Pend Oreille County

COMMUNITY DEVELOPMENT DEPARTMENT

P. O. Box 5066 Newport, Washington 99156-5066
Phone: 509-447-4821

Greg Snow	**Rick Cruse**	**Andy Huddleston**
Director	Building Inspector	Planner II/Building Inspector, CFM

MEMORANDUM

TO:	Washington Dept. Fish and Wildlife (SEPA Olympia) Washington Dept. of Ecology (SEPA Olympia) Washington Dept. of Natural Resources (SEPA Olympia) Pend Oreille Public Utility District #1 (Autumn Rice) United States Army Corp of Engineers (Jess Jordan) Sacheen Sewer District (Sheila Pearman) Pend Oreille County Fire District #3 (Mike Nokes) Pend Oreille County Sherriff Department (Alan Botzheim)
DATE:	**January 24, 2018**
TITLE:	**Fertile Valley Road Rehabilitation/Resurfacing Project**
PROPONENT:	**Pend Oreille County Public Works Department**
LOCATION:	**FERTILE VALLEY ROAD FROM HWY 211 TO THE OUTLET BRIDGE**
SUBJECT:	**SEPA Checklist and Notice of Application and Action, Shoreline Substantial Development Permit (SSDP-18-001)**

Enclosed please find a JARPA, SEPA, Notice of Application and Action, and associated documents for the proposal located near Sacheen Lake @ Fertile Valley Road from HWY 211 to the Outlet Bridge. The documents are also available at www.pendoreilleco.org under Community Development and Notices of Application and Action. Pend Oreille County is lead agency for this proposal.

Your comments are sought in order to assist the Pend Oreille County Community Development Dept. in rendering a decision on this application pursuant to Pend Oreille County Development Regulations Ch. XX14. **The SEPA Optional DNS process is being used and this may be the only opportunity to comment on the environmental impacts for the proposal. The county expects to issue a Determination of Non-Significance for this project.** Written comments must be submitted by **February 08, 2018** regarding this proposal and can be submitted to Andy Huddleston, c/o Pend Oreille County Community Development Department, PO Box 5066, or hand delivered during regular business hours to 418 South Scott Street, Newport, WA 99156, or emailed to ahuddleston@pendoreille.org

Planning, Building & Economic Development

Combined Notice of Application and Action

Pursuant to County Development Regulations, notice is hereby given that Pend Oreille County did on December 29, 2017 received a complete Shoreline Substantial Development Permit Application, Joint Aquatic Resources Permit Application, and associated documents from Pend Oreille County Public Works Dept. and did on December 29, 2017 issue a Determination of Completeness for Resurfacing Fertile Valley Road Project (FILE NO. SSDP-18-001), Location: Fertile Valley Road @ HWY 211 to the Outlet Bridge. **An Environmental Checklist under the State Environmental Policy Act (SEPA) was prepared by the applicant on October 3, 2017 and the county expects to issue a Determination of Non-Significance for this project. The optional DNS process is being used and this may be the only opportunity to comment on the environmental impacts for the proposal**. Any person desiring to express their views, or to be notified of the action taken on this application should contact the Pend Oreille County Community Development Department. The submitted application and related file documents may be examined by the public between 8:00 AM & 4:30 PM at the Pend Oreille County Courthouse, Annex Building, 418 South Scott Street, Newport, WA 99156, (509) 447-4821 and viewed at www.pendoreilleco.org. Contact: Andy Huddleston, Community Development Department Planner, (509) 447-6462, ahuddleston@pendoreille.org. Written comments from the public may be submitted to Pend Oreille County no later than **February 8, 2018**.

Required Permits: Shoreline Substantial Development Permit (Pend Oreille County), Floodplain Development Permit (Pend Oreille County)

Dated: January 22, 2018

Publish: January 24, 2018
January 31, 2018

Please Send Invoice to:
Pend Oreille County Community Development Department
Post Office Box 5066, Newport, WA 99156

US Army Corps of Engineers
Seattle District

WASHINGTON STATE
Joint Aquatic Resources Permit Application (JARPA) Form[1,2] [help]

USE BLACK OR BLUE INK TO ENTER ANSWERS IN THE WHITE SPACES BELOW.

AGENCY USE ONLY

Date received:

Agency reference #: _____

Tax Parcel #(s): _____

Part 1–Project Identification

1. Project Name (A name for your project that you create. Examples: Smith's Dock or Seabrook Lane Development) [help]
Fertile Valley Road Widening

Part 2–Applicant

The person and/or organization responsible for the project. [help]

2a. Name (Last, First, Middle)			
Ramsey, Don			
2b. Organization (If applicable)			
Pend Oreille County			
2c. Mailing Address (Street or PO Box)			
2d. City, State, Zip			
Newport, WA 99156			
2e. Phone (1)	**2f.** Phone (2)	**2g.** Fax	**2h.** E-mail
(509) 447-4513	( )	( )	

[1]Additional forms may be required for the following permits:

- If your project may qualify for Department of the Army authorization through a Regional General Permit (RGP), contact the U.S. Army Corps of Engineers for application information (206) 764-3495.
- If your project might affect species listed under the Endangered Species Act, you will need to fill out a Specific Project Information Form (SPIF) or prepare a Biological Evaluation. Forms can be found at http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx.
- Not all cities and counties accept the JARPA for their local Shoreline permits. If you need a Shoreline permit, contact the appropriate city or county government to make sure they accept the JARPA.

[2]To access an online JARPA form with [help] screens, go to http://www.epermitting.wa.gov/site/alias__resourcecenter/jarpa_jarpa_form/9984/jarpa_form.aspx.

For other help, contact the Governor's Office for Regulatory Innovation and Assistance at (800) 917-0043 or help@oria.wa.gov.

Part 3–Authorized Agent or Contact

Person authorized to represent the applicant about the project. (Note: Authorized agent(s) must sign 11b of this application.) [help]

3a. Name (Last, First, Middle)			
Mason, Jonathan			
3b. Organization (If applicable)			
Pend Oreille County			
3c. Mailing Address (Street or PO Box)			
3d. City, State, Zip			
3e. Phone (1)	**3f.** Phone (2)	**3g.** Fax	**3h.** E-mail
( )	( )	( )	

Part 4–Property Owner(s)

Contact information for people or organizations owning the property(ies) where the project will occur. Consider both **upland and aquatic** ownership because the upland owners may not own the adjacent aquatic land. [help]

☒ Same as applicant. (Skip to Part 5.)

☐ Repair or maintenance activities on existing rights-of-way or easements. (Skip to Part 5.)

☐ There are multiple upland property owners. Complete the section below and fill out JARPA Attachment A for each additional property owner.

☐ Your project is on Department of Natural Resources (DNR)-managed aquatic lands. If you don't know, contact the DNR at (360) 902-1100 to determine aquatic land ownership. If yes, complete JARPA Attachment E to apply for the Aquatic Use Authorization.

4a. Name (Last, First, Middle)			
4b. Organization (If applicable)			
4c. Mailing Address (Street or PO Box)			
4d. City, State, Zip			
4e. Phone (1)	**4f.** Phone (2)	**4g.** Fax	**4h.** E-mail
( )	( )	( )	

Part 5–Project Location(s)

Identifying information about the property or properties where the project will occur. [help]

☐ There are multiple project locations (e.g. linear projects). Complete the section below and use JARPA Attachment B for each additional project location.

5a. Indicate the type of ownership of the property. (Check all that apply.) [help]

☐ Private
☐ Federal
☒ Publicly owned (state, county, city, special districts like schools, ports, etc.)
☐ Tribal
☐ Department of Natural Resources (DNR) – managed aquatic lands (Complete JARPA Attachment E)

5b. Street Address (Cannot be a PO Box. If there is no address, provide other location information in 5p.) [help]

Fertile Valley Road from mile post 6.9 to mile post 9.3.

5c. City, State, Zip (If the project is not in a city or town, provide the name of the nearest city or town.) [help]

5d. County [help]

5e. Provide the section, township, and range for the project location. [help]

¼ Section	Section	Township	Range
	24,25,26,35/ **19,30**	31	43/ **44**

5f. Provide the latitude and longitude of the project location. [help]

- Example: 47.03922 N lat. / -122.89142 W long. (Use decimal degrees - NAD 83)

48.146389 N lat., -117.336599 W long. to 48.16775 N lat, -117.300444 W long.

5g. List the tax parcel number(s) for the project location. [help]

- The local county assessor's office can provide this information.

n/a

5h. Contact information for all adjoining property owners. (If you need more space, use JARPA Attachment C.) [help]

Name	Mailing Address	Tax Parcel # (if known)

5i. List all wetlands on or adjacent to the project location. [help]

There are 3 tributaries, 1 named (Cedar Creek) and 2 unnamed, and associated wetlands are present near the project area.

5j. List all waterbodies (other than wetlands) on or adjacent to the project location. [help]

Sacheen Lake

5k. Is any part of the project area within a 100-year floodplain? [help]

☒ Yes ☐ No ☐ Don't know

5l. Briefly describe the vegetation and habitat conditions on the property. [help]

Road side vegetation consists of mainly of weeds, mullin and RCG

5m. Describe how the property is currently used. [help]

Road right of way

5n. Describe how the adjacent properties are currently used. [help]

Rural residential housing

5o. Describe the structures (above and below ground) on the property, including their purpose(s) and current condition. [help]

Utilities: power, telephone, fiber optic, sewer

5p. Provide driving directions from the closest highway to the project location, and attach a map. [help]

The project terminates at the intersection with Highway 211.

Part 6–Project Description

6a. Briefly summarize the overall project. You can provide more detail in 6b. [help]

The top of the road is going to be excavated and rebuilt to provide a 4 ft wider shoulder with a curb.

6b. Describe the purpose of the project and why you want or need to perform it. [help]

The purpose of the project is to reconstruct the roadway and provide a wider shoulder along the side of the road and to adjust some of the curves in the road to enhance traffic safety.

6c. Indicate the project category. (Check all that apply) [help]

- ☐ Commercial
- ☐ Residential
- ☐ Institutional
- ☒ Transportation
- ☐ Recreational
- ☐ Maintenance
- ☐ Environmental Enhancement

6d. Indicate the major elements of your project. (Check all that apply) [help]

☐ Aquaculture	☐ Culvert	☐ Float	☐ Retaining Wall (upland)
☐ Bank Stabilization	☐ Dam / Weir	☐ Floating Home	☒ Road
☐ Boat House	☐ Dike / Levee / Jetty	☐ Geotechnical Survey	☐ Scientific Measurement Device
☐ Boat Launch	☐ Ditch	☐ Land Clearing	☐ Stairs
☐ Boat Lift	☐ Dock / Pier	☐ Marina / Moorage	☐ Stormwater facility
☐ Bridge	☐ Dredging	☐ Mining	☐ Swimming Pool
☐ Bulkhead	☐ Fence	☐ Outfall Structure	☐ Utility Line
☐ Buoy	☐ Ferry Terminal	☐ Piling/Dolphin	
☐ Channel Modification	☐ Fishway	☐ Raft	

☐ Other:

6e. Describe how you plan to construct each project element checked in 6d. Include specific construction methods and equipment to be used. [help]

- Identify where each element will occur in relation to the nearest waterbody.
- Indicate which activities are within the 100-year floodplain.

A wide range of heavy machinery (loaders, dozers, trackhoes, backhoes, dump trucks, roller, pavers, stripers) and other heavy equipment and power tools will be used to remove and rebuild up to 2 feet of the top of road.

6f. What are the anticipated start and end dates for project construction? (Month/Year) [help]

- If the project will be constructed in phases or stages, use JARPA Attachment D to list the start and end dates of each phase or stage.

Start date: Spring 2018 End date: Fall 2020 ☐ See JARPA Attachment D

6g. Fair market value of the project, including materials, labor, machine rentals, etc. [help]

6h. Will any portion of the project receive federal funding? [help]

- **If yes**, list each agency providing funds.

☐ Yes ☒ No ☐ Don't know

Part 7–Wetlands: Impacts and Mitigation

☒ Check here if there are wetlands or wetland buffers on or adjacent to the project area.
(If there are none, skip to Part 8.) [help]

7a. Describe how the project has been designed to avoid and minimize adverse impacts to wetlands. [help]

☐ Not applicable

No aspect of the project will enter the wetland areas. BMPs, temporary erosion control and SWPPP will be required during construction to prevent sediment or pollutants from entering the wetlands

7b. Will the project impact wetlands? [help]

☐ Yes ☒ No ☐ Don't know

7c. Will the project impact wetland buffers? [help]

☐ Yes ☒ No ☐ Don't know

7d. Has a wetland delineation report been prepared? [help]

- **If Yes**, submit the report, including data sheets, with the JARPA package.

☒ Yes ☐ No

7e. Have the wetlands been rated using the Western Washington or Eastern Washington Wetland Rating System? [help]

- **If Yes**, submit the wetland rating forms and figures with the JARPA package.

☒ Yes ☐ No ☐ Don't know

7f. Have you prepared a mitigation plan to compensate for any adverse impacts to wetlands? [help]

- **If Yes**, submit the plan with the JARPA package and answer 7g.
- **If No, or Not applicable**, explain below why a mitigation plan should not be required.

☐ Yes ☒ No ☐ Not applicable

7g. Summarize what the mitigation plan is meant to accomplish, and describe how a watershed approach was used to design the plan. [help]

7h. Use the table below to list the type and rating of each wetland impacted, the extent and duration of the impact, and the type and amount of mitigation proposed. Or if you are submitting a mitigation plan with a similar table, you can state (below) where we can find this information in the plan. [help]

Activity (fill, drain, excavate, flood, etc.)	Wetland Name[1]	Wetland type and rating category[2]	Impact area (sq. ft. or Acres)	Duration of impact[3]	Proposed mitigation type[4]	Wetland mitigation area (sq. ft. or acres)

[1] If no official name for the wetland exists, create a unique name (such as "Wetland 1"). The name should be consistent with other project documents, such as a wetland delineation report.
[2] Ecology wetland category based on current Western Washington or Eastern Washington Wetland Rating System. Provide the wetland rating forms with the JARPA package.
[3] Indicate the days, months or years the wetland will be measurably impacted by the activity. Enter "permanent" if applicable.

[4] Creation (C), Re-establishment/Rehabilitation (R), Enhancement (E), Preservation (P), Mitigation Bank/In-lieu fee (B)

Page number(s) for similar information in the mitigation plan, if available: _____

7i. For all filling activities identified in 7h, describe the source and nature of the fill material, the amount in cubic yards that will be used, and how and where it will be placed into the wetland. [help]

7j. For all excavating activities identified in 7h, describe the excavation method, type and amount of material in cubic yards you will remove, and where the material will be disposed. [help]

Part 8–Waterbodies (other than wetlands): Impacts and Mitigation

In Part 8, "waterbodies" refers to non-wetland waterbodies. (See Part 7 for information related to wetlands.) [help]

☒ Check here if there are waterbodies on or adjacent to the project area. (If there are none, skip to Part 9.)

8a. Describe how the project is designed to avoid and minimize adverse impacts to the aquatic environment. [help]

☐ Not applicable

BMPs, temporary erosion control and SWPPP will be required during construction to prevent sediment or pollutants from entering the lake. A curb along the side of the new road will help prevent runoff from entering in to the lake.

8b. Will your project impact a waterbody or the area around a waterbody? [help]

☐ Yes ☐ No

8c. Have you prepared a mitigation plan to compensate for the project's adverse impacts to non-wetland waterbodies? [help]

- **If Yes**, submit the plan with the JARPA package and answer 8d.
- **If No, or Not applicable,** explain below why a mitigation plan should not be required.

☐ Yes ☒ No ☐ Not applicable

8d. Summarize what the mitigation plan is meant to accomplish. Describe how a watershed approach was used to design the plan.

- If you already completed 7g you do not need to restate your answer here. [help]

8e. Summarize impact(s) to each waterbody in the table below. [help]

Activity (clear, dredge, fill, pile drive, etc.)	Waterbody name[1]	Impact location[2]	Duration of impact[3]	Amount of material (cubic yards) to be placed in or removed from waterbody	Area (sq. ft. or linear ft.) of waterbody directly affected

[1] If no official name for the waterbody exists, create a unique name (such as "Stream 1") The name should be consistent with other documents provided.
[2] Indicate whether the impact will occur in or adjacent to the waterbody. If adjacent, provide the distance between the impact and the waterbody and indicate whether the impact will occur within the 100-year flood plain.
[3] Indicate the days, months or years the waterbody will be measurably impacted by the work. Enter "permanent" if applicable.

8f. For all activities identified in 8e, describe the source and nature of the fill material, amount (in cubic yards) you will use, and how and where it will be placed into the waterbody. [help]

8g. For all excavating or dredging activities identified in 8e, describe the method for excavating or dredging, type and amount of material you will remove, and where the material will be disposed. [help]

Part 9–Additional Information

Any additional information you can provide helps the reviewer(s) understand your project. Complete as much of this section as you can. It is ok if you cannot answer a question.

9a. If you have already worked with any government agencies on this project, list them below. [help]

Agency Name	Contact Name	Phone	Most Recent Date of Contact
Ecology	Jacob McCann	( )	9/7/17
		( )	
		( )	

9b. Are any of the wetlands or waterbodies identified in Part 7 or Part 8 of this JARPA on the Washington Department of Ecology's 303(d) List? [help]

- **If Yes,** list the parameter(s) below.
- If you don't know, use Washington Department of Ecology's Water Quality Assessment tools at: http://www.ecy.wa.gov/programs/wq/303d/.

☐ Yes ☐ No

West Branch of the Little Spokane River a Category 5- 303(d) for dissolved oxygen.

9c. What U.S. Geological Survey Hydrological Unit Code (HUC) is the project in? [help]

- Go to http://cfpub.epa.gov/surf/locate/index.cfm to help identify the HUC.

17010308

9d. What Water Resource Inventory Area Number (WRIA #) is the project in? [help]

- Go to http://www.ecy.wa.gov/services/gis/maps/wria/wria.htm to find the WRIA #.

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9e. Will the in-water construction work comply with the State of Washington water quality standards for turbidity? [help]

- Go to http://www.ecy.wa.gov/programs/wq/swqs/criteria.html for the standards.

☐ Yes ☐ No ☒ Not applicable

9f. If the project is within the jurisdiction of the Shoreline Management Act, what is the local shoreline environment designation? [help]

- If you don't know, contact the local planning department.
- For more information, go to: http://www.ecy.wa.gov/programs/sea/sma/laws_rules/173-26/211_designations.html.

☒ Rural ☐ Urban ☐ Natural ☐ Aquatic ☐ Conservancy ☐ Other _____

9g. What is the Washington Department of Natural Resources Water Type? [help]

- Go to http://www.dnr.wa.gov/forest-practices-water-typing for the Forest Practices Water Typing System.

☐ Shoreline ☐ Fish ☐ Non-Fish Perennial ☐ Non-Fish Seasonal

9h. Will this project be designed to meet the Washington Department of Ecology's most current stormwater manual? [help]

- **If No**, provide the name of the manual your project is designed to meet.

☒ Yes ☐ No

Name of manual:

9i. Does the project site have known contaminated sediment? [help]

- **If Yes**, please describe below.

☐ Yes ☒ No

9j. If you know what the property was used for in the past, describe below. [help]

9k. Has a cultural resource (archaeological) survey been performed on the project area? [help]

- **If Yes**, attach it to your JARPA package.

☐ Yes ☒ No

9l. Name each species listed under the federal Endangered Species Act that occurs in the vicinity of the project area or might be affected by the proposed work. [help]

9m. Name each species or habitat on the Washington Department of Fish and Wildlife's Priority Habitats and Species List that might be affected by the proposed work. [help]

Part 10–SEPA Compliance and Permits

Use the resources and checklist below to identify the permits you are applying for.

- Online Project Questionnaire at http://apps.oria.wa.gov/opas/.
- Governor's Office for Regulatory Innovation and Assistance at (800) 917-0043 or help@oria.wa.gov.
- For a list of addresses to send your JARPA to, click on agency addresses for completed JARPA.

10a. Compliance with the State Environmental Policy Act (SEPA). (Check all that apply.) [help] • For more information about SEPA, go to www.ecy.wa.gov/programs/sea/sepa/e-review.html.
☐ A copy of the SEPA determination or letter of exemption is included with this application.
☒ A SEPA determination is pending with _____ (lead agency). The expected decision date is _____.
☐ I am applying for a Fish Habitat Enhancement Exemption. (Check the box below in 10b.) [help]
☐ This project is exempt (choose type of exemption below). ☐ Categorical Exemption. Under what section of the SEPA administrative code (WAC) is it exempt? _____ ☐ Other: _____
☐ SEPA is pre-empted by federal law.

10b. Indicate the permits you are applying for. (Check all that apply.) [help]

LOCAL GOVERNMENT

Local Government Shoreline permits:

☒ Substantial Development ☐ Conditional Use ☐ Variance

☐ Shoreline Exemption Type (explain): _____

Other City/County permits:

☐ Floodplain Development Permit ☐ Critical Areas Ordinance

STATE GOVERNMENT

Washington Department of Fish and Wildlife:

☐ Hydraulic Project Approval (HPA) ☐ Fish Habitat Enhancement Exemption – Attach Exemption Form

You must submit a check for $150 to Washington Department of Fish and Wildlife, unless your project qualifies for an exemption or alternative payment method below. **Do not send cash.**

Check the appropriate boxes:

☐ $150 check enclosed. Check #_____
Attach check made payable to Washington Department of Fish and Wildlife.

☐ My project is exempt from the application fee. (Check appropriate exemption)_____
- ☐ HPA processing is conducted by applicant-funded WDFW staff.
  Agreement #_____
- ☐ Mineral prospecting and mining.
- ☐ Project occurs on farm and agricultural land.
  (Attach a copy of current land use classification recorded with the county auditor, or other proof of current land use.)
- ☐ Project is a modification of an existing HPA originally applied for, prior to July 10, 2012.
  HPA #_____

Washington Department of Natural Resources:

☐ Aquatic Use Authorization
Complete JARPA Attachment E and submit a check for $25 payable to the Washington Department of Natural Resources.
Do not send cash.

Washington Department of Ecology:

☐ Section 401 Water Quality Certification

FEDERAL GOVERNMENT

United States Department of the Army permits (U.S. Army Corps of Engineers):

☐ Section 404 (discharges into waters of the U.S.) ☐ Section 10 (work in navigable waters)

United States Coast Guard permits:

☐ Private Aids to Navigation (for non-bridge projects)

Part 11–Authorizing Signatures

Signatures are required before submitting the JARPA package. The JARPA package includes the JARPA form, project plans, photos, etc. [help]

11a. Applicant Signature (required) [help]

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities, and I agree to start work only after I have received all necessary permits.

I hereby authorize the agent named in Part 3 of this application to act on my behalf in matters related to this application. DLR (initial)

By initialing here, I state that I have the authority to grant access to the property. I also give my consent to the permitting agencies entering the property where the project is located to inspect the project site or any work related to the project. DLR (initial)

Applicant Printed Name	Applicant Signature	Date
Don Ramsay County Engr	Don Ramsay	10/4/17

11b. Authorized Agent Signature [help]

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities and I agree to start work only after all necessary permits have been issued.

Authorized Agent Printed Name	Authorized Agent Signature	Date
Jonathan Mason	Jonathan Mason	10/4/17

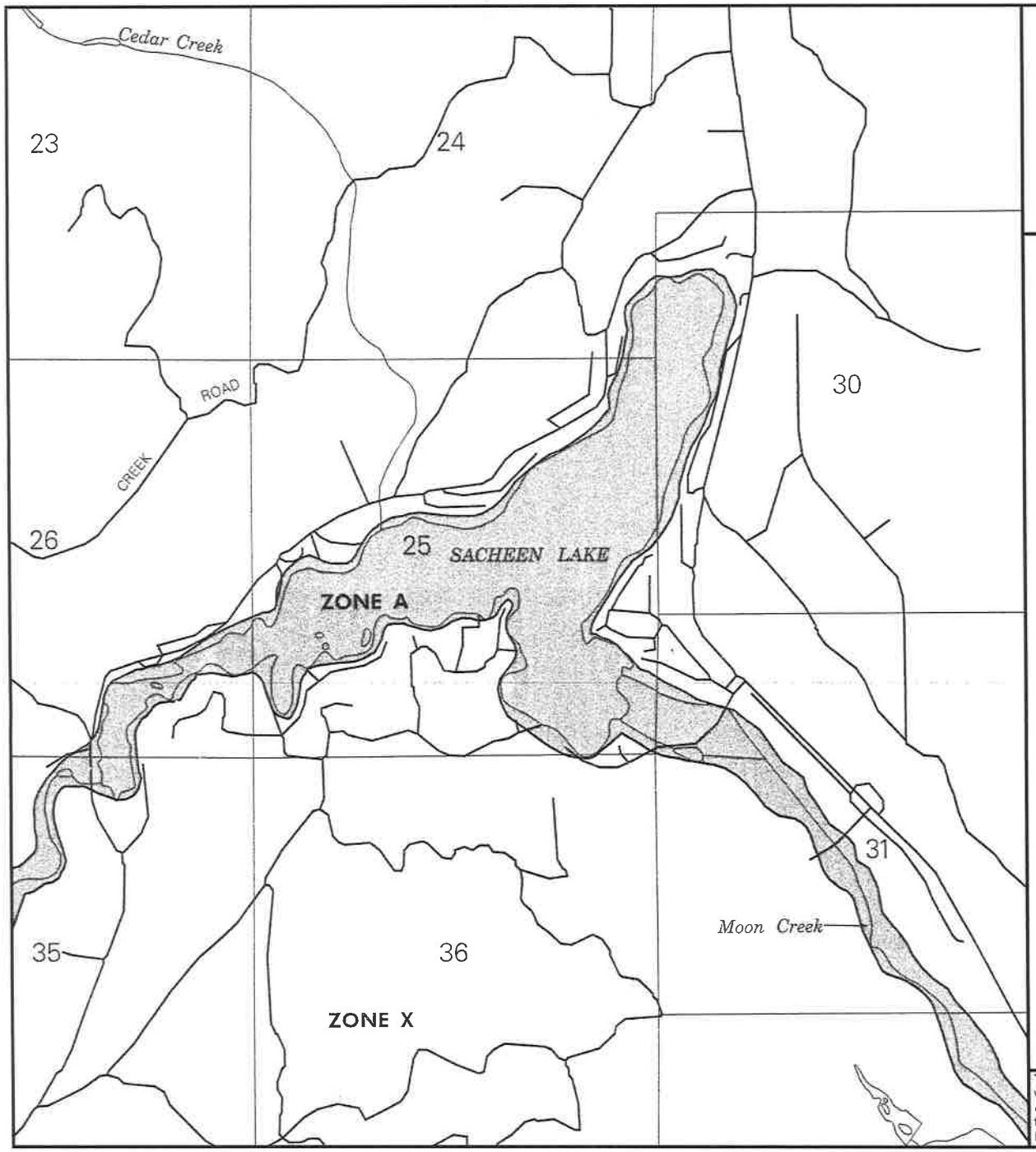
11c. Property Owner Signature (if not applicant) [help]
Not required if project is on existing rights-of-way or easements.

I consent to the permitting agencies entering the property where the project is located to inspect the project site or any work. These inspections shall occur at reasonable times and, if practical, with prior notice to the landowner.

Property Owner Printed Name	Property Owner Signature	Date

18 U.S.C §1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than 5 years or both.

If you require this document in another format, contact the Governor's Office for Regulatory Innovation and Assistance (ORIA) at (800) 917-0043. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call (877) 833-6341. ORIA publication number: ENV-019-09 rev. 09/2015



APPROXIMATE SCALE IN FEET

2000 0 2000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

PEND OREILLE COUNTY, WASHINGTON AND INCORPORATED AREAS

PANEL 850 OF 1000

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS COMMUNITY	NUMBER	PANEL	SUFFIX
PEND OREILLE COUNTY, UNINCORPORATED AREAS	53051	0850	C

MAP NUMBER 53051C0850 C

EFFECTIVE DATE: MARCH 4, 2002

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Purpose of checklist: **SEPA ENVIRONMENTAL CHECKLIST**

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants: [help]

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:
Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals: [help]

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. BACKGROUND [help]

1. Name of proposed project, if applicable: [help]
Fertile Valley Road Widening

2. Name of applicant: [help]
Pend Oreille County Public Works

3. Address and phone number of applicant and contact person: [help]
PO Box 5040; 625 W. 4th St. Newport, WA 99156

4. Date checklist prepared: [help]
08/02/2017

5. Agency requesting checklist: [help]
Pend Oreille County Public Works Department

6. Proposed timing or schedule (including phasing, if applicable): [help]
Spring 2018 to Fall 2018.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with

this proposal? If yes, explain. [help]
No

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. [help]
N/A.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. [help]
N/A

10. List any government approvals or permits that will be needed for your proposal, if known. [help]
State and county governments have been informed of the project, site visits were made and concluded that HPA, 401 and 404 will not be required so long as the project stays within in the road right of way, no wetlands or culverts were to be removed or replaced.
402, and SSDP may be required.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.) [help]
The project will widen a two-lane roadway to allow for wider road shoulders. Some clearing and grading will be required. Shoulders will be widened and meet standards.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. [help]
See attached Vicinity Map. The project will take place from M.P. 6.9 at the end of Fertile Valley BR—06.88 through M.P. 9.316 where Fertile Valley Rd meets Highway 211.

B. ENVIRONMENTAL ELEMENTS [help]

1. Earth

a. General description of the site [help]
(circle one): Flat, rolling, hilly, steep slopes, mountainous,
other The roadway is relatively flat but there is change in elevation along the road corridor.

b. What is the steepest slope on the site (approximate percent slope)? [help]
Approximately 10 percent

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. [help]
According to the USDA NRCS soil survey, the material on site is primarily Moscow-Rock Outcrop-Prouty, "... made of moderately deep, well drained, nearly level to very steep soils formed in residuum and colluvium that are derived dominantly from granitic rock and are mixed with or mantled by volcanic ash and loess; on foothills and mountains."

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. [help]

No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [help]

The road will be excavated from the Fertile Valley Bridge to Highway 211. The top of the road will be removed and replaced with new material.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. [help]

Yes, erosion could result during widening of the roadway, ditching, and excavation of the outcrop.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? [help]

100% of the road will be covered with impervious surface.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: [help]

A temporary erosion and sediment control plan and spill plan will be prepared and implemented. Erosion control BMPs such as silt fence or fiber wattles will be placed to minimize sedimentation.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. [help]

There will be temporary emissions from construction equipment and fugitive dust.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. [help]

No

c. Proposed measures to reduce or control emissions or other impacts to air, if any: [help]

A temporary sediment and erosion control plan will be prepared that will outline the required Best Management Practices (BMPs) which may include dust abatement and erosion control seeding. Vehicles will not be left idling unnecessarily.

3. **Water**

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. [help]

Yes, Sacheen Lake as well as 3 tributaries, 1 named (Cedar Creek) and 2 unnamed, and associated wetlands are present near the project area.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. [help]

Yes the roadway widening will be within 200 feet of the Sacheen Lake in some places.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. [help]

None. There will be no work in surface water or wetlands.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. [help]

No.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. [help]

No, the project is near the Sacheen Lake but the roadway is elevated and outside of the floodplain. The outlet side of the lake is highlighted but is well out of the elevation of flooding. See attached floodplain map.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. [help]

No.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known. [help]

No

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. [help]

No waste material will be discharged into the ground.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. [help]

Stormwater will run off of the constructed roadway and will sheet flow down the roadway fill slopes and grassy ditches and is expected to infiltrate before flowing to surface waters. During construction, temporary erosion and sediment control BMPs will be installed to minimize the potential to discharge to waters. The disturbed soils will be reseeded after construction to minimize sedimentation and erosion.

2) Could waste materials enter ground or surface waters? If so, generally describe. [help]

Yes. There is potential for soil to enter wetlands and surface water due to proximity; however, it will be minimized by the timing of the projects as well as with BMPs including silt fence, fiber wattles, reseeding and hauling material off site to upland areas.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

A temporary erosion and sediment control plan will be prepared to specify the BMPs to minimize risk of sediment entering surface waters. Work will be done during low rainfall periods A Certified Erosion and Sediment Control Lead will be on site daily during construction. BMPs may include silt fence, fiber wattles, reseeding disturbed soils, sediment ponds and other measures.

4. **Plants** [help]

a. Check the types of vegetation found on the site: [help]

x deciduous tree: alder, maple, aspen, other
x evergreen tree: fir, cedar, pine, other
x shrubs
x grass
____ pasture
____ crop or grain
____ Orchards, vineyards or other permanent crops.
x wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
x water plants: water lily, eelgrass, milfoil, other

x other types of vegetation

b. What kind and amount of vegetation will be removed or altered? [help]
Weeds, mullin, RCG and upland grasses will be removed.

c. List threatened and endangered species known to be on or near the site. [help]
No federally listed threatened and endangered species known to be near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: [help]
Disturbed soils will be reseeded.

e. List all noxious weeds and invasive species known to be on or near the site.
St. John's wort, spotted knapweed, and sulfur cinquefoil are present on site.

5. **Animals**

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include: [help]

birds: **hawk, heron, eagle, songbirds**, **waterfowl**
other: mammals: **deer, bear**, elk, beaver, other:
fish: bass, **salmon, trout,** herring, shellfish, other _____

b. List any threatened and endangered species known to be on or near the site. [help]
The area has been identified as potential grey wolf habitiat.

c. Is the site part of a migration route? If so, explain. [help]
No.

d. Proposed measures to preserve or enhance wildlife, if any: [help]
Vegetation removal will be minimized where practicable. Work on the shoreline will be avoided.

e. List any invasive animal species known to be on or near the site.
None.

6. **Energy and natural resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. [help]
N/A

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. [help]
No

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: [help]
None.

7. **Environmental health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe. [help]
There will be construction equipment on site but there will be a Spill Plan and Temporary Erosion and Sedimentation Plan prepared that will reduce the potential for spills from equipment.

1) Describe any known or possible contamination at the site from present or past uses.

None

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

There may be petroleum and chemicals stored during construction. Chemical storage, equipment refueling and equipment maintenance will be addressed in the Spill Plan and Temporary Sediment and Erosion Control Plan.

4) Describe special emergency services that might be required.

If there is a spill, the polluting activity will be stopped and the spill plan will be followed. Spill kits will be on site.

5) Proposed measures to reduce or control environmental health hazards, if any:

A Spill Plan and Temporary Sediment and Erosion Control Plan will be prepared and implemented that will include bmps to minimize risk including siting equipment and vehicle refueling and maintenance sites, waste sites and other potential hazards away from waterways. Silt fencing, fiber wattles and other bmps will be installed. Spill kits will be on site.

b. **Noise**

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? [help]

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indi- cate what hours noise would come from the site. [help]

There will be temporary noise increases due to construction. Work will be done during daylight hours. Equipment will include backhoes, dump trucks, graders and other construction equipment.

3) Proposed measures to reduce or control noise impacts, if any: [help]

Work will be done during daylight hours only.

8. **Land and shoreline use**

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. [help]

Road right of way

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? [help]

No. There are trees along the roadway but they are not designated or used for forestry production or farming.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No. Access and detour routes will be provided for all users including farm equipment.

c. Describe any structures on the site. [help]

Residential housing

d. Will any structures be demolished? If so, what? [help]

No.

e. What is the current zoning classification of the site? [help]

Road

f. What is the current comprehensive plan designation of the site? [help]

Transportation- Arterial Collector

g. If applicable, what is the current shoreline master program designation of the site? [help]

Rural residential

h. Has any part of the site been classified as a critical area by the city or county? If so, specify. [help]

Critical areas on site include: wetland buffer, shoreline, soil construction hazard

i. Approximately how many people would reside or work in the completed project? [help]

N/A

j. Approximately how many people would the completed project displace? [help]

None

k. Proposed measures to avoid or reduce displacement impacts, if any: [help]

N/A

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: [help]

N/A

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

N/A

9. **Housing**

a. Approximately how many units would be provided, if any? Indicate whether high, mid- dle, or low-income housing. [help]

None

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. [help]

None

c. Proposed measures to reduce or control housing impacts, if any: [help]

N/A

10. **Aesthetics**

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? [help]

The elevation of the road is expected to stay the same.

b. What views in the immediate vicinity would be altered or obstructed? [help]

None

c. Proposed measures to reduce or control aesthetic impacts, if any: [help]

Vegetation removal will be minimized as practicable. Disturbed soils will be reseeded and revegetated. The existing jersy barriers on the south side of the road will be removed and replaced with guardrail.

11. **Light and glare**

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? [help]

None

b. Could light or glare from the finished project be a safety hazard or interfere with views? [help]

N/A

c. What existing off-site sources of light or glare may affect your proposal? [help]

None

d. Proposed measures to reduce or control light and glare impacts, if any: [help]

Work will be done during daylight hours.

12. **Recreation**

a. What designated and informal recreational opportunities are in the immediate vicinity? [help]
Sacheen Lake is located south of the project area.

b. Would the proposed project displace any existing recreational uses? If so, describe. [help]
No

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: [help]
N/A

13. **Historic and cultural preservation**

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe. [help]
No

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [help]
The project will have no effect to cultural resources since the project lies within ROW of preexisting disturbance. If there is an inadvertent discovery then all construction activity around the site will cease and DAHP and the Tribes will be contacted as appropriate.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [help]
N/A

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.
If unanticipated remains are found work will stop and the sheriff, tribes and DAHP will be contacted.

14. **Transportation**

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any. [help]
The project is located on Fertile Valley Rd from mp6.9 to mp9.3. The existing alignment and roadbed will be used until the new road is constructed. Access will be provided during construction.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? [help]
No.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? [help]
None

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). [help]

Fertile Valley Road will be widened to improve safety along the road by the widening.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. [help]

No

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates? [help]

The project would improve safety but would not increase vehicular trips.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No. There will be temporary construction delays but the existing roadway will be used until the new road is constructed.

h. Proposed measures to reduce or control transportation impacts, if any: [help]

A traffic control plan will be prepared. Access through the project will be maintained through construction.

15. **Public services**

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [help]

No

b. Proposed measures to reduce or control direct impacts on public services, if any. [help]

N/A

16. **Utilities**

a. Circle utilities currently available at the site: [help]
Electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other N/A this is a road construction project

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. [help]

None. Existing utilities will be relocated within the new alignment should need be.

C. SIGNATURE [HELP]

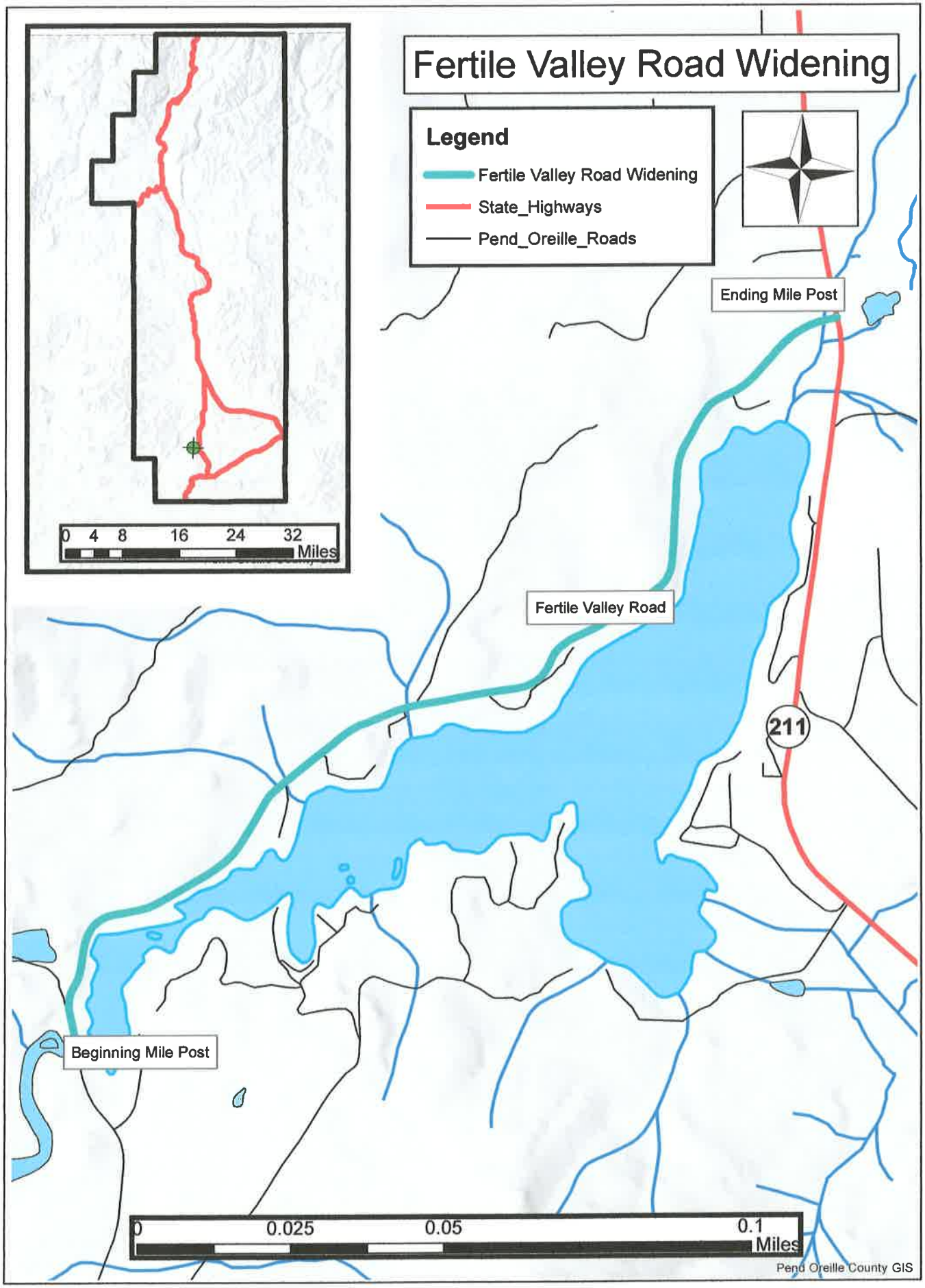
The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Don Ramsey

Name of signee Don Ramsey

Position and Agency/Organization County Engineer / Pend Oreille County

Date Submitted: 10/3/17


Fertile Valley Road Widening
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Fertile Valley Road
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Beginning Mile Post
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Miles
Pend Oreille County GIS

Fertile Valley Road Improvement Project

Draft
Wetland Delineation Report

Prepared for:

Pend Oreille County Public Works

Prepared by:

Anderson Environmental Consulting (AEC)

December 9, 2010

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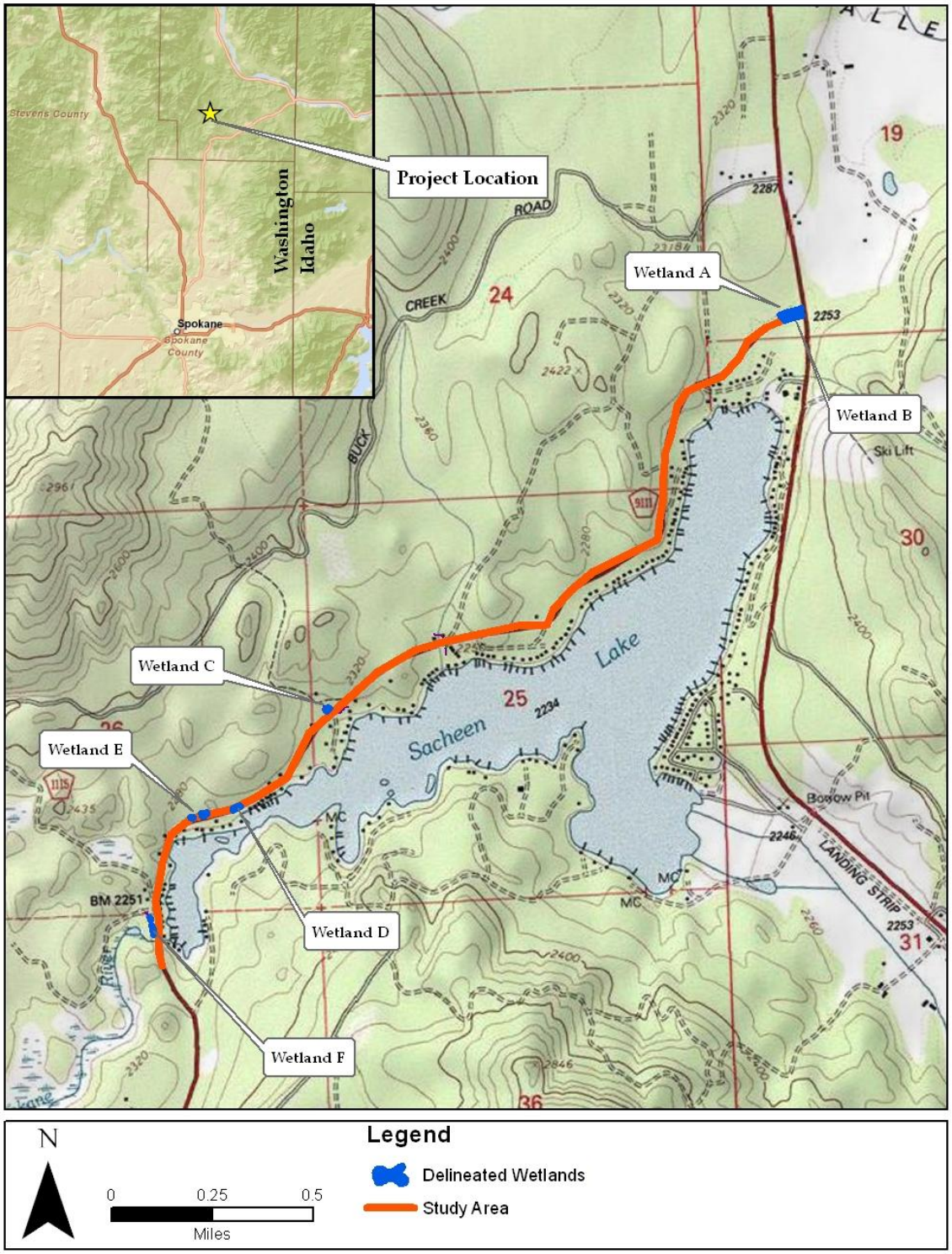
1. Introduction

Figure 1. Vicinity Map



1.1 PROJECT DESCRIPTION

Pend Oreille County Public Works will improve Fertile Valley Road between Highway 211 and the bridge over the southwest outlet of Sacheen Lake. The existing road is an approximately 20 foot wide paved rural road serving rural residences along Fertile Valley Road. The project will repair the existing roadway, extend the shoulder for bicycle/pedestrian use and add stormwater treatment areas.

1.2 PROJECT LOCATION

The project is located in Sections 19, 30 and 35, Township 31N, Range 44E and Sections 24, 25, and 26, Township 31N, Range 43E in Pend Oreille County, Washington. See Figure 1, *Vicinity Map*.

2. Methodology

This wetland delineation was completed using the US Army Corps of Engineers *Wetlands Delineation Manual* (Environmental Laboratory, 1987) with the Regional Supplement to the US Army Corps of Engineers *Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (USACE, 2010). The US Army Corps of Engineers (USACE) and the State of Washington recognize the use of these methodologies for delineation of wetlands in specific vegetation zones. It was determined that the area surrounding the project is an area for which application of this methodology is appropriate.

The technical guidance provides recommended procedures to be used for determining jurisdictional boundaries of wetlands. To be considered wetland, hydrophytic vegetation, hydric soils, and wetland hydrology must be present under normal circumstances. Indicators to determine if this criterion is met are specified in the Corps methodology. Methodology is also recommended for disturbance from recent natural events or human activities.

The Washington State Wetland Rating System for Eastern Washington (Hruby, 2004) was used to assess project study area wetland functions and values and to assign a wetland category. This is based on the potential and opportunity to provide water quality, hydrologic and habitat functions.

2.1 BACKGROUND INFORMATION

Information was collected prior to field evaluation of the wetlands to assist in data collection and to provide background information regarding the project area. Data sources included the following:

- Aerial photography
- US Geological Survey 1:24,000 topographic maps; Ruby Quadrangle
- Soil Survey of Pend Oreille County, Washington
- Hydric Soils List for Washington
- US Fish and Wildlife Service National Wetland Inventory (NWI) Maps

2.2 FIELD INVESTIGATON

The delineation was completed by Michelle Anderson and Melanie Dishron of Anderson Environmental Consulting (AEC). The project study area included approximately 35 feet from the pavement on either side of the existing roadway.

NWI maps show that palustrine emergent, palustrine scrub shrub and palustrine forested wetlands are present in the project area, primarily concentrated at the northern and southern ends of the project.

Field data was collected primarily on October 18 and 22, 2010 with a follow up site visit on October 29, 2010. Each sampling site was assigned a unique number and data forms were completed for each data point. Data points were evaluated in both upland and wetland areas to determine the wetland boundaries. Wetland boundaries were marked using flagging then recorded using a Trimble Geographic Positioning System (GPS) GeoXT handheld which has sub-meter accuracy. GPS data was then overlaid on aerial layers using Geographic Information Systems (GIS).

2.2.1 Hydrology

The hydrological information was collected during a normal rain year during the later part of the growing season. The site was evaluated for surface water, ponding, saturation of soils near the surface, drift lines, oxidized rhizospheres and other positive indicators for hydrology.

2.2.2 Soils

Prior to the site visit, the NRCS soil survey data was researched and the mapped soil types were evaluated to determine if they are hydric. Hydric soils are soils formed under exclusively saturated conditions and typically support hydrophytic vegetation. In the field, pits were excavated to depths up to 20 inches and soil profile data was recorded. This included determining if soils are hydric using the Munsell (1992) color charts, investigating for redoximorphic features, organic matter, texture and other positive indicators for hydric soils.

2.2.3 Vegetation

Hydrophytic vegetation consists of those plant species that have adapted to growing in substrates that are periodically deficient of oxygen because of saturated soil conditions. Five basic groups of vegetation are recognized based on their frequency of occurrence in wetlands. These categories, referred to as the "wetland indicator status" (from the wettest to driest habitats) are as follows:

- obligate wetland plants (OBL)
- facultative wetland (FACW)
- facultative (FAC)
- facultative upland (FACU)
- upland plants (UPL)

Vegetative communities with dominant plants that could be considered distinctively hydrophytic or upland were used to identify the best data sites. Dominant plant species were visually estimated and recorded for each data point and for each wetland based on variably shaped communities. The wetland indicator status of each plant was determined based on the 1988 and 1993 USFWS plant lists for Region 9 (Reed, 1988 & 1993).

Trees were recorded within an approximate 30-foot radius and shrubs and herbaceous vegetation within a 5-foot radius. The shapes of the vegetative areas were adjusted to best incorporate the representative plant community. A determination of predominance of hydrophytic vegetation was made using the 50-20 rule. Dominance of plant species were determined by estimating the percentage of aerial cover per stratum. Species per stratum were listed together in descending order of cover percentages. If more than 50 percent of the dominant species included by the above criteria are FAC, FACW or OBL, the vegetation community was considered hydrophytic.

3. Affected Environment

3.1 LANDSCAPE CONTEXT AND POSITION

3.1.1 Topography

The project area ranges in elevation from approximately 2230 to 2300 feet above sea level. Fertile Valley Road generally follows the west side of Sacheen Lake. The area is primarily forested with both permanent and seasonal rural residences.

3.1.2 Hydrology

The project is located in the Little Spokane River Watershed (WRIA 55). Within the project area, the hydrology to the site is primarily from Cedar Creek, Moon Creek and a drainage on the north end of the lake which drains to Sacheen Lake. Sacheen Lake outlets to the West Branch of the Little Spokane River which is a primary tributary of the Little Spokane River. The most prevalent positive indicators of hydrology were saturation, a high water table, drainage patterns, and oxidized rhizospheres.

3.1.3 Soils

The soils mapped in the project area include

- Dufort very stony silt loam (44)
- Kegel Loam (62)
- Newbell-Rock outcrop complex (93)
- Rock Outcrop-Moscow complex (117)

None of the soils in the project area are listed as hydric soils under the National Hydric Soils list or the local hydric soil list.

The wetland areas were primarily mapped as Dufort Very Stony Silt Loam and Kegel Loam; however at many soil pits the on-site soil investigations were not consistent with the published soil descriptions. Positive indicators for hydric soils in the wetland areas included; highly organic soils and dark soils with redoximorphic features.

3.1.4 Vegetation

Vegetative communities present in the study area were highly diverse with forested, scrub shrub, aquatic bed and emergent vegetation. Immediately along the roadway the vegetation is primarily weedy species and grasses. Tables 1 and 2 list the plants identified in the upland and wetland areas, respectively, in the project area.

Table 1. Upland Plants Identified in Project Area

Symbol	Common Name	*Scientific Name*	Wetland Indicator Status
ABGR	Douglas fir	*Abies grandis*	FACU
ACGLD4	Douglas maple	*Acer glabrum*	FAC
ASCA	British Columbia wild ginger	*Asarum caudatum*	FACU
BRCA5	California brome	*Bromus carinatus*	NI
CAOB4	Obtuse sedge	*Carex obtuse*	NI
CEDE	Diffuse knapweed	*Centaurea diffusa*	NI
DAGL	Orchard grass	*Dactylis glomerata*	FACU
EQAR	Common horsetail	*Equisetum arvense*	FAC
HODI	Ocean spray	*Holidicus discolor*	FACU
HYPE	Common St. John's wort	*Hypericum perforatum*	NI
LIDAM	Dalmation toadflax	*Linaria dalmatica*	NI
MARE	Low Oregon grape	*Mahonia repens*	FACU
PICO	Lodgepole pine	*Pinus contorta*	FAC
POBAT	Black cottonwood	*Populus balsamifera*	NI
PTAQ	Western bracken fern	*Pteridium aquilinum*	FACU
RUPA	Thimbleberry	*Rubus parviflorus*	FAC-
SARA	Red elderberry	*Sambucus racemosa*	FACU
SYAL	Common snowberry	*Symporacarpus albus*	FACU
TSHE	Western hemlock	*Tsuga heterophylla*	FAC
VETH	Common mullein	*Verbascum Thapsus*	NI

Table 2. Wetland Plants Identified in Project Area

Symbol	Common Name	*Scientific Name*	Wetland Indicator Status
ALIS	Plantain	*Alisma spp.*	OBL
ALRU	Alder	*Alnus rubra*	FAC
CARO	Beaked sedge	*Carex rostrata*	OBL
COSE	Red osier dogwood	*Cornus sericea*	FACW
COSE	Red osier dogwood	*Cornus sericea*	FACW+
CRDO	Black Hawthorne	*Crataegus douglasii*	FAC
EQAR	Horsetail	*Equisetum arvense*	FAC
FRVI	Wild strawberry	*Fragaria virginiana*	FAC
LOIN5	Twinberry	*Loniciera involucrata*	FAC+
LYAM3	Skunk cabbage	*Lysichiton americanus*	OBL
PHAR	Reed canarygrass	*Phalaris arundinacea*	FACW
POBAT	Black cottonwood	*Populus balsamifera*	FAC
RONU	Nootka rose	*Rosa nutkana*	FAC
SAEX	Sandbar willow	*Salix exigua*	OBL
SPDO	Hardhack	*Spirea douglasii*	FACW
THPL	Western red cedar	*Thuja plicata*	FAC
TYLA	Cattail	*Typha latifolia*	OBL
URDI	Stinging nettle	*Urtica dioca*	FAC+

4. Findings

All of the identified wetlands are neighboring to or abut Sacheen Lake. All of the waterbodies identified in the study area are hydrologically connected to Sacheen Lake which is hydrologically connected to the West Branch of the Little Spokane River, perennial stream that flows into the Little Spokane River. All of the wetlands and waterbodies described in this report are recommended to be jurisdictional by the Corps under Section 404 of the Clean Water Act and are considered by FHWA under Executive Order 11990.

4.1 WETLANDS

Six wetlands were identified within the study area and are described below. Wetland characteristics have been summarized in Table 3, *Wetland Summary*. Maps depicting wetland boundaries are in Appendix A, Wetland Boundary Maps. Additional detail regarding each data point can be found on the data forms located in Appendix B, Wetland Data Forms.

Table 3. Wetland Summary

Wetland	Cowardin Classification	Dominant Vegetation	Size (acreage)	Category[1]
A	Palustrine scrub shrub	Willow, alder, hardhack, and reed canarygrass	0.12	III
B	Palustrine scrub shrub	Willow, alder, hardhack, twinberry, water parsley, and horsetail reed	0.13	III
C	Palustrine scrub shrub/forested	Alder, western red cedar, Douglas maple, skunk cabbage, and stinging nettle	0.02	III
D	Lacustrine scrub shrub	Black cottonwood, hardhack, alder, and sedges	0.03	II
E	Palustrine Forested	Black cottonwood, alder, willow, western red cedar, hardhack, and cattail	0.05	III
F	Palustrine scrub shrub	Black cottonwood, hardhack, cattail, and red osier dogwood	0.01	II

Wetland A is a Category III palustrine scrub shrub wetland located at the northwest corner of the intersection of Fertile Valley Rd. and Hwy 211. The site is a depression that collects hydrology from the surrounding hills and road runoff. The soils are an organic muck of 7.5YR 2.5/1 and a gravelly sandy loam of 7.5YR 3/1 and are considered hydric. Wetland A is dominated by willow, alder, hardhack, red osier dogwood and reed canarygrass. Positive hydrological indicators included a high water table and saturation at the surface. 0.12 acres of the wetland is located within the study area.

Jurisdiction-This wetland is adjacent to and neighbors Sacheen Lake. Sacheen Lake drains to the West Branch of the Little Spokane River which is a perennial stream and tributary to the Little Spokane River. The Little Spokane River is a tributary to the Spokane River, a traditional

[1] Category I is the highest function and value and Category IV is the lowest function and value.

navigable water. Therefore, Wetland A is recommended to be jurisdictional by the Corps and FHWA.

Wetland B is a Category III palustrine scrub shrub wetland located at the southwest corner of the intersection of Fertile Valley Road and Hwy 211. Positive hydrological indicators included a high water table and saturation at the surface. The vegetation is dense scrub shrub dominated by hardhack and alder. The soil is an organic muck with a color of 10YR 2/1 and redoximorphic features and is considered hydric. 0.13 acres of Wetland B is within the study area.

Jurisdiction-This wetland is part of a larger wetland that appears to extend southwest and connects to a drainage that flows to Sacheen Lake. Sacheen Lake drains to the West Branch of the Little Spokane River, a perennial stream and tributary to the Little Spokane River which is a tributary to the Spokane River, a traditional navigable water. Therefore, Wetland B is recommended to be jurisdictional by the Corps and FHWA.

Wetland C is a Category III palustrine scrub shrub located on the southern section of the project area on the north side of Fertile Valley Road. The wetland is dominated by alder, western red cedar, Douglas maple, skunk cabbage and stinging nettle. The soil is a sandy muck with a color of 10YR 2/1 and is considered hydric. The wetland abuts both sides of unnamed stream 1, a perennial stream that flows to the southeast and enters Sacheen Lake. Positive hydrological indicators included a high water table and saturation at the surface. 0.02 acres of the wetland is within the study area.

Jurisdiction-Wetland C abuts a perennial stream which is a tributary to Sacheen Lake. Sacheen Lake drains to the West Branch of the Little Spokane River, a perennial stream and tributary to the Little Spokane River which is a tributary to the Spokane River, a traditional navigable water. Therefore, Wetland C is recommended to be jurisdictional by the Corps and FHWA.

Wetland D is Category II lacustrine scrub shrub wetland located on the southern section of the project area on the fringe of Sacheen Lake. It is at the base of a steep fill slope with riprap encroaching on the site. The wetland is dominated by black cottonwood, hardhack, alder, and sedges. The soil is silt with a color of 10YR 2/2 and redoximorphic features. Oxidized rhizopheres, ponding and saturation near the surface were positive hydrological indicators that were present. 0.03 of wetland D is within the study area.

Jurisdiction- Wetland D is part of a wetland fringe and abuts Sacheen Lake. Sacheen Lake drains to the West Branch of the Little Spokane River, a perennial stream and tributary to the Little Spokane River which is a tributary to the Spokane River, a traditional navigable water. Wetland D is recommended to be jurisdictional by the Corps and FHWA

Wetland E is a Category III palustrine forested wetland located on the southern end of the project, on the west side of Fertile Valley Road. It is dominated by black cottonwood, western red cedar, alder, willow, and hardhack. Soils are a silt loam in the upper layer and a sandy soil

beneath with an organic pan. A high water table and saturation near the surface were present. 0.05 of wetland E is within the study area.

Jurisdiction- Wetland E is the southern end of a more extensive forested wetland that extends north. It is a depressional wetland that neighbors Sacheen Lake but is separated by Fertile Valley Road. Sacheen Lake drains to the West Branch of the Little Spokane River, a perennial stream and tributary to the Little Spokane River. The Little Spokane River is a tributary to the Spokane River, a traditional navigable water. Wetland E is recommended to be jurisdictional by the Corps and FHWA.

Wetland F is a Category II palustrine scrub shrub wetland with components of forest, emergent and aquatic bed. It is located at the southern end of the project on the west side of Fertile Valley Road. It is dominated by black cottonwood, red osier dogwood and hardhack. Soils are an organic muck which is a positive indicator for hydric soils. Wetland F receives its hydrology primarily from the southern outlet of Sacheen Lake. 0.01 of this wetland is within the study area.

Jurisdiction- Wetland F is at the southern outlet of Sacheen Lake where Sacheen Lake drains to the West Branch of the Little Spokane River. The West Branch of the Little Spokane River is a perennial stream and tributary to the Little Spokane River which is a tributary to the Spokane River, a traditional navigable water. Wetland F is recommended to be jurisdictional by the Corps and FHWA.

4.2 WETLAND FUNCTION AND VALUE ASSESSMENT

The Revised Washington State Wetland Rating System in Eastern Washington was used to assess the wetland functions and values. This method is a rapid method of assessing wetland functions and is useful for determining the appropriate mitigation. The individual wetland function and value assessment forms are included in Appendix C, Wetland Rating Forms.

Wetlands A, B, C and E are rated as a Category III wetlands. Sacheen Lake does not meet Washington State Water Quality Standards for phosphorus. Wetlands A and B are located at the intersection of Highway 211 and Fertile Valley Road and have a high opportunity and potential to improve water quality of downstream waters. Wetlands A and B also rated high for habitat functions due to the structural diversity of the vegetation. While the wetlands in the project corridor are not wetlands with special characteristics or natural heritage wetlands, both wetlands C and E are in the vicinity of documented occurrences of federal or state species of concern or protected species; however, the species were not documented in the wetlands (NHP, 2010).

Wetlands D and F are rated as Category II wetlands and rated high for all three functions; water quality, hydrologic and habitat. Wetland D is on the fringe of Sacheen Lake and Wetland F is the headwater of the West Branch of the Little Spokane River. Both wetlands are hydrologically connected to impaired waters. In addition, both Sacheen Lake and the West Branch of the Little Spokane River have had flooding problems during years of high

precipitation. Therefore, both wetlands are highly functioning for water storage capacity and flood attenuation and water quality. In addition, both wetlands have diverse vegetative structures including aquatic beds and have a fairly contiguous connectivity to other undeveloped habitats and riparian corridors. Therefore, both wetlands offer suitable habitat for a large diversity of plant, animal and fish species. While the wetlands in the project corridor are not wetlands with special characteristics or natural heritage wetlands, both wetlands D and F are in the vicinity of documented occurrences of federal or state species of concern or protected species; however, the species were not documented in the wetlands (NHP, 2010).

4.3 WATERS OF THE US

The following waterbodies are located in or near the project study area.

Sacheen Lake is a two mile long, 317 acre lake with approximately 43 square miles drainage area. The maximum depth is 40 feet. Its principal inlets include Moon and Cedar creeks and it outlets via the West Branch of the Little Spokane River. There is a low dam at the outlet, built in 1922. Sacheen Lake is 303(d) listed for phosphorus.

Cedar Creek is located on the northwest side of Sacheen Lake and the north side of Fertile Valley Road near Northland Drive. It is a perennial stream with an approximately 6 foot wide channel. It crosses under Fertile Valley Road through a corrugated culvert with a perched outlet.

Unnamed Creek 1 flows from the northwest and drains through a culvert to Sacheen Lake. It is located near Wetland C. The inlet to the culvert is impounded by the fill associated with Fertile Valley Road. The creek is perennial with an approximately 5 foot wide channel.

West Branch of the Little Spokane River is a perennial stream that begins at the southern outlet of Sacheen Lake. It is approximately 16.5 miles long and is primarily located in Pend Oreille County within the Little Spokane Watershed (WRIA 55). It is the principal tributary to the Little Spokane River which is a tributary to the Spokane River, a traditional navigable water. The West Branch of the Little Spokane River is 303(d) listed for dissolved oxygen and temperature.

Little Spokane River is located in the Little Spokane Watershed (WRIA 55) and contains a West Branch and East Branch. It is 303(d) listed for turbidity and dissolved oxygen. The river is approximately 35 miles long and is one of the two major tributaries to the Spokane River, a traditional navigable water.

5. References

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APPENDIX A. WETLAND BOUNDARY MAPS

DP 1
DP 2
A
DP 4
DP 3
B
FERTILE VALLEY RD
21
Legend
N
0
100
200
Feet
upland data point
wetland data point
Fertile Valley Road
Study Area
Delineated Wetlands in Study Area
Approximate Wetland beyond Study Area
NWI Wetlands

Cedar Creek
FERTILE VALLEY RD
DP 5
Sacheen Lake
Legend
N
0
100
200
Feet
upland data point
wetland data point
Fertile Valley Road
Study Area
Delineated Wetlands in Study Area
Approximate Wetland beyond Study Area
NWI Wetlands
Cedar Creek

FERTILE VALLEY RD
DP 6
C
Unnamed Creek 1
Legend
N
0
50
100
Feet
upland data point
wetland data point
Fertile Valley Road
Study Area
Delineated Wetlands in Study Area
Approximate Wetland beyond Study Area
NWI Wetlands
Unnamed Creek 1

FERTILE VALLEY RD
DP 7
DP 9
D
DP 8
Legend
N
0
50
100
Feet
upland data point
wetland data point
Fertile Valley Road
Study Area
Delineated Wetlands in Study Area
Approximate Wetland beyond Study Area
NWI Wetlands

E
DP 10
E
DP 11
DP 12
FERTILE VALLEY RD
Sacheen Lake
Legend
N
0
50
100
Feet
upland data point
wetland data point
Fertile Valley Road
Study Area
Delineated Wetlands in Study Area
Approximate Wetland beyond Study Area
NWI Wetlands

DP 13
F
FERTILE VALLEY RD
Sacheen Lake
Legend
N
0
50
100
Feet
upland data point
wetland data point
Fertile Valley Road
Study Area
Delineated Wetlands in Study Area
Approximate Wetland beyond Study Area
NWI Wetlands

APPENDIX B. WETLAND DELINEATION DATA FORMS

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

Project/Site: Fertile Valley Rd City/County: Newport / Pend Oreille Sampling Date: 10-18-10

Applicant/Owner: Pend Oreille County Public Works State: WA Sampling Point: DP 1

Investigator(s): MCA / MDA Section, Township, Range: S19 T31N R44E

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

Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Kegel loam (602) NWI classification: PSS

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. 0			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. ALRU	30	Y	FAC
2. Salix	20	Y	FACW
3. SPDO	30	Y	FACW
4.			
5.			
	80 = Total Cover		
Herb Stratum (Plot size: _____)			
1. PHAR	90	Y	FACW
2. SPDO	5		FACW
3. EQAR	5		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - 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 X No _____

Remarks:

SOIL

Sampling Point: DP1

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 %	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR3/1	100					fine gravelly sandy loam	
6-13	7.5YR2.5/1	100					organic 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)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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 X 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 along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) (**LRR A**)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes X No ____ Depth (inches): 1"

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Project/Site: Fertile Valley Rd City/County: Newport / Pend Oreille Sampling Date: 10-18-10

Applicant/Owner: Pend Oreille County State: WA Sampling Point: DP2

Investigator(s): MCA / MDA Section, Township, Range: S19 T31N R44E

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

Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Kegel loam (62) NWI classification: PSS

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. 0			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5' long)			
1. SPDO	20	Y	FACW
2. SYAL	20	Y	FACU
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: _____)			
1. PHAR	90	Y	FACW
2. POPR	10		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

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: 67% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - 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 X No _____

Remarks:

SOIL

Sampling Point: DP 2

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 %	Type[1]	Loc[2]	Texture	Remarks
0-5.5	7.5YR3/1	100					Coarse gravelly sand	- variable colors
5.5-	10YR3/2	100					coarse sandy loam	- variable less gravel + more 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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: Fertile Valley City/County: Pend Oreille Sampling Date: 10/18/10

Applicant/Owner: Pend Oreille Public Works State: WA Sampling Point: DP 3

Investigator(s): MA/MD Section, Township, Range: S19 T31N R44E

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

Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Kegel loam (62) NWI classification: PSS

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

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

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

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

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

Remarks: 211 DP 3 Fertile Valley

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. ALRU	30%	Y	FAC
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 10')			
1. SPDO	75%	Y	FACW
2. LOIN	10%	N	FAC+
3. ALRU	5%	N	FAC
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 10')			
1. EQAR	5%	N	FAC
2. SOLANUM	5%	N	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

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

% Bare Ground in Herb Stratum _____

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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - 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 X No _____

Remarks: Moss

SOIL

Sampling Point: DP3

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 %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100%					Org Muck	
3-8	10YR 2/1	100%					Clay Silt	
8-14	10YR 2/1	60%	10YR 3/3	40%	C	M		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.)

- X Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- X 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)
- __ Very Shallow Dark Surface (TF12)
- __ 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 X 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 along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) **(LRR A)**
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes X No ____ Depth (inches): 8"

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 0"

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Project/Site: Fertile Valley City/County: Pend Oreille Sampling Date: 10/18/10
Applicant/Owner: Pend Oreille County State: WA Sampling Point: DP 4
Investigator(s): MA/MD Section, Township, Range: S19 T31N R44E
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: Kegel loam (62) 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 X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: 211 60 DP4

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. ALRU	35%	Y	FAC
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. SPDO	75%	Y	FACW
2. PHAR	25%	Y	FACW
3. OESA	<5%		OBL
4. LOIN	10%		FACW
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. PHAR	40%	Y	FACW
2. ARCT	TR	N	
3. EQAR	5%	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - 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 X No _____

Remarks:

SOIL

Sampling Point: DP4

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 %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Coarse gravelly 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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No X

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

Remarks: Upland pit 20" from DP 3

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

Project/Site: Fertile Valley Rd City/County: Newport / Pend Oreille Sampling Date: 10-18-10
Applicant/Owner: Pend Oreille County State: WA Sampling Point: DP 5
Investigator(s): MCA/MDA Section, Township, Range: S25 T31N R43E
Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: Dufort very stony silt loam (44) NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No Y
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. POBAT	20	Y	FAC
2. ABGR	10	N	
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. SPDO	30	Y	FACW
2. SYAL	30	Y	FACU
3. RONU	10	N	FACU
4. ALRU	10	N	FAC
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. AGST	40	Y	FAC
2. RONU	10	N	FAC
3. ASCA	10	N	FACU
4. leaf litter	30	N.	
5. ASCA	10	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - 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 X

Remarks:
N same level as culvert inlet
Near 8051

SOIL

Sampling Point: DPS

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 %	Type[1]	Loc[2]	Texture	Remarks
0-1	N						Coarse Sand	
1-4	7.5YR 3/1	100					Coarse gravelly Sand	
4-13	10YR 3/4	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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: Fertile Valley City/County: Pend Oreille Sampling Date: 10/18/10
Applicant/Owner: Pend Oreille County Public Works State: WA Sampling Point: DP6
Investigator(s): MA/MD Section, Township, Range: S25 T31N R43E
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: Dufort very stony silt loam (44) NWI classification: PSS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ABIES GRANDIS	35	Y	FACU
2. ALRU	20	Y	FAC
3. THPL	10	N	FAC
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
* 1. ACGL	30%	Y	FAC
2. ALRU	30	Y	FAC
3. COSE	40	Y	FACW
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. EQHY	15		FACW
2. URDI	20%	Y	FAC
3. PTAQ	20%	Y	FACU
4. LYAM	5%		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - 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 X No _____

Remarks:

SOIL

Sampling Point: DP6

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 %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100%					Sandy Muck	
5-12	10YR 3/2	100%					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)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No ___ Depth (inches): 4"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Ditch/Stream crosses under roadway to lake.

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

Project/Site: Fertile Valley Rd City/County: Pend Oreille Co Sampling Date: 10-22-10

Applicant/Owner: Pend Oreille Co Public Works State: WA Sampling Point: DP 7

Investigator(s): MCA + MDA Section, Township, Range: S26 T31N R43E

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

Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Rock outcrop-Moscow Complex -117 NWI classification: _____

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. THPL	20	Y	FAC
2. ABGR	20	Y	FACU
3. ACGL	20	Y	FAC
4. ALRU	20	Y	FAC
POTR	20	Y	FAC
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. POTR	5	N	FAC
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ASCA	5		FACU
2. EQAR	10		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - 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 X No _____

Remarks:

SOIL

Sampling Point: DP7

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 %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Sandy loam	
2-6	10YR 2/2	100					silt loam	
6-12	2.5Y 3/1	60	10YR 2/2	40			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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

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

Project/Site: Fertile Valley Rd City/County: Newport/P.O Sampling Date: 10/22/10

Applicant/Owner: Pend Oreille Public Works State: WA Sampling Point: DP-8

Investigator(s): MA / MB Section, Township, Range: S26 T31 R43E

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

Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Newbell - Rock outcrop complex (93) NWI classification: PSS

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. POBAT	25	Y	FAC
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. SPDO	30	Y	FACW
2. POBAT	20	Y	FAC
3.			
4.			
5.			
	50 = Total Cover		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Geranium.	5		
2. ALRU	10		FAC
3. VE	10		
4. Carex sp	5		
5. EQAR	<5		FAC
6.			
7. leaf + Rock litter			
8.			
9.			
10.			
11.			
	30 = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 60%

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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - 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 X No _____

Remarks:

SOIL

Sampling Point: DP-8

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 %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	70	10YR 6/4	30		C	silt	ovidized Rhizosphere,
6+								Rock + Root obstruction

[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 Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- X 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)
- __ Very Shallow Dark Surface (TF12)
- __ 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 X No ____

Remarks:

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)
- __ 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)
- X Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) **(LRR A)**
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 1"

Water Table Present? Yes X No ____ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

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

Remarks: water

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

Project/Site: Fertile Valley City/County: Pend Oreille Sampling Date: 10/22/10
Applicant/Owner: Pend Oreille Public Works State: WA Sampling Point: DP-9
Investigator(s): MA/MD Section, Township, Range: S26 T31N R43E
Landform (hillslope, terrace, etc.): ____ Local relief (concave, convex, none): ____ Slope (%): ____
Subregion (LRR): URRE Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: Rock outcrop-Moscow complex (117) 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 X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ACGLDY	10	N	FAC
2. SYAL	30	Y	FACU
3. RUPA	30	Y	FAC-
4. ACGL	5		FAC
5.			
	= Total Cover		

Herb Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. CEDE	40	Y	NI
2. HYPE	30	Y	NI
3. FRVI	20	Y	FAC
4. ACMI	20	Y	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		

Woody Vine Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 16% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - 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 X

Remarks:

SOIL

Sampling Point: DP9

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 %	Type[1]	Loc[2]	Texture	Remarks
0-4	5YR 3/2	100					Sandy loam	variable color No redox
4-10	2.5YR 3/2	100					loamy Sand	NO Redox
10-14	2.5YR 3/2	100					Sandy loam	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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: Fertile Valley Rd City/County: Pend Oreille Co Sampling Date: 10-22-10
Applicant/Owner: P. O. Public Works State: _____ Sampling Point: DP-10
Investigator(s): MCA / MDA Section, Township, Range: S26 T31N R43E
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: Rock outcrop-Moscow complex (117) NWI classification: PSS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. POBAT	20	Y	FAC
2. ALRU	30	Y	FAC
3. Saliv	30	Y	FACW
4. Birch	10	N	
THPL	20	= Total Cover	FAC

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ALRU	20	Y	FAC
2. SPDO	50	Y	FACW
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. PTAQ	10		FACU
2. TYLA	10		OBL
3. leaf litter	80		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - 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 X No _____

Remarks:
dense spruce stand

SOIL

Sampling Point: DP10

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 %	Type[1]	Loc[2]	Texture	Remarks
0-3.5	10YR 2/1	100					silt loam	Rock obstr @ 13"
								organic layer w/sand
3.5-12	10YR 3/2	100					Sand	w/gravels! Variable
								colors due to
								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)
- X Sandy Mucky Mineral (S1) ?
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks: Sandy soils at base of fill slope with organic layer 3.5"

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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 5

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

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

Project/Site: Fertile Valley Rd. City/County: Pend Oreille. Sampling Date: 10/22/10
Applicant/Owner: Pend Oreille County Public Works State: WA Sampling Point: DP11
Investigator(s): MA / MD Section, Township, Range: S26 T31N R43E
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: Rock outcrop - Moscow complex - (117) 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 X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. POBAT	40	Y	FAC
2. PSME	20	Y	FACU
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 10)			
1. COSE	30	Y	FACW
2. SPDO	20	Y	FACW
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 10)			
1. SPDO	10	N	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

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

% Bare Ground in Herb Stratum _____

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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - 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 X No _____

Remarks:

SOIL

Sampling Point: DP11

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 %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					loam	
5-12	10YR 2/2	90	10YR 4/2	10%	D		Silty loam	Oxy. Rhizo @ 9"

[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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks: Oxidized Rhizospheres @ 9"

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)
- X 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(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)

Mich check askme

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 5"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

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

Project/Site: Fertile Valley Rd. City/County: Pend Oreille Sampling Date: 10/22/10

Applicant/Owner: Pend Oreille Public Works State: WA Sampling Point: DP 12

Investigator(s): MA / MD Section, Township, Range: S26 T31N R43E

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

Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Rock outcrop - Moscow complex (117) NWI classification: _____

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

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

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

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

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

Remarks:

SEE [illegible]

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ABGR	10%	N	FACU
2. POPT	30%	Y	FAC
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. SPDO	90%	Y	FACW
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. SPDO	10%	N	FACW
2. LASE	<5	N	FACU
3. Leaf litter	90	Y	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - 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 X No _____

Remarks:

SOIL

Sampling Point: DP-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 %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Sandy loam	
4-12	10YR 3/2	100					loamy sand (w/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 Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: Fertile Valley Rd City/County: Pend Oreille Sampling Date: 10-29-10

Applicant/Owner: Pend Oreille Public Works State: WA Sampling Point: DP-13

Investigator(s): MA / MD Section, Township, Range: S35 T31N R43E

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

Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Borosaprists (22) NWI classification: PF

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No _____	Is the Sampled Area within a Wetland? Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. PIPO	10	N	
2. POBA	20	Y	Fac
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. SPRO	90	Y	FACW
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. TYLA	70	Y	OBL
2. CARO	20	Y	OBL
3. SPDO	10	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

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 X No _____

Remarks:

SOIL

Sampling Point: DP 13

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 %	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5YR3/1	100					silt loam	
5-10	7.5YR3/2	100					org. muck	
10-	7.5YR3/2						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.)

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

Indicators for Problematic Hydric Soils[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 X 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 along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) (LRR A)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No ____ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): 4

Wetland Hydrology Present? Yes X No ____

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

Remarks:

APPENDIX C. WETLAND RATING FORMS

Wetland name or number A+B

WETLAND RATING FORM – EASTERN WASHINGTON

Version 2 - Updated June 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): Wetlands A+B Date of site visit: 10-18-10

Rated by Michelle Anderson Trained by Ecology? Yes__ No___ Date of training_____

SEC: 19 TWNSHP: 31N RNGE: 44E Is S/T/R in Appendix D? Yes___ No X

Map of wetland unit: Figure ____ Estimated size _____

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III X IV___

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for "Water Quality" Functions	16
Score for Hydrologic Functions	12
Score for Habitat Functions	17
TOTAL score for functions	45

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ III___ Does not Apply X

Final Category (choose the "highest" category from above) III

Summary of basic information about the wetland unit

Wetland Type		Wetland Class	
Vernal Pool		Depressional	X
Alkali		Riverine	
Natural Heritage Wetland		Lake-fringe	
Bog		Slope	
Forest			
None of the above		Check if unit has multiple HGM classes present	

Wetland name or number A+B

Does the wetland being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered* ***animal or plant*** *species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered* ***animal*** *species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	X	
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	X	

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number A+B

Classification of Vegetated Wetlands for Eastern Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Does the entire wetland unit **meet both** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

___At least 30% of the open water area is deeper than 3 m (10 ft)?

NO – go to Step 2 **YES** – The wetland class is **Lake-fringe (lacustrine fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (*slope can be very gradual*),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

____The water leaves the wetland **without being impounded**?

NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than a foot deep).*

NO – go to Step 3 **YES** – The wetland class is **Slope**

3. Is the entire wetland unit in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes." *The wetland can contain depressions that are filled with water when the river is not flooding.*

NO - go to Step 4 **YES** – The wetland class is **Riverine**

4. Is the entire wetland unit in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to Step 5 **YES** – The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

PSSIC

Wetland name or number A+B

HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (riverine is within boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number A+B

D	**Depressional Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
D	**D 1.0 Does the wetland unit have the <u>potential</u> to improve water quality?**	*(see p. 38)*
D	D 1.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet - points = 5 Wetland has an intermittently flowing outlet points = 3 Wetland has a highly constricted permanently flowing outlet points = 3 Wetland has a permanently flowing surface outlet points = 1	3
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions of soil types)* YES points = 3 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation for > 2/3 of area points = 5 Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area points = 3 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure ___ 5
D	D 1.4 Characteristics of seasonal ponding or inundation. *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland points = 3 Area seasonally ponded is ¼ - ½ total area of wetland points = 1 Area seasonally ponded is < ¼ total area of wetland points = 0 NOTE: *See text for indicators of seasonal and permanent inundation/flooding.* Map of Hydroperiods	Figure ___ 0
D	**Total for D 1** *Add the points in the boxes above*	8
D	**D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150 ft X Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ YES multiplier is **2** NO multiplier is **1**	multiplier 2
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by the multiplier in D2 ***Record score on p. 1 of field form***	16

Wetland name or number A+B

D	**Depressional Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	**Points** (only 1 score per box)
D	**D 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	*(see p. 39)*
D	D 3.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet — points = 8 Wetland has an intermittently flowing outlet — points = 4 Wetland has a highly constricted permanently flowing outlet — points = 4 Wetland has a permanently flowing surface outlet — points = 0	4
D	D 3.2 Depth of storage during wet periods: *Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water)* Marks of ponding are at least 3 ft above the surface — points = 8 The wetland is a "headwater" wetland" *(see p. 39)* — points = 6 Marks are 2 ft to < 3 ft from surface — points = 6 Marks are 1 ft to < 2 ft from surface — points = 4 Marks are 6 in to < 1 ft from surface — points = 2 No marks above 6 in. or wetland has only saturated soils — points = 0	2
D	**Total for D 3** *Add the points in the boxes above*	6
D	**D 4.0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — Wetland is in a headwater of a river or stream that has flooding problems X Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 42)* multiplier 2
D	**TOTAL - Hydrologic Functions** Multiply the score from D3 by the multiplier in D4 ***Record score on p. 1 of field form***	12

Comments

Wetland name or number A+B

R	**Riverine Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
R	**R 1.0 Does the wetland unit have the <u>potential</u> to improve water quality?**	*(see p. 45)*
R	R 1.1 Area of surface depressions within the riverine unit that can trap sediments during a flooding event: Depressions cover >1/3 area of wetland points = 6 Depressions cover > 1/10 area of wetland points = 3 If depressions > 1/10th of area of unit draw polygons on aerial photo or map Depressions present but cover < 1/10 area of wetland points = 1 No depressions present points = 0	Figure ___
R	R 1.2 Characteristics (cover) of the vegetation in the unit *(area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub > 2/3 the area of the wetland points = 10 Forest or shrub 1/3 – 2/3 area of the wetland points = 5 Ungrazed, herbaceous plants > 2/3 area of wetland points = 5 Ungrazed herbaceous plants 1/3 – 2/3 area of wetland points = 2 Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland points = 0 Aerial photo or map showing polygons of different vegetation cover	Figure ___
R	**Total for R1** *Add the points in the boxes above*	
R	**R 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland intercepts groundwater within the Reclamation Area — Untreated stormwater flows into wetland — Tilled fields or orchards within 150 feet of wetland — Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential or urban areas are within 150 ft of wetland — The river or stream that floods the wetland has a contributing basin where human activities have raised the levels of sediment, toxic compounds or nutrients in the river water above water quality standards — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.46)* multiplier _____
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R1 by the multiplier in R2 ***Record score on p. 1 of field form***	

Wetland name or number A+B

R	**Riverine Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
R	**R 3.0 Does the wetland have the <u>potential</u> to reduce flooding and erosion?**	*(see p. 47)*
R	R 3.1 Amount overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks).* *Calculate the ratio: width of wetland/ width of stream.* If the ratio is 2 or more — points = 10 If the ratio is between 1 and < 2 — points = 8 If the ratio is ½ to < 1 — points = 4 If the ratio is ¼ to < ½ — points = 2 If the ratio is < ¼ — points = 1 Aerial photo or map showing average widths	Figure ___
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: *Treat large woody debris as "forest or shrub" (area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub for more than 2/3 the area of the wetland. — points = 6 Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area — points = 4 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area — points = 2 Vegetation does not meet above criteria — points = 0 Aerial photo or map showing polygons of different vegetation types	Figure ___
R	**Total for R3** *Add the points in the boxes above*	
R	**R 4.0 Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) than can be damaged by flooding — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 50)* multiplier
R	**TOTAL - Hydrologic Functions** Multiply the score from R3 by the multiplier in R4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number A+B

L	**Lake-fringe Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
L	**L 1.0 Does the wetland have the <u>potential</u> to improve water quality?**	*(see p.52)*
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide — points = 6 Vegetation is between 16 ft (5m) and 33ft wide — points = 3 Vegetation is 6ft (2m) wide to < 16 ft wide — points = 1 Map of Cowardin classes with widths marked	Figure ___
L	L 1.2 Characteristics of the vegetation in the wetland *choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.* Herbaceous plants cover >90% of the vegetated area — points = 6 Herbaceous plants cover >2/3 of the vegetated area — points = 4 Herbaceous plants cover >1/3 of the vegetated area — points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area — points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed cover > 2/3 of the vegetated area — points = 0 Map with polygons of different vegetation types	Figure ___
L	**Total for L1** *Add the points in the boxes above*	
L	**L 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Wetland is along the shores of a lake or reservoir that does not meet water quality standards — Grazing in the wetland or within 150ft — Untreated stormwater flows into the wetland — Tilled fields or orchards within 150 feet of wetland — Residential or urban areas are within 150 ft of wetland — Powerboats with gasoline or diesel engines use the lake — Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 53)* multiplier _____
L	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from L1 by the multiplier in L2 ***Record score on p. 1 of field form***	

Wetland name or number A+B

L	**Lake-fringe Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce shoreline erosion	**Points** (only 1 score per box)
L	**L 3.0 Does the wetland have the <u>potential</u> to reduce shoreline erosion?**	*(see p.54)*
L	L 3.1 Average width and characteristics of vegetation along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* > ¾ of the vegetation is shrubs or trees at least 33 ft (10m) wide points = 6 > ¾ of the vegetation is shrubs or trees at least 6 ft. (2 m) wide points = 4 > ¼ of the vegetation is shrubs or trees at least 33 ft (10m) wide points = 4 Vegetation is at least 6 ft (2m) wide points = 2 Vegetation is less than 6 ft (2m) wide points = 0 Aerial photo or map with Cowardin vegetation classes	Figure ___
L	**L 4.0 Does the wetland have the <u>opportunity</u> to reduce erosion?** Are there features along the shore that will be impacted if the shoreline erodes? *Note which of the following conditions apply.* — There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. — There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland than can be damaged by shoreline erosion — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 55)* Multiplier _____
L	**TOTAL - Hydrologic Functions** Multiply the score from L3 by the multiplier in L4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number A+B

S	**Slope Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
S	**S 1.0 Does the wetland have the <u>potential</u> to improve water quality?**	*(see p.56)*
S	S 1.1 Characteristics of average slope of wetland: Slope is1% or less *(a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)* points = 3 Slope is between 1% and 2% points = 2 Slope is more than 2% but less than 5% points = 1 Slope is 5% or greater points = 0	
S	S 1.2 The soil 2 inches below the surface is clay or organic *(use NRCS definitions of soil types)* YES = 3 points NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland.* ***Dense*** *vegetation means you have trouble seeing the soil surface (>75% cover), and* ***uncut*** *means not grazed or mowed and plants are higher than 6 inches.* Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > ½ of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons	**Figure ___**
S	**Total for S 1** *Add the points in the boxes above*	
S	**S 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland is a groundwater seep within the Reclamation Area — Untreated stormwater flows through the wetland — Tilled fields or orchards within 150 feet of wetland — Residential, urban areas, or golf courses are within 150 ft upslope of wetland — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.58)* multiplier _____
S	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from S1 by the multiplier in S2 ***Record score on p. 1 of field form***	

Wetland name or number A+B

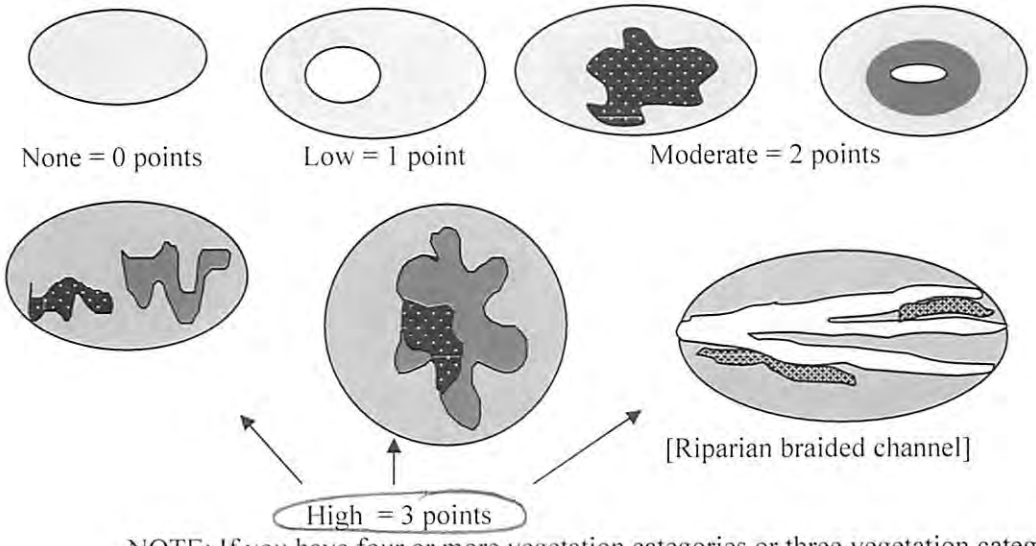
S	**Slope Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
S	**S 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	***(see p.59)***
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. *Choose the points appropriate for the description that best fit conditions in the wetland. See question S 1.3 for definition of dense and uncut.* ***Rigid*** *means that the stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows.* Dense, uncut, **rigid** vegetation covers > 90% of the area of the unit — points = 6 Dense, uncut, **rigid** vegetation > 1/2 – 90% area of unit — points = 3 Dense, uncut, **rigid** vegetation > 1/4 – 1/2 of unit — points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid — points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	**Total for S3** *Add the points in the boxes above*	
S	**S 4. 0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p.61)*** *Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field.* Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — Wetland has surface runoff that can cause flooding problems downgradient — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier _____
S	**TOTAL - Hydrologic Functions** Multiply the score from S3 by the multiplier in S4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number A+B

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure ***(see p.62)*** *Check the vegetation classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is ¼ acre or more than 10% of the area if unit is < 2.5 acres.* ____Aquatic bed ____Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ____Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover X Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover X Scrub/shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) *Add the number of vegetation types that qualify. If you have:* 4-6 types points = 3 3 types points = 2 2 types points = 1 1 type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents	Figure ___ 1
H 1.2. Is one of the vegetation types "aquatic bed?" ***(see p .64)*** YES = 1 point NO = 0 points	0
H 1.3. Surface Water ***(see p.65)*** H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? *Note: answer YES for Lake-fringe wetlands* YES = 3 points & **go to H 1.4** NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, AND that has an unvegetated bottom (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points Map showing areas of open water	Figure ___ 3
H 1.4. Richness of Plant Species ***(see p. 66)*** Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites ,Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)* If you counted: > 9 species points = 2 4-9 species points = 1 # of species ____ < 4 species points = 0 points *List species below if you wish*	1

Wetland name or number A+B

	Figure ___
H 1.5. Interspersion of habitats *(see p. 67)* Decided from the diagrams below whether interspersion between categories of vegetation (described in H 1.1), or categories and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.  NOTE: If you have four or more vegetation categories or three vegetation categories and open water the rating is always "high". Use maps from H1.1 and H1.3	3
H 1.6. Special Habitat Features: *(see p. 68)* *Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column.* ____Loose rocks larger than 4" **or** large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the unit. Minimal ____Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. _X_Emergent or shrub vegetation in areas that are permanently inundated/ponded. *The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.* ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	1
TOTAL Potential to provide habitat *Add the scores in the column above*	9

Comments

Wetland name or number A + B

H 2.0 Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 71)* *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed." Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer.* — 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference **Points = 5** — 330 ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** X 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open ~~water >~~ 25% circumference, . **Points = 3** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the criteria above** — No paved areas (except paved trails) or buildings within 80ft (25 m) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 170ft (50m) of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <6.6ft wide (2m) for more than 95% of the circumference (e.g . tilled fields, paving, basalt bedrock extend to edge of wetland). **Points = 0** — Buffer does not meet any of the criteria above. **Points = 1** Aerial photo showing buffers	**Figure ___** 3
H 2.2 Wet Corridors *(see p. 72)* H 2.2.1 Is the wetland unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor at least ¼ mile long with surface water or flowing water throughout most of the year (> 9 months/yr)? (*dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor*). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor, at least ¼ mile long with water flowing seasonally, **OR** a lake-fringe wetland without a "wet" corridor, **OR** a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO go to H 2.2.3 H 2.2.3 Is the wetland within a 1/2 mile of any permanent stream, seasonal stream, or lake (*do not include man-made ditches*)? YES = 1 point NO = 0 points	1

Wetland name or number A+B

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see p. 74)* Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections **do not** have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.* _X_ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____ **Aspen Stands:** Pure or mixed stands of aspen greater than 2 acres. ____ **Cliffs:** Greater than 25 ft high and occurring below 5000 ft. ____ **Old-growth forests:** (east of Cascade crest): In general, stands will be >150 years of age, with 10 trees/acre that are > 21 in dbh, and 1 - 3 snags/acre > 12-14 in diameter. ____ **Mature forests:** Stands with average diameters exceeding 21 in dbh; crown cover may be less that 100%; decay, 80 - 160 years old east of the Cascade crest. ____ **Prairies and Steppe:** Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community. ____ **Shrub-steppe:** Tracts of land consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. ____ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft, composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages ____ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. ____ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. ____ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.8 ha (2 acres). If wetland has **2 or more** Priority Habitats = **4 points** If wetland has **1** Priority Habitat = **2 points** No Priority habitats = **0 points** *Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*	2

Comments

Wetland name or number A+B

H 2.4 Landscape *(choose the **one** description of the landscape around the wetland that best fits)* ***(see p. 76)*** — The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs*) **points = 5** — There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development) **points = 5** X There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed? **points = 2** — There is at least 1 wetland within ½ mile. **points = 1** — Does not meet any of the four criteria above **points = 0**	2
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	8
H 3.0 Does the wetland unit have indicators that its ability to provide habitat is reduced?	
H 3.1 Indicator of reduced habitat functions ***(see p. 75)*** Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? *(NOTE: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers)* YES = **- 5 points** NO = 0 points	*Points will be subtracted*
Total Score for Habitat Functions – *add the points for H 1, H 2, and H 3 and record the result on p. 1*	17

Comments

Wetland name or number A+B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools *(see p. 79)* Is the wetland unit **less than 4000 ft^2**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO – *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands *(see p. 81)* Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 2 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. YES = Category I NO – *not an alkali wetland*	**Cat. I**

Wetland name or number A+B

SC 3.0 Natural Heritage Wetlands *(see p. 81)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)* S/T/R information from Appendix D ___ or accessed from WNHP/DNR database ___ YES X – contact WNHP/DNR (see p. 79) and go to SC 3.2 NO ___ SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as or as a site with state threatened, endangered, or sensitive plant species? YES = Category I NO – *not a natural heritage wetland*	**Cat. I**
SC 4.0 Bogs *(see p. 82)* Does the wetland unit **(or any part of the wetland unit)** meet both the criteria for soils and vegetation in bogs. *Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.* SC 4.1. Does the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to SC 4.3 No - go to SC 4.2 SC 4.2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?? Yes - go to SC 4.3 No - *Is not a bog for rating* SC 4.3. Does the wetland unit have more than 70% cover of mosses at ground level in any area within its boundaries, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Category I bog No - go to Q. 4.4 *NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.*	**Cat. I**
SC 4.4. Is the unit, or any part of it, forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?* Yes – Category I bog NO	**Cat. I**

Wetland name or number A+B

SC 5.0 Forested Wetlands *(see p. 85)* Does the wetland unit have an area of forest (*you should have identified a forested class, if present, in question H 1.1*) rooted within its boundary that meet **at least one** of the following three criteria? — The wetland is within the "100 year" floodplain of a river or stream — aspen (*Populus tremuloides*) are a dominant or co-dominant of the "woody" vegetation. (*Dominants means it represents at least 50% of the cover of woody species, co-dominant means it represents at least 20% of the total cover of woody species*) — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see p. 83)* YES = go to SC 5.1 NO – *not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees Slow growing trees are: western red cedar (*Thuja plicata*), Alaska yellow cedar (*Chamaecyparis nootkatensis*), pine spp. mostly "white" pine (*Pinus monticola*), western hemlock (*Tsuga heterophylla*), Englemann spruce (*Picea engelmannii*). YES = Category I NO = go to SC 5.2	**Cat. I**
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) are a dominant or co-dominant species? YES = Category I NO = go to SC 5.3	**Cat. I**
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. Fast growing species are: Alders – red (*Alnus rubra*), thin-leaf (*A. tenuifolia*) Cottonwoods – narrow-leaf (*Populus angustifolia*), black (*P. balsamifera*) Willows- peach-leaf (*Salix amygdaloides*), Sitka (*S. sitchensis*), Pacific (*S. lasiandra*), Aspen - (*Populus tremuloides*), Water Birch (*Betula occidentalis*) YES = Category II NO = go to SC 5.5	**Cat. II**
SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	**Cat. II**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* If you answered NO for all types enter "Not Applicable" on p.1	N/A

Wetland name or number C

WETLAND RATING FORM – EASTERN WASHINGTON

Version 2 - Updated June 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): Wetland C Date of site visit: 10-18-10

Rated by Michelle Anderson Trained by Ecology? Yes X No___ Date of training_____

SEC: 25 TWNSHP: 31N RNGE: 43E Is S/T/R in Appendix D? Yes___ No___

Map of wetland unit: Figure ____ Estimated size _____

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III X IV___

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for "Water Quality" Functions	14
Score for Hydrologic Functions	8
Score for Habitat Functions	19
TOTAL score for functions	41

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ III___ Does not Apply___

Final Category (choose the "highest" category from above) III

Summary of basic information about the wetland unit

Wetland Type		Wetland Class	
Vernal Pool		**Depressional**	
Alkali		**Riverine**	
Natural Heritage Wetland		**Lake-fringe**	
Bog		**Slope**	
Forest			
None of the above		Check if unit has multiple HGM classes present	

Wetland name or number C

Does the wetland being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered* ***animal or plant*** *species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered* ***animal*** *species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	X	

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number C

Classification of Vegetated Wetlands for Eastern Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Does the entire wetland unit **meet both** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

___At least 30% of the open water area is deeper than 3 m (10 ft)?

NO – go to Step 2 **YES** – The wetland class is **Lake-fringe (lacustrine fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (*slope can be very gradual*),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

____The water leaves the wetland **without being impounded**?

NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than a foot deep).*

NO - go to Step 3 **YES** – The wetland class is **Slope**

3. Is the entire wetland unit in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes." *The wetland can contain depressions that are filled with water when the river is not flooding.*

NO - go to Step 4 **YES** – The wetland class is **Riverine**

4. Is the entire wetland unit in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to Step 5 **YES** – The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

Wetland name or number C

HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (riverine is within boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number C

D	**Depressional Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
D	**D 1.0 Does the wetland unit have the potential to improve water quality?**	*(see p. 38)*
D	D 1.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet - points = 5 Wetland has an intermittently flowing outlet points = 3 Wetland has a highly constricted permanently flowing outlet points = 3 Wetland has a permanently flowing surface outlet points = 1	1
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions of soil types)* YES points = 3 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation for > 2/3 of area points = 5 Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area points = 3 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure ___ 5
D	D 1.4 Characteristics of seasonal ponding or inundation. *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland points = 3 Area seasonally ponded is ¼ - ½ total area of wetland points = 1 Area seasonally ponded is < ¼ total area of wetland points = 0 NOTE: *See text for indicators of seasonal and permanent inundation/flooding.* Map of Hydroperiods	Figure ___ 1
D	**Total for D 1** *Add the points in the boxes above*	7
D	**D 2. Does the wetland unit have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150 ft X Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other _____ **YES** multiplier is 2 **NO** multiplier is **1**	multiplier 2
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by the multiplier in D2 ***Record score on p. 1 of field form***	14

Wetland name or number C

D	**Depressional Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	**Points** (only 1 score per box)
D	**D 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	*(see p. 39)*
D	D 3.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet — points = 8 Wetland has an intermittently flowing outlet — points = 4 Wetland has a highly constricted permanently flowing outlet — points = 4 Wetland has a permanently flowing surface outlet — points = 0	0
D	D 3.2 Depth of storage during wet periods: *Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water)* Marks of ponding are at least 3 ft above the surface — points = 8 The wetland is a "headwater" wetland" *(see p. 39)* — points = 6 Marks are 2 ft to < 3 ft from surface — points = 6 Marks are 1 ft to < 2 ft from surface — points = 4 Marks are 6 in to < 1 ft from surface — points = 2 No marks above 6 in. or wetland has only saturated soils — points = 0	4
D	**Total for D 3** *Add the points in the boxes above*	4
D	**D 4.0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — Wetland is in a headwater of a river or stream that has flooding problems X Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other _____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 42)* multiplier 2
D	**TOTAL - Hydrologic Functions** Multiply the score from D3 by the multiplier in D4 ***Record score on p. 1 of field form***	8

Comments

Wetland name or number C

R	**Riverine Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
R	**R 1.0 Does the wetland unit have the <u>potential</u> to improve water quality?**	*(see p. 45)*
R	R 1.1 Area of surface depressions within the riverine unit that can trap sediments during a flooding event: Depressions cover >1/3 area of wetland points = 6 Depressions cover > 1/10 area of wetland points = 3 If depressions > 1/10th of area of unit draw polygons on aerial photo or map Depressions present but cover < 1/10 area of wetland points = 1 No depressions present points = 0	**Figure ___**
R	R 1.2 Characteristics (cover) of the vegetation in the unit *(area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub > 2/3 the area of the wetland points = 10 Forest or shrub 1/3 – 2/3 area of the wetland points = 5 Ungrazed, herbaceous plants > 2/3 area of wetland points = 5 Ungrazed herbaceous plants 1/3 – 2/3 area of wetland points = 2 Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland points = 0 Aerial photo or map showing polygons of different vegetation cover	**Figure ___**
R	**Total for R1** *Add the points in the boxes above*	
R	**R 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland intercepts groundwater within the Reclamation Area — Untreated stormwater flows into wetland — Tilled fields or orchards within 150 feet of wetland — Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential or urban areas are within 150 ft of wetland — The river or stream that floods the wetland has a contributing basin where human activities have raised the levels of sediment, toxic compounds or nutrients in the river water above water quality standards — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.46)* multiplier _____
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R1 by the multiplier in R2 ***Record score on p. 1 of field form***	

Wetland name or number C

R	**Riverine Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
R	**R 3.0 Does the wetland have the <u>potential</u> to reduce flooding and erosion?**	*(see p. 47)*
R	R 3.1 Amount overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland/ width of stream.* If the ratio is 2 or more — points = 10 If the ratio is between 1 and < 2 — points = 8 If the ratio is ½ to < 1 — points = 4 If the ratio is ¼ to < ½ — points = 2 If the ratio is < ¼ — points = 1 Aerial photo or map showing average widths	**Figure ___**
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: *Treat large woody debris as "forest or shrub" (area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub for more than 2/3 the area of the wetland. — points = 6 Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area — points = 4 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area — points = 2 Vegetation does not meet above criteria — points = 0 Aerial photo or map showing polygons of different vegetation types	**Figure ___**
R	**Total for R3** *Add the points in the boxes above*	
R	**R 4.0 Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) than can be damaged by flooding — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 50)* multiplier
R	**TOTAL - Hydrologic Functions** Multiply the score from R3 by the multiplier in R4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number C

L	**Lake-fringe Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
L	**L 1.0 Does the wetland have the <u>potential</u> to improve water quality?**	*(see p.52)*
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide — points = 6 Vegetation is between 16 ft (5m) and 33ft wide — points = 3 Vegetation is 6ft (2m) wide to < 16 ft wide — points = 1 Map of Cowardin classes with widths marked	Figure ___
L	L 1.2 Characteristics of the vegetation in the wetland *choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.* Herbaceous plants cover >90% of the vegetated area — points = 6 Herbaceous plants cover >2/3 of the vegetated area — points = 4 Herbaceous plants cover >1/3 of the vegetated area — points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area — points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed cover > 2/3 of the vegetated area — points = 0 Map with polygons of different vegetation types	Figure ___
L	**Total for L1** *Add the points in the boxes above*	
L	**L 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Wetland is along the shores of a lake or reservoir that does not meet water quality standards — Grazing in the wetland or within 150ft — Untreated stormwater flows into the wetland — Tilled fields or orchards within 150 feet of wetland — Residential or urban areas are within 150 ft of wetland — Powerboats with gasoline or diesel engines use the lake — Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 53)* multiplier _____
L	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from L1 by the multiplier in L2 ***Record score on p. 1 of field form***	

Wetland name or number C

L	**Lake-fringe Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce shoreline erosion	**Points** (only 1 score per box)
L	**L 3.0 Does the wetland have the <u>potential</u> to reduce shoreline erosion?**	***(see p.54)***
L	L 3.1 Average width and characteristics of vegetation along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* > ¾ of the vegetation is shrubs or trees at least 33 ft (10m) wide — points = 6 > ¾ of the vegetation is shrubs or trees at least 6 ft. (2 m) wide — points = 4 > ¼ of the vegetation is shrubs or trees at least 33 ft (10m) wide — points = 4 Vegetation is at least 6 ft (2m) wide — points = 2 Vegetation is less than 6 ft (2m) wide — points = 0 Aerial photo or map with Cowardin vegetation classes	**Figure ___**
L	**L 4.0 Does the wetland have the <u>opportunity</u> to reduce erosion?** Are there features along the shore that will be impacted if the shoreline erodes? *Note which of the following conditions apply.* — There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. — There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland than can be damaged by shoreline erosion — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	***(see p. 55)*** Multiplier _____
L	**TOTAL - Hydrologic Functions** Multiply the score from L3 by the multiplier in L4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number C

S	**Slope Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
S	**S 1.0 Does the wetland have the <u>potential</u> to improve water quality?**	*(see p.56)*
S	S 1.1 Characteristics of average slope of wetland: Slope is1% or less *(a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)* points = 3 Slope is between 1% and 2% points = 2 Slope is more than 2% but less than 5% points = 1 Slope is 5% or greater points = 0	
S	S 1.2 The soil 2 inches below the surface is clay or organic *(use NRCS definitions of soil types)* YES = 3 points NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland.* ***Dense*** *vegetation means you have trouble seeing the soil surface (>75% cover), and* ***uncut*** *means not grazed or mowed and plants are higher than 6 inches.* Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > ½ of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons	**Figure ___**
S	**Total for S 1** *Add the points in the boxes above*	
S	**S 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland is a groundwater seep within the Reclamation Area — Untreated stormwater flows through the wetland — Tilled fields or orchards within 150 feet of wetland — Residential, urban areas, or golf courses are within 150 ft upslope of wetland — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.58)* multiplier _____
S	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from S1 by the multiplier in S2 ***Record score on p. 1 of field form***	

Wetland name or number C

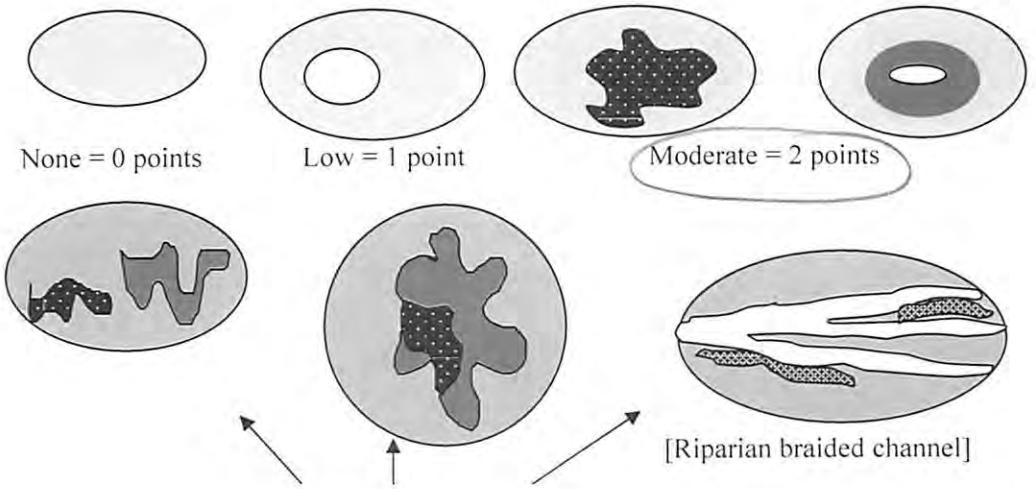
S	**Slope Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
S	**S 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	*(see p.59)*
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. *Choose the points appropriate for the description that best fit conditions in the wetland. See question S 1.3 for definition of dense and uncut.* ***Rigid*** *means that the stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows.* Dense, uncut, **rigid** vegetation covers > 90% of the area of the unit — points = 6 Dense, uncut, **rigid** vegetation > 1/2 – 90% area of unit — points = 3 Dense, uncut, **rigid** vegetation > 1/4 – 1/2 of unit — points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid — points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	**Total for S3** *Add the points in the boxes above*	
S	**S 4. 0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p.61)*** *Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field.* Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — Wetland has surface runoff that can cause flooding problems downgradient — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier _____
S	**TOTAL - Hydrologic Functions** Multiply the score from S3 by the multiplier in S4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number C

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure ***(see p.62)*** *Check the vegetation classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is ¼ acre or more than 10% of the area if unit is < 2.5 acres.* ____Aquatic bed ____Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover _X_Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover ____Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover X Scrub/shrub (areas where shrubs have >30% cover) _V_Forested (areas where trees have >30% cover) *Add the number of vegetation types that qualify. If you have:* 4-6 types points = 3 3 types points = 2 2 types points = 1 1 type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents	Figure ___ 2
H 1.2. Is one of the vegetation types "aquatic bed?" ***(see p .64)*** YES = 1 point NO = 0 points	0
H 1.3. Surface Water ***(see p.65)*** H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? *Note: answer YES for Lake-fringe wetlands* YES = 3 points & **go to H 1.4** NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, AND that has an unvegetated bottom (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points Map showing areas of open water	Figure ___ 3
H 1.4. Richness of Plant Species ***(see p. 66)*** Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites ,Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)* If you counted: > 9 species points = 2 4-9 species points = 1 # of species ____ < 4 species points = 0 points *List species below if you wish*	2

Wetland name or number C

H 1.5. Interspersion of habitats *(see p. 67)* Decided from the diagrams below whether interspersion between categories of vegetation (described in H 1.1), or categories and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.  NOTE: If you have four or more vegetation categories or three vegetation categories and open water the rating is always "high". Use maps from H1.1 and H1.3	**Figure ___** 2
H 1.6. Special Habitat Features: *(see p. 68)* *Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column.* ____Loose rocks larger than 4" **or** large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the unit. ____Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. X Emergent or shrub vegetation in areas that are permanently inundated/ponded. *The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.* ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	1
TOTAL Potential to provide habitat *Add the scores in the column above*	10

Comments

Wetland name or number C

H 2.0 Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 71)* *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed." Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer.* — 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference **Points = 5** — 330 ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** — 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the criteria above** — No paved areas (except paved trails) or buildings within 80ft (25 m) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** X No paved areas or buildings within 170ft (50m) of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <6.6ft wide (2m) for more than 95% of the circumference (e.g . tilled fields, paving, basalt bedrock extend to edge of wetland). **Points = 0** — Buffer does not meet any of the criteria above. **Points = 1** Aerial photo showing buffers	**Figure ___** 2
H 2.2 Wet Corridors *(see p. 72)* H 2.2.1 Is the wetland unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor at least ¼ mile long with surface water or flowing water throughout most of the year (> 9 months/yr)? (*dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor*). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor, at least ¼ mile long with water flowing seasonally, **OR** a lake-fringe wetland without a "wet" corridor, **OR** a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO go to H 2.2.3 H 2.2.3 Is the wetland within a 1/2 mile of any permanent stream, seasonal stream, or lake (*do not include man-made ditches*)? YES = 1 point NO = 0 points	4

Wetland name or number C

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see p. 74)* Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections **do not** have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.* X **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____ **Aspen Stands:** Pure or mixed stands of aspen greater than 2 acres. ____ **Cliffs:** Greater than 25 ft high and occurring below 5000 ft. ____ **Old-growth forests:** (east of Cascade crest): In general, stands will be >150 years of age, with 10 trees/acre that are > 21 in dbh, and 1 - 3 snags/acre > 12-14 in diameter. ____ **Mature forests:** Stands with average diameters exceeding 21 in dbh; crown cover may be less that 100%; decay, 80 - 160 years old east of the Cascade crest. ____ **Prairies and Steppe:** Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community. ____ **Shrub-steppe:** Tracts of land consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. ____ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft, composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages ____ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. ____ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. ____ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.8 ha (2 acres). If wetland has **2 or more** Priority Habitats = **4 points** If wetland has **1** Priority Habitat = **2 points** No Priority habitats = **0 points** *Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*	2

Comments

Wetland name or number C

H 2.4 Landscape *(choose the **one** description of the landscape around the wetland that best fits)* ***(see p. 76)*** — The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs*) **points = 5** — There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development) **points = 5** — There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed? **points = 2** — There is at least 1 wetland within ½ mile. **points = 1** — Does not meet any of the four criteria above **points = 0**	2
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	9
H 3.0 Does the wetland unit have indicators that its ability to provide habitat is reduced?	
H 3.1 Indicator of reduced habitat functions ***(see p. 75)*** Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? *(NOTE: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers)* YES = **- 5 points** NO = 0 points	*Points will be subtracted* 0
Total Score for Habitat Functions – *add the points for ~~H 1,~~ H 2, and H 3 and record the result on p. 1*	19

Comments

Wetland name or number C

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools *(see p. 79)* Is the wetland unit **less than 4000 ft^2**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO – *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands *(see p. 81)* Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 2 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. YES = Category I NO – *not an alkali wetland*	**Cat. I**

Wetland name or number C

SC 3.0 Natural Heritage Wetlands *(see p. 81)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)* S/T/R information from Appendix D ___ or accessed from WNHP/DNR database ___ YES X – contact WNHP/DNR (see p. 79) and go to SC 3.2 NO ___ SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as or as a site with state threatened, endangered, or sensitive plant species? YES = Category I NO – *not a natural heritage wetland*	**Cat. I**
SC 4.0 Bogs *(see p. 82)* Does the wetland unit **(or any part of the wetland unit)** meet both the criteria for soils and vegetation in bogs. *Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.* SC 4.1. Does the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to SC 4.3 No - go to SC 4.2 SC 4.2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?? Yes - go to SC 4.3 No – *Is not a bog for rating* SC 4.3. Does the wetland unit have more than 70% cover of mosses at ground level in any area within its boundaries, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Category I bog No - go to Q. 4.4 *NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.*	**Cat. I**
SC 4.4. Is the unit, or any part of it, forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?* Yes – Category I bog NO	**Cat. I**

Wetland name or number C

SC 5.0 Forested Wetlands *(see p. 85)* Does the wetland unit have an area of forest (*you should have identified a forested class, if present, in question H 1.1*) rooted within its boundary that meet **at least one** of the following three criteria? — The wetland is within the "100 year" floodplain of a river or stream — aspen (*Populus tremuloides*) are a dominant or co-dominant of the "woody" vegetation. (*Dominants means it represents at least 50% of the cover of woody species, co-dominant means it represents at least 20% of the total cover of woody species*) — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see p. 83)* YES = go to SC 5.1 NO – *not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees Slow growing trees are: western red cedar (*Thuja plicata*), Alaska yellow cedar (*Chamaecyparis nootkatensis*), pine spp. mostly "white" pine (*Pinus monticola*), western hemlock (*Tsuga heterophylla*), Englemann spruce (*Picea engelmannii*). YES = Category I NO = go to SC 5.2	**Cat. I**
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) are a dominant or co-dominant species? YES = Category I NO = go to SC 5.3	**Cat. I**
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. Fast growing species are: Alders – red (*Alnus rubra*), thin-leaf (*A. tenuifolia*) Cottonwoods – narrow-leaf (*Populus angustifolia*), black (*P. balsamifera*) Willows- peach-leaf (*Salix amygdaloides*), Sitka (*S. sitchensis*), Pacific (*S. lasiandra*), Aspen - (*Populus tremuloides*), Water Birch (*Betula occidentalis*) YES = Category II NO = go to SC 5.5	**Cat. II**
SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	**Cat. II**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* If you answered NO for all types enter "Not Applicable" on p.1	N/A

Wetland name or number D

WETLAND RATING FORM – EASTERN WASHINGTON

Version 2 - Updated June 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): Wetlands D Date of site visit: 10-18-10

Rated by Michelle Anderson Trained by Ecology? Yes X No___ Date of training_____

SEC: 26 TWNSHP: 31N RNGE: 43E Is S/T/R in Appendix D? Yes X No___

Map of wetland unit: Figure ____ Estimated size >10 acres

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II X III___ IV___

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for "Water Quality" Functions	18
Score for Hydrologic Functions	12
Score for Habitat Functions	21
TOTAL score for functions	51

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ III___ Does not Apply X

Final Category (choose the "highest" category from above) II

Summary of basic information about the wetland unit

Wetland Type		Wetland Class	
Vernal Pool		**Depressional**	
Alkali		**Riverine**	
Natural Heritage Wetland		**Lake-fringe**	X
Bog		**Slope**	
Forest			
None of the above		Check if unit has multiple HGM classes present	

Wetland name or number D

Does the wetland being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered* ***animal or plant*** *species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered* ***animal*** *species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	X	

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number D

Classification of Vegetated Wetlands for Eastern Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Does the entire wetland unit **meet both** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

___At least 30% of the open water area is deeper than 3 m (10 ft)?

NO – go to Step 2 **YES** – The wetland class is **Lake-fringe (lacustrine fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (*slope can be very gradual*),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

____The water leaves the wetland **without being impounded**?

NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than a foot deep).*

NO - go to Step 3 **YES** – The wetland class is **Slope**

3. Is the entire wetland unit in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes." *The wetland can contain depressions that are filled with water when the river is not flooding.*

NO - go to Step 4 **YES** – The wetland class is **Riverine**

4. Is the entire wetland unit in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to Step 5 **YES** – The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

Wetland name or number D

HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (riverine is within boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number D

D	**Depressional Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
D	**D 1.0 Does the wetland unit have the <u>potential</u> to improve water quality?**	*(see p. 38)*
D	D 1.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet - points = 5 Wetland has an intermittently flowing outlet points = 3 Wetland has a highly constricted permanently flowing outlet points = 3 Wetland has a permanently flowing surface outlet points = 1	
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions of soil types)* YES points = 3 NO points = 0	
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation for > 2/3 of area points = 5 Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area points = 3 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure ___
D	D 1.4 Characteristics of seasonal ponding or inundation. *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland points = 3 Area seasonally ponded is ¼ - ½ total area of wetland points = 1 Area seasonally ponded is < ¼ total area of wetland points = 0 NOTE: *See text for indicators of seasonal and permanent inundation/flooding.* Map of Hydroperiods	Figure ___
D	**Total for D 1** *Add the points in the boxes above*	
D	**D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier _____
D	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from D1 by the multiplier in D2 ***Record score on p. 1 of field form***	

Wetland name or number D

	Depressional Wetlands HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	**Points** (only 1 score per box)
D	**D 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	*(see p. 39)*
D	D 3.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet — points = 8 Wetland has an intermittently flowing outlet — points = 4 Wetland has a highly constricted permanently flowing outlet — points = 4 Wetland has a permanently flowing surface outlet — points = 0	
D	D 3.2 Depth of storage during wet periods: *Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water)* Marks of ponding are at least 3 ft above the surface — points = 8 The wetland is a "headwater" wetland" *(see p. 39)* — points = 6 Marks are 2 ft to < 3 ft from surface — points = 6 Marks are 1 ft to < 2 ft from surface — points = 4 Marks are 6 in to < 1 ft from surface — points = 2 No marks above 6 in. or wetland has only saturated soils — points = 0	
D	**Total for D 3** *Add the points in the boxes above*	
D	**D 4.0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 42)* multiplier ____
D	**TOTAL - Hydrologic Functions** Multiply the score from D3 by the multiplier in D4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number D

R	**Riverine Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
R	**R 1.0 Does the wetland unit have the <u>potential</u> to improve water quality?**	*(see p. 45)*
R	R 1.1 Area of surface depressions within the riverine unit that can trap sediments during a flooding event: Depressions cover >1/3 area of wetland points = 6 Depressions cover > 1/10 area of wetland points = 3 If depressions > 1/10th of area of unit draw polygons on aerial photo or map Depressions present but cover < 1/10 area of wetland points = 1 No depressions present points = 0	Figure ___
R	R 1.2 Characteristics (cover) of the vegetation in the unit *(area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub > 2/3 the area of the wetland points = 10 Forest or shrub 1/3 – 2/3 area of the wetland points = 5 Ungrazed, herbaceous plants > 2/3 area of wetland points = 5 Ungrazed herbaceous plants 1/3 – 2/3 area of wetland points = 2 Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland points = 0 Aerial photo or map showing polygons of different vegetation cover	Figure ___
R	**Total for R1** *Add the points in the boxes above*	
R	**R 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland intercepts groundwater within the Reclamation Area — Untreated stormwater flows into wetland — Tilled fields or orchards within 150 feet of wetland — Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential or urban areas are within 150 ft of wetland — The river or stream that floods the wetland has a contributing basin where human activities have raised the levels of sediment, toxic compounds or nutrients in the river water above water quality standards — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.46)* multiplier _____
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R1 by the multiplier in R2 ***Record score on p. 1 of field form***	

Wetland name or number D

R	**Riverine Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
R	**R 3.0 Does the wetland have the <u>potential</u> to reduce flooding and erosion?**	*(see p. 47)*
R	R 3.1 Amount overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks). Calculate the ratio: width of wetland/ width of stream.* If the ratio is 2 or more — points = 10 If the ratio is between 1 and < 2 — points = 8 If the ratio is ½ to < 1 — points = 4 If the ratio is ¼ to < ½ — points = 2 If the ratio is < ¼ — points = 1 Aerial photo or map showing average widths	**Figure ___**
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: *Treat large woody debris as "forest or shrub" (area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub for more than 2/3 the area of the wetland. — points = 6 Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area — points = 4 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area — points = 2 Vegetation does not meet above criteria — points = 0 Aerial photo or map showing polygons of different vegetation types	**Figure ___**
R	**Total for R3** *Add the points in the boxes above*	
R	**R 4.0 Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) than can be damaged by flooding — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 50)* multiplier
R	**TOTAL - Hydrologic Functions** Multiply the score from R3 by the multiplier in R4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number D

		Points (only 1 score per box)
L	**Lake-fringe Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
L	**L 1.0 Does the wetland have the potential to improve water quality?**	*(see p.52)*
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide — points = 6 Vegetation is between 16 ft (5m) and 33ft wide — points = 3 Vegetation is 6ft (2m) wide to < 16 ft wide — points = 1 Map of Cowardin classes with widths marked	Figure ___ 6
L	L 1.2 Characteristics of the vegetation in the wetland *choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.* Herbaceous plants cover >90% of the vegetated area — points = 6 Herbaceous plants cover >2/3 of the vegetated area — points = 4 Herbaceous plants cover >1/3 of the vegetated area — points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area — points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed cover > 2/3 of the vegetated area — points = 0 Map with polygons of different vegetation types	Figure ___ 3
L	**Total for L1** *Add the points in the boxes above*	9
L	**L 2.0 Does the wetland have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* X Wetland is along the shores of a lake or reservoir that does not meet water quality standards Phoshorus — Grazing in the wetland or within 150ft — Untreated stormwater flows into the wetland — Tilled fields or orchards within 150 feet of wetland X Residential or urban areas are within 150 ft of wetland X Powerboats with gasoline or diesel engines use the lake — Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 53)* multiplier 2
L	**TOTAL - Water Quality Functions** Multiply the score from L1 by the multiplier in L2 ***Record score on p. 1 of field form***	18

Wetland name or number D

L	**Lake-fringe Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce shoreline erosion	**Points** (only 1 score per box)
L	**L 3.0 Does the wetland have the <u>potential</u> to reduce shoreline erosion?**	*(see p.54)*
L	L 3.1 Average width and characteristics of vegetation along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* > ¾ of the vegetation is shrubs or trees at least 33 ft (10m) wide — points = 6 > ¾ of the vegetation is shrubs or trees at least 6 ft. (2 m) wide — points = 4 > ¼ of the vegetation is shrubs or trees at least 33 ft (10m) wide — points = 4 Vegetation is at least 6 ft (2m) wide — points = 2 Vegetation is less than 6 ft (2m) wide — points = 0 Aerial photo or map with Cowardin vegetation classes	**Figure ___** 6
L	**L 4.0 Does the wetland have the <u>opportunity</u> to reduce erosion?** Are there features along the shore that will be impacted if the shoreline erodes? *Note which of the following conditions apply.* X There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. X There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland than can be damaged by shoreline erosion — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 55)* Multiplier 2
L	**TOTAL - Hydrologic Functions** Multiply the score from L3 by the multiplier in L4 ***Record score on p. 1 of field form***	12

Comments

Wetland name or number D

S	**Slope Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
S	**S 1.0 Does the wetland have the <u>potential</u> to improve water quality?**	*(see p.56)*
S	S 1.1 Characteristics of average slope of wetland: Slope is1% or less *(a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)* points = 3 Slope is between 1% and 2% points = 2 Slope is more than 2% but less than 5% points = 1 Slope is 5% or greater points = 0	
S	S 1.2 The soil 2 inches below the surface is clay or organic *(use NRCS definitions of soil types)* YES = 3 points NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland.* ***Dense*** *vegetation means you have trouble seeing the soil surface (>75% cover), and* ***uncut*** *means not grazed or mowed and plants are higher than 6 inches.* Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > ½ of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons	Figure ___
S	**Total for S 1** *Add the points in the boxes above*	
S	**S 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland is a groundwater seep within the Reclamation Area — Untreated stormwater flows through the wetland — Tilled fields or orchards within 150 feet of wetland — Residential, urban areas, or golf courses are within 150 ft upslope of wetland — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.58)* multiplier _____
S	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from S1 by the multiplier in S2 ***Record score on p. 1 of field form***	

Wetland name or number D

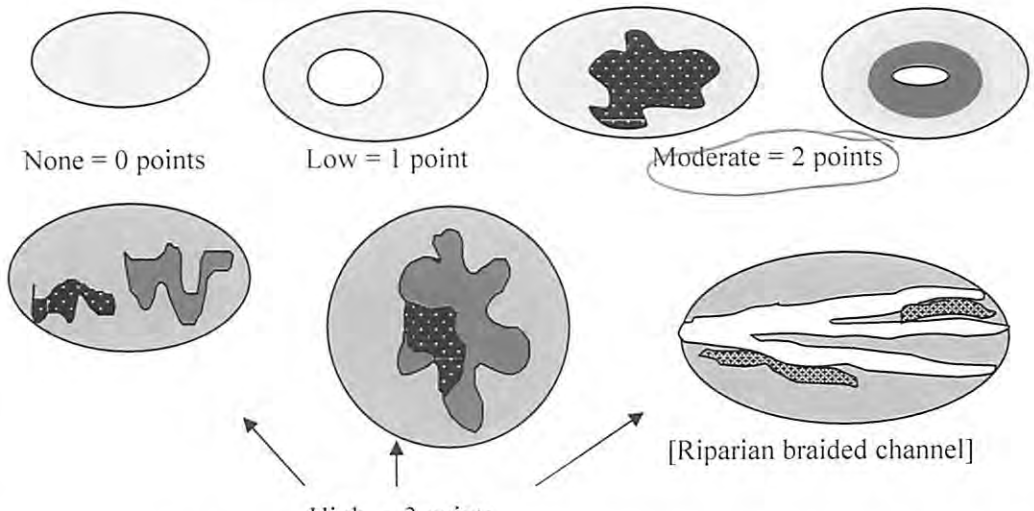
S	**Slope Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
S	**S 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	*(see p.59)*
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. *Choose the points appropriate for the description that best fit conditions in the wetland. See question S 1.3 for definition of dense and uncut.* ***Rigid*** *means that the stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows.* Dense, uncut, **rigid** vegetation covers > 90% of the area of the unit points = 6 Dense, uncut, **rigid** vegetation > 1/2 – 90% area of unit points = 3 Dense, uncut, **rigid** vegetation > 1/4 – 1/2 of unit points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	**Total for S3** *Add the points in the boxes above*	
S	**S 4. 0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p.61)*** *Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field.* Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — Wetland has surface runoff that can cause flooding problems downgradient — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier _____
S	**TOTAL - Hydrologic Functions** Multiply the score from S3 by the multiplier in S4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number D

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure ***(see p.62)*** *Check the vegetation classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is ¼ acre or more than 10% of the area if unit is < 2.5 acres.* X Aquatic bed ____ Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ____ Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover X Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover X Scrub/shrub (areas where shrubs have >30% cover) X Forested (areas where trees have >30% cover) *Add the number of vegetation types that qualify. If you have:* 4-6 types points = 3 3 types points = 2 2 types points = 1 1 type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents	Figure ___ 3
H 1.2. Is one of the vegetation types "aquatic bed?" ***(see p .64)*** YES = 1 point NO = 0 points	1
H 1.3. Surface Water ***(see p.65)*** H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? *Note: answer YES for Lake-fringe wetlands* YES = 3 points & **go to H 1.4** NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, AND that has an unvegetated bottom (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points Map showing areas of open water	Figure ___ 3
H 1.4. Richness of Plant Species ***(see p. 66)*** Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites ,Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)* If you counted: > 9 species points = 2 4-9 species points = 1 # of species ____ < 4 species points = 0 points *List species below if you wish*	1

Wetland name or number D

	Figure ___
H 1.5. Interspersion of habitats *(see p. 67)* Decided from the diagrams below whether interspersion between categories of vegetation (described in H 1.1), or categories and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.  None = 0 points Low = 1 point Moderate = 2 points [Riparian braided channel] High = 3 points NOTE: If you have four or more vegetation categories or three vegetation categories and open water the rating is always "high". Use maps from H1.1 and H1.3	2
H 1.6. Special Habitat Features: *(see p. 68)* *Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column.* X Loose rocks larger than 4" **or** large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. X Cattails or bulrushes are present within the unit. ___ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. X Emergent or shrub vegetation in areas that are permanently inundated/ponded. *The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.* X Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) OR signs of recent beaver activity ___ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	4
TOTAL Potential to provide habitat *Add the scores in the column above*	11

Comments

Wetland name or number D

H 2.0 Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 71)* *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed." Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer.* — 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference **Points = 5** — 330 ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** — 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the criteria above** — No paved areas (except paved trails) or buildings within 80ft (25 m) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 170ft (50m) of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <6.6ft wide (2m) for more than 95% of the circumference (e.g . tilled fields, paving, basalt bedrock extend to edge of wetland). **Points = 0** — Buffer does not meet any of the criteria above. **Points = 1** Aerial photo showing buffers	**Figure ___** 3
H 2.2 Wet Corridors *(see p. 72)* H 2.2.1 Is the wetland unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor at least ¼ mile long with surface water or flowing water throughout most of the year (> 9 months/yr)? (*dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor*). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor, at least ¼ mile long with water flowing seasonally, **OR** a lake-fringe wetland without a "wet" corridor, **OR** a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO go to H 2.2.3 H 2.2.3 Is the wetland within a 1/2 mile of any permanent stream, seasonal stream, or lake (*do not include man-made ditches*)? YES = 1 point NO = 0 points	1

Wetland name or number D

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see p. 74)* Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections **do not** have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.* X **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____**Aspen Stands:** Pure or mixed stands of aspen greater than 2 acres. ____**Cliffs:** Greater than 25 ft high and occurring below 5000 ft. ____**Old-growth forests:** (east of Cascade crest): In general, stands will be >150 years of age, with 10 trees/acre that are > 21 in dbh, and 1 - 3 snags/acre > 12-14 in diameter. ____**Mature forests:** Stands with average diameters exceeding 21 in dbh; crown cover may be less that 100%; decay, 80 - 160 years old east of the Cascade crest. ____**Prairies and Steppe:** Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community. ____**Shrub-steppe:** Tracts of land consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. ____**Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft, composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages ____**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. X **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. ____**Aspen Stands:** Pure or mixed stands of aspen greater than 0.8 ha (2 acres). If wetland has **2 or more** Priority Habitats = **4 points** If wetland has **1** Priority Habitat = **2 points** No Priority habitats = **0 points** *Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*	4

Comments

Wetland name or number D

H 2.4 Landscape *(choose the **one** description of the landscape around the wetland that best fits)* ***(see p. 76)*** — The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs*) **points = 5** — There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development) **points = 5** — There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed? **points = 2** — There is at least 1 wetland within ½ mile. **points = 1** — Does not meet any of the four criteria above **points = 0**	2
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	10
H 3.0 Does the wetland unit have indicators that its ability to provide habitat is reduced?	
H 3.1 Indicator of reduced habitat functions ***(see p. 75)*** Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? *(NOTE: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers)* YES = **- 5 points** NO = 0 points	*Points will be subtracted* 0
Total Score for Habitat Functions – *add the points for H 1, H 2, and H 3 and record the result on p. 1*	21

Comments

Wetland name or number D

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools *(see p. 79)* Is the wetland unit **less than 4000 ft^2**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO - *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands *(see p. 81)* Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 2 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. YES = Category I NO – *not an alkali wetland*	**Cat. I**

Wetland name or number D

SC 3.0 Natural Heritage Wetlands *(see p. 81)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)* S/T/R information from Appendix D X or accessed from WNHP/DNR database ___ YES X – contact WNHP/DNR (see p. 79) and go to SC 3.2 NO ___ SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as or as a site with state threatened, endangered, or sensitive plant species? YES = Category I NO → *not a natural heritage wetland*	**Cat. I**
SC 4.0 Bogs *(see p. 82)* Does the wetland unit **(or any part of the wetland unit)** meet both the criteria for soils and vegetation in bogs. *Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.* SC 4.1. Does the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to SC 4.3 No → go to SC 4.2 SC 4.2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?? Yes - go to SC 4.3 No → *Is not a bog for rating* SC 4.3. Does the wetland unit have more than 70% cover of mosses at ground level in any area within its boundaries, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Category I bog No → go to Q. 4.4 *NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.*	**Cat. I**
SC 4.4. Is the unit, or any part of it, forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?* Yes – Category I bog NO	**Cat. I**

Wetland name or number D

SC 5.0 Forested Wetlands *(see p. 85)* Does the wetland unit have an area of forest (*you should have identified a forested class, if present, in question H 1.1*) rooted within its boundary that meet **at least one** of the following three criteria? — The wetland is within the "100 year" floodplain of a river or stream — aspen (*Populus tremuloides*) are a dominant or co-dominant of the "woody" vegetation. (*Dominants means it represents at least 50% of the cover of woody species, co-dominant means it represents at least 20% of the total cover of woody species*) — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see p. 83)* YES = go to SC 5.1 NO – *not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees Slow growing trees are: western red cedar (*Thuja plicata*), Alaska yellow cedar (*Chamaecyparis nootkatensis*), pine spp. mostly "white" pine (*Pinus monticola*), western hemlock (*Tsuga heterophylla*), Englemann spruce (*Picea engelmannii*). YES = Category I NO = go to SC 5.2	**Cat. I**
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) are a dominant or co-dominant species? YES = Category I NO = go to SC 5.3	**Cat. I**
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. Fast growing species are: Alders – red (*Alnus rubra*), thin-leaf (*A. tenuifolia*) Cottonwoods – narrow-leaf (*Populus angustifolia*), black (*P. balsamifera*) Willows- peach-leaf (*Salix amygdaloides*), Sitka (*S. sitchensis*), Pacific (*S. lasiandra*), Aspen - (*Populus tremuloides*), Water Birch (*Betula occidentalis*) YES = Category II NO = go to SC 5.5	**Cat. II**
SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	**Cat. II**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* If you answered NO for all types enter "Not Applicable" on p.1	N/A

Wetland name or number E

WETLAND RATING FORM – EASTERN WASHINGTON

Version 2 - Updated June 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): Wetland E Date of site visit: 10-18-10

Rated by Michelle Anderson Trained by Ecology? Yes X No___ Date of training_____

SEC: 26 TWNSHP: 31N RNGE: 43E Is S/T/R in Appendix D? Yes___ No___

Map of wetland unit: Figure ____ Estimated size _____

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III X IV___

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for "Water Quality" Functions	11
Score for Hydrologic Functions	20
Score for Habitat Functions	17
TOTAL score for functions	48

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ III___ Does not Apply X

Final Category (choose the "highest" category from above) III

Summary of basic information about the wetland unit

Wetland Type		Wetland Class	
Vernal Pool		**Depressional**	X
Alkali		**Riverine**	
Natural Heritage Wetland		**Lake-fringe**	
Bog		**Slope**	
Forest			
None of the above		Check if unit has multiple HGM classes present	

PFO1C

Wetland name or number _____

H 2.4 Landscape *(choose the **one** description of the landscape around the wetland that best fits)* ***(see p. 76)*** — The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs*) **points = 5** — There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development) **points = 5** — There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed? **points = 2** — There is at least 1 wetland within ½ mile. **points = 1** — Does not meet any of the four criteria above **points = 0**	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	13
H 3.0 Does the wetland unit have indicators that its ability to provide habitat is reduced?	
H 3.1 Indicator of reduced habitat functions ***(see p. 75)*** Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? *(NOTE: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers)* YES = **- 5 points** NO = 0 points	*Points will be subtracted*
Total Score for Habitat Functions – *add the points for H 1, H 2, and H 3 and record the result on p. 1*	17

Comments

Wetland name or number _____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools *(see p. 79)* Is the wetland unit **less than 4000 ft^2**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO - *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands *(see p. 81)* Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 2 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. YES = Category I NO – *not an alkali wetland*	**Cat. I**

SC 3.0 Natural Heritage Wetlands *(see p. 81)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)* S/T/R information from Appendix D ___ or accessed from WNHP/DNR database ___ YES X – contact WNHP/DNR (see p. 79) and go to SC 3.2 NO ___ SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as or as a site with state threatened, endangered, or sensitive plant species? YES = Category I NO – *not a natural heritage wetland*	**Cat. I**
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SC 4.4. Is the unit, or any part of it, forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?* Yes – Category I bog NO	**Cat. I**

SC 5.0 Forested Wetlands *(see p. 85)* Does the wetland unit have an area of forest (*you should have identified a forested class, if present, in question H 1.1*) rooted within its boundary that meet **at least one** of the following three criteria? — The wetland is within the "100 year" floodplain of a river or stream — aspen (*Populus tremuloides*) are a dominant or co-dominant of the "woody" vegetation. (*Dominants means it represents at least 50% of the cover of woody species, co-dominant means it represents at least 20% of the total cover of woody species*) — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see p. 83)* YES = go to SC 5.1 NO – *not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees Slow growing trees are: western red cedar (*Thuja plicata*), Alaska yellow cedar (*Chamaecyparis nootkatensis*), pine spp. mostly "white" pine (*Pinus monticola*), western hemlock (*Tsuga heterophylla*), Englemann spruce (*Picea engelmannii*). YES = Category I NO = go to SC 5.2	**Cat. I**
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) are a dominant or co-dominant species? YES = Category I NO = go to SC 5.3	**Cat. I**
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. Fast growing species are: Alders – red (*Alnus rubra*), thin-leaf (*A. tenuifolia*) Cottonwoods – narrow-leaf (*Populus angustifolia*), black (*P. balsamifera*) Willows- peach-leaf (*Salix amygdaloides*), Sitka (*S. sitchensis*), Pacific (*S. lasiandra*), Aspen - (*Populus tremuloides*), Water Birch (*Betula occidentalis*) YES = Category II NO = go to SC 5.5	**Cat. II**
SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	**Cat. II**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* If you answered NO for all types enter "Not Applicable" on p.1	NA

Wetland name or number E

Does the wetland being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered* ***animal or plant*** *species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered* ***animal*** *species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	X	
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	X	

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number E

Classification of Vegetated Wetlands for Eastern Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Does the entire wetland unit **meet both** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

___At least 30% of the open water area is deeper than 3 m (10 ft)?

NO – go to Step 2 **YES** – The wetland class is **Lake-fringe (lacustrine fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (*slope can be very gradual*),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

____The water leaves the wetland **without being impounded**?

NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than a foot deep).*

NO - go to Step 3 **YES** – The wetland class is **Slope**

3. Is the entire wetland unit in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes." *The wetland can contain depressions that are filled with water when the river is not flooding.*

NO - go to Step 4 **YES** – The wetland class is **Riverine**

4. Is the entire wetland unit in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to Step 5 **YES** – The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (riverine is within boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number E

D	**Depressional Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
D	**D 1.0 Does the wetland unit have the potential to improve water quality?**	*(see p. 38)*
D	D 1.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet - points = 5 Wetland has an intermittently flowing outlet points = 3 Wetland has a highly constricted permanently flowing outlet points = 3 Wetland has a permanently flowing surface outlet points = 1	5
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions of soil types)* YES points = 3 NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation for > 2/3 of area points = 5 Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area points = 3 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure ___ 5
D	D 1.4 Characteristics of seasonal ponding or inundation. *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland points = 3 Area seasonally ponded is ¼ - ½ total area of wetland points = 1 Area seasonally ponded is < ¼ total area of wetland points = 0 NOTE: *See text for indicators of seasonal and permanent inundation/flooding.* Map of Hydroperiods	Figure ___ 1
D	**Total for D 1** *Add the points in the boxes above*	11
D	**D 2. Does the wetland unit have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 1
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by the multiplier in D2 ***Record score on p. 1 of field form***	11

Wetland name or number E

D	**Depressional Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	**Points** (only 1 score per box)
D	**D 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	*(see p. 39)*
D	D 3.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet — points = 8 Wetland has an intermittently flowing outlet — points = 4 Wetland has a highly constricted permanently flowing outlet — points = 4 Wetland has a permanently flowing surface outlet — points = 0	8
D	D 3.2 Depth of storage during wet periods: *Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water)* Marks of ponding are at least 3 ft above the surface — points = 8 The wetland is a "headwater" wetland" *(see p. 39)* — points = 6 Marks are 2 ft to < 3 ft from surface — points = 6 Marks are 1 ft to < 2 ft from surface — points = 4 Marks are 6 in to < 1 ft from surface — points = 2 No marks above 6 in. or wetland has only saturated soils — points = 0	2
D	**Total for D 3** *Add the points in the boxes above*	10
D	**D 4.0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems X Other No outlet. Could flow to Sacheen YES multiplier is **2** NO multiplier is **1**	*(see p. 42)* multiplier 2
D	**TOTAL - Hydrologic Functions** Multiply the score from D3 by the multiplier in D4 ***Record score on p. 1 of field form***	20

Comments

Wetland name or number E

R	**Riverine Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
R	**R 1.0 Does the wetland unit have the <u>potential</u> to improve water quality?**	*(see p. 45)*
R	R 1.1 Area of surface depressions within the riverine unit that can trap sediments during a flooding event: Depressions cover >1/3 area of wetland points = 6 Depressions cover > 1/10 area of wetland points = 3 If depressions > 1/10th of area of unit draw polygons on aerial photo or map Depressions present but cover < 1/10 area of wetland points = 1 No depressions present points = 0	Figure ___
R	R 1.2 Characteristics (cover) of the vegetation in the unit *(area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub > 2/3 the area of the wetland points = 10 Forest or shrub 1/3 – 2/3 area of the wetland points = 5 Ungrazed, herbaceous plants > 2/3 area of wetland points = 5 Ungrazed herbaceous plants 1/3 – 2/3 area of wetland points = 2 Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland points = 0 Aerial photo or map showing polygons of different vegetation cover	Figure ___
R	**Total for R1** *Add the points in the boxes above*	
R	**R 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland intercepts groundwater within the Reclamation Area — Untreated stormwater flows into wetland — Tilled fields or orchards within 150 feet of wetland — Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential or urban areas are within 150 ft of wetland — The river or stream that floods the wetland has a contributing basin where human activities have raised the levels of sediment, toxic compounds or nutrients in the river water above water quality standards — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.46)* multiplier _____
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R1 by the multiplier in R2 ***Record score on p. 1 of field form***	

Wetland name or number E

R	**Riverine Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
R	**R 3.0 Does the wetland have the <u>potential</u> to reduce flooding and erosion?**	*(see p. 47)*
R	R 3.1 Amount overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks).* *Calculate the ratio: width of wetland/ width of stream.* If the ratio is 2 or more — points = 10 If the ratio is between 1 and < 2 — points = 8 If the ratio is ½ to < 1 — points = 4 If the ratio is ¼ to < ½ — points = 2 If the ratio is < ¼ — points = 1 Aerial photo or map showing average widths	Figure ___
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: *Treat large woody debris as "forest or shrub" (area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub for more than 2/3 the area of the wetland. — points = 6 Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area — points = 4 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area — points = 2 Vegetation does not meet above criteria — points = 0 Aerial photo or map showing polygons of different vegetation types	Figure ___
R	**Total for R3** *Add the points in the boxes above*	
R	**R 4.0 Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) than can be damaged by flooding — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 50)* multiplier
R	**TOTAL - Hydrologic Functions** Multiply the score from R3 by the multiplier in R4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number E

L	**Lake-fringe Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
L	**L 1.0 Does the wetland have the <u>potential</u> to improve water quality?**	*(see p.52)*
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide — points = 6 Vegetation is between 16 ft (5m) and 33ft wide — points = 3 Vegetation is 6ft (2m) wide to < 16 ft wide — points = 1 Map of Cowardin classes with widths marked	Figure ___
L	L 1.2 Characteristics of the vegetation in the wetland *choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.* Herbaceous plants cover >90% of the vegetated area — points = 6 Herbaceous plants cover >2/3 of the vegetated area — points = 4 Herbaceous plants cover >1/3 of the vegetated area — points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area — points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed cover > 2/3 of the vegetated area — points = 0 Map with polygons of different vegetation types	Figure ___
L	**Total for L1** *Add the points in the boxes above*	
L	**L 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Wetland is along the shores of a lake or reservoir that does not meet water quality standards — Grazing in the wetland or within 150ft — Untreated stormwater flows into the wetland — Tilled fields or orchards within 150 feet of wetland — Residential or urban areas are within 150 ft of wetland — Powerboats with gasoline or diesel engines use the lake — Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 53)* multiplier _____
L	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from L1 by the multiplier in L2 ***Record score on p. 1 of field form***	

Wetland name or number E

L	**Lake-fringe Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce shoreline erosion	**Points** (only 1 score per box)
L	**L 3.0 Does the wetland have the <u>potential</u> to reduce shoreline erosion?**	*(see p.54)*
L	L 3.1 Average width and characteristics of vegetation along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* > ¾ of the vegetation is shrubs or trees at least 33 ft (10m) wide — points = 6 > ¾ of the vegetation is shrubs or trees at least 6 ft. (2 m) wide — points = 4 > ¼ of the vegetation is shrubs or trees at least 33 ft (10m) wide — points = 4 Vegetation is at least 6 ft (2m) wide — points = 2 Vegetation is less than 6 ft (2m) wide — points = 0 Aerial photo or map with Cowardin vegetation classes	Figure ___
L	**L 4.0 Does the wetland have the <u>opportunity</u> to reduce erosion?** Are there features along the shore that will be impacted if the shoreline erodes? *Note which of the following conditions apply.* — There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. — There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland than can be damaged by shoreline erosion — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 55)* Multiplier _____
L	**TOTAL - Hydrologic Functions** Multiply the score from L3 by the multiplier in L4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number E

S	**Slope Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
S	**S 1.0 Does the wetland have the <u>potential</u> to improve water quality?**	*(see p.56)*
S	S 1.1 Characteristics of average slope of wetland: Slope is1% or less *(a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)* points = 3 Slope is between 1% and 2% points = 2 Slope is more than 2% but less than 5% points = 1 Slope is 5% or greater points = 0	
S	S 1.2 The soil 2 inches below the surface is clay or organic *(use NRCS definitions of soil types)* YES = 3 points NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland.* ***Dense*** *vegetation means you have trouble seeing the soil surface (>75% cover), and* ***uncut*** *means not grazed or mowed and plants are higher than 6 inches.* Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > ½ of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons	Figure ___
S	**Total for S 1** *Add the points in the boxes above*	
S	**S 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland is a groundwater seep within the Reclamation Area — Untreated stormwater flows through the wetland — Tilled fields or orchards within 150 feet of wetland — Residential, urban areas, or golf courses are within 150 ft upslope of wetland — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.58)* multiplier _____
S	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from S1 by the multiplier in S2 ***Record score on p. 1 of field form***	

Wetland name or number E

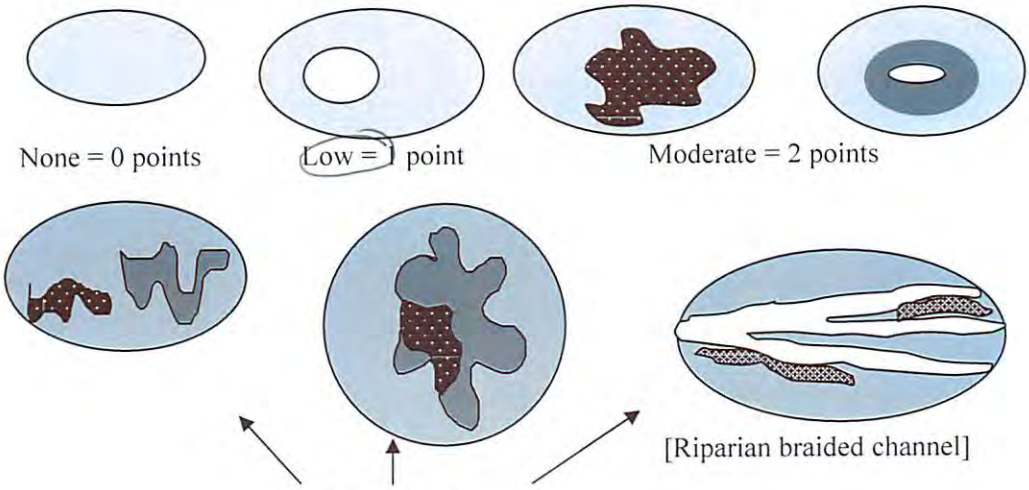
S	**Slope Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
S	**S 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	*(see p.59)*
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. *Choose the points appropriate for the description that best fit conditions in the wetland. See question S 1.3 for definition of dense and uncut.* ***Rigid*** *means that the stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows.* Dense, uncut, **rigid** vegetation covers > 90% of the area of the unit — points = 6 Dense, uncut, **rigid** vegetation > 1/2 – 90% area of unit — points = 3 Dense, uncut, **rigid** vegetation > 1/4 – 1/2 of unit — points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid — points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	**Total for S3** *Add the points in the boxes above*	
S	**S 4. 0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p.61)*** *Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field.* Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — Wetland has surface runoff that can cause flooding problems downgradient — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier _____
S	**TOTAL - Hydrologic Functions** Multiply the score from S3 by the multiplier in S4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number E

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure ***(see p.62)*** *Check the vegetation classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is ¼ acre or more than 10% of the area if unit is < 2.5 acres.* ____Aquatic bed ____Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ____Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover ____Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover X Scrub/shrub (areas where shrubs have >30% cover) X Forested (areas where trees have >30% cover) *Add the number of vegetation types that qualify. If you have:* 4-6 types points = 3 3 types points = 2 2 types points = 1 1 type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents	**Figure ___** 1
H 1.2. Is one of the vegetation types "aquatic bed?" ***(see p .64)*** YES = 1 point NO = 0 points	0
H 1.3. Surface Water ***(see p.65)*** H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? *Note: answer YES for Lake-fringe wetlands* YES = 3 points & **go to H 1.4** NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, AND that has an unvegetated bottom (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points Map showing areas of open water	**Figure ___** 0
H 1.4. Richness of Plant Species ***(see p. 66)*** Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites ,Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)* If you counted: > 9 species points = 2 4-9 species points = 1 # of species ____ < 4 species points = 0 points *List species below if you wish*	1

Wetland name or number E

	Figure ___
H 1.5. Interspersion of habitats *(see p. 67)* Decided from the diagrams below whether interspersion between categories of vegetation (described in H 1.1), or categories and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.  None = 0 points Low = 1 point Moderate = 2 points [Riparian braided channel] High = 3 points NOTE: If you have four or more vegetation categories or three vegetation categories and open water the rating is always "high". Use maps from H1.1 and H1.3	1
H 1.6. Special Habitat Features: *(see p. 68)* *Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column.* X Loose rocks larger than 4" **or** large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. (Riprap) ___ Cattails or bulrushes are present within the unit. ___ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. ___ Emergent or shrub vegetation in areas that are permanently inundated/ponded. *The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.* ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) OR signs of recent beaver activity ___ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	1
TOTAL Potential to provide habitat *Add the scores in the column above*	4

Comments

Wetland name or number E

H 2.0 Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 71)* *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed." Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer.* — 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference **Points = 5** — 330 ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** — 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the criteria above** — No paved areas (except paved trails) or buildings within 80ft (25 m) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 170ft (50m) of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <6.6ft wide (2m) for more than 95% of the circumference (e.g . tilled fields, paving, basalt bedrock extend to edge of wetland). **Points = 0** — Buffer does not meet any of the criteria above. **Points = 1** Aerial photo showing buffers	**Figure ___** 3
H 2.2 Wet Corridors *(see p. 72)* H 2.2.1 Is the wetland unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor at least ¼ mile long with surface water or flowing water throughout most of the year (> 9 months/yr)? (*dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor*). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor, at least ¼ mile long with water flowing seasonally, **OR** a lake-fringe wetland without a "wet" corridor, **OR** a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO go to H 2.2.3 H 2.2.3 Is the wetland within a 1/2 mile of any permanent stream, seasonal stream, or lake (*do not include man-made ditches*)? YES = 1 point NO = 0 points	1

Wetland name or number E

H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see p. 74)*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections **do not** have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.* ____**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____**Aspen Stands:** Pure or mixed stands of aspen greater than 2 acres. ____**Cliffs:** Greater than 25 ft high and occurring below 5000 ft. ____**Old-growth forests:** (east of Cascade crest): In general, stands will be >150 years of age, with 10 trees/acre that are > 21 in dbh, and 1 - 3 snags/acre > 12-14 in diameter. _X_**Mature forests:** Stands with average diameters exceeding 21 in dbh; crown cover may be less that 100%; decay, 80 - 160 years old east of the Cascade crest. ____**Prairies and Steppe:** Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community. ____**Shrub-steppe:** Tracts of land consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. _X_**Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft, composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages ____**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. ____**Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. ____**Aspen Stands:** Pure or mixed stands of aspen greater than 0.8 ha (2 acres). If wetland has **2 or more** Priority Habitats = **4 points** If wetland has **1** Priority Habitat = **2 points** No Priority habitats = **0 points** *Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*	4

Comments

Wetland name or number F

WETLAND RATING FORM – EASTERN WASHINGTON

Version 2 - Updated June 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): Wetland F Date of site visit: 10-18-10

Rated by Michelle Anderson Trained by Ecology? Yes X No___ Date of training_____

SEC: 35 TWNSHP: 31N RNGE: 43E Is S/T/R in Appendix D? Yes___ No___

Map of wetland unit: Figure ____ Estimated size _____

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II X III___ IV___

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for "Water Quality" Functions	20
Score for Hydrologic Functions	8
Score for Habitat Functions	32
TOTAL score for functions	60

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II X III___ Does not Apply___

Final Category (choose the "highest" category from above) II

Summary of basic information about the wetland unit

Wetland Type		Wetland Class	
Vernal Pool		Depressional	X
Alkali		Riverine	
Natural Heritage Wetland		Lake-fringe	
Bog		Slope	
Forest	X		
None of the above		Check if unit has multiple HGM classes present	

 PEM1C & PAB4H

Wetland name or number F

Does the wetland being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That Need Special Protection, and That Are Not Included in the Rating	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered* ***animal or plant*** *species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered* ***animal*** *species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*	X	
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.	X	

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 20 for more detailed instructions on classifying wetlands.

Wetland name or number F

Classification of Vegetated Wetlands for Eastern Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Does the entire wetland unit **meet both** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;

___At least 30% of the open water area is deeper than 3 m (10 ft)?

NO – go to Step 2 **YES** – The wetland class is **Lake-fringe (lacustrine fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (*slope can be very gradual*),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

____The water leaves the wetland **without being impounded**?

NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than a foot deep).*

NO - go to Step 3 **YES** – The wetland class is **Slope**

3. Is the entire wetland unit in a valley or stream channel where it gets inundated by overbank flooding from that stream or river? In general, the flooding should occur at least once every ten years to answer "yes." *The wetland can contain depressions that are filled with water when the river is not flooding.*

NO - go to Step 4 **YES** – The wetland class is **Riverine**

4. Is the entire wetland unit in a topographic depression, outside areas that are inundated by overbank flooding, in which water ponds, or is saturated to the surface, at some time of the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to Step 5 **YES** – The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

Wetland name or number F

HGM Classes Within One Delineated Wetland Boundary	Class to Use for Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (riverine is within boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

The wetland is at a transition between Sacheen Lake and W. Branch of Little Spokane RR

Wetland name or number F

D	**Depressional Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
D	**D 1.0 Does the wetland unit have the potential to improve water quality?**	*(see p. 38)*
D	D 1.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet - points = 5 Wetland has an intermittently flowing outlet points = 3 Wetland has a highly constricted permanently flowing outlet points = 3 Wetland has a permanently flowing surface outlet points = 1	1
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions of soil types)* YES points = 3 NO points = 0	3
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation for > 2/3 of area points = 5 Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area points = 3 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure ___ 5
D	D 1.4 Characteristics of seasonal ponding or inundation. *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland points = 3 Area seasonally ponded is ¼ - ½ total area of wetland points = 1 Area seasonally ponded is < ¼ total area of wetland points = 0 NOTE: *See text for indicators of seasonal and permanent inundation/flooding.* Map of Hydroperiods	Figure ___ 1
D	**Total for D 1** *Add the points in the boxes above*	10
D	**D 2. Does the wetland unit have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150 ft ✓ Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier 2
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by the multiplier in D2 ***Record score on p. 1 of field form***	20

Wetland name or number F

D	**Depressional Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	**Points** (only 1 score per box)
D	**D 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	*(see p. 39)*
D	D 3.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet — points = 8 Wetland has an intermittently flowing outlet — points = 4 Wetland has a highly constricted permanently flowing outlet — points = 4 Wetland has a permanently flowing surface outlet — points = 0	0
D	D 3.2 Depth of storage during wet periods: *Estimate the height of ponding above the surface of the wetland (see text for description of measuring height). In wetlands with permanent ponding, the surface is the lowest elevation of "permanent" water)* Marks of ponding are at least 3 ft above the surface — points = 8 The wetland is a "headwater" wetland" *(see p. 39)* — points = 6 Marks are 2 ft to < 3 ft from surface — points = 6 Marks are 1 ft to < 2 ft from surface — points = 4 Marks are 6 in to < 1 ft from surface — points = 2 No marks above 6 in. or wetland has only saturated soils — points = 0	4
D	**Total for D 3** *Add the points in the boxes above*	4
D	**D 4.0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is groundwater, irrigation return flow, or water levels in the wetland are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* X Wetland is in a headwater of a river or stream that has flooding problems X Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 42)* multiplier 2
D	**TOTAL - Hydrologic Functions** Multiply the score from D3 by the multiplier in D4 ***Record score on p. 1 of field form***	8

Comments

Wetland name or number F

R	**Riverine Wetlands** WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality	**Points** (only 1 score per box)
R	**R 1.0 Does the wetland unit have the <u>potential</u> to improve water quality?**	*(see p. 45)*
R	R 1.1 Area of surface depressions within the riverine unit that can trap sediments during a flooding event: Depressions cover >1/3 area of wetland points = 6 Depressions cover > 1/10 area of wetland points = 3 If depressions > 1/10th of area of unit draw polygons on aerial photo or map Depressions present but cover < 1/10 area of wetland points = 1 No depressions present points = 0	Figure ___
R	R 1.2 Characteristics (cover) of the vegetation in the unit *(area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub > 2/3 the area of the wetland points = 10 Forest or shrub 1/3 – 2/3 area of the wetland points = 5 Ungrazed, herbaceous plants > 2/3 area of wetland points = 5 Ungrazed herbaceous plants 1/3 – 2/3 area of wetland points = 2 Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland points = 0 Aerial photo or map showing polygons of different vegetation cover	Figure ___
R	**Total for R1** *Add the points in the boxes above*	
R	**R 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland intercepts groundwater within the Reclamation Area — Untreated stormwater flows into wetland — Tilled fields or orchards within 150 feet of wetland — Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential or urban areas are within 150 ft of wetland — The river or stream that floods the wetland has a contributing basin where human activities have raised the levels of sediment, toxic compounds or nutrients in the river water above water quality standards — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.46)* multiplier _____
R	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from R1 by the multiplier in R2 ***Record score on p. 1 of field form***	

Wetland name or number P

R	**Riverine Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
R	**R 3.0 Does the wetland have the <u>potential</u> to reduce flooding and erosion?**	*(see p. 47)*
R	R 3.1 Amount overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow of water and the width of the stream or river channel (distance between banks).* *Calculate the ratio: width of wetland/ width of stream.* If the ratio is 2 or more — points = 10 If the ratio is between 1 and < 2 — points = 8 If the ratio is ½ to < 1 — points = 4 If the ratio is ¼ to < ½ — points = 2 If the ratio is < ¼ — points = 1 Aerial photo or map showing average widths	Figure ___
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: *Treat large woody debris as "forest or shrub" (area of polygons with >90% cover at person height. This is **not** Cowardin vegetation classes)*: Forest or shrub for more than 2/3 the area of the wetland. — points = 6 Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area — points = 4 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area — points = 2 Vegetation does not meet above criteria — points = 0 Aerial photo or map showing polygons of different vegetation types	Figure ___
R	**Total for R3** *Add the points in the boxes above*	
R	**R 4.0 Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?** *Answer NO if the major source of water is irrigation return flow or water levels are controlled by a reservoir.* Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. — There are natural resources downstream (e.g. salmon redds) than can be damaged by flooding — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 50)* multiplier
R	**TOTAL - Hydrologic Functions** Multiply the score from R3 by the multiplier in R4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number F

L	**Lake-fringe Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
L	**L 1.0 Does the wetland have the <u>potential</u> to improve water quality?**	*(see p.52)*
L	L 1.1 Average width of vegetation along the lakeshore: Vegetation is more than 33ft (10m) wide — points = 6 Vegetation is between 16 ft (5m) and 33ft wide — points = 3 Vegetation is 6ft (2m) wide to < 16 ft wide — points = 1 Map of Cowardin classes with widths marked	Figure ___
L	L 1.2 Characteristics of the vegetation in the wetland *choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of Cover is total cover in the unit, but it can be in patches. NOTE: Herbaceous does not include aquatic bed.* Herbaceous plants cover >90% of the vegetated area — points = 6 Herbaceous plants cover >2/3 of the vegetated area — points = 4 Herbaceous plants cover >1/3 of the vegetated area — points = 3 Other vegetation that is not aquatic bed in > 2/3 vegetated area — points = 3 Other vegetation that is not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed cover > 2/3 of the vegetated area — points = 0 Map with polygons of different vegetation types	Figure ___
L	**Total for L1** *Add the points in the boxes above*	
L	**L 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in the lake water, or surface water flowing through the wetland to the lake is polluted. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Wetland is along the shores of a lake or reservoir that does not meet water quality standards — Grazing in the wetland or within 150ft — Untreated stormwater flows into the wetland — Tilled fields or orchards within 150 feet of wetland — Residential or urban areas are within 150 ft of wetland — Powerboats with gasoline or diesel engines use the lake — Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 53)* multiplier _____
L	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from L1 by the multiplier in L2 ***Record score on p. 1 of field form***	

Wetland name or number F

L	**Lake-fringe Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce shoreline erosion	**Points** (only 1 score per box)
L	**L 3.0 Does the wetland have the <u>potential</u> to reduce shoreline erosion?**	*(see p.54)*
L	L 3.1 Average width and characteristics of vegetation along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* > ¾ of the vegetation is shrubs or trees at least 33 ft (10m) wide points = 6 > ¾ of the vegetation is shrubs or trees at least 6 ft. (2 m) wide points = 4 > ¼ of the vegetation is shrubs or trees at least 33 ft (10m) wide points = 4 Vegetation is at least 6 ft (2m) wide points = 2 Vegetation is less than 6 ft (2m) wide points = 0 Aerial photo or map with Cowardin vegetation classes	**Figure ___**
L	**L 4.0 Does the wetland have the <u>opportunity</u> to reduce erosion?** Are there features along the shore that will be impacted if the shoreline erodes? *Note which of the following conditions apply.* — There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. — There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland than can be damaged by shoreline erosion — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 55)* Multiplier _____
L	**TOTAL - Hydrologic Functions** Multiply the score from L3 by the multiplier in L4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number F

S	**Slope Wetlands** WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	**Points** (only 1 score per box)
S	**S 1.0 Does the wetland have the <u>potential</u> to improve water quality?**	*(see p.56)*
S	S 1.1 Characteristics of average slope of wetland: Slope is1% or less *(a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)* points = 3 Slope is between 1% and 2% points = 2 Slope is more than 2% but less than 5% points = 1 Slope is 5% or greater points = 0	
S	S 1.2 The soil 2 inches below the surface is clay or organic *(use NRCS definitions of soil types)* YES = 3 points NO = 0 points	
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland.* ***Dense*** *vegetation means you have trouble seeing the soil surface (>75% cover), and* ***uncut*** *means not grazed or mowed and plants are higher than 6 inches.* Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 Dense, woody, vegetation > ½ of unit points = 2 Dense, ungrazed, herbaceous vegetation > 1/4 of unit points = 1 Does not meet any of the criteria above for herbaceous vegetation points = 0 Aerial photo or map with vegetation polygons	Figure ___
S	**Total for S 1** *Add the points in the boxes above*	
S	**S 2.0 Does the wetland have the <u>opportunity</u> to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150ft — Wetland is a groundwater seep within the Reclamation Area — Untreated stormwater flows through the wetland — Tilled fields or orchards within 150 feet of wetland — Residential, urban areas, or golf courses are within 150 ft upslope of wetland — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.58)* multiplier _____
S	**<u>TOTAL</u> - Water Quality Functions** Multiply the score from S1 by the multiplier in S2 ***Record score on p. 1 of field form***	

Wetland name or number F

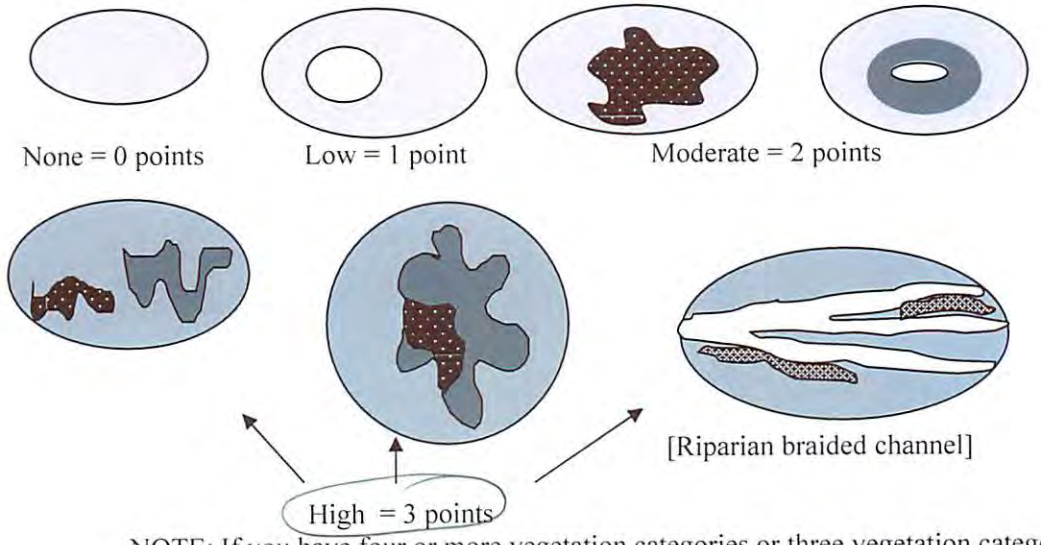
S	**Slope Wetlands** HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
S	**S 3.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?**	*(see p.59)*
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. *Choose the points appropriate for the description that best fit conditions in the wetland. See question S 1.3 for definition of dense and uncut.* ***Rigid*** *means that the stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows.* Dense, uncut, **rigid** vegetation covers > 90% of the area of the unit — points = 6 Dense, uncut, **rigid** vegetation > 1/2 – 90% area of unit — points = 3 Dense, uncut, **rigid** vegetation > 1/4 – 1/2 of unit — points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid — points = 0	
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	
S	**Total for S3** *Add the points in the boxes above*	
S	**S 4. 0 Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** ***(see p.61)*** *Answer NO if the major source of water is irrigation return flow (e.g. a seep that is on the downstream side of a dam or at the base of an irrigated field.* Answer YES if the wetland is in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* — Wetland has surface runoff that can cause flooding problems downgradient — Other_____ **YES** multiplier is **2** **NO** multiplier is **1**	multiplier _____
S	**TOTAL - Hydrologic Functions** Multiply the score from S3 by the multiplier in S4 ***Record score on p. 1 of field form***	

Comments

Wetland name or number F

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure ***(see p.62)*** *Check the vegetation classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is ¼ acre or more than 10% of the area if unit is < 2.5 acres.* X Aquatic bed ____ Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ____ Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover X Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover X Scrub/shrub (areas where shrubs have >30% cover) X Forested (areas where trees have >30% cover) *Add the number of vegetation types that qualify. If you have:* 4-6 types points = 3 3 types points = 2 2 types points = 1 1 type points = 0 Map of Cowardin vegetation classes and areas with different heights of emergents	Figure ___ 3
H 1.2. Is one of the vegetation types "aquatic bed?" ***(see p .64)*** YES = 1 point NO = 0 points	1
H 1.3. Surface Water ***(see p.65)*** H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? *Note: answer YES for Lake-fringe wetlands* YES = 3 points & **go to H 1.4** NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, AND that has an unvegetated bottom (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points Map showing areas of open water	Figure ___ 3
H 1.4. Richness of Plant Species ***(see p. 66)*** Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites ,Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)* If you counted: > 9 species points = 2 4-9 species points = 1 # of species ____ < 4 species points = 0 points *List species below if you wish*	2

Wetland name or number F

	Figure ___
H 1.5. Interspersion of habitats *(see p. 67)* Decided from the diagrams below whether interspersion between categories of vegetation (described in H 1.1), or categories and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.  NOTE: If you have four or more vegetation categories or three vegetation categories and open water the rating is always "high". Use maps from H1.1 and H1.3	3
H 1.6. Special Habitat Features: *(see p. 68)* *Check the habitat features that are present in the wetland unit. The number of checks is the number of points you put into the next column.* X Loose rocks larger than 4" **or** large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. X Cattails or bulrushes are present within the unit. ___ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. X Emergent or shrub vegetation in areas that are permanently inundated/ponded. *The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.* X Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) OR signs of recent beaver activity ___ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	4
TOTAL Potential to provide habitat *Add the scores in the column above*	16

Comments

H 2.0 Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 Buffers ***(see p. 71)*** *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed." Relatively undisturbed also means no grazing, no landscaping, no daily human use, and no structures or paving within undisturbed part of buffer.* — 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference **Points = 5** — 330 ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** X 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 170ft (50 m) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the criteria above** — No paved areas (except paved trails) or buildings within 80ft (25 m) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 170ft (50m) of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <6.6ft wide (2m) for more than 95% of the circumference (e.g . tilled fields, paving, basalt bedrock extend to edge of wetland). **Points = 0** — Buffer does not meet any of the criteria above. **Points = 1** Aerial photo showing buffers	**Figure ___** 3
H 2.2 Wet Corridors ***(see p. 72)*** H 2.2.1 Is the wetland unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor at least ¼ mile long with surface water or flowing water throughout most of the year (> 9 months/yr)? (*dams, heavily used gravel roads, paved roads, fields tilled to edge of stream, or pasture to edge of stream are considered breaks in the corridor*). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft wide, vegetated corridor, at least ¼ mile long with water flowing seasonally, **OR** a lake-fringe wetland without a "wet" corridor, **OR** a riverine wetland without a surface channel connecting to the stream? YES = 2 points (go to H 2.3) NO go to H 2.2.3 H 2.2.3 Is the wetland within a 1/2 mile of any permanent stream, seasonal stream, or lake (*do not include man-made ditches*)? YES = 1 point NO = 0 points	4

Wetland name or number _____

H 2.3 Near or adjacent to other priority habitats listed by WDFW *(see p. 74)* Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections **do not** have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.* _X_ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____ **Aspen Stands:** Pure or mixed stands of aspen greater than 2 acres. ____ **Cliffs:** Greater than 25 ft high and occurring below 5000 ft. ____ **Old-growth forests:** (east of Cascade crest): In general, stands will be >150 years of age, with 10 trees/acre that are > 21 in dbh, and 1 - 3 snags/acre > 12-14 in diameter. _X_ **Mature forests:** Stands with average diameters exceeding 21 in dbh; crown cover may be less that 100%; decay, 80 - 160 years old east of the Cascade crest. ____ **Prairies and Steppe:** Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community. ____ **Shrub-steppe:** Tracts of land consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. _X_ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft, composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages ____ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. _X_ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. ____ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.8 ha (2 acres). If wetland has **2 or more** Priority Habitats = **4 points** If wetland has **1** Priority Habitat = **2 points** No Priority habitats = **0 points** *Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*	4

Comments

Wetland name or number F

H 2.4 Landscape *(choose the **one** description of the landscape around the wetland that best fits)* ***(see p. 76)*** — The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. (*Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs*) **points = 5** — There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing in the connection or an open water connection along a lake shore without heavy boat traffic are OK, but connections should NOT be bisected by paved roads, fill, fields, heavy boat traffic or other development) **points = 5** — There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed? **points = 2** — There is at least 1 wetland within ½ mile. **points = 1** — Does not meet any of the four criteria above **points = 0**	5
H 2. TOTAL Score - opportunity for providing habitat *Add the scores in the column above*	16
H 3.0 Does the wetland unit have indicators that its ability to provide habitat is reduced?	
H 3.1 Indicator of reduced habitat functions ***(see p. 75)*** Do the areas of open water in the wetland unit have a resident population of carp (see text for indicators of the presence of carp)? *(NOTE: This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers)* YES = **- 5 points** NO = 0 points	*Points will be subtracted*
Total Score for Habitat Functions – *add the points for H 1, H 2, and H 3 and record the result on p. 1*	32

Comments

Wetland name or number F

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools *(see p. 79)* Is the wetland unit **less than 4000 ft^2**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO - *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands *(see p. 81)* Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 2 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 2 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. YES = Category I NO – *not an alkali wetland*	**Cat. I**

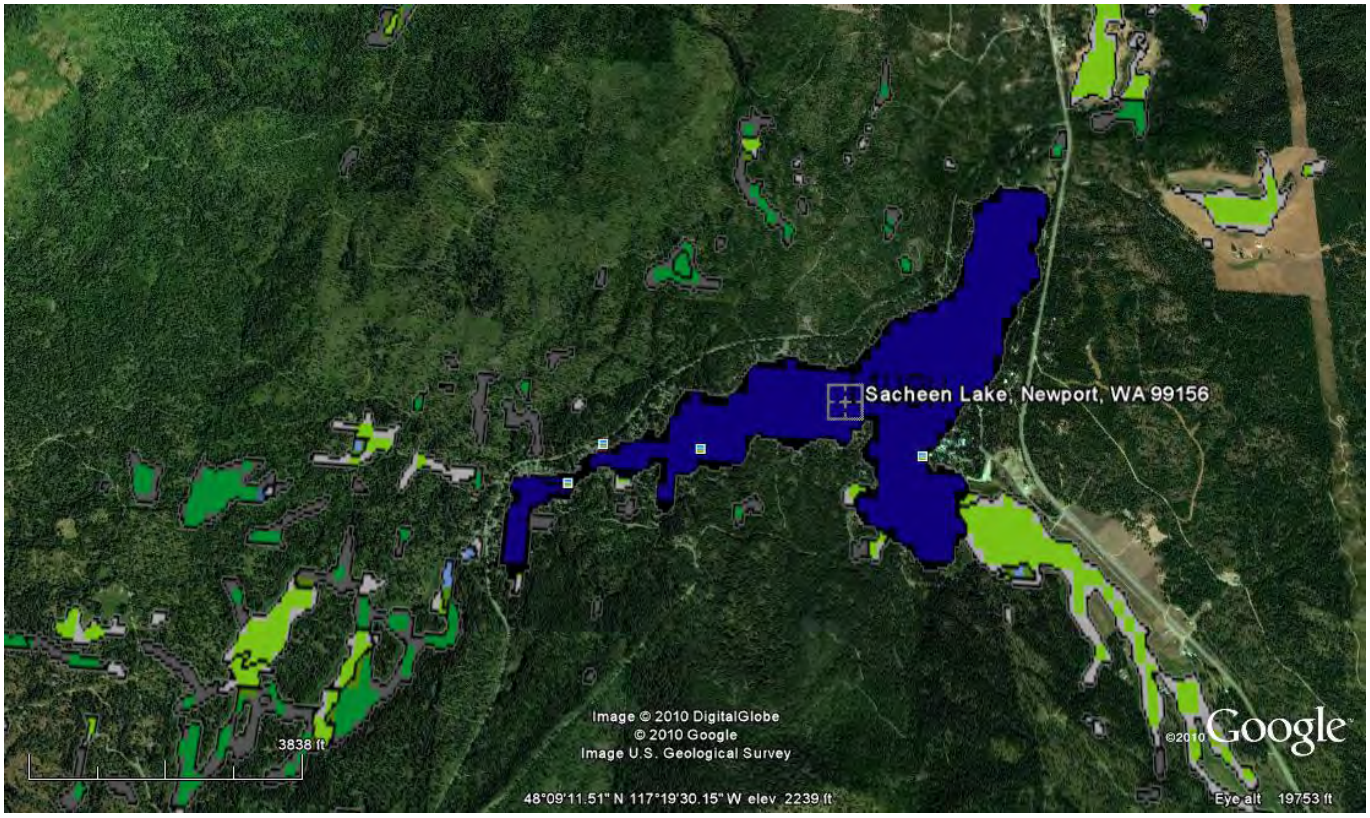
Wetland name or number F

SC 3.0 Natural Heritage Wetlands *(see p. 81)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 3.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)* S/T/R information from Appendix D ___ or accessed from WNHP/DNR database ___ YES X – contact WNHP/DNR (see p. 79) and go to SC 3.2 NO ___ SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as or as a site with state threatened, endangered, or sensitive plant species? YES = Category I NO – *not a natural heritage wetland*	**Cat. I**
SC 4.0 Bogs *(see p. 82)* Does the wetland unit **(or any part of the wetland unit)** meet both the criteria for soils and vegetation in bogs. *Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.* SC 4.1. Does the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to SC 4.3 No - go to SC 4.2 SC 4.2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?? Yes - go to SC 4.3 No - *Is not a bog for rating* SC 4.3. Does the wetland unit have more than 70% cover of mosses at ground level in any area within its boundaries, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Category I bog No - go to Q. 4.4 *NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.*	**Cat. I**
SC 4.4. Is the unit, or any part of it, forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?* Yes – Category I bog NO	**Cat. I**

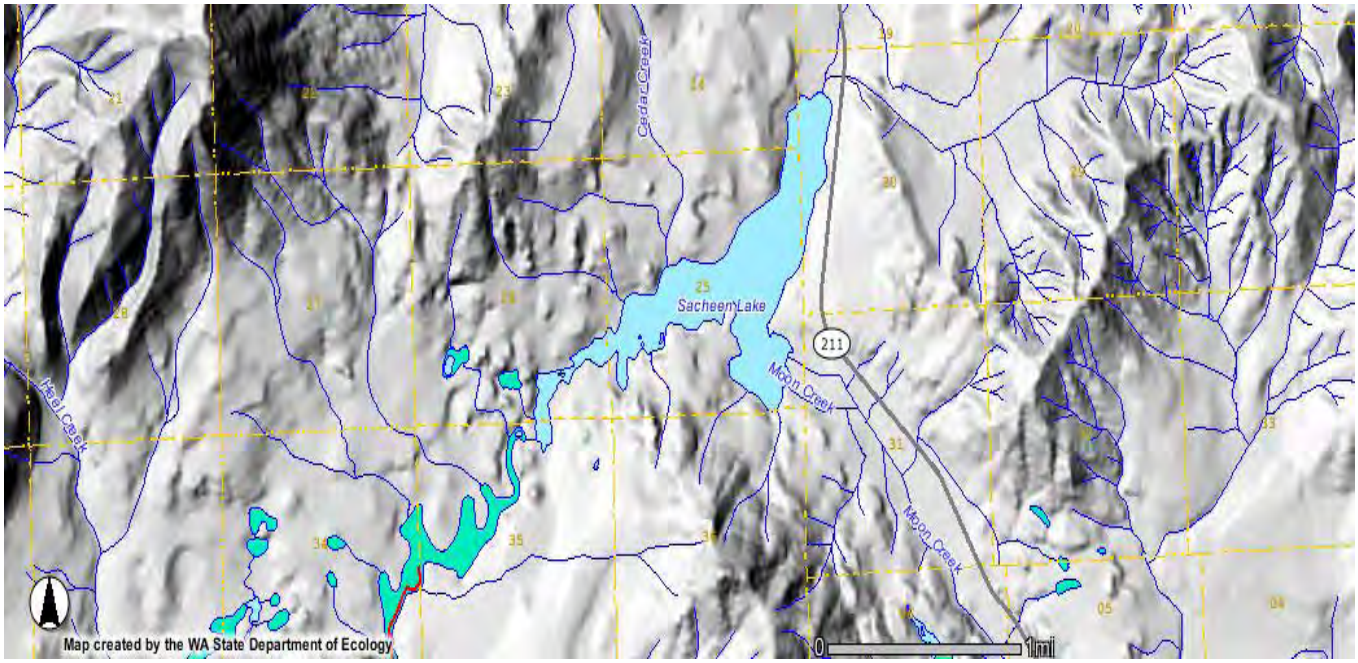
Wetland name or number F

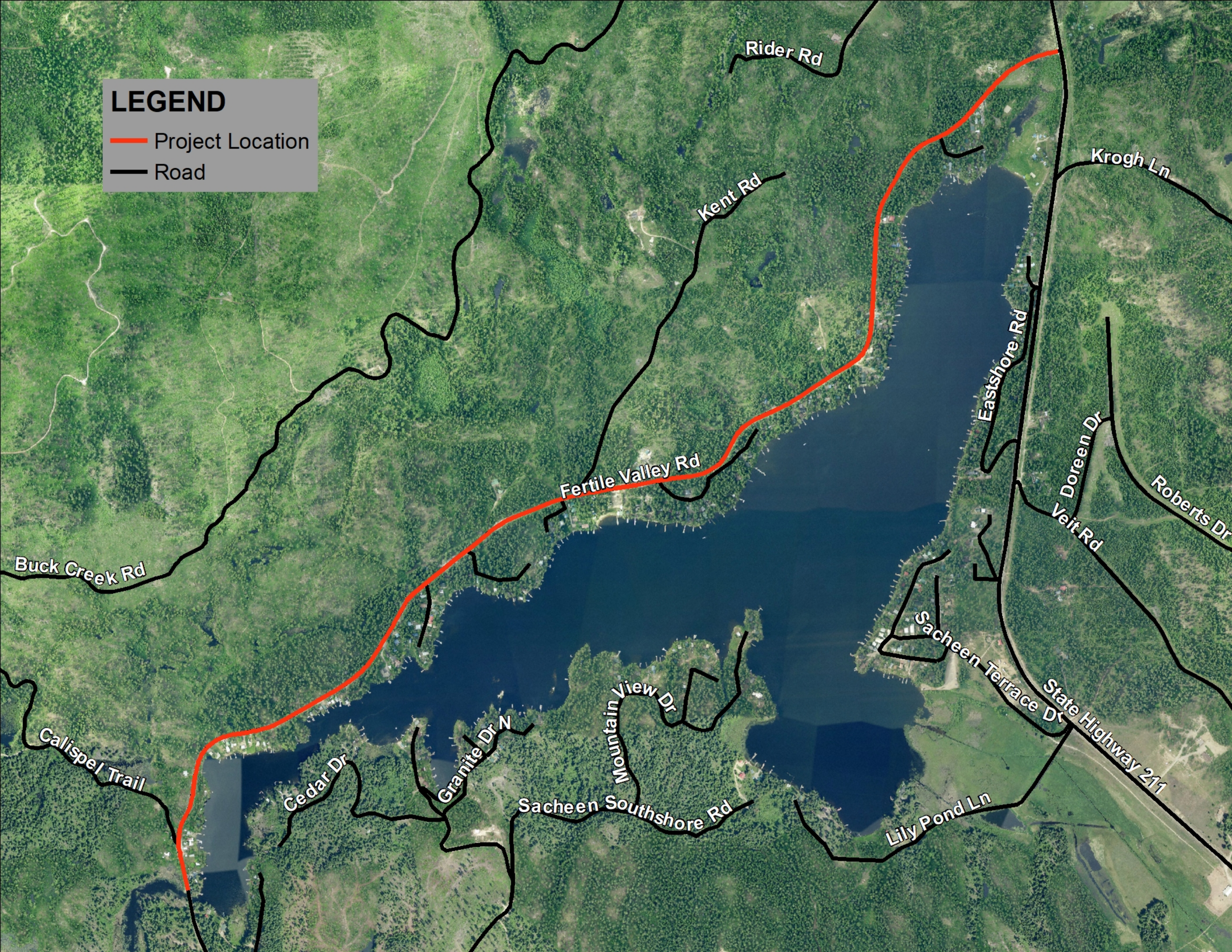
SC 5.0 Forested Wetlands *(see p. 85)* Does the wetland unit have an area of forest (*you should have identified a forested class, if present, in question H 1.1*) rooted within its boundary that meet **at least one** of the following three criteria? X The wetland is within the "100 year" floodplain of a river or stream — aspen (*Populus tremuloides*) are a dominant or co-dominant of the "woody" vegetation. (*Dominants means it represents at least 50% of the cover of woody species, co-dominant means it represents at least 20% of the total cover of woody species*) — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see p. 83)* YES = go to SC 5.1 NO –*not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees Slow growing trees are: western red cedar (*Thuja plicata*), Alaska yellow cedar (*Chamaecyparis nootkatensis*), pine spp. mostly "white" pine (*Pinus monticola*), western hemlock (*Tsuga heterophylla*), Englemann spruce (*Picea engelmannii*). YES = Category I NO = go to SC 5.2	**Cat. I**
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) are a dominant or co-dominant species? YES = Category I NO = go to SC 5.3	**Cat. I**
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. Fast growing species are: Alders – red (*Alnus rubra*), thin-leaf (*A. tenuifolia*) Cottonwoods – narrow-leaf (*Populus angustifolia*), black (*P. balsamifera*) Willows- peach-leaf (*Salix amygdaloides*), Sitka (*S. sitchensis*), Pacific (*S. lasiandra*), Aspen - (*Populus tremuloides*), Water Birch (*Betula occidentalis*) YES = Category II NO = go to SC 5.5	**Cat. II**
SC 5.5 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	**Cat. II**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* If you answered NO for all types enter "Not Applicable" on p.1	II

APPENDIX D. NATIONAL WETLAND INVENTORY MAP



APPENDIX E. Water Quality Assessment Map




LEGEND
Project Location
Road
Rider Rd
Kent Rd
Krogh Ln
Eastshore Rd
Doreen Dr
Roberts Dr
Veit Rd
Fertile Valley Rd
Buck Creek Rd
Sacheen Terrace Dr
State Highway 211
Calispel Trail
Cedar Dr
Granite Dr N
Mountain View Dr
Sacheen Southshore Rd
Lily Pond Ln

PEND OREILLE COUNTY NOTICE OF APPLICATION
Shoreline Substantial Development Permit: SSDP-18-001
APPLICANT: Pend Oreille County Public Works Dept.
PROPOSED PROJECT: Rehabilitation of Fertile Valley Road
Highway 211 To Outlet Bridge - Spring 2018
PUBLIC COMMENT PERIOD: Jan. 24 - Feb. 8, 2018
FOR INFORMATION OR TO SUBMIT COMMENT:
P.O. County Community Development Dept.
509-447-6462 or ahuddleston@pendoreille.org
www.824.org

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