109

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-20	10YR	2/1	100%					Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON PERSISTANT SATURATION (AQUIC MOISTURE REGIME).

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: Deschutes County **State:** OR **Sampling Point:** SP 110

Investigator(s): Alessandra Capretti, Adam Merrill **Section, Township, Range:** S 34 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7917 **Long.:** -121.5096 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	30	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	30	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex aquatilis	60	☑	60.0%	OBL
2. Carex nebrascensis	40	☑	40.0%	OBL
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		160 (B)

Prevalence Index = B/A = 1.231

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 110

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-7	10YR	2/1	100%						Silt	dense root mass
7-10	10YR	2/1	60%	2.5YR	3/6	40%	C	M	Silt	
10-20	5Y	7/3	70%	10YR	4/6	30%	C	M	Silty Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON HYDROLOGY INDICATOR.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	10

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: Deschutes County **State:** OR **Sampling Point:** SP 111

Investigator(s): Alessandra Capretti, Adam Merrill **Section, Township, Range:** S 3 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7795 **Long.:** -121.5162 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1. Pinus contorta	5	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	5	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	20	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	20	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex aquatilis	80	☑	84.2%	OBL
2. Carex nebrascensis	10	☐	10.5%	OBL
3. Agrostis sp.	5	☐	5.3%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	95	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	90	x 1 =	90
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		160 (B)

Prevalence Index = B/A = 1.333

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Agrostis sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 111

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-8	10YR	2/1	100%						Silty Clay	ROOT MASS
8-11	10YR	2/1	100%						Silty Clay	
11-20	2.5Y	7/4	70%	2.5YR	4/8	30%	C	M	Silty Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON PERSISTANT SATURATION (AQUIC MOISTURE REGIME).

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	18
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: Deschutes County **State:** OR **Sampling Point:** SP 112

Investigator(s): Alessandra Capretti, Adam Merrill **Section, Township, Range:** S 3 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** hummocky **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7866 **Long.:** -121.5143 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	5	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	5	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex aquatilis	60	☑	60.0%	OBL
2. Agrostis sp.	40	☑	40.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	60	x 1 =	60
FACW species	5	x 2 =	10
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		190 (B)

Prevalence Index = B/A = 1.810

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 112

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-5	10YR	3/2	100%					Silt Loam	root mass
5-10	10YR	2/1	100%					Silt Loam	
10-20	10YR	3/2	100%					Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

aquic moisture regime

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 07-May-10

Applicant/Owner: Deschutes County **State:** OR **Sampling Point:** SP 113

Investigator(s): Alessandra Capretti, Adam Merrill **Section, Township, Range:** S 35 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** hummocky **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7908 **Long.:** -121.5039 **Datum:** NAD 83

Soil Map Unit Name: W: Water **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	10	☑	100.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	10		= Total Cover	
Herb Stratum (Plot size:)				
1. Carex nebrascensis	30	☑	30.0%	OBL
2. Carex aquatilis	60	☑	60.0%	OBL
3. Juncus balticus	10	☐	10.0%	FACW
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100		= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	90	x 1 =	90
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		110 (B)

Prevalence Index = B/A = 1.100

Hydrophytic Vegetation Indicators:

☑ **Dominance Test is > 50%**

☑ **Prevalence Index is ≤3.0** [1]

☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: sp113

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-3	10YR	3/2	100%					Silty Clay Loam	thick root mass
3-8	10YR	3/2	100%					Silty Clay Loam	
8-20	10YR	2/1	100%					Silty Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON HYDROLOGY INDICATORS.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	8

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 17-Nov-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 114

Investigator(s): Sarah Hartung **Section, Township, Range:** S 2 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7873 **Long.:** -121.5066 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	40	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Betula glandulosa	30	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	30	= Total Cover	
Herb Stratum (Plot size:)			
1. Poa sp.	100	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	30	**x 2 =**	60
FAC species	140	**x 3 =**	420
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	170	**(A)**	480 **(B)**

Prevalence Index = B/A = 0.000

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0**[1]
- ☐ **Morphological Adaptations**[1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Wetland Non-Vascular Plants**[1]
- ☐ **Problematic Hydrophytic Vegetation**[1] **(Explain)**

[1]**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 114

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR	2/1	100%						peat	
7-20	10YR	3/1	100%						Silt Loam	with high level of organics

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soils assumed based on persistent saturation.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	15
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 04-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 201

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 7 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8632 **Long.:** -121.4536 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		= Total Cover	
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	15	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	15		= Total Cover	
Herb Stratum (Plot size:)				
1. Carex aquatilis	85	☑	85.0%	OBL
2. Typha latifolia	5	☐	5.0%	OBL
3. Phalaris arundinacea	10	☐	10.0%	FACW
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100		= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	90	x 1 =	90
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		140 (B)

Prevalence Index = B/A = 1.217

Hydrophytic Vegetation Indicators:

☑ **Dominance Test is > 50%**

☑ **Prevalence Index is ≤3.0** [1]

☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 201

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-4	10YR	2/1	100%						Silt Loam	
4-10	10YR	2/1	100%						Clay Loam	
10-22	10YR	2/1	80%	10YR	3/4	20%	C	M	Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUME HYDRIC SOILS BASED ON PERSISTENT SATURATION.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	5

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 04-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 202

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 12 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8537 **Long.:** -121.4812 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Achillea millefolium	40	☑ 40.0%	FACU
2. Poa sp.	55	☑ 55.0%	FAC
3. Taraxacum officinale	5	☐ 5.0%	FACU
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	100 (A)		345 (B)

Prevalence Index = B/A = 3.450

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 202

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-8	7.5YR	2.5/2	100%						Loam	
8-20	10YR	2/2	100%						Sandy Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 203

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 7 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °

Subregion (LRR): LRR B **Lat.:** 43.8627 **Long.:** -121.4600 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	50	☑ 62.5%	FACW
2. Spiraea douglasii	30	☑ 37.5%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	80	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	40	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	40	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		200 (B)

Prevalence Index = B/A = 1.667

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

60% SURFACE WATER

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 203

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-8	10YR	2/1	100%						Mucky silt	
8-20	10YR	3/1	100%						Sandy Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☑ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches):	1
Water Table Present?	Yes ◉	No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 205

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 6 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8695 **Long.:** -121.4610 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.		☐ 0.0%	
2.		☐ 0.0%	
3.		☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	90	☑ 90.0%	OBL
2. Juncus balticus	5	☐ 5.0%	FACW
3. Typha latifolia	5	☐ 5.0%	OBL
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	95	x 1 =	95
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		105 (B)

Prevalence Index = B/A = 1.050

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex dominant through majority of wetland, small clumps dominated by other two species

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 205

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

no access - hydric soils assumed based on OBL dominant veg.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Aerial photos

Remarks:

no access - hydrology assumed based on aerial photo, landscape position, and observations of adjacent river elevation [approx. At wetland elevation]

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 206

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 6 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8764 **Long.:** -121.4601 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

Off-site determination. Area contains hydrophytic veg, wetland hydrology observed from aerial photos and veg., hydric soils assumed [no access]

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	65	☑ 65.0%	OBL
2. Typha latifolia	30	☑ 30.0%	OBL
3. Juncus balticus	5	☐ 5.0%	FACW
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	95	x 1 =	95
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		105 (B)

Prevalence Index = B/A = 1.050

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Carex and Typha dominated, patches of Salix throughout. Mostly on edges.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 206

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

no access - hydric soils assumed based on OBL dominant veg.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Aerial photo

Remarks:

no access - hydrology assumed based on aerial photo, landscape position, and observations of adjacent river elevation [wetland outlet near river elevation wetland elevation]

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 207

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 6 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.5% / 0.3 °

Subregion (LRR): LRR B **Lat.:** 43.8769 **Long.:** -121.4628 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

Off-site determination. Area contains hydrophytic veg, wetland hydrology observed from aerial photos and veg., hydric soils assumed [no access].

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	100	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	100	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex aquatilis	100	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	100	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	200 (A)		300 (B)

Prevalence Index = B/A = 1.500

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Several lone pines observed, however PSS is Salix dominated.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 207

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

no access - hydric soils assumed based on FAC and wetter dominant veg.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Aerial photo

Remarks:

no access - hydrology assumed based on aerial photo, landscape position, and observations of adjacent river elevation [approx. At wetland elevation]

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 208

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 1 T 20 S R 10 E

Landform (hillslope, terrace, etc.): **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8694 **Long.:** -121.4691 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	2	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	60	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	60	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	80	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	80	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 20 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	80	x 1 =	80
FACW species	60	x 2 =	120
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	142 (A)		206 (B)

Prevalence Index = B/A = 1.451

Hydrophytic Vegetation Indicators:

☑ **Dominance Test is > 50%**

☑ **Prevalence Index is ≤3.0** [1]

☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Several lone pines observed, however PSS wetland is Salix dominated w/ Carex dominant herb layer

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 208

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

no access - hydric soils assumed based on FAC and wetter dominant veg.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Aerial photo

Remarks:

no access - hydrology assumed based on aerial photo, landscape position, and observations of adjacent channel elevation [approx. At wetland elevation]

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 05-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 209

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 7 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8571 **Long.:** -121.4574 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
Offsite determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	3	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	3	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	5	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	5	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Carex aquatilis	90	☑ 90.0%	OBL
2. Carex nebrascensis	10	☐ 10.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	5	x 2 =	10
FAC species	3	x 3 =	9
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	108 (A)		119 (B)

Prevalence Index = B/A = 1.102

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Carex dominant through majority of wetland, individual Salix and Pinus as well.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 209

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

no access - hydric soils assumed based on OBL dominant veg.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Aerial photo

Remarks:

no access - hydrology assumed based on aerial photo, landscape position, and observations of adjacent river elevation [approx. At wetland elevation]

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 210

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 7 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8599 **Long.:** -121.4570 **Datum:** NAD 83

Soil Map Unit Name: W: Water **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Carex aquatilis	100	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 210

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-5	10YR	2/2	100%						Silt Loam	w/ roots
5-20	10YR	2/1	100%						Silt	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS ASSUMED BASED ON PERSISTANT SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	10
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	4

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 212

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 7 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8538 **Long.:** -121.4587 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMF

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	80	☑ 80.0%	OBL
2. Juncus balticus	20	☑ 20.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	80	x 1 =	80
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		120 (B)

Prevalence Index = B/A = 1.200

Hydrophytic Vegetation Indicators:

☑ **Dominance Test is > 50%**

☑ **Prevalence Index is ≤3.0** [1]

☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 212

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDRIC SOILS BASED ON PERSISTANT SATURATION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 213

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 7 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8529 **Long.:** -121.4592 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMF

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Typha latifolia	10	☐ 10.0%	OBL
2. Carex aquatilis	90	☑ 90.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	100	(B)

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 213

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUME HYDRIC SOILS BASED ON AERIAL MAP AND LANDSCAPE POSITION

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Aerial Photo

Remarks:

ASSUME HYDROLOGY BASED ON LOW ELEVATION AND PROXIMITY TO THE RIVER

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 214

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 18 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8464 **Long.:** -121.4595 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	10	☑ 100.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	60	☑ 60.0%	OBL
2. Juncus balticus	40	☑ 40.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	60	x 1 =	60
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		140 (B)

Prevalence Index = B/A = 1.400

Hydrophytic Vegetation Indicators:

☑ **Dominance Test is > 50%**

☑ **Prevalence Index is ≤3.0** [1]

☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 214

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-2	10YR	3/2	100%						Loam	duff
2-8	10YR	3/2	100%						Silt	decaying sedge material
8-20	10YR	3/1	80%	10YR	3/4	20%	C	PL	Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

SATURATION AT SURFACE

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 217

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 19 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 2.0% / 1.1 °

Subregion (LRR): LRR B **Lat.:** 43.8323 **Long.:** -121.4481 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	50	☑ 100.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	50	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Carex aquatilis	90	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	90	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	90	x 1 =	90
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		90 (B)

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 217

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUME HYDRIC SOILS BASED ON HYDROLOGY INDICATOR.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Aerial photo

Remarks:

Saturation was visually observed off-site and was based on the observation of water glistening on the surface by the naked eye and/or with the aid of binoculars.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 218

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 19 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 2.0% / 1.1 °

Subregion (LRR): LRR B **Lat.:** 43.8320 **Long.:** -121.4481 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	30	☑ 85.7%	FACW
2. Spiraea douglasii	5	☐ 14.3%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	35	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Carex aquatilis	50	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	50	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 50 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		120 (B)

Prevalence Index = B/A = 1.412

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 218

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUME HYDRIC SOILS BASED ON HYDROLOGY INDICATORS.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Aerial photo

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 07-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 221

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 31 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8016 **Long.:** -121.4593 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
Off-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	2	☑ 100.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	2	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Carex aquatilis	95	☑ 95.0%	OBL
2. Juncus balticus	5	☐ 5.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	95	x 1 =	95
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		105 (B)

Prevalence Index = B/A = 1.050

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 221

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUME HYDRIC SOILS BASED ON WETLAND HYDROLOGY INDICATORS AND HYDROPHYTIC VEGETATION.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☑ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 07-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 222

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 31 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8014 **Long.:** -121.4588 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Poa sp.	50	☑ 50.0%	FAC
2. Achillea millefolium	20	☑ 20.0%	FACU
3. Juncus balticus	20	☑ 20.0%	FACW
4. Taraxacum officinale	10	☐ 10.0%	FACU
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	50	x 3 =	150
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	100 (A)		310 (B)

Prevalence Index = B/A = 3.100

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 222

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-20	10YR	3/2	100%					Silt Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deachutes County LWI **City/County:** Deschutes **Sampling Date:** 07-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** 223

Investigator(s): Sarah Hartung, Aaron Booy **Section, Township, Range:** S 31 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8000 **Long.:** -121.4545 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	50	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	50	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	60	☑ 60.0%	OBL
2. Carex nebrascensis	40	☑ 40.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	150 (A)		200 (B)

Prevalence Index = B/A = 1.333

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: 223

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-7	10YR	3/2	80%	7.5YR	4/6	20%	C	M	Loam	
7-20	10YR	3/1	70%	7.5YR	4/6	30%	C	M	Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 400

Investigator(s): John Gordon **Section, Township, Range:** S 34 T 20 S R 10 E

Landform (hillslope, terrace, etc.): oxbow **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.7908 **Long.:** -121.5198 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
In oxbow south of Fall River. On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	15	☑ 60.0%	FACW
2. Betula glandulosa	10	☑ 40.0%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	25	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	80	☑ 88.9%	OBL
2. Carex nebrascensis	10	☐ 11.1%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	125 (A)		160 (B)

Prevalence Index = B/A = 1.280

Hydrophytic Vegetation Indicators:

☑ **Dominance Test is > 50%**

☑ **Prevalence Index is ≤3.0** [1]

☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
about 10% openwater

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 400

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-14	7.5YR	2.5/1	100%					organic	
14-20	7.5YR	3/2	100%					organic	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [x] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (LRR C)
- [ ] 1 cm Muck (A9) (LRR D)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Muck Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- [ ] 1 cm Muck (A9) (LRR C)
- [ ] 2 cm Muck (A10) (LRR B)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (●) No ( )

Remarks:

Depths approximate; soil very wet and unconsolidated except 0-14" is very full of roots making extraction of sample difficult

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (Nonriverine)
- [ ] Sediment Deposits (B2) (Nonriverine)
- [ ] Drift deposits (B3) (Noneriverine)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (Riverine)
- [ ] Sediment Deposits (B2) (Riverine)
- [ ] Drift Deposits (B3) Riverine)
- [ ] Drainage Patterns (B10)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●)	No ( )	Depth (inches):	1
Water Table Present?	Yes (●)	No ( )	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Surface water varies, to 2 inches deep to 1 inch near pit.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 402

Investigator(s): John Gordon **Section, Township, Range:** S 30 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.8169 **Long.:** -121.4514 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1. Salix geyeriana	30	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	30	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Carex aquatilis	75	☑	93.8%	OBL
2. Carex nebrascensis	5	☐	6.3%	OBL
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	80	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 20 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	80	x 1 =	80
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		140 (B)

Prevalence Index = B/A = 1.273

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Bare soil covered with litter. About 5% unvegetated open water in small patches.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 402

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-3	7.5YR	2.5/2	100%						Sandy Loam	many roots
3-12	7.5YR	3/2	100%						Silt	
12-20	7.5YR	3/1	95%	7.5YR	3/3	5%	C	PL	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

ASSUME HYDRIC SOILS BASED PERSISTENT SATURATION.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Surface water with a depth of 6 inches was located several feet south of pit.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 06-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 403

Investigator(s): John Gordon **Section, Township, Range:** S 30 T 20 S R 11 E

Landform (hillslope, terrace, etc.): **Local relief (concave, convex, none):** **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8178 **Long.:** -121.4564 **Datum:** NAD 83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ○ No ◉

Wetland Hydrology Present? Yes ○ No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:

No access to wetland to the west. Vegetation community is similar, except it has large patches of Juncus balticus. On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	**= Total Cover**		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	**= Total Cover**		
Herb Stratum (Plot size:)				
1. Juncus balticus	35	☑	38.9%	FACW
2. Achillea millefolium	20	☑	22.2%	FACU
3. Poa sp.	15	☐	16.7%	FAC
4. Taraxacum officinale	10	☐	11.1%	FACU
5. Agropyron repens	10	☐	11.1%	FAC
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	90	**= Total Cover**		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	**= Total Cover**		

% Bare Ground in Herb Stratum: 10 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	25	x 3 =	75
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	90 (A)		265 (B)

Prevalence Index = B/A = 2.944

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Poa sp. assumed FAC. Pinus contorta adjacent are not included. SP is for meadow/grassland community on this lot and adjacent lot to the west.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 403

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-4	10YR	2/2	100%					Sand	
4-8	10YR	4/2	100%					Sand	
8-20	10YR	6/2						Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Soil is very well drained, porous, slightly moist.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 07-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 404

Investigator(s): John Gordon **Section, Township, Range:** S 6 T 21 S R 11 E

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR B **Lat.:** 43.7895 **Long.:** -121.4623 **Datum:** NAD 83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PSSC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	30	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	30	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Carex aquatilis	70	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	70	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum: 30 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	70	x 1 =	70
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		130 (B)

Prevalence Index = B/A = 1.300

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 404

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-4	7.5YR	2.5/2	95%	7.5YR	3/3	5%	C	PL	Sand	
4-9	7.5YR	2.5/1	95%	7.5YR	3/3	5%	C	PL	Sand	
9-20	7.5YR	2.5/1	100%						Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Water table still rising when pit closed. Surface water is present in nearby parts of oxbow.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Deschutes County LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 12-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 405

Investigator(s): John Gordon **Section, Township, Range:** S 24 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8202 **Long.:** -121.4668 **Datum:** NAD 83

Soil Map Unit Name: 115A: Shanahan loamy coarse sand, 0 to 3 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

Offsite determination. No visual or physical access. Determination based on aerial photos, NWI, soil maps and project experience.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0		**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0		**= Total Cover**	
Herb Stratum (Plot size:)				
1. Carex sp.	0	☐	0.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	0		**= Total Cover**	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		**= Total Cover**	

% Bare Ground in Herb Stratum: 0 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

Vegetatoin appears similar to vegetation in floodplain and oxbow wetlands in study area. Predominant emergent group is Carex. Carex sp. assumed FACW.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 405

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc[2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Landscape position and vegetation indicate hydric conditions.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☑ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Vegetation indicates wetland hydrology is present, based on vegetation consistent with oxbow wetlands nearby.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: DESCHUTES LWI **City/County:** Sunriver/Deschutes **Sampling Date:** 07-May-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 408

Investigator(s): ALISON SIGLER, ROSEMARY BAKER **Section, Township, Range:** S 26 T 20 S R 10 E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR B **Lat.:** 43.8105 **Long.:** -121.4888 **Datum:** NAD 83

Soil Map Unit Name: Not available **NWI classification:** PEMA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1. Pinus contorta	20	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	20		**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)				
1. Spiraea douglasii	5	☑	50.0%	FACW
2.		☐	0.0%	
3.	5	☑	50.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	10		**= Total Cover**	
Herb Stratum (Plot size:)				
1. Juncus sp.	10	☑	22.2%	FACW
2. Poa sp.	30	☑	66.7%	FAC
3. Fragaria virginiana	5	☐	11.1%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	45		**= Total Cover**	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0		**= Total Cover**	

% Bare Ground in Herb Stratum: 55 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	50	x 3 =	150
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	70	(A)	200 (B)

Prevalence Index = B/A = 2.857

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP 408

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-4	10YR	3/2	100%						Loam	
4-20	10YR	3/2	90%	10YR	4/3	10%	C	M	Silty Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	7
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	1

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 17-Nov-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 600

Investigator(s): Sarah Hartung **Section, Township, Range:** S 19 T 20 S R 11 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** slight concave **Slope:** 1.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7402 **Long.:** -121.4654 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PEMC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☑ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
Site is normally irrigated, but has not been irrigated in the past 3-4 years. On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus balticus	75	☑ 75.0%	FACW
2. Poa spp.	20	☑ 20.0%	FAC
3. Thinopyrum intermedium	5	☐ 5.0%	UPL
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	100 (A)		235 (B)

Prevalence Index = B/A = 2.350

Hydrophytic Vegetation Indicators:

- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0**[1]
- ☐ **Morphological Adaptations**[1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Wetland Non-Vascular Plants**[1]
- ☐ **Problematic Hydrophytic Vegetation**[1] **(Explain)**

[1]**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Poa spp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 600

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR	3/2	100%						Sandy Loam	dense w/roots
3-4	10YR	2/2	100%						loamy duff	many composite colors
4-8	10YR	4/2	100%						Sandy Loam	many composite colors
8-20	10YR	4/3	100%						Loamy Sand	many composite colors

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soils assumed based on irrigated conditions. Site receives overflow from irrigation channels.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☑ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Saturation present in early part of growing season. Very moist at 0.5", sand layer moist 8-13" but no saturation, lots of organic decaying.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 17-Nov-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 601

Investigator(s): Sarah Hartung **Section, Township, Range:** S 24 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 1.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7413 **Long.:** -121.4689 **Datum:** NAD83

Soil Map Unit Name: 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus balticus	10	☐ 10.0%	FACW
2. Carex sp.	10	☐ 10.0%	FACW
3. Trifolium repens	20	☑ 20.0%	FAC
4. Taraxacum officinale	20	☑ 20.0%	FACU
5. Thinopyrum intermedium	20	☑ 20.0%	UPL
6. Poa sp.	20	☑ 20.0%	FAC
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	20	**x 2 =**	40
FAC species	40	**x 3 =**	120
FACU species	20	**x 4 =**	80
UPL species	20	**x 5 =**	100
Column Totals:	100	**(A)**	340 **(B)**

Prevalence Index = B/A = 3.400

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0**[1]
- ☐ **Morphological Adaptations**[1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Wetland Non-Vascular Plants**[1]
- ☐ **Problematic Hydrophytic Vegetation**[1] **(Explain)**

[1]**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

Carex sp. assumed FACW and Poa sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 601

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR	3/3	100%						Sandy Loam	dense roots
0-8.5	10YR	3/2	100%						Sandy Loam	
8.5-20	10YR	5/4	50%						Sand	mixed colors
	10YR	4/4	50%						Sand	no redox

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

somewhat moist

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 17-Nov-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 602

Investigator(s): Sarah Hartung **Section, Township, Range:** S 24 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 1.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7453 **Long.:** -121.4694 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus balticus	60	☑ 60.0%	FACW
2. Trifolium repens	30	☑ 30.0%	FAC
3. Festuca arundinacea	5	☐ 5.0%	FAC
4. Taraxacum officinale	5	☐ 5.0%	FACU
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	60	**x 2 =**	120
FAC species	35	**x 3 =**	105
FACU species	5	**x 4 =**	20
UPL species	0	**x 5 =**	0
Column Totals:	100 **(A)**		245 **(B)**

Prevalence Index = B/A = 2.450

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0**[1]
- ☐ **Morphological Adaptations**[1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Wetland Non-Vascular Plants**[1]
- ☐ **Problematic Hydrophytic Vegetation**[1] **(Explain)**

[1]**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 602

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR	3/3	100%						Loam	40% organic
3-6	10YR	3/2	100%						Loamy Sand	
6-18	10YR	4/3	80%						Sand	20% silts
	10YR	5/6	20%						Sand	no streaking

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soils assumed based on hydrology indicators.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☑ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Landowner information about irrigating the site in the spring.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 03-Dec-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 603

Investigator(s): Sarah Hartung **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** **Long.:** **Datum:** NAD83

Soil Map Unit Name: **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	0	☐ 0.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	70	☑ 70.0%	FACW
2. Veronica americana	10	☐ 10.0%	OBL
3. Poa sp.	10	☐ 10.0%	FAC
4. Agrostis sp.	10	☐ 10.0%	FAC
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = 0.000

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0**[1]
- ☐ **Morphological Adaptations**[1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Wetland Non-Vascular Plants**[1]
- ☐ **Problematic Hydrophytic Vegetation**[1] **(Explain)**

[1]**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Poa sp. and Agrostis sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 603

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR	2/2	100%						peat	
6-18	10YR	3/1	90%	10YR	3/3	10%	C	M	Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☑ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	12

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Saturation along ped surfaces. Best professional judgement- expect saturation iin upper part during early growing season.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 17-Nov-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 604

Investigator(s): Sarah Hartung **Section, Township, Range:** S 2 T 21 S R 10 E

Landform (hillslope, terrace, etc.): Valley bottom **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7892 **Long.:** -121.5030 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PFOA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex aquatilis	80	☑ 80.0%	OBL
2. Phalaris arundinacea	10	☐ 10.0%	FACW
3. Hordeum jubatum	10	☐ 10.0%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	80	**x 1 =**	80	
FACW species	10	**x 2 =**	20	
FAC species	10	**x 3 =**	30	
FACU species	0	**x 4 =**	0	
UPL species	0	**x 5 =**	0	
Column Totals:	100	**(A)**	130	**(B)**

Prevalence Index = B/A = 1.300

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0**[1]
- ☐ **Morphological Adaptations**[1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Wetland Non-Vascular Plants**[1]
- ☐ **Problematic Hydrophytic Vegetation**[1] **(Explain)**

[1]**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 604

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR	2/2	100%						peat	
6-20	10YR	3/1	60%	10YR	4/1	30%	D	M	Silty Clay Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	11
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	6

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 17-Nov-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 605

Investigator(s): Sarah Hartung **Section, Township, Range:** S 2 T 20 S R 10 E

Landform (hillslope, terrace, etc.): swale, valley bottom **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7864 **Long.:** -121.5067 **Datum:** NAD83

Soil Map Unit Name: 144A: Sunriver sandy loam, 0 to 3 percent slopes **NWI classification:** PEMA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	30	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Salix geyeriana	50	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	50	= Total Cover	
Herb Stratum (Plot size:)			
1. Geum macrophyllum	5	☐ 5.0%	FACW
2. Veronica americana	10	☐ 10.0%	OBL
3. Agrostis sp.	75	☑ 75.0%	FAC
4. Bromus sp.	10	☐ 10.0%	FAC
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	**x 1 =**	10
FACW species	55	**x 2 =**	110
FAC species	115	**x 3 =**	345
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	180	**(A)**	465 **(B)**

Prevalence Index = B/A = 0.000

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0**[1]
- ☐ **Morphological Adaptations**[1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Wetland Non-Vascular Plants**[1]
- ☐ **Problematic Hydrophytic Vegetation**[1] **(Explain)**

[1]**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Agrostis sp. and Bromus sp. assumed FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 605

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR	2/2	100%						peat	
6-20	10YR	2/1	70%						Silt Loam	mixed matrix
	10YR	3/2	30%							

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydric soils assumed based on hydrology indicators.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☑ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Very moist 0-9", Best professional judgement indicates area would be saturated for at least 2 weeks during the growing season.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: DESCHUTES LWI **City/County:** SUNRIVER/DESCHUTES **Sampling Date:** 17-Nov-10

Applicant/Owner: DESCHUTES COUNTY **State:** OR **Sampling Point:** SP 606

Investigator(s): Sarah Hartung **Section, Township, Range:** S 2 T 21 S R 10 E

Landform (hillslope, terrace, etc.): bottom of slope **Local relief (concave, convex, none):** flat **Slope:** 2.0% / 0.0 °

Subregion (LRR): LRR A **Lat.:** 43.7856 **Long.:** -121.5067 **Datum:** NAD83

Soil Map Unit Name: 29A: Cryaquolls, 0 to 3 percent slopes **NWI classification:** PFOA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks:

On-site determination.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Pinus contorta	50	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Achillea millefolium	2	☐ 2.2%	FACU
2. Fragaria virginiana	10	☐ 10.9%	FACU
3. Carex sp.	40	☑ 43.5%	FAC
4. Poa sp.	30	☑ 32.6%	FAC
5. Unknown herb	10	☐ 10.9%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	92	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 8

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	120	x 3 =	360
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	132 (A)		408 (B)

Prevalence Index = B/A = 0.000

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0**[1]
- ☐ **Morphological Adaptations**[1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Wetland Non-Vascular Plants**[1]
- ☐ **Problematic Hydrophytic Vegetation**[1] **(Explain)**

[1]**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Carex sp. and Poa sp. assumed to be FAC.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Soil

Sampling Point: SP 606

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR	2/1	100%						Silt Loam	with 30% duff/organics
3-10	10YR	4/1	90%	10YR	4/4	10%	C	M	Clay Loam	
10-20	10YR	6/2	80%	10YR	4/4	20%	C	M	Sand	streaking in sand

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils:[3]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☑ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Saturation in spring based on landowner information. Springs located at base of the hill provide hydrology for the area. Water ponds on nearby roads throughout spring.

APPENDIX D: WETLAND SUMMARY SHEETS

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 207

Wetland Mapping Code: 1

Size (acres): 3.5

Location

Legal: T 20 S R 11E S 6 BB

Other: Located on the west side of the Deschutes River, west and parallel to the airport

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8769

Longitude: -121.4628

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PSSE

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Low-lying area along the Deschutes River, open space.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 10

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water and an island.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 2, included the Deschutes River shoreline.

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 206

Wetland Mapping Code: 2

Size (acres): 1.0

Location

Legal: T 20 S R 11 E S 6 BB

Other: West of airport, east side of Deschutes River and slightly east of channel

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8743

Longitude: -121.4617

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Herbs: Carex aquatilis (Water sedge), Typha latifolia (Broadleaf cattail)

Comments: Off-site determination. In undeveloped area adjacent to the airport.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 8

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included the larger wetland that extends outside of the study area.

Percent (approx.) of the Wetland Visited: 0, viewed from public trail.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 205

Wetland Mapping Code: 3

Size (acres): 12.7

Location

Legal: T 20 S R 11 E S 6 AC, BC, CB

Other: West and southwest of airport on west side of Deschutes River, near confluence with Spring River

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8701

Longitude: -121.4619

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. In open space, undeveloped area south of confluence of Spring River and Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 16

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 2, included the Deschutes River shoreline.

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 208

Wetland Mapping Code: 4

Size (acres): 2.2

Location

Legal: T 20 S R 10 E S 1 AD

Other: Southwest of airport on the east side of Spring River, west of Deschutes River

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8684

Longitude: -121.4699

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Narrow, convoluted wetland along Spring River and unnamed tributary to Spring River. In undeveloped area, open space.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 4

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in Spring River.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 201

Wetland Mapping Code: 5

Size (acres): 8.0

Location

Legal: T 20 E R 11 E S 6 DC, CD

Other: North of Spring River Road, west side of Deschutes River

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8684

Longitude: -121.4699

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. In undeveloped area along the Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 10.5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 0, viewed from right-of-way.

Percent (approx.) of the AA Visited: 0, viewed from right-of-way.

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 203 (6a-b)

Wetland Mapping Code: 6a-b

Size (acres): 0.6

Location

Legal: T 20 S R 11 E S 7 AB, T 20 S R 11 E S 6 DC

Other: West of Lunar Dr along Spring River Rd

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: a. 43.8627 b. 43.8630

Longitude: a. -121.4600 b. -121.4591

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Depressional Outflow (6a-b)

Dominant Vegetation and Comments

Cowardin Classification(s): PSSF (6a), PSSC (6b)

Vegetation: Salix geyeriana (Geyer willow), Spiraea douglasii (Douglas spirea), Herbs: Carex aquatilis (Water sedge),

Comments: On-site determination. 6a-b surrounded by residential development and along busy road (Spring River Rd). Fill activities have reduced size of 6a, only a few residences nearby and adjacent to woodland.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 0.6,same size as wetland areas.

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. For 6a-b, the AA's were the same size as the wetland polygons.

Percent (approx.) of the Wetland Visited: a. 20 b. 10

Percent (approx.) of the AA Visited: a. 20 b. 10

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 210

Wetland Mapping Code: 7

Size (acres): 0.7

Location

Legal: T 20 S R 11 E S 7 AB, DB

Other: East of Lunar Rd, south of Spring River Rd on west side of Deschutes River

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8599

Longitude: -121.4570

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Carex aquatilis (Water sedge)

Comments: On-site determination. Narrow wetland along Deschutes River, residential waterfront.
Two polygons less than 100 feet apart on same side of Deschutes River; considered one unit due to small size of polygons and close proximity.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 2

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 20

Percent (approx.) of the AA Visited: 6

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 209

Wetland Mapping Code: 8

Size (acres): 1.1

Location

Legal: T 20 S R 11 E S 7 DB

Other: East of Lunar Rd, east side of Deschutes River

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8570

Longitude: -121.4574

Soils

Mapped Series: 44A: Sunriver sandy loam, 0 to 3 percent slopes, 29A Cryaquolls, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Undeveloped land along the Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 2.5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 1, included shoreline of Deschutes River.

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: N/A

Wetland Mapping Code: 9

Size (acres): 6.8

Location

Legal: T 20 S R 11 E S 7 CD

Other: Immediately south of the confluence of Little Deschutes and Deschutes River; west of Canoe Camp Dr

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8514

Longitude: -121.4524

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PFOC

Vegetation: From aerials and vegetation in vicinity: Carex sp. (sedges); grasses (unknown species); Pinus contorta (Lodgepole pine)

Comments: Not able to view in field due to lack of property access and lack of public roads, therefore no data sheet was created. Wetland is in undeveloped forested area; exclusive residences and golf course to the east.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 15

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included the larger wetland extending north of the study area and adjoining open water in the Deschutes River and Little Deschutes River.

Percent (approx.) of the Wetland Visited: 0, not able to view in field due to lack of property access and lack of public roads.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 212

Wetland Mapping Code: 10

Size (acres): 9.2

Location

Legal: T 20 S R 11 E S 7 AC, BC, CC, DC

Other: South of the intersection of Meteor and Elsinore, west side of Deschutes River

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8539

Longitude: -121.4614

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMF, PSSE, PFOA

Vegetation: Herbs: Carex aquatilis (Water sedge), Juncus balticus (Baltic rush)

Comments: Off-site determination. Old Oxbow of Deschutes River; surrounded by residential development. Viewed from public trail.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 9.2

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0, viewed from public trail.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 213

Wetland Mapping Code: 11

Size (acres): 3.8

Location

Legal: T 20 S R 11 E S 7 AC, DC

Other: East of Eclipse on the east side of the Deschutes River

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8523

Longitude: -121.4594

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMF

Vegetation: Carex aquatilis (Water sedge)

Comments: Off-site determination. Low-lying area on a bend of the Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 1, included the Deschutes River shoreline.

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 214

Wetland Mapping Code: 12

Size (acres): 2.2

Location

Legal: T 20 S R 11 E S 18 AB, BB

Other: South of Guss Way on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Sunriver

Latitude: 43.8468

Longitude: -121.4619

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE

Vegetation: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge), Juncus balticus (Baltic rush)

Comments: On-site determination. Narrow fringe along the Deschutes River, residential waterfront. Several docks and boat slips constructed in wetland. Wetland includes previous DSL determination WD2009-0042.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 4

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/3/2010

Investigator(s): John Gordon, Rosemary Baker

Data Sheet Numbers: SP 101

Wetland Mapping Code: 13a-d

Size (acres): 0.7

Location

Legal: T 20 S R 10 E S 13 CA

Other: Running northwest to southeast from Norwalk continuing south of Pasadena

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8403

Longitude: -121.4734

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Overland Flow

Hydro-geomorphic (HGM) Classification(s): Slope Headwater

Dominant Vegetation and Comments

Cowardin Classification(s): PSSE, PFOE

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Prunus sp. (cherry), Salix sp. (willow)

Comments: On-site determination. Surrounded by residential development.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 0.7

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 25

Percent (approx.) of the AA Visited: 25

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/3/2010

Investigator(s): John Gordon, Adam Merrill

Data Sheet Numbers: SP 100

Wetland Mapping Code: 14

Size (acres): 9.8

Location

Legal: T 20 S R 3 E S 13 AD, BD, AC, T 20 S R 3 E S 18 BC

Other: South of Pasadena Rd, north of Milky Way

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8394

Longitude: -121.4714

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC

Vegetation: Shrubs: Salix sp., Herbs: Carex sp., Geum macrophyllum (Largeleaf avens), Rumex acetosa (Garden sorrel), Juncus balticus (Baltic rush)

Comments: On-site determination. Old oxbow of Deschutes River surrounded by residential development. Wetland includes previous DSL determination WD2007-0154.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 15

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 10

Percent (approx.) of the AA Visited: 4

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 7

Wetland Mapping Code: 15

Size (acres): 4.3

Location

Legal: T 20 S R 10 E S 13 CD, DD, T 20 S R 11 E S 18 CC, T 20 S R 10 E S 24 BA

Other: South of Upland Rd and Milky Way, on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8360

Longitude: -121.4710

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Overland Flow

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Carex nebrascensis (Nebraska sedge), Carex aquatilis (Water sedge)

Comments: On-site determination and includes previous delineation WD1995-0148. Narrow fringe along the Deschutes River, residential waterfront.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 10

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 4

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 6

Wetland Mapping Code: 16

Size (acres): 2.0

Location

Legal: T 20 S R 10 E S 24 AA, BA

Other: Northwest of Wood Duck and Osprey intersection on the west side of the Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8324

Longitude: -121.4702

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Herbs: Carex aquatilis (Water sedge)

Comments: On-site determination. Peninsula at bend in Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 10

Percent (approx.) of the AA Visited: 2

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/3/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 5

Wetland Mapping Code: 17

Size (acres): 2.5

Location

Legal: T 20 S R 10 E S 24 BA, DA

Other: West and parallel to Wood Duck, on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8306

Longitude: -121.4739

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PFOA

Vegetation: Herbs: Carex aquatilis (Water sedge), Equisetum arvense (Field horsetail)

Comments: On-site determination. Low-lying area along the Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 6

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 9, 102

Wetland Mapping Code: 18

Size (acres): 10.7

Location

Legal: T 20 S R 10 E S 24 CB, CA, BD, AC, DB

Other: South of Sharp on west side of Deschutes River, includes area in drainage field

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8285

Longitude: -121.4729

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMF

Vegetation: Herbs: Carex aquatilis (Water sedge), Scirpus americanus (Chairmaker's bulrush), Juncus balticus (Baltic rush)

Comments: On-site determination of previous delineations, WD1993-0294 and WD2001-0398. Backwater slough connected to the Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 12

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 3

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 10

Wetland Mapping Code: 19

Size (acres): 2.3

Location

Legal: T 20 S R 10 E S 24 AD, BD

Other: West of the end of Chief Paulina on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8241

Longitude: -121.4718

Soils

Mapped Series: 9A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC

Vegetation: Carex aquatilis (Water sedge)

Comments: Off-site determination. Undeveloped land along the Deschutes River, adjacent to upland forest.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 11

Wetland Mapping Code: 20

Size (acres): 3.7

Location

Legal: T 20 S R 10 E S 24 BD

Other: South of Big River/Century Rd, on the east bank of the Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8252

Longitude: -121.4741

Soils

Mapped Series: 29: Cryaquolls, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Carex aquatilis (Water sedge)

Comments: Off-site determination. Undeveloped land along the Deschutes River, adjacent to upland forest.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 7

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: N/A

Wetland Mapping Code: 21

Size (acres): 7.8

Location

Legal: T 20 S R 10 E S 24 AD, DD, CD

Other: North of Big River/Century Rd, east of Fountainebleau and south of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8203

Longitude: -121.4724

Soils

Mapped Series: 115A: Shanahan loamy coarse sand, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEME, PEMH, PSSC, PFOA

Vegetation: From aerial image and vegetation in vicinity: grasses, sedges, and Pinus contorta (Lodgepole Pine)

Comments: Off-site determination. No visual access. Old oxbow of Deschutes River surrounded by low density residential and forest.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 7.84

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 8

Wetland Mapping Code: 22

Size (acres): 4.5

Location

Legal: T 20 S R 10 E S 24 BD, AC, DC

Other: South of the end of Cone, on the west side of the Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8227

Longitude: -121.4781

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Carex aquatilis (Water sedge)

Comments: On-site determination. Low-lying area adjacent to Deschutes River. Buffer is upland forest and low density residential.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 7

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: N/A

Wetland Mapping Code: 23

Size (acres): 1.1

Location

Legal: T 20 S R 10 E S 24 AC, BC

Other: North of Gatehouse Ln, on the east side of the Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8239

Longitude: -121.4826

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes,144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Impounding

Dominant Vegetation and Comments

Cowardin Classification(s): PABF

Vegetation: From aerial image and vegetation in vicinity: sedges, and Pinus contorta (Lodgepole Pine)

Comments: Off-site determination and no public access viewing.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1.1

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary

Data Sheet Numbers: SP 13

Wetland Mapping Code: 24

Size (acres): 3.0

Location

Legal: T 20 S R 10 E S 23 D

Other: North of Big River Rd on the east side of the Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8220

Longitude: -121.4889

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMF

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: On-site determination. Low-lying area adjacent to Deschutes River. Residential development upslope.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 10

Percent (approx.) of the AA Visited: 2

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 12

Wetland Mapping Code: 25

Size (acres): 5.0

Location

Legal: T 20 S R 10 E S 23 DD, T 20 S R 10 E S 26 AA

Other: Southeast of Wagon Master on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8184

Longitude: -121.4906

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Low-lying area adjacent to Deschutes River. Residential development upslope, beyond forest buffer.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 7

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary

Data Sheet Numbers: SP 14

Wetland Mapping Code: 26a-b

Size (acres): 2.5

Location

Legal: T 20 S 10 E S 25 AB, DB, CB

Other: North and south of Century Rd, to the east of Seevers

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8157

Longitude: -121.4797

Soils

Mapped Series: 115A: Shanahan loamy coarse sand, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Depressional Closed Nonpermanently Flooded

Dominant Vegetation and Comments

Cowardin Classification(s): PEMA, PSSA, PFOA

Vegetation: Shrubs: Salix sp., Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Near residential uses and forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 2.5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 0, viewed from right-of-way.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 15

Wetland Mapping Code: 27a-c

Size (acres): 12.1

Location

Legal: T 20 S R 10 E S 25 BB

Other: East of Heierman Dr and south of S Century Dr

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8121

Longitude: -121.4851

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Depressional Closed Nonpermanently Flooded

Dominant Vegetation and Comments

Cowardin Classification(s): PFOY

Vegetation: Pinus contorta (Lodgepole pine), Shrubs: Spiraea douglasii (Douglas spirea), Salix geyeriana (Geyer willow), Betula grandulosa (resin birch), Herbs: Juncus sp., Fragaria virginiana (Virginia strawberry), Equisetum arvense (Field horsetail)

Comments: On-site determination. Wetland/Upland Mosaic located in a forested, undeveloped residential area that has uneven terrain from extensive on-site ditching and previous earth moving work, creating pockets of upland areas throughout wetland. This wetland sits to the west of the base of a slope.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 12.1

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 10

Percent (approx.) of the AA Visited: 10

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 16

Wetland Mapping Code: 28a-b

Size (acres): 1.8

Location

Legal: T 20 S R 10 E S 25 BC

Other: West of Heierman Dr, north and south of Gross Dr

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8099

Longitude: -121.4862

Soils

Mapped Series: 144A, Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Depressional Closed Nonpermanently Flooded

Dominant Vegetation and Comments

Cowardin Classification(s): PFOY

Vegetation: Shrubs: Betula glandulosa (Resin birch), Spiraea douglasii (Douglas spirea), Herbs: Poa sp.

Comments: On-site determination. Wetland/Upland Mosaic located in a forested, undeveloped residential area that has uneven terrain from extensive on-site ditching and previous earth moving work, creating pockets of upland areas.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1.8

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 10

Percent (approx.) of the AA Visited: 10

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 408

Wetland Mapping Code: 29a-c

Size (acres): 5.8

Location

Legal: T 20 S R 10 E S 26 DA, AD

Other: South and west of Heierman Dr

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8105

Longitude: -121.4888

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Depressional Closed Nonpermanently Flooded

Dominant Vegetation and Comments

Cowardin Classification(s): PFOY, PEMY

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Spiraea douglasii (Douglas spirea), Herbs: Juncus sp., Poa sp., Fragaria virginiana (Virginia strawberry)

Comments: On-site determination. Wetland/Upland Mosaic due to uneven terrain and areas of upland vegetation creating numerous upland hummocks.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5.8

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 5

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 17

Wetland Mapping Code: 30

Size (acres): 1.7

Location

Legal: T 20 S R 10 E S 26 BD

Other: North of Big River Rd, west of Casper and east of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8119

Longitude: -121.4927

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Depressional Closed Nonpermanently Flooded

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE, PFOE

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Betula glandulosa (Resin birch), Salix geyeriana (Geyer willow), Herbs: Carex nebrascensis (Nebraska sedge)

Comments: On-site determination. Wetland/Upland Mosaic, part of an old river oxbow including non-wetland hummocks. This wetland extends out of study area and is adjacent to the Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1.7

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 5

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 18

Wetland Mapping Code: 31

Size (acres): 0.8

Location

Legal: T 20 S R 10 E S 26 BD

Other: Northwest of Big River Rd on east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8118

Longitude: -121.4963

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge), Carex nebrascensis (Nebraska sedge)

Comments: Off-site determination. Low-lying area along the Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 2

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0, viewed from adjacent parcel.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/25/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 45A

Wetland Mapping Code: 32

Size (acres): 1.4

Location

Legal: T 20 S R 10 E S 26 BD

Other: Northwest of Meadow, on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8096

Longitude: -121.4955

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY, PSSC, R2UBH

Vegetation: Shrubs: Alnus incana (Gray alder), Salix exigua (Narrowleaf willow), Herbs: Carex sp., Phalaris arundinacea (Reed canary grass)

Comments: Off-site determination. Peninsula in bend of Deschutes River. A couple residences nearby but mainly upland forest in vicinity.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 3

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/25/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 46A

Wetland Mapping Code: 33

Size (acres): 3.7

Location

Legal: T 20 S R 10 E S 26 BD, CD

Other: South of Meadow, on the east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8084

Longitude: -121.4953

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PFOC

Vegetation: Herbs: Carex sp., (sedge), Poa sp., (grass), Juncus sp. (rush), Trees: Pinus contorta (Lodgepole Pine)

Comments: Off-site determination. Wetland is part of an old oxbow of Deschutes River. A few residences nearby but mainly forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 15

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included the off-site wetland to the south and adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 42A

Wetland Mapping Code: 34

Size (acres): 4.3

Location

Legal: T 20 S R 20 E S 35 AA, BA

Other: West of Foster Rd, north and south of Gray Wolf

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8046

Longitude: -121.4956

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PFOA

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Rosa gymnocarpa (Dwarf rose), Salix exigua (narrowleaf willow), Herbs: Fragaria virginiana (Virginia strawberry), Trifolium repens (White clover)

Comments: On-site determination. Wetland/Upland Mosaic due to relict oxbow with uneven terrain and pockets of upland vegetation. Wetland extends out of study area, two polygons united by “off-site” wetland area. Surrounded by forested land; south and higher elevation than old oxbow (Wetland 33).

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 9

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included off-site wetland area to the north.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alessandra Capretti, Adam Merrill

Data Sheet Numbers: SP 106

Wetland Mapping Code: 35

Size (acres): 2.5

Location

Legal: T 20 S R 10 E S 35 BB, CB

Other: Southeast of the intersection of Carrington and Forest on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8007

Longitude: -121.5055

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, R2UBH

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex nebrascensis (Nebraska sedge), Carex aquatilis (Water sedge), Juncus balticus (Baltic rush)

Comments: On-site determination. Residential waterfront along Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 4.5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 2

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 43A

Wetland Mapping Code: 36

Size (acres): 2.4

Location

Legal: T 20 S R 10 E S 35 CB, DBO

Other: Northeast of Mallard Dr, on west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7990

Longitude: -121.5023

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC

Vegetation: Shrubs: Salix exigua (narrowleaf willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Low-lying area along the Deschutes River. Low density residential, forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alessandra Capretti, Adam Merrill

Data Sheet Numbers: SP 107

Wetland Mapping Code: 37

Size (acres): 1.9

Location

Legal: T 20 S R 10 E S 35 AC, BC, CB, DB

Other: East of Mallard, on west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7978

Longitude: -121.5029

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC, R2UBH

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge), Carex nebrascensis (Nebraska sedge)

Comments: On-site determination. Complex of low-lying wetland areas along the Deschutes River. Wetland extends outside of the study area. SP 107 is representative of wetland 37 although it is located outside of study area, it characterizes the same wetland. Two polygons united by “off-site” wetland area.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 14

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water, wetlands outside of study area, peninsula and island to the north.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Sarah Hartung, Alison Sigler

Data Sheet Numbers: SP 7A

Wetland Mapping Code: 38

Size (acres): 2.3

Location

Legal: T 20 S R 10 E S 35 BC, AC

Other: South of Beaver Dr; east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7948

Longitude: -121.5023

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMH, R2UBH

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (narrowleaf willow), Herbs: Juncus balticus (Baltic rush), Carex aquatilis (Water sedge)

Comments: Off-site determination. Low-lying area along river; adjacent to national forest.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited:

Percent (approx.) of the AA Visited:

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alessandra Capretti, Adam Merrill

Data Sheet Numbers: SP 108

Wetland Mapping Code: 39

Size (acres): 1.8

Location

Legal: T 20 S R 10 E S 35 BC, CC

Other: North of the end of Silver Fox, on the west side of the Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7945

Longitude: -121.5034

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PSSC

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Betula grandulosa (Resin birch), Herbs: Juncus balticus (Baltic rush), Carex aquatilis (Water sedge), Carex nebrascensis (Nebraska sedge)

Comments: On-site determination. Undeveloped peninsula in bend of Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 6

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water and the east end of the wetland that extends off-site.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alessandra Capretti, Adam Merrill

Data Sheet Numbers: SP 109

Wetland Mapping Code: 40

Size (acres): 3.5

Location

Legal: T 20 S R 10 E S 35 BC, T 20 S R 10 E S 34 AD, DD

Other: South of Mallard, east of Forest on west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7947

Longitude: -121.5082

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC

Vegetation: Herbs: Carex nebrascensis (Nebraska sedge), Carex aquatilis (Water sedge)

Comments: On-site determination. Low-lying area along the Deschutes River. Low density residential to the west.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 6

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010, 11/17/2010

Investigator(s): A. Capretti, A. Merrill, S. Hartung

Data Sheet Numbers: SP 113

Wetland Mapping Code: 41

Size (acres): 34.0

Location

Legal: T 20 S R 10 E S 34 DD, T 20 S R 10 E S 35 BC, CC, T 21 S R 10 E S 2 BB

Other: South of Mallard Dr, northwest of Silver Fox Dr on east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7892

Longitude: -121.5030

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding, seeps from forested hillside to the east, and overland flow. Roads in area often flooded in spring according to landowner information.

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE, PFOE

Vegetation: Pinus contorta (Lodgepole pine), Salix geyeriana (Geyer willow), Herbs: Carex nebrascensis (Nebraska sedge), Carex aquatilis (Water sedge), Poa sp. (grass)

Comments: On-site determination (41). Wetland/Upland Mosaic hummocks of slightly higher elevation and upland vegetation included in wetlands. A large island (included in wetland) in the Deschutes River created the excavation of a channel at the southeast end of the island. Portions of wetland are in a low-lying area at base of forested hill. Platted for residential development, but not fully built. Wetland includes previous DSL determination WD1994-0072. Three polgons assessed as one unit, all formerly united prior to excavation of cut-off channels. A log jam is obstructing the cut-off channel at the base of the northern polygon, according to nearby landowner information.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 39

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Deschutes River.

Percent (approx.) of the Wetland Visited: 2

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): A. Capretti, A. Merrill

Data Sheet Numbers: SP 110

Wetland Mapping Code: 42

Size (acres): 34.8

Location

Legal: T 20 S R 10 E S 34 DD, T 20 S R 10 E S 35 BC, T 21 S R 10 E S 3 AA, T 21 S R 10 E S 2 BB

Other: East of Forest Ln on the west side of Deschutes River, includes large island

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7917

Longitude: -121.5096

Soils

Mapped Series: 9A Cryaquolls, 0 to 3 percents slopes, W: Water

Hydrology

Primary Hydrology Source(s): Overland Flow

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC, PFOC, R2UBH

Vegetation: Shrubs: Salix exigua (narrowleaf willow), Herbs: Carex aquatilis (Water sedge), Carex nebrascensis (Nebraska sedge)

Comments: On-site determination. Wetland/Upland Mosaic due to uneven terrain and dynamic floodplain conditions that have created uneven topography resulting in non-wetland/upland hummocks. Wetland includes large island formed by river meander. Four polygons assessed as one, united by a large oxbow west of Deschutes River main channel.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 45

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water and large island.

Percent (approx.) of the Wetland Visited: 3

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010, 11/17/2010

Investigator(s): A. Sigler, R. Baker, S. Hartung

Data Sheet Numbers: SP 114, 603, 604, 605, 606

Wetland Mapping Code: 43a-e

Size (acres): 32.3

Location

Legal: T 21 S R 10 E S 3 AA, T 21 S R 10 E S 2 BB

Other: Northwest of Silver Fox Dr on east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7873

Longitude: -121.5066

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater, seeps from forested hillside to the east, and overland flow.

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMA, PFOA, PFOE

Vegetation: Pinus contorta (Lodgepole pine), Betula glandulosa (bog birch), Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge), Agrostis sp. (bentgrass), Poa sp. (bluegrass)

Comments: On-site determination and review of previous delineations WD2001-0365, WD2007-0620 and WD2003-0034. Low lying area along the Deschutes River. Residential use adjacent to wetland.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 35

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 2

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 5

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): John Gordon, Adam Merrill

Data Sheet Numbers: N/A

Wetland Mapping Code: 44

Size (acres): 12.3

Location

Legal: T 21 S R 10 E S 3 AA, BA

Other: South of Forest Ln on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7872

Longitude: -121.5124

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC, PFOC, R2UBH

Vegetation: From aerial and landscape in vicinity: Salix sp. (willow), Herbs: Carex sp. (sedge)

Comments: Off-site determination. No visual access. Low-lying area south of confluence of Fall River and Deschutes River. Mapped as occurring in two different drainages, but assessed as if in Deschutes River drainage.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 16

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alessandra Capretti, Adam Merrill

Data Sheet Numbers: SP 112

Wetland Mapping Code: 45

Size (acres): 21.0

Location

Legal: T 21 S R 10 E S 3 BA, CA, DA

Other: West of Mule Deer and Red Bear, east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7866

Longitude: -121.5143

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, W: Water, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Overland Flow

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSC

Vegetation: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge), Agrostis sp.

Comments: On-site determination. Wetland/Upland Mosaic includes an old oxbow and has upland hummocks throughout the wetland.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 25

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Sarah Hartung, Alison Sigler

Data Sheet Numbers: SP 41A

Wetland Mapping Code: 46

Size (acres): 25.3

Location

Legal: T 21 S R 10 E S 3 AB, DB, BA, DA, AC

Other: Northwest of Blacktail, west side of Deschutes River, south of Fall River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7843

Longitude: -121.5163

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percent slopes, W: Water, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC, PFOC

Vegetation: Shrubs: Alnus incana (Gray alder), Salix exigua (narrowleaf willow), Herbs: Carex aquatilis (Water sedge), Poa sp. (bluegrass)

Comments: Off-site determination. Wetland/Upland Mosaic due to dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks. Low-lying area along the Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 32

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water and island to the south.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Sarah Hartung, Alison Sigler

Data Sheet Numbers: N/A

Wetland Mapping Code: 47

Size (acres): 2.8

Location

Legal: T 21 S R 10 E S 3 AC, BD

Other: Parallel to the intersection of White Tail Ln and Silver Fox Dr on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7820

Longitude: -121.5173

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC

Vegetation: From aerial and landscape in vicinity: Salix sp. (willow), Herbs: Carex sp. (sedge)

Comments: Off-site determination with no visual access. Peninsula at bend in river. Wetland/Upland Mosaic due to uneven terrain.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Alessandra Capretti, Adam Merrill

Data Sheet Numbers: SP 111

Wetland Mapping Code: 48

Size (acres): 27.4

Location

Legal: T 21 S R 10 E S 3 BD, CD, AC, CA

Other: Parallel to the intersection of White Tail Ln and Silver Fox Dr on the east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7795

Longitude: -121.5162

Soils

Mapped Series: 9A Cryaquolls, 0 to 3 percents slopes, W: Water, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: On-site determination. Wetland/Upland Mosaic due to hummocks. Low-lying area along the Deschutes River; a few residences to the south and east. Two polygons assessed as one, formerly united prior to excavation of a cut-off channel at east end of island.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 32

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 8A

Wetland Mapping Code: 49

Size (acres): 1.5

Location

Legal: T 21 S R 10 E S 3 AD

Other: North of Big Buck Ln and east of Silver Fox Dr

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7801

Longitude: -121.5122

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PFOY

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (narrowleaf willow), Herbs: Poa sp. (bluegrass), Juncus sp. (rush)

Comments: Off-site determination. Adjacent to low density residential use and forest land. Higher in elevation than Wetland 48.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1.5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 0, viewed from right-of-way.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 9A

Wetland Mapping Code: 50a-c

Size (acres): 14.8

Location

Legal: T 21 S R 10 E S 3 DD, T 21 S R 10 E S 2 CC, T 21 S R 10 E S 10 AA

Other: South of Big Buck Ln, east and west of Caribou Dr and north and south of Silver Fox Dr

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7797

Longitude: -121.5108

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY, PFOY

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (narrowleaf willow), Herbs: Poa sp., (bluegrass), Carex sp. (sedge)

Comments: On-site determination. Wetland/Upland Mosaic with upland areas at about 10%, wetland ditched throughout site. At base of slope, a few residences in area and upland forest.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 14.8

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 12A

Wetland Mapping Code: 51

Size (acres): 3.4

Location

Legal: T 21 S R 10 E S 3 DD

Other: South of Fisher Ln and east of Silver Fox Dr

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7780

Longitude: -121.5086

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY, PFOY

Vegetation: Shrubs: Salix exigua (narrowleaf willow), Herbs: Juncus balticus (Baltic rush)

Comments: On-site determination. At base of slope, a few residences in area and upland forest.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 3.4

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 11A

Wetland Mapping Code: 52

Size (acres): 2.4

Location

Legal: T 21 S R 10 E S 3 AC, DC, CDO

Other: East of Moose Dr on the west side of the Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7781

Longitude: -121.5169

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY, PFOY

Vegetation: Carex aquatilis (Water sedge)

Comments: On-site determination. Narrow wetland along the river; low density residential

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 40A

Wetland Mapping Code: 53

Size (acres): 4.2

Location

Legal: T 21 S R 10 E S 3 CD, T 21 S R 10 E S 10 BA

Other: East of Lynx Dr on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7770

Longitude: -121.5134

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE

Vegetation: Shrubs: Salix exigua (narrowleaf willow), Herbs: Carex aquatilis (Water sedge), Poa sp. (bluegrass)

Comments: Off-site determination. Peninsula formed by river bend.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 8

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 10A

Wetland Mapping Code: 54

Size (acres): 36.8

Location

Legal: T 21 S R 10 E S 3 DD, CD, T 21 S R 10 E S 10 AA, BA River

Other: Northwest of Bench Leg Rd and southwest of Silver Fox Dr on east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7794

Longitude: -121.5119

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY, PSSY, PFOY

Vegetation: Juncus effusus (Common rush), Juncus balticus (Baltic rush), Carex aquatilis (Water sedge)

Comments: On-site determination and review of previous delineation WD2007-0398 and WD1995-0062. At base of forested slope along the river. Wetland/Upland Mosaic consisting of uneven, mostly forested with with some uneven terrain and pockets of upland vegetation interwined within the wetland.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 38

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included a portion of adjoining open water.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 33A

Wetland Mapping Code: 55

Size (acres): 4.0

Location

Legal: T 21 S R 10 E S 10 BA, CA, AB, DB

Other: Northeast of the end of LaPine State Recreation Rd in the park on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7725

Longitude: -121.5164

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE, PFOE

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (Narrowleaf willow), Herbs: Juncus balticus (Baltic rush), Carex aquatilis (Water sedge)

Comments: On-site determination. Wetland/Upland Mosaic due to dynamic floodplain conditions that have created uneven topography and resulting in non-wetland hummocks.
Peninsula in bend of river, adjacent to forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 6

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 32A

Wetland Mapping Code: 56

Size (acres): 8.5

Location

Legal: T 21 S R 10 E S 10 AB, BB, CB, T 21 S R 10 E S 9 DA

Other: North of LaPine State Recreation Rd in the park on the east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7717

Longitude: -121.5229

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (Narrowleaf willow), Herbs: Juncus balticus (Baltic rush), Carex sp.

Comments: Off-site determination. No soil excavation allowed in LaPine State Park. Wetland/Upland Mosaic located on an island in river bend with uneven topography and upland vegetation. Wetland includes shoreline to the east of the island.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 13

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 31A

Wetland Mapping Code: 57

Size (acres): 0.9

Location

Legal: T 21 S R 10 E S 10 CB

Other: North of LaPine State Recreation Rd in the park on the east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7703

Longitude: -121.5249

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex sp., Veratrum californicum (California false hellebore)

Comments: On-site determination but no digging was allowed in the park. Narrow wetland at base of steep slope in LaPine State Park.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 3

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 20

Percent (approx.) of the AA Visited: 10

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 35A

Wetland Mapping Code: 58

Size (acres): 0.9

Location

Legal: T 21 S R 10 E S 10 BB, CB

Other: North of LaPine State Recreation Rd in the park on the west side of the island in Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7724

Longitude: -121.5247

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Narrow fringe along an island in bend of river of state park.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 3

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 36A

Wetland Mapping Code: 59

Size (acres): 2.2

Location

Legal: T 21 S R 10 E S 10 BB

Other: North of LaPine State Recreation Rd in the park on the east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7739

Longitude: -121.5238

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Pinus contorta (Lodgepole pine), Herbs: Smilacena stellata (Starry false lily of the valley), Carex aquatilis (Water sedge), Juncus balticus (Baltic rush)

Comments: On-site determination but no digging was allowed in the park. Peninsula in Deschutes River. Wetland/Upland Mosaic due to uneven terrain.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 4

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 50

Percent (approx.) of the AA Visited: 10

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 37A

Wetland Mapping Code: 60

Size (acres): 3.9

Location

Legal: T 21 S R 10 E S 10 BB, T 21 S R 10 E S 9 AA

Other: Southwest of the end of Mountain Sheep Ln in LaPine State Park on the north side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7749

Longitude: -121.5254

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PFOE, R2UBH

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex sp., Juncus balticus (Baltic rush)

Comments: Off-site determination. Low-lying area along the Deschutes River; includes small island to the east.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 6

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0, viewed from opposite shoreline.

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 38A

Wetland Mapping Code: 61

Size (acres): 2.1

Location

Legal: T 21 S R 10 E S 9 AA, T 21 S R 10 E S 4 DD

Other: North of LaPine State Recreation Rd in the park on the east side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7755

Longitude: -121.5301

Soils

Mapped Series: 14C: Shanahan loamy coarse sand, 0 to 15 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE, PFOE

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex sp.

Comments: On-site determination but no digging was allowed in the state park. Peninsula in bend of river.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 3

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 50

Percent (approx.) of the AA Visited: 10

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 39A

Wetland Mapping Code: 62

Size (acres): 3.1

Location

Legal: 21 S R 10 E S 9 AA

Other: West of LaPine State Recreation Rd in the state park on the west side of Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7742

Longitude: -121.5299

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE, PFOE

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex aquatilis (Water sedge), Juncus balticus (Baltic rush)

Comments: Off-site determination. Wetland/Upland Mosaic has dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): John Gordon, Adam Merrill

Data Sheet Numbers: SP 104

Wetland Mapping Code: 63

Size (acres): 10.4

Location

Legal: T 20 S R 10 E S 34 CC, DC, T 21 S R 10 E S 3 AB, DB, T 21 S R 10 E S 3 BA

Other: South of Forest Ln, east of FS Road 4360; along Fall River near confluence with Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7921

Longitude: -121.5196

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PSSC, PFOC

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Betula glandulosa (Resin birch), Herbs: Carex aquatilis (Water sedge)

Comments: On-site determination. Wetland/Upland Mosaic due to dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks.
Complex of wetland on both sides of the Fall River; adjacent to undeveloped forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 15

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water of the Fall River.

Percent (approx.) of the Wetland Visited: 5

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): John Gordon

Data Sheet Numbers: SP 400

Wetland Mapping Code: 64

Size (acres): 2.0

Location

Legal: T 20 S R 10 E S 34 DC, T 21 S R 10 E S 3 AB

Other: West of Forest Ln on the Fall River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7908

Longitude: -121.5198

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Impounding

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Betula glandulosa (Resin birch), Herbs: Carex aquatilis (Water sedge)

Comments: On-site determination. Old oxbow of Fall River adjacent to undeveloped forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 2.0

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 10

Percent (approx.) of the AA Visited: 2

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): John Gordon, Adam Merrill

Data Sheet Numbers: N/A

Wetland Mapping Code: 65

Size (acres): 0.7

Location

Legal: T 20 S R 10 E S 34 BC

Other: East of FS Road 4360 on the Fall River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7961

Longitude: -121.5260

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PSSC

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Betula glandulosa (Resin birch), Herbs: Carex sp. (sedge)

Comments: Off-site determination. Low-lying area along undeveloped peninsula in the Fall River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Fall River.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): John Gordon, Adam Merrill

Data Sheet Numbers: N/A

Wetland Mapping Code: 66

Size (acres): 1.4

Location

Legal: T 20 S R 10 E S 34 ACO

Other: East of FS Road 4360 on the north bank of the Fall River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7957

Longitude: -121.5266

Soils

Mapped Series: 29A Cryaquolls, 0 to 3 percents slopes, 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PSSC

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Betula glandulosa (Resin birch), Herbs: Carex sp. (sedge)

Comments: On-site determination. Adjacent to undeveloped forest land, signage in area indicates public access is allowed.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 2

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Fall River.

Percent (approx.) of the Wetland Visited: 1

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): John Gordon, Adam Merrill

Data Sheet Numbers: N/A

Wetland Mapping Code: 67

Size (acres): 0.8

Location

Legal: T 20 S R 10 E S 33 AD, DD

Other: East of FS Road 4360 on the Fall River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7932

Longitude: -121.5288

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PFOC

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Betula glandulosa (Resin birch), Herbs: Carex sp. (sedge)

Comments: Off-site determination. Peninsula in Fall River adjacent to undeveloped forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1.5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/5/2010

Investigator(s): John Gordon, Adam Merrill

Data Sheet Numbers: N/A

Wetland Mapping Code: 68

Size (acres): 0.3

Location

Legal: T 20 S R 10 E S 33 AD, DDO

Other: East of FS Road 4360, south side of Fall River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7939

Longitude: -121.5295

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PSSC

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Betula glandulosa (Resin birch), Herbs: Carex sp. (sedge)

Comments: Off-site determination. Narrow wetland along the Fall River; undeveloped forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 0.5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/4/2010

Investigator(s): John Gordon, Adam Merrill

Data Sheet Numbers: SP 103

Wetland Mapping Code: 69

Size (acres): 39.1

Location

Legal: T 20 S R 10 E 33 BD, CD, DD, T 20 S R 10 E S 33 AC, BC, CC, DC, T 20 S R 10 E S 33 CB T 20 S R 10 E S 33 CB, T 20 S R 10 E S 32 DA, T 20 S R 10 E S 32 AD, BD, CD, DD.

Other: South of S Century Dr, mostly east of FS Road 4360 on both sides of the Fall River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7934

Longitude: -121.5352

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Flooding

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC, PSSF, PFOC, R2UBH

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix geyeriana (Geyer willow), Betula grandulosa (Resin birch), Herbs: Carex aquatilis (Water sedge), Juncus ensifolius (Swordleaf rush)

Comments: On-site determination. Wetland/Upland Mosaic due to dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks.
Signage in area indicates public access allowed.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 60

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Fall River.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/3/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 2

Wetland Mapping Code: 70

Size (acres): 0.6

Location

Legal: T 20 S R 10 S 31 BD

Other: South of South Century Dr, northeast of the fish hatchery on the north bank of a side channel of the Fall River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7978

Longitude: -121.5722

Soils

Mapped Series: 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Overland Flow

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PSSF

Vegetation: Trees: Salix sp., Herbs: Carex aquatilis (Water sedge)

Comments: On-site determination. Low-lying area at base of slope along a side channel of Fall River. Side channel modified for fish hatchery operations.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in side channel of Fall River.

Percent (approx.) of the Wetland Visited: 50

Percent (approx.) of the AA Visited: 40

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/3/2010

Investigator(s): Alison Sigler, Rosemary Baker

Data Sheet Numbers: SP 4

Wetland Mapping Code: 71a-b

Size (acres): 0.5

Location

Legal: T 20 S R 10 E S 31 BC, CC

Other: North and south of S Century Dr on Indian Creek

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7950

Longitude: -121.5856

Soils

Mapped Series: 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes

Hydrology

Primary Hydrology Source(s): Overland Flow

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMH

Vegetation: Herbs: Carex aquatilis (Water sedge), Salix sp., Poa sp., Fragaria virginiana (Virginia strawberry)

Comments: On-site determination and review of previous DSL delineation WD2004-0061.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 0.5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 10

Percent (approx.) of the AA Visited: 10

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/3/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 1

Wetland Mapping Code: 72

Size (acres): 0.9

Location

Legal: T 21 S R 9 E S 23 AA, BA

Other: West of Kokanee Way on the east side of Deschutes River; Pringle Falls; downstream from Burgess Rd Bridge

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7434

Longitude: -121.6076

Soils

Mapped Series: Not available

Hydrology

Primary Hydrology Source(s): Overland Flow

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PSSF

Vegetation: Herbs: Juncus effusus (Common rush), Poa palustris (Fowl bluegrass)

Comments: On-site determination. Braided side channels of upper Deschutes River through wetland; surrounded by small housing development. Wetland/Upland Mosaic located within and near stream channel where hummocks with upland vegetation are located throughout the wetland.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 2

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 50

Percent (approx.) of the AA Visited: 40

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 217

Wetland Mapping Code: 73

Size (acres): 46.8

Location

Legal: T 20 S R 11 E S 18 AD, DD, T 20 S R 11 E S 17 BC, CC, T 20 S R 11 E S 19 AA, T 20 S R 11 E S 20 BB

Other: East of Hashknife Rd, west of School House Rd, Little Deschutes River, north of bridge

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8373

Longitude: -121.4482

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEME, PSSE, PFOE, R2UBH

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Wetland/Upland Mosaic due to dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks.
Wetland is within an exclusive, low density residential development.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 55

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 2

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 218

Wetland Mapping Code: 74a-c

Size (acres): 94.9

Location

Legal: T 20 S R 11 E S 18 AD, DD, T 20 S R 11 E S 17 BC, CC, T 20 S R 11 E S 19 AA, T 20 S R 11 E S 20 BB

Other: East of Hashknife Rd, west of School House Rd, Little Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8261

Longitude: -121.4453

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEME, PSSE, PFOE

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Wetland/Upland Mosaic due to dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks. Wetland along private camping facility; undeveloped land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 115

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: 1

Percent (approx.) of the AA Visited: <1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: N/A

Wetland Mapping Code: 75

Size (acres): 0.7

Location

Legal: T 20 S R 11 E S 19 BD

Other: North of S Century Dr, east of Snow Good Rd and west of the Little Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8

Longitude: -121.4

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Depressional Closed Nonpermanently Flooded.

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Herbaceous plants (unknown species)

Comments: Off-site determination. No visual access. In private camp facility; undeveloped forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 0.7

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA was the same size as the wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/6/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 402

Wetland Mapping Code: 76

Size (acres): 72.7

Location

Legal: T 20 S R 11 E S 30 AA, BA, CA, DA, T 20 S R 11 E S 19 DD, CD, T 20 S R 11 E S 30 AD, BD, CD

Other: East of Lazy River Rd, south of S Century Rd, west of Huntington Rd on the Little Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8169

Longitude: -121.4514

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEME, PSSE, PFOE

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge), Carex nebrascensis (Nebraska sedge)

Comments: On-site determination of previous DSL delineations WD2009-0454, WD1993-0251. Wetland/Upland Mosaic due to dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks.Wetland located in low-density residential area mixed with natural land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 80

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 223

Wetland Mapping Code: 77

Size (acres): 23.4

Location

Legal: T 20 S R 11 E S 31 BA, AA, CA, T 20 S R 11 E S 30 BD, DD

Other: East of Lazy River Rd, northeast of Log Bridge Rd, west of Huntington Rd

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8033

Longitude: -121.4538

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEME, PSSE, PFOE

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge), Carex nebrascensis (Nebraska sedge)

Comments: On-site determination and review of previous DSL delineation WD2002-0612. Wetland/Upland Mosaic due to due to dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks. Wetland located in rural residential area along the Little Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 28

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 221

Wetland Mapping Code: 78

Size (acres): 0.5

Location

Legal: T 20 S R 11 E S 31 AB

Other: North of Lazy River Dr, south of Lodgepole Ln and east of JackPine Wy

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.8016

Longitude: -121.4593

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMB

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: Off-site determination. Rural residential area.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 0.5

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 5/7/2010

Investigator(s): John Gordon

Data Sheet Numbers: SP 404

Wetland Mapping Code: 79

Size (acres): 142.2

Location

Legal: T 20 S R 11 E S 31 BD, CA, AC, BC, CC, DC, T 21 S R 11 E S 6 AB, BB, CB, T 21 S R 10 E S 1 DA T 21 S R 11 E S 6 BC.

Other: :West of Huntington Rd, south of Old Bridge Rd on the Little Deschutes River

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7895

Longitude: -121.4623

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEME, PSSE, PFOE

Vegetation: Shrubs: Salix geyeriana (Geyer willow), Herbs: Carex aquatilis (Water sedge)

Comments: On-site determination. Wetland/Upland Mosaic due to dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks. Wetland includes DSL determination WD2009-0055. Wetland is in rural residential area and undeveloped forest land along the Little Deschutes River. Large wetland on both side of Little Deschutes River assessed as one despite occuring in two USGS sub-watersheds, assumed primary influence on polygon is the LIttle Deschutes River.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 155

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 2

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Sarah Hartung, Aaron Booy

Data Sheet Numbers: SP 13A

Wetland Mapping Code: 80

Size (acres): 91.6

Location

Legal: T 21 S R 10 E S 12 DB, T 21 S R 10 E S 12 AC, BC, DC, CC, T 21 S R 10 E S 12 CA T 21 S R 10 E S 12 BD, CD

Other: South of La Pine State Recreation Rd

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7660

Longitude: -121.4776

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMF, PSSF, PFOC

Vegetation: Herbs: Carex aquatilis (Water sedge), Juncus balticus (Baltic rush). Wetland/Upland Mosaic; includes uneven terrain and small islands of non-wetlands along old oxbows. Adjacent to undeveloped forest land and scrub-shrub.

Comments: Off-site determination. Wetland/Upland Mosaic includes hummocks, upland vegetated pockets, and old oxbows encompassing both sides of the river.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 95

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: N/A

Wetland Mapping Code: 81

Size (acres): 17.3

Location

Legal: T 21 S R 10 E S 13 BA, DA, CA, T 21 S R 10 E S 13 AB, T 21 S R 10 E S 12 DC, T 21 S R 10 E S 12 CD

Other: South of La Pine State Recreation Rd, west and north of Huntington Rd

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7599

Longitude: -121.4732

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEME

Vegetation: Herbaceous plants (unknown species)

Comments: Off-site determination with limited visual access. Undeveloped land along Paulina Creek. Wetland/Upland Mosaic located on large, open field with hummocks.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 19

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining area in Paulina Creek.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 2A

Wetland Mapping Code: 82

Size (acres): 10.4

Location

Legal: T 21 S R 10 E S 13 DA

Other: South of La Pine State Recreation Rd, west and north of Huntington Rd

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7557

Longitude: -121.4694

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Herbs: Carex sp., Juncus balticus (Baltic rush)

Comments: Off-site determination. Wetland/Upland Mosaic. No site access, but impoundment appears to be an earthen berm, possibly for vehicle access and/or agricultural purposes.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 10.4

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010, 11/17/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 1A, 601, 602

Wetland Mapping Code: 83

Size (acres): 93.7

Location

Legal: T 21 S R 10 E S 13 DA, DD, T 21 S R 11 E S 18 BC, CC, T 21 S R 10 E S 24, AA, DA T 21 S R 11 E S 18 BC, CC.

Other: South of La Pine State Recreation Rd, west, south and north of Huntington Rd

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7508

Longitude: -121.4687

Soils

Mapped Series: 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater, overland flow - irrigation ditches diverted from Paulina Creek.

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Herbs: Juncus balticus (Baltic rush), Trifolium repens (White clover), Poa sp. (bluegrass), Carex sp. (sedge)

Comments: On-site determination with landowner and DSL present. Pasture land for cattle surrounded by rural residential and upland forests. Wetland/Upland Mosaic due to hummocks along the irrigation ditches; uneven excavation of ditches. Site heavily irrigated in the spring.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 93.7

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 20

Percent (approx.) of the AA Visited: 20

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: N/A

Wetland Mapping Code: 84

Size (acres): 7.9

Location

Legal: T 21 S R 11 E S 18 BC, CC, DC, T 21 S R 11 E S 19 BB

Other: Northwest of Highway 97, north of intersection of Pine Crest Ln and Hwy 97, along Paulina Creek

Basin: Deschutes River

Nearest Town: Three Rivers

Latitude: 43.7506

Longitude: -121.4634

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater, overland flow in some years but Paulina Creek dry for most of the season due to irrigation withdrawals

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Herbaceous plants (unknown species)

Comments: Off-site determination. Adjacent to pasture land not recently irrigated.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 7.9

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010, 11/17/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 600

Wetland Mapping Code: 85

Size (acres): 32.0

Location

Legal: T 21 S R 11 E S 19 AB, BB, CB, DB, T 21 S R 11 E S 19 AC, BC, CC, DC

Other: Southeast of Hwy 97, west of Paulina Lake Rd

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.7398

Longitude: -121.4652

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater, overland flow and diversions from Paulina Creek.

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Juncus sp. (rush), Poa sp. (bluegrass), Thinopyrum intermedium (Intermediate wheatgrass)

Comments: On-site determination with DSL present. Accessed easement on-site with adjacent landowner (Mr. Hatcher). Site manipulated due to excavation of irrigation ditches. ODOT excavated a ditch on-site parallel to Hwy 97 to prevent roadway flooding in the spring.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 32.0

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 2

Percent (approx.) of the AA Visited: 2

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: N/A

Wetland Mapping Code: 86

Size (acres): 95.2

Location

Legal: T 21 S R 11 E S 30 AB, BB, T 21 S R 11 E S 30, BA, CA, T 21 S R 11 E S 19, CC

Other: East of Hwy 97, South of Paulina Lake Rd, west of Newberry Rd

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.7291

Longitude: -121.4533

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater, overland flow

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Poa sp. (bluegrass), Thinopyrum intermedium (Intermediate wheatgrass)

Comments: Off-site determination. Wetland/Upland Mosaic; upland hummocks along ditches. Site disturbed from ditching, diverting water from Paulina Creek, and past grazing activities.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 95.2

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0, viewed from adjacent gravel road.

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: N/A

Wetland Mapping Code: 87a-b

Size (acres): 41.1

Location

Legal: T 21 S R 11 E S 30 AA, DA, T 21 S R 11 E S 29 CB, DB, T 21 S R 11 E S 29, AC, BC, DC T 21 S R 11 E S 29 AD, BD, CD

Other: South of Paulina Lake Rd, east of Newberry Rd and north of USFS 9745 Rd

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.7255

Longitude: -121.4446

Soils

Mapped Series: 114C, Shanahan loamy coarse sand, 0 to 15 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater, overland flow in some years from Paulina Creek

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Poa sp. (bluegrass), Juncus sp. (rush), Agropyron repens (quackgrass)

Comments: Off-site determination. Wetland/Upland Mosaic due to uneven terrain, small islands of non-wetland along the stream channels. Site disturbed from ditching, diverting water from Paulina Creek, and past grazing activities.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 45

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining area in Paulina Creek.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 4A

Wetland Mapping Code: 88

Size (acres): 1.4

Location

Legal: T 21 S R 10 E S 14 AA

Other: Northwest of Pine Grove Rd and Shadow Ct

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.7603

Longitude: -121.4895

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMB

Vegetation: Poa sp. (bluegrass), Carex sp. (sedge)

Comments: On-site determination. Horse pasture in rural residential area; golf course nearby

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1.4

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 20

Percent (approx.) of the AA Visited: 20

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 3A

Wetland Mapping Code: 89

Size (acres): 85.0

Location

Legal: T 21 S R 10 E S 12 CC, DC, T 21 S R 10 E S 14 AA, DA, T 21 S R 10 E S 13 AB, BB, CB

Other: East of Pine Grove Rd, south of Bridge Dr

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.7567

Longitude: -121.4853

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEMB, PEMC, PEMF, PEMY, PSSC, PSSF, PFOC, PFOF, R2UBH

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex nebrascensis (Nebraska sedge), Juncus nevadensis (Sierra rush)

Comments: On-site determination. Wetland/Upland Mosaic. Site includes old oxbows and small islands of non-wetland due to uneven terrain. Rural residential area with undeveloped natural land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 95

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/21/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 6A

Wetland Mapping Code: 90

Size (acres): 65.5

Location

Legal: T 21 S R 10 E S 14 AD, CD, DD, T 21 S R 10 E S 13 BC, T 21 S R 10 E S 13 CB, T 21 S R 10 E S 23 AA

Other: South of Bridge Dr, north of Riverview Dr

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.7512

Longitude: -121.4872

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEMY, PSSY, PFOY, R2UBH

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Juncus balticus (Baltic rush), Carex sp. (sedge)

Comments: On-site determination; includes previous delineation WD2007-0442. Wetland/Upland Mosaic. Site includes old oxbows and small islands of non-wetland due to uneven terrain. Rural residential area and undeveloped natural land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 75

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 8/9/2010

Investigator(s): Alessandra Capretti

Data Sheet Numbers: N/A

Wetland Mapping Code: 91

Size (acres): 2.9

Location

Legal: T 21 S R 10 E S 23 AB, BA

Other: West of Bridge Dr, south of Sprague Loop

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.7456

Longitude: -121.4968

Soils

Mapped Series: 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Herbaceous plants

Comments: Off-site determination. A few rural residences in area but mainly undeveloped land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 2.9

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 1

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 15A, 57A

Wetland Mapping Code: 92a-b

Size (acres): 48.8

Location

Legal: T 21 S R 10 E S 23 AB, DB, T 21 S R 10 E S 23 AC, DC, T 21 S R 10 E S 23 CA, T 21 S R 10 E S 23 CD T 21 S R 10 E S 23 BD.

Other: West of Bridge Dr, south of Buena Vista Dr

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.7400

Longitude: -121.4987

Soils

Mapped Series: 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY

Vegetation: Trees: Pinus contorta (Lodgepole pine), Herbs: Juncus sp., Festuca idahoensis (Idaho fescue)

Comments: Off-site determination. Wetland/Upland Mosaic due to uneven terrain. Rural residential area; pasture land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 48.8

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 14A

Wetland Mapping Code: 93a-b

Size (acres): 340.06

Location

Legal: T 21 S R 10 E S 23 AA, BA, CA, DA, T 21 S R 10 E S 23 AD, BD, CD, DD, T 21 S R 10 E S 26 AA, BA, CA T 21 S R 10 E S 26 DA, T 21 S R 10 E S 26 AD, BD, CD, DD, T 21 S R 10 E S 35 AA, BA, T 21 S R 10 E S 14 CD, DD.

Other: Mostly east of Bridge Dr, west of Riverview Dr, along the Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: North end: 43.7472

South end: 43.7146

Longitude: North end: -121.4923

South end: -121.4955

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PABH, PEMY, PSSY, PFOY, R2UBH

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex aquatilis (Water sedge)

Comments: On-site determination and review of previous delineation WD2009-0208. Wetland/Upland Mosaic due to uneven terrain creating many non-wetland islands. Site includes numerous old oxbows of the Little Deschutes River. Rural residential area. Wetland 93a is one of the larger polygons because of the broad, continuous floodplain on the east side of the Little Deschutes River. Division between Wetlands 93a and 94 is based on a change from PSSY at the south end of Wetland 93 to PEME and PSSC at north end of Wetland 94.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 360

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 17A

Wetland Mapping Code: 94

Size (acres): 104.14

Location

Legal: T 21 S R 10 E S 35 AA, BA, CA, DA, T 21 S R 10 E S 35 DB, T 21 S R 10 E S 35 AC, CC, DC T 21 S R 10 E S 35 BD, CD.

Other: North of Burgess Rd, west of Huntington Rd, along the Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: North end: 43.7146

South end: 43.7037

Longitude: North end: -121.4955

South end: -121.4993

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEMC, PSSC

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Phalaris arundinacea (Reed canary grass), Carex aquatilis (Water sedge)

Comments: On-site determination. Wetland/Upland Mosaic due to uneven terrain creating many non-wetland islands. Site includes many old oxbows of the Little Deschutes River. Rural residential area and undeveloped forest land. Division between Wetlands 93a and 94 is based on a change from PSSY at the south end of Wetland 93 to PEME and PSSC at north end of Wetland 94.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 120

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 19A

Wetland Mapping Code: 95

Size (acres): 69.1

Location

Legal: T 21 S R 10 E S 35 CC, DC, T 22 S R 10 E S 2 AB, BB, CB, DB

Other: South of Burgess Rd, east of Arctic Dr and west of Glenwood Dr, along the Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.7010

Longitude: -121.5018

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A:Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEMC, PFOC

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex sp.

Comments: On-site determination. Wetland/Upland Mosaic due to uneven terrain creating many non-wetland islands. Rural residential area and undeveloped natural land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 80

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the river.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: N/A

Wetland Mapping Code: 96

Size (acres): 82.3

Location

Legal: T 22 S R 10 E S 2 CB, BC, CC, DC, T 22 S R 10 E S 3 AD, DD

Other: West of Huntington Rd, south of Burgess Rd/Frontage Rd

Basin: Deschutes River

Nearest Town: La Pine

Latitude: North end: 43.6964

South end: 43.6893

Longitude: North end: -121.5036

South end: -121.5031

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A, Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEMC, PSSC

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex sp.

Comments: Off-site determination. Wetland/Upland Mosaic due to uneven terrain creating many non-wetland islands. Rural residential area and undeveloped natural land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 95

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: N/A

Wetland Mapping Code: 97

Size (acres): 64.3

Location

Legal: T 22 S R 10 E S 10 AA, BA, CA, T 22 S R 10 E S 2 CC, T 22 S R 10 E S 11 BB

Other: West of Huntington Rd and Caldwell Dr, along the Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6873

Longitude: -121.5048

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC, PFOC, R2UBH

Vegetation: Herbaceous plants (various spp.), Salix sp. (willow)

Comments: Off-site determination. Wetland includes DSL delineation WD1995-0280. Wetland/Upland Mosaic due to uneven terrain creating many non-wetland islands. Rural residential area and undeveloped natural land and pasture land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 70

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/22/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: N/A

Wetland Mapping Code: 98

Size (acres): 7.7

Location

Legal: T 22 S R 10 E S 10 AA, BA, CA, T 22 S R 10 E S 2 CC, T 22 S R 10 E S 11 BB

Other: West of Huntington Rd and Caldwell Dr

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6856

Longitude: -121.5232

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes, W: Water

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMA

Vegetation: Herbaceous plants (unknown species).

Comments: Off-site determination with no public viewing access. Rural residential area; fallow pasture. Wetland includes DSL delineation WD1995-0280.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 7.7

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/23/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 21A

Wetland Mapping Code: 99

Size (acres): 232.7

Location

Legal: T 22 S R 10 E S 17 AA, T 22 S R 10 E S 8 DD, T 22 S R 10 E S 9 AC,CC, DC, T 22 S R 10 E S 16 AB, BB T 22 S R 10 E S 9 AD, BD, CD, CD, T 22 S R 10 E S 9 DA, T 22 S R 10 E S 10 CB, DB, T 22 S R 10 E S 10 BC, T 22 S R 10 E S 10 CA

Other: North of Jackpine Rd, south of Rim Dr and Davis Ave, along the Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: North end: 43.6844

South end: 43.6726

Longitude: North end: -121.5147

South end: -121.5472

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEMY, PSSY, PFOY, R2UBH

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex aquatilis (Water sedge)

Comments: On-site determination. Wetland/Upland Mosaic due to dynamic floodplain conditions that have created uneven topography resulting in non-wetland hummocks. Rural residential area.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 245

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/23/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 23A

Wetland Mapping Code: 100a-b

Size (acres): 15.0

Location

Legal: T 22 S R 10 E S 9 CD, T 22 S R 10 E S 16 BA, T 22 S R 10 E S 16 AB

Other: Northwest of Ash Rd, North of Jackpine Rd, east of Riverland Ave

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6725

Longitude: -121.5368

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMA, PFOA

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Amelanchier alnifolia (Saskatoon serviceberry), Rosa sp., Herbs: Fragaria sp. (strawberry), Poa sp. (bluegrass)

Comments: On-site determination. Residential area.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 15.0

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 1

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/23/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 25A

Wetland Mapping Code: 101

Size (acres): 1.2

Location

Legal: T 22 S R 10 E S 17 BA

Other: South of Deer Ave, north of Cascade Dr

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6732

Longitude: -121.5532

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMA, PFOA

Vegetation: Trees: Pinus contorta (Lodgepole pine), Herbs: Achillea millefolium (Common yarrow), Trifolium sp., Carex aquatilis (Water sedge), Juncus balticus (Baltic rush), Stellaria longifolia (Longleaf starwort), Galeopsis tetrahit (Brittlestem hempnettle)

Comments: On-site determination. Rural residential area and undeveloped natural land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1.2

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 10

Percent (approx.) of the AA Visited: 10

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/23/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 26A

Wetland Mapping Code: 102

Size (acres): 2.28

Location

Legal: T 22 S R 10 E S 17 AB, T 22 S R 10 E S 17 BA

Other: North of Cascade Dr, south of Deer Ave, along Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6722

Longitude: -121.5549

Soils

Mapped Series: 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY, PFOY

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex sp. (sedge)

Comments: On-site determination.This wetland is on a gentle slope, slightly higher in elevation than south of the roadway and is in a rural residential area. Assessed separately from Wetland 103 due to difference in slope and elevation.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 2.28

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: 2

Percent (approx.) of the AA Visited: 2

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/23/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 24A

Wetland Mapping Code: 103a-b

Size (acres): 200.4

Location

Legal: T 22 S R 9 E S 24 AA, T 22 S R 10 E S 18 CC, DC, T 22 S R 10 E S 18 AD, CD, DD T 22 S R 10 E S 17 AB, CB, DB, T 22 S R 10 E S 17 AA, BA, CA

Other: Mostly north of Pierce Rd, along the Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6695

Longitude: -121.5574

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 114C: Shanahan loamy coarse sand, 0 to 15 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC, PFOC, R2UBH

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Herbs: Carex sp., Stellaria longifolia (Longleaf starwort)

Comments: On-site determination. Wetland/Upland Mosaic due to uneven terrain. Rural residential area; open space.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 220

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 30A

Wetland Mapping Code: 104a-b

Size (acres): 1.2

Location

Legal: T 22 S R 10 E S 18 CA

Other: Southwest of Deer Ave

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6683

Longitude: -121.5715

Soils

Mapped Series: 114C, Shanahan loamy coarse sand, 0 to 15 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMB

Vegetation: Herbs: Phalaris arundinacea (Reed canary grass), Poa sp., Juncus balticus (Baltic rush)

Comments: Off-site determination. Undeveloped forest land.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 1.2

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/23/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 28A

Wetland Mapping Code: 105

Size (acres): 97.2

Location

Legal: T 22 S R 9 E S 24 AA, BA, CA, DA, T 22 S R 9 E S 24 AD, BD, CD, T 22 S R 9 E S 24 DC T 22 S R 9 E S 25 BA.

Other: Mostly north of Masten Rd, along the Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6546

Longitude: -121.5888

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 114C, Shanahan loamy coarse sand, 0 to 15 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (Narrowleaf willow), Herbs: Phalaris arundinacea (Reed canary grass), Carex aquatilis

Comments: Off-site determination. Wetland/Upland Mosaic due to uneven terrain. Rural residential area.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 110

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the river.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/23/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 27A

Wetland Mapping Code: 106

Size (acres): 159.3

Location

Legal: T 22 S R 9 E S 25 BA, CA, T 22 S R 9 E S 25 AB, DB, T 22 S R 9 E S 25 AC T 22 S R 9 E S 25 AD, BD, CD, DD, T 22 S R 9 E S 25 AC, T 22 S R 9 E S 36 AA, BA.

Other: South and east of Masten Rd, along the Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6453

Longitude: -121.5919

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 114C, Shanahan loamy coarse sand, 0 to 15 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC, PFOC, R2UBH

Vegetation: Shrubs: Salix exigua (Narrowleaf willow), Spiraea sp., Herbs: Carex sp. (sedge)

Comments: Off-site determination. Wetland/Upland Mosaic due to uneven terrain resulting in many non-wetland islands. Rural residential.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 170

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/24/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 29A

Wetland Mapping Code: 107

Size (acres): 100.4

Location

Legal: T 22 S R 9 E S 36 BA, CA, T 22 S R 9 E S 36 AB, DB, T 22 S R 9 E S 36 AC, BC, CC, DC T 22 S R 9 E S 36 BD, CD.

Other: West of Wagon Trail Rd and east of Masten Rd, along the Little Deschutes River

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6455

Longitude: -121.5918

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 114C, Shanahan loamy coarse sand, 0 to 15 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PSSC, PFOC, R2UBH

Vegetation: Trees: Pinus contorta (Lodgepole pine), Shrubs: Salix exigua (Narrowleaf willow), Herbs: Phalaris arundinacea (Reed canary grass), Alopecurus pratensis (Meadow foxtail), Carex aquatilis (Water sedge)

Comments: On-site determination. Wetland/Upland Mosaic due to uneven terrain.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 120

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland. In this case, the AA included adjoining open water in the Little Deschutes River.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 6/23/2010

Investigator(s): Alison Sigler, Sarah Hartung

Data Sheet Numbers: SP 22A

Wetland Mapping Code: 108

Size (acres): 48.0

Location

Legal: T 22 S R 10 E S 15 CD, DD, T 22 S R 10 E S 22 BA

Other: South of 6th St, northwest of Hwy 97

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6671

Longitude: -121.5107

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 144A, Sunriver sandy loam, 0 to 3 percent slopes, 153A: Tutni loamy coarse sand, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMY, PFOY

Vegetation: Claytonia perfoliata (Miner's lettuce), Carex sp. (sedge) Carex nebrascensis (Nebraska sedge)

Comments: Off-site determination. Wetland includes wetland polygon from the La Pine/Wickiup Junction LWI.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 48.0

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0, viewed from right-of-way

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 8/2009 and 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 3

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 8/9/2010

Investigator(s): Alessandra Capretti

Data Sheet Numbers: SP 47A

Wetland Mapping Code: 109

Size (acres): 112.8

Location

Legal: T 22 S R 10 E S 22 BA, CA, DA, T 22 S R 10 E S 22 AD, BD, DD, T 22 S R 10 E S 23 BC, CC T 22 S R 10 E S 15 CD.

Other: Southeast of Hwy 97 and west of Huntington Rd

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6603

Longitude: -121.5117

Soils

Mapped Series: 115A, Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 153A: Tutni loamy coarse sand, 0 to 3 percent slopes, 29A: Cryaquolls, 0 to 3 percent slopes,144A: Sunriver sandy loam, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PFOC

Vegetation: Leymus cinereus (Basin wildrye)

Comments: Off-site determination. Undeveloped, open space.
Wetland includes wetland polygon from the La Pine/Wickiup Junction LWI.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 112.8

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 1

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 8/9/2010

Investigator(s): Alessandra Capretti

Data Sheet Numbers: SP 49A, SP 50A, SP 51A*

Wetland Mapping Code: 110

Size (acres): 221.10

Location

Legal: T 22 S R 10 E S 22 AD, CD, DD, T 22 S R 10 E S 27 AA, BA, CA, DA, T 22 S R 10 E S 27 AB, DB

Other: Northeast of Hwy 31

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6326

Longitude: -121.5146

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A: Shanahan loamy coarse sand, 0 to 3 percent slopes, 144A: Sunriver sandy loam, 0 to 3 percent slopes ,153A: Tutni loamy coarse sand, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PABF, PEMC, PFOC

Vegetation: Leymus cinereus (Basin wildrye)

Comments: Off-site determination. Undeveloped, open space. *SP 51A describes non-wetland conditions (i.e. no hydrology) on the southwest side of the road to demonstrate that Wetland 110 does not extend under the road.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 221.10

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 1

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 8/10/2010

Investigator(s): Alessandra Capretti

Data Sheet Numbers: SP 52A

Wetland Mapping Code: 111

Size (acres): 8.6

Location

Legal: T 22 S R 10 E S 27 DB, T 22 S R 10 E S 27 AC

Other: Northeast of Hwy 31

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6354

Longitude: -121.5161

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PFOC

Vegetation: Herbs: Festuca idahoensis (Idaho fescue)

Comments: Off-site determination. Wetland includes previous DSL delineation WD2006-0415.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 8.6

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 1

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 8/10/2010

Investigator(s): Alessandra Capretti

Data Sheet Numbers: SP 53A

Wetland Mapping Code: 112

Size (acres): 15.3

Location

Legal: T 22 S R 10 E S 27 AC, DC, T 22 S R 10 E S 34 AB

Other: Southeast of Hwy 31

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6343

Longitude: -121.5156

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 153A: Tutni loamy coarse sand, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Riverine Flow-Through Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PFOC

Vegetation: Herbs: Juncus effusus (Common rush), Festuca idahoensis (Idaho fescue), Leymus cinereus (Basin wildrye)

Comments: Off-site determination. Agricultural use.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 15.3

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 1

Percent (approx.) of the AA Visited: 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 1

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 8/10/2010

Investigator(s): Alessandra Capretti

Data Sheet Numbers: SP 54A

Wetland Mapping Code: 113

Size (acres): 78.0

Location

Legal: T 22 S R 10 E S 27 CD, T 22 S R 10 E S 34 BA, CA, T 22 S R 10 E S 34 AB, DB, T 22 S R 10 E S 34 AC

Other: Northeast of Hwy 31

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6254

Longitude: -121.5166

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 153A: Tutni loamy coarse sand, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMF, PFOA, PFOC

Vegetation: Herbs: Hordeum jubatum (Foxtail barley), Leymus cinereus (Basin wildrye)

Comments: Off-site determination. Rural residential, agricultural use.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 78.0

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: < 1

Percent (approx.) of the AA Visited: < 1

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 1

Goal 6 Water Quality Resource: Yes

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

South Deschutes County Local Wetland Inventory

— Wetland Summary Sheet —

Date(s) of Field Verification: 8/10/2010

Investigator(s): Alessandra Capretti

Data Sheet Numbers: N/A

Wetland Mapping Code: 114

Size (acres): 31.0

Location

Legal: T 22 S R 10 E S 34 AC, BC, DC

Other: West of Huntington Rd

Basin: Deschutes River

Nearest Town: La Pine

Latitude: 43.6201

Longitude: -121.5210

Soils

Mapped Series: 29A: Cryaquolls, 0 to 3 percent slopes, 115A: Shanahan loamy coarse sand, low, 0 to 3 percent slopes, 153A: Tutni loamy coarse sand, 0 to 3 percent slopes

Hydrology

Primary Hydrology Source(s): Groundwater

Hydro-geomorphic (HGM) Classification(s): Slope Valley

Dominant Vegetation and Comments

Cowardin Classification(s): PEMC, PFOC

Vegetation: Herbs: Hordeum jubatum (Foxtail barley), Leymus cinereus (Basin wildrye)

Comments: Off-site determination. Rural residential, agricultural use.

Oregon Rapid Wetland Assessment Protocol (ORWAP)

Approximate Size of the Assessment Area (AA) in acres: 31.0

AA as Percent of the Entire Wetland: NA. This question was intended for cases where the AA is smaller than wetland.

Percent (approx.) of the Wetland Visited: 0

Percent (approx.) of the AA Visited: 0

Month & Year of ORWAP Training Attended by Investigator(s): 5/2010

Number of Wetlands Assessed by Investigators Using ORWAP: 1

Goal 6 Water Quality Resource: No

Wetland Classification Codes		
PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

Wetland Number	1	2	3	4	5	6a	6b	7	8
Tax Lot	2011060000600	2011060000600	2011060000800	201001D000300	201106C008200	201107B000101	201106C003000	201107B001700	201107B003500
		2011060000500			201106D008200	201107B000103		201107B002000	201107B003502
						201107B000102		201107B001600	
						201107B000104		201107B001900	
						201107B000119		201107B001400	
						201107B000105		201107B001300	
								201107B001500	

Wetland Number	9	10	11	12	13a	13b	13c	13d	14
Tax Lot	201107D000700	201107C013300	201107C016000	201013A025600	201013A009000	201013A011600	201013A009900	201013D002101	201013C000400
	201107D000600	201107C012400	201107C015900	201013A025700	201013A008700	201013A011500	201013A010000		201013C000700
	201107D000100	201107C012600		201118B004700	201013A008900		201013A009800		201013D000200
		201107C000300		201118B004800	201013A008800				201013D000400
		201107C012300		201118B003600					201013D001300
		201107C012500		201118B003800					201013C000800
		201107C002700		201118B005300					201013C001000
		201107C011900		201118B005500					201013C000300
		201107C012000		201118B003700					201013D000300
		201107C012700		201118B003900					201013C000100
		201107C001400		201118B005400					201013C000200
		201107C001500		201118B005600					201013C001700
		201107C002800		201118B003300					201013D000900
		201107C011700		201118B004000					201013C000900
		201107C011800		201118B004400					201013C001100
		201107C013100		201118B005100					201013D000700
		201107C013200		201118B005800					201013D000800
		201107C012200		201118B004500					201013D002999
		201107C012100		201118B004600					201013D003000
				201118B004100					201013D004400
				201118B004300					201013D002800
				201118B005000					201013D003200
				201118B005200					201013D003400
				201118B003400					201013D006800
				201118B005700					201013D009100
				201118B003500					201013D009300
				201118B004200					201013D000100
				201118B004900					201013D002000
									201013D003700
									201013D001100
									201013D003300
									201013D005100
									201013D006900
									201013D007600
									201013D003600
									201013D005300
									201013D005400
									201013D007100
									201013D007300
									201013D008600
									201013D008800
									201013D010600
									201013D012300
									201013D012500
									201013D004700
									201013D004800
									201013D007900

Wetland Number	14	14	15	16	17	18	19	20	21
Tax Lot	201013D008000	201118C002400	201013D017700	201024A015200	201024A015700	201024D000600	201024D000100	201024D000402	201024C000101
	201013D011500	201118C002600	201013D017900		201024A015800	201024A015100	201024D000403		201024D000402
	201013D011800	201118C003500	201013D019500		201024A015200	201024A015102			201024D000100
	201013D001000	201013C000600	201013D019800		201024A015300	201024B001401			201024D000401
	201013D002900	201013D000500	201013D018500		201024A015600	201024B006200			
	201013D003100	201013D001500	201013D018600			201024A016000			
	201013D004500	201013D001700	201013D019900			201024A015101			
	201013D004600	201013D003500	201013D020100			201024B001400			
	201013D007800	201013D004200	201013D017600			201024B001403			
	201013D008100	201013D004900	201013D018200			201024B006100			
	201013D012800	201013D006700	201013D018900			201024D000403			
	201013D001600	201013D007400	201013D018400			201024B001404			
	201013D004300	201013D008500	201013D018700			201024B005900			
	201013D005000	201013D009200	201013D020300						
	201013D005200	201013D012000	201013D018100						
	201013D008300	201013D012700	201013D018300						
	201013D009000	201118C002300	201013D018800						
	201013D009400	201118C002700	201013D020200						
	201013D012200	201013D001800	201013D017800						
	201013D005500		201013D019400						
	201013D007000		201013D019700						
	201013D007200		201013D019000						
	201013D008700		201013D019300						
	201013D008900		201024A015200						
	201013D010500		201118C001800						
	201013D012400		201013D018000						
	201013D012600		201013D019100						
	201013D009500		201013D020000						
	201013D009600								
	201013D011700								
	201013D007500								
	201013D007700								
	201013D008200								
	201013D008400								
	201013D011900								
	201013D012100								
	201118C002800								
	201118C002900								
	201118C002000								
	201118C002200								
	201118C003700								
	201118C003900								
	201118C001900								
	201118C002100								
	201118C003600								
	201118C003800								
	201118C002500								

Wetland Number	22	23	24	25	26a	26b	27a	27b	27c
Tax Lot	201024D000700	201024C000302	201023D000700	201023D004100	2010000001900	2010000001900	201025B008700	201025C001300	2010000001901
	201024D000800		201023D001000	201026AA05500		201025B007800	201025B008900	201025C001400	201025C001500
			201023D000800	2010000001700		201025B006500	201025C002100		
			201023D001500			201025B007700	201025C002300		
			201023D001100				201025B009100		
			201023D001300				201025B010000		
			201023D001400				201025B008800		
			201023D023000				201025B009000		
			201023D001200				201025C002000		
							201025C002200		
							201025C002400		
							201025B008300		
							201025B009400		
							201025B010100		
							201025C001900		
							201025C002600		
							201025B009500		
							201025B009600		
							201025B009900		
							201025B009700		
							201025B009800		
							201025C002900		
							201025B008400		
							201025B008600		
							201025C001600		
							201025C001800		
							201025C002500		
							201025C002700		
							201025B008500		
							201025B009200		
							201025C001700		
							201025C002800		

Wetland Number	28a	28b	29a	29b	29c	30	31	32	33
Tax Lot	201025C003300	201025C003600	201026AD03000	201025C003300	201026D003900	201026D007300	201026D006700	201026D007800	201026D005100
	201025C003400		201026AD03200	201025C003100	201026D003800	201026D007600	201026D006600		201026D005200
	201025C003500		201026AD03100	201025C003200	201025C003600	201026D007200	2010000001700		201026D008200
			201026AD03300	201026D000100		201026D007400	201026D006500		201026D005300
			201026AD02200	201026D003700		201026D007700			201026D008000
			201026AD02100	201026D003400		2010000001700			2010000001700
				201025C003400					201026D005400
				201026D000200					
				201025C003500					
				201026D000300					
				201026D003500					

Wetland Number	34	35	36	37	38	39	40	41	42
Tax Lot	201035A002300	201035B003700	201035B010800	201035B010800	201035C000100	201035C000200	201035C003100	201035C000100	2010340003800
	201035A001700	201035B003600	201035B011200	201035C000100	201035C000300		201035C003300	2010340003800	2010340003802
	201035A002500	201035B004100	201035B010900	201035C004200			201035C003200	2010340003803	2010340003804
	201035A002400	201035B003300		201035C004300			2010340003700	201035C000800	201035C001600
	201035A001400	201035B004000					2010340003801	201035C001000	211002B001800
	201035A001600	201035B003800					2010340003806	201035C000500	211003A000500
	201035A001800	201035B003200						201035C001300	211003A000100
	201035A002800	201035B003400						2010340003700	211003A000900
	201035A001900	201035B003500						201035C000700	211003A000600
	201035A002700	201035B004200						201035C001100	211003A000800
								201035C000400	211003A000200
								201035C000600	211003A010200
								201035C001200	
								201035C001400	
								211002B000100	
								211002B001900	
								201035C001500	

Wetland Number	43a	43b	43c	43d	43e	44	45	46	47
Tax Lot	211002B004500	211002B002500	201035C000700	211002B007600	211002B003500	2110030000500	211003A001500	2110030000500	2110030001000
	211002B004600	211002B002900	211002B000100	211002B007800	211002B003700	211003A010300	211003A001700	211003A003200	2110030000900
	211003A008900	211002B003000	211002B000300	2110000000600	211002B004600	211003A010200	2110030000500		211003D019000
	211003A009000	211003A000400	211002B000900	211002B006800	211002B003600	211003A000300	211003A002400		
	211003A009100	211003A000500	211002B001000	211002B006900	211002B003800		211003A002500		
		211002B003300	211002B000200	211002B007500	211002B004000		211003A001400		
		211002B002600	211002B000600	211002B007700	211002B004900		211003A001600		
		211002B002800	211002B001300	211002B006300	211002B004700		2110030000700		
		211002B002400	211002B001100	211002B007200	211002B004800		211003A001300		
		211002B003200	211002B000500	211002B007900	211002B003400		211003A002100		
		211002B002300	211002B000700	211002B008300	211002B003900		211003A002900		
		211002B003100	211002B001200	211002B006700	211002B004100		211003A002300		
			211002B000400	211002B007000	211002B005000		211003A002600		
				211002B008400	211002B004400		211003A001900		
				211002B008500	211002B005100		211003A002200		
				211002B008000			211003A002700		
				211002B008200			211003A001800		
				211002B006600			211003A003200		
				211002B007100					
				211002B007300					
				211002B007400					
				211002B008100					

Wetland Number	48	49	50a	50b	50c	51	52	53	54
Tax Lot	211003D018700	211003D009300	211003DD02700	211003DD01200	2110000000600	211003DD04400	211003C001700	211003DC03000	211010A002500
	211003D018900	211003D009500	211003DD02900	211003DD01400	211010A000200	211003DD03600	211003C000800		2110000000600
	211003DC01300	211003D009400	211003DD01900	211003DD00400	211003DD00600	211003DD03700	211003C001500		211010A001300
	211003DC01500	211003D009600	211003DD02200	211003DD00500		211003DD04000	211003C001600		211010A001600
	211003D018000	211003D009700	211003DD02800	211003DD01100		211003DD03800	211003C001400		211003DD04600
	211003D018100	211003D009900	211003DD03000	211003DD01300		211003DD03900	211003C001000		211003DD06100
	2110030001100	211003D009800	211003DD02600	211003DD00100		211003DD04100	211003C001300		211010A000300
	211003D018600		211003DD03300	211003DD00800		211003DD04300	2110030001300		211010A003200
	211003D018800		211003DD02000	211003DD01500		211003DD04200	211003C001200		211010A003400
	211003DC01200		211003DD02100	211003DD00200					211010A000900
	211003DC01400		211003DD03200	211003DD00300					211010A001200
	211003D017600		211003DD03400	211003DD00700					211010A004000
	211003D018400		211003DD01800	211003DD00900					211010A001400
	211003D019100		211003DD02300	211003DD00600					211010A001500
	211003DC01100		211003DD02500	211003DD01000					211003DC02900
	211003DC01800		211003DD01700						211003DD04500
	211003D017700		211003DD02400						211003DD04700
	211003D017800		211003DD03100						211010A000200
	2110030000800		211003DD03500						211010A000400
	211003A003100								211010A003100
	211003D018300								211010A003300
	211003D018500								211010A003500
	211003DC01700								211010A001700
	211003D018200								211003DD05100
	211003DC01600								211003DD05800
									211010A000500
									211010A003000
									211010A003700
									211003DD05200
									211003DD05300
									211003DD05600
									211010A001000
									211010A001100
									211003DC01000
									211010A000600
									211010A000800
									211010A002700
									211003DC02600
									211003DC02800
									211003DD04800
									211003DD05000
									211003DD05700
									211003DD05900
									211010A003600
									211010A003800
									211010A002900
									211010A001800

Wetland Number	54	55	56	57	58	59	60	61	62
Tax Lot	211003DC02700	211010A002300	2110000000601	2110000000601	2110000000601	2110000000601	2110000000601	2110000000601	2110000000601
	211003DD04900	2110000000601							
	211003DD06000								
	211010A000700								
	211010A002800								
	211010A003900								

Wetland Number	63	64	65	66	67	68	69	70	71a
Tax Lot	2010340003401	2010340003401	2010340003401	2010340003401	2010000001607	2010000001607	2010000001605	201031D000200	2010310000202
	2110030000400	2110030000500					2010000001607		
	2110030000500	2110030000600					2010000001600		
	211003A010400						2010000001606		
	211003A010500						2010000001608		
	211003A010300						2010000001700		
	211003A010200								

Wetland Number	71b	72	73	74a	74b	74c	75	76	77
Tax Lot	2010310000203	210923A000102	2011170001300	2011000002510	2011000002510	2011000002510	2011000002510	2011000002601	2011000000100
		210923A017700	2011170001700	201119A000600				2011000002508	201131A000900
		210923A017800	201118A010800	2011200001300				2011000002509	201131A001000
		210923A018000	201118D014500	201119A000500				201130A000705	201131A002400
		210923A017900	201118D014000	201119A000400				201130A000706	201131A002700
			201118D014400	2011200001000				201130D002400	201130D001600
			201118D013800	2011200001200				201130D002600	201130D003300
			201118D014100					201130A000200	201131A001500
			2011200000700					201130A000400	201131A001700
			201119A000200					201130A001500	201130D001500
			201119A000400					201130A001700	201131A001200
			2011200000600					201130D001600	201131A001900
			2011170000100					201130D001800	201130D003400
			2011170001400					201130D004600	201131A001400
								201130A001000	201131A001600
								201130A001400	201131A001800
								201130D002000	201130D002700
								201130A000300	201131A001101
								201130A000500	201131A001300
								201130A001600	201131A002500
								201130A000800	201131A002600
								201130A000900	201130D001400
								201130A000600	201130D001501
								201130A001100	201131A002100
								201130A001300	201131A002300
								201130D001900	201130D002800
								201130D002100	201131A001100
								201130D001700	201131A002200
								201130D001801	
								201130D002500	
								201130D002300	
								201130A000100	
								201130A000702	
								201130A001200	
								201130D002200	

Wetland Number	78	79	79	80	81	82	83	84	85
Tax Lot	201131B002700	201131A000900	2111000000100	2110000000400	2110000001409	2110000001409	2110000001500	2111000000800	2111000000906
	201131B002600	201131A002700	211106B001100		2110000000400	2110000001410	2111000000100	2111000000803	2111000000802
		201131B001200	211106B001800		2110000001410		2111000000800		2111000000900
		201131B001300	211106B002900		2110000001400				2111000000905
		201131C002100	211106B003600		2110000001300				
		201131C002400	211106B000700						
		201131C003900	211106B002200						
		201131C004000	211106B003900						
		201131B000300	211106B004100						
		201131B000500	211106B001300						
		201131C001200	211106B001600						
		201131C001400	211106B003000						
		201131C003000	211106B003100						
		201131C003300	211106B004900						
		201131B000100	211106C000200						
		201131B000800	211106B001000						
		201131B001600	211106B001700						
		201131C001600	211106B001900						
		201131C002800	211106B002100						
		201131C003600	211106B000800						
		201131B000200	211106B002300						
		201131B000400	211106B003800						
		201131B000700	211106B004000						
		201131B001000	211106B001500						
		201131B001700	211106B003300						
		201131B002000	211106B000300						
		201131C001300	211106B002600						
		201131C001500	211106B002800						
		201131C002900	211106B003500						
		201131C003200	211106B003700						
		201131C004700	201131A002900						
		201131A000800	201131B000600						
		201131B001100	201131B001900						
		201131C002200	201131C001800						
		201131C002300	201131C002600						
		201131C004100	201131C003400						
		201131C003500	201131C003800						
		201131C003700	211106B000200						
		201131C004600	211106B000900						
		201131A002800	211106B002000						
		201131C001700	211106B002700						
		201131C001900	211106B003400						
		201131C002500							
		201131C002700							
		2110000000401							
		211001A010500							
		211001A010501							

Wetland Number	86	87a	87b	88	89	90	91	92a	92b
Tax Lot	2111000000900	2111000000909	2111000000911	211013B005200	211013B001300	211014D004800	211023B000100	211023B000301	211023B000301
	2111000000910		2111000000912	211013B005400	211013B001500	211014D004900	211023A005300	211023B000100	211023D004700
	2111000000909		2111000000903	211013B005300	211013B003700	211013C000900	211023A005500	211023A005700	211023B000500
	2111000001100		2111000000910	2110000001401	211013B003800	211013C001100	211023A005200	211023B000300	211023C000101
	2111000000908		2111000000909		211013B000100	211014D004700		211023B000302	211023C000200
					211013B002200	211014D005400			211023D004800
					211013B003000	211014D005600			211023B000600
					2110000000400	211014D004400			211023C000100
					211013B004200	211013C001900			211023D004900
					211013B001200	211013C002000			211023D005000
					211013B001400	211014D006100			211023B000400
					211013B003600	211013C001000			211023D005400
					211013B003701	211013C001200			211023C000300
					2110000001400	211014D004200			211023D005300
					211013B001900	211014D005500			
					211013B003300	211014D004301			
					211013B003801	211014D004600			
					211013B000500	211014D005200			
					211013B002100	211013C000600			
					211013B003100	211013C001600			
					211013B001100	211013C002300			
					211013B003901	211014D005800			
					211013B001600	211013C001800			
					211013B001800	211013C002100			
					211013B002000	211013C000601			
					211013B003400	211013C000800			
					211013B004100	211014D005700			
					211013B001700	211014D005900			
					211013B004000	211013C001300			
						211013C001500			
						211013C001700			
						211013C002200			
						211023A000700			
						211023A000900			
						211014D004300			
						211014D005300			
						2110000001600			
						211013C000700			
						211013C001400			
						211014D006000			
						211023A000800			

Wetland Number	93a	93a	93a	93b	94	95	96	97	98
Tax Lot	211014D004400	211023D002400	211035A001401	211026D002900	2110000003100	2110000001416	2210000000221	2210000000221	2210000000225
	211014D006100	211023D003900	211035A002100	211026D002800	2110000001416	2110000001403	2210000000224	2210000000111	
	211014D004200	211023D004100	211035A002200	211026D002700	2110000001415	211035C007800	2210000000200	2210000000100	
	211014D004301	211026A001300	211035A001900	211026D002600	2110000001403	221002BA04100		2210000000225	
	211023A002900	211026A000600	211035A002000		211035A002100	221002BA03400			
	211023A001000	211026A001700	211035A001800		211035A002200	221002BA03600			
	211023A001300	211026A002400	211035A001400		211035A002000	2210000000224			
	211023A003700	211026A003100	211035A001500		211035A002300	2210000001002			
	211023A003800	211026A001000	211035A001700		211035A000900	221002BA03800			
	211023A003300	211026A001200	211035A000900		211035A001000	221002BA00199			
	211023A004200	211026A002700	211035A001000		211035C006200	221002BA03500			
	211023A001100	211026A002900	211035A001002		211035C007000	221002BA03700			
	211023A001200	211026D001300	211035A001100		211035A000199	221002BA03900			
	211023A003900	211026D001500	211023A003500		211035A000800	221002BA05200			
	211023A001400	211026A001600	211023A003400		211035A001002	221002BA04200			
	211023A003100	211026A002300	211014D004300		211035C006100	221002BA04400			
	211023A004500	211026A002500	2110000001600		211035C005500	221002BA03301			
	211023A004601	211026A002000	211014D006000		211035C006900	221002BA03300			
	211023D002300	211026A002100	211023A001500		211035C007100	2210000000200			
	211023D002500	211026A003500	211023A003600		211035A000700	2210000000300			
	211023D004000	211026A000700	211023D002000		211035A001100	221002BA04300			
	211023D004200	211026A000900	211023D003800		211035D000200				
	211023A001600	211026A003200	211026A001500						
	211023A001800	211026A003400	211026A002200						
	211023A004900	211026A002600	211026A003300						
	211023D001900	211026A002800	211026D000200						
	211023D001400	211026D001400	211026D000800						
	211023D001500	211026A001800	211026D001200						
	211023D003200	211026A001900	211026D001900						
	211023D003300	211026D001600	211035A001600						
	211023D001600	211026D000400	211035A001200						
	211023D001700	211026D001000							
	211023D003100	211026D001700							
	211023D003400	211026D000601							
	211023D002800	211026D000700							
	211023D003000	211026D002100							
	211023D003500	211026D000100							
	211023D003700	211026D000300							
	211023A001700	211026D000900							
	211023A004100	211026D001100							
	211023D002900	211026D001800							
	211023D003600	211026D002000							
	211023D004300	211026D000500							
	211023A001900	211026D000600							
	211023A003000	211026D002200							
	211023A004600	211026D002300							
	211023A004800	211035A001300							

Wetland Number	99	99	99	100a	100b	101	102	103a	103a
Tax Lot	2210000000208	221009C008000	221016B005200	221016A025000	221016B000201	221017A003800	221017B016200	2209000000200	221017B006200
	2210000001600	221009C009500	221016B005400	221016A024900	221016B000202	221017A004700	221017B016400	2210000002300	221017B007500
	2210000000223	221009C009700	221017A007800	221016B000100	221016B000101	221017A004000	221017B015500	2210000002400	221017B003500
	2210000000100	221009C006900	221017A002500		221016B000100	221017A004200	221017B016600	2209000000209	221017B004200
	2210000000225	221009C007500	221017A002400			221017A004900	221017B015800	2210000002402	221017B005400
	2210000001907	221009C008200	221017A001600			221017A005100	221017B015900	221017A003600	221017B006100
	221008D004400	221009C008600	221017A001800			221017A003900	221017B016300	221017A005300	221017B007900
	221008D003800	221009C009300	221017A002000			221017A004300	221017B016500	221017A005500	221017B010700
	221008D005200	221009C010000	221008D005000			221017A005200	221017B016000	221017A007000	221017A002600
	221008D005500	221009C005100	221008D005400			221017A004100	221017B016700	221017A007200	221017A003100
	221008D005600	221009C005800	221009C003400			221017A004800		221017B003100	221017A003300
	221008D005100	221009C006000	221009C004100					221017B004900	221017A005600
	221008D005300	221009C008300	221009C005200					221017B006400	221017A005800
	221008D004600	221009C008500	221009C005900					221017B006600	221017A006500
	221008D004700	221009C009200	221009C006700					221017A002700	221017A006700
	221009C004900	221009C009400	221009C007700					221017A003000	221017B003400
	221009C000200	221009C009900	221009C008400					221017A006200	221017B003600
	221009C004300	221009C010100	221009C009100					221017A006300	221017B004100
	221009C005000	221009C005600	221009C010200					221017A007700	221017B004300
	221009C005700	221009C007100	221017A002200					221017A002800	221017B006700
	221009C003300	221009C007300						221017A002900	221017B007100
	221009C003500	221009C008700						221017B002200	221017B007600
	221009C004200	221009C008800						221017B003700	221017B007800
	221009C004400	221009C010300						221017B004000	221017B010300
	221009C006800	221009C003000						221017B005500	221017A003500
	221009C007000	221009C004500						221017B005600	221017A005400
	221009C007400	221009C004700						221017B007300	221017A006900
	221009C007600	221009C006500						221017B007400	221017A007100
	221009C000100	221009C007900						221017A006000	221017B003000
	221009C003600	221009C008100						221017A006100	221017B003200
	221009C003900	221009C009600						221017A007800	221017B004500
	221009C005300	221009C009800						221017A007900	221017B005000
	221009C005400	221016B000301						221017B003900	221017B006300
	221009C007101	221016B000201						221017B005700	221017B006500
	221009C007200	221016B004600						221017B005800	221017B008000
	221009C008900	221017A001700						221017B007200	221017B016300
	221009C009000	221017A001900						221017A003200	221017A003400
	221009C000101	221016B000101						221017A005700	221017A005900
	221009C000102	221016B000102						221017A006400	221017A006600
	221009C003700	221016B004700						221017A007500	221017A007300
	221009C003800	221016B005000						221017A008101	221017B003300
	221009C005500	221016B004800						221017A007400	221017B005200
	221009C004600	221016B004900						221017A007600	221017B005900
	221009C004800	221016A024900						221017A008100	221017B007000
	221009C006400	221016B000300						221017B005100	221017B007700
	221009C006600	221016B004500						221017B005300	
	221009C007800	221016B005300						221017B006000	

Wetland Number	103b	104a	104b	105	106	107	108	109	110
Tax Lot	2210000002402	2210000001001	2210000002300	2209000000200	2209000001703	2209000001800	2210000001800	2210000002802	2210000002805
	221017B009800	2210000002300		2209000000209	2209000001707	2209000003000	221015DA01100	2210000000100	2210270000103
	221017B010000				220925C000100	2209000000206	2210220000200	2210000001800	2210270000300
	221017B009400				2209000001800		221015DA01200	2210220000101	2210270000108
	221017B009600				2209000001702		2210220000300	2210220000200	2210270000109
	221017B009300				220925C000300			221023C002401	2210220000101
	221017B010100				220925C000301			2210220000100	2210270000105
	221017B009700				2209000000200				2210270000104
	221017B009900				2209000001700				2210270000099
	221017B009500				2209000001701				2210270000100
	221017B010200				220925C000104				2210270000102
					220925C000200				2210270000107
					220925C000101				2210220000900
					220925C000102				2210270000600
					220925C000801				2210270000106

Wetland Number	111	112	113	114
Tax Lot	2210270000300	2210000002803	2210000002803	2210000001900
	2210270000400	2210270000101	2210000000100	2210000004100
	2210270000500	2210270000901	2210270000101	2210000002803
	2210270000099	2210270001500		

APPENDIX E: COWARDIN GLOSSARY OF TERMS

Table E-1 and the quoted descriptions below are provided for Cowardin classes, water regimes and special modifiers identified in the South Deschutes County LWI study area. For further information about Cowardin class, water regime and special modifiers refer to *Classification of Wetlands and Deepwater Habitats of the United States* document (Cowardin et al., 1979).

Table E-1. Cowardin Wetland Habitat Classes and Water Regimes found in the South Deschutes County Local Wetland Inventory

Labeled Feature on Map	Cowardin Class	Water Regime	Special Modifier
PABF	PAB: Palustrine Aquatic Bed	F: Semipermanently Flooded	--
PABFx	PAB: Palustrine Aquatic Bed	F: Semipermanently Flooded	x: excavated
PABH	PAB: Palustrine Aquatic Bed	H: Permanently Flooded	--
PEMA	PEM: Palustrine Emergent	A: Temporarily Flooded	--
PEMB	PEM: Palustrine Emergent	B: Saturated	
PEMC	PEM: Palustrine Emergent	C: Seasonally Flooded	--
PEMCx	PEM: Palustrine Emergent	C: Seasonally Flooded	x: Excavated
PEME	PEM: Palustrine Emergent	E: Seasonally Flooded/Saturated	
PEMF	PEM: Palustrine Emergent	F: Semipermanently Flooded	--
PEMH	PEM: Palustrine Emergent	H: Permanently Flooded	
PEMY	PEM: Palustrine Emergent	Y: Saturated/Semi-permanently/ Seasonally Flooded	
PFOA	PFO: Palustrine Forested	A: Temporarily Flooded	--
PFOB	PFO: Palustrine Forested	B: Saturated	--
PFOC	PFO: Palustrine Forested	C: Seasonally Flooded	--
PFOE	PFO: Palustrine Forested	E: Seasonally Flooded/Saturated	

Labeled Feature on Map	Cowardin Class	Water Regime	Special Modifier
PFOY	PFO: Palustrine Forested	Y: Saturated/Semi-permanently/ Seasonally Flooded	
PSSA	PSS: Palustrine Scrub-shrub	A: Temporarily Flooded	--
PSSC	PSS: Palustrine Scrub-shrub	C: Seasonally Flooded	--
PSSE	PSS: Palustrine Scrub-shrub	E: Seasonally Flooded/Saturated	--
PSSY	PSS: Palustrine Scrub-shrub	Y: Saturated/Semi-permanently/ Seasonally Flooded	--
PUBF	PUB: Palustrine Unconsolidated Bottom	F: Semipermanently Flooded	--
PUBFh	PUB: Palustrine Unconsolidated Bottom	F: Semipermanently Flooded	h: Diked/Impounded
PUBFx	PUB: Palustrine Unconsolidated Bottom	F: Semipermanently Flooded	x: Excavated
PUSHh	PUS: Palustrine Unconsolidated Shore	H: Permanently Flooded	--
PUSCx	PUS: Palustrine Unconsolidated Shore	C: Seasonally Flooded	x: Excavated
R2UBH	R2UB: Riverine Upper Perennial Unconsolidated Bottom	H: Permanently Flooded	
R2UBHx	R2UB: Riverine Lower Perennial Unconsolidated Bottom	H: Permanently Flooded	x: Excavated
R4SBC	R4SB: Riverine Streambed	C: Seasonally Flooded	
R4SBCx	R4SB: Riverine Streambed	C: Seasonally Flooded	x: Excavated

Palustrine System

Definition.The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 percent. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 m at low water; and (4) salinity due to ocean-derived salts less than 0.5 percent.

Limits. The Palustrine System is bounded by upland or by any of the other four Systems.

Description. The Palustrine System was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States. It also includes the small, shallow, permanent or intermittent water bodies often called ponds. Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes. They may also occur as islands in lakes or rivers. The erosive forces of wind and water are of minor importance except during severe floods.

The emergent vegetation adjacent to rivers and lakes is often referred to as "the shore zone" or the "zone of emergent vegetation" (Reid and Wood 1976), and is generally considered separately from the river or lake. As an example, Hynes (1970:85) wrote in reference to riverine habitats, "We will not here consider the long list of emergent plants which may occur along the banks out of the current, as they do not belong, strictly speaking, to the running water habitat. " There are often great similarities between wetlands lying adjacent to lakes or rivers and isolated wetlands of the same class in basins without open water.

Subsystems. None.

Classes. Rock Bottom, Unconsolidated Bottom, Aquatic Bed, Unconsolidated Shore, Moss-Lichen Wetland, Emergent Wetland, Scrub-Shrub Wetland, and Forested Wetland.

Unconsolidated Bottom

Definition. The Class Unconsolidated Bottom includes all wetland and deepwater habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent. Water regimes are restricted to subtidal, permanently flooded, intermittently exposed, and semipermanently flooded.

Description. Unconsolidated Bottoms are characterized by the lack of large stable surfaces for plant and animal attachment. They are usually found in areas with lower energy than Rock Bottoms, and may be very unstable. Exposure to wave and current action, temperature, salinity, and light penetration determines the composition and distribution of organisms.

Most macroalgae attach to the substrate by means of basal holdfast cells or discs; in sand and mud, however, algae penetrate the substrate and higher plants can successfully root if wave action and currents are not too strong. Most animals in unconsolidated sediments live within the substrate, e.g., Macoma and the amphipod Melita. Some, such as the polychaete worm Chaetopterus, maintain permanent burrows, and others may live on the surface, especially in coarse-grained sediments.

In the Marine and Estuarine Systems, Unconsolidated Bottom communities are relatively stable. They vary from the Arctic to the tropics, depending largely on temperature, and from the open ocean to the upper end of the estuary, depending on salinity. Thorson (1957) summarized and described characteristic types of level-bottom communities in detail.

In the Riverine System, the substrate type is largely determined by current velocity, and plants and animals exhibit a high degree of morphologic and behavioral adaptation to flowing water. Certain species are confined to specific substrates and some are at least more abundant in one type of substrate than in others. According to Hynes (1970:208), "The larger the stones, and hence the more complex the substratum, the more diverse is the invertebrate fauna." In the Lacustrine and Palustrine Systems, there is usually a high correlation, within a given water body, between the nature of the substrate and the number of species and individuals. For example, in the profundal bottom of eutrophic lakes where light is absent, oxygen content is low, and carbon dioxide concentration is high, the sediments are ooze-like organic materials and species diversity is low. Each substrate type typically supports a relatively distinct community of organisms (Reid and Wood 1976:262).

Aquatic Bed

Definition. The Class Aquatic Bed includes wetlands and deepwater habitats dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Water regimes include subtidal, irregularly exposed, regularly flooded, permanently flooded, intermittently exposed, semipermanently flooded, and seasonally flooded.

Emergent Wetland

Definition. The Emergent Wetland Class is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. All water regimes are included except subtidal and irregularly exposed.

Description. In areas with relatively stable climatic conditions, Emergent Wetlands maintain the same appearance year after year. In other areas, such as the prairies of the central United States, violent climatic fluctuations cause them to revert to an open water phase in some years (Stewart and Kantrud 1972). Emergent Wetlands are found throughout the United States and occur in all Systems except the Marine. Emergent Wetlands are known by many names, including marsh, meadow, fen, prairie pothole, and

slough. Areas that are dominated by pioneer plants which become established during periods of low water are not Emergent Wetlands and should be classified as Vegetated Unconsolidated Shores or Vegetated Streambeds.

Shrub-Scrub Wetland

Definition. The Class Scrub-Shrub Wetland includes areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. All water regimes except subtidal are included.

Description. Scrub-Shrub Wetlands may represent a successional stage leading to Forested Wetland, or they may be relatively stable communities. They occur only in the Estuarine and Palustrine Systems, but are one of the most widespread classes in the United States (Shaw and Fredine 1956). Scrub-Shrub Wetlands are known by many names, such as shrub swamp (Shaw and Fredine 1956), shrub carr (Curtis 1959), bog (Heinselman 1970), and pocosin (Kologiski 1977). For practical reasons we have also included forests composed of young trees less than 6 m tall.

Forested Wetland

Definition. The Class Forested Wetland is characterized by woody vegetation (i.e., trees) that is 6 m tall or taller. All water regimes are included except subtidal.

Description. Forested Wetlands are most common in the eastern United States and in those sections of the West where moisture is relatively abundant, particularly along rivers and in the mountains. They occur only in the Palustrine and Estuarine Systems and normally possess an overstory of trees, an understory of young trees or shrubs, and a herbaceous layer. Forested Wetlands in the Estuarine System, which include the mangrove forests of Florida, Puerto Rico, and the Virgin Islands, are known by such names as swamps, hammocks, heads, and bottoms. These names often occur in combination with species names or plant associations such as cedar swamp or bottom.

Streambed

Definition. The Class Streambed includes all wetland contained within the Intermittent Subsystem of the Riverine System and all channels of the Estuarine System or of the Tidal Subsystem of the Riverine System that are completely dewatered at low tide. Water regimes are restricted to irregularly exposed, regularly flooded, irregularly flooded, seasonally flooded, temporarily flooded, and intermittently flooded.

Description. Streambeds vary greatly in substrate and form depending on the gradient of the channel, the velocity of the water, and the sediment load. The substrate material frequently changes abruptly between riffles and pools, and complex patterns of bars may form on the convex side of single channels or be included as islands within the bed of braided streams (Crickmay 1974). In mountainous areas the entire channel may be cut through bedrock. In most cases streambeds are not vegetated because of the scouring

effect of moving water, but, like Unconsolidated Shores, they may be colonized by "pioneering" annuals or perennials during periods of low flow or they may have perennial emergents and shrubs that are too scattered to qualify the area for classification as Emergent Wetland or Scrub-Shrub Wetland.

Unconsolidated Shore

Definition. The Class Unconsolidated Shore includes all wetland habitats having three characteristics: (1) unconsolidated substrates with less than 75 percent areal cover of stones, boulders, or bedrock; (2) less than 30 percent areal cover of vegetation other than pioneering plants; and (3) any of the following water regimes: irregularly exposed, regularly flooded, irregularly flooded, seasonally flooded, temporarily flooded, intermittently flooded, saturated, or artificially flooded. Intermittent or intertidal channels of the Riverine System and intertidal channels of the Estuarine System are classified as Streambed.

Description. Unconsolidated Shores are characterized by substrates lacking vegetation except for pioneering plants that become established during brief periods when growing conditions are favorable. Erosion and deposition by waves and currents produce a number of landforms such as beaches, bars, and flats, all of which are included in this Class. Unconsolidated Shores are found adjacent to Unconsolidated Bottoms in all Systems; in the Palustrine and Lacustrine Systems, the Class may occupy the entire basin. As in Unconsolidated Bottoms, the particle size of the substrate and the water regime are the important factors determining the types of plant and animal communities present. Different substrates usually support characteristic invertebrate fauna. Faunal distribution is controlled by waves, currents, interstitial moisture, salinity, and grain size (Hedgpeth 1957; Ranwell 1972; Riedl and McMahan 1974).

Aquatic Bed

Description. Aquatic Beds represent a diverse group of plant communities that requires surface water for optimum growth and reproduction. They are best developed in relatively permanent water or under conditions of repeated flooding. The plants are either attached to the substrate or float freely in the water above the bottom or on the surface.

Water Regime Modifiers

Precise description of hydrologic characteristics requires detailed knowledge of the duration and timing of surface inundation, both yearly and long-term, as well as an understanding of groundwater fluctuations. Because such information is seldom available, the water regimes that, in part, determine characteristic wetland and deepwater plant and animal communities are described here in only general terms. Water regimes are grouped under two major headings, Tidal and Nontidal.

Tidal Water Regime Modifiers are used for wetlands and deepwater habitats in the Estuarine and Marine Systems and Nontidal Modifiers are used for all nontidal parts of

the Palustrine, Lacustrine, and Riverine Systems. The Tidal Subsystem of the Riverine System and tidally influenced parts of the Palustrine and Lacustrine Systems require careful selection of Water Regime Modifiers. We designate subtidal and irregularly exposed wetlands and deepwater habitats in the Palustrine, Riverine, and Lacustrine Systems as *permanently flooded-tidal* rather than subtidal, and Palustrine, Riverine, and Lacustrine wetlands regularly flooded by the tide as *regularly flooded*. If Palustrine, Riverine, and Lacustrine wetlands are only irregularly flooded by tides, we designate them by the appropriate nontidal Water Regime Modifier with the word tidal added, as in *seasonally flooded-tidal*.

Though not influenced by oceanic tides, nontidal water regimes may be affected by wind or seiches in lakes. Water regimes are defined in terms of the growing season, which we equate to the frost-free period (see the U.S. Department of Interior National Atlas 1970:110-111 for generalized regional delineation). The rest of the year is defined as the dormant season, a time when even extended periods of flooding may have little influence on the development of plant communities.

Permanently Flooded. Water covers the land surface throughout the year in all years. Vegetation is composed of obligate hydrophytes.

Intermittently Exposed. Surface water is present throughout the year except in years of extreme drought.

Semipermanently Flooded. Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.

Seasonally Flooded. Surface water is present for extended periods especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface.

Saturated. The substrate is saturated to the surface for extended periods during the growing season, but surface water is seldom present.

Temporarily Flooded. Surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season. Plants that grow both in uplands and wetlands are characteristic of the temporarily flooded regime.

Intermittently Flooded. The substrate is usually exposed, but surface water is present for variable periods without detectable seasonal periodicity. Weeks, months, or even years may intervene between periods of inundation. The dominant plant communities under this regime may change as soil moisture conditions change. Some areas exhibiting this regime do not fall within our definition of wetland because they do not have hydric soils or support hydrophytes.

Artificially Flooded. The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams. The vegetation growing on these

areas cannot be considered a reliable indicator of water regime. Examples of artificially flooded wetlands are some agricultural lands managed under a rice-soybean rotation, and wildlife management areas where forests, crops, or pioneer plants may be flooded or dewatered to attract wetland wildlife. Neither wetlands within or resulting from leakage from man-made impoundments, nor irrigated pasture lands supplied by diversion ditches or artesian wells, are included under this modifier and hardwoods.

Special Modifiers

Many wetlands and deepwater habitats are man-made, and natural ones have been modified to some degree by the activities of man or beavers. Since the nature of these modifications often greatly influences the character of such habitats, special modifying terms have been included here to emphasize their importance. The following Modifiers should be used singly or in combination wherever they apply to wetlands and deepwater habitats.

Excavated
Lies within a basin or channel excavated by man.

Impounded
Created or modified by a barrier or dam which purposefully or unintentionally obstructs the outflow of water. Both man-made dams and beaver dams are included.

Diked
Created or modified by a man-made barrier or dike designed to obstruct the inflow of water.

Partly Drained
The water level has been artificially lowered, but the area is still classified as wetland because soil moisture is sufficient to support hydrophytes. Drained areas are not considered wetland if they can no longer support hydrophytes.

Farmed
The soil surface has been mechanically or physically altered for production of crops, but hydrophytes will become reestablished if farming is discontinued.

Artificial
Refers to substrates classified as Rock Bottom, Unconsolidated Bottom, Rocky Shore, and Unconsolidated Shore that were emplaced by man, using either natural materials such as dredge spoil or synthetic materials such as discarded automobiles, tires, or concrete. Jetties and breakwaters are examples of Artificial Rocky Shores.

APPENDIX F: ORWAP RAW DATA

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1			Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-b	30	31	32	33	34	35	36	37	38	39	40	41	42
2	D1	*Mitigation Investment*	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere (0= no, 1= yes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3			(no information)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	D2	*Conservation Investment*	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance habitat mainly as part of a **voluntary effort** not used explicitly to offset impacts elsewhere (0= no, 1= yes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5			(no information)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	D3	Normal Land Cover	This AA (a) is **not** along (or in the bienniel floodplain of) a large stream or river where riparian woodlands would be typical **and** (b) had a presettlement vegetation class **not** dominated by trees as indicated by the Oregon Explorer web site Enter 1 if both are true, 0= if not.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	D4	Enciosed by Roads	Draw a circle of radius of 2 miles centered on the AA. Do paved public roads completely encircle the AA? (0= no, 1= yes)	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
8	D5	Distance to Nearest Busy Road	The distance from the **center** of the AA to the nearest road with an average daytime traffic rate of at least 1 vehicle/ minute is:																																										
9			>1 mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
10			0.5- 1 mile	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
11			1000-2600 ft	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0
12			500-1000 ft	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
13			100-500 ft	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
14			<100 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	D6	Forest Landscape Extent	Draw a circle of radius of 2 **miles** centered on the AA. Including the AA itself, the cumulative amount of forest (regardless of patch sizes) is:																																										
16			<5% of the circle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17			5 to 20%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18			20 to 50%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
19			50 to 80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
20			>80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	D7	Forest Tract Proximity	The minimum distance from the AA **edge** to the closest forested tract or corridor **larger than 100 acres** is:																																										
22			<100 ft, or contiguous and not separated from the AA by impervious surface, open water, bare dirt, or lawn	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1
23			100-300 ft; or <100 ft but separated by impervious surface, open water, bare dirt, or lawn	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24			300-1000 ft	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
25			>1000 ft	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0
26	D8	Size of Nearby Forest	The largest patch or corridor that is forested and is either within the AA, or begins within the AA, or **begins within 0.5 mile** of the AA edge, and then extends outward occupies:																																										
27			<1 acre of forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28			1-10 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29			10-100 acres	0	0	1	0	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30			100-1000 acres	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
31			>1000 acres	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
32	D9	Natural Land Cover Extent	Within a 2-mile radius measured from the center of the AA, the percent of the **land** that has *natural land cover* is:																																										
33			<5% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34			5 to 20% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35			20 to 60% of the land	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0
36			60 to 90% of the land	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1
37			>90% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	D10	Type of Land Cover Alteration	Within a 2-mile radius measured from the center of the AA, the percent of the area that is not "natural land cover" or water is mostly:																																										
39			impervious surface, e.g., paved road, parking lot, building, exposed rock	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
40			bare pervious surface, e.g., dirt or gravel road, plowed fields, dunes, recent clearcut or landslide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1			Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-b	30	31	32	33	34	35	36	37	38	39	40	41	42
41			cultivated row crops, orchard, tree plantations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42			artificially landscaped areas or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43			grassland grazed or mowed to a height usually shorter than 4 inches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44			other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45			(none of above; land cover is >90% natural land cover)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	D11	Proximity to Natural Land Cover	The minimum distance from the AA edge to the closest tract or corridor of natural (not necessarily native) land cover larger than 100 acres and not interrupted by roads or other gaps of disturbed land wider than 100 ft, is:																																											
47			<100 ft, or the AA contains >100 acres of vegetation, or >100 acres of natural land cover is contiguous to the AA (not separated by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0	1	1	1
48			<100 ft, but separated from the wetland by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49			100-300 ft; and not separated from the wetland by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
50			100-300 ft, but separated from the wetland by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51			> 300 ft	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0
52	D12	Size of Largest Nearby Tract or Corridor of Natural Land Cover	The largest patch or corridor that is natural land cover and is either (a) entirely within the AA, or (b) begins within the AA, or (c) begins within 0.5 mile of the AA edge, and then extends outward occupies:																																										
53			<1 acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54			1-10 acres	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55			10-100 acres	0	1	0	0	1	1	1	1	1	0	1	1	0	0	1	0	1	1	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56			100-1000 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
57			>1000 acres	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0		0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
58	D13	Local Wetland Uniqueness	Within 0.5 mile of the center of the AA, the AA and vegetation of the same form that is contiguous to it together provide (select all that apply):																																										
59			the largest patch of currently ungrazed, unmowed, and unshaded herbaceous vegetation	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
60			the largest patch of unshaded shrubland (excluding plantations)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61			the largest patch of deciduous or evergreen trees (excluding plantations)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62			NONE of above	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
63	D14	Cropland & Wetland in Landscape	Draw a circle of radius of 2 miles centered on the AA. The amount of cropland, airport, golf course, and /or herbaceous wetland (including this one) is:																																										
64			<5% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65			5 to 20%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
66			20 to 50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67			50 to 80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68			>80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	D15	Proximity to Cropland-Wetland	The distance from the AA edge to the closest tract of cropland, airport, golf course, and /or herbaceous wetland (including this one) larger than 1 acre is:																																										
70			<100 ft, or the AA contains >1 acre of such cover, or is contiguous to >1 acre of such cover	0	1	1	0	1	0	0	0	1	1	1	1	0	1	0	1	1	1	1	1	0	1	0	1	1	0	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1	1	1
71			100 to 300 ft	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
72			300 to 1000 ft	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
73			>1000 ft	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	D16	Ponded Water in Landscape	Draw a circle of radius of 2 miles centered on the AA. Including water ponded in the AA itself or in a fringing water body, the amount of non-tidal water that is ponded during most of the year is:																																										

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1			Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-b	30	31	32	33	34	35	36	37	38	39	40	41	42
75			<5% of the circle, located in 5 or fewer ponds or lakes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
76			<5% of the circle, located in >5 ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77			5 to 30%, located in 10 or fewer ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78			5 to 30%, located in >10 ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79			>30%, located in 15 or fewer ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80			>30%, located in >15 ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	D17	Ponded Water Proximity	The minimum distance from the AA to the closest non-tidal wetland, pond, or lake that is **larger than** 1 acre, is ponded most of the year, and is **not** part of the same associated wetland, pond, or lake, is:																																											
82			<300 ft, and connected with a natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83			<300 ft, but no uninterrupted natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84			300-1000 ft, and connected with a natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85			300-1000 ft, but no uninterrupted natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86			>1000 ft, and connected with a natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
87			>1000 ft, but no uninterrupted natural land corridor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
88	D18	Large Ponded Water Proximity	The distance from the AA edge to the closest (but separate) non-tidal body of water that is ponded during most of the year and is **larger than 20 acres** (about 1000 ft on a side) is:																																										
89			<1 mile	1	1	1	0	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90			1-5 miles	0	0	0	1	0	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
91			>5 miles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
92	D19	Tidal Proximity	The distance from the AA edge to the closest tidal body of water is:																																										
93			<1 mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94			1-5 miles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95			>5 miles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
96	D20	*Upslope Soil Erodibility Risk*	Using the Web Soil Survey procedure described in the ORWAP manual, the rating of the soil map unit which occupies the largest percentage of the zone 200 ft uphill from the AA is:																																										
97			very severe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98			severe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99			moderate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100			slight	0	1	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
101			(could not determine)	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
102	D21	Wetland Size	Using the Web Soil Survey AOI tool to measure it, what is the **area** of the largest patch of emergent, shrub, or forest vegetation within the wetland of which the AA is a part? See instructions in last column and figures in Appendix A of the Manual.	W	W	W		W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
103			<0.1 acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104			0.1 - 1 acre	1	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105			1 to 10 acres	0	0	0	0	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	0	1	0	0	0	1	1	1	0	0	1	1	0	0	0	0	0	0
106			10 to 100 acres	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	0	0	0	1	1	0	0	1	1	1	1	1	1
107			100 to 1000 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108			>1000 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	D22	*Wetland Size Uniqueness in Watershed*	From the Wetland Explorer web site (see Manual), determine the 12-digit code number for this wetland's HUC6 (Hydrologic Unit Code, i.e., watershed). Then turn to the HUC4, HUC5, and HUC6 worksheets and compare the size of the wetland (of which this AA is a part) with that of the largest wetlands of the same class in the same HUC4 (first 8 digits), the same HUC5 (first 10 digits), and the same HUC6 (12 digits). Enter "1" for **all** that apply below:	W	W	W		W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
110			the vegetated part of this AA's wetland is as large or larger than any of its class mapped in its HUC4 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111			the vegetated part of this AA's wetland is as large or larger than any of its class mapped in its HUC5 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1			Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-b	30	31	32	33	34	35	36	37	38	39	40	41	42
112			the vegetated part of this AA's wetland is as large or larger than any of its class mapped in its HUC6 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113			none of above	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114			data are inadequate (NWI mapping not >90% completed in HUC)	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
115	D23	*Wetland Number & Diversity Uniqueness*	Turn to the HUCbest worksheet. Is this AA located in one of the HUCs that are listed as having a large diversity of wetland types relative to area of wetlands (column 3), or a large number (column 4) or area (column 5) of wetlands relative to area of the HUC? Enter "1" for **all** that apply below:																																												
116			yes, for the HUC4 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117			yes, for the HUC5 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118			yes, for the HUC6 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119			none of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
120			data are inadequate (NWI mapping not completed in HUC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	D24	Historical Hydrologic Connectivity	Compared to the wetland **originally present** at this location (just prior to settlement in 1851), the current wetland is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
122			**same size and boundaries**, approximately. For example, wetland boundary may be nearly identical to hydric soil boundary and/or maps of presettlement wetland vegetation	0	1	0	1	1	0	0	0	1	0	1	0	0	0	0	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
123			**smaller** (50-99% of the original size) and/or **severed** (by roads, dikes, drained soils, etc) from **a few** historically connected wetlands that may no longer exist. Soil map may show hydric soil extending somewhat beyond current wetland boundary.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124			**much smaller** (<50% of the original size) and/or **extensively severed** (by roads, dikes, drained soils) from **many** historically connected wetlands that may no longer exist. Soil map may show hydric soil extending far beyond current wetland boundary.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125			**larger** (due to damming of stream or runoff, excavation, removal of obstructions, irrigation, etc. **that flooded soils which probably were not mapped as "hydric"**) or has been connected to wetlands from which it existed in isolation just prior to settlement.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126			**no wetland** was present at this location originally (none of the AA is mapped even as partially-hydric soil; the entire AA apparently resulted from impoundment, excavation, or regrading of upland non-hydric soils)	1	0	1	0	0	1	1	0	0	0	0	1	1	1	1	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
127	D25	Special Conservation Designations of the Wetland or Local Area	According to the Oregon Explorer web site or other sources noted below:																																											
128			a) the AA is within or is **connected to** (at least seasonally) a stream or other water body **within 0.5 mile** that has been designated as **Essential Indigenous Anadromous Salmonid Habitat (ESH)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129			b) the AA is within or contiguous to a **Special Protected Area** managed by a conservation group or designated as specially protected for conservation by a state or federal resource agency, as indicated online at http://oregonexplorer.info/wetlands/orwap/ .	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130			c) the AA is within or contiguous to a **Wetland Priority Area** as determined by ODFW and ORNHIC, and indicated online at http://oregonexplorer.info/wetlands/orwap/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131			d) the AA is within an IBA (Important Bird Area, as officially designated in the **IBA worksheet**, and/or the web site given in column E)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132			NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1			Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-b	30	31	32	33	34	35	36	37	38	39	40	41	42
133	D26	*Non-anadromous Fish Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare non-anadromous fish species in the vicinity of this wetland is:																																											
134			high (≥ 0.75 for maximum score, or ≥ 0.90 for score sum), or there is a recent (within 5 yrs) onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135			intermediate (i.e., not as described above or below)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
136			low (≤ 0.33 for both the maximum score this group's score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	D27	*Invertebrate Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare invertebrate species in the vicinity of this wetland is:																																											
139			high (≥ 0.75 for maximum score, or for this group's score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140			low (< 0.75 for maximum score AND for this group's score sum, but not 0 for both)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
142	D28	*Amphibian or Reptile of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare amphibian or reptile species in the vicinity of this wetland is:																																											
143			high (≥ 0.60 for maximum score, or >0.90 for score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144			intermediate (i.e., not as described above or below)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145			low (≤ 0.21 for maximum score AND <0.15 for score sum, but not 0 for both)	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
147	D29	*Nesting Waterbird Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare nesting waterbird species in the vicinity of this wetland is:																																											
148			high (≥ 0.60 for maximum score, or ≥1.00 for this group's score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149			intermediate (i.e., not as described above or below)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150			low (≤ 0.09 for maximum score and for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
152	D30	*Non-breeding (Feeding) Waterbird Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare non-breeding (feeding) waterbird species in the vicinity of this wetland is:																																											
153			high (≥ 0.33 for maximum score, or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154			low (< 0.33 for maximum score and for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1			Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-b	30	31	32	33	34	35	36	37	38	39	40	41	42
155			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
156	D31	*Songbird, Raptor, or Mammal Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare songbird, raptor, or mammal species in the vicinity of this wetland is:																																											
157			high (≥ 0.60 for maximum score, or >xx for score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
158			intermediate (i.e., not as described above or below)	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159			low (≤ 0.09 for maximum score AND <xx for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
160			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
161	D32	*Plant Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare plant species in the vicinity of this wetland is:																																											
162			high (≥ 0.75 for maximum score, or > 4.00 for score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163			intermediate (i.e., not as described above or below)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164			low (≤ 0.12 for maximum score AND < 0.20 for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
166	D33	*Floodable Property*	According to the Oregon Explorer web site:																																											
167			The AA is tidal, or is either (a) **not** within a 100-yr floodplain of a river, or (b) there are **no** inhabited buildings or cropland within 2 miles downslope that are within the 100-yr floodplain. Mark "1" then SKIP TO D35.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
168			**Inhabited buildings** within 1 mile downslope from the AA also are within the 100-yr floodplain	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1
169			**Croplands** but no inhabited buildings are within 1 mile downslope from the AA, and that cropland is also within the 100-yr floodplain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170			Inhabited buildings within **1-2 miles** downslope from the AA are also are within the 100-yr floodplain	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0
171			Croplands but no inhabited buildings are within 1-2 miles downslope from the AA, and that cropland is also within the 100-yr floodplain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172			No floodplain data are available, and damage from river floods has not occurred within 2 miles downgradient. Mark "1" then SKIP to D35.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	D34	*Downslope Storage*	Between the AA and any floodable buildings or cropland located within 2 miles downslope:																																											
174			river flow is regulated **and** there are many detention ponds and wetlands capable of storing water.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
175			river flow is regulated **or** there are many detention ponds and wetlands capable of storing water.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176			NONE of the above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177	D35	*Wetland Relative Elevation in Watershed*	According to Oregon Explorer map showing this AA's position within its **HUC4** watershed, the AA is [see Manual for specific guidance]:																																										
178			in the upper one-third of its watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179			in the middle one-third of its watershed	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1			Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-b	30	31	32	33	34	35	36	37	38	39	40	41	42
180			in the lower one-third of its watershed, or is included in a 100-yr floodplain, or is closer than about 2 miles from a channel known to be wider than 50 ft (stream order 4 or larger),	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181	D36	Contributing Area (CA) Percent	The area of the wetland (and of any lake or pond of which this AA is a part), relative to its contributing area (CA) as defined using procedures in the Manual, is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
182			<1% of its CA, or most of the wetland is tidal, or water drawn from other surface water bodies (e.g., flood irrigation) is main source of water	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
183			1 to 10% of its CA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
184			10 to 100% of its CA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185			Larger than the area of its CA (wetland has essentially no CA, e.g., isolated by dikes with no input channels, or is in terrain so flat that a CA can't be delineated). SKIP TO D40.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
186	D37	Unvegetated Surface in the Contributing Area	The proportion of the CA comprised of buildings, roads, parking lots, other pavement, exposed bedrock, and other impervious surface is about :	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
187			>25%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
188			10 to 25%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
189			<10%, or wetland is tidal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
190	D38	Upslope Storage	The cumulative area of other wetlands, detention ponds,and reservoirs in the same CA is:	W	W	W		W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
191			Much (>10x) greater than the area of this wetland (plus any contiguous pond or lake), or inflow is strongly regulated by dams etc.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
192			Somewhat greater than the area of this wetland (plus any contiguous pond or lake) and flows to wetland are not strongly regulated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193			Less than the area of this wetland (plus any contiguous pond or lake), or wetland is tidal, or no upslope wetlands/ ponds, and no inflow regulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
194	D39	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as indicated by the following: (a) input channel is present, (b) CA slopes are steep, (c) input channels have been straightened, (d) upslope wetlands have been ditched extensively, (e) land cover is mostly non-forest, and/or (f) most CA soils are shallow and/or have high runoff coefficients). This statement is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
195			Mostly true	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
196			Somewhat true	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
197			Mostly untrue, or wetland is tidal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
198	D40	Known Water Quality Issues in the Input Water	Within 1 mile upstream from the wetland, at least one of the major sources of surface water to this wetland (at least seasonally) has been designated as Water Quality Limited (303d) for at least one of the parameters below. Obtain from web site only -- do not guess. Select all that apply.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
199			total suspended solids (TSS), sedimentation, or turbidity	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
200			phosphorus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
201			nitrate or ammonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
202			toxics, dioxin, heavy metals (iron, manganese, lead, zinc, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203			temperature	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
204			None of above, or degraded water cannot reach wetland, or no data.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
205	D41	Known Water Quality Issues Below the AA	Within 1 mile downstream or downslope from this wetland, there is at least one stream or other water body that has been designated as Water Quality Limited (303d) for at least one of the parameters below. Obtain from web site only -- do not guess. Select all that apply.	W	W	W		W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
206			total suspended solids (TSS), sedimentation, or turbidity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
1			Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-b	30	31	32	33	34	35	36	37	38	39	40	41	42
207			phosphorus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
208			nitrate or ammonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
209			toxics, dioxin, heavy metals (iron, manganese, lead, zinc, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
210			temperature	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
211			None of above, or no data.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
212	D42	Type of Outflow Connection to 303d	At least part of the AA is connected to the downstream 303d water mentioned above:																																											
213			for 9 or more continuous months annually (persistent water in a stream, ditch, lake, or other water body)	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1
214			intermittently (at least once annually, but for less than 9 months continually)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
215			Not connected, or connected less than annually	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
216	D43	Drinking Water Source (DEQ)	According to the ODEQ Lasar database, the AA is within:																																											
217			the source area for a surface-water (SW) drinking water source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
218			the source area for a groundwater (GW) drinking water source	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
219			Neither of above	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
220	D44	Groundwater Risk Designations	The AA is (select all that apply):																																											
221			within a designated Groundwater Management Area (ODEQ): http://www.deq.state.or.us/WQ/groundwater/docs/mapgwmas.pdf	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
222			within a designated Sole Source Aquifer area (EPA): the North Florence Dunal Aquifer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
223			NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
224	D45	Mean Annual Precipitation	According to the PRISM Data Explorer, annual precipitation in the vicinity has normally been:																																											
225			<10 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
226			10-12 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
227			13-19 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
228			20-47 inches per year	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
229			48-77 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230			>77 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
231	D46	County Rank for Phosphorus Loading	The phosphorus loading rank of the county in which the AA is located is: (select one); see Table 6 in WQprob worksheet)																																											
232			top 4 in Oregon (Marion, Malheur, Umatilla, Linn)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
233			top 18 (see Table 6 in WQprob worksheet)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
234			bottom 18 (see Table 6 in WQprob worksheet)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
235			bottom 4 (Josephine, Hood River, Lincoln, Clatsop)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
236	D47	County Rank for Nitrogen Loading	The nitrogen loading rank of the county in which the AA is located is: (select one; see Table 7 in WQprob worksheet)																																											
237			top 4 in Oregon (Marion, Malheur, Umatilla, Linn)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
238			top 18 (see Table 7 in WQprob worksheet)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239			bottom 18 (see Table 7 in WQprob worksheet)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
240			bottom 4 (Curry, Josephine, Lincoln, Clatsop)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241	D48	Estuarine Position	The AA's relative position in the estuary is (SKIP if nontidal):																																											
242			lower 1/3 (often on a bay and distant from the head-of-tide of a major river; includes most saline tidal wetlands)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
243			mid 1/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
244			upper 1/3 (near the head-of-tide of a major river; includes most brackish and fresh tidal wetlands)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
245	D49	Salinity	The usual maximum water-surface salinity during high tide in summer in the main channel or bay closest to the AA is (SKIP if nontidal):																																											
246			>30 parts per thousand (undiluted seawater)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
247			5-30 ppt (mesohaline, polyhaline)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
248			0.5 - 5 ppt (oligohaline)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
249			<0.5 ppt (fresh)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250			no data for nearby locations found at the ODEQ LASAR web site or from other sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ
1			Assessment Area	43a-e	44	45	46	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85
2	D1	*Mitigation Investment*	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere (0= no, 1= yes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3			(no information)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	D2	*Conservation Investment*	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance habitat mainly as part of a **voluntary effort** not used explicitly to offset impacts elsewhere (0= no, 1= yes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5			(no information)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	D3	Normal Land Cover	This AA (a) is **not** along (or in the bienniel floodplain of) a large stream or river where riparian woodlands would be typical **and** (b) had a presettlement vegetation class **not** dominated by trees as indicated by the Oregon Explorer web site Enter 1 if both are true, 0= if not.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	D4	Enciosed by Roads	Draw a circle of radius of 2 miles centered on the AA. Do paved public roads completely encircle the AA? (0= no, 1= yes)	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	1	1	0
8	D5	Distance to Nearest Busy Road	The distance from the **center** of the AA to the nearest road with an average daytime traffic rate of at least 1 vehicle/ minute is:																																												
9			>1 mile	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
10			0.5- 1 mile	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0	0
11			1000-2600 ft	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	1	0
12			500-1000 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
13			100-500 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14			<100 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	D6	Forest Landscape Extent	Draw a circle of radius of 2 **miles** centered on the AA. Including the AA itself, the cumulative amount of forest (regardless of patch sizes) is:																																												
16			<5% of the circle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17			5 to 20%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18			20 to 50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0
19			50 to 80%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1
20			>80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	D7	Forest Tract Proximity	The minimum distance from the AA **edge** to the closest forested tract or corridor **larger than 100 acres** is:																																												
22			<100 ft, or contiguous and not separated from the AA by impervious surface, open water, bare dirt, or lawn	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23			100-300 ft; or <100 ft but separated by impervious surface, open water, bare dirt, or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24			300-1000 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	1	1	1
25			>1000 ft	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0
26	D8	Size of Nearby Forest	The largest patch or corridor that is forested and is either within the AA, or begins within the AA, or **begins within 0.5 mile** of the AA edge, and then extends outward occupies:																																												
27			<1 acre of forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28			1-10 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29			10-100 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
30			100-1000 acres	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
31			>1000 acres	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1
32	D9	Natural Land Cover Extent	Within a 2-mile radius measured from the center of the AA, the percent of the **land** that has *natural land cover* is:																																												
33			<5% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34			5 to 20% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35			20 to 60% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
36			60 to 90% of the land	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1
37			>90% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	D10	Type of Land Cover Alteration	Within a 2-mile radius measured from the center of the AA, the percent of the area that is not "natural land cover" or water is mostly:																																												
39			impervious surface, e.g., paved road, parking lot, building, exposed rock	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
40			bare pervious surface, e.g., dirt or gravel road, plowed fields, dunes, recent clearcut or landslide	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1

	A	B	C	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ
1			Assessment Area	43a-e	44	45	46	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85
41			cultivated row crops, orchard, tree plantations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42			artificially landscaped areas or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43			grassland grazed or mowed to a height usually shorter than 4 inches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44			other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45			(none of above; land cover is >90% natural land cover)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
46	D11	Proximity to Natural Land Cover	The minimum distance from the AA edge to the closest tract or corridor of natural (not necessarily native) land cover larger than 100 acres and not interrupted by roads or other gaps of disturbed land wider than 100 ft, is:																																												
47			<100 ft, or the AA contains >100 acres of vegetation, or >100 acres of natural land cover is contiguous to the AA (not separated by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	1	1	1	1	1	1	1
48			<100 ft, but separated from the wetland by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49			100-300 ft; and not separated from the wetland by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50			100-300 ft, but separated from the wetland by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51			> 300 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	0	0	0	0	0	0
52	D12	Size of Largest Nearby Tract or Corridor of Natural Land Cover	The largest patch or corridor that is natural land cover and is either (a) entirely within the AA, or (b) begins within the AA, or (c) begins within 0.5 mile of the AA edge, and then extends outward occupies:																																												
53			<1 acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54			1-10 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55			10-100 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56			100-1000 acres	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
57			>1000 acres	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1
58	D13	Local Wetland Uniqueness	Within 0.5 mile of the center of the AA, the AA and vegetation of the same form that is contiguous to it together provide (select all that apply):																																												
59			the largest patch of currently ungrazed, unmowed, and unshaded herbaceous vegetation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	1	1	0
60			the largest patch of unshaded shrubland (excluding plantations)	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0
61			the largest patch of deciduous or evergreen trees (excluding plantations)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62			NONE of above	1	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	0	1	1	0	0	1
63	D14	Cropland & Wetland in Landscape	Draw a circle of radius of 2 miles centered on the AA. The amount of cropland, airport, golf course, and /or herbaceous wetland (including this one) is:																																												
64			<5% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
65			5 to 20%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
66			20 to 50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67			50 to 80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68			>80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	D15	Proximity to Cropland-Wetland	The distance from the AA edge to the closest tract of cropland, airport, golf course, and /or herbaceous wetland (including this one) larger than 1 acre is:																																											
70			<100 ft, or the AA contains >1 acre of such cover, or is contiguous to >1 acre of such cover	1	1	1	1	1	1	0	0	0	0	1	1	1	1	0	0	1	1	1	0	1	0	1	1	1	1	1	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1
71			100 to 300 ft	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72			300 to 1000 ft	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
73			>1000 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
74	D16	Ponded Water in Landscape	Draw a circle of radius of 2 miles centered on the AA. Including water ponded in the AA itself or in a fringing water body, the amount of non-tidal water that is ponded during most of the year is:																																											

	A	B	C	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ
1			Assessment Area	43a-e	44	45	46	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85
75			<5% of the circle, located in 5 or fewer ponds or lakes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
76			<5% of the circle, located in >5 ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77			5 to 30%, located in 10 or fewer ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78			5 to 30%, located in >10 ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79			>30%, located in 15 or fewer ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80			>30%, located in >15 ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	D17	Ponded Water Proximity	The minimum distance from the AA to the closest non-tidal wetland, pond, or lake that is **larger than** 1 acre, is ponded most of the year, and is **not** part of the same associated wetland, pond, or lake, is:																																												
82			<300 ft, and connected with a natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
83			<300 ft, but no uninterrupted natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84			300-1000 ft, and connected with a natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
85			300-1000 ft, but no uninterrupted natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86			>1000 ft, and connected with a natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
87			>1000 ft, but no uninterrupted natural land corridor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1
88	D18	Large Ponded Water Proximity	The distance from the AA edge to the closest (but separate) non-tidal body of water that is ponded during most of the year and is **larger than 20 acres** (about 1000 ft on a side) is:																																												
89			<1 mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90			1-5 miles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	0	0	0	0
91			>5 miles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	1	1	1	1	1
92	D19	Tidal Proximity	The distance from the AA edge to the closest tidal body of water is:																																											
93			<1 mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94			1-5 miles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95			>5 miles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
96	D20	*Upslope Soil Erodibility Risk*	Using the Web Soil Survey procedure described in the ORWAP manual, the rating of the soil map unit which occupies the largest percentage of the zone 200 ft uphill from the AA is:																																											
97			very severe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98			severe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99			moderate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100			slight	1	1	1	1	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0
101			(could not determine)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	D21	Wetland Size	Using the Web Soil Survey AOI tool to measure it, what is the **area** of the largest patch of emergent, shrub, or forest vegetation within the wetland of which the AA is a part? See instructions in last column and figures in Appendix A of the Manual.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
103			<0.1 acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104			0.1 - 1 acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105			1 to 10 acres	0	0	0	0	0	0	1	0	0	1	1	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1
106			10 to 100 acres	1	1	1	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
107			100 to 1000 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	0
108			>1000 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	D22	*Wetland Size Uniqueness in Watershed*	From the Wetland Explorer web site (see Manual), determine the 12-digit code number for this wetland's HUC6 (Hydrologic Unit Code, i.e., watershed). Then turn to the HUC4, HUC5, and HUC6 worksheets and compare the size of the wetland (of which this AA is a part) with that of the largest wetlands of the same class in the same HUC4 (first 8 digits), the same HUC5 (first 10 digits), and the same HUC6 (12 digits). Enter "1" for **all** that apply below:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
110			the vegetated part of this AA's wetland is as large or larger than any of its class mapped in its HUC4 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111			the vegetated part of this AA's wetland is as large or larger than any of its class mapped in its HUC5 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ
1			Assessment Area	43a-e	44	45	46	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85
112			the vegetated part of this AA's wetland is as large or larger than any of its class mapped in its HUC6 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
113			none of above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
114			data are inadequate (NWI mapping not >90% completed in HUC)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0
115	D23	*Wetland Number & Diversity Uniqueness*	Turn to the HUCbest worksheet. Is this AA located in one of the HUCs that are listed as having a large diversity of wetland types relative to area of wetlands (column 3), or a large number (column 4) or area (column 5) of wetlands relative to area of the HUC? Enter "1" for **all** that apply below:																																													
116			yes, for the HUC4 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117			yes, for the HUC5 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118			yes, for the HUC6 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119			none of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
120			data are inadequate (NWI mapping not completed in HUC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	D24	Historical Hydrologic Connectivity	Compared to the wetland **originally present** at this location (just prior to settlement in 1851), the current wetland is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
122			**same size and boundaries**, approximately. For example, wetland boundary may be nearly identical to hydric soil boundary and/or maps of presettlement wetland vegetation	1	0	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	1	1	1	0	0	0
123			**smaller** (50-99% of the original size) and/or **severed** (by roads, dikes, drained soils, etc) from **a few** historically connected wetlands that may no longer exist. Soil map may show hydric soil extending somewhat beyond current wetland boundary.	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124			**much smaller** (<50% of the original size) and/or **extensively severed** (by roads, dikes, drained soils) from **many** historically connected wetlands that may no longer exist. Soil map may show hydric soil extending far beyond current wetland boundary.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125			**larger** (due to damming of stream or runoff, excavation, removal of obstructions, irrigation, etc. **that flooded soils which probably were not mapped as "hydric"**) or has been connected to wetlands from which it existed in isolation just prior to settlement.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0
126			**no wetland** was present at this location originally (none of the AA is mapped even as partially-hydric soil; the entire AA apparently resulted from impoundment, excavation, or regrading of upland non-hydric soils)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	1	0	0	0	0	0	0	1
127	D25	Special Conservation Designations of the Wetland or Local Area	According to the Oregon Explorer web site or other sources noted below:																																											
128			a) the AA is within or is **connected to** (at least seasonally) a stream or other water body **within 0.5 mile** that has been designated as **Essential Indigenous Anadromous Salmonid Habitat (ESH)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129			b) the AA is within or contiguous to a **Special Protected Area** managed by a conservation group or designated as specially protected for conservation by a state or federal resource agency, as indicated online at http://oregonexplorer.info/wetlands/orwap/ .	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130			c) the AA is within or contiguous to a **Wetland Priority Area** as determined by ODFW and ORNHIC, and indicated online at http://oregonexplorer.info/wetlands/orwap/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
131			d) the AA is within an IBA (Important Bird Area, as officially designated in the **IBA worksheet**, and/or the web site given in column E)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132			NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1

	A	B	C	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ
1			Assessment Area	43a-e	44	45	46	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85
133	D26	*Non-anadromous Fish Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare non-anadromous fish species in the vicinity of this wetland is:																																												
134			high (≥ 0.75 for maximum score, or ≥ 0.90 for score sum), or there is a recent (within 5 yrs) onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135			intermediate (i.e., not as described above or below)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
136			low (≤ 0.33 for both the maximum score this group's score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
138	D27	*Invertebrate Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare invertebrate species in the vicinity of this wetland is:																																												
139			high (≥ 0.75 for maximum score, or for this group's score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140			low (< 0.75 for maximum score AND for this group's score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
142	D28	*Amphibian or Reptile of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare amphibian or reptile species in the vicinity of this wetland is:																																											
143			high (≥ 0.60 for maximum score, or >0.90 for score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144			intermediate (i.e., not as described above or below)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
145			low (≤ 0.21 for maximum score AND <0.15 for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
147	D29	*Nesting Waterbird Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare nesting waterbird species in the vicinity of this wetland is:																																											
148			high (≥ 0.60 for maximum score, or ≥1.00 for this group's score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149			intermediate (i.e., not as described above or below)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150			low (≤ 0.09 for maximum score and for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
152	D30	*Non-breeding (Feeding) Waterbird Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare non-breeding (feeding) waterbird species in the vicinity of this wetland is:																																											
153			high (≥ 0.33 for maximum score, or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154			low (< 0.33 for maximum score and for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ
1			Assessment Area	43a-e	44	45	46	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85
155			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
156	D31	*Songbird, Raptor, or Mammal Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare songbird, raptor, or mammal species in the vicinity of this wetland is:																																												
157			high (≥ 0.60 for maximum score, or >xx for score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
158			intermediate (i.e., not as described above or below)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159			low (≤ 0.09 for maximum score AND <xx for score sum, but not 0 for both)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
161	D32	*Plant Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare plant species in the vicinity of this wetland is:																																												
162			high (≥ 0.75 for maximum score, or > 4.00 for score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163			intermediate (i.e., not as described above or below)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164			low (≤ 0.12 for maximum score AND < 0.20 for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
166	D33	*Floodable Property*	According to the Oregon Explorer web site:																																												
167			The AA is tidal, or is either (a) **not** within a 100-yr floodplain of a river, or (b) there are **no** inhabited buildings or cropland within 2 miles downslope that are within the 100-yr floodplain. Mark "1" then SKIP TO D35.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
168			**Inhabited buildings** within 1 mile downslope from the AA also are within the 100-yr floodplain	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0
169			**Croplands** but no inhabited buildings are within 1 mile downslope from the AA, and that cropland is also within the 100-yr floodplain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170			Inhabited buildings within **1-2 miles** downslope from the AA are also are within the 100-yr floodplain	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	1
171			Croplands but no inhabited buildings are within 1-2 miles downslope from the AA, and that cropland is also within the 100-yr floodplain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172			No floodplain data are available, and damage from river floods has not occurred within 2 miles downgradient. Mark "1" then SKIP to D35.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	D34	*Downslope Storage*	Between the AA and any floodable buildings or cropland located within 2 miles downslope:																																												
174			river flow is regulated **and** there are many detention ponds and wetlands capable of storing water.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
175			river flow is regulated **or** there are many detention ponds and wetlands capable of storing water.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176			NONE of the above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177	D35	*Wetland Relative Elevation in Watershed*	According to Oregon Explorer map showing this AA's position within its HUC4 watershed, the AA is [see Manual for specific guidance]:																																											
178			in the upper one-third of its watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179			in the middle one-third of its watershed	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1

	A	B	C	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ
1			Assessment Area	43a-e	44	45	46	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85
180			in the lower one-third of its watershed, or is included in a 100-yr floodplain, or is closer than about 2 miles from a channel known to be wider than 50 ft (stream order 4 or larger),	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0
181	D36	Contributing Area (CA) Percent	The area of the wetland (and of any lake or pond of which this AA is a part), relative to its contributing area (CA) as defined using procedures in the Manual, is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
182			<1% of its CA, or most of the wetland is tidal, or water drawn from other surface water bodies (e.g., flood irrigation) is main source of water	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
183			1 to 10% of its CA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
184			10 to 100% of its CA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185			Larger than the area of its CA (wetland has essentially no CA, e.g., isolated by dikes with no input channels, or is in terrain so flat that a CA can't be delineated). SKIP TO D40.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
186	D37	Unvegetated Surface in the Contributing Area	The proportion of the CA comprised of buildings, roads, parking lots, other pavement, exposed bedrock, and other impervious surface is about :	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
187			>25%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
188			10 to 25%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
189			<10%, or wetland is tidal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
190	D38	Upslope Storage	The cumulative area of other wetlands, detention ponds,and reservoirs in the same CA is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
191			Much (>10x) greater than the area of this wetland (plus any contiguous pond or lake), or inflow is strongly regulated by dams etc.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
192			Somewhat greater than the area of this wetland (plus any contiguous pond or lake) and flows to wetland are not strongly regulated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193			Less than the area of this wetland (plus any contiguous pond or lake), or wetland is tidal, or no upslope wetlands/ ponds, and no inflow regulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
194	D39	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as indicated by the following: (a) input channel is present, (b) CA slopes are steep, (c) input channels have been straightened, (d) upslope wetlands have been ditched extensively, (e) land cover is mostly non-forest, and/or (f) most CA soils are shallow and/or have high runoff coefficients). This statement is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
195			Mostly true	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
196			Somewhat true	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
197			Mostly untrue, or wetland is tidal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
198	D40	Known Water Quality Issues in the Input Water	Within 1 mile upstream from the wetland, at least one of the major sources of surface water to this wetland (at least seasonally) has been designated as Water Quality Limited (303d) for at least one of the parameters below. Obtain from web site only -- do not guess. Select all that apply.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
199			total suspended solids (TSS), sedimentation, or turbidity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
200			phosphorus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
201			nitrate or ammonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
202			toxics, dioxin, heavy metals (iron, manganese, lead, zinc, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203			temperature	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
204			None of above, or degraded water cannot reach wetland, or no data.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
205	D41	Known Water Quality Issues Below the AA	Within 1 mile downstream or downslope from this wetland, there is at least one stream or other water body that has been designated as Water Quality Limited (303d) for at least one of the parameters below. Obtain from web site only -- do not guess. Select all that apply.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
206			total suspended solids (TSS), sedimentation, or turbidity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ
1			Assessment Area	43a-e	44	45	46	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85
207			phosphorus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
208			nitrate or ammonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
209			toxics, dioxin, heavy metals (iron, manganese, lead, zinc, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
210			temperature	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1
211			None of above, or no data.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0
212	D42	Type of Outflow Connection to 303d	At least part of the AA is connected to the downstream 303d water mentioned above:																																											
213			for 9 or more continuous months annually (persistent water in a stream, ditch, lake, or other water body)	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	0
214			intermittently (at least once annually, but for less than 9 months continually)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
215			Not connected, or connected less than annually	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
216	D43	Drinking Water Source (DEQ)	According to the ODEQ Lasar database, the AA is within:																																											
217			the source area for a surface-water (SW) drinking water source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
218			the source area for a groundwater (GW) drinking water source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
219			Neither of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1
220	D44	Groundwater Risk Designations	The AA is (select all that apply):																																											
221			within a designated Groundwater Management Area (ODEQ): http://www.deq.state.or.us/WQ/groundwater/docs/mapgwmas.pdf	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
222			within a designated Sole Source Aquifer area (EPA): the North Florence Dunal Aquifer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
223			NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
224	D45	Mean Annual Precipitation	According to the PRISM Data Explorer, annual precipitation in the vicinity has normally been:																																											
225			<10 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
226			10-12 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
227			13-19 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
228			20-47 inches per year	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
229			48-77 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230			>77 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
231	D46	County Rank for Phosphorus Loading	The phosphorus loading rank of the county in which the AA is located is: (select one); see Table 6 in WQprob worksheet)																																											
232			top 4 in Oregon (Marion, Malheur, Umatilla, Linn)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
233			top 18 (see Table 6 in WQprob worksheet)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
234			bottom 18 (see Table 6 in WQprob worksheet)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
235			bottom 4 (Josephine, Hood River, Lincoln, Clatsop)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
236	D47	County Rank for Nitrogen Loading	The nitrogen loading rank of the county in which the AA is located is: (select one; see Table 7 in WQprob worksheet)																																											
237			top 4 in Oregon (Marion, Malheur, Umatilla, Linn)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
238			top 18 (see Table 7 in WQprob worksheet)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239			bottom 18 (see Table 7 in WQprob worksheet)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
240			bottom 4 (Curry, Josephine, Lincoln, Clatsop)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241	D48	Estuarine Position	The AA's relative position in the estuary is (SKIP if nontidal):																																											
242			lower 1/3 (often on a bay and distant from the head-of-tide of a major river; includes most saline tidal wetlands)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
243			mid 1/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
244			upper 1/3 (near the head-of-tide of a major river; includes most brackish and fresh tidal wetlands)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
245	D49	Salinity	The usual maximum water-surface salinity during high tide in summer in the main channel or bay closest to the AA is (SKIP if nontidal):																																										
246			>30 parts per thousand (undiluted seawater)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
247			5-30 ppt (mesohaline, polyhaline)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
248			0.5 - 5 ppt (oligohaline)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
249			<0.5 ppt (fresh)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
250			no data for nearby locations found at the ODEQ LASAR web site or from other sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0

	A	B	C	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM
1			Assessment Area	86	87	88	89	90	91	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103a-b	104a-b	105	106	107	108	109	110	111	112	113	114
2	D1	*Mitigation Investment*	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere (0= no, 1= yes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3			(no information)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	D2	*Conservation Investment*	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance habitat mainly as part of a **voluntary effort** not used explicitly to offset impacts elsewhere (0= no, 1= yes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5			(no information)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	D3	Normal Land Cover	This AA (a) is **not** along (or in the bienniel floodplain of) a large stream or river where riparian woodlands would be typical **and** (b) had a presettlement vegetation class **not** dominated by trees as indicated by the Oregon Explorer web site Enter 1 if both are true, 0= if not.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	D4	Enciosed by Roads	Draw a circle of radius of 2 miles centered on the AA. Do paved public roads completely encircle the AA? (0= no, 1= yes)	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	1	1	0	0	0	0
8	D5	Distance to Nearest Busy Road	The distance from the **center** of the AA to the nearest road with an average daytime traffic rate of at least 1 vehicle/ minute is:																															
9			>1 mile	0	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
10			0.5- 1 mile	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
11			1000-2600 ft	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
12			500-1000 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13			100-500 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0
14			<100 ft	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	D6	Forest Landscape Extent	Draw a circle of radius of 2 **miles** centered on the AA. Including the AA itself, the cumulative amount of forest (regardless of patch sizes) is:																															
16			<5% of the circle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17			5 to 20%	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18			20 to 50%	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1
19			50 to 80%	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0
20			>80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	D7	Forest Tract Proximity	The minimum distance from the AA **edge** to the closest forested tract or corridor **larger than 100 acres** is:																															
22			<100 ft, or contiguous and not separated from the AA by impervious surface, open water, bare dirt, or lawn	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1
23			100-300 ft; or <100 ft but separated by impervious surface, open water, bare dirt, or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24			300-1000 ft	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
25			>1000 ft	1	0	0	0	1	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
26	D8	Size of Nearby Forest	The largest patch or corridor that is forested and is either within the AA, or begins within the AA, or **begins within 0.5 mile** of the AA edge, and then extends outward occupies:																															
27			<1 acre of forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28			1-10 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29			10-100 acres	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30			100-1000 acres	0	0	1	1	1	1	0	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0	1	0	0	1	1	0	0	0	0
31			>1000 acres	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	0	1	1	0	0
32	D9	Natural Land Cover Extent	Within a 2-mile radius measured from the center of the AA, the percent of the **land** that has *natural land cover* is:																															
33			<5% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34			5 to 20% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35			20 to 60% of the land	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36			60 to 90% of the land	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
37			>90% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	D10	Type of Land Cover Alteration	Within a 2-mile radius measured from the center of the AA, the percent of the area that is not "natural land cover" or water is mostly:																															
39			impervious surface, e.g., paved road, parking lot, building, exposed rock	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0
40			bare pervious surface, e.g., dirt or gravel road, plowed fields, dunes, recent clearcut or landslide	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0

	A	B	C	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM
1			Assessment Area	86	87	88	89	90	91	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103a-b	104a-b	105	106	107	108	109	110	111	112	113	114
41			cultivated row crops, orchard, tree plantations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
42			artificially landscaped areas or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43			grassland grazed or mowed to a height usually shorter than 4 inches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44			other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45			(none of above; land cover is >90% natural land cover)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	D11	Proximity to Natural Land Cover	The minimum distance from the AA edge to the closest tract or corridor of natural (not necessarily native) land cover larger than 100 acres and not interrupted by roads or other gaps of disturbed land wider than 100 ft, is:																														
47			<100 ft, or the AA contains >100 acres of vegetation, or >100 acres of natural land cover is contiguous to the AA (not separated by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn)	1	1	1	1	0	0	0	1	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
48			<100 ft, but separated from the wetland by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49			100-300 ft; and not separated from the wetland by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50			100-300 ft, but separated from the wetland by impervious surface or wide (>50 ft) stretches of open water, bare ground, or lawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51			> 300 ft	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
52	D12	Size of Largest Nearby Tract or Corridor of Natural Land Cover	The largest patch or corridor that is natural land cover and is either (a) entirely within the AA, or (b) begins within the AA, or (c) begins within 0.5 mile of the AA edge, and then extends outward occupies:																														
53			<1 acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54			1-10 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55			10-100 acres	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56			100-1000 acres	0	0	1	1	1	1	0	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0	1	0	1	1	1	1	0
57			>1000 acres	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	1
58	D13	Local Wetland Uniqueness	Within 0.5 mile of the center of the AA, the AA and vegetation of the same form that is contiguous to it together provide (select all that apply):																														
59			the largest patch of currently ungrazed, unmowed, and unshaded herbaceous vegetation	0	1	0	1	0	0	0	1	1	0	1	0	0	1	0	0	0	1	0	1	1	1	0	0	1	0	0	0	0
60			the largest patch of unshaded shrubland (excluding plantations)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0
61			the largest patch of deciduous or evergreen trees (excluding plantations)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62			NONE of above	1	0	1	0	1	1	1	0	0	1	0	1	1	0	1	1	1	0	1	0	0	0	1	1	0	1	1	1	1
63	D14	Cropland & Wetland in Landscape	Draw a circle of radius of 2 miles centered on the AA. The amount of cropland, airport, golf course, and /or herbaceous wetland (including this one) is:																														
64			<5% of the land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65			5 to 20%	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
66			20 to 50%	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67			50 to 80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68			>80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	D15	Proximity to Cropland-Wetland	The distance from the AA edge to the closest tract of cropland, airport, golf course, and /or herbaceous wetland (including this one) larger than 1 acre is:																														
70			<100 ft, or the AA contains >1 acre of such cover, or is contiguous to >1 acre of such cover	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
71			100 to 300 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72			300 to 1000 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73			>1000 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	D16	Ponded Water in Landscape	Draw a circle of radius of 2 miles centered on the AA. Including water ponded in the AA itself or in a fringing water body, the amount of non-tidal water that is ponded during most of the year is:																														

	A	B	C	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM
1			Assessment Area	86	87	88	89	90	91	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103a-b	104a-b	105	106	107	108	109	110	111	112	113	114	
75			<5% of the circle, located in 5 or fewer ponds or lakes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
76			<5% of the circle, located in >5 ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77			5 to 30%, located in 10 or fewer ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78			5 to 30%, located in >10 ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79			>30%, located in 15 or fewer ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80			>30%, located in >15 ponds or lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	D17	Ponded Water Proximity	The minimum distance from the AA to the closest non-tidal wetland, pond, or lake that is **larger than** 1 acre, is ponded most of the year, and is **not** part of the same associated wetland, pond, or lake, is:																															
82			<300 ft, and connected with a natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83			<300 ft, but no uninterrupted natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84			300-1000 ft, and connected with a natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85			300-1000 ft, but no uninterrupted natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86			>1000 ft, and connected with a natural land corridor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
87			>1000 ft, but no uninterrupted natural land corridor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
88	D18	Large Ponded Water Proximity	The distance from the AA edge to the closest (but separate) non-tidal body of water that is ponded during most of the year and is **larger than 20 acres** (about 1000 ft on a side) is:																															
89			<1 mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90			1-5 miles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0
91			>5 miles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1
92	D19	Tidal Proximity	The distance from the AA edge to the closest tidal body of water is:																															
93			<1 mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94			1-5 miles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95			>5 miles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
96	D20	*Upslope Soil Erodibility Risk*	Using the Web Soil Survey procedure described in the ORWAP manual, the rating of the soil map unit which occupies the largest percentage of the zone 200 ft uphill from the AA is:																															
97			very severe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98			severe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99			moderate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100			slight	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
101			(could not determine)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	D21	Wetland Size	Using the Web Soil Survey AOI tool to measure it, what is the **area** of the largest patch of emergent, shrub, or forest vegetation within the wetland of which the AA is a part? See instructions in last column and figures in Appendix A of the Manual.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
103			<0.1 acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104			0.1 - 1 acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
105			1 to 10 acres	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
106			10 to 100 acres	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107			100 to 1000 acres	0	0	0	1	1	0	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1
108			>1000 acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	D22	*Wetland Size Uniqueness in Watershed*	From the Wetland Explorer web site (see Manual), determine the 12-digit code number for this wetland's HUC6 (Hydrologic Unit Code, i.e., watershed). Then turn to the HUC4, HUC5, and HUC6 worksheets and compare the size of the wetland (of which this AA is a part) with that of the largest wetlands of the same class in the same HUC4 (first 8 digits), the same HUC5 (first 10 digits), and the same HUC6 (12 digits). Enter "1" for **all** that apply below:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
110			the vegetated part of this AA's wetland is as large or larger than any of its class mapped in its HUC4 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111			the vegetated part of this AA's wetland is as large or larger than any of its class mapped in its HUC5 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM
1			Assessment Area	86	87	88	89	90	91	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103a-b	104a-b	105	106	107	108	109	110	111	112	113	114
112			the vegetated part of this AA's wetland is as large or larger than any of its class mapped in its HUC6 watershed	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0
113			none of above	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1
114			data are inadequate (NWI mapping not >90% completed in HUC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	D23	*Wetland Number & Diversity Uniqueness*	Turn to the HUCbest worksheet. Is this AA located in one of the HUCs that are listed as having a large diversity of wetland types relative to area of wetlands (column 3), or a large number (column 4) or area (column 5) of wetlands relative to area of the HUC? Enter "1" for **all** that apply below:																															
116			yes, for the HUC4 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117			yes, for the HUC5 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118			yes, for the HUC6 watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119			none of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
120			data are inadequate (NWI mapping not completed in HUC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	D24	Historical Hydrologic Connectivity	Compared to the wetland **originally present** at this location (just prior to settlement in 1851), the current wetland is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
122			**same size and boundaries**, approximately. For example, wetland boundary may be nearly identical to hydric soil boundary and/or maps of presettlement wetland vegetation	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1
123			**smaller** (50-99% of the original size) and/or **severed** (by roads, dikes, drained soils, etc) from **a few** historically connected wetlands that may no longer exist. Soil map may show hydric soil extending somewhat beyond current wetland boundary.	1	0	1	0	1	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124			**much smaller** (<50% of the original size) and/or **extensively severed** (by roads, dikes, drained soils) from **many** historically connected wetlands that may no longer exist. Soil map may show hydric soil extending far beyond current wetland boundary.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125			**larger** (due to damming of stream or runoff, excavation, removal of obstructions, irrigation, etc. **that flooded soils which probably were not mapped as "hydric"**) or has been connected to wetlands from which it existed in isolation just prior to settlement.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126			**no wetland** was present at this location originally (none of the AA is mapped even as partially-hydric soil; the entire AA apparently resulted from impoundment, excavation, or regrading of upland non-hydric soils)	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
127	D25	Special Conservation Designations of the Wetland or Local Area	According to the Oregon Explorer web site or other sources noted below:																													
128			a) the AA is within or is **connected to** (at least seasonally) a stream or other water body **within 0.5 mile** that has been designated as **Essential Indigenous Anadromous Salmonid Habitat (ESH)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129			b) the AA is within or contiguous to a **Special Protected Area** managed by a conservation group or designated as specially protected for conservation by a state or federal resource agency, as indicated online at http://oregonexplorer.info/wetlands/orwap/ .	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130			c) the AA is within or contiguous to a **Wetland Priority Area** as determined by ODFW and ORNHIC, and indicated online at http://oregonexplorer.info/wetlands/orwap/	0	0	1	1	1	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
131			d) the AA is within an IBA (Important Bird Area, as officially designated in the **IBA worksheet**, and/or the web site given in column E)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132			NONE of above	1	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

	A	B	C	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM
1			Assessment Area	86	87	88	89	90	91	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103a-b	104a-b	105	106	107	108	109	110	111	112	113	114
133	D26	*Non-anadromous Fish Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare non-anadromous fish species in the vicinity of this wetland is:																														
134			high (≥ 0.75 for maximum score, or ≥ 0.90 for score sum), or there is a recent (within 5 yrs) onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135			intermediate (i.e., not as described above or below)	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
136			low (≤ 0.33 for both the maximum score this group's score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
138	D27	*Invertebrate Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare invertebrate species in the vicinity of this wetland is:																														
139			high (≥ 0.75 for maximum score, or for this group's score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140			low (< 0.75 for maximum score AND for this group's score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
142	D28	*Amphibian or Reptile of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare amphibian or reptile species in the vicinity of this wetland is:																														
143			high (≥ 0.60 for maximum score, or >0.90 for score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144			intermediate (i.e., not as described above or below)	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
145			low (≤ 0.21 for maximum score AND <0.15 for score sum, but not 0 for both)	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	D29	*Nesting Waterbird Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare nesting waterbird species in the vicinity of this wetland is:																														
148			high (≥ 0.60 for maximum score, or ≥1.00 for this group's score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149			intermediate (i.e., not as described above or below)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150			low (≤ 0.09 for maximum score and for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
152	D30	*Non-breeding (Feeding) Waterbird Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare non-breeding (feeding) waterbird species in the vicinity of this wetland is:																														
153			high (≥ 0.33 for maximum score, or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154			low (< 0.33 for maximum score and for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM
1			Assessment Area	86	87	88	89	90	91	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103a-b	104a-b	105	106	107	108	109	110	111	112	113	114
155			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
156	D31	*Songbird, Raptor, or Mammal Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare songbird, raptor, or mammal species in the vicinity of this wetland is:																													
157			high (≥ 0.60 for maximum score, or >xx for score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
158			intermediate (i.e., not as described above or below)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159			low (≤ 0.09 for maximum score AND <xx for score sum, but not 0 for both)	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
161	D32	*Plant Species of Conservation Concern*	According to the Oregon Explorer web site, the score for occurrences of rare plant species in the vicinity of this wetland is:																													
162			high (≥ 0.75 for maximum score, or > 4.00 for score sum), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163			intermediate (i.e., not as described above or below)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164			low (≤ 0.12 for maximum score AND < 0.20 for score sum, but not 0 for both)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165			zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
166	D33	*Floodable Property*	According to the Oregon Explorer web site:																													
167			The AA is tidal, or is either (a) **not** within a 100-yr floodplain of a river, or (b) there are **no** inhabited buildings or cropland within 2 miles downslope that are within the 100-yr floodplain. Mark "1" then **SKIP TO D35.**	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
168			**Inhabited buildings** within 1 mile downslope from the AA also are within the 100-yr floodplain	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
169			**Croplands** but no inhabited buildings are within 1 mile downslope from the AA, and that cropland is also within the 100-yr floodplain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170			Inhabited buildings within **1-2 miles** downslope from the AA are also are within the 100-yr floodplain	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
171			Croplands but no inhabited buildings are within 1-2 miles downslope from the AA, and that cropland is also within the 100-yr floodplain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172			No floodplain data are available, and damage from river floods has not occurred within 2 miles downgradient. Mark "1" then **SKIP to D35.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	D34	*Downslope Storage*	Between the AA and any floodable buildings or cropland located within 2 miles downslope:																													
174			river flow is regulated **and** there are many detention ponds and wetlands capable of storing water.	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
175			river flow is regulated **or** there are many detention ponds and wetlands capable of storing water.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176			NONE of the above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177	D35	*Wetland Relative Elevation in Watershed*	According to Oregon Explorer map showing this AA's position within its HUC4 watershed, the AA is [see Manual for specific guidance]:																													
178			in the upper one-third of its watershed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179			in the middle one-third of its watershed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	A	B	C	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM
1			Assessment Area	86	87	88	89	90	91	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103a-b	104a-b	105	106	107	108	109	110	111	112	113	114
180			in the lower one-third of its watershed, or is included in a 100-yr floodplain, or is closer than about 2 miles from a channel known to be wider than 50 ft (stream order 4 or larger),	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181	D36	Contributing Area (CA) Percent	The area of the wetland (and of any lake or pond of which this AA is a part), relative to its contributing area (CA) as defined using procedures in the Manual, is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
182			<1% of its CA, or most of the wetland is tidal, or water drawn from other surface water bodies (e.g., flood irrigation) is main source of water	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
183			1 to 10% of its CA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
184			10 to 100% of its CA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185			Larger than the area of its CA (wetland has essentially no CA, e.g., isolated by dikes with no input channels, or is in terrain so flat that a CA can't be delineated). SKIP TO D40.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
186	D37	Unvegetated Surface in the Contributing Area	The proportion of the CA comprised of buildings, roads, parking lots, other pavement, exposed bedrock, and other impervious surface is about :	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
187			>25%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
188			10 to 25%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1
189			<10%, or wetland is tidal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0
190	D38	Upslope Storage	The cumulative area of other wetlands, detention ponds,and reservoirs in the same CA is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
191			Much (>10x) greater than the area of this wetland (plus any contiguous pond or lake), or inflow is strongly regulated by dams etc.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
192			Somewhat greater than the area of this wetland (plus any contiguous pond or lake) and flows to wetland are not strongly regulated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193			Less than the area of this wetland (plus any contiguous pond or lake), or wetland is tidal, or no upslope wetlands/ ponds, and no inflow regulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
194	D39	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as indicated by the following: (a) input channel is present, (b) CA slopes are steep, (c) input channels have been straightened, (d) upslope wetlands have been ditched extensively, (e) land cover is mostly non-forest, and/or (f) most CA soils are shallow and/or have high runoff coefficients). This statement is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
195			Mostly true	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
196			Somewhat true	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
197			Mostly untrue, or wetland is tidal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
198	D40	Known Water Quality Issues in the Input Water	Within 1 mile upstream from the wetland, at least one of the major sources of surface water to this wetland (at least seasonally) has been designated as Water Quality Limited (303d) for at least one of the parameters below. Obtain from web site only -- do not guess. Select all that apply.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
199			total suspended solids (TSS), sedimentation, or turbidity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200			phosphorus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
201			nitrate or ammonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
202			toxics, dioxin, heavy metals (iron, manganese, lead, zinc, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203			temperature	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
204			None of above, or degraded water cannot reach wetland, or no data.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
205	D41	Known Water Quality Issues Below the AA	Within 1 mile downstream or downslope from this wetland, there is at least one stream or other water body that has been designated as Water Quality Limited (303d) for at least one of the parameters below. Obtain from web site only -- do not guess. Select all that apply.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
206			total suspended solids (TSS), sedimentation, or turbidity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM
1			Assessment Area	86	87	88	89	90	91	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103a-b	104a-b	105	106	107	108	109	110	111	112	113	114
207			phosphorus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
208			nitrate or ammonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
209			toxics, dioxin, heavy metals (iron, manganese, lead, zinc, etc.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
210			temperature	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
211			None of above, or no data.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
212	D42	Type of Outflow Connection to 303d	At least part of the AA is connected to the downstream 303d water mentioned above:																													
213			for 9 or more continuous months annually (persistent water in a stream, ditch, lake, or other water body)	0	0	0	1	1	0	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0
214			intermittently (at least once annually, but for less than 9 months continually)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
215			Not connected, or connected less than annually	0	0	1	0	0	1	1	0	0	0	0	0	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0
216	D43	Drinking Water Source (DEQ)	According to the ODEQ Lasar database, the AA is within:																													
217			the source area for a surface-water (SW) drinking water source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
218			the source area for a groundwater (GW) drinking water source	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
219			Neither of above	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
220	D44	Groundwater Risk Designations	The AA is (select all that apply):																													
221			within a designated Groundwater Management Area (ODEQ): http://www.deq.state.or.us/WQ/groundwater/docs/mapgwmas.pdf	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
222			within a designated Sole Source Aquifer area (EPA): the North Florence Dunal Aquifer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
223			NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
224	D45	Mean Annual Precipitation	According to the PRISM Data Explorer, annual precipitation in the vicinity has normally been:																													
225			<10 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
226			10-12 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
227			13-19 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
228			20-47 inches per year	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
229			48-77 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230			>77 inches per year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
231	D46	County Rank for Phosphorus Loading	The phosphorus loading rank of the county in which the AA is located is: (select one); see Table 6 in WQprob worksheet)																													
232			top 4 in Oregon (Marion, Malheur, Umatilla, Linn)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
233			top 18 (see Table 6 in WQprob worksheet)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
234			bottom 18 (see Table 6 in WQprob worksheet)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
235			bottom 4 (Josephine, Hood River, Lincoln, Clatsop)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
236	D47	County Rank for Nitrogen Loading	The nitrogen loading rank of the county in which the AA is located is: (select one; see Table 7 in WQprob worksheet)																													
237			top 4 in Oregon (Marion, Malheur, Umatilla, Linn)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
238			top 18 (see Table 7 in WQprob worksheet)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239			bottom 18 (see Table 7 in WQprob worksheet)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
240			bottom 4 (Curry, Josephine, Lincoln, Clatsop)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241	D48	Estuarine Position	The AA's relative position in the estuary is (SKIP if nontidal):																													
242			lower 1/3 (often on a bay and distant from the head-of-tide of a major river; includes most saline tidal wetlands)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
243			mid 1/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
244			upper 1/3 (near the head-of-tide of a major river; includes most brackish and fresh tidal wetlands)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
245	D49	Salinity	The usual maximum water-surface salinity during high tide in summer in the main channel or bay closest to the AA is (SKIP if nontidal):																													
246			>30 parts per thousand (undiluted seawater)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
247			5-30 ppt (mesohaline, polyhaline)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
248			0.5 - 5 ppt (oligohaline)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
249			<0.5 ppt (fresh)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250			no data for nearby locations found at the ODEQ LASAR web site or from other sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-c	30	31	32	33	34	35	36	37	38	39	40	41	42	43a-e	44	45	46
F1	Presence of Specific Wetland Types	Does the AA contain, or is it part of, any of these wetland types? Mark "1" next to all that apply.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Tidal wetland: receives tidal water at least once during a normal year, regardless of salinity, and dominated by emergent or woody vegetation.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lacustrine wetland: an undiked non-tidal wetland bordering a body of standing **open water** that is >20 acres.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Fringe wetland: an undiked "shoreline" wetland bordering persistent open water that is >3 times wider than the wetland (includes most tidal, lacustrine, large riverine, some others).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F2	Wetland Type of Conservation Concern	Does the AA contain, or is it part of, any of these wetland types? Mark "1" next to all that apply. Consult the "Rare Wetland Type" reported for the general vicinity by the Oregon Explorer web site, but be aware that those may not apply to the exact AA you have delimited.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Bog or Fen: contains a sponge-like organic soil layer which covers most of the AA AND often has extensive cover of sedges and/or broad-leaved evergreen shrubs (e.g., Ledum). Often lacks tributaries, being fed mainly by groundwater and/or direct precipitation.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Playa, Salt Flat, or Alkaline Lake: a non-tidal ponded water body usually having saline (salinity >1 ppt or conductivity >1000 µS) or alkaline (conductivity >2000 µS and pH >9) conditions and large seasonal water level fluctuations (if inputs-outputs unregulated), If a playa or salt flat, vegetation cover is sparse and plants typical of saline or alkaline conditions (e.g., *Distichlis* , *Atriplex*) are common.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Hot spring (anywhere in Oregon): a wetland where discharging groundwater in summer is >10 degrees (F) warmer than the expected water temperature.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Native wet prairie (west of the Cascade crest): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, and dominated primarily by graminoids often including species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Vernal pool (Willamette Valley): a seasonally inundated wetland, underlain by hardpan or claypan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and with plant species distinctly different from those in slighly higher areas, and often including species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Vernal pool (Medford area): a seasonally inundated acidic wetland, underlain by hardpan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and having concentric rings of similar vegetation, often including species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Vernal pool (Modoc basalt & Columbia Plateau): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located on shallow basalt bedrock and often having species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Interdunal wetland (Coastal ecoregion): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located between sand dunes where wind has scoured the sand down to the water table (deflation plain), and often with significant cover of species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Mature forested wetland (anywhere): a wetland in which mean diameter of trees (d.b.h., FACW and FAC species only) exceeds 18 inches, and/or the average age of trees exceeds 80 years, or there are >5 trees/acre with diameter >32 inches.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Ultramafic soil wetland (mainly southwestern Oregon): a low-elevation wetland, usually with a sponge-like organic soil layer, occurring in an area with exposed serpentine or peridotite rock, and/or in soils with very low Ca:Mg ratios.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Wooded tidal wetlands with >30% cover of trees and shrubs. A wetland inundated at least once annually by tides and often dominated by woody plant species.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Undiked tidal freshwater wetland: an emergent or wooded wetland inundated at least once annually by tides and with surface salinity <0.5 ppt during most of spring and summer, and which has never been diked.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F3	Low Marsh	The percent of the vegetated part of the AA that is "low marsh" (covered by tidal water for part of almost every day) is:																																													
		>95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<1% or none of the AA (high marsh only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F4	Tidal-Nontidal Hydroconnectivity	AA is (select one):	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		contiguous to a non-tidal palustrine wetland that contains surface water at least seasonally, and mostly not separated by a dike or other barrier, allowing fish access to both wetlands during spring.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		contiguous to a non-tidal palustrine wetland that contains surface water at least seasonally, but mostly separated by a dike or other barrier, yet still allowing fish access to both wetlands during spring.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not contiguous to a non-tidal palustrine wetland that contains surface water, but has an inflowing stream that allows fish during the springtime to access a non-tidal wetland < 1 mile upstream.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not contiguous to a non-tidal palustrine wetland that contains surface water, but has an inflowing stream that allows fish during the springtime to access a non-tidal wetland > 1 mile upstream.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not contiguous to a non-tidal palustrine wetland, and lacks an inflowing non-tidal stream that provides fish access to an upstream wetland that contains surface water at least seasonally.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F5	Interannual Water Dynamics	Select one:																																													
		throughout the last 5 years most of the AA has been **constantly covered** with surface water, except for **one** period (of <6 continuous months) when most of the AA went dry (lacked surface water, due to drawdown, drought, etc.).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		throughout the last 5 years most of the AA has **constantly lacked** surface water, except for **one** period (of <6 continuous months) when most of the AA was inundated (had surface water).	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		neither of above	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	0	1	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		unknown	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F6	Surface Water Occurrence	No part of the AA is ever inundated (contains at least 1 inch of water above the land surface) for more than 14 consecutive days during a normal year. That is, it is a **saturated-only** wetland. If true, mark "1" here, then SKIP TO F39 (Herbaceous Extent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F7	Seasonal Water Extent	During normal years, the percent of the wetland AA that is inundated **only seasonally** (more than 14 consecutive days but no more than 9 months, or in tidal wetlands is "high marsh" that is inundated by tides fewer than half the days in any month) is:																																												
		>75% of the AA	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75% of the AA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-c	30	31	32	33	34	35	36	37	38	39	40	41	42	43a-e	44	45	46
		25-50% of the AA	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
		5-25% of the AA	0	0	0	0	1	0	1	0	0	1	1	1	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
		<5% of the AA, or none	0	1	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F8	Extent of Persistent Surface Water (Dry Season)	When the AA's surface water is at its lowest annual level, the percent of the AA still containing surface water (whether obscured by vegetation or not) is:																																												
		>95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the AA	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	1	1	0	1	1	0	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the AA	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0
		1-25% of the AA	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	1	1	1	1	1	1
		None of the above, and the AA contains or is part of a fringe wetland, SKIP to F10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		None of the above, and not a fringe wetland, SKIP to F10	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F9	Onsite Surface Water Isolation (Dry Season)	When the AA's surface water is at its lowest annual level (for tidal wetlands = annual lowest tide), the percent of the surface water that is in or connected to flowing channels that exit the AA, compared to surface water that is outside of channels and their floodplains (e.g., in small depressions that do not connect annually to the channel if any), is:																																												
		all (100%) located in channels, swales, or with a contiguous surface water connection to a lake or estuary at all times of year	1	1	1	1	1	0	1	1	1	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	1	1	1	1	1	1
		75-99% in or connected to channels, swales, or contiguous lake/ estuary, 1-25% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0
		50-75% in or connected to channels, swales, or contiguous lake/ estuary, 25-50% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% in or connected to channels, swales, or contiguous lake/ estuary, 50-75% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25% in or connected to channels, swales, or contiguous lake/ estuary, 75-99% in isolated pools	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		all located in isolated pools or a single isolated pond from which no surface water exits when levels are lowest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F10	Onsite Surface Water Isolation (Wet Season)	During most of the wettest time of a normal year, the percent of the surface water that is in or connected to ditches, swales, or flowing channels that exit the AA, compared to surface water that is in isolated pools that do not connect annually to channels or swales (if any), is:																																											
		all (100%) located in channels, *swales* , or in other areas with a wet-season surface connection to channels or to a contiguous lake or estuary	1	0	1	0	0	0	1	0	0	1	0	0	0	1	1	0	1	0	0	1	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
		75-99% in or connected to channels, swales, or contiguous lake/ estuary, 1-25% in isolated pools	0	1	0	1	0	1	0	1	1	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	1	0	1	1	1	1	0	0	1	0	0	0	0	0	0
		50-75% in or connected to channels, swales, or contiguous lake/ estuary, 25-50% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% in or connected to channels, swales, or contiguous lake/ estuary, 50-75% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25% in or connected to channels, swales, or contiguous lake/ estuary, 75-99% in isolated pools	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		all located in isolated pools or a single isolated pond from which no surface water exits		0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F11	Predominant Water Fluctuation Range	During most years, the difference in surface water level in most of the vegetated area between the driest and wettest time of year is:															·												·	·	·	·	·	·	·	·	·	·									
		>6 ft change	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		3-6 ft change	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0
		1-3 ft change	1	0	1	0	0	0	1	0	0	1	0	1	0	1	0	0	1	0	1	1	0	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.5 - 1 ft change	0	0	0	1	0	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
		<0.5 ft or no change (stable)	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
F12	Predominant Depth Class	During most of the time surface water is present, its depth in most of the inundated part of the AA is:																																												
		>6 ft deep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		2-6 ft deep	1	0	1	0	1	0	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
		1-2 ft deep	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.5 - 1 ft deep	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		<0.5 ft deep	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
F13	Depth Class Distribution	During most of the time when surface water is present (select one):																																												
		One depth class (use the classes in F13) comprises >90% of the AA's inundated area	1	1	0	0	1	0	0	1	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1	1	1	1
		One depth class comprises >50% of the AA's inundated area	0	0	1	1	0	1	1	0	1	1	1	0	0	1	0	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
		Neither of above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F14	Deep Spots	Ponded nontidal water deeper than 3 ft covers at least 1 acre or >5% of the AA during (check all that apply):																																												
		most of the period November-April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		most of the period May-October	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		neither of above (no ponded water >3 ft deep is that extensive)	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0	1	0	1	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1
		impossible to tell	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
F15	Open Water Interspersion With Partly Inundated Vegetation	Visualize the extent and distribution of ponded open water within the AA, relative to the distribution of the most dominant form of partly-inundated vegetation (herbaceous or woody, with stems and leaves >4" above the water surface). Visualize this as it occurs during May of most years. In the table to the right, first estimate the percent open water (left column) in the AA, then its distribution (top row). Select the highest applicable number and enter it in column D. If the AA has no ponded water during May, score it "1." If this is a fringe wetland, assume Open Water is >70%.	1	5	1	2	2	3	2	2	5	8	5	2	1	1	1	1	1	4	1	1	2	1	3	1	1	14	1	1	1	8	1	0	1	1	2	2	2	0	2	2	2	1	1	1	1	2
		Note: Ponded open water is surface water that is not visibly flowing and contains no vegetation (except perhaps floating-leaved or completely submersed species) and is not beneath a canopy of trees or shrubs. For tidal sites, consider the condition at average mid-tide.																																												
F16	Inflow	When surface water (if any) enters the AA, it enters as (select all applicable choices):																																												
		flow moving in channels or ditches	1	0	1	1	1	0	0	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1	0	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
		surface water exchanged broadly with contiguous waters such as an estuary, lake, or major river	0	1	0	0	1	0	1	0	1	0	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0	1	1	0	1	1	1	1	0	0	1	0	0	0	0	0	0
		water pumped into or intentionally diverted to the AA, e.g., as part of a stormwater dispersion system, irrigation practice, or drainage tile outlet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		groundwater, runoff, and direct precipitation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F17	Groundwater	Select one:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Part of the wetland contains strong evidence of groundwater discharges at the wetland surface during summer. (a) Springs are observed or are shown on maps, or (b) water is cooler in summer and warmer in winter than in other local wetlands, or (c) measurements from shallow wells indicate groundwater is discharging to the wetland.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-c	30	31	32	33	34	35	36	37	38	39	40	41	42	43a-e	44	45	46
		Part of the wetland has less definitive **evidence** of discharging groundwater during summer. Wetland has no perennial tributary and is on organic, sandy, or gravelly soil (as determined in F59) AND has one or more: (a) outflow is present and persists during most of the summer or (b) on a natural slope of >5%, or (c) very close to the base of a natural slope steeper than 15%, or (d) located at a geologic fault, or (e) has rust deposits, colored precipitates, or dispersible natural oil sheen, or (f) within a mile of the top of a HUC4 watershed.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Neither of above is true, although some groundwater may discharge to or flow through the wetland, and wetland is in a region of **eastern Oregon** with mean annual precipitation of less than xx.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		None of the above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F18	Outflow Duration	The **most durable** surface water connection between the **wetland** and the closest contiguous and/or downslope surface waters is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		persistent (>9 months/yr), or daily tidal exchange	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		seasonal (14 days to 9 months/yr, not necessarily consecutive)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		temporary (<14 days, not necessarily consecutive)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		none -- the wetland lacks an outlet. If so, mark "1" here and SKIP TO F26 (Sheltering of Water).	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F19	Outflow Confinement	During major runoff events, in the places where surface water exits the wetland it is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		impeded by a pipe, culvert, tidegate, narrowly breached dike, berm, beaver dam, or other obstruction (other than natural topography), or water is pumped out of the wetland (e.g., for irrigation)		1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not impeded by anything other than (possibly) natural topography	1	0	0	1	1	0	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F20	Inlet+Outlet	Either the wetland has **BOTH an inlet and outlet** with seasonal or persistent surface flow, or the wetland is **tidal or lacustrine**. If so, enter "1" here and continue. If **neither condition met**, enter "0" here and then SKIP to F25 (Sheltering of Water).	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F21	Throughflow Complexity	During peak annual flow, the surface water that flows through the wetland's channel or floodplain:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		encounters little or no vegetation, boulders, or other sources of friction.	1	1	0	1	1	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1
		mostly encounters herbaceous vegetation that offers little resistance, and water follows a fairly **straight** path from entrance to exit (few internal channels, only slight meandering)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	0	1	1	0	1	0	0	0	0	0	0	0	0
		mostly encounters herbaceous vegetation that offers little resistance and follows a fairly **indirect** path from entrance to exit (non-channelized flow or many internal channels, or very braided or tightly meandering)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
		encounters measurable resistance from fairly-rigid vegetation (e.g., **cattail, bulrush, woody** plants) or channel-clogging debris, and follows a fairly **straight** path from entrance to exit.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		encounters measurable resistance from fairly-rigid vegetation (e.g., cattail, bulrush, woody species) or channel-clogging debris, and follows a fairly **indirect** path from entrance to exit.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F22	Vegetated Zone Relative Width	During most of the time **open water** is present in the wetland, vegetated areas within the wetland, where they are contiguous to open water, are:																																														
		wider than the contiguous open water	1	1	0	0	1	0	0	0	1	0	1	0	0	0	0	1	1	1	1	1	0	0	0	1	1	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		narrower than the contiguous open water	0	0	0	1	0	0	1	1	0	1	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F23	Vegetated Zone Absolute Width	At the AA, the average width of wetland vegetated area that separates adjoining uplands (if any) from contiguous open waters (if any) is:																																													
		>300 ft, or no contiguous upland or open waters (not even temporary)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	1	1	0	0	1	0	0
		100-300 ft	1	1	0	0	0	0	1	0	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	1	1	1	1	0	0	0	0	1	1	0	1
		25-100 ft	0	0	0	1	0	0	0	1	0	1	0	1	0	1	1	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5-25 ft		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F24	Undercut Banks	During most of the spring and summer, the percent of the AA's **water edge**, if any, that has undercut banks is:																																													
		>75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25%	1	0	0	0	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
		<1%, or no definable water edge is present	0	1	0	0	0	0	1	1	0	1	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0
		cannot estimate		0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1
F25	Sheltering of Water	At mid-day in summer, the area of surface water within the AA that is shaded by herbaceous or woody vegetation, incised channels, streambanks, or other features also present within the AA is:																																													
		>75% of the water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75% of the water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5-25% of the water	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5% of the water	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		(surface water is typically absent in summer or during low tide)	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F26	Abovewater Wood	The number of downed wood pieces thicker than 4 inches that remain only partly underwater during most of the spring or early summer, thus potentially serving as **basking sites** for turtles, birds, or frogs, is:																																													
		Several	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
		Few or none, or AA never has any surface water at that time	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
F27	Islands	Select all that apply:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		During **early summer** the AA contains a floating vegetation mat suitable for nesting birds and isolated from the shore by water depths >3 ft. Or AA is an island with similar isolation and a gently-sloping water edge that is **mostly vegetated**.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		During early summer the AA contains (or is) an island with a gently-sloping water edge, that is **mostly bare** and is isolated from the shore by water depths >3 ft.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Neither of above		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
F28	Shorebird Feeding Habitats	The extent of **mudflats or unwooded shortgrass** areas within the AA during **April or August** (or for tidal AAs, during mean low tide) is usually:																																													
		none, or <100 sq. ft, and there are none that cover >10,000 sq. ft anywhere within 300 ft of the AA	1	1	0	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	1	1	1	1	0	0	1	1	1	1	1	0	0	0	0	0	1	1	1	1
		none, or <100 sq. ft, but some that cover >10,000 are within 300 ft of the AA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
		100-1000 sq. ft. within AA	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
		1000 – 10,000 sq. ft. within AA	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
		>10,000 sq. ft within AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F29	Waves	Which of the following is most true:																																													

		Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-c	30	31	32	33	34	35	36	37	38	39	40	41	42	43a-e	44	45	46
		Wind or boats frequently generate waves of >1 ft near the AA, those waves are intercepted by the wetland, and structures behind the AA are protected from wave erosion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Wind or boats frequently generate waves of >1 ft near the AA, those waves are intercepted by the wetland, but there are no structures behind the wetland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Neither wind nor boats frequently generate waves of >1 ft near the AA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0	0	1	0	1	0	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F30	Vectors for Waterborne Pests	Select all that apply:																																													
		a regularly-used boat dock is present within or contiguous to the AA	0	0	0	0	0	0	1	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
		a regularly-used boat dock is **not within the AA**, but there is one within 300 ft of the AA and there is a persistent or tidal surface connection between the dock and the AA	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
		large ships that empty ballast water are regularly present in nearby contiguous waters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		the AA has a **persistent surface water connection** (>9 mos./yr, via ditch, pipe, channel, tidegate, or floodplain) to a nearby perennial stream, river, lake, or estuary	1	1	0	1	1	0	1	1	1	1	0	0	0	0	0	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		none of the above	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F31	Non-native Aquatic Animals	The following are known or likely to have reproducing populations in this AA, its wetland, or in water bodies within 300 ft that connect to the AA at least seasonally. Select all that apply:																																												
		non-native amphibians (e.g., bullfrog) or reptiles (e.g., red-ear slider)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1
		carp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		other non-native fish (e.g., bass, gambusia, walleye, crappie, brook trout)	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
		non-native invertebrates (e.g., New Zealand mudsnail, mitten crab, rusty crayfish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		nutria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		none of above, or unknown	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F32	Ice-free	During most years, most of the wetland's surface water does **not** freeze, or freezes for fewer than 4 continuous weeks, or surface water is absent most winters.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0
F33	Ponded Threshold	During **most of the summer**, the AA contains more than 0.25 acre of ponded non-tidal surface water that is deeper than 1 ft, or is within 300 ft of such an area and the intervening habitat is not developed (roads, etc.). Or nesting within the AA by ducks, geese, or swans has been proven.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F34	No Scum	During most summers, **less than** 80% of the water surface is covered by floating algae, duckweed, and other non-rooted aquatic plants, AND no major fish kills occur. If no surface water is present in summer, mark "1" in column D.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F35	Submerged & Floating-leaved Aquatic Vegetation (SAV)	*SAV* (submerged & floating-leaved aquatic vegetation) occupies an annual maximum of:																																												
		>95% of the surface water area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the surface water area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the surface water area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0
		5-25% of the surface water area	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
		<5% of the surface water area. Mark "1" here and SKIP TO F39 (Herbaceous Extent).	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	1	1	1	1	1	1	1	1	1
F36	SAV Invasive vs. Non-invasive Cover	The areal cover of SAV at mid-summer is comprised of:																																												
		mostly invasive SAV species (see list in column E). Mark "1" here and SKIP to F39.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly non-invasive species	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		impossible to tell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0
F37	SAV Native Species Dominance	Considering just the SAV species that are native:																																												
		one or two of those species together comprise >50% of the SAV cover	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		no two of the native SAV species together comprise >50% of the SAV cover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		impossible to tell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0
F38	SAV Species Ubiquity	Of all the SAV species in this AA:																																												
		all are species that are common among Oregon's wetlands and lakes (see Plants worksheet, "Common Species" column)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		at least one species is a SAV plant that is **not** common among Oregon's wetlands and lakes, and it covers >1% of the SAV area or >100 sq. ft.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		impossible to tell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0
F39	Herbaceous Extent	The areal cover of herbaceous plants during **mid-summer** is:																																												
		>95% of the **vegetated** part of the AA	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
		50-95% of the vegetated part of the AA		1	0	0	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	0	1	1	1	1	0	0	0	1	0	0	1	1	1	0	1	1	1
		25-50% of the vegetated part of the AA	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
		5-25% of the vegetated part of the AA	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
		<5% of the vegetated part of the AA. Mark "1" here and SKIP TO F44 (Woody Extent).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F40	Graminoid vs. Forb Cover	The maximum annual areal cover of herbaceous plants is:																																												
		overwhelmingly graminoids (>80% cover of grasslike plants)	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		mostly graminoids (50-80% cover)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly non-graminoids (e.g., forbs, ferns) (50-80%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly (>80%) non-graminoids	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F41	Herbaceous Native vs. Non-native Cover	The maximum annual areal cover of herbaceous plants is:																																												
		overwhelmingly (>80% cover) non-native species, of which >10% are species considered invasive (see column E). Mark "1" and SKIP to F44.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly (>80% cover) non-native species, but <10% are considered invasive (see column E). Mark "1" and SKIP to F44.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) non-native species, regardless of invasiveness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) native species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly (>80%) native species	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F42	Herbaceous Species Dominance	Of just the herbaceous species:																																												
		one or two **native** species together comprise >50% of the areal cover of herbaceous plants at any time during the year	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		no two of the native species together comprise >50% of the areal cover of herbaceous plants, or no native species are present	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F43	Herbaceous Plant Species Ubiquity	Of all the herbaceous species in this AA:																																												
		all are species that are common among Oregon's wetlands (see Plants worksheet, "Common Species" column)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		at least one species is not common among Oregon's wetlands and it covers >1% of the AA's herbaceous area or >100 sq. ft (either contiguous or scattered)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F44	Woody Extent Within	Within the AA, woody vegetation (shrubs, trees, woody vines) occupies:																																												
		>95% of the vegetated part of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-c	30	31	32	33	34	35	36	37	38	39	40	41	42	43a-e	44	45	46
	the AA	50-95% of the vegetated AA	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	1	0	1	1	1	0	0	1	1	0	1	0
		25-50% of the vegetated AA	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
		5-25% of the vegetated AA	0	1	0	0	1	0	0	1	0	1	0	1	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	1	0	1
		<5% of the vegetated AA	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
F45	Woody Extent Along Water Edge	Where surface water is present during the wettest time of year, the AA's woody vegetation occupies:																																													
		>95% of the area within 100 ft of open water, or, nearly all of the woody vegetation is inundated during annual high water	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the area within 100 ft of open water, or most of the woody vegetation is inundated during annual high water	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	1	1	1	1	0	0	0
		25-50% of the area within 100 ft of open water	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
		5-25% of the area within 100 ft of open water	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1
		<5% of the area within 100 ft of water; mark "1" here and SKIP TO F50 (Woody Diameter Classes).	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0
F46	Woody Distribution	The wetland's woody vegetation is:																																												
		clumped in fairly distinct bands or patches mostly separate from herbaceous vegetation, and most patches or bands are large (>1 acre including contiguous upland woody veg). Or nearly the entire AA is wooded. Isolated shrubs or trees are few.	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0
		clumped in fairly distinct bands or patches mostly separate from herbaceous vegetation, and most patches are small (<1 acre including contiguous upland woody veg).	0	0	0	1	1	1	0	1	1	1	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	1	0	0	0	1	1
		dispersed quite evenly amid the herbaceous vegetation, in many small patches, or many isolated shrubs or trees.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0
F47	Cover of Woody Invasives	Within parts of the AA having shrubs or woody vines, the areal cover is:																																												
		overwhelmingly (>80%) non-natives that are categorized as invasive (see Plants worksheet)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly other non-natives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) non-natives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) natives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly (>80%) natives	1	0	0	1	1	1	0	1	1	1	0	1	1	1	1	0	1	0	0	0	1	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1
F48	Shrub & Vine Species Dominance	Of just the shrub & woody vine species that are native:																																												
		one or two of the native species together comprise >80% of the shrub & vine cover	1	0	0	1	1	1	0	1	1	1	0	1	1	1	1	0	1	0	0	0	1	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1
		no two of the native species together comprise >80% of the shrub & vine cover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F49	Shrub & Vine Species Ubiquity	Of all the shrub & woody vine species in this AA:																																											
		all are species that are common among Oregon's wetlands (see Plants worksheet, "Common Species" column)	1	0	0	1	1	1	0	1	1	1	0	1	1	1	1	0	1	0	0	0	1	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1
		at least one species is not common among Oregon's wetlands and it covers >1% of the AA or >100 sq. ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F50	Woody Diameter Classes	Select all the types occupying >5% of the wooded part of the AA or >5% of its upland edge if that is wooded.																																											
		deciduous 1-4" diameter and >3 ft tall	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		evergreen 1-4" diameter and >3 ft tall	1	1	0	1	1	0	0	1	0	0	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		deciduous 4-9" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
		evergreen 4-9" diameter	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1
		dead standing 4-9" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	1	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
		deciduous 9-21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		evergreen 9-21" diameter	0	1	0	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	1	1
		dead standing 9-21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
		deciduous >21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		evergreen >21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		dead standing >21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
		Lacks woody vegetation, or none of above occupy >5% of the wooded part of the AA or 5% of the length of the upland edge.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F51	N Fixers	Within the vegetated part of the AA, the cover of nitrogen-fixing plants (e.g., alder, sweetgale, legumes) is:																																												
		<1% or none	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1
		1-25%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1
		25-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F52	Waterfowl Food Plants	The percent of the vegetated part of the AA, excluding areas that are never inundated, which contains one or more of these plants: Alisma spp., Beckmannia spp., Polygonum spp. (natives only), Potomogeton (Stuckenia) spp., Ruppia spp., Sagittaria spp., Sparganium spp., Zostera spp., is:																																												
		<1% or none, and none are known to occur commonly within the same wetland or within 300 ft of this AA	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		<1% or none, but some are known to occur commonly within the same wetland or within 300 ft of this AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-10%	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		10-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F53	History of Fire or Vegetation Removal	The last time that >5% of the AA's vegetation cover was burned or harvested for hay or timber was:																																												
		0-12 months ago, and this occurs almost annually within part of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0-12 months ago, but was not an annual (or near-annual) event	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-5 years ago	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>5 years ago, or never	0	0	1	0	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		unknown	1	1	0	1	1	0	0	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F54	Height Uniformity of Dominant Stratum	Within the stratum (herbaceous, shrub, or tree) that covers the most onsite area, the wetland plants during maximum annual cover condition are mostly:																																												
		of nearly uniform height (+ or - 20% of average)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1
		of very diverse heights (e.g., short & tall forbs, short & mid-height grasses)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
F55	Bare Ground & Plant Litter	In the part of the AA that is inundated only seasonally or is saturated, the usual condition during minimum annual cover conditions in a typical 1 x 1 m plot is:																																												
		little or no (<5%) *bare ground* or plant litter is visible between stems or under canopy; dense herbaceous ground cover; may be dense perennial grasses, moss, or others with high stem or root density.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0
		some (5-20%) bare ground or litter is visible; moderately dense ground cover; may be mostly perennial forbs, creeping vines, fairly sparse grasses.	1	0	1	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		much (20-50%) bare ground or plant litter is visible; low stem density; may be mostly woody plants, cattail, bulrush, sparse annuals.	0	1	0	1	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0	1	1	1	1	1

		Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-c	30	31	32	33	34	35	36	37	38	39	40	41	42	43a-e	44	45	46
		mostly (>50%) bare ground or plant litter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
F56	Upland Edge Shape Complexity	Most of the edge between the wetland and upland is (select one):	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Linear: a significant proportion of the AA's upland edge is straight, as in AAs bounded by partly or wholly by dikes or roads	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Convoluted: Wetland perimeter is many times longer than maximum width of the wetland, with many alcoves and indentations ("fingers")	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
		Intermediate: AA's perimeter either (a) is only mildly convoluted, or (b) mixed -- contains about lengths of linear and convoluted segments.	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
F57	Upland Inclusions	The extent of inclusions of upland within the AA (as indicated by their topography, plants, and/or soils) is:																																													
		Many (e.g., wetland-upland "mosaic")	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
		Few or none	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0
F58	Soil Composition in the Soil Pit	The composition of the soil in the soil pit at the ground surface (uppermost soil layer and excluding the *duff layer,* see protocol in ORWAP Manual) is:																																													
		Loamy : includes silt, silt loam, loam, sandy loam	0	0	0	0	0	1	1	0	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		Clayey : includes clay, clay loam, silty clay, silty clay loam, sandy clay, sandy clay loam	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Organic : includes muck, mucky peat, peat, and mucky mineral	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Coarse : includes sand, loamy sand, gravel, cobble, stones, boulders, fluvents, fluvaquents, riverwash	1	1	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F59	Downed Wood	The number of downed wood pieces longer than 6 ft and with diameter >6", and not submerged by water when water is present, is:																																													
		Several (>5 if AA is >10 acres, or >2 for smaller AAs)	0	0	0	0	0	0	1	0	1	1	1	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	1	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	1	1	1
		Few or none	1	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	0	0	1	1	0	0	1	1	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0
F60	Ground Irregularity	The number of animal burrows, mounds, hummocks, boulders, upturned trees, islands, natural levees, dry channels, pits, wide soil cracks, and microdepressions (in parts of the AA that lack persistent water) is:																																													
		Several (extensive micro-topography)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
		Few or none (minimal microtopography; <1% of the area that isn't persistently inundated); e.g., many flat sites having a single hydroperiod	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
		Intermediate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	1	1	0
F61	Internal Gradient	The gradient along most of the AA's water flow paths (both sheet and channel flow) is:																																													
		>10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		6-10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		2-5%		0	0	0	0	0	1	0	0	1	0	0	1	1	1	1	0	1	1	1	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
		Flat (<2%, no slope or flow is ever apparent. Includes most depressional sites	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0
F62	Fish Access From Offsite	Small fish (e.g., stickleback, minnow) from elsewhere in the watershed can access part of this AA for at least 2 days during most years or are known to already be present onsite.	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1
F63	Nesting or Roosting Structures	Within the AA or within its wetland or within 300 ft of AA, there are bridges, buildings, caves, or ledges with openings/ crevices, well-maintained bird or bat boxes, elevated platforms, or other artificial structures suitable for nesting by some native bird or bat species.	0	0	0	0	1	1	1	1	0	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
F64	Cliffs, Banks, or Beaver	In the AA or within its wetland or within 100 ft of the AA, there are elevated terrestrial features such as cliffs, stream banks, excavated pits, or pumice walls (but not riprap) that extend at least 6 ft nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Or there is evidence that beaver have used this AA (e.g., gnawed limbs).	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1
F65	*Visibility*	The maximum percent of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public paved paths that adjoin or are within 300 ft of the AA (select one) is:																																													
		>50%	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		25-50%	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0
		<25%	0	0	0	1	0	0	1	1	1	1	0	1	1	1	1	0	0	1	1	0	1	0	1	0	0	1	1	1	1	1	0	0	1	1	1	0	1	1	1	1	0	1	1	1	1
F66	*Ownership*	Most of the AA is (select one):																																													
		in public ownership	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
		in private ownership	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1
F67	*Public Access*	For most of the AA, permission for access is normally given or allowed:																																												
		to anyone, on any date, no permit required	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		to anyone, but only on particular dates, no permit required	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		only on a case-by-case or permit basis, on any date	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		only on a case-by-case or permit basis, only on particular dates	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		seldom or never	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
		(do not know)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0
F68	*Non-consumptive Uses - Actual or Potential*	Assuming access permission was granted, select all statements that are true of this AA as it currently exists:																																												
		Walking is physically possible in >5% of the AA during most of year, e.g., free of deep water and dense shrub thickets	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		All or part of the AA (or an area within sight of the AA and within 100 ft) would be physically accessible to people in wheelchairs, e.g., paved and flat	1	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		Maintained roads, parking areas, or foot-trails are within 30 ft of the AA, or the AA can be accessed most of the year by boat	1	1	1	0	1	1	1	0	0	1	1	1	1	0	0	1	1	0	1	1	0	1	0	1	1	0	1	1	1	1	1	1	0	0	0	0	1	1	0	1	1	1	1	1	1
F69	*Sustained Scientific Use*	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring wetland.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(do not know)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F70	Consumptive Uses (Provisioning Services)	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select all that apply.																																												
		low-impact commercial timber harvest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		low-impact grazing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		commercial harvesting of hay or mushrooms	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		waterfowl hunting or furbearer trapping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		fishing (including shellfish harvest)	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	0	1	0	1	1	0	0	0	0	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0
		None of the above	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	1	1	1	1	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1
F71	Domestic Wells	Wells that currently provide drinking water are:																																												
		Within 500 ft and downslope from the AA	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1	0	1	1	0	0	1	1	0	1	1	1	1	1	1	0	1	1	1	0	1	0	1
		500-1000 ft and downslope	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-c	30	31	32	33	34	35	36	37	38	39	40	41	42	43a-e	44	45	46
		>1000 ft downslope, or none downslope, or AA is tidal, or no information	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0
F72	Sediment Removal	Excessive accumulation of sediment has caused problems for large boats, with shoaling in some cases necessitating frequent dredging, in waters that are located:																																													
		contiguous to the AA, or <1 mile downslope from the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-5 miles downslope	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>5 miles downslope, or no accumulation problems, or no information	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F73	Devegetation	The percent of the AA's vegetation cover that normally grows taller than 4 inches but which has been persistently reduced to less than that height by mowing and/or grazing by domestic or wild animals is:																																												
		>95%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-90%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
		<5%, or grazing/ mowing does not cause the described condition	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1
F74	Core Area 1	The part of the AA almost never visited by humans during an average year probably comprises:																																												
		>95% of the AA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	1	1	1	1
		50-95%	0	1	1	0	1	1	0	0	0	1	0	0	0	0	1	1	0	1	1	1	0	1	1	1	1	0	1	1	1	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
		5-50%, or <5% but inhabited building is within 300 ft of the AA	0	0	0	1	0	0	0	1	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		<5%, and no inhabited building within 300 ft of the AA	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F75	Core Area 2	The part of the AA visited by humans almost daily for several weeks during an average year probably comprises:																																												
		>95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95%	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5-50%	0	1	1	0	1	0	0	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		<5%	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
F76	Weed Source Along Upland Edge	Along the AA's boundary with upland, the percent of the upland edge (within 10 ft of AA) that is occupied by species that are marked as invasive in the Plants worksheet is:																																												
		most (>50%) of the upland edge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		much (5-50%) of the upland edge	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		some (1-5%) of the upland edge	0	1	0	0	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		none of the upland edge (invasives apparently absent), or AA is an island with no upland	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F77	Natural Land Cover in Buffer	Within 100 ft upslope of the AA's wetland-upland boundary, the percent of the upland that contains *natural* (not necessarily native) land cover is:																																												
		>90%, or there is no upland boundary	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	0	1	0	1
		60 to 90%	0	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	0	0	1	0	0	0	0	1	1	1	0	1	0	1	0
		30 to 60%	0	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
		5 to 30%	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5%	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F78	Type of Land Cover Alteration in Buffer	Within 100 ft upslope of the AA's wetland-upland boundary, the upland land cover that is not natural (as defined above) is mostly:																																												
		impervious surface, e.g., paved road, parking lot, building, exposed rock	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		bare pervious surface, e.g., dirt road, dike, dunes, recent clearcut, landslide	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		cultivated row crops or orchard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		artificially landscaped areas or lawn	0	0	0	1	0	0	1	1	0	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	1	0	1	0
		grain fields, or grassland grazed or mowed to a height usually shorter than 4 inches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(buffer is >90% natural land cover or AA occupies all of an island)	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	1	1	1	1	0	1	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	0	1	0	1
F79	*Buffer Slope*	Along the AA's wetland-upland boundary and extending 100 ft uphill, the average slope of the land is mostly:																																												
		<1% (flat -- almost no noticeable slope, or there is no upland boundary)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		2-5%	1	1	1	1	1	1	1	0	1	1	1	0	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
		5-30%	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F80	Edge Slope	Within 10 ft of ponded surface water (if any) in early summer, the percent of the vegetated area (wetland or upland) that has a gentle or moderate slope (less than 5% slope) is:																																												
		>75%	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0
		50-75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50%	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
		1-25%	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<1%,	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(ponded surface water in early summer covers <1% of AA, or AA is tidal)	1	0	1	1	1	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	1	0	0	1	0	1	1	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0
F81	Independently Sustainable Hydrology	How likely is it that any or all of this AA will persist as a wetland (not necessarily of the same type) if an existing dike or berm, water control structure (e.g., dam, weir), or pumping/ diversion system that now helps sustain it -- and is within 1 mile of the AA -- was removed or became inoperable?																																												
		Very likely, or no such feature is present (greater sustainability potential)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		Somewhat likely -- part but not all of the AA would remain a wetland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Unlikely or not at all (lower sustainability potential)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
F1	Presence of Specific Wetland Types	Does the AA contain, or is it part of, any of these wetland types? Mark "1" next to all that apply.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Tidal wetland: receives tidal water at least once during a normal year, regardless of salinity, and dominated by emergent or woody vegetation.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lacustrine wetland: an undiked non-tidal wetland bordering a body of standing **open water** that is >20 acres.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Fringe wetland: an undiked "shoreline" wetland bordering persistent open water that is >3 times wider than the wetland (includes most tidal, lacustrine, large riverine, some others).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F2	Wetland Type of Conservation Concern	Does the AA contain, or is it part of, any of these wetland types? Mark "1" next to all that apply. Consult the "Rare Wetland Type" reported for the general vicinity by the Oregon Explorer web site, but be aware that those may not apply to the exact AA you have delimited.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Bog or Fen: contains a sponge-like organic soil layer which covers most of the AA AND often has extensive cover of sedges and/or broad-leaved evergreen shrubs (e.g., Ledum). Often lacks tributaries, being fed mainly by groundwater and/or direct precipitation.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Playa, Salt Flat, or Alkaline Lake: a non-tidal ponded water body usually having saline (salinity >1 ppt or conductivity >1000 µS) or alkaline (conductivity >2000 µS and pH >9) conditions and large seasonal water level fluctuations (if inputs-outputs unregulated), If a playa or salt flat, vegetation cover is sparse and plants typical of saline or alkaline conditions (e.g., *Distichlis* , *Atriplex*) are common.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Hot spring (anywhere in Oregon): a wetland where discharging groundwater in summer is >10 degrees (F) warmer than the expected water temperature.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Native wet prairie (west of the Cascade crest): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, and dominated primarily by graminoids often including species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Vernal pool (Willamette Valley): a seasonally inundated wetland, underlain by hardpan or claypan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and with plant species distinctly different from those in slighly higher areas, and often including species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Vernal pool (Medford area): a seasonally inundated acidic wetland, underlain by hardpan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and having concentric rings of similar vegetation, often including species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Vernal pool (Modoc basalt & Columbia Plateau): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located on shallow basalt bedrock and often having species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Interdunal wetland (Coastal ecoregion): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located between sand dunes where wind has scoured the sand down to the water table (deflation plain), and often with significant cover of species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Mature forested wetland (anywhere): a wetland in which mean diameter of trees (d.b.h., FACW and FAC species only) exceeds 18 inches, and/or the average age of trees exceeds 80 years, or there are >5 trees/acre with diameter >32 inches.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Ultramafic soil wetland (mainly southwestern Oregon): a low-elevation wetland, usually with a sponge-like organic soil layer, occurring in an area with exposed serpentine or peridotite rock, and/or in soils with very low Ca:Mg ratios.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Wooded tidal wetlands with >30% cover of trees and shrubs. A wetland inundated at least once annually by tides and often dominated by woody plant species.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Undiked tidal freshwater wetland: an emergent or wooded wetland inundated at least once annually by tides and with surface salinity <0.5 ppt during most of spring and summer, and which has never been diked.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F3	Low Marsh	The percent of the vegetated part of the AA that is "low marsh" (covered by tidal water for part of almost every day) is:																																												
		>95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<1% or none of the AA (high marsh only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F4	Tidal-Nontidal Hydroconnectivity	AA is (select one):	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		contiguous to a non-tidal palustrine wetland that contains surface water at least seasonally, and mostly not separated by a dike or other barrier, allowing fish access to both wetlands during spring.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		contiguous to a non-tidal palustrine wetland that contains surface water at least seasonally, but mostly separated by a dike or other barrier, yet still allowing fish access to both wetlands during spring.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not contiguous to a non-tidal palustrine wetland that contains surface water, but has an inflowing stream that allows fish during the springtime to access a non-tidal wetland < 1 mile upstream.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not contiguous to a non-tidal palustrine wetland that contains surface water, but has an inflowing stream that allows fish during the springtime to access a non-tidal wetland > 1 mile upstream.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not contiguous to a non-tidal palustrine wetland, and lacks an inflowing non-tidal stream that provides fish access to an upstream wetland that contains surface water at least seasonally.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F5	Interannual Water Dynamics	Select one:																																												
		throughout the last 5 years most of the AA has been **constantly covered** with surface water, except for **one** period (of <6 continuous months) when most of the AA went dry (lacked surface water, due to drawdown, drought, etc.).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0			
		throughout the last 5 years most of the AA has **constantly lacked** surface water, except for **one** period (of <6 continuous months) when most of the AA was inundated (had surface water).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
		neither of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0	1	0	1
		unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0
F6	Surface Water Occurrence	No part of the AA is ever inundated (contains at least 1 inch of water above the land surface) for more than 14 consecutive days during a normal year. That is, it is a **saturated-only** wetland. If true, mark "1" here, then **SKIP TO F39** (Herbaceous Extent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
F7	Seasonal Water Extent	During normal years, the percent of the wetland AA that is inundated **only seasonally** (more than 14 consecutive days but no more than 9 months, or in tidal wetlands is "high marsh" that is inundated by tides fewer than half the days in any month) is:																																											
		>75% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
		50-75% of the AA	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	1	1	0	1	0	0	0

		Assessment Area	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
		25-50% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5-25% of the AA	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	0	1	0	0	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	0
		<5% of the AA, or none	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
F8	Extent of Persistent Surface Water (Dry Season)	When the AA's surface water is at its lowest annual level, the percent of the AA still containing surface water (whether obscured by vegetation or not) is:																																												
		>95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the AA	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the AA	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		1-25% of the AA	1	1	1	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	0	1	0	1
		None of the above, and the AA contains or is part of a fringe wetland, SKIP to F10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		None of the above, and not a fringe wetland, SKIP to F10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
F9	Onsite Surface Water Isolation (Dry Season)	When the AA's surface water is at its lowest annual level (for tidal wetlands = annual lowest tide), the percent of the surface water that is in or connected to flowing channels that exit the AA, compared to surface water that is outside of channels and their floodplains (e.g., in small depressions that do not connect annually to the channel if any), is:																																											
		all (100%) located in channels, swales, or with a contiguous surface water connection to a lake or estuary at all times of year	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		75-99% in or connected to channels, swales, or contiguous lake/ estuary, 1-25% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	1	1	0	0	0	0	0	1	1	0	1	0	0
		50-75% in or connected to channels, swales, or contiguous lake/ estuary, 25-50% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		25-50% in or connected to channels, swales, or contiguous lake/ estuary, 50-75% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
		1-25% in or connected to channels, swales, or contiguous lake/ estuary, 75-99% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
		all located in isolated pools or a single isolated pond from which no surface water exits when levels are lowest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
F10	Onsite Surface Water Isolation (Wet Season)	During most of the wettest time of a normal year, the percent of the surface water that is in or connected to ditches, swales, or flowing channels that exit the AA, compared to surface water that is in isolated pools that do not connect annually to channels or swales (if any), is:																																											
		all (100%) located in channels, *swales* , or in other areas with a wet-season surface connection to channels or to a contiguous lake or estuary	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
		75-99% in or connected to channels, swales, or contiguous lake/ estuary, 1-25% in isolated pools	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	0	1	1	0	1	1	0	1	1	1	1	1	0	0	0	1	0	0	0
		50-75% in or connected to channels, swales, or contiguous lake/ estuary, 25-50% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
		25-50% in or connected to channels, swales, or contiguous lake/ estuary, 50-75% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		1-25% in or connected to channels, swales, or contiguous lake/ estuary, 75-99% in isolated pools	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
		all located in isolated pools or a single isolated pond from which no surface water exits	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
F11	Predominant Water Fluctuation Range	During most years, the difference in surface water level in most of the vegetated area between the driest and wettest time of year is:									.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
		>6 ft change	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		3-6 ft change	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		1-3 ft change	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		0.5 - 1 ft change	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	0	0	0	0	1	0	1	0	1	1	1	1	1	1	1	0	1	0
		<0.5 ft or no change (stable)	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
F12	Predominant Depth Class	During most of the time surface water is present, its depth in most of the inundated part of the AA is:																																											
		>6 ft deep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		2-6 ft deep	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0
		1-2 ft deep	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.5 - 1 ft deep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	0	0
		<0.5 ft deep	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
F13	Depth Class Distribution	During most of the time when surface water is present (select one):																																											
		One depth class (use the classes in F13) comprises >90% of the AA's inundated area	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0
		One depth class comprises >50% of the AA's inundated area	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	0	1	0	0	1	1	1	1	0	0	0	0	1	0
		Neither of above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
F14	Deep Spots	Ponded nontidal water deeper than 3 ft covers at least 1 acre or >5% of the AA during (check all that apply):																																											
		most of the period November-April	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0
		most of the period May-October	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		neither of above (no ponded water >3 ft deep is that extensive)	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	0	1	0	0	0	1	1	1	0	1	0	0
		impossible to tell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
F15	Open Water Interspersion With Partly Inundated Vegetation	Visualize the extent and distribution of ponded open water within the AA, relative to the distribution of the most dominant form of partly-inundated vegetation (herbaceous or woody, with stems and leaves >4" above the water surface). Visualize this as it occurs during May of most years. In the table to the right, first estimate the percent open water (left column) in the AA, then its distribution (top row). Select the highest applicable number and enter it in column D. If the AA has no ponded water during May, score it "1." If this is a fringe wetland, assume Open Water is >70%.	2	2	1	1	1	1	2	1	4	4	2	4	4	2	0	1	1	11	1	1	1	1	1	1	1	1	1	14	14	2	9	2	0	2	8	2	2	2	2	2	2	2	0	1	16	1
		Note: Ponded open water is surface water that is not visibly flowing and contains no vegetation (except perhaps floating-leaved or completely submersed species) and is not beneath a canopy of trees or shrubs. For tidal sites, consider the condition at average mid-tide.																																											
F16	Inflow	When surface water (if any) enters the AA, it enters as (select all applicable choices):																																											
		flow moving in channels or ditches	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0	1	1	0	0
		surface water exchanged broadly with contiguous waters such as an estuary, lake, or major river	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	1	0
		water pumped into or intentionally diverted to the AA, e.g., as part of a stormwater dispersion system, irrigation practice, or drainage tile outlet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	1	0
		groundwater, runoff, and direct precipitation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	0	1	1	1	0	0	1	1	1	1	0	1	1	1
F17	Groundwater	Select one:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Part of the wetland contains strong evidence of groundwater discharges at the wetland surface during summer. (a) Springs are observed or are shown on maps, or (b) water is cooler in summer and warmer in winter than in other local wetlands, or (c) measurements from shallow wells indicate groundwater is discharging to the wetland.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
		Part of the wetland has less definitive **evidence** of discharging groundwater during summer. Wetland has no perennial tributary and is on organic, sandy, or gravelly soil (as determined in F59) AND has one or more: (a) outflow is present and	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		persists during most of the summer or (b) on a natural slope of >5%, or (c) very close to the base of a natural slope steeper than 15%, or (d) located at a geologic fault, or (e) has rust deposits, colored precipitates, or dispersible natural oil sheen, or (f) within a mile of the top of a HUC4 watershed.																																										
		Neither of above is true, although some groundwater may discharge to or flow through the wetland, and wetland is in a region of **eastern Oregon** with mean annual precipitation of less than xx.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1
		None of the above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
F18	Outflow Duration	The **most durable** surface water connection between the **wetland** and the closest contiguous and/or downslope surface waters is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		persistent (>9 months/yr), or daily tidal exchange	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	1	1	0	1	1	0
		seasonal (14 days to 9 months/yr, not necessarily consecutive)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1
		temporary (<14 days, not necessarily consecutive)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		none -- the wetland lacks an outlet. If so, mark "1" here and SKIP TO F26 (Sheltering of Water).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F19	Outflow Confinement	During major runoff events, in the places where surface water exits the wetland it is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		impeded by a pipe, culvert, tidegate, narrowly breached dike, berm, beaver dam, or other obstruction (other than natural topography), or water is pumped out of the wetland (e.g., for irrigation)	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	0	1	0
		not impeded by anything other than (possibly) natural topography	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	0	0	1	0	0	0	0	1	0	0	1	0	1
F20	Inlet+Outlet	Either the wetland has BOTH **an inlet and outlet** with seasonal or persistent surface flow, or the wetland is **tidal or lacustrine**. If so, enter "1" here and continue. If **neither condition met**, enter "0" here and then SKIP to F25 (Sheltering of Water).	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	0
F21	Throughflow Complexity	During peak annual flow, the surface water that flows through the wetland's channel or floodplain:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		W	W	W	W	W	W	W	W	W	W	W	W	W	W
		encounters little or no vegetation, boulders, or other sources of friction.	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
		mostly encounters herbaceous vegetation that offers little resistance, and water follows a fairly **straight** path from entrance to exit (few internal channels, only slight meandering)	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
		mostly encounters herbaceous vegetation that offers little resistance and follows a fairly **indirect** path from entrance to exit (non-channelized flow or many internal channels, or very braided or tightly meandering)	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0
		encounters measurable resistance from fairly-rigid vegetation (e.g., **cattail, bulrush, woody** plants) or channel-clogging debris, and follows a fairly **straight** path from entrance to exit.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		encounters measurable resistance from fairly-rigid vegetation (e.g., cattail, bulrush, woody species) or channel-clogging debris, and follows a fairly **indirect** path from entrance to exit.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F22	Vegetated Zone Relative Width	During most of the time **open water** is present in the wetland, vegetated areas within the wetland, where they are contiguous to open water, are:																																													
		wider than the contiguous open water	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	0	0	1	0
		narrower than the contiguous open water	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F23	Vegetated Zone Absolute Width	At the AA, the average width of wetland vegetated area that separates adjoining uplands (if any) from contiguous open waters (if any) is:																																												
		>300 ft, or no contiguous upland or open waters (not even temporary)	1	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	0	0	0	0	0	1	1	0	0	0	0
		100-300 ft	0	0	0	1	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		25-100 ft	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0
		5-25 ft	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		<5 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F24	Undercut Banks	During most of the spring and summer, the percent of the AA's **water edge**, if any, that has undercut banks is:																																												
		>75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		25-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25%	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	1	1	1	1	1	0	0	1	1	1	0	1	1	0	1	1	1	1	1	0	1	0	0	0	0	0	0
		<1%, or no definable water edge is present	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		cannot estimate	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	1	0	1	1	0	0	0	0
F25	Sheltering of Water	At mid-day in summer, the area of surface water within the AA that is shaded by herbaceous or woody vegetation, incised channels, streambanks, or other features also present within the AA is:																																												
		>75% of the water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75% of the water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
		5-25% of the water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5% of the water	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	1	0	1	0	1	1	0	1	1	1	1	1	1	0	1	1	0	0	0	0
		(surface water is typically absent in summer or during low tide)	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
F26	Abovewater Wood	The number of downed wood pieces thicker than 4 inches that remain only partly underwater during most of the spring or early summer, thus potentially serving as **basking sites** for turtles, birds, or frogs, is:																																												
		Several	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	0
		Few or none, or AA never has any surface water at that time	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	0	0	0	1	1	1	1	1	1	1	0	0	1	1
F27	Islands	Select all that apply:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		During **early summer** the AA contains a floating vegetation mat suitable for nesting birds and isolated from the shore by water depths >3 ft. Or AA is an island with similar isolation and a gently-sloping water edge that is **mostly vegetated**.	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		During early summer the AA contains (or is) an island with a gently-sloping water edge, that is **mostly bare** and is isolated from the shore by water depths >3 ft.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Neither of above	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1
F28	Shorebird Feeding Habitats	The extent of **mudflats or unwooded shortgrass** areas within the AA during **April or August** (or for tidal AAs, during mean low tide) is usually:																																												
		none, or <100 sq. ft, and there are none that cover >10,000 sq. ft anywhere within 300 ft of the AA	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	0	1	1	1	1	1	0	0	0	0	0	1
		none, or <100 sq. ft, but some that cover >10,000 are within 300 ft of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		100-1000 sq. ft. within AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		1000 – 10,000 sq. ft. within AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		>10,000 sq. ft within AA	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
F29	Waves	Which of the following is most true:																																												

		Assessment Area	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
		Wind or boats frequently generate waves of >1 ft near the AA, those waves are intercepted by the wetland, and structures behind the AA are protected from wave erosion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Wind or boats frequently generate waves of >1 ft near the AA, those waves are intercepted by the wetland, but there are no structures behind the wetland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		Neither wind nor boats frequently generate waves of >1 ft near the AA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	0	0
F30	Vectors for Waterborne Pests	Select all that apply:																																												
		a regularly-used boat dock is present within or contiguous to the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		a regularly-used boat dock is **not within the AA**, but there is one within 300 ft of the AA and there is a persistent or tidal surface connection between the dock and the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
		large ships that empty ballast water are regularly present in nearby contiguous waters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		the AA has a **persistent surface water connection** (>9 mos./yr, via ditch, pipe, channel, tidegate, or floodplain) to a nearby perennial stream, river, lake, or estuary	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	1	1	0	0	0
		none of the above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	0	0	0	1	0	1
F31	Non-native Aquatic Animals	The following are known or likely to have reproducing populations in this AA, its wetland, or in water bodies within 300 ft that connect to the AA at least seasonally. Select all that apply:																																												
		non-native amphibians (e.g., bullfrog) or reptiles (e.g., red-ear slider)	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	0	1	1	1
		carp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		other non-native fish (e.g., bass, gambusia, walleye, crappie, brook trout)	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	1
		non-native invertebrates (e.g., New Zealand mudsnail, mitten crab, rusty crayfish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		nutria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		none of above, or unknown	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
F32	Ice-free	During most years, most of the wetland's surface water does **not** freeze, or freezes for fewer than 4 continuous weeks, or surface water is absent most winters.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1	1
F33	Ponded Threshold	During **most of the summer**, the AA contains more than 0.25 acre of ponded non-tidal surface water that is deeper than 1 ft, or is within 300 ft of such an area and the intervening habitat is not developed (roads, etc.). Or nesting within the AA by ducks, geese, or swans has been proven.	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	1	0	0	0	0	1	0
F34	No Scum	During most summers, **less than** 80% of the water surface is covered by floating algae, duckweed, and other non-rooted aquatic plants, AND no major fish kills occur. If no surface water is present in summer, mark "1" in column D.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1
F35	Submerged & Floating-leaved Aquatic Vegetation (SAV)	*SAV* (submerged & floating-leaved aquatic vegetation) occupies an annual maximum of:																																												
		>95% of the surface water area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the surface water area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the surface water area	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
		5-25% of the surface water area	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0
		<5% of the surface water area. Mark "1" here and SKIP TO F39 (Herbaceous Extent).	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	1	1	1	0	0	1
F36	SAV Invasive vs. Non-invasive Cover	The areal cover of SAV at mid-summer is comprised of:																																												
		mostly invasive SAV species (see list in column E). Mark "1" here and SKIP to F39.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly non-invasive species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0
		impossible to tell	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
F37	SAV Native Species Dominance	Considering just the SAV species that are native:																																												
		one or two of those species together comprise >50% of the SAV cover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0
		no two of the native SAV species together comprise >50% of the SAV cover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		impossible to tell	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
F38	SAV Species Ubiquity	Of all the SAV species in this AA:																																												
		all are species that are common among Oregon's wetlands and lakes (see Plants worksheet, "Common Species" column)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1	0
		at least one species is a SAV plant that is **not** common among Oregon's wetlands and lakes, and it covers >1% of the SAV area or >100 sq. ft.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		impossible to tell	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
F39	Herbaceous Extent	The areal cover of **herbaceous** plants during **mid-summer** is:																																												
		>95% of the **vegetated** part of the AA	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	1	1	1	1	1	1	0	0	0
		50-95% of the vegetated part of the AA	0	0	1	0	0	1	1	1	0	1	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
		25-50% of the vegetated part of the AA	1	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
		5-25% of the vegetated part of the AA	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0
		<5% of the vegetated part of the AA. Mark "1" here and SKIP TO F44 (Woody Extent).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F40	Graminoid vs. Forb Cover	The maximum annual areal cover of herbaceous plants is:																																												
		overwhelmingly graminoids (>80% cover of grasslike plants)	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
		mostly graminoids (50-80% cover)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
		mostly non-graminoids (e.g., forbs, ferns) (50-80%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		overwhelmingly (>80%) non-graminoids	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F41	Herbaceous Native vs. Non-native Cover	The maximum annual areal cover of herbaceous plants is:																																												
		overwhelmingly (>80% cover) non-native species, of which >10% are species considered invasive (see column E). Mark "1" and SKIP to F44.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly (>80% cover) non-native species, but <10% are considered invasive (see column E). Mark "1" and SKIP to F44.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) non-native species, regardless of invasiveness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		mostly (50-80%) native species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0
		overwhelmingly (>80%) native species	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	0	0	1
F42	Herbaceous Species Dominance	Of just the herbaceous species:																																												
		one or two **native** species together comprise >50% of the areal cover of herbaceous plants at any time during the year	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
		no two of the native species together comprise >50% of the areal cover of herbaceous plants, or no native species are present	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F43	Herbaceous Plant Species Ubiquity	Of all the herbaceous species in this AA:																																												
		all are species that are common among Oregon's wetlands (see Plants worksheet, "Common Species" column)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		at least one species is not common among Oregon's wetlands and it covers >1% of the AA's herbaceous area or >100 sq. ft (either contiguous or scattered)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F44	Woody Extent Within	Within the AA, woody vegetation (shrubs, trees, woody vines) occupies:																																												
		>95% of the vegetated part of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
	the AA	50-95% of the vegetated AA	1	1	0	1	1	1	0	1	1	0	1	0	0	1	1	1	1	0	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0
		25-50% of the vegetated AA	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		5-25% of the vegetated AA	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5% of the vegetated AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	1	1	1	1	1	1	0	0	1
F45	Woody Extent Along Water Edge	Where surface water is present during the wettest time of year, the AA's woody vegetation occupies:																																												
		>95% of the area within 100 ft of open water, or, nearly all of the woody vegetation is inundated during annual high water	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		50-95% of the area within 100 ft of open water, or most of the woody vegetation is inundated during annual high water	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0
		25-50% of the area within 100 ft of open water	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		5-25% of the area within 100 ft of open water	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5% of the area within 100 ft of water; mark "1" here and SKIP TO F50 (Woody Diameter Classes).	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	1	1	1	1	1	0	0	1
F46	Woody Distribution	The wetland's woody vegetation is:																																												
		clumped in fairly distinct bands or patches mostly separate from herbaceous vegetation, and most patches or bands are large (>1 acre including contiguous upland woody veg). Or nearly the entire AA is wooded. Isolated shrubs or trees are few.	0	0	1	1	1	0	0	1	1	0	0	0	0	0	0	1	1	0	1	1	1	1	1	0	1	0	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0
		clumped in fairly distinct bands or patches mostly separate from herbaceous vegetation, and most patches are small (<1 acre including contiguous upland woody veg).	1	1	0	0	0	0	1	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
		dispersed quite evenly amid the herbaceous vegetation, in many small patches, or many isolated shrubs or trees.	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F47	Cover of Woody Invasives	Within parts of the AA having shrubs or woody vines, the areal cover is:																																												
		overwhelmingly (>80%) non-natives that are categorized as invasive (see Plants worksheet)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly other non-natives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) non-natives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) natives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly (>80%) natives	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0
F48	Shrub & Vine Species Dominance	Of just the shrub & woody vine species that are native:																																												
		one or two of the native species together comprise >80% of the shrub & vine cover	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0
		no two of the native species together comprise >80% of the shrub & vine cover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F49	Shrub & Vine Species Ubiquity	Of all the shrub & woody vine species in this AA:																																											
		all are species that are common among Oregon's wetlands (see Plants worksheet, "Common Species" column)	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0
		at least one species is not common among Oregon's wetlands and it covers >1% of the AA or >100 sq. ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F50	Woody Diameter Classes	Select all the types occupying >5% of the wooded part of the AA or >5% of its upland edge if that is wooded.																																											
		deciduous 1-4" diameter and >3 ft tall	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
		evergreen 1-4" diameter and >3 ft tall	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	1	1	0	0
		deciduous 4-9" diameter	1	1	0	0	0	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		evergreen 4-9" diameter	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	0	0	0	0	0	1	1	0	1	0
		dead standing 4-9" diameter	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
		deciduous 9-21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		evergreen 9-21" diameter	1	1	1	1	1	1	1	1	0	1	0	0	1	0	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	0	1	0	1	1	0	0	0	0	0	1	1	0	1	0
		dead standing 9-21" diameter	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	0
		deciduous >21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		evergreen >21" diameter	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		dead standing >21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lacks woody vegetation, or none of above occupy >5% of the wooded part of the AA or 5% of the length of the upland edge.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	0	0	1
F51	N Fixers	Within the vegetated part of the AA, the cover of nitrogen-fixing plants (e.g., alder, sweetgale, legumes) is:																																												
		<1% or none	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		1-25%	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F52	Waterfowl Food Plants	The percent of the vegetated part of the AA, excluding areas that are never inundated, which contains one or more of these plants: Alisma spp., Beckmannia spp., Polygonum spp. (natives only), Potomogeton (Stuckenia) spp., Ruppia spp., Sagittaria spp., Sparganium spp., Zostera spp., is:																																												
		<1% or none, and none are known to occur commonly within the same wetland or within 300 ft of this AA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1
		<1% or none, but some are known to occur commonly within the same wetland or within 300 ft of this AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
		1-10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
		10-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F53	History of Fire or Vegetation Removal	The last time that >5% of the AA's vegetation cover was burned or harvested for hay or timber was:																																												
		0-12 months ago, and this occurs almost annually within part of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0-12 months ago, but was not an annual (or near-annual) event	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-5 years ago	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>5 years ago, or never	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
		unknown	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
F54	Height Uniformity of Dominant Stratum	Within the stratum (herbaceous, shrub, or tree) that covers the most onsite area, the wetland plants during maximum annual cover condition are mostly:																																												
		of nearly uniform height (+ or - 20% of average)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1		
		of very diverse heights (e.g., short & tall forbs, short & mid-height grasses)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		
F55	Bare Ground & Plant Litter	In the part of the AA that is inundated only seasonally or is saturated, the usual condition during minimum annual cover conditions in a typical 1 x 1 m plot is:																																												
		little or no (<5%) *bare ground* or plant litter is visible between stems or under canopy; dense herbaceous ground cover; may be dense perennial grasses, moss, or others with high stem or root density.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	1	1	0
		some (5-20%) bare ground or litter is visible; moderately dense ground cover; may be mostly perennial forbs, creeping vines, fairly sparse grasses.	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	1
		much (20-50%) bare ground or plant litter is visible; low stem density; may be mostly woody plants, cattail, bulrush, sparse annuals.	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0

		Assessment Area	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
		mostly (>50%) bare ground or plant litter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F56	Upland Edge Shape Complexity	Most of the edge between the wetland and upland is (select one):	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Linear: a significant proportion of the AA's upland edge is straight, as in AAs bounded by partly or wholly by dikes or roads	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
		Convoluted: Wetland perimeter is many times longer than maximum width of the wetland, with many alcoves and indentations ("fingers")	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Intermediate: AA's perimeter either (a) is only mildly convoluted, or (b) mixed -- contains about lengths of linear and convoluted segments.	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1
F57	Upland Inclusions	The extent of inclusions of upland within the AA (as indicated by their topography, plants, and/or soils) is:																																												
		Many (e.g., wetland-upland "mosaic")	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		Few or none	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1
F58	Soil Composition in the Soil Pit	The composition of the soil in the soil pit at the ground surface (uppermost soil layer and excluding the *duff layer,* see protocol in ORWAP Manual) is:																																											
		Loamy : includes silt, silt loam, loam, sandy loam	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	0	1	1	1	0	1	1	1	0	1	0	0	0	0	1	1	1	1	1
		Clayey : includes clay, clay loam, silty clay, silty clay loam, sandy clay, sandy clay loam	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		Organic : includes muck, mucky peat, peat, and mucky mineral	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Coarse : includes sand, loamy sand, gravel, cobble, stones, boulders, fluvents, fluvaquents, riverwash	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	1	1	1	1	0	0	0	0	0
F59	Downed Wood	The number of downed wood pieces longer than 6 ft and with diameter >6", and not submerged by water when water is present, is:																																											
		Several (>5 if AA is >10 acres, or >2 for smaller AAs)	1	1	0	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
		Few or none	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
F60	Ground Irregularity	The number of animal burrows, mounds, hummocks, boulders, upturned trees, islands, natural levees, dry channels, pits, wide soil cracks, and microdepressions (in parts of the AA that lack persistent water) is:																																											
		Several (extensive micro-topography)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Few or none (minimal microtopography; <1% of the area that isn't persistently inundated); e.g., many flat sites having a single hydroperiod	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	1	0	0	0	0	0	1	1	1	0	0	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0
		Intermediate	1	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1
F61	Internal Gradient	The gradient along most of the AA's water flow paths (both sheet and channel flow) is:																																											
		>10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		6-10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		2-5%	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	1	1	0	1	1	0
		Flat (<2%, no slope or flow is ever apparent. Includes most depressional sites	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	0	0	1	0	0	1
F62	Fish Access From Offiste	Small fish (e.g., stickleback, minnow) from elsewhere in the watershed can access part of this AA for at least 2 days during most years or are known to already be present onsite.	1	1	0	0	0	1	1	1	1	1	1	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	1
F63	Nesting or Roosting Structures	Within the AA or within its wetland or within 300 ft of AA, there are bridges, buildings, caves, or ledges with openings/ crevices, well-maintained bird or bat boxes, elevated platforms, or other artificial structures suitable for nesting by some native bird or bat species.	0	0	0	0	0	1	0	1	1	0	0	0	0	1	1	1	0	1	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1
F64	Cliffs, Banks, or Beaver	In the AA or within its wetland or within 100 ft of the AA, there are elevated terrestrial features such as cliffs, stream banks, excavated pits, or pumice walls (but not riprap) that extend at least 6 ft nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Or there is evidence that beaver have used this AA (e.g., gnawed limbs).	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
F65	*Visibility*	The maximum percent of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public paved paths that adjoin or are within 300 ft of the AA (select one) is:																																											
		>50%	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	1	1	0	0	0	0	0
		25-50%	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		<25%	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	0	0	0	0	0	0	1	1	1
F66	*Ownership*	Most of the AA is (select one):																																											
		in public ownership	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		in private ownership	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
F67	*Public Access*	For most of the AA, permission for access is normally given or allowed:																																											
		to anyone, on any date, no permit required	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		to anyone, but only on particular dates, no permit required	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		only on a case-by-case or permit basis, on any date	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		only on a case-by-case or permit basis, only on particular dates	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		seldom or never	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		(do not know)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1
F68	*Non-consumptive Uses - Actual or Potential*	Assuming access permission was granted, select all statements that are true of this AA as it currently exists:																																											
		Walking is physically possible in >5% of the AA during most of year, e.g., free of deep water and dense shrub thickets	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0
		All or part of the AA (or an area within sight of the AA and within 100 ft) would be physically accessible to people in wheelchairs, e.g., paved and flat	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	0	1	1	0	1	0	1	1	1	0	0	0	1	0	1	1	0	0	0	0
		Maintained roads, parking areas, or foot-trails are within 30 ft of the AA, or the AA can be accessed most of the year by boat	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	1	1
F69	*Sustained Scientific Use*	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring wetland.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(do not know)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F70	Consumptive Uses (Provisioning Services)	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select all that apply.																																											
		low-impact commercial timber harvest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		low-impact grazing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		commercial harvesting of hay or mushrooms	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		waterfowl hunting or furbearer trapping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		fishing (including shellfish harvest)	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	1	1	1	1	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0
		None of the above	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	1	0	1	1	1	1	1	1	1	0	0	1
F71	Domestic Wells	Wells that currently provide drinking water are:																																											
		Within 500 ft and downslope from the AA	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	1	1	1	1
		500-1000 ft and downslope	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0

		Assessment Area	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
		>1000 ft downslope, or none downslope, or AA is tidal, or no information	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0
F72	Sediment Removal	Excessive accumulation of sediment has caused problems for large boats, with shoaling in some cases necessitating frequent dredging, in waters that are located:																																												
		contiguous to the AA, or <1 mile downslope from the AA	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		1-5 miles downslope	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>5 miles downslope, or no accumulation problems, or no information	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
F73	Devegetation	The percent of the AA's vegetation cover that normally grows taller than 4 inches but which has been persistently reduced to less than that height by mowing and/or grazing by domestic or wild animals is:																																											
		>95%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
		50-90%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		5-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	1
		<5%, or grazing/ mowing does not cause the described condition	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	1	0	1	0	1	1	1	0	1	1	0	1	1	0
F74	Core Area 1	The part of the AA almost never visited by humans during an average year probably comprises:																																											
		>95% of the AA	1	1	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0
		50-95%	0	0	0	1	1	1	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	1	1	0	0	0	0	0	1	1	0	1	0
		5-50%, or <5% but inhabited building is within 300 ft of the AA	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1
		<5%, and no inhabited building within 300 ft of the AA	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
F75	Core Area 2	The part of the AA visited by humans almost daily for several weeks during an average year probably comprises:																																											
		>95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0
		5-50%	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	1	1	1	0	0	0
		<5%	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	1	1	1	0	0	0	0	0	1
F76	Weed Source Along Upland Edge	Along the AA's boundary with upland, the percent of the upland edge (within 10 ft of AA) that is occupied by species that are marked as invasive in the Plants worksheet is:																																											
		most (>50%) of the upland edge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		much (5-50%) of the upland edge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0
		some (1-5%) of the upland edge	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	1	1	1	1	0
		none of the upland edge (invasives apparently absent), or AA is an island with no upland	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1
F77	Natural Land Cover in Buffer	Within 100 ft upslope of the AA's wetland-upland boundary, the percent of the upland that contains *natural* (not necessarily native) land cover is:																																											
		>90%, or there is no upland boundary	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	1	1	1	1	1	0	1	1	0	0	1	0
		60 to 90%	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0
		30 to 60%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
		5 to 30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		<5%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
F78	Type of Land Cover Alteration in Buffer	Within 100 ft upslope of the AA's wetland-upland boundary, the upland land cover that is not natural (as defined above) is mostly:																																											
		impervious surface, e.g., paved road, parking lot, building, exposed rock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	1	1	1	0	0	1	1	1	0	0	0	0	1	0	0
		bare pervious surface, e.g., dirt road, dike, dunes, recent clearcut, landslide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		cultivated row crops or orchard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		artificially landscaped areas or lawn	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0
		grain fields, or grassland grazed or mowed to a height usually shorter than 4 inches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		(buffer is >90% natural land cover or AA occupies all of an island)	1	1	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0	0	1	1
F79	*Buffer Slope*	Along the AA's wetland-upland boundary and extending 100 ft uphill, the average slope of the land is mostly:																																											
		<1% (flat -- almost no noticeable slope, or there is no upland boundary)	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
		2-5%	1	1	0	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	0
		5-30%	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		>30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F80	Edge Slope	Within 10 ft of ponded surface water (if any) in early summer, the percent of the vegetated area (wetland or upland) that has a gentle or moderate slope (less than 5% slope) is:																																											
		>75%	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	1	1	0
		50-75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50%	1	1	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<1%,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(ponded surface water in early summer covers <1% of AA, or AA is tidal)	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	1	1
F81	Independently Sustainable Hydrology	How likely is it that any or all of this AA will persist as a wetland (not necessarily of the same type) if an existing dike or berm, water control structure (e.g., dam, weir), or pumping/ diversion system that now helps sustain it -- and is within 1 mile of the AA -- was removed or became inoperable?																																											
		Very likely, or no such feature is present (greater sustainability potential)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0
		Somewhat likely -- part but not all of the AA would remain a wetland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	1
		Unlikely or not at all (lower sustainability potential)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103	104a-b	105	106	107	108	109	110	111	112	113	114
F1	Presence of Specific Wetland Types	Does the AA contain, or is it part of, any of these wetland types? Mark "1" next to all that apply.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Tidal wetland: receives tidal water at least once during a normal year, regardless of salinity, and dominated by emergent or woody vegetation.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lacustrine wetland: an undiked non-tidal wetland bordering a body of standing **open water** that is >20 acres.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Fringe wetland: an undiked "shoreline" wetland bordering persistent open water that is >3 times wider than the wetland (includes most tidal, lacustrine, large riverine, some others).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F2	Wetland Type of Conservation Concern	Does the AA contain, or is it part of, any of these wetland types? Mark "1" next to all that apply. Consult the "Rare Wetland Type" reported for the general vicinity by the Oregon Explorer web site, but be aware that those may not apply to the exact AA you have delimited.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Bog or Fen: contains a sponge-like organic soil layer which covers most of the AA AND often has extensive cover of sedges and/or broad-leaved evergreen shrubs (e.g., Ledum). Often lacks tributaries, being fed mainly by groundwater and/or direct precipitation.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Playa, Salt Flat, or Alkaline Lake: a non-tidal ponded water body usually having saline (salinity >1 ppt or conductivity >1000 µS) or alkaline (conductivity >2000 µS and pH >9) conditions and large seasonal water level fluctuations (if inputs-outputs unregulated), If a playa or salt flat, vegetation cover is sparse and plants typical of saline or alkaline conditions (e.g., *Distichlis* , *Atriplex*) are common.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Hot spring (anywhere in Oregon): a wetland where discharging groundwater in summer is >10 degrees (F) warmer than the expected water temperature.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Native wet prairie (west of the Cascade crest): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, and dominated primarily by graminoids often including species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Vernal pool (Willamette Valley): a seasonally inundated wetland, underlain by hardpan or claypan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and with plant species distinctly different from those in slighly higher areas, and often including species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Vernal pool (Medford area): a seasonally inundated acidic wetland, underlain by hardpan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and having concentric rings of similar vegetation, often including species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Vernal pool (Modoc basalt & Columbia Plateau): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located on shallow basalt bedrock and often having species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Interdunal wetland (Coastal ecoregion): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located between sand dunes where wind has scoured the sand down to the water table (deflation plain), and often with significant cover of species in column E.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Mature forested wetland (anywhere): a wetland in which mean diameter of trees (d.b.h., FACW and FAC species only) exceeds 18 inches, and/or the average age of trees exceeds 80 years, or there are >5 trees/acre with diameter >32 inches.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Ultramafic soil wetland (mainly southwestern Oregon): a low-elevation wetland, usually with a sponge-like organic soil layer, occurring in an area with exposed serpentine or peridotite rock, and/or in soils with very low Ca:Mg ratios.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Wooded tidal wetlands with >30% cover of trees and shrubs. A wetland inundated at least once annually by tides and often dominated by woody plant species.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Undiked tidal freshwater wetland: an emergent or wooded wetland inundated at least once annually by tides and with surface salinity <0.5 ppt during most of spring and summer, and which has never been diked.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		NONE of above	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F3	Low Marsh	The percent of the vegetated part of the AA that is "low marsh" (covered by tidal water for part of almost every day) is:																							
		>95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<1% or none of the AA (high marsh only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F4	Tidal-Nontidal Hydroconnectivity	AA is (select one):	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		contiguous to a non-tidal palustrine wetland that contains surface water at least seasonally, and mostly not separated by a dike or other barrier, allowing fish access to both wetlands during spring.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		contiguous to a non-tidal palustrine wetland that contains surface water at least seasonally, but mostly separated by a dike or other barrier, yet still allowing fish access to both wetlands during spring.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not contiguous to a non-tidal palustrine wetland that contains surface water, but has an inflowing stream that allows fish during the springtime to access a non-tidal wetland < 1 mile upstream.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not contiguous to a non-tidal palustrine wetland that contains surface water, but has an inflowing stream that allows fish during the springtime to access a non-tidal wetland > 1 mile upstream.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		not contiguous to a non-tidal palustrine wetland, and lacks an inflowing non-tidal stream that provides fish access to an upstream wetland that contains surface water at least seasonally.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F5	Interannual Water Dynamics	Select one:																							
		throughout the last 5 years most of the AA has been **constantly covered** with surface water, except for **one** period (of <6 continuous months) when most of the AA went dry (lacked surface water, due to drawdown, drought, etc.).	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		throughout the last 5 years most of the AA has **constantly lacked** surface water, except for **one** period (of <6 continuous months) when most of the AA was inundated (had surface water).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
		neither of above	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
		unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
F6	Surface Water Occurrence	No part of the AA is ever inundated (contains at least 1 inch of water above the land surface) for more than 14 consecutive days during a normal year. That is, it is a **saturated-only** wetland. If true, mark "1" here, then SKIP TO F39 (Herbaceous Extent)	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
F7	Seasonal Water Extent	During normal years, the percent of the wetland AA that is inundated **only seasonally** (more than 14 consecutive days but no more than 9 months, or in tidal wetlands is "high marsh" that is inundated by tides fewer than half the days in any month) is:																							
		>75% of the AA	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		50-75% of the AA	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0

		Assessment Area	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103	104a-b	105	106	107	108	109	110	111	112	113	114
		25-50% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
		5-25% of the AA	0	1	0	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0
		<5% of the AA, or none	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
F8	Extent of Persistent Surface Water (Dry Season)	When the AA's surface water is at its lowest annual level, the percent of the AA still containing surface water (whether obscured by vegetation or not) is:																							
		>95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the AA	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the AA	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25% of the AA	0	0	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1
		None of the above, and the AA contains or is part of a fringe wetland, SKIP to F10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		None of the above, and not a fringe wetland, SKIP to F10	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
F9	Onsite Surface Water Isolation (Dry Season)	When the AA's surface water is at its lowest annual level (for tidal wetlands = annual lowest tide), the percent of the surface water that is in or connected to flowing channels that exit the AA, compared to surface water that is outside of channels and their floodplains (e.g., in small depressions that do not connect annually to the channel if any), is:																							
		all (100%) located in channels, swales, or with a contiguous surface water connection to a lake or estuary at all times of year	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
		75-99% in or connected to channels, swales, or contiguous lake/ estuary, 1-25% in isolated pools	0	0	1	1	1	1	0	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0
		50-75% in or connected to channels, swales, or contiguous lake/ estuary, 25-50% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% in or connected to channels, swales, or contiguous lake/ estuary, 50-75% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25% in or connected to channels, swales, or contiguous lake/ estuary, 75-99% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		all located in isolated pools or a single isolated pond from which no surface water exits when levels are lowest	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F10	Onsite Surface Water Isolation (Wet Season)	During most of the wettest time of a normal year, the percent of the surface water that is in or connected to ditches, swales, or flowing channels that exit the AA, compared to surface water that is in isolated pools that do not connect annually to channels or swales (if any), is:																							
		all (100%) located in channels, *swales* , or in other areas with a wet-season surface connection to channels or to a contiguous lake or estuary	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		75-99% in or connected to channels, swales, or contiguous lake/ estuary, 1-25% in isolated pools	0	0	0	1	1	1	0	0	0	0	0	1	0	1	1	0	1	1	1	1	1	1	1
		50-75% in or connected to channels, swales, or contiguous lake/ estuary, 25-50% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% in or connected to channels, swales, or contiguous lake/ estuary, 50-75% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25% in or connected to channels, swales, or contiguous lake/ estuary, 75-99% in isolated pools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		all located in isolated pools or a single isolated pond from which no surface water exits	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
F11	Predominant Water Fluctuation Range	During most years, the difference in surface water level in most of the vegetated area between the driest and wettest time of year is:	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
		>6 ft change	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		3-6 ft change	0	0	1	1	1	1	0	1	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0
		1-3 ft change	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.5 - 1 ft change	0	1	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	1	1	1	1	1
		<0.5 ft or no change (stable)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
F12	Predominant Depth Class	During most of the time surface water is present, its depth in most of the inundated part of the AA is:																							
		>6 ft deep	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		2-6 ft deep	0	0	1	1	1	1	0	1	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0
		1-2 ft deep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.5 - 1 ft deep	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0
		<0.5 ft deep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
F13	Depth Class Distribution	During most of the time when surface water is present (select one):																							
		One depth class (use the classes in F13) comprises >90% of the AA's inundated area	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1
		One depth class comprises >50% of the AA's inundated area	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0
		Neither of above	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
F14	Deep Spots	Ponded nontidal water deeper than 3 ft covers at least 1 acre or >5% of the AA during (check all that apply):																							
		most of the period November-April	0	1	1	1	1	1	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
		most of the period May-October	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
		neither of above (no ponded water >3 ft deep is that extensive)	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0
		impossible to tell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0
F15	Open Water Interspersion With Partly Inundated Vegetation	Visualize the extent and distribution of ponded open water within the AA, relative to the distribution of the most dominant form of partly-inundated vegetation (herbaceous or woody, with stems and leaves >4" above the water surface). Visualize this as it occurs during May of most years. In the table to the right, first estimate the percent open water (left column) in the AA, then its distribution (top row). Select the highest applicable number and enter it in column D. If the AA has no ponded water during May, score it "1." If this is a fringe wetland, assume Open Water is >70%.	0	16	8	2	2	2	8	8	1	0	1	8	0	1	2	2	2	2	2	2	2	2	2
		Note: Ponded open water is surface water that is not visibly flowing and contains no vegetation (except perhaps floating-leaved or completely submersed species) and is not beneath a canopy of trees or shrubs. For tidal sites, consider the condition at average mid-tide.																							
F16	Inflow	When surface water (if any) enters the AA, it enters as (select all applicable choices):																							
		flow moving in channels or ditches	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1
		surface water exchanged broadly with contiguous waters such as an estuary, lake, or major river	0	1	0	1	1	1	0	1	0	0	0	1	0	1	1	1	0	0	0	0	0	1	1
		water pumped into or intentionally diverted to the AA, e.g., as part of a stormwater dispersion system, irrigation practice, or drainage tile outlet	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0
		groundwater, runoff, and direct precipitation	0	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1
F17	Groundwater	Select one:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Part of the wetland contains strong evidence of groundwater discharges at the wetland surface during summer. (a) Springs are observed or are shown on maps, or (b) water is cooler in summer and warmer in winter than in other local wetlands, or (c) measurements from shallow wells indicate groundwater is discharging to the wetland.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103	104a-b	105	106	107	108	109	110	111	112	113	114
		Part of the wetland has less definitive evidence of discharging groundwater during summer. Wetland has no perennial tributary and is on organic, sandy, or gravelly soil (as determined in F59) AND has one or more: (a) outflow is present and persists during most of the summer or (b) on a natural slope of >5%, or (c) very close to the base of a natural slope steeper than 15%, or (d) located at a geologic fault, or (e) has rust deposits, colored precipitates, or dispersible natural oil sheen, or (f) within a mile of the top of a HUC4 watershed.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Neither of above is true, although some groundwater may discharge to or flow through the wetland, and wetland is in a region of eastern Oregon with mean annual precipitation of less than xx.	0	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1
		None of the above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F18	Outflow Duration	The most durable surface water connection between the wetland and the closest contiguous and/or downslope surface waters is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		persistent (>9 months/yr), or daily tidal exchange	0	1	1	1	1	1	0	1	0	0	1	1	0	1	1	1	1	1	1	0	1	1	1
		seasonal (14 days to 9 months/yr, not necessarily consecutive)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		temporary (<14 days, not necessarily consecutive)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		none -- the wetland lacks an outlet. If so, mark "1" here and SKIP TO F26 (Sheltering of Water).	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F19	Outflow Confinement	During major runoff events, in the places where surface water exits the wetland it is:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		impeded by a pipe, culvert, tidegate, narrowly breached dike, berm, beaver dam, or other obstruction (other than natural topography), or water is pumped out of the wetland (e.g., for irrigation)	0	1	0	1	1	1	0	0	1	0	1	0	0	0	0	0	1	1	1	1	0	1	1
		not impeded by anything other than (possibly) natural topography	0	0	1	0	0	0	0	1	0	0	0	1	0	1	1	1	0	0	0	0	1	0	0
F20	Inlet+Outlet	Either the wetland has BOTH an inlet and outlet with seasonal or persistent surface flow, or the wetland is tidal or lacustrine. If so, enter "1" here and continue. If neither condition met, enter "0" here and then SKIP to F25 (Sheltering of Water).	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	1	1	0	1	1	1
F21	Throughflow Complexity	During peak annual flow, the surface water that flows through the wetland's channel or floodplain:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		encounters little or no vegetation, boulders, or other sources of friction.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		mostly encounters herbaceous vegetation that offers little resistance, and water follows a fairly straight path from entrance to exit (few internal channels, only slight meandering)	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly encounters herbaceous vegetation that offers little resistance and follows a fairly indirect path from entrance to exit (non-channelized flow or many internal channels, or very braided or tightly meandering)	0	0	1	0	0	0	0	1	0	0	0	1	0	1	1	1	0	1	1	0	1	1	1
		encounters measurable resistance from fairly-rigid vegetation (e.g., cattail, bulrush, woody plants) or channel-clogging debris, and follows a fairly straight path from entrance to exit.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		encounters measurable resistance from fairly-rigid vegetation (e.g., cattail, bulrush, woody species) or channel-clogging debris, and follows a fairly indirect path from entrance to exit.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F22	Vegetated Zone Relative Width	During most of the time open water is present in the wetland, vegetated areas within the wetland, where they are contiguous to open water, are:																							
		wider than the contiguous open water	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	1	1	0	1	1	1
		narrower than the contiguous open water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F23	Vegetated Zone Absolute Width	At the AA, the average width of wetland vegetated area that separates adjoining uplands (if any) from contiguous open waters (if any) is:																							
		>300 ft, or no contiguous upland or open waters (not even temporary)	0	0	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0
		100-300 ft	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1
		25-100 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5-25 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5 ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F24	Undercut Banks	During most of the spring and summer, the percent of the AA's water edge, if any, that has undercut banks is:																							
		>75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75%	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25%	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<1%, or no definable water edge is present	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
		cannot estimate	0	0	1	0	0	0	0	1	0	0	0	1	0	1	1	1	1	0	0	0	1	0	0
F25	Sheltering of Water	At mid-day in summer, the area of surface water within the AA that is shaded by herbaceous or woody vegetation, incised channels, streambanks, or other features also present within the AA is:																							
		>75% of the water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75% of the water	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the water	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5-25% of the water	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5% of the water	0	0	0	1	1	1	0	0	0	0	0	1	0	1	1	1	1	1	1	0	1	1	1
		(surface water is typically absent in summer or during low tide)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
F26	Abovewater Wood	The number of downed wood pieces thicker than 4 inches that remain only partly underwater during most of the spring or early summer, thus potentially serving as basking sites for turtles, birds, or frogs, is:																							
		Several	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
		Few or none, or AA never has any surface water at that time	0	0	1	1	1	1	1	1	0	0	1	0	0	1	1	0	1	1	1	1	1	1	1
F27	Islands	Select all that apply:	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		During early summer the AA contains a floating vegetation mat suitable for nesting birds and isolated from the shore by water depths >3 ft. Or AA is an island with similar isolation and a gently-sloping water edge that is mostly vegetated.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		During early summer the AA contains (or is) an island with a gently-sloping water edge, that is mostly bare and is isolated from the shore by water depths >3 ft.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Neither of above	0	1	1	1	1	1	1	1	0	0	1	1	0	1	1	0	1	1	1	1	1	1	1
F28	Shorebird Feeding Habitats	The extent of mudflats or unwooded shortgrass areas within the AA during April or August (or for tidal AAs, during mean low tide) is usually:																							
		none, or <100 sq. ft, and there are none that cover >10,000 sq. ft anywhere within 300 ft of the AA	0	0	0	1	1	1	0	0	0	0	1	1	0	1	1	1	0	0	0	0	0	0	1
		none, or <100 sq. ft, but some that cover >10,000 are within 300 ft of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		100-1000 sq. ft. within AA	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0
		1000 – 10,000 sq. ft. within AA	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
		>10,000 sq. ft within AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
F29	Waves	Which of the following is most true:																							

		Assessment Area	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103	104a-b	105	106	107	108	109	110	111	112	113	114
		Wind or boats frequently generate waves of >1 ft near the AA, those waves are intercepted by the wetland, and structures behind the AA are protected from wave erosion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Wind or boats frequently generate waves of >1 ft near the AA, those waves are intercepted by the wetland, but there are no structures behind the wetland	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Neither wind nor boats frequently generate waves of >1 ft near the AA	0	0	1	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1
F30	Vectors for Waterborne Pests	Select all that apply:																							
		a regularly-used boat dock is present within or contiguous to the AA	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		a regularly-used boat dock is **not within the AA**, but there is one within 300 ft of the AA and there is a persistent or tidal surface connection between the dock and the AA	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		large ships that empty ballast water are regularly present in nearby contiguous waters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		the AA has a **persistent surface water connection** (>9 mos./yr, via ditch, pipe, channel, tidegate, or floodplain) to a nearby perennial stream, river, lake, or estuary	0	0	1	1	1	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
		none of the above	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	1	1	1	1	1	1
F31	Non-native Aquatic Animals	The following are known or likely to have reproducing populations in this AA, its wetland, or in water bodies within 300 ft that connect to the AA at least seasonally. Select all that apply:																							
		non-native amphibians (e.g., bullfrog) or reptiles (e.g., red-ear slider)	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	0	0	0	0	1	1
		carp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		other non-native fish (e.g., bass, gambusia, walleye, crappie, brook trout)	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	0	0	0	0	1	1
		non-native invertebrates (e.g., New Zealand mudsnail, mitten crab, rusty crayfish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		nutria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		none of above, or unknown	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0
F32	Ice-free	During most years, most of the wetland's surface water does **not** freeze, or freezes for fewer than 4 continuous weeks, or surface water is absent most winters.	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	1	1	1	1	1
F33	Ponded Threshold	During **most of the summer**, the AA contains more than 0.25 acre of ponded non-tidal surface water that is deeper than 1 ft, or is within 300 ft of such an area and the intervening habitat is not developed (roads, etc.). Or nesting within the AA by ducks, geese, or swans has been proven.	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
F34	No Scum	During most summers, **less than** 80% of the water surface is covered by floating algae, duckweed, and other non-rooted aquatic plants, AND no major fish kills occur. If no surface water is present in summer, mark "1" in column D.	0	1	1	1	1	1	1	1	0	0	0	1	0	0	0	1	1	1	0	0	0	0	1
F35	Submerged & Floating-leaved Aquatic Vegetation (SAV)	*SAV* (submerged & floating-leaved aquatic vegetation) occupies an annual maximum of:																							
		>95% of the surface water area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the surface water area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50% of the surface water area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		5-25% of the surface water area	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	1	1	0
		<5% of the surface water area. Mark "1" here and SKIP TO F39 (Herbaceous Extent).	0	0	1	1	1	1	1	1	0	0	1	1	0	0	0	0	1	0	0	1	0	0	1
F36	SAV Invasive vs. Non-invasive Cover	The areal cover of SAV at mid-summer is comprised of:																							
		mostly invasive SAV species (see list in column E). Mark "1" here and SKIP to F39.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly non-invasive species	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
		impossible to tell	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	1	0
F37	SAV Native Species Dominance	Considering just the SAV species that are native:																							
		one or two of those species together comprise >50% of the SAV cover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
		no two of the native SAV species together comprise >50% of the SAV cover	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		impossible to tell	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
F38	SAV Species Ubiquity	Of all the SAV species in this AA:																							
		all are species that are common among Oregon's wetlands and lakes (see Plants worksheet, "Common Species" column)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
		at least one species is a SAV plant that is **not** common among Oregon's wetlands and lakes, and it covers >1% of the SAV area or >100 sq. ft.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		impossible to tell	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
F39	Herbaceous Extent	The areal cover of **herbaceous** plants during **mid-summer** is:																							
		>95% of the **vegetated** part of the AA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
		50-95% of the vegetated part of the AA	0	0	1	0	1	1	1	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0
		25-50% of the vegetated part of the AA	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5-25% of the vegetated part of the AA	0	1	0	0	0	0	0	1	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0
		<5% of the vegetated part of the AA. Mark "1" here and SKIP TO F44 (Woody Extent).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F40	Graminoid vs. Forb Cover	The maximum annual areal cover of herbaceous plants is:																							
		overwhelmingly graminoids (>80% cover of grasslike plants)	0	0	0	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
		mostly graminoids (50-80% cover)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly non-graminoids (e.g., forbs, ferns) (50-80%)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly (>80%) non-graminoids	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
F41	Herbaceous Native vs. Non-native Cover	The maximum annual areal cover of herbaceous plants is:																							
		overwhelmingly (>80% cover) non-native species, of which >10% are species considered invasive (see column E). Mark "1" and SKIP to F44.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly (>80% cover) non-native species, but <10% are considered invasive (see column E). Mark "1" and SKIP to F44.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) non-native species, regardless of invasiveness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) native species	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
		overwhelmingly (>80%) native species	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
F42	Herbaceous Species Dominance	Of just the herbaceous species:																							
		one or two **native** species together comprise >50% of the areal cover of herbaceous plants at any time during the year	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0
		no two of the native species together comprise >50% of the areal cover of herbaceous plants, or no native species are present	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1
F43	Herbaceous Plant Species Ubiquity	Of all the herbaceous species in this AA:																							
		all are species that are common among Oregon's wetlands (see Plants worksheet, "Common Species" column)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		at least one species is not common among Oregon's wetlands and it covers >1% of the AA's herbaceous area or >100 sq. ft (either contiguous or scattered)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F44	Woody Extent Within	Within the AA, woody vegetation (shrubs, trees, woody vines) occupies:																							
		>95% of the vegetated part of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103	104a-b	105	106	107	108	109	110	111	112	113	114
	the AA	50-95% of the vegetated AA	0	1	0	1	0	0	0	1	1	1	0	1	0	1	1	1	0	0	0	0	0	0	0
		25-50% of the vegetated AA	0	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		5-25% of the vegetated AA	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
		<5% of the vegetated AA	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
F45	Woody Extent Along Water Edge	Where surface water is present **during the wettest time of year**, the AA's woody vegetation occupies:																							
		>95% of the area **within 100 ft of open water**, or, nearly all of the woody vegetation is inundated during annual high water	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95% of the area within 100 ft of open water, or most of the woody vegetation is inundated during annual high water	0	0	1	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0
		25-50% of the area within 100 ft of open water	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
		5-25% of the area within 100 ft of open water	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5% of the area within 100 ft of water; mark "1" here and SKIP TO F50 (Woody Diameter Classes).	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	1	1	1	1	1	1
F46	Woody Distribution	The wetland's woody vegetation is:																							
		clumped in fairly distinct bands or patches mostly separate from herbaceous vegetation, and **most patches or bands are large** (>1 acre including contiguous upland woody veg). Or nearly the entire AA is wooded. Isolated shrubs or trees are few.	0	0	1	1	0	0	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
		clumped in fairly distinct bands or patches mostly separate from herbaceous vegetation, and **most patches are small** (<1 acre including contiguous upland woody veg).	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
		dispersed quite evenly amid the herbaceous vegetation, in many small patches, or many isolated shrubs or trees.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F47	Cover of Woody Invasives	Within parts of the AA having shrubs or woody vines, the areal cover is:																							
		overwhelmingly (>80%) non-natives that are categorized as **invasive** (see Plants worksheet)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly **other non-natives**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) non-natives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		mostly (50-80%) **natives**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		overwhelmingly (>80%) natives	0	1	1	1	1	1	0	1	1	0	1	1	0	1	1	1	0	0	0	0	0	0	0
F48	Shrub & Vine Species Dominance	Of just the shrub & woody vine species that are native:																							
		one or two of the native species together comprise >80% of the shrub & vine cover	0	1	1	1	1	1	0	1	1	0	1	1	0	1	1	1	0	0	0	0	0	0	0
		no two of the native species together comprise >80% of the shrub & vine cover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F49	Shrub & Vine Species Ubiquity	Of all the shrub & woody vine species in this AA:																							
		all are species that are common among Oregon's wetlands (see Plants worksheet, "Common Species" column)	0	1	1	1	1	1	0	1	1	0	1	1	0	1	1	1	0	0	0	0	0	0	0
		at least one species is not common among Oregon's wetlands and it covers >1% of the AA or >100 sq. ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F50	Woody Diameter Classes	Select all the types occupying >5% **of the wooded part** of the AA or >5% **of its upland edge** if that is wooded.																							
		deciduous 1-4" diameter and >3 ft tall	0	0	1	1	1	1	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0
		evergreen 1-4" diameter and >3 ft tall	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1
		deciduous 4-9" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		evergreen 4-9" diameter	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	0
		dead standing 4-9" diameter	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		deciduous 9-21" diameter	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		evergreen 9-21" diameter	0	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	0	1	1	0	0	1	0
		dead standing 9-21" diameter	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		deciduous >21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		evergreen >21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		dead standing >21" diameter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lacks woody vegetation, or none of above occupy >5% of the wooded part of the AA or 5% of the length of the upland edge.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
F51	N Fixers	Within the vegetated part of the AA, the cover of nitrogen-fixing plants (e.g., alder, sweetgale, legumes) is:																							
		<1% or none	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1
		1-25%	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
		25-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F52	Waterfowl Food Plants	The percent of the vegetated part of the AA, **excluding areas that are never inundated**, which contains one or more of these plants: Alisma spp., Beckmannia spp., Polygonum spp. (natives only), Potomogeton (Stuckenia) spp., Ruppia spp., Sagittaria spp., Sparganium spp., Zostera spp., is:																							
		<1% or none, and none are known to occur commonly within the same wetland or within 300 ft of this AA	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
		<1% or none, but some are known to occur commonly within the same wetland or within 300 ft of this AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
		1-10%	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1
		10-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F53	History of Fire or Vegetation Removal	The last time that >5% of the AA's vegetation cover was burned or harvested for hay or timber was:																							
		0-12 months ago, and this occurs almost annually within part of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0-12 months ago, but was not an annual (or near-annual) event	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-5 years ago	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>5 years ago, or never	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		unknown	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F54	Height Uniformity of Dominant Stratum	Within the stratum (herbaceous, shrub, or tree) that covers the most onsite area, the wetland plants during maximum annual cover condition are mostly:																							
		of nearly uniform height (+ or - 20% of average)	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		of very diverse heights (e.g., short & tall forbs, short & mid-height grasses)	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F55	Bare Ground & Plant Litter	In the part of the AA that is inundated only seasonally or is saturated, the usual condition during **minimum annual cover conditions** in a typical 1 x 1 m plot is:																							
		little or no (<5%) *bare ground* or plant litter is visible between stems or under canopy; dense herbaceous ground cover; may be dense perennial grasses, moss, or others with high stem or root density.	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1
		some (5-20%) bare ground or litter is visible; moderately dense ground cover; may be mostly perennial forbs, creeping vines, fairly sparse grasses.	1	0	0	0	1	1	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0
		much (20-50%) bare ground or plant litter is visible; low stem density; may be mostly woody plants, cattail, bulrush, sparse annuals.	0	0	1	1	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0

		Assessment Area	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103	104a-b	105	106	107	108	109	110	111	112	113	114
		mostly (>50%) bare ground or plant litter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F56	Upland Edge Shape Complexity	Most of the edge between the wetland and upland is (select one):	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		Linear: a significant proportion of the AA's upland edge is straight, as in AAs bounded by partly or wholly by dikes or roads	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Convoluted: Wetland perimeter is many times longer than maximum width of the wetland, with many alcoves and indentations ("fingers")	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0
		Intermediate: AA's perimeter either (a) is only mildly convoluted, or (b) mixed -- contains about lengths of linear and convoluted segments.	1	0	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1
F57	Upland Inclusions	The extent of inclusions of upland within the AA (as indicated by their topography, plants, and/or soils) is:																							
		Many (e.g., wetland-upland "mosaic")	0	1	1	1	1	1	0	1	1	0	1	1	0	1	1	1	0	0	0	0	0	0	0
		Few or none	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	1	1	1	1	1	1
F58	Soil Composition in the Soil Pit	The composition of the soil in the soil pit at the ground surface (uppermost soil layer and excluding the *duff layer,* see protocol in ORWAP Manual) is:																							
		Loamy : includes silt, silt loam, loam, sandy loam	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1
		Clayey : includes clay, clay loam, silty clay, silty clay loam, sandy clay, sandy clay loam	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
		Organic : includes muck, mucky peat, peat, and mucky mineral	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		Coarse : includes sand, loamy sand, gravel, cobble, stones, boulders, fluvents, fluvaquents, riverwash	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F59	Downed Wood	The number of downed wood pieces longer than 6 ft and with diameter >6", and not submerged by water when water is present, is:																							
		Several (>5 if AA is >10 acres, or >2 for smaller AAs)	0	1	1	1	1	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
		Few or none	1	0	0	0	0	0	1	0	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1
F60	Ground Irregularity	The number of animal burrows, mounds, hummocks, boulders, upturned trees, islands, natural levees, dry channels, pits, wide soil cracks, and microdepressions (in parts of the AA that lack persistent water) is:																							
		Several (extensive micro-topography)	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		Few or none (minimal microtopography; <1% of the area that isn't persistently inundated); e.g., many flat sites having a single hydroperiod	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0
		Intermediate	0	1	0	0	0	0	1	1	1	0	1	0	0	1	1	0	1	1	1	1	1	1	1
F61	Internal Gradient	The gradient along most of the AA's water flow paths (both sheet and channel flow) is:																							
		>10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		6-10%	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		2-5%	1	1	1	0	0	0	0	1	0	1	0	1	0	1	1	1	1	0	0	0	0	0	0
		Flat (<2%, no slope or flow is ever apparent. Includes most depressional sites	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	1	1	1	1	1	1
F62	Fish Access From Offsite	Small fish (e.g., stickleback, minnow) from elsewhere in the watershed can access part of this AA for at least 2 days during most years or are known to already be present onsite.	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	0	1	1	0	1	1	1
F63	Nesting or Roosting Structures	Within the AA or within its wetland or within 300 ft of AA, there are bridges, buildings, caves, or ledges with openings/ crevices, well-maintained bird or bat boxes, elevated platforms, or other artificial structures suitable for nesting by some native bird or bat species.	0	1	0	1	1	1	0	0	1	0	0	1	0	1	1	1	0	1	1	1	1	1	1
F64	Cliffs, Banks, or Beaver	In the AA or within its wetland or within 100 ft of the AA, there are elevated terrestrial features such as cliffs, stream banks, excavated pits, or pumice walls (but not riprap) that extend at least 6 ft nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Or there is evidence that beaver have used this AA (e.g., gnawed limbs).	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
F65	*Visibility*	The maximum percent of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public paved paths that adjoin or are within 300 ft of the AA (select one) is:																							
		>50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
		25-50%	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
		<25%	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0
F66	*Ownership*	Most of the AA is (select one):																							
		in public ownership	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		in private ownership	1	1	1	0	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
F67	*Public Access*	For most of the AA, permission for access is normally given or allowed:																							
		to anyone, on any date, no permit required	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		to anyone, but only on particular dates, no permit required	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		only on a case-by-case or permit basis, on any date	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		only on a case-by-case or permit basis, only on particular dates	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		seldom or never	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(do not know)	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F68	*Non-consumptive Uses - Actual or Potential*	Assuming access permission was granted, select all statements that are true of this AA as it currently exists:																							
		Walking is physically possible in >5% of the AA during most of year, e.g., free of deep water and dense shrub thickets	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		All or part of the AA (or an area within sight of the AA and within 100 ft) would be physically accessible to people in wheelchairs, e.g., paved and flat	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		Maintained roads, parking areas, or foot-trails are within 30 ft of the AA, or the AA can be accessed most of the year by boat	1	1	1	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1
F69	*Sustained Scientific Use*	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring wetland.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(do not know)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
F70	Consumptive Uses (Provisioning Services)	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select all that apply.																							
		low-impact commercial timber harvest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		low-impact grazing	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		commercial harvesting of hay or mushrooms	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		waterfowl hunting or furbearer trapping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		fishing (including shellfish harvest)	0	1	0	1	1	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0
		None of the above	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	1	0	1	1	1	1	1	1
F71	Domestic Wells	Wells that currently provide drinking water are:																							
		Within 500 ft and downslope from the AA	1	1	1	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	1	1	1	0	0
		500-1000 ft and downslope	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0

		Assessment Area	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102	103	104a-b	105	106	107	108	109	110	111	112	113	114
		>1000 ft downslope, or none downslope, or AA is tidal, or no information	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
F72	Sediment Removal	Excessive accumulation of sediment has caused problems for large boats, with shoaling in some cases necessitating frequent dredging, in waters that are located:																							
		contiguous to the AA, or <1 mile downslope from the AA	0	1	0	0	0	0	0	0	1	0	1	1	0	1	1	0	1	0	0	0	0	0	0
		1-5 miles downslope	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		>5 miles downslope, or no accumulation problems, or no information	1	0	1	1	1	1	1	1	0	1	0	0	1	0	0	1	0	1	1	1	1	1	1
F73	Devegetation	The percent of the AA's vegetation cover that normally grows taller than 4 inches but which has been persistently reduced to less than that height by mowing and/or grazing by domestic or wild animals is:																							
		>95%	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-90%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		5-50%	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		<5%, or grazing/ mowing does not cause the described condition	0	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1
F74	Core Area 1	The part of the AA almost never visited by humans during an average year probably comprises:																							
		>95% of the AA	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	1	0	0	1	1
		50-95%	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0
		5-50%, or <5% but inhabited building is within 300 ft of the AA	1	1	1	1	1	1	0	0	1	0	1	0	0	1	1	0	1	0	0	0	0	0	0
		<5%, and no inhabited building within 300 ft of the AA	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F75	Core Area 2	The part of the AA visited by humans almost daily for several weeks during an average year probably comprises:																							
		>95% of the AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		50-95%	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5-50%	1	0	0	1	1	1	1	0	1	0	0	1	0	1	1	1	1	0	0	0	0	0	0
		<5%	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	1	1	1	1	1
F76	Weed Source Along Upland Edge	Along the AA's boundary with upland, the percent of the upland edge (within 10 ft of AA) that is occupied by species that are marked as invasive in the Plants worksheet is:																							
		most (>50%) of the upland edge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		much (5-50%) of the upland edge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		some (1-5%) of the upland edge	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	0	0
		none of the upland edge (invasives apparently absent), or AA is an island with no upland	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1
F77	Natural Land Cover in Buffer	Within 100 ft upslope of the AA's wetland-upland boundary, the percent of the upland that contains *natural* (not necessarily native) land cover is:																							
		>90%, or there is no upland boundary	1	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0
		60 to 90%	0	0	1	1	1	1	0	0	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1
		30 to 60%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		5 to 30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<5%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F78	Type of Land Cover Alteration in Buffer	Within 100 ft upslope of the AA's wetland-upland boundary, the upland land cover that is not natural (as defined above) is mostly:																							
		impervious surface, e.g., paved road, parking lot, building, exposed rock	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
		bare pervious surface, e.g., dirt road, dike, dunes, recent clearcut, landslide	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
		cultivated row crops or orchard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		artificially landscaped areas or lawn	0	1	1	1	1	1	0	0	1	1	1	1	0	1	1	0	0	0	0	1	1	0	0
		grain fields, or grassland grazed or mowed to a height usually shorter than 4 inches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(buffer is >90% natural land cover or AA occupies all of an island)	1	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	1	1	0	0	1	1
F79	*Buffer Slope*	Along the AA's wetland-upland boundary and extending 100 ft uphill, the average slope of the land is mostly:																							
		<1% (flat -- almost no noticeable slope, or there is no upland boundary)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
		2-5%	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	0	1	1	0	0	0	1	1
		5-30%	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0
		>30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F80	Edge Slope	Within 10 ft of ponded surface water (if any) in early summer, the percent of the vegetated area (wetland or upland) that has a gentle or moderate slope (less than 5% slope) is:																							
		>75%	0	1	1	0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	1	1	1	1	1
		50-75%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		25-50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1-25%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		<1%,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(ponded surface water in early summer covers <1% of AA, or AA is tidal)	1	0	0	1	1	1	1	0	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0
F81	Independently Sustainable Hydrology	How likely is it that any or all of this AA will persist as a wetland (not necessarily of the same type) if an existing dike or berm, water control structure (e.g., dam, weir), or pumping/ diversion system that now helps sustain it -- and is within 1 mile of the AA -- was removed or became inoperable?																							
		Very likely, or no such feature is present (greater sustainability potential)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1
		Somewhat likely -- part but not all of the AA would remain a wetland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0
		Unlikely or not at all (lower sustainability potential)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Assessment Area	1	2	3	4	5	6a-b	7	8	9	10	11	12	13a-d	14	15	16	17	18	19	20	21	22	23	24	25	26a-b	27a-c	28a-b	29a-c	30	31	32	33	34
S1	Wetter Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	1	0	0	0	1	0	1	0	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	0	1	3	3	3	1	1	0	0	0
s2		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
s3	Drier Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0	0	0	4	1	0	0	0	0	1	0	1	1	0	1	1	0	0	1	0	1	1	0	1	3	3	3	1	1	1	1	1
s4		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
s5	Altered Timing of Water Inputs	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
s6	Nutrient / Contaminant / Organic/ Salt Loading	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	3	3	3	3	3	1	3	3	3	3	3	3	0	3	3	3	3	3	3	3	2	3	2	3	3	2	3	3	3	3	3	3	3	3
s7	Sediment Loading from Contributing Area	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	3	3	3	3	3	3	3	3	4	3	3	3	0	3	3	3	3	3	3	3	3	3	2	3	3	4	3	3	3	3	3	2	2	5
s8	Soil or Sediment Disturbance Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	2	0	0	0	3	2	0	0	1	3	2	0	4	4	3	1	2	3	3	2	3	4	3	3	2	3	3	3	4	2	4	3	3
s9	Vegetation Reduction Activities Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0	0	0	0	0	2	1	0	0	0	0	0	0	2	3	0	0	2	1	0	0	0	3	3	0	0	3	3	3	3	2	3	3	3

S1	Wetter Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0.2	0	0	0	0.2	0	0.2	0	0.2	0	0.2	0	0.2	0	0.2	0.2	0.2	0	0	0.2	0	0.2	0.2	0	0.2	0.6	0.6	0.6	0.2	0.2	0	0	0
s2		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.8
s3	Drier Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0	0	0	0.8	0.2	0	0	0	0	0.2	0	0.2	0.2	0	0.2	0.2	0	0	0.2	0	0.2	0.2	0	0.2	0.6	0.6	0.6	0.2	0.2	0.2	0.2	0.2
s4		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
s5	Altered Timing of Water Inputs	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
s6	Nutrient / Contaminant / Organic/ Salt Loading	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0.6	0.6	0.6	0.6	0.6	0.2	0.6	0.6	0.6	0.6	0.6	0.6	0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.4	0.6	0.4	0.6	0.6	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
s7	Sediment Loading from Contributing Area	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.8	0.6	0.6	0.6	0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.4	0.6	0.6	0.8	0.6	0.6	0.6	0.6	0.6	0.4	0.4	1
s8	Soil or Sediment Disturbance Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0.4	0	0	0	0.6	0.4	0	0	0.2	0.6	0.4	0	0.8	0.8	0.6	0.2	0.4	0.6	0.6	0.4	0.6	0.8	0.6	0.6	0.4	0.6	0.6	0.6	0.8	0.4	0.8	0.6	0.6
s9	Vegetation Reduction Activities Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0	0	0	0	0	0.4	0.2	0	0	0	0	0	0	0.4	0.6	0	0	0.4	0.2	0	0	0	0.6	0.6	0	0	0.6	0.6	0.6	0.6	0.4	0.6	0.6	0.6

		Assessment Area	35	36	37	38	39	40	41	42	43a-e	44	45	46	47	48	49	50a-c	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67
S1	Wetter Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0	1	1	0	1	1	1	1	0	0	0	0	0
s2		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
s3	Drier Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
s4		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
s5	Altered Timing of Water Inputs	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
s6	Nutrient / Contaminant / Organic/ Salt Loading	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	1	1	1	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	3	1	3	3	3	1	1	1	1	1
s7	Sediment Loading from Contributing Area	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	4	4	4	4	4	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	4	4	4	4	4	4	4	4	5	5	5	5	5
s8	Soil or Sediment Disturbance Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	3	2	0	3	3	3	3	3	3	3	3	3	3	3	1	2	2	3	3	3	4	2	3	3	4	3	3	3	4	0	4	4	4
s9	Vegetation Reduction Activities Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	3	2	3	2	2	2	0	0	0	0	0

S1	Wetter Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	0.4	0	0	0	0	0.2	0.2	0	0.2	0.2	0.2	0.2	0	0	0	0	0
s2		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
s3	Drier Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0
s4		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
s5	Altered Timing of Water Inputs	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
s6	Nutrient / Contaminant / Organic/ Salt Loading	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0.2	0.2	0.2	0.2	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	0.6	0.6	0.2	0.6	0.6	0.6	0.2	0.2	0.2	0.2	0.2
s7	Sediment Loading from Contributing Area	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.8	0.8	0.8	0.8	0.8	0	0	0	0	0	0	0	0	0	0.4	0.4	0.4	0	0	0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1	1	1	1	1
s8	Soil or Sediment Disturbance Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.6	0.4	0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.2	0.4	0.4	0.6	0.6	0.6	0.8	0.4	0.6	0.6	0.8	0.6	0.6	0.6	0.8	0	0.8	0.8	0.8
s9	Vegetation Reduction Activities Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0.4	0.2	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6	0.6	0.4	0.6	0.4	0.4	0.4	0	0	0	0	0

		Assessment Area	68	69	70	71a-b	72	73	74a-c	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92a-b	93a-b	94	95	96	97	98	99	100a-b	101	102
S1	Wetter Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	3	1	0	0
s2		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0
s3	Drier Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0	0	0	0	0	1	0	1	0	1	0	1	1	1	1	1	1	0	1	1	1	2	1	1	1	1	1	1	0	1	5	1	0
s4		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1	4
s5	Altered Timing of Water Inputs	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0
s6	Nutrient / Contaminant / Organic/ Salt Loading	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	1	1	1	1	3	3	3	1	0	3	3	3	1	2	2	2	2	1	1	1	3	3	3	3	3	3	1	1	2	2	2	1	1	1	1
s7	Sediment Loading from Contributing Area	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	5	5	5	5	3	3	3	0	0	3	3	3	4	3	3	3	3	4	4	4	4	4	4	4	5	4	4	4	4	4	2	4	0	4	0
s8	Soil or Sediment Disturbance Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	4	4	3	0	0	1	1	0	0	4	0	4	4	0	0	0	0	2	1	1	4	3	4	2	5	4	5	2	2	2	3	4	2	0	2
s9	Vegetation Reduction Activities Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0	0	2	0	3	1	1	2	0	2	0	3	4	0	0	2	2	0	1	0	3	0	3	1	4	3	3	0	0	0	2	3	2	2	0

S1	Wetter Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0.2	0.2	0.2	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0.2	0.2	0.2	0.2	0.2	0	0.6	0.2	0	0
s2		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0
s3	Drier Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0	0	0	0	0	0.2	0	0.2	0	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2	1	0.2	0
s4		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.8	0.2	0.8
s5	Altered Timing of Water Inputs	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2	0	0.2	0
s6	Nutrient / Contaminant / Organic/ Salt Loading	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0.2	0.2	0.2	0.2	0.6	0.6	0.6	0.2	0	0.6	0.6	0.6	0.2	0.4	0.4	0.4	0.4	0.2	0.2	0.2	0.6	0.6	0.6	0.6	0.6	0.6	0.2	0.2	0.4	0.4	0.4	0.2	0.2	0.2	0.2
s7	Sediment Loading from Contributing Area	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	0.6	0.6	0.6	0	0	0.6	0.6	0.6	0.8	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1	0.8	0.8	0.8	0.8	0.8	0.4	0.8	0	0.8	0
s8	Soil or Sediment Disturbance Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.8	0.8	0.6	0	0	0.2	0.2	0	0	0.8	0	0.8	0.8	0	0	0	0	0.4	0.2	0.2	0.8	0.6	0.8	0.4	1	0.8	1	0.4	0.4	0.4	0.6	0.8	0.4	0	0.4
s9	Vegetation Reduction Activities Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0	0	0.4	0	0.6	0.2	0.2	0.4	0	0.4	0	0.6	0.8	0	0	0.4	0.4	0	0.2	0	0.6	0	0.6	0.2	0.8	0.6	0.6	0	0	0	0.4	0.6	0.4	0.4	0

		Assessment Area	103	104a-b	105	106	107	108	109	110	111	112	113	114
S1	Wetter Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	0	0	0	0	2	0	0	1	1	0	0
s2		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	1	1	1	1	1	1	1	1	1	1	1
s3	Drier Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	1	1	1	0	1	1	1	1	1	1
s4		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	0	1	1	1	1	1	1	1	1	1	1
s5	Altered Timing of Water Inputs	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	1	0	1	1	1	1	1	1	1	1	1	1
s6	Nutrient / Contaminant / Organic/ Salt Loading	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	1	1	1	1	1	2	2	3	2	3	3	3
s7	Sediment Loading from Contributing Area	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	4	3	4	4	4	3	4	4	4	4	4	4
s8	Soil or Sediment Disturbance Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	4	4	4	4	2	3	4	3	3	1	1
s9	Vegetation Reduction Activities Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0	3	2	2	2	3	2	2	2	2	2	2

S1	Wetter Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0	0	0	0	0.4	0	0	0.2	0.2	0	0
s2		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
s3	Drier Water Regime	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0	0.2	0.2	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2
s4		0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
s5	Altered Timing of Water Inputs	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.2	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
s6	Nutrient / Contaminant / Organic/ Salt Loading	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.6	0.4	0.6	0.6	0.6
s7	Sediment Loading from Contributing Area	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0.8	0.6	0.8	0.8	0.8	0.6	0.8	0.8	0.8	0.8	0.8	0.8
s8	Soil or Sediment Disturbance Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-4. (2 pt) if 5-6. (3 pt) if 7-8. (4 pt) if 9-10. (5 pt) if >10.	0	0.8	0.8	0.8	0.8	0.4	0.6	0.8	0.6	0.6	0.2	0.2
s9	Vegetation Reduction Activities Within the Site	0 if Sum= 0, (1 pt) if Sum= 1-3. (2 pt) if 4-5. (3 pt) if 6-7. (4 pt) if 8. (5 pt) if 9.	0	0.6	0.4	0.4	0.4	0.6	0.4	0.4	0.4	0.4	0.4	0.4

APPENDIX G: ORWAP SUMMARY SCORES – TABLES G1 TO G4

Table G-1: Abbreviations for ORWAP Functions (Adamus, 2010)

Code	Wetland Function
WS	Water Storage & Delay
SR	Sediment Retention & Stabilization
PR	Phosphorus Retention
NR	Nitrate Removal & Retention
T	Thermoregulation
CS	Carbon Sequestration
OE	Organic Matter Export
INV	Aquatic Invertebrate Habitat
FA	Anadromous Fish Habitat
FR	Non-anadromous Fish Habitat
AM	Amphibian & Reptile Habitat
WBF	Waterbird Feeding Habitat
WBM	Waterbird Nesting Habitat
SBM	Songbird, Raptor & Mammal
POL	Pollinator Habitat
PD	Native Plant Diversity

Table G2. ORWAP Effectiveness Scores for Functions at 114 Upper Deschutes Wetland Sites

SITE	WS	SR	PR	NR	T	CS	OE	INV	FA	FR	AM	WBF	WBN	SBM	POL	PD
1	2.83	4.65	2.25	3.68	3.61	1.98	6.86	4.20	0.00	3.70	3.60	3.86	3.62	4.46	6.08	4.25
2	1.56	5.04	7.74	3.04	3.61	2.18	6.58	3.08	0.00	2.71	2.31	4.22	3.86	2.63	4.16	4.58
3	2.00	10.00	10.00	10.00	0.00	2.33	0.00	4.44	0.00	3.66	2.87	4.45	4.61	3.36	4.79	4.39
4	1.31	3.40	1.96	3.12	3.06	2.40	7.35	4.36	0.00	3.56	2.65	2.97	0.00	2.86	5.32	4.60
5	1.56	5.04	7.74	3.04	3.61	2.18	6.58	3.08	0.00	2.71	2.31	4.22	3.86	2.63	4.16	4.58
6a-b	5.34	5.30	4.69	4.96	2.08	2.83	5.95	5.09	0.00	1.14	5.21	3.54	2.79	2.54	4.24	4.33
7	1.89	3.90	4.26	3.82	3.61	1.94	6.77	3.77	0.00	4.55	2.26	3.75	4.18	2.58	3.56	4.73
8	1.31	3.60	2.08	2.81	3.61	2.23	6.69	3.70	0.00	4.15	2.11	3.44	4.44	2.41	3.94	4.49
9	2.14	4.61	4.21	3.22	4.44	2.15	6.84	5.19	0.00	3.18	2.63	4.39	0.00	2.87	5.33	4.79
10	2.39	5.13	4.59	5.48	3.11	2.10	4.81	4.12	0.00	2.61	2.52	3.94	4.24	2.94	4.20	4.58
11	1.72	4.09	2.31	3.44	3.61	2.30	6.63	3.91	0.00	3.63	2.22	4.19	4.82	2.68	3.85	4.18
12	2.33	4.65	4.44	3.96	3.61	2.15	5.17	2.68	0.00	3.77	1.92	3.37	0.00	2.49	3.32	4.46
13a-d	0.00	10.00	10.00	10.00	0.00	2.21	0.00	6.46	0.00	0.71	6.37	2.34	0.00	3.40	6.49	5.22
14	1.89	3.31	4.13	3.51	3.61	1.85	6.56	3.22	0.00	4.32	2.18	3.12	0.00	2.38	3.97	4.70
15	3.47	2.58	3.24	2.92	2.08	1.77	8.00	3.10	0.00	1.56	2.02	3.42	0.00	2.56	3.64	4.35
16	1.47	3.92	4.57	3.06	3.61	2.10	6.34	4.62	0.00	4.47	2.23	4.42	0.00	2.20	3.19	4.42
17	2.63	4.47	4.34	3.98	2.94	2.16	6.84	4.93	0.00	4.65	2.85	4.42	0.00	3.49	4.67	4.55
18	3.19	3.53	4.63	3.86	2.94	1.41	6.72	4.75	0.00	3.24	2.03	4.49	4.46	2.57	4.46	4.02
19	2.61	4.02	4.36	3.65	2.94	1.86	6.42	4.88	0.00	4.44	1.83	4.36	0.00	2.26	3.55	4.37
20	2.56	3.85	4.27	3.57	2.94	1.91	6.45	4.69	0.00	4.53	1.89	4.28	0.00	2.33	3.65	4.45
21	3.50	10.00	10.00	10.00	0.00	2.51	0.00	5.53	0.00	5.68	2.73	4.03	0.00	2.89	5.13	5.07
22	2.52	3.85	3.95	3.55	4.42	1.65	6.54	4.83	0.00	4.65	2.21	4.31	0.00	2.83	4.09	4.37
23	3.25	10.00	10.00	10.00	0.00	1.84	0.00	5.98	0.00	3.74	5.90	3.35	3.70	2.85	3.75	4.34

SITE	WS	SR	PR	NR	T	CS	OE	INV	FA	FR	AM	WBF	WBN	SBM	POL	PD
24	2.52	3.85	3.91	2.92	4.42	1.71	6.54	4.13	0.00	4.35	2.20	4.26	0.00	2.32	3.56	4.53
25	2.56	4.13	4.33	3.59	4.42	1.99	6.50	4.90	0.00	4.75	3.34	4.26	0.00	3.89	6.47	4.28
26a-b	1.25	10.00	10.00	10.00	0.00	2.27	0.00	5.87	0.00	0.83	5.64	3.18	0.00	2.69	4.97	4.75
27a-c	6.00	10.00	10.00	10.00	0.00	2.28	0.00	5.50	0.00	1.15	6.51	2.80	0.00	3.86	7.05	4.74
28a-b	6.00	10.00	10.00	10.00	0.00	2.28	0.00	5.50	0.00	1.15	6.51	2.80	0.00	3.86	7.05	4.74
29a-c	5.00	10.00	10.00	10.00	0.00	2.09	0.00	5.39	0.00	1.10	6.50	3.15	0.00	3.98	5.85	4.50
30	3.05	4.40	5.27	4.22	2.22	2.32	7.42	4.18	0.00	2.83	3.23	4.96	0.00	4.16	6.42	4.47
31	2.56	4.13	4.37	3.75	3.28	2.05	6.54	3.55	0.00	4.26	3.12	3.61	0.00	3.55	5.54	4.32
32	3.17	3.82	3.88	3.89	3.61	1.79	7.03	5.19	0.00	3.84	3.85	4.00	0.00	4.86	6.44	3.96
33	3.46	5.03	4.42	4.43	3.61	2.02	7.31	4.46	0.00	3.18	3.49	4.53	0.00	3.98	5.31	3.09
34	2.71	4.50	4.47	4.23	3.28	2.44	6.87	4.62	0.00	6.03	3.03	3.56	0.00	3.92	4.76	4.60
35	3.04	4.82	4.49	4.44	3.61	2.19	7.14	4.16	0.00	3.80	3.37	4.19	0.00	4.31	5.04	4.23
36	3.04	4.82	4.49	4.69	3.61	2.23	7.19	4.25	0.00	3.80	3.40	4.19	0.00	4.31	5.13	4.28
37	2.81	3.36	4.12	3.85	3.28	2.02	6.99	4.98	0.00	4.07	3.29	3.98	0.00	3.86	5.28	4.65
38	2.30	3.51	3.93	3.55	3.61	1.93	6.90	4.39	0.00	3.15	3.11	4.09	0.00	3.96	5.37	4.42
39	1.72	4.13	4.30	3.47	2.78	2.95	7.85	3.79	0.00	2.68	3.51	3.89	0.00	4.51	5.56	4.64
40	1.32	3.77	4.47	3.36	2.50	2.28	7.61	4.39	0.00	2.52	4.01	4.19	0.00	5.02	6.52	4.86
41	1.32	3.77	4.47	3.36	2.50	2.28	7.61	4.39	0.00	2.52	4.01	4.19	0.00	5.02	6.52	4.86
42	1.32	3.77	4.47	3.78	2.50	2.32	7.60	5.14	0.00	2.65	4.11	3.75	0.00	5.42	7.36	5.32
43a-e	1.48	4.05	4.53	3.37	2.50	2.36	7.48	4.38	0.00	2.51	4.06	3.45	0.00	5.12	6.99	5.15
44	1.32	3.63	4.41	3.34	2.50	2.18	7.56	5.14	0.00	2.65	4.08	3.75	0.00	5.10	7.31	5.32
45	1.32	3.77	4.47	3.36	2.50	2.32	7.60	4.38	0.00	2.51	4.01	3.75	0.00	5.09	6.52	4.86
46	1.48	4.05	4.53	3.79	2.50	2.28	7.49	5.01	0.00	2.65	4.23	3.77	0.00	5.30	7.36	5.11
47	1.32	3.77	4.47	3.36	2.50	2.32	7.61	4.81	0.00	2.65	4.06	4.22	0.00	5.13	6.89	4.85

SITE	WS	SR	PR	NR	T	CS	OE	INV	FA	FR	AM	WBF	WBN	SBM	POL	PD
48	1.32	3.77	4.47	3.36	2.50	2.32	7.61	4.81	0.00	2.65	4.06	4.22	0.00	5.13	6.89	4.85
49	1.64	4.48	4.60	3.75	2.50	2.27	5.96	5.18	0.00	2.34	6.31	3.19	0.00	3.22	5.77	5.13
50a-c	1.57	4.48	7.60	3.69	3.75	2.32	5.91	5.72	0.00	2.48	6.87	3.23	0.00	4.33	6.42	5.20
51	1.57	4.48	7.60	3.69	3.75	2.32	5.91	5.72	0.00	2.48	6.87	3.23	0.00	4.33	6.42	5.20
52	1.32	3.35	4.35	3.32	2.50	2.24	7.52	4.86	0.00	2.65	4.00	3.44	0.00	5.04	6.79	4.94
53	1.48	4.05	4.53	3.79	2.50	2.32	7.49	5.29	0.00	2.79	4.12	3.83	0.00	5.06	7.27	5.01
54	1.32	3.77	4.47	3.36	2.50	2.32	7.60	4.38	0.00	2.51	3.84	3.66	0.00	5.09	6.52	4.85
55	3.13	3.65	3.94	3.85	3.61	1.73	6.93	3.94	0.00	4.14	3.75	3.95	0.00	5.09	6.16	3.68
56	3.22	4.13	4.18	4.31	3.61	1.85	7.15	4.94	0.00	4.16	4.02	4.36	3.98	4.75	6.85	3.87
57	2.00	3.06	3.87	3.28	3.06	2.20	7.77	4.28	0.00	4.78	3.86	3.27	3.64	4.45	6.40	3.99
58	2.83	4.24	4.14	3.80	3.61	1.98	7.12	5.16	0.00	3.37	4.09	4.03	3.91	4.72	6.10	2.63
59	2.83	4.38	4.20	3.66	3.61	2.04	7.12	5.17	0.00	3.37	4.18	4.29	3.79	5.08	6.74	3.73
60	3.19	4.40	4.12	4.14	3.28	1.89	7.05	4.81	0.00	4.25	4.03	4.46	0.00	5.43	7.01	3.68
61	3.31	4.06	4.13	4.07	3.61	1.93	7.42	5.21	0.00	4.20	3.61	4.25	0.00	5.10	6.23	3.98
62	3.03	3.65	4.01	3.67	3.61	1.72	6.99	4.41	0.00	4.53	3.76	3.25	0.00	5.11	6.22	3.77
63	2.03	3.48	5.26	3.99	3.61	2.24	6.61	5.23	0.00	4.26	4.09	3.91	0.00	5.26	7.15	5.37
64	1.92	4.63	5.57	3.92	1.94	2.28	7.41	5.36	0.00	7.69	4.43	4.19	4.96	5.16	6.93	4.82
65	2.03	3.48	4.26	3.68	4.44	2.24	6.61	5.37	0.00	4.26	4.28	3.91	0.00	5.69	7.15	5.16
66	2.03	3.48	4.26	3.68	4.44	2.24	6.61	5.37	0.00	4.26	4.28	3.91	0.00	5.69	7.15	5.16
67	2.03	3.48	4.26	3.68	4.44	2.24	6.61	5.37	0.00	4.26	4.28	3.91	0.00	5.69	7.15	5.16
68	2.03	3.48	4.26	3.68	4.44	2.24	6.61	5.37	0.00	4.26	4.28	3.91	0.00	5.69	7.15	5.16
69	2.03	3.48	4.26	3.68	4.44	2.24	6.61	5.37	0.00	4.26	4.28	3.91	0.00	5.69	7.15	5.16
70	2.66	4.78	2.69	4.64	2.61	2.27	5.22	5.16	0.00	2.95	3.94	3.63	0.00	4.61	6.10	3.66
71a-b	1.85	3.41	2.45	3.27	4.94	2.39	4.74	4.34	0.00	4.03	3.66	2.66	0.00	3.99	5.41	4.13

SITE	WS	SR	PR	NR	T	CS	OE	INV	FA	FR	AM	WBF	WBN	SBM	POL	PD
72	2.55	3.38	2.10	4.60	2.72	2.11	7.77	5.11	0.00	3.17	2.63	3.14	0.00	3.54	4.95	4.15
73	2.56	5.00	4.66	4.83	4.11	2.13	6.68	5.44	0.00	3.38	3.21	4.10	3.29	4.27	6.44	4.95
74	2.55	3.38	2.10	4.60	2.72	2.16	7.77	5.25	0.00	3.06	2.61	3.24	0.00	3.54	4.95	4.05
75	1.25	10.00	10.00	10.00	0.00	1.95	0.00	5.42	0.00	0.58	5.91	2.99	0.00	2.47	5.11	4.92
76	1.58	4.15	1.94	4.14	2.28	1.78	6.54	4.59	0.00	3.22	3.03	3.91	0.00	4.45	6.20	3.53
77	1.53	3.44	4.14	3.25	3.28	2.36	6.38	3.99	0.00	3.13	2.86	3.22	0.00	3.72	4.46	4.11
78	0.67	6.88	5.29	5.33	0.00	3.93	0.00	4.11	0.00	1.29	3.92	3.02	0.00	2.99	3.99	3.20
79	1.81	4.27	4.56	4.29	3.28	2.43	4.51	4.31	0.00	3.05	3.10	3.80	0.00	3.86	5.47	4.20
80	3.31	4.48	7.23	3.60	3.28	1.81	6.64	5.09	0.00	3.55	3.51	4.44	3.79	4.80	6.52	4.77
81	3.52	4.91	5.15	4.92	1.44	3.23	5.84	6.01	0.00	5.76	3.81	4.76	0.00	4.13	5.55	4.85
82	4.08	5.50	2.80	4.47	1.78	2.77	6.11	7.07	0.00	6.22	3.81	5.98	5.51	4.18	5.55	4.77
83	4.08	5.50	2.80	5.10	1.78	2.77	5.77	7.07	0.00	6.22	3.78	5.70	5.33	3.97	5.82	4.66
84	4.02	5.33	2.75	5.01	2.11	2.77	5.81	7.00	0.00	6.09	3.70	5.42	5.23	3.97	5.82	3.83
85	3.83	4.10	2.70	3.30	0.00	2.47	7.68	6.44	0.00	1.06	6.66	3.50	0.00	3.12	4.84	4.00
86	3.28	5.25	4.67	4.65	2.44	2.75	6.11	5.95	0.00	5.91	3.25	4.34	0.00	3.41	6.12	4.92
87a-b	2.92	5.21	4.76	4.58	2.44	2.78	6.04	6.06	0.00	5.88	3.75	4.39	0.00	3.92	6.23	5.02
88	0.67	5.00	5.50	5.33	0.00	2.50	0.00	3.11	0.00	1.50	4.15	2.44	0.00	2.80	3.92	2.73
89	2.05	3.58	3.88	3.83	4.94	1.94	6.49	3.52	0.00	3.27	3.36	3.93	0.00	4.43	5.51	4.41
90	2.20	5.15	4.92	2.88	5.83	2.57	4.83	5.13	0.00	4.61	3.06	4.62	4.08	4.11	5.84	5.58
91	3.25	5.23	5.31	4.64	1.25	2.61	7.32	2.82	0.00	2.21	2.80	4.45	0.00	2.77	4.08	4.37
92a-b	0.53	3.38	5.06	4.11	0.00	2.74	0.00	4.70	0.00	1.92	2.88	2.75	0.00	2.14	4.05	3.88
93a-b	2.20	5.15	4.92	2.88	5.83	2.57	4.83	4.09	0.00	4.19	2.93	4.72	4.04	3.92	5.84	5.42
94	3.11	3.38	4.03	3.60	4.11	1.85	6.71	4.54	0.00	3.09	2.76	4.24	3.74	3.86	6.34	4.19
95	0.00	4.98	4.44	4.08	3.28	2.15	3.77	4.75	0.00	2.86	2.84	3.32	0.00	4.04	6.46	4.91

SITE	WS	SR	PR	NR	T	CS	OE	INV	FA	FR	AM	WBF	WBN	SBM	POL	PD
96	0.00	5.29	4.52	4.11	3.28	2.16	3.85	4.80	0.00	2.86	3.05	3.42	0.00	4.02	6.65	4.91
97	0.00	5.29	4.52	4.11	3.28	2.16	3.85	4.80	0.00	2.86	3.05	3.42	0.00	4.02	6.65	4.91
98	4.75	10.00	10.00	10.00	0.00	2.21	0.00	5.64	0.00	5.52	5.72	4.64	0.00	2.24	4.08	5.08
99	3.14	3.79	4.22	3.98	4.11	1.97	6.67	5.20	0.00	3.89	3.54	4.02	3.55	4.73	6.66	4.66
100a-b	3.93	5.10	4.28	3.95	1.39	3.40	5.75	4.92	0.00	4.44	6.07	2.15	0.00	3.82	5.94	4.18
101	0.53	4.94	9.28	3.27	0.00	3.95	0.00	5.31	0.00	1.50	4.13	2.19	0.00	3.21	3.96	3.19
102	3.01	5.13	7.40	3.83	2.08	2.86	5.73	6.18	0.00	1.19	6.04	3.36	0.00	3.09	4.52	5.00
103a-b	4.01	5.10	5.64	6.17	3.28	1.85	6.78	5.75	0.00	4.80	4.05	4.44	0.00	5.43	7.05	5.28
104a-b	0.33	6.88	5.22	4.78	0.00	3.47	0.00	5.83	0.00	2.08	5.89	2.19	0.00	4.35	5.21	2.75
105	2.60	4.58	4.39	4.54	3.28	2.27	6.79	4.63	0.00	3.32	3.63	4.16	0.00	4.97	5.87	4.05
106	2.60	4.58	4.39	4.54	3.28	2.27	6.80	4.64	0.00	3.33	3.81	4.19	0.00	4.97	5.87	4.05
107	3.06	3.21	3.98	3.66	3.61	1.89	6.74	4.98	0.00	3.65	4.02	4.61	0.00	5.79	7.08	3.87
108	1.50	3.69	4.71	3.72	2.50	2.24	4.43	4.04	0.00	2.36	2.37	3.76	0.00	2.41	4.93	3.44
109	2.73	5.24	4.68	3.85	2.78	3.00	6.61	4.39	0.00	2.79	3.32	5.61	4.87	4.16	5.01	4.30
110	2.73	5.03	4.51	3.60	2.50	2.77	6.89	4.11	0.00	2.72	3.01	5.28	4.69	3.74	4.62	3.24
111	4.19	5.30	4.63	4.60	3.75	2.60	6.58	5.93	0.00	2.40	6.47	4.62	0.00	3.49	4.51	3.75
112	2.83	4.40	4.24	3.98	2.50	2.50	8.58	4.42	0.00	2.88	3.33	5.20	4.28	3.91	4.51	3.08
113	2.73	5.03	4.51	4.35	2.50	2.86	7.05	4.44	0.00	2.72	3.80	5.28	4.73	4.53	4.96	3.44
114	2.73	5.03	4.65	4.35	2.50	2.82	7.05	4.38	0.00	2.53	3.82	4.84	0.00	4.50	5.04	4.19

Table G3. ORWAP Values Scores for 114 Upper Deschutes Wetland Sites

SITE	WS*	SR*	PR*	NR*	T*	INV*	FA*	FR*	AM*	WBF*	WBN*	SBM*	POL*	PD*	PUv*	PSv*	Cond*	Stress*
1	3.96	7.84	6.68	4.79	3.33	6.00	3.86	6.93	4.00	6.00	4.00	6.00	1.94	6.00	2.33	2.00	2.80	3.72
2	3.96	7.73	6.81	5.71	3.33	7.00	4.22	7.11	4.00	6.00	4.00	6.00	0.83	6.00	3.33	2.00	6.49	5.18
3	3.96	7.64	6.68	4.62	0.00	7.00	4.45	7.23	4.00	6.00	4.00	6.00	0.83	6.00	4.00	2.00	4.85	3.77
4	6.46	5.69	6.00	4.91	3.33	7.00	2.97	6.49	4.00	4.00	3.00	6.00	10.00	6.00	0.67	2.00	5.81	4.61
5	3.96	7.73	6.81	5.71	3.33	7.00	4.22	7.11	4.00	6.00	4.00	6.00	0.83	6.00	3.33	2.00	6.49	5.18
6a-b	6.46	6.21	6.47	5.27	1.67	7.00	3.54	3.33	4.00	6.00	4.00	6.00	3.06	6.00	3.00	0.00	2.66	6.31
7	6.46	7.09	6.10	5.16	3.33	7.00	3.75	6.88	4.00	6.00	4.00	6.00	1.94	6.00	1.33	2.00	4.62	5.97
8	6.46	6.92	5.85	4.91	3.33	7.00	3.44	6.72	4.00	6.00	4.00	6.00	1.94	6.00	0.67	2.00	5.24	5.09
9	6.46	8.14	5.72	5.12	3.33	7.00	4.39	7.19	7.33	6.00	4.00	6.00	10.00	6.00	0.67	2.00	5.73	5.86
10	6.46	7.01	6.10	5.16	3.33	7.00	3.94	6.97	4.00	6.00	4.00	6.00	0.83	6.00	1.33	2.00	5.18	5.44
11	6.46	7.83	6.81	5.71	3.33	7.00	4.19	7.09	7.33	6.00	4.00	6.00	5.00	6.00	3.33	2.00	7.23	5.54
12	6.46	7.20	6.22	5.29	3.33	7.00	3.37	6.69	4.00	6.00	4.00	6.00	0.83	6.00	1.33	2.00	3.93	5.91
13a-d	6.46	5.88	6.06	4.89	0.00	7.00	2.34	3.33	4.00	6.00	4.00	6.00	3.06	6.00	2.00	0.00	2.60	1.60
14	6.46	6.97	5.85	5.25	3.33	7.00	3.12	6.56	4.00	6.00	4.00	6.00	0.83	6.00	0.67	2.00	3.93	6.86
15	6.46	7.35	5.97	5.37	3.33	7.00	3.42	6.71	4.00	6.00	4.00	6.00	0.83	6.00	0.67	2.00	4.60	7.28
16	6.46	7.75	6.56	5.46	3.33	7.00	4.42	7.21	4.00	6.00	4.00	6.00	0.83	6.00	3.33	2.00	7.10	5.39
17	6.46	7.86	6.56	5.46	3.33	7.00	4.42	7.21	4.00	6.00	4.00	6.00	0.83	6.00	4.00	2.00	6.35	4.64
18	6.46	7.73	6.56	5.46	3.33	7.00	4.49	3.33	7.33	6.00	4.00	6.00	5.00	6.00	0.67	0.00	5.85	7.18
19	6.46	7.86	6.56	4.79	3.33	7.00	4.36	7.18	4.00	6.00	4.00	6.00	0.83	6.00	1.33	2.00	7.10	7.20
20	6.46	7.92	6.56	4.79	3.33	7.00	4.28	7.14	4.00	6.00	4.00	6.00	0.83	6.00	3.33	2.00	7.10	7.41
21	6.46	7.46	6.39	5.16	0.00	7.00	4.03	3.33	4.00	6.00	4.00	6.00	3.06	6.00	0.67	0.00	3.93	5.19

SITE	WS*	SR*	PR*	NR*	T*	INV*	FA*	FR*	AM*	WBF*	WBN*	SBM*	POL*	PD*	PUv*	PSv*	Cond*	Stress*
22	6.46	7.03	5.72	4.46	3.33	7.00	4.31	7.16	4.00	6.00	4.00	6.00	0.83	6.00	3.33	2.00	7.10	7.51
23	6.46	6.62	6.39	5.49	0.00	7.00	3.35	3.33	4.00	6.00	4.00	6.00	1.94	6.00	0.67	0.00	5.10	5.60
24	6.46	8.19	6.84	5.58	3.33	7.00	4.26	7.13	4.00	6.00	4.00	6.00	0.83	6.00	2.33	2.00	5.85	6.06
25	6.46	8.00	6.68	4.79	3.33	7.00	4.26	7.13	4.00	6.00	4.00	6.00	0.83	6.00	2.33	2.00	3.85	7.92
26a-b	6.46	6.08	6.39	5.16	0.00	7.00	3.18	3.33	4.00	6.00	4.00	6.00	3.06	6.00	0.67	0.00	2.60	5.90
27a-c	6.04	4.96	5.59	4.41	0.00	4.50	2.80	3.33	2.33	3.50	2.33	3.50	0.83	3.50	2.00	0.00	3.39	5.27
28a-b	6.04	4.96	5.59	4.41	0.00	4.50	2.80	3.33	2.33	3.50	2.33	3.50	0.83	3.50	2.00	0.00	3.39	5.27
29a-c	6.04	4.89	5.59	3.75	0.00	4.50	3.15	3.33	2.33	3.50	2.33	3.50	0.83	3.50	2.00	0.00	2.60	5.36
30	6.46	8.05	6.84	5.58	3.33	7.00	4.96	7.48	4.00	6.00	4.00	6.00	0.83	6.00	1.33	2.00	2.60	7.39
31	6.46	8.19	6.99	5.71	3.33	7.00	3.61	6.80	4.00	6.00	4.00	6.00	3.06	6.00	3.33	2.00	3.85	6.02
32	6.46	6.89	5.72	4.79	3.33	7.00	4.00	3.33	4.00	6.00	4.00	6.00	1.94	6.00	2.33	0.00	2.60	5.83
33	6.46	7.69	6.56	5.46	3.33	7.00	4.53	7.27	4.00	6.00	4.00	6.00	0.83	6.00	0.00	2.00	3.43	4.68
34	6.46	6.52	6.68	5.58	3.33	7.00	3.56	3.33	4.00	6.00	4.00	6.00	3.06	6.00	0.67	0.00	2.68	6.43
35	6.46	7.98	6.47	5.44	3.33	7.00	4.19	7.09	4.00	6.00	4.00	6.00	0.83	6.00	0.67	2.00	2.60	5.45
36	6.46	7.98	6.47	5.44	3.33	7.00	4.19	7.09	4.00	6.00	4.00	6.00	0.83	6.00	0.67	2.00	2.60	5.45
37	3.96	7.81	6.22	5.19	3.33	7.00	3.98	3.33	4.00	6.00	4.00	6.00	0.83	6.00	3.33	0.00	6.35	5.58
38	3.96	7.78	6.22	4.52	3.33	7.00	4.09	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.94	0.00	7.10	5.22
39	3.96	7.72	6.85	5.71	3.33	7.00	3.89	3.33	4.00	6.00	4.00	6.00	0.83	6.00	0.67	0.00	5.10	5.13
40	3.96	7.48	6.18	5.18	3.33	7.00	4.19	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.11	0.00	5.73	4.04
41	3.96	7.48	6.18	5.18	3.33	7.00	4.19	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.11	0.00	5.73	4.04
42	6.46	7.42	6.06	4.39	3.33	7.00	3.75	3.33	7.33	6.00	4.00	6.00	5.00	6.63	1.94	0.00	5.18	3.80
43a-e	3.96	7.48	6.18	5.18	3.33	7.00	3.45	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.67	0.00	5.10	4.13
44	6.46	7.42	6.06	4.39	3.33	7.00	3.75	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.11	0.00	5.18	3.80

SITE	WS*	SR*	PR*	NR*	T*	INV*	FA*	FR*	AM*	WBF*	WBN*	SBM*	POL*	PD*	PUv*	PSv*	Cond*	Stress*
45	6.46	7.48	6.18	5.18	3.33	7.00	3.75	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.11	0.00	5.18	4.04
46	6.46	7.42	6.06	5.06	3.33	7.00	3.77	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.11	0.00	6.35	3.80
47	6.46	7.42	6.06	5.06	3.33	7.00	4.22	3.33	7.33	6.00	4.00	6.00	5.00	6.56	1.11	0.00	5.18	3.93
48	6.46	7.42	6.06	5.06	3.33	7.00	4.22	3.33	7.33	6.00	4.00	6.00	5.00	6.56	1.11	0.00	5.18	3.93
49	6.46	6.16	6.18	5.01	3.33	7.00	3.19	3.33	4.00	6.00	4.00	6.00	3.06	6.00	2.50	0.00	6.35	3.89
50a-c	6.46	6.10	6.06	4.89	3.33	7.00	3.23	3.33	4.00	6.00	4.00	6.00	1.94	6.00	1.67	0.00	3.85	3.78
51	6.46	6.10	6.06	4.89	3.33	7.00	3.23	3.33	4.00	6.00	4.00	6.00	1.94	6.00	1.67	0.00	3.85	3.78
52	6.46	7.42	6.06	5.06	3.33	7.00	3.44	3.33	4.00	6.00	4.00	6.00	1.94	6.00	1.11	0.00	3.93	4.03
53	6.46	7.42	6.06	5.06	3.33	7.00	3.83	3.33	4.00	6.00	4.00	6.00	0.83	6.00	2.78	0.00	5.73	4.05
54	6.46	7.48	6.18	5.18	3.33	7.00	3.66	3.33	7.33	6.00	4.00	6.00	5.00	6.32	1.11	0.00	5.10	4.35
55	3.96	7.87	6.22	4.86	3.33	7.00	3.95	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.94	0.00	2.60	4.95
56	4.17	7.40	5.81	4.86	3.33	7.00	4.36	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.94	0.00	5.10	5.05
57	4.17	6.77	5.31	4.46	3.33	7.00	3.27	6.63	4.00	6.00	4.00	6.00	3.06	6.00	1.39	2.00	2.60	5.26
58	4.17	7.30	6.14	5.12	3.33	7.00	4.03	3.33	4.00	6.00	4.00	6.00	3.06	6.00	1.39	0.00	3.43	5.05
59	4.17	7.30	5.81	4.86	3.33	7.00	4.29	7.14	4.00	6.00	4.00	6.00	0.83	6.00	1.39	2.00	3.23	4.93
60	4.17	7.40	6.14	5.12	3.33	7.00	4.46	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.94	0.00	2.60	4.93
61	4.17	7.45	6.14	5.12	3.33	7.00	4.25	3.33	4.00	6.00	4.00	6.00	0.83	6.00	1.94	0.00	2.60	5.03
62	4.17	7.44	6.14	5.12	3.33	7.00	3.25	3.33	4.00	6.00	4.00	6.00	1.94	6.00	2.78	0.00	2.60	5.03
63	6.46	6.97	5.39	4.19	3.33	7.00	3.91	6.95	4.00	6.00	4.00	6.00	0.83	6.00	0.67	2.00	3.85	6.11
64	6.46	5.08	6.22	4.36	3.33	7.69	4.19	3.33	4.00	4.00	3.00	6.00	0.83	6.00	1.11	0.00	3.93	5.36
65	3.33	4.58	5.14	4.11	3.33	7.00	3.91	6.95	4.00	4.00	3.00	6.00	0.83	6.00	1.67	2.00	5.10	5.68
66	3.33	4.58	5.14	4.11	3.33	7.00	3.91	6.95	4.00	4.00	3.00	6.00	0.83	6.00	1.67	2.00	5.10	5.68
67	3.33	4.58	5.14	4.11	3.33	7.00	3.91	6.95	4.00	4.00	3.00	6.00	0.83	6.00	1.67	2.00	5.10	5.68

SITE	WS*	SR*	PR*	NR*	T*	INV*	FA*	FR*	AM*	WBF*	WBN*	SBM*	POL*	PD*	PUv*	PSv*	Cond*	Stress*
68	3.33	4.58	5.14	4.11	3.33	7.00	3.91	6.95	4.00	4.00	3.00	6.00	0.83	6.00	1.67	2.00	5.10	5.68
69	3.33	4.58	5.14	4.11	3.33	7.00	3.91	6.95	4.00	4.00	3.00	6.00	0.83	6.00	1.67	2.00	5.10	5.68
70	1.25	3.31	3.95	3.44	3.33	4.61	3.63	3.33	2.33	2.33	1.75	3.50	0.83	3.59	0.56	2.00	3.10	5.74
71a-b	1.67	5.45	6.10	5.56	3.33	7.00	2.66	6.33	4.00	4.00	3.00	6.00	0.83	6.00	2.00	2.00	4.60	7.20
72	5.83	3.59	3.03	3.37	3.33	3.54	3.14	3.33	0.67	0.67	0.50	1.00	0.00	2.91	1.33	0.00	3.10	4.49
73	3.96	5.59	5.72	5.12	3.33	7.00	4.10	7.05	7.33	6.00	4.00	6.00	10.00	6.20	2.00	2.00	5.10	4.80
74	6.25	3.25	3.35	3.62	3.33	3.54	3.24	3.33	0.67	0.67	0.50	1.00	0.83	2.93	1.33	0.00	3.10	4.49
75	3.96	5.31	5.10	4.65	0.00	7.00	2.99	3.33	4.00	6.00	4.00	6.00	10.00	6.00	1.33	0.00	4.64	3.05
76	6.46	4.73	4.51	4.51	3.33	7.00	3.91	3.33	7.33	6.00	4.00	6.00	10.00	6.14	4.00	0.00	4.89	6.94
77	6.46	5.70	5.97	5.37	3.33	7.00	3.22	6.61	4.00	6.00	4.00	6.00	10.00	6.00	1.33	2.00	5.10	6.81
78	6.46	5.75	5.56	5.04	0.00	7.00	3.02	3.33	4.00	6.00	4.00	6.00	10.00	6.00	4.00	0.00	3.35	5.93
79	6.46	5.65	5.85	5.25	3.33	7.00	3.80	6.90	4.00	6.00	4.00	6.00	10.00	6.00	2.00	2.00	5.85	6.76
80	6.46	5.28	6.22	4.52	3.33	7.00	4.44	3.33	7.33	10.00	7.33	6.00	10.00	6.44	2.00	0.00	5.10	5.20
81	6.04	3.92	5.14	3.99	1.67	5.76	4.76	3.33	3.33	10.00	5.67	3.50	10.00	3.61	0.56	2.00	7.29	3.63
82	6.04	3.92	5.14	3.99	1.67	6.22	5.98	3.33	3.33	3.50	2.33	3.50	10.00	3.93	2.67	0.00	7.12	3.75
83	3.54	3.92	5.14	3.99	1.67	6.22	5.70	3.33	5.67	3.44	2.58	3.50	10.00	6.37	2.67	0.00	5.87	4.25
84	3.54	3.87	5.14	3.99	1.67	6.09	5.42	3.33	5.67	3.44	2.58	3.50	10.00	6.30	4.00	0.00	5.69	4.25
85	3.96	5.28	6.60	5.56	1.67	7.00	3.50	1.75	4.00	4.00	3.00	6.00	10.00	6.00	2.67	0.00	4.43	6.03
86	7.29	5.16	6.22	4.52	3.33	7.00	4.34	2.17	4.00	4.00	3.00	6.00	10.00	6.00	2.00	0.00	5.98	6.82
87a-b	7.29	5.16	6.22	4.52	3.33	7.00	4.39	2.20	7.33	4.00	3.00	6.00	10.00	6.13	2.00	0.00	4.73	6.57
88	6.46	5.11	6.68	5.75	0.00	7.00	2.44	3.33	4.00	10.00	5.50	6.00	0.83	6.00	1.67	0.00	5.48	6.39
89	6.46	4.44	5.85	5.25	3.33	7.00	3.93	6.96	7.33	10.00	6.33	6.00	5.00	6.00	0.00	2.00	5.59	6.05
90	6.46	5.71	6.56	5.46	3.33	7.00	4.62	7.31	4.00	10.00	5.50	6.00	0.83	6.00	0.97	2.00	4.02	7.56

SITE	WS*	SR*	PR*	NR*	T*	INV*	FA*	FR*	AM*	WBF*	WBN*	SBM*	POL*	PD*	PUv*	PSv*	Cond*	Stress*
91	6.04	4.33	5.81	4.79	1.67	4.50	4.45	3.33	2.33	2.33	1.75	3.50	1.67	3.50	0.67	0.00	4.60	5.91
92a-b	3.96	5.09	6.56	5.29	0.00	7.00	2.75	3.33	4.00	4.00	3.00	6.00	1.67	6.00	2.00	2.00	4.64	7.03
93a-b	3.96	5.71	6.56	5.46	3.33	7.00	4.72	7.36	7.33	10.00	5.50	6.00	5.00	6.12	0.97	2.00	4.08	7.57
94	7.29	5.33	6.35	5.31	3.33	7.00	4.24	3.33	7.33	10.00	5.50	6.00	5.00	6.11	1.33	2.00	4.54	7.28
95	7.29	5.39	6.35	5.31	3.33	7.00	3.32	6.66	4.00	10.00	5.50	6.00	0.83	6.00	0.00	2.00	5.16	5.90
96	7.29	5.39	6.51	5.45	3.33	7.00	3.42	6.71	7.33	10.00	5.50	6.00	5.00	6.02	0.00	2.00	4.54	5.79
97	7.29	5.39	6.51	5.45	3.33	7.00	3.42	6.71	4.00	10.00	5.50	6.00	0.83	6.00	0.00	2.00	4.54	5.65
98	7.29	4.91	6.39	4.49	0.00	7.00	4.64	3.33	4.00	10.00	5.50	6.00	10.00	6.00	0.67	0.00	7.41	4.63
99	7.29	5.31	6.22	5.19	3.33	7.00	4.02	3.33	7.33	10.00	6.33	6.00	10.00	6.35	1.33	0.00	5.16	5.05
100a-b	7.29	5.00	6.35	5.15	1.67	7.00	2.15	3.33	4.00	4.00	3.00	6.00	10.00	6.00	0.67	0.00	2.41	6.12
101	7.29	5.11	6.35	4.81	0.00	7.00	2.19	3.33	4.00	10.00	5.50	6.00	10.00	6.00	2.33	0.00	2.16	6.27
102	7.29	5.00	6.35	5.15	3.33	7.00	3.36	3.33	4.00	10.00	5.50	6.00	10.00	6.00	2.33	0.00	3.91	3.58
103a-b	7.29	5.58	6.22	5.19	3.33	7.00	4.44	7.22	7.33	10.00	6.33	6.00	10.00	6.73	0.00	2.00	5.16	4.95
104a-b	7.29	4.95	6.22	4.36	0.00	7.00	2.19	3.33	4.00	10.00	5.50	6.00	10.00	6.00	0.67	0.00	2.79	4.50
105	6.67	5.62	5.97	5.44	3.33	7.00	4.16	7.08	7.33	10.00	6.33	6.00	10.00	6.25	1.33	2.00	5.16	4.90
106	6.67	5.62	5.97	5.44	3.33	7.00	4.19	7.09	7.33	10.00	6.33	6.00	10.00	6.25	1.33	2.00	5.16	4.90
107	6.67	5.39	5.97	5.11	3.33	7.00	4.61	3.33	7.33	10.00	6.33	6.00	10.00	6.87	1.33	0.00	5.16	4.95
108	3.54	4.15	5.39	4.91	3.33	4.50	3.76	1.88	3.33	3.44	2.58	3.50	10.00	3.50	3.33	2.00	6.94	7.30
109	3.96	5.22	6.51	5.45	3.33	7.00	5.61	2.80	4.00	4.00	3.00	6.00	10.00	6.00	3.33	0.00	6.85	5.36
110	6.46	5.22	6.68	5.58	3.33	7.00	5.28	2.64	7.33	4.00	3.00	6.00	10.00	6.00	3.33	0.00	6.57	5.92
111	6.46	5.08	6.51	5.28	1.67	7.00	4.62	2.31	4.00	4.00	3.00	6.00	10.00	6.00	3.33	0.00	6.93	5.42
112	6.46	5.22	6.68	5.58	3.33	7.00	5.20	2.60	4.00	4.00	3.00	6.00	10.00	6.00	3.33	0.00	6.57	4.86
113	6.46	5.22	6.68	4.91	3.33	7.00	5.28	2.64	4.00	4.00	3.00	6.00	10.00	6.00	3.33	0.00	6.65	4.25

SITE	WS*	SR*	PR*	NR*	T*	INV*	FA*	FR*	AM*	WBF*	WBN*	SBM*	POL*	PD*	PUv*	PSv*	Cond*	Stress*
114	6.46	5.22	6.68	4.91	3.33	7.00	4.84	2.42	4.00	4.00	3.00	6.00	10.00	6.00	3.33	0.00	6.94	4.25

***Abbreviations:** Water Storage & Delay (WS); Sediment Retention & Stabilization (SR); Phosphorus Retention (PR); Nitrate Removal & Retention (NR); Thermoregulation (T); Aquatic Invertebrate Habitat (INV); Anadromous Fish Habitat (FA); Non-anadromous Fish Habitat (FR); Amphibian & Reptile Habitat (AM); Waterbird Feeding Habitat (WBF); Waterbird Nesting Habitat (WBN); Songbird, Raptor, & Mammal Habitat (SBM); Pollinator Habitat (POL); Native Plant Diversity (PD); Public Use & Access (PUv); Provisioning Services (PSv); Ecological Condition (Cond); and Wetland Stressors (Stress).

Table G4. Summary of High Scoring Functions of Wetlands that Meet Criterion 3 for the WQR Determination

Wetland (an "X" indicates function is ≥ 90th percentile)	Wetland Function and 90th Percentile										
	WS	T	CS	INV	FR	AM	WBF	WBN	SBM	POL	PD
	3.70	4.42	2.78	5.85	4.77	5.90	4.63	4.26	5.15	7.05	5.16
42	-	-	-	-	-	-	-	-	X	X	X
63	-	-	-	-	-	-	-	-	X	X	X
64	-	-	-	-	X	-	-	X	X	-	-
65	-	-	-	-	-	-	-	-	X	X	X
66	-	-	-	-	-	-	-	-	X	X	X
67	-	-	-	-	-	-	-	-	X	X	X
68	-	-	-	-	-	-	-	-	X	X	X
69	-	-	-	-	-	-	-	-	X	X	X
81	-	-	-	X	X	-	X	-	-	-	-
82	X	-	-	X	X	-	X	X	-	-	-
83	X	-	-	X	X	-	X	X	-	-	-
84	X	-	-	X	X	-	X	X	-	-	-
93a-b	-	X	-	-	-	-	X	-	-	-	X
100a-b	X	-	X	-	-	X	-	-	-	-	-
102	-	-	X	X	-	X	-	-	-	-	-
109	-	-	X	-	-	-	X	X	-	-	-
111	X	-	-	X	-	-	-	-	-	-	-
113	-	-	X	-	-	-	X	X	-	-	-

APPENDIX H: OVERVIEW OF GROUNDWATER QUALITY

ESA Adolfson performed a brief analysis of groundwater issues in South Deschutes County based upon existing information.

In general, the water quality in the shallow aquifer of Deschutes County is threatened by nitrate contamination from widespread use of septic systems. The effluent from these conventional septic wastewater systems has been shown to contribute to nitrate levels in the upper 100 feet of the shallow aquifer. The contaminated groundwater not only affects the local water supply wells, it also impacts water quality of the Deschutes and Little Deschutes Rivers in areas where the groundwater discharges into the river.

Groundwater in this region occurs in most of the fractured bedrock as well as the alluvial deposits, which consist of shallow fine to coarse sand, fine to coarse gravel and cinder fluvial deposits. Most wells in the study area are screened in these fluvial deposits. Less permeable silts and clays comprise much of the lacustrine deposits but overall the shallow aquifer is considered unconfined. Many of these soils are derived from pumice deposits which are relatively low in organic matter and have high porosity. The soils in the region are highly permeable with no intervening layer protecting the aquifer. The high permeability allows for swift downward migration of water from precipitation and septic effluent. The water table generally ranges in depth from less than two feet to about thirty feet below ground surface.

Groundwater velocities are generally low and oxic (oxygen rich or at least containing oxygen) near the water table surface (Rich, 2005). However, at depths ranging from near zero to more than fifty feet below the water table, groundwater becomes suboxic (low in oxygen) where conditions are conducive to denitrification. Denitrification is the microbially facilitated geochemical process where nitrates are reduced or removed through a process which results in the production of harmless molecular nitrogen (N_2) through a series of intermediate gaseous nitrogen products. Denitrification helps limit nitrate contamination in the groundwater, but requires anaerobic (without oxygen) conditions; therefore, any oxic portions of an aquifer remain vulnerable to nitrate contamination.

In a study conducted by the USGS, an attempt was made to better understand the relationship of oxic and suboxic conditions in the aquifer near La Pine Oregon (USGS, 2007). While the distribution of oxic and suboxic conditions varies widely throughout the region, the findings of the La Pine study determined that oxic groundwater tended to be present near the outside edge of a river meander bend (edge closest to the margin of the valley floor) (USGS, 2007). However, not all outside edges were oxic. In areas where the width of the riparian environment adjacent to an outside edge was relatively narrow, oxic groundwater conditions were found. Groundwater samples taken from the center of riparian zones were always suboxic (USGS, 2007). Therefore, the relatively narrow wetlands identified in the project area such as Wetlands 15, 14, 72, and 52 or the wetlands located near the outside edge of a river meander bend such as Wetlands10, 29a-c combined with 28 a-b and 27a-c, and 35 are likely the last defenses against nitrate contributions to the Deschutes and Little Deschutes rivers. The ORWAP scores for these examples vary; however as noted above, the scores do not account for overall size of the wetland and the underlying groundwater conditions. A more thorough examination in

light of the findings of the USGS study may offer more guidance in interpreting the value scores of the identified wetlands and making determinations for Goal 6 Water Quality Resources.

LITERATURE CITATIONS

Rich, Barbara et. al., *in collaboration with* Deschutes County Environmental Health Division, Oregon Department of Environmental Quality and US Geological Survey. Undated. *La Pine National Decentralized Wastewater Treatment Demonstration Project,* 1999 – 2005.

U.S. Geological Survey (USGS). 2007. *Ground Water Redox Zonation near La Pine, Oregon: Relation to River Position within the Aquifer-Riparian Zone Continuum,* Scientific Investigations Report 2007-5239,

ATTACHMENT 1: SOUTH DESCHUTES COUNTY LOCAL WETLAND INVENTORY MAPS