

Wetland and Stream Delineation Report

Cashmere Mill Site
Cashmere, Washington

for
Port of Chelan County

January 30, 2014 (revised April 14, 2014)



GEOENGINEERS 
Earth Science + Technology

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File No. 18593-001-02

January 30, 2014 (revised April 14, 2014)

Prepared for:

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INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) was contracted by the Washington Department of Ecology and the Port of Chelan County (Port) to perform a wetland and stream delineation at the former Cashmere lumber mill site (site) to support remediation and redevelopment planning and construction. A previous delineation occurred in 2008 by the Alliance Consulting Group (Alliance, 2008; Appendix D). This supplemental report serves to update the wetland boundary to its current condition and provide additional details regarding the soil and hydrologic condition of critical areas in support of contamination remediation activities. This report has been written in accordance with Cashmere Municipal Code (CMC), Chapter 18.10.

PROJECT LOCATION AND SITE DESCRIPTION

The site is located just south of Sunset Highway and Mill Road in Cashmere, Chelan County, Washington (Figure 1). The project is located in Section 05, Township 23 N, Range 19 E of the Willamette Meridian (W.M.). Historic use of the site included lumber mill and various commercial and light industrial operations. The site was sold to the Port in 2007, who began geotechnical investigations in 2007 and environmental investigations in 2009 to quantify the extent of wood waste fill (sawdust, lumber ends, bark, and wood debris) and petroleum-contaminated soil (PCS) on-site. Prior to redevelopment and/or sale, the Port is required to remove wood waste-related materials from areas of the site that are developable, remove soil with petroleum contamination above cleanup levels, and backfill the site with structural import fill to regrade the site and improve drainage. Further details regarding site history and geotechnical/environmental investigations are summarized in a letter report prepared by Maul Foster & Alongi, Inc. (MFA, 2013).

WETLAND AND STREAM DELINEATION

Paper Inventory

Environmental maps of the project area were collected and reviewed as part of a paper inventory. The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) online mapper (USFWS, 2010) shows a disconnected palustrine scrub/shrub seasonally flooded (PSSC) system along the south and partially east/west property boundaries. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey indicates two main soil types within the project area: Alluvial land in the vicinity of Brender Creek and Beverly fine sandy loam in the site's more upland, central portion.

Additional information was obtained from the Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) and Washington State Department of Fish and Wildlife (WDFW) SalmonScape mapping application (DNR, 2007; WDFW, 2011). Brender Creek is mapped by both DNR and WDFW along the south and majority of east/west property boundaries. DNR maps this stream as fish-bearing (Type F) and according to SalmonScape the stream contains presence of summer steelhead (*Oncorhynchus mykiss*) and spring Chinook (*Oncorhynchus tshawytscha*) salmon.

Field Investigation

GeoEngineers biologists conducted a field assessment on December 19, 2013 to revisit the on-site wetland and stream delineation line and gather additional soils data to confirm wetland status. A photographic record was collected during the field visit to document existing site conditions. Representative photos have been included in Appendix A.

Delineation of aquatic critical areas was conducted in accordance with guidelines presented in CMC Chapter 18.10 (Critical Areas Code), which includes the use of Washington State Wetlands Identification and Delineation Manual (Ecology, 1997). In addition, the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE, 2008) were used.

The previous delineation line was followed and the wetland/stream boundary marked using a Trimble GeoXT unit equipped with ArcPad GIS software. To confirm wetland determinations, we established three formal data sample plots and six additional soil investigation plots. Wetland boundary and sample plot locations can be viewed on Figure 2. Additional soils data is included in Table 3. We also rated the delineated wetland using the Washington State Wetland Rating System for Eastern Washington (Hruby, 2004) as specified in CMC Chapter 18.10B.020 (Identification and Rating). Appendices B and C include sample plot data forms and wetland rating forms, respectively. Stream typing was conducted in accordance with guidelines presented in CMC Chapter 18.10C.020 (Fish and Wildlife Habitat Conservation Areas - Classification). Determination of buffer width for streams was conducted in accordance with CMC Chapter 18.10C.050 (Fish and Wildlife Habitat Conservation Areas - General standards).

Brender Creek

Brender Creek is the site's main hydrologic feature, forming the site boundary to the south, west, and east. A mid-1990s cooperative conservation effort conducted by the property owner, WDFW, and the Chelan County Conservation District removed sediment from the stream channel and created a large berm that parallels the creek. The berm is approximately 10 feet high, 60 feet wide, and 1,000 feet long (Maul Foster, 2013). This topographic feature was nearly contiguous along the delineated boundary except for one section approximately 300 feet in length.

Brender Creek takes a highly dynamic course within Wetland A as it passes through the site. Areas of well-defined channel were interspersed with wide sections of beaver impoundments and undefined bank features. According to CMC 18.10C.020 – Classification, Brender Creek is regulated as a “Level 1 Critical” habitat area and requires a 75-foot buffer for minor development or a 100-foot buffer for major development. OHWM of Brender Creek was not delineated during field investigations; its required buffer is smaller than that of Wetland A.

Wetland A

Surrounding Brender Creek is a saturated, seasonally inundated riparian wetland. Along 90 percent of the delineation boundary, the wetland edge is clearly tied to a sharp topographic break along the shoreline. The other 10 percent of the delineated wetland boundary was defined by hydric soils. Soils were consistently darker within the wetland boundary and

displayed noticeable redoximorphic features. Soils within the wetland buffer were lighter in color, lacked redox concentrations, and contained more gravels and cobbles. This wetland includes a large ponded area in the northwest, riparian scrub-shrub conditions through the more confined central corridor, and a large emergent area dominated by cattails southeast of the site. Some forested sections exist, mainly in the site's western half. Recent beaver activity including runs, dams, and dens were noted throughout the delineation. Extensive backwatering has occurred in places and spills onto an upland area in the northwest quadrant of the site where the berm is reduced or diminished and the general topography of the site is more level (see Figure 2 – 'beaver backwater area'). While neither hydric soils nor hydrophytic vegetation were noted in this area, wetland conditions could develop given continued flooding of this area.

Wetland A was rated as a Category 1 wetland using the Ecology Eastern Washington rating form (Hruby 2004). The rating was largely consistent with the previous delineation effort (Appendix D). A habitat score between 26 and 29 points adds 45 feet to the standard buffer width of 75 feet according to Cashmere Municipal Code 18.10B.050 – Wetland Buffers. This 120-foot final buffer is shown on Figure 2.

Ditch Conveyance

An irrigation return ditch enters the mill property along the southern shoulder of Mill Road (Page 9, MFA 2013). This ditch is augmented with flow through a culvert from a driveway to the west. The system then passes through a long pipe in the vicinity of Mill Road exiting to an open ditch near the site's eastern boundary. This ditch conveys flow east for a short distance toward two culverts. The main conveyance flows north through a culvert underneath Mill Road and toward Sunset Highway – the outfall of this pipe was not found. An overflow culvert also exists at the end of this ditch, conveying high flows east into Brender Creek.

Tables 1 through 3 on the following pages summarize information regarding wetlands, streams, and soils encountered within the area of investigation. Soil and sample plots in Table 3 can be located on Figure 2.

TABLE 1. WETLAND A

Wetland A - Information	
Location	Surrounding Brender Creek and appeared to extend offsite to the west and southeast.
WRIA	45 - Wenatchee
Local Jurisdiction	City of Cashmere
Rating	I (75 points) ¹
Buffer Width	120 feet ²
Size	Approximately 10 acres (estimated from site visit)
Cowardin Class	Palustrine Scrub/Shrub
HGM Class	Riverine
Data Forms	Appendix C: Wetland SP-1, Wetland SP-2, Upland SP-3
Description Summary	
Vegetation	<p>Herbaceous: Slough sedge (<i>Carex obnupta</i>), cattail (<i>Typha latifolia</i>), reed canary grass (<i>Phalaris arundinacea</i>)</p> <p>Shrub: Red osier dogwood (<i>Cornus sericea</i>), nutka rose (<i>Rosa nutkana</i>), coyote willow (<i>Salix exigua</i>)</p> <p>Tree: Black cottonwood (<i>Populus angustifolia</i>)</p>
Soils	SP-1 & SP-2: Meets criteria for hydric soil indicator Redox Dark Surface (F6)
Hydrology	<p>Indicators: Surface inundation and saturated soils within 12 inches of surface.</p> <p>Source: Overbank flooding of Brender Creek, direct precipitation, high water table</p>
Notes	Wetland A extends off-site with large ponded areas to the southeast and northwest. The delineated wetland boundary on-site exhibits a combination of flowing stream and overbank flooding characteristics. Numerous long-term, channel-spanning beaver dams have altered hydrology in Brender Creek, expanding wetland areas along the property's southern boundary.
Western Washington Wetland Rating Functions Summary (Appendix C - 72 points total)	
Water Quality	22 points: due to large area of water storage, high frequency of thick-stemmed woody vegetation, and multiple potential sources of pollution nearby.
Hydrologic	24 points: due to relatively large wetland to stream width ratio, thick vegetation to slow heavy flows, and downstream resources that could be damaged by flooding.
Habitat	29 points: due to high habitat interspersions, special habitat features, and large size.
Buffer Condition	The wetland is bounded by a steep vegetated rise to the south and west, the abandoned mill site to the north, and open fields to the east.

Notes:

1. Wetland rating in accordance with Washington State Wetlands Rating System for Eastern Washington, (Hruby, 2004).
2. CMC 18.10B.050 - Wetland Buffers. Based on a category 1 rating that scores 26-29 habitat points, adding 45 feet to the standard 75-foot buffer. The final buffer width is subject to approval by the jurisdictional authority.

TABLE 2. BRENDER CREEK

Brender Creek - Information	
Location	Enters the site from the northwest flowing south through a wide bend along the southern property boundary, exiting the site flowing northeast.
WRIA	45 – Wenatchee
Local Jurisdiction	City of Cashmere
DNR Stream Type	F ¹
Local Jurisdiction Stream Type	Level 1 ²
Buffer Width	75 feet ³
Average Channel Width	10-20 feet ⁴
Gradient	0 to 5%
Duration	Perennial
Description Summary	
Documented Fish Use	Chinook Salmon and Steelhead ⁵
Connectivity	Flows into the Wenatchee River approximately 1,000 feet northeast of the site. Mission Creek joins Brender Creek just north of Sunset Highway.
Channel Description	Highly dynamic channel consists of extensive beaver dam backwater areas and has extensive emergent and overhanging vegetation cover.
Riparian/Buffer Condition	Steep topography bounds the stream through most of its course on-site. Large wetland areas have developed in the valley and lowlands surrounding the creek. Sparse residential development and light grazing exists near the stream just south of Mill Road.
Notes	OHWL not delineated – stream course mapped on Figure 2 taken from available ESRI data & maps.

Notes:

¹ Washington State Department of Natural Resources (DNR) Forest Practices Application Review System (FPARS) (DNR, 2007)² CMC 18.10C.020 – Classification.³ CMC 18.10C.050 – General standards.⁴ Average Channel Width estimated by GeoEngineers biologists during site visit.⁵ Washington State Department of Fish and Wildlife (WDFW) SalmonScape mapping application (WDFW, 2014).

TABLE 3. SOILS CLASSIFICATION SUMMARY ALONG DELINEATION LINE

Location	Color	Texture	Indicator
Soil 1 - OUT	10 YR 4/3 100%	Gravelly, sandy loam	N/A
SP1	10YR 2/1 95%; 10YR 4/6 5%	Loamy	F6 Redox Dark Surface
Soil 2 - OUT	10 YR 4/3 100%	Gravelly, sandy loam	N/A
SP2	10YR 2/1 95%; 10YR 4/6 5%	Loamy	F6 Redox Dark Surface
Soil 3 - IN	10YR 2/1 95%; 10YR 4/6 5%	Loamy	F6 Redox Dark Surface
Soil 4 - OUT	10 YR 4/3 100%	Gravelly, sandy loam	N/A
Soil 5 - IN	10YR 2/1 95%; 10YR 4/6 5%	Loamy	F6 Redox Dark Surface
Soil 6 - OUT	10 YR 4/2 100%	Gravelly, sandy loam	N/A
SP3	10 YR 4/3 100%	Gravelly, sandy loam	N/A

WETLAND BUFFER IMPACT ASSESSMENT

Current conditions of Brender Creek and its associated wetland floodplain trigger a wetland buffer requirement of 120 feet per the current Cashmere Critical Areas Ordinance. The buffer established in 2008 was set at 85-feet which was used in the planning of the site clean-up actions to remove wood waste and petroleum contaminated soil. To complete the clean-up as planned, portions of the buffer will be encroached upon. Figure 2 illustrates the site plan, wetland boundary, buffers and the excavation extent for the clean-up activity.

Buffer impact from the planned clean-up will be 3.25 acres spanning approximately 2,767 linear feet of the buffer on the site. Figure 2 illustrates the anticipated wetland buffer impact from the clean-up activity. At present, the buffer area is largely unvegetated above the berm running along the northern side of Brender Creek. Buffer vegetation is more substantial in the western portion of the property where the berm is pushed up against the open water area of Brender Creek and native vegetation has become more established over time. Where the berm is established and set back from the creek, vegetation is confined to the berm slope toward the creek. Above the berm on the upland side, very little vegetation is present. Figure 3 and Appendix A present recent site photographs demonstrating buffer characteristics.

WETLAND BUFFER MITIGATION PLAN

Buffer impacts for the proposed cleanup and remediation activities will include excavation and removal of contaminated soils no closer than 85 feet from the wetland boundary. The resulting 35 feet of buffer impacts will be excavated and backfilled with clean fill and graded to drain stormwater away from the wetland and Brender Creek. BMPs including silt fence, straw wattles, and slope stabilization (straw matting, alfalfa, or other applicable ground cover) will be used as applicable to prevent erosion. When site and soil conditions are amenable, it is recommended that

a hydroseed mix be applied to disturbed soils following the completion of grading activities. To promote native plant establishment, a seed mix comprised of only native plants suitable for local conditions, such as BFI native seed mix for the lower Columbia region (or equivalent) (<http://www.bfinativeseeds.com/mixes.aspx>) should be used.

Following onsite activities the buffer will be returned to essentially its current state. Signs will be placed to mark the 120-foot wetland buffer. Any further site development plans will require additional impacts analysis to Brender Creek and its associated wetlands including appropriate mitigation plan development.

SUMMARY

GeoEngineers performed wetland and stream delineation at the Cashmere Mill Site for the Port of Chelan County. One wetland and one stream feature were investigated, identified and delineated with GPS and marked in the field. In addition, a managed conveyance of irrigation return flow along Mill Road was identified and delineated. Portions of this conveyance are underground in a pipe with an undetermined location. Wetland A is a Category I wetland that requires a 120-foot buffer because it scored between 26 and 29 habitat points on the Ecology rating form. Brender Creek is a mapped fish-bearing stream that meets the criteria for a Level 1 Critical habitat area and requires a minimum 75-foot buffer.

After project designs are finalized, potential wetland and buffer impacts should be assessed and, if needed, minimization and mitigation options should be evaluated. If potential wetland and/or stream impacts are identified, a Mitigation Plan and other development permits may be required.

LIMITATIONS

GeoEngineers has prepared this Wetland and Stream Delineation in general accordance with the scope and limitations of our proposal. Within the limitations of scope, schedule and budget, our services have been executed in accordance with the generally accepted practices for wetland and stream delineation in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

This report has been prepared for the exclusive use of the Port of Chelan County, authorized agents and regulatory agencies following the described methods and information available at the time of the work. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. The information contained herein should not be applied for any purpose or project except the one originally contemplated.

The applicant is advised to contact all appropriate regulatory agencies (local, state and federal) prior to design or construction of any development to obtain necessary permits and approvals.

REFERENCES

- Alliance Consulting Group, Inc. (2008), "Wetland Delineation and Classification – Cashmere Mill Site."
- BFI Native Seeds. 1145 Jefferson Ave, Moses Lake, WA, 98837. (509) 765-6348 or online at www.bfinative-seeds.com.
- Cashmere Municipal Code Chapter 18.10. Available online: <http://www.codepublishing.com/WA/cashmere/>
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- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed 12/17/2013.
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- USFWS (2012). Wetlands Mapper. <http://www.fws.gov/wetlands/Data/mapper.html>.
- WDFW (2014). SalmonScape Application. Version 4.0. <http://wdfw.wa.gov/mapping/salmonscape/>



Vicinity Map

Former Cashmere Mill Site
Data Gap Assessment
Cashmere, Washington



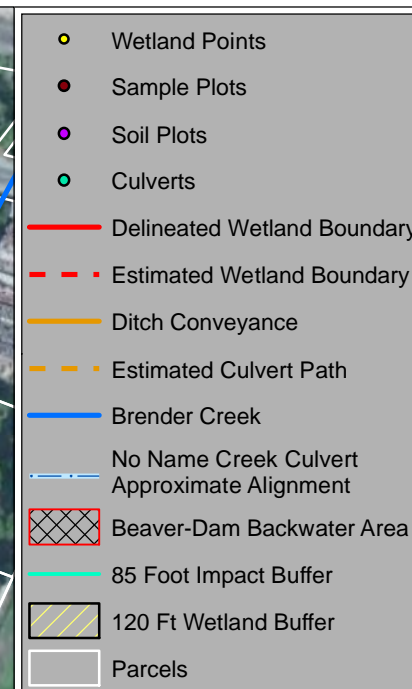
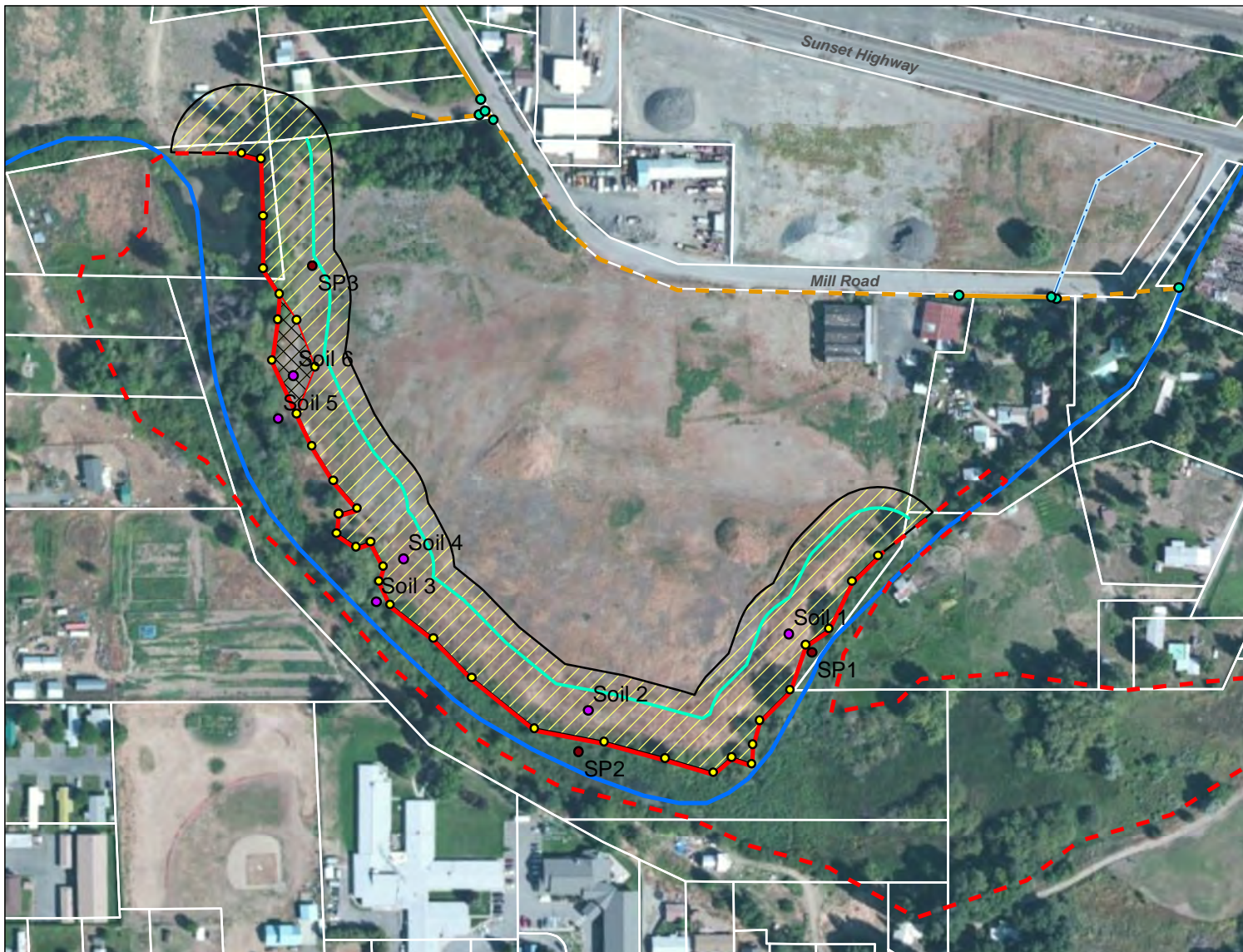
Figure 1

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.

Data Sources: ESRI Data & Maps, Street Maps 2005

Transverse Mercator, State Plane South, North American Datum 1983
North arrow oriented to grid north



0 400
Feet

Projection: WGS 1984 Web Mercator Auxiliary Sphere

Data Source: ESRI Data & Maps, Chelan County GIS
No Name creek culvert approximate alignment provided by Maul, Foster & Alongi, Inc., March 2014.

Notes:

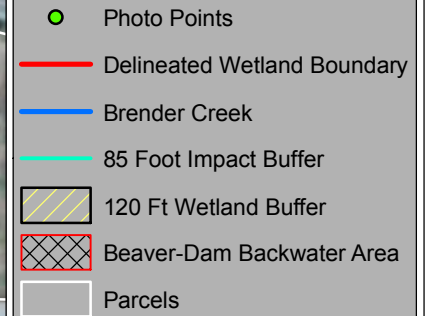
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. Paths between culverts are estimates only. Utilities must be located prior to any digging or other surface disturbance.

Wetland Delineation and Buffers Map

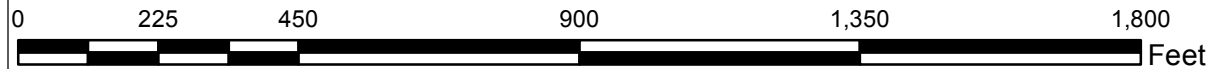
Former Cashmere Mill Site
Cashmere, Washington



Figure 2



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Notes:

1. Photo locations correspond to Appendix A - Site Photographs
2. The locations of all features shown are approximate.
3. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Projection: WGS 1984 Web Mercator Auxiliary Sphere

Data Source: ESRI Data & Maps, Chelan County GIS



Photo Location Map

Former Cashmere Mill Site
Cashmere, Washington



Figure 3

A topographic map with blue contour lines on a white background. The map shows various elevation features, including peaks and valleys. A dashed blue line traces a path through the terrain, starting from the upper left, curving around a central peak, and extending towards the bottom right. Another dashed line is visible in the lower right quadrant.

APPENDIX A

Site Photographs



Photograph 1
Northeast corner of delineation looking south. Note apparent elevation difference between wetland and upland areas.



Photograph 2
Southeast corner of delineation looking east. Note large emergent cattail area extending off-site.



Photograph 3
Southern, more constricted riparian corridor looking west from upland berm. Note 20+ foot rise to development south of the channel.



Photograph 4
Large beaver dam complex in site's central area. A second, similar-size dam exists approximately 30 feet upstream just visible in frame.

Site Photographs

Cashmere Mill Wetland Delineation
Cashmere, Washington

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Figure A-1



Photograph 5
Extensive backwatering in low areas lacking berms
behind beaver dams.



Photograph 6
Additional view of backwater areas outside wetland
vegetated or riparian areas.



Photograph 7
Ponded area and raised berms looking north in the
site's northwest area.



Photograph 8
Typical upland soil conditions viewed in
excavator-dug test pit.

Site Photographs

Cashmere Mill Wetland Delineation
Cashmere, Washington



Figure A-2

A background topographic map with blue contour lines of varying thicknesses. A dashed blue line winds through the map, possibly indicating a trail or a specific boundary. The map features several peaks and valleys, with the dashed line generally following a path through the valleys.

APPENDIX B

Sample Plot Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Cashmere Mill City/County: Cashmere/Chelan Sampling Date: 12/19
 Applicant/Owner: Port of Chelan County State: WA Sampling Point: SP1
 Investigator(s): ALW, WSW Section, Township, Range: S5/T23N/R19E
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): B Lat: 47.518941 Long: -120.479905 Datum: WGS84
 Soil Map Unit Name: Alluvial Land NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>Black Cottonwood (Populus balsamifera)</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. <u>Redosier Dogwood (Cornus sericea)</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Nutka Rose (Rosa nutkana)</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	OBL species _____ x1 = _____
3. <u>Coyote Willow (Salix exigua)</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>	FACW species _____ x2 = _____
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: _____)				Column Totals: _____ (A) _____ (B)
1. <u>Cattail (Typha latifolia)</u>	<u>30</u>	<u>yes</u>	<u>OBL</u>	Prevalence Index = B/A = _____
2. <u>Reed Canary Grass (Phalaris arundinacea)</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators:
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
5. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
6. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Remarks:				

Project Site: Cashmere Mill

SOIL

Sampling Point: SP1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	10 YR 2/1	95	10 YR 4/6	5	C	M	Loam	
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

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

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

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present?

Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

US Army Corps of Engineers

Arid West – Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Cashmere Mill City/County: Cashmere/Chelan Sampling Date: 12/19
 Applicant/Owner: Port of Chelan County State: WA Sampling Point: SP2
 Investigator(s): ALW, WSW Section, Township, Range: S5/T23N/R19E
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): B Lat: 47.518555 Long: -120.481548 Datum: WGS84
 Soil Map Unit Name: Alluvial Land NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>Black Cottonwood (Populus balsamifera)</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. <u>Redosier Dogwood (Cornus sericea)</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Nutka Rose (Rosa nutkana)</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>	OBL species _____ x1 = _____
3. <u>Snowberry (Symphoricarpos albus)</u>	<u>5</u>	<u>no</u>	_____	FACW species _____ x2 = _____
4. <u>Coyote Willow (Salix exigua)</u>	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: _____)				Column Totals: _____ (A) _____ (B)
1. <u>Cattail (Typha latifolia)</u>	<u>30</u>	<u>yes</u>	<u>OBL</u>	Prevalence Index = B/A = _____
2. <u>Reed Canary Grass (Phalaris arundinacea)</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
3. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Remarks:				

Project Site: Cashmere MillSampling Point: SP2**SOIL****Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	10 YR 2/1	95	10 YR 4/6	5	C	M	Loam	
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (Inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: _____

HYDROLOGY**Wetland Hydrology Indicators:**

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

Secondary Indicators (2 or more required)

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:Surface Water Present? Yes ☒ No ☐ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): _____**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: _____

US Army Corps of Engineers

Arid West – Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Cashmere Mill City/County: Cashmere/Chelan Sampling Date: 12/19
 Applicant/Owner: Port of Chelan County State: WA Sampling Point: SP3
 Investigator(s): ALW, WSW Section, Township, Range: S5/T23N/R19E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): B Lat: 47.520707 Long: -120.483369 Datum: WGS84
 Soil Map Unit Name: Alluvial Land NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>Black Cottonwood (Populus balsamifera)</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. <u>Snowberry (Symphoricarpos albus)</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	OBL species _____ x1 = _____
3. _____	_____	_____	_____	FACW species <u>5</u> x2 = <u>10</u>
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species <u>55</u> x4 = <u>220</u>
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: _____)				Column Totals: <u>60</u> (A) _____ (B)
1. <u>Kentucky Bluegrass (Poa pratensis)</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>	Prevalence Index = B/A = _____
2. <u>Dandelion (Taraxacum officinale)</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Remarks:				

Project Site: Cashmere MillSampling Point: SP3**SOIL****Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-10	10 YR 4/3	100	_____	_____	_____	_____	Gravelly- Loam	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (Inches): _____

Hydric Soils Present?Yes ☐ No ☒

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

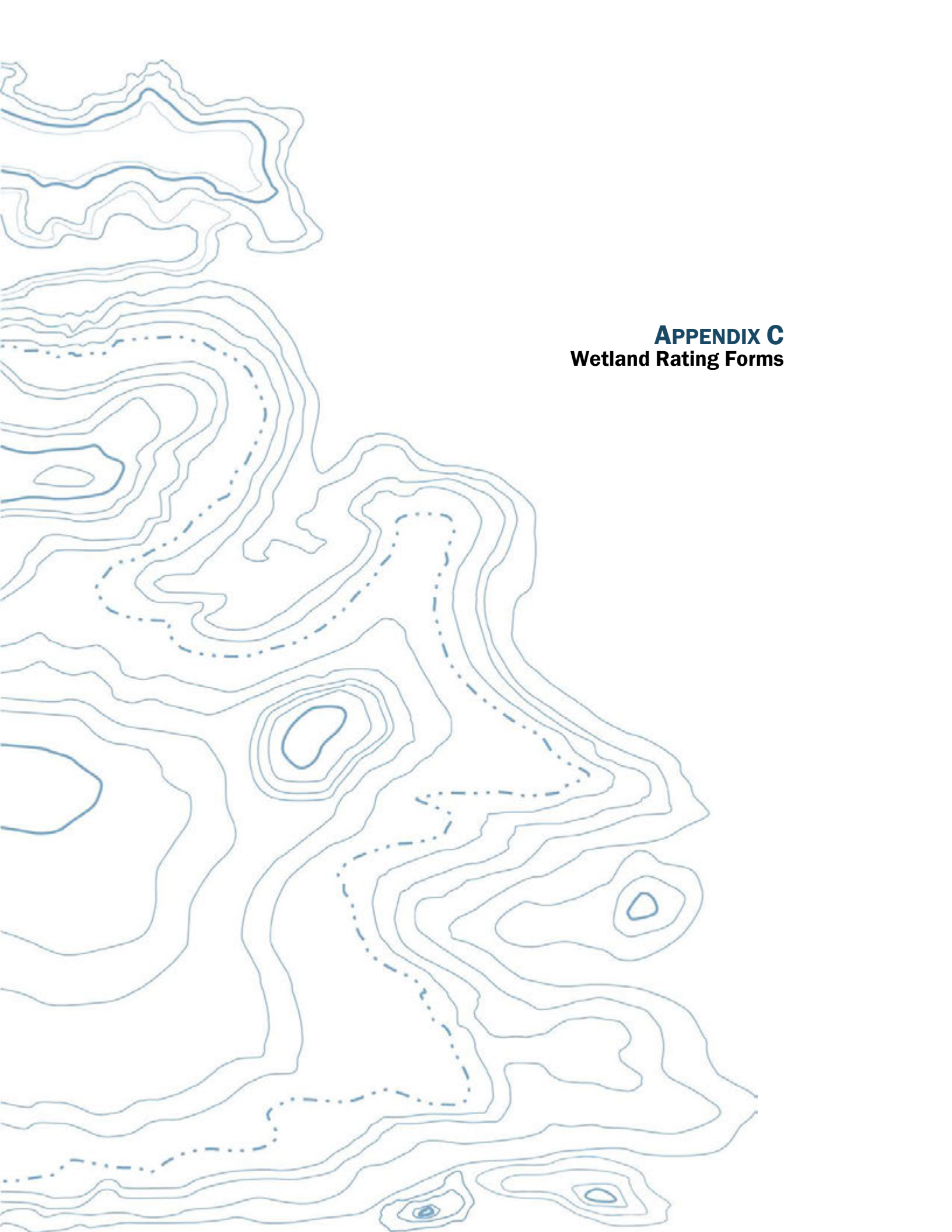
Field Observations:Surface Water Present? Yes ☒ No ☐ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): _____**Wetland Hydrology Present?** Yes ☐ No ☒

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

Remarks:

US Army Corps of Engineers

Arid West – Version 2.0



APPENDIX C

Wetland Rating Forms

Wetland name or number: _____

WETLAND RATING FORM –EASTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users –
Updated Oct. 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): A

Date of site visit: 12/19/13

Rated by: ALW, WSW

Trained by Ecology? ☐ Yes ☒ No

Date of training: _____

SEC: 5

TWNSHP: 23N

RNGE: 19E

Is S/T/R in Appendix D? ☐ Yes ☒ No

Map of wetland unit: **Figure 2**

Estimated size 10 Acres

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☒ I ☐ II ☐ 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

22

Score for Hydrologic Functions

24

Score for Habitat Functions

29

TOTAL score for Functions

75

Category based on SPECIAL CHARACTERISTICS of Wetland: ☐ I ☐ II ☐ III ☒ Does not Apply

Final Category (choose the “highest” category from above)

1

Summary of basic information about the wetland unit.

Wetland Type	
Vernal Pool	<input type="checkbox"/>
Alkali	<input type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>
Bog	<input type="checkbox"/>
Forest	<input type="checkbox"/>
None of the above	<input checked="" type="checkbox"/>

Wetland Class	
Depressional	<input type="checkbox"/>
Riverine	<input checked="" type="checkbox"/>
Lake-fringe	<input type="checkbox"/>
Slope	<input type="checkbox"/>
Check if unit has multiple HGM classes present	<input type="checkbox"/>

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 and that are Not Included in the Rating	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> 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 1 Natural Heritage Wetlands (see p. 19 of data form).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> 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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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: _____

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) where 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 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 types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than a foot deep).*

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

3. Is the 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 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 classes. 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.

<i>HGM Classes Within One Delineated Wetland Boundary</i>	<i>Class to Use for Rating</i>
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 Depressional and Flat Wetlands		Points (only 1 score per box)
WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.		
D 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland unit: <ul style="list-style-type: none"> Wetland has no surface water outlet..... points = 5 <input type="checkbox"/> Wetland has an intermittently flowing outlet..... points = 3 <input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet..... points = 3 <input type="checkbox"/> Wetland has a permanently flowing surface outlet..... points = 1 <input type="checkbox"/> 	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definition of soil types</i>). <input type="checkbox"/> YES points = 3 <input type="checkbox"/> NO points = 0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> Wetland has persistent, ungrazed vegetation for > = 2/3 of area..... points = 5 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation from 1/3 to 2/3 of area..... points = 3 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area..... points = 1 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation < 1/10 of area..... points = 0 <input type="checkbox"/> <p style="text-align: right;">Map of Cowardin vegetation classes</p>	Figure <input type="checkbox"/>
	D 1.4 Characteristics of seasonal ponding or inundation: <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i> <ul style="list-style-type: none"> Area seasonally ponded is > 1/2 total area of wetland points = 3 <input type="checkbox"/> Area seasonally ponded is 1/4 to 1/2 total area of wetland..... points = 1 <input type="checkbox"/> Area seasonally ponded is < 1/4 total area of wetland points = 0 <input type="checkbox"/> <p>NOTE: See text for indicators of seasonal and permanent inundation/flooding..... Map of Hydroperiods</p>	Figure <input type="checkbox"/>
Total for D 1		Add the points in the boxes above
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? <i>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.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	Multiplier
◆ TOTAL – Water Quality Functions Multiply the score from D1 by D2. Record score on p. 1 of field form		
HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.		
D 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.39)
	D 3.1 Characteristics of surface water flows out of the wetland unit: <ul style="list-style-type: none"> Wetland has no surface water outlet..... points = 8 <input type="checkbox"/> Wetland has an intermittently flowing outlet..... points = 4 <input type="checkbox"/> Wetland has a highly constricted permanently flowing outlet..... points = 4 <input type="checkbox"/> Wetland has a permanently flowing surface outlet..... points = 0 <input type="checkbox"/> 	
	D 3.2 Depth of storage during wet periods. <i>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.</i> <ul style="list-style-type: none"> Marks of ponding are at least 3 ft. above the surface points = 8 <input type="checkbox"/> The wetland is a “headwater” wetland (<i>see p. 39</i>) points = 6 <input type="checkbox"/> Marks are 2 ft. to < 3 ft. from surface points = 6 <input type="checkbox"/> Marks are 1 ft. to < 2 ft. from surface points = 4 <input type="checkbox"/> Marks are 6 in. to < 1 ft. from surface..... points = 2 <input type="checkbox"/> No marks above 6 in. or wetland has only saturated soils points = 0 <input type="checkbox"/> 	
Total for D 3		Add the points in the boxes above
D 4	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. <i>Note which of the following conditions apply.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	Multiplier
◆ TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then record score on p.1 of field form.		

Wetland name or number: _____

R Riverine Wetlands		Points (only 1 score per box)
WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.		
R 1	Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.45)
R 1.1	<p>Area of surface depressions within the riverine wetland that can trap sediments during a flooding event:</p> <ul style="list-style-type: none"> Depressions cover > 1/3 area of wetland points = 6 <input checked="" type="checkbox"/> Depressions cover > 1/10 area of wetland points = 3 <input type="checkbox"/> <p>If depressions > 1/10th of area of unit draw polygons on aerial photo or map.</p> <ul style="list-style-type: none"> Depressions present but cover < 1/10 area of wetland points = 1 <input type="checkbox"/> No depressions present points = 0 <input type="checkbox"/> 	<p>Figure <input type="checkbox"/></p> <p>6</p>
R 1.2	<p>Characteristics (cover) of the vegetation in the unit (<i>area of polygons with > 90% cover at person height. This is not Cowardin vegetation classes</i>):</p> <ul style="list-style-type: none"> Forest or shrub > 2/3 the area of the wetland points = 10 <input type="checkbox"/> Forest or shrub 1/3 – 2/3 area of the wetland points = 5 <input checked="" type="checkbox"/> Ungrazed, herbaceous plants > 2/3 area of wetland points = 5 <input type="checkbox"/> Ungrazed herbaceous plants 1/3 – 2/3 area of wetland points = 2 <input type="checkbox"/> Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland points = 0 <input type="checkbox"/> <p>Aerial photo or map showing polygons of different vegetation cover</p>	<p>Figure <input type="checkbox"/></p> <p>5</p>
Total for R1		Add the points in the boxes above
		11
R 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 46)
<p>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. <i>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.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Wetland intercepts groundwater within the Reclamation Area <input type="checkbox"/> Untreated stormwater flows into wetland <input checked="" type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland <input checked="" type="checkbox"/> Water flows into wetland from a stream or culvert that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential or urban areas are within 150 ft. of wetland <input type="checkbox"/> The river or stream that floods the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above water quality standards. <input type="checkbox"/> Other _____ <p><input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1</p>		<p>Multiplier</p> <p>2</p>
◆ TOTAL – Water Quality Functions		22
Multiply the score from R1 by the multiplier in R2; then record score on p.1 of field form.		
HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream degradation.		
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.47)
R 3.1	<p>Amount overbank storage the wetland provides: <i>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.</i></p> <ul style="list-style-type: none"> If the ratio is 2 or more points = 10 <input type="checkbox"/> If the ratio is between 1 and < 2 points = 8 <input checked="" type="checkbox"/> If the ratio is 1/2 to < 1 points = 4 <input type="checkbox"/> If the ratio is 1/4 to < 1/2 points = 2 <input type="checkbox"/> If the ratio is < 1/4 points = 1 <input type="checkbox"/> <p>Aerial photo or map showing average widths</p>	<p>Figure <input type="checkbox"/></p> <p>8</p>
R 3.2	<p>Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as “forest or shrub” (areas of polygons with > 90% cover at person height. This is not Cowardin vegetation classes)</i>:</p> <ul style="list-style-type: none"> Forest or shrub for more than 2/3 the area of the wetland points = 6 <input type="checkbox"/> Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area points = 4 <input checked="" type="checkbox"/> Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 2 <input type="checkbox"/> Vegetation does not meet above criteria points = 0 <input type="checkbox"/> <p>Aerial photo or map showing polygons of different vegetation types</p>	<p>Figure <input type="checkbox"/></p> <p>4</p>
Total for R3		Add the points in the boxes above
		12
R 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p.50)
<p>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. <i>Note which of the following conditions apply.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. <input checked="" type="checkbox"/> There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding <input type="checkbox"/> Other _____ <p><input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1</p>		<p>Multiplier</p> <p>2</p>
◆ TOTAL – Hydrologic Functions		24
Multiply the score from R3 by the multiplier in R4. Record score on p.1 of field form.		

Wetland name or number: _____

L Lake-fringe Wetlands		Points (only 1 score per box)
WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.		
L 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.52)
	<p>L 1.1 Average width of vegetation along the lakeshore:</p> <ul style="list-style-type: none"> • Vegetation is more than 33 ft. (10m) wide points = 6 <input type="checkbox"/> • Vegetation is more than 16 ft.(5m) wide and < 33 ft wide points = 3 <input type="checkbox"/> • Vegetation is 6 ft. (2m) wide to < 16 ft wide points = 1 <input type="checkbox"/> <p style="text-align: center;">Map of Cowardin classes with widths marked</p> <p>L 1.2 Characteristics of the vegetation in the wetland: <i>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.</i></p> <ul style="list-style-type: none"> • Herbaceous plants cover > 90% of the vegetated area points = 6 <input type="checkbox"/> • Herbaceous plants cover > 2/3 of the vegetated area points = 4 <input type="checkbox"/> • Herbaceous plants cover > 1/3 of the vegetated area points = 3 <input type="checkbox"/> • Other vegetation that is not aquatic bed in > 2/3 vegetated area points = 3 <input type="checkbox"/> • Other vegetation that is not aquatic bed in > 1/3 vegetated area points = 1 <input type="checkbox"/> • Aquatic bed cover > 2/3 of the vegetated area points = 0 <input type="checkbox"/> <p style="text-align: center;">Map with polygons of different vegetation types</p>	<p>Figure <input type="checkbox"/></p> <p>Figure <input type="checkbox"/></p>
Total for L1		Add the points in the boxes above
L 2	<p>Does the wetland have the <u>opportunity</u> to improve water quality?</p> <p>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. <i>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.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Wetland is along the shores of a lake or reservoir that does not meet water quality standards <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater flows into the wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland <input type="checkbox"/> Residential or urban areas are within 150 ft. of wetland <input type="checkbox"/> Powerboats with gasoline or diesel engines use the lake <input type="checkbox"/> Parks with grassy areas that are maintained, ballfields, golf courses (all within 150 ft. of shore of lake) <input type="checkbox"/> Other _____ <p><input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1</p>	(see p.53)
◆	TOTAL – Water Quality Functions	Multiply the score from L1 by the multiplier in L2. Record score on p.1 of field form.
HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce shoreline erosion.		
L 3	Does the wetland have the <u>potential</u> to reduce shoreline erosion?	(see p.54)
	<p>L 3.1 Average width and characteristics of vegetation along the lakeshore (<i>do not include aquatic bed</i>): (choose the highest scoring description that matches conditions in the wetland)</p> <ul style="list-style-type: none"> • > 3/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide points = 6 <input type="checkbox"/> • > 3/4 of vegetation is shrubs or trees at least 6 ft. (2m) wide. points = 4 <input type="checkbox"/> • > 1/4 of vegetation is shrubs or trees at least 33 ft. (10m) wide. points = 4 <input type="checkbox"/> • Vegetation is at least 6 ft. (2m) wide..... points = 2 <input type="checkbox"/> • Vegetation is less than 6 ft. (2m) wide. points = 0 <input type="checkbox"/> <p style="text-align: center;">Aerial photo or map with Cowardin vegetation classes</p>	Figure <input type="checkbox"/>
L 4	<p>Does the wetland have the <u>opportunity</u> to reduce erosion?</p> <p>Are there features along the shore that will be impacted if the shoreline erodes? <i>Note which of the following conditions apply.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> There are human structures and activities along the shore behind the wetland (buildings, fields) that can be damaged by erosion. <input type="checkbox"/> There are undisturbed natural resources along the shore (e.g. mature forests, other classes of wetland) behind the wetland that can be damaged by shoreline erosion. <input type="checkbox"/> Other _____ <p><input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1</p>	(see p. 55)
◆	TOTAL – Hydrologic Functions	Multiply the score from L3 by the multiplier L4. Record score on p.1 of field form.

Comments:

Wetland name or number: _____

S Slope Wetlands		Points (only 1 score per box)
WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.		
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.56)
S 1.1	Characteristics of average slope of wetland: • Slope is 1% or less (<i>a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance</i>) 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 1.2	The soil 2 inches below the surface is clay or organic, or smells anoxic (<i>use NRCS definitions of soil types</i>). YES = 3 points NO = 0 points	
S 1.3	Characteristics of the vegetation in the wetland that trap sediments and pollutants: <i>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.</i> • Dense, ungrazed, herbaceous vegetation > 90% of the wetland unit points = 6 • Dense, ungrazed, herbaceous vegetation > 1/2 of unit points = 3 • Dense, woody, vegetation > 1/2 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 <input type="checkbox"/>
Total for S 1		Add the points in the boxes above
S 2	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? <i>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.</i> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Wetland is a groundwater seep within the Reclamation Area <input type="checkbox"/> Untreated stormwater flows through the wetland <input type="checkbox"/> Tilled fields, logging, or orchards within 150 ft. of wetland <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. upslope of wetland <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	(see p. 58) Multiplier
◆	TOTAL – Water Quality Functions Multiply the score from S1 by the multiplier in S2. Record score on p.1 of field form.	_____
HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.		
S 3	Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	(see p.59)
S 3.1	Characteristics of vegetation that reduce the velocity of surface flows during storms: <i>Choose the points appropriate for the description that best fits conditions in the wetland. See questions S 1.3 for definition of dense and uncut. Rigid means that the stems of plants should be thick enough (usually > 1/8 in), or dense enough to remain erect during surface flows.</i> • Dense, uncut, rigid vegetation covers > 90% of the area of the unit points = 6 <input type="checkbox"/> • Dense, uncut, rigid vegetation > 1/2 – 90% area of unit points = 3 <input type="checkbox"/> • Dense, uncut, rigid vegetation > 1/4 – 1/2 of unit points = 1 <input type="checkbox"/> • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 <input type="checkbox"/>	
S 3.2	Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. <input type="checkbox"/> YES = 2 points <input type="checkbox"/> NO = 0 points	
Total for S3		Add the points in the boxes above
S 4	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 fro flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i> <input type="checkbox"/> Wetland has surface runoff that can cause flooding problems downgradient <input type="checkbox"/> Other _____ <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	Multiplier
◆	TOTAL – Hydrologic Functions Multiply the score from S3 by S4. Record score on p.1 of field form.	_____

Comments: _____

Wetland name or number: _____

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)									
HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.											
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species? (see P. 62)										
	<p>H 1.1 <u>Categories of Vegetation structure:</u> Check the vegetarian classes (as defined by Cowardin) and heights of emergents present. Size threshold for each class or height category is 1/4 acre or more than 10% of the area if unit is < 2.5 acres.</p> <p> <input type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants 0-12 inches (0-30cm) high are the highest layer and have > 30% cover <input type="checkbox"/> Emergent plants >12 – 40 inches (30 – 100cm) high are the highest layer with > 30% cover <input checked="" type="checkbox"/> Emergent plants > 40 inches (>100cm) high are the highest layer with > 30% cover <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) </p> <p>Add the number of vegetation types that qualify. If you have: 4 – 6 types points = 3 <input type="checkbox"/> 3 types points = 2 <input checked="" type="checkbox"/> </p> <p>2 types points = 1 <input type="checkbox"/> 1 type points = 0 <input type="checkbox"/> </p> <p>Map of Cowardin vegetation classes and areas with different heights of emergents</p>	<p>Figure <input type="checkbox"/></p> <p>2</p>									
	<p>H 1.2 Is one of the vegetation types “aquatic bed?” (see p.64)</p> <p><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p>	0									
	<p>H 1.3 <u>Surface Water</u> (see p. 65)</p> <p>H1.3.1 Does the unit have areas of “open” water (without emergent or shrub plants) over at least 1/4 acre or 10% of its area during the spring (March – early June) OR in early fall (August – end of September)? <i>Note: answer YES for Lake-fringe wetlands.</i></p> <p><input checked="" type="checkbox"/> YES = 3 points & go to H 1.4 <input type="checkbox"/> NO = go to H 1.3.2</p> <p>H 1.3.2 Does the unit have an intermittent or permanent stream within its boundaries, or along one side, over at least 1/4 acre or 10% of its area, AND that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?</p> <p><input type="checkbox"/> YES = 3 points <input type="checkbox"/> NO = 0 points</p> <p>Map showing areas of open water</p>	<p>Figure <input type="checkbox"/></p> <p>3</p>									
	<p>H 1.4 <u>Richness of Plant Species</u> (see p. 66)</p> <p>Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold)</p> <p><i>You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)</i></p> <p>If you counted:</p> <table border="0"> <tr> <td>> 9 species</td> <td>points = 2</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>4 – 9 species</td> <td>points = 1</td> <td><input type="checkbox"/></td> </tr> <tr> <td>< 4 species</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p># of species _____</p> <p>List species below if you wish: _____</p>	> 9 species	points = 2	<input checked="" type="checkbox"/>	4 – 9 species	points = 1	<input type="checkbox"/>	< 4 species	points = 0	<input type="checkbox"/>	2
> 9 species	points = 2	<input checked="" type="checkbox"/>									
4 – 9 species	points = 1	<input type="checkbox"/>									
< 4 species	points = 0	<input type="checkbox"/>									
	<p>H 1.5 <u>Interspersion of Habitats</u> (see p. 67)</p> <p>Decided from the diagrams below whether interspersion between types of vegetation (described in H1.1), or categories and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="text-align: center;"> <p>None = 0 points Low = 1 point Moderate = 2 points</p> <p>High = 3 points</p> <p>[riparian braided channels]</p> </div> <p>Note: If you have 4 or more vegetation categories or 3 vegetation categories and open water, the rating is always “high”. Use maps from H 1.1 and H 1.3</p>	<p>Figure <input type="checkbox"/></p> <p>3</p>									

Comments: _____

Wetland name or number: _____

	<p>H 1.6 <u>Special Habitat Features</u> (see p. 68) <i>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.</i></p> <p><input checked="" type="checkbox"/> Loose rocks larger than 4" or large, downed, woody debris (> 4 in. diameter) within the area of surface ponding or in stream</p> <p><input checked="" type="checkbox"/> Cattails or bulrushes are present within the unit</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30m (100 ft) of the edge</p> <p><input checked="" type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <i>The presence of "yellow flag" Iris is a good indicator of vegetation in areas permanently ponded.</i></p> <p><input checked="" type="checkbox"/> 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</p> <p><input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p> <p style="text-align: right;">Maximum score possible = 6</p>	4
<p>H 1 TOTAL Score – potential to provide habitat <i>Add the scores in the column above</i></p>		14
H 2	<p>Does the wetland have the <u>opportunity</u> to provide habitat for many species?</p>	<p>(only 1 score per box)</p>
	<p>H 2.1 <u>Buffers</u> (see P. 71): <i>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.</i></p> <p><input type="checkbox"/> 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference..... points = 5</p> <p><input type="checkbox"/> 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... points = 4</p> <p><input type="checkbox"/> 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference..... points = 4</p> <p><input type="checkbox"/> 330 ft (100m) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... points = 3</p> <p><input type="checkbox"/> 170 ft (50m) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference..... points = 3</p> <p>If buffer does not meet any of the three criteria above:</p> <p><input checked="" type="checkbox"/> No paved areas (except paved trails) or buildings within 80 ft (25m) of wetland > 95% circumference. Light to moderate grazing or lawns are OK..... points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 170 ft (50m) of wetland for > 50% circumference. Light to moderate grazing or lawns are OK..... points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer..... points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 6.6 ft wide (2m) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland)..... points = 0</p> <p><input type="checkbox"/> Buffer does not meet any of the criteria above..... points = 1</p>	<p>Figure <input type="checkbox"/></p> <p style="font-size: 2em;">2</p>
	<p>H 2.2 <u>Wet Corridors</u> (see p. 72)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor at least 1/4 mile long with surface water or water 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).</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> YES = 4 points (go to H 2.3) <input type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the unit part of a relatively undisturbed and unbroken, > 30 ft. wide, vegetated corridor, at least 1/4 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?</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland within 1/2 mile of any permanent stream, seasonal stream, or lake (<i>do not include man-made ditches</i>)?</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 1 point <input type="checkbox"/> NO = 0 points</p>	4

Comments: _____

Wetland name or number: _____

	<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW (<i>see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm</i>). Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections to the habitats can be disturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (may include urban or urban growth areas) (<i>full descriptions in WDFW PHS report p. 152</i>).</p> <p><input type="checkbox"/> Eastside Steppe: Non-forested vegetation type dominated by broadleaf herbaceous flora(i.e., forbs), perennial bunchgrasses, or a combination of both (<i>full description of species found here in WDFW PHS report p. 153</i>).</p> <p><input type="checkbox"/> Old-growth/Mature forests (east of Cascade crest): (<i>full descriptions in WDFW PHS report p. 157</i>). Old-growth: Stands are > 150 yrs in age; may be variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. Mature: Stands 80 – 160 yrs old. Decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p><input type="checkbox"/> Juniper Savannah: All juniper woodlands (<i>SE part of state only; check map</i>)</p> <p><input type="checkbox"/> Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).</p> <p><input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Inland Dunes This placeholder is for a new priority habitat that will capture areas known as Inland Dunes. A definition will be developed later in Fall 2008. (<i>check WDFW web site</i>)</p> <p><input checked="" type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 30 cm (12 in) in eastern Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 2 or more Priority Habitats = 4 points If wetland has 1 Priority Habitat = 2 points No Priority habitats = 0 points</p> <p><i>Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in H 2.4)</i></p>	4
	<p>H 2.4 <u>Landscape:</u> Choose the one description of the landscape around the wetland that best fits. (<i>see p. 76</i>)</p> <ul style="list-style-type: none"> • 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. (<i>Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs.</i>)..... points = 5 <input checked="" type="checkbox"/> • There are at least 3 other wetlands within 1/2 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 2 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 1 <input type="checkbox"/> • Does not meet any of the four criteria above points = 0 <input type="checkbox"/> 	5
	<p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores in the columns above</i></p>	15
H 3	<p>Does the wetland unit have indicators that its ability to provide habitat is reduced?</p>	
	<p>H 3.1 <u>Indicator of reduced habitat functions</u> (<i>see p. 75</i>) 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: <i>This question does not apply to reservoirs with water levels controlled by dams, such as the reservoirs on the Columbia and Snake Rivers.</i></p> <p style="text-align: center;"><input type="checkbox"/> YES = 5 points <input checked="" type="checkbox"/> NO = 0 points</p>	<i>Points will be subtracted</i> 0
◆	<p>Total Score for Habitat Functions <i>Add the points for H 1, H 2 and H 3; and record the result on p. 1</i></p>	29

Comments: _____

Wetland name or number: _____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland 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.		
SC1	Vernal pools (see p.79) Is the wetland unit less than 4,000 ft² , and does it meet at least two of the following criteria? <input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. <input type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>NOTE: If you find perennial, “obligate”, wetland plants the wetland is probably NOT a vernal pool.</i> <input type="checkbox"/> The soil in the wetland are shallow (<1 ft. deep (30cm) and is underlain by an impermeable layer such as basalt or clay. <input type="checkbox"/> Surface water is present for less than 120 days during the “wet” season. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO = not a vernal pool	
	SC 1.1 Is the vernal pool relatively undisturbed in February and March? <input type="checkbox"/> YES = Go to SC 1.2 <input type="checkbox"/> 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.)? <input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = Category III	<input type="checkbox"/> Cat. II <input type="checkbox"/> Cat. III
SC2	Alkali wetlands (see p.81) Does the wetland unit meet one of the following two criteria? <input type="checkbox"/> The wetland has a conductivity > 3.0 mS/cm. <input type="checkbox"/> 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). <input type="checkbox"/> 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 meet two of the following three sub-criteria? <input type="checkbox"/> Salt encrustations around more than 80% of the edge of the wetland. <input type="checkbox"/> More than 3/4 of the plant cover consists of species listed on Table 2. <input type="checkbox"/> 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. <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO – not an alkali wetland	Cat. I <input type="checkbox"/>
SC3	Natural Heritage Wetlands (see p. 82) 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 <input type="checkbox"/> or accessed from WNHP/DNR web site <input checked="" type="checkbox"/> YES <input type="checkbox"/> Contact WNHP/DNR (see p. 79) and go to SC 3.2 NO <input checked="" type="checkbox"/> SC 3.2 Has DNR identified the wetland unit as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO – not a natural heritage wetland	Cat. I <input type="checkbox"/>

Wetland name or number: _____

SC4	<p>Bogs (see p. 82)</p> <p>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. <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1 Does the wetland 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.) <input type="checkbox"/> YES = go to SC 4.3 <input checked="" type="checkbox"/> NO = go to SC 4.2</p> <p>SC 4.2 Does the wetland 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? <input type="checkbox"/> YES = go to 4.3 <input checked="" type="checkbox"/> NO = Is not a bog for rating</p> <p>SC 4.3 Does the wetland 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)? <input type="checkbox"/> YES = Category I bog <input type="checkbox"/> NO = go to question 4.4</p> <p>NOTE: <i>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.</i></p> <p>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)? <input type="checkbox"/> YES = Category 1 bog <input type="checkbox"/> NO</p>	Cat. I <input type="checkbox"/>
SC5	<p>Forested Wetlands (see p. 85)</p> <p>Does the wetland unit have an area of forest (<i>you should have identified a forested class, if present, in question H 1.1</i>) rooted within its boundary that meet at least one of the following three criteria? <input type="checkbox"/> The wetland is within the “100 year” floodplain of a river or stream. <input type="checkbox"/> Aspen (<i>Populus tremuloides</i>) are a dominant or co-dominant of the “woody” vegetation. (<i>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.</i>) <input type="checkbox"/> There is at least 1/4 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). <input type="checkbox"/> YES = go to SC 5.1 <input checked="" type="checkbox"/> NO – not a forested wetland with special characteristics</p>	
	<p>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 (<i>Thuja plicata</i>), Alaska yellow cedar (<i>Chamaecyparis nootkatensis</i>), pine spp. mostly “white” pine (<i>Pinus monticola</i>), western hemlock (<i>Tsuga heterophylla</i>), Englemann spruce (<i>Picea engelmannii</i>)? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 5.2</p>	Cat. I <input type="checkbox"/>
	<p>SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) as a dominant or co-dominant species? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 5.3</p>	Cat. I <input type="checkbox"/>
	<p>SC 5.3 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are fast growing species? Fast growing species are: Alders – red (<i>alnus rubra</i>), thin-leaf (<i>A. tenuifolia</i>); Cottonwoods – narrow-leaf (<i>Populus angustifolia</i>), black (<i>P. balsamifera</i>); Willows – peach-leaf (<i>Salix amygdaloides</i>), Sitka (<i>S. sitchensis</i>), Pacific (<i>S. lasiandra</i>), Aspen – <i>Populus tremuloides</i>, Water Birch (<i>Betula occidentalis</i>) <input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 5.5</p>	Cat. II <input type="checkbox"/>
	<p>SC 5.5 Is the forested component of the wetland within the “100 year floodplain” of a river or stream? <input type="checkbox"/> YES = Category II</p>	Cat. II <input type="checkbox"/>
◆	<p>Category of wetland based on Special Characteristics</p> <p><i>Choose the “highest” rating if wetland falls into several categories.</i> <i>If you answered NO for all types enter “Not Applicable” on p. 1</i></p>	

A background image of a topographic map with blue contour lines. The map shows various peaks and valleys, with some areas highlighted by dashed and dotted blue lines. The text is positioned in the upper right quadrant of the page.

APPENDIX D

Alliance Consulting 2008 Delineation Report

Wetland Delineation and Classification

Cashmere Mill Site



Chuck Jones

Alliance Consulting Group, Inc

Wetland Delineation and Classification

Contents

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Introduction

The wetland delineation, classification and rating was completed to provide information on the potential development of the property, Chelan County parcel #231905110150- T 23 R 19 Section 05, for the Chelan County Port District. This property is located with the Cashmere Urban Growth Area, just south of the Wenatchee River about a tenth of a mile.

On May 29th, 2008, Alliance Consulting Group, Inc. conducted a wetland delineation and classification, which was then surveyed by Northwest GeoDimensions, Inc. in June 2008. The delineation and classification was developed using the standards in the Washington Department of Ecology "Washington State Wetlands Identification and Delineation Manual", publication #96-94. The rating, or typing, was done using the Washington State Wetlands Rating System for Eastern Washington (DOE #04-06-15).

While this report provides the methods and data for the wetlands that occur on the property, this report does not discuss protection or mitigation measures for a proposed development. At the time of this report, no specific proposal had been developed. In addition, no determination was made as to the regulatory documents that would be used for protection or mitigation measures.

Methodology

To mark the boundary between wetlands and uplands, wooden posts with orange surveyor's flagging were numerically labeled. Data were collected at each point (24), except soils information was collected at 5 points. The location of the points was mapped using standard land-surveying methods, by Northwest GeoDimensions. The points were selected at no more than 100 foot intervals. Table 1 below lists the points and distances. Figure one is the final surveyed points and wetland boundary.

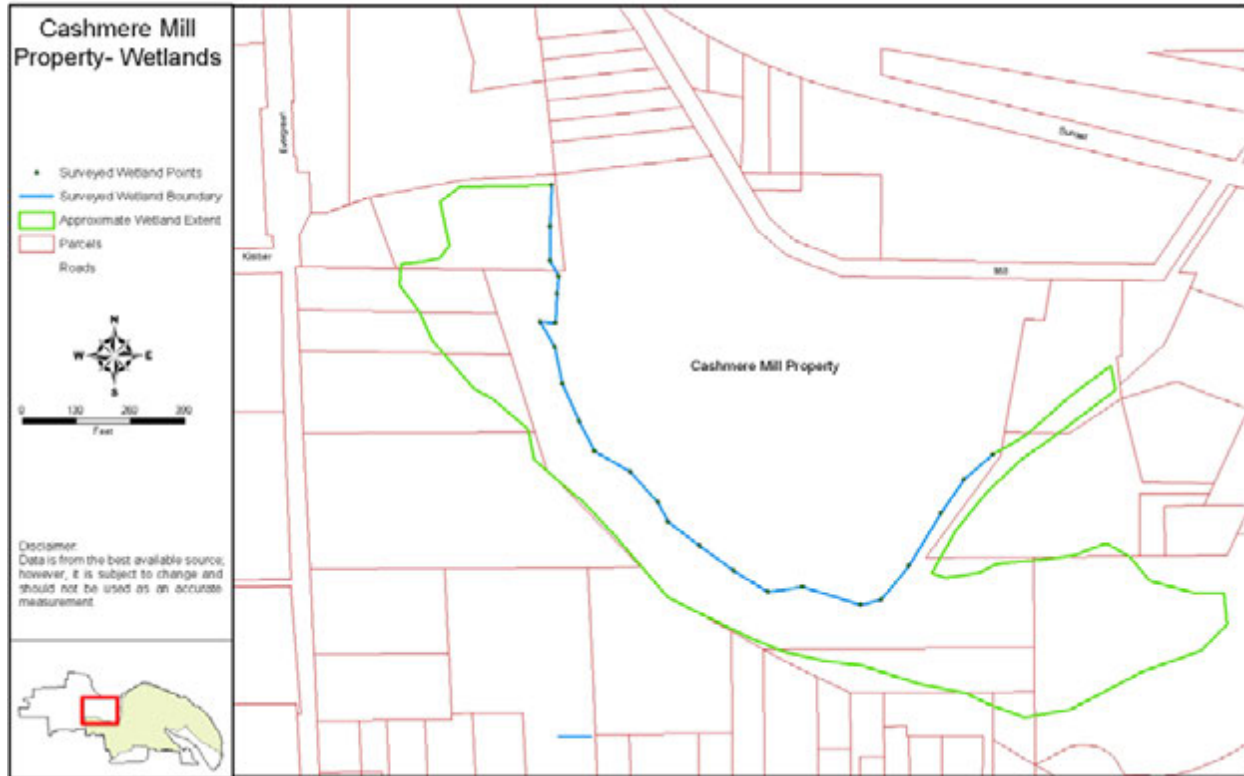
Guidance from the 1997 Washington State Department of Ecology's (Ecology's) Washington State Wetlands Identification and Delineation Manual (Ecology 1997) was used to perform the wetland delineation. The methods in these manuals recognize that the three parameters of hydrology, hydric soils, and hydrophytic vegetation that are generally found in wetlands and that these parameters are important in the establishment and maintenance of wetland communities. The methods evaluate each of the three parameters to determine if a wetland is present and to establish wetland boundaries.

The presence of dominant hydrophytic vegetation and indicators of wetland hydrology were used to delineate the boundary between wetland and upland areas. Wetland boundaries were then confirmed by checking the soil color and organic content to verify presence of hydric soils. Wetlands were classified using the U.S. Fish and Wildlife Service's (USFWS) Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and were categorized using Ecology's Washington State Wetlands Rating System for Eastern Washington (Hruby 2004). The wetland delineation survey forms and wetland rating form are included as appendices A and B.

Table I. Survey points.

Position/post #	Distance Ft	Notes
1	0	Start at NW corner. Area along the north (east-west line) is not wetland or riparian area, but planted cottonwoods. No other indicators
2	100	
3	84	
4	43	turn to east
5	45	
6	71	
7	37	Sharp turn to west
8	72	Sharp turn south, south east
9	100	
10	100	
11	100	
12	80	Approximate start of large berm on N side of stream/wetland
13	100	
14	100	
15	50	
16	100	
17	100	
18	85	
19	145	Wider ponded area
20	52	large bend to NE, large elm
21	107	
22	150	
23	100	Narrows
24	100	NE Property boundary

Figure 1. Cashmere Mill Site Wetland Delineation



Hydrophytic Vegetation

USFWS has established a rating system that has been applied to commonly occurring plant species on the basis of their frequency of occurrence in wetlands. Species indicator status expresses the range in which plants may occur in wetlands and non-wetlands (uplands). Under this system, vegetation is considered hydrophytic when there is an indicator status of facultative (FAC), facultative wetland (FACW) or obligate wetland (O8L). Modifiers are used with the Facultative indicator categories to more specifically define the frequency of occurrence. A positive (+) sign indicates plants are more frequently found in wetlands than the category indicates, whereas a negative (-) sign indicates that plants are less frequently found in wetlands than the indicator signifies.

The hydrophytic vegetation criterion for a wetland determination is met when more than 50 percent of the dominant species in the plant community are FAC or wetter (Table 2). The USFWS's National List of Plant Species that Occur in Wetlands (Reed 1988), as well as the supplement to that list (Reed et al. 1993), were used to determine vegetation indicator status.

Table 2. USFWS Plant Indicator Species Definitions

Plant Indicator Status Category	Indicator Status Abbreviation	Definition (Estimated Probability of Occurrence)
Obligate Upland	UPL	Occur rarely «1 percent) in wetlands, and almost always (>99 percent) in uplands
Facultative Upland	FACU	Occur sometimes (1 percent to <33 percent) in wetlands, but occur more often (>67 percent to 99 percent) in uplands
Facultative	FACW	Similar likelihood (33 percent to 67 percent) of occurring in both wetlands and uplands
Facultative Wetland	FACW	Occur usually in wetlands (>67 percent to 99 percent), but also occur in uplands (1 percent to 33 percent)
Obligate Wetland	OBL	Occur almost always (>99 percent) in wetlands, but rarely occur in uplands «1 percent)
Not Listed	NL	Not listed due to insufficient information to determine status

Wetland Hydrology

Evidence of permanent or periodic inundation (water marks, drift lines, drainage patterns), or soil saturation to the surface for 12 consecutive days or more during the growing season (soil temperatures above 41°F at 19.7 inches below the surface) meets the hydrology criterion. Oxidized root channels in the top 12 inches, water-stained leaves, and local soil survey data are secondary indicators of wetland hydrology.

Hydric Soils

Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper soil horizons are considered hydric soils. Field indicators of hydric soils include histosols, the presence of a histic epipedon, a sulfidic odor, low soil chroma (Munsell matrix chroma of 2 with mottles or less than 2 without mottles [Munsell 2000]), or gleying (in sandy soils).

Results

The Cashmere Mill Property surveyed is approximately 24.5 acres in size that was historically a wood processing facility, including a log yard. The site was more recently converted to a recreational type site with camping areas, gardens etc. The recreational use was abandoned a few years ago and is currently vacant. The site has numerous areas with planted cottonwoods that were established using an irrigation system when it was used as a recreational area. The site is generally flat with a large berm (approximately 10-15 feet high above the wetlands) along the south and eastern sides along Brender Creek and the wetlands that were surveyed.

The wetlands are part of a complex series of beaver dams and lowlands that make up this portion of Brender Creek. While there are some plan community and minor geo-morphological differences within the wetland area, the entire area was considered one large wetland for purposes of the ratings forms. The wetland delineation was done within the property boundary and the surveyed length is 1984.6 feet. The acreage of the wetland directly on or adjacent to the property is approximately 13 acres in size.

Figure 2. Aerial photo (2006) with wetland delineation.



Vegetation

The vegetation consists of a wide variety of native and non-native plants. Table 3 is a list of the species found in the wetland. For specific survey points see the wetland delineation points in the appendices.

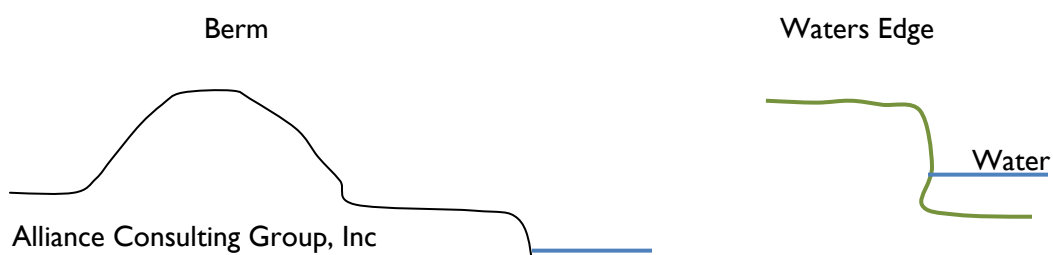
Vegetation present was dominated by species typically found in wetlands. The vegetation in the first section consists mostly of grasses, and other herbaceous plants. Hydrophytic plant species were among those dominating the site, and included obligate wetland species (OBL), such as cattails, and facultative wetland species (FACW), primarily canary reed grass. Some upland species were present in limited areas, including snowberry and serviceberry.

Table 3. Plant Species List

Common Name	Scientific Name	Hydrologic Indicator
Black cottonwood	<i>Populus angustifolia</i>	FACW
Cattails	<i>Typha latifolia</i>	OBL
Coyote Willow (native)	<i>Salix exigua</i>	FACW
Horsetail	<i>Equisetum variegatum</i>	FACW
Nutka Rose	<i>Rosa nutkana</i>	NL
Red Osier Dogwood	<i>Cornus stolonifera</i>	FACW
Reed Canary Gr	<i>Phalaris arundinacea</i>	FACW
Sedge	<i>Carex spp.</i>	OBL
Serviceberry	<i>Amelanchier alnifolia</i>	UPL
Snowberry	<i>Symphoricarpos albus</i>	UPL
Sumac	<i>Rhus trilobata</i>	NL
Water Birch	<i>Betula occidentalis</i>	OBL
Willow (native)	<i>Salix spp.</i>	FAC+
Yellow Flag Iris	<i>Iris pseudacorus</i>	OBL
Dandelion	<i>Taraxacum officinale</i>	FACU
Elm	<i>Ulmus parvifolia</i>	NL
Kentucky Blue Grass	<i>Poa pratensis</i>	FACU+
Walnut	<i>Juglans spp.</i>	NL
Weeping Willow	<i>Salix babylonica</i>	FACW

Wetland Hydrology

Hydrology within the wetland was characterized by as a riverine hydrologic system. The site is generally level. The south and east sections have a fairly high berm that is moderately steep, although the wetland-stream course is very gently sloped. The upland side of the berm is just slightly higher than the wetland. Positive indicators for wetland hydrology occur within the wetlands, including inundation and saturated soils within 12 inches of the surface in some areas. The water's edge throughout the area has a steep/vertical shape varying from 8 inches in the northwest area to more than 3 feet in the south and eastern portions. A drawing below gives a fairly representative depiction of the water's edge/bank.



Hydric Soils

Indicators of hydric soils observed on the property include low-chroma soil matrix colors (10YR2/1 - 3/1) and sandy gravelly loam soil textures. The soil survey identified Alluvial Land within the wetland is hydric “in wet spots”. The soil properties observed in the field test pits confirmed the mapped soil type.

Functions and Values Assessment

Wetlands provide a number of values and functions, such as fish and wildlife habitats, natural water quality improvement, flood storage, shoreline erosion protection and opportunities for recreation and aesthetic appreciation. Protecting wetlands can, in turn, protect human health and safety by reducing flood damage and preserving water quality.

Although every wetland serves some functions, the type and the degree to which a particular functions are served varies from wetland to wetland. Rating the relative functions of a certain wetland in comparison to other wetlands in the region was developed by the Department of Ecology in the Washington State Wetland Rating System for Eastern Washington (Hruby 2004). This rating system categorizes wetlands using a function based approach for water quality, hydrologic and habitat. Possible ratings range from Category I (highest-quality) to Category IV (lowest-quality). Wetlands are categorized based on their potential and opportunity to perform these functions. Functions include filtering runoff, reducing flooding and erosion, and providing diverse and undisturbed habitat for a variety of fish and wildlife species.

Based on results of the rating form from the Ecology methods, the wetland was rated as a Category I. Copies of the categorization datasheets are provided in Appendix C.

References

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- Hruby, T. 2004. Washington State wetland rating system for Eastern Washington Revised.
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- Munsell Color. 2000. Munsell soil color charts. New Windsor, New York.
- Reed, P.B., Jr. 1988. National list of plant species that occur in wetlands: Northwest (Region 9). U.S. Fish Wildlife Service Biological Report #88(26.9).
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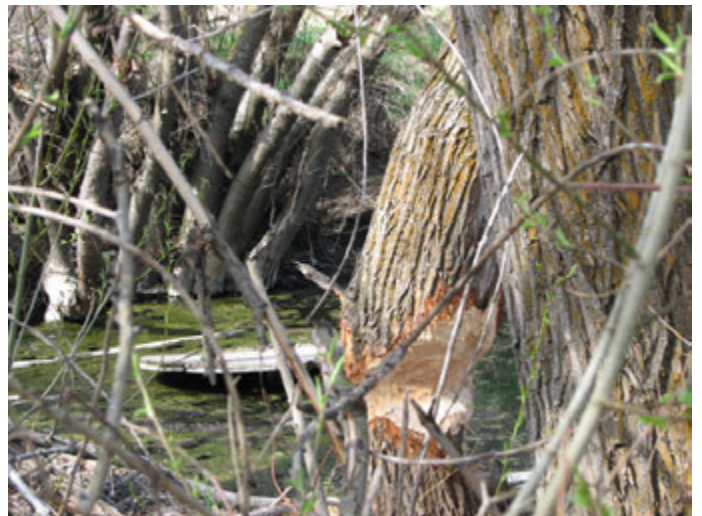
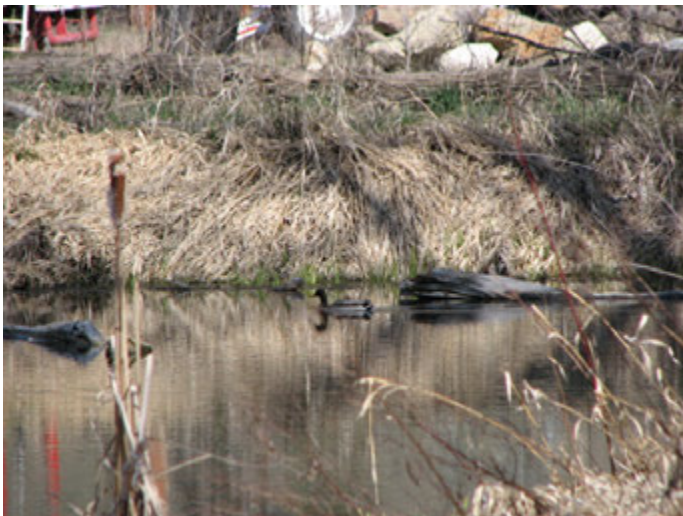
Appendix A Photos

Photos were taken in early April on an initial site visit.



Note below in the left background, the beginning of the berm on the south end.







Appendix B Wetland Delineation Survey Forms

Appendix C Wetland Rating Forms

**DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation
Manual or 1987 Corps Wetland Delineation Manual)**

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	1

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Spp cover	Stratum	% cover	Indicator	Dominant Plant Spp cover	Stratum	% cover	Indicator
Black cottonwood	T	10	FacVW				
Sedge	H	5	Obl				
Y Flag Iris	H	1	Obl				
Reed Canary Gr	H	84	FacVW				
Cattails	H	In water 50' from plot	Obl				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in
areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations
Wetland plant database
Pers knowledge of reg plant comm
Other (explain)

X
X

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Wetland hydrology present? yes no

Rationale for decision/Remarks:

Water Marks: yes

☒

no

on

Drift Lines: yes

☐

no

Sediment Deposits: yes

☒

no

Drainage Patterns: yes

☒

no

Oxidized Root (live)

☐

Channels <12 in. yes

☐

no

Local Soil Survey: yes

☐

no

FAC Neutral: yes

☐

no

Other (explain):

Aerial photographs:

Other:

**DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation
Manual or 1987 Corps Wetland Delineation Manual)**

Project Site: Cashmere Mill Site Date: 5/29/2008
 Applicant/owner: Chelan County Port District County: Chelan
 State: WA
 Invesitgator(s): Chuck Jones, Alliance Consulting Group Inc T/R/S: 29-19-05

Do Normal Circumstances exist on the site? Yes ☒ No ☐ Comm ID
 Is the site significantly disturbed (atypical situation)? Yes ☒ No ☐ Transect ID
 Is the area a potential Problem Area? Yes ☒ No ☐ Plot ID 2

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Black cottonwood	T	10	FacW				
Sedge	H	5	Obl				
Y Flag Iris	H	1	Obl				
Reed Canary Gr	H	79	FacW				
Cattails	H	5	Obl				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC 100

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Wetland hydrology present? yes no

Rationale for decision/Remarks:

Y

Date, plant growth

>24 in

>24 in

Stream

Y

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

Aerial photographs:

☒ X

☐

☒ X

☒ X

☐

☐

☐

☐

☐

Y

no

no

no

no

no

no

no

Other:

on OHWM

**DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation
Manual or 1987 Corps Wetland Delineation Manual)**

Project Site: Cashmere Mill Site Date: 5/29/2008
 Applicant/owner: Chelan County Port District County: Chelan
 State: WA
 Invesitgator(s): Chuck Jones, Alliance Consulting Group Inc T/R/S: 29-19-05

Do Normal Circumstances exist on the site? Yes ☒ No ☐ Comm ID
 Is the site significantly disturbed (atypical situation)? Yes ☒ No ☐ Transect ID
 Is the area a potential Problem Area? Yes ☒ No ☐ Plot ID 3

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Black cottonwood	T	10	FacW	Elm	T	2	No
Sedge	H	5	Obl	Willow (non-n)	T	5	Fac+
Y Flag Iris	H	1	Obl				
Reed Canary Gr	H	64	FacW				
Cattails	H	5	Obl				
Red Os Dogwood	S	5	FacW				
Willow (native)	S	3	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC 98

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Wetland hydrology present? yes no

Rationale for decision/Remarks:

Y

Date, plant growth

>24 in

>24 in

Stream

Y

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

Aerial photographs:

☒ X

☐

☒ X

☒ X

☐

☐

☐

☐

☐

Y

no

no

no

no

no

no

no

no

on OHWM

**DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation
Manual or 1987 Corps Wetland Delineation Manual)**

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	4

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Black cottonwood	T	5	FacW	Elm	T	1	No
Sedge	H	5	Obl	Willow (non-n)	T	5	Fac+
Y Flag Iris	H	1	Obl				
Reed Canary Gr	H	57	FacW				
Cattails	H	10	Obl				
Red Os Dogwood	S	15	FacW				
Willow (native)	S	3	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Physiological/reproductive adaptations	<input type="text"/>
Wetland plant database	<input checked="" type="checkbox"/>
Pers knowledge of reg plant comm	<input checked="" type="checkbox"/>
Other (explain)	<input style="width: 100px;" type="text"/>

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? yes no	<input style="width: 50px;" type="text" value="Y"/>	Water Marks: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	on <input style="width: 50px;" type="text" value="OHWM"/>
Based on: soil temp	<input style="width: 50px;" type="text"/>	Drift Lines: yes	<input type="checkbox"/>	no <input type="checkbox"/>	
<input style="width: 50px;" type="text"/> other (explain)	<input style="width: 100px;" type="text" value="Date, plant growth"/>	Sediment Deposits: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	
		Drainage Patterns: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	
Dept. of inundation: inches	<input style="width: 50px;" type="text"/>	Oxidized Root (live)	<input type="checkbox"/>	<input type="checkbox"/>	
Depth to free water in pit: inches	<input style="width: 50px;" type="text" value="6"/>	Channels <12 in. yes	<input type="checkbox"/>	no <input checked="" type="checkbox"/>	
Depth to saturated soil: inches	<input style="width: 50px;" type="text" value="5"/>	Local Soil Survey: yes	<input type="checkbox"/>	no <input checked="" type="checkbox"/>	
Check all that apply & explain below:		FAC Neutral: yes	<input type="checkbox"/>	no <input type="checkbox"/>	
Stream, Lake or gage data:	<input style="width: 100px;" type="text" value="Stream"/>	Other (explain):	<input type="text"/>		

Wetland hydrology present? yes no Aerial photographs: ☐ Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	5

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Black cottonwood	T		I FacW	Elm	T	I	No
Sedge	H		I Obl	Willow (non-n)	T	5	Fac+
Y Flag Iris	H		I Obl	Horsetail	H	25	FacW
Reed Canary Gr	H	37	FacW				
Cattails	H	5	Obl				
Red Os Dogwood	S	22	FacW				
Willow (native)	S	2	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

X
X

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Date, plant growth

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

X	no
	no
X	no
X	no
	no X
	no X
	no

on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	6

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Cattails	H	15	Obl	Nutka Rose	S	5	No
Horsetail	H	15	FacW	Kent Blu Gr	H	20	No
Y Flag Iris	H	1	Obl	Dandelion	H	1	No
Reed Canary Gr	H	37	FacW	Elm	T	2	No
Sumac	S	2	No				
Serviceberry	S	2	Upl				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation

Morphological adaptations

Physiological/reproductive adaptations	<input type="text"/>
Wetland plant database	<input checked="" type="checkbox"/>
Pers knowledge of reg plant comm	<input checked="" type="checkbox"/>
Other (explain)	<input style="width: 100px;" type="text"/>

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? yes no	<input style="width: 50px;" type="text" value="Y"/>	Water Marks: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	on <input style="width: 50px;" type="text" value="OHWM"/>
Based on: soil temp	<input style="width: 50px;" type="text"/>	Drift Lines: yes	<input type="checkbox"/>	no <input type="checkbox"/>	
<input style="width: 50px;" type="text"/> other (explain)	<input style="width: 50px;" type="text" value="Date, plant growth"/>	Sediment Deposits: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	
		Drainage Patterns: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	

Dept. of inundation: inches	<input style="width: 50px;" type="text"/>	Oxidized Root (live)	<input type="checkbox"/>	no <input type="checkbox"/>	
Depth to free water in pit: inches	<input style="width: 50px;" type="text" value=">24 in"/>	Channels <12 in. yes	<input type="checkbox"/>	no <input checked="" type="checkbox"/>	
Depth to saturated soil: inches	<input style="width: 50px;" type="text" value=">24 in"/>	Local Soil Survey: yes	<input type="checkbox"/>	no <input checked="" type="checkbox"/>	
Check all that apply & explain below:		FAC Neutral: yes	<input type="checkbox"/>	no <input type="checkbox"/>	
Stream, Lake or gage data:	<input style="width: 50px;" type="text" value="Stream"/>	Other (explain):	<input style="width: 100px;" type="text"/>		

Wetland hydrology present? yes no Aerial photographs: Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	7

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Cattails	H	15	Obl	Nutka Rose	S	5	No
Horsetail	H	15	FacW	Kent Blu Gr	H	20	No
Y Flag Iris	H	1	Obl	Dandelion	H	1	No
Reed Canary Gr	H	35	FacW	Elm	T	2	No
Sumac	S	2	No				
Serviceberry	S	2	Upl				
Willow (native)	S	2	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation

Morphological adaptations

Physiological/reproductive adaptations	<input type="text"/>
Wetland plant database	<input checked="" type="checkbox"/>
Pers knowledge of reg plant comm	<input checked="" type="checkbox"/>
Other (explain)	<input style="width: 100px;" type="text"/>

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? yes no	<input style="width: 50px;" type="text" value="Y"/>	Water Marks: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	on <input style="width: 50px;" type="text" value="OHWM"/>
Based on: soil temp	<input style="width: 50px;" type="text"/>	Drift Lines: yes	<input type="checkbox"/>	no <input type="checkbox"/>	
<input style="width: 50px;" type="text"/> other (explain)	<input style="width: 50px;" type="text" value="Date, plant growth"/>	Sediment Deposits: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	
		Drainage Patterns: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	
Dept. of inundation: inches	<input style="width: 50px;" type="text"/>	Oxidized Root (live)	<input type="checkbox"/>	<input type="checkbox"/>	
Depth to free water in pit: inches	<input style="width: 50px;" type="text" value=">24 in"/>	Channels <12 in. yes	<input type="checkbox"/>	no <input checked="" type="checkbox"/>	
Depth to saturated soil: inches	<input style="width: 50px;" type="text" value=">24 in"/>	Local Soil Survey: yes	<input type="checkbox"/>	no <input checked="" type="checkbox"/>	
Check all that apply & explain below:		FAC Neutral: yes	<input type="checkbox"/>	no <input type="checkbox"/>	
Stream, Lake or gage data:	<input style="width: 50px;" type="text" value="Stream"/>	Other (explain):	<input style="width: 100px;" type="text"/>		

Wetland hydrology present? yes no Aerial photographs: Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	8

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Cattails	H	10	Obl	Nutka Rose	S	2	No
Horsetail	H	15	FacW	Kent Blu Gr	H	10	No
Y Flag Iris	H	1	Obl	Dandelion	H	1	No
Reed Canary Gr	H	20	FacW	Elm	T	2	No
Sumac	S	1	No	Willow- Non na	T	10	Fac+
Serviceberry	S	3	Upl	Black Cottonwo	T	5	FacW
Willow (native)	S	5	FacW	Red Os Dwood	S	15	FacW

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

X
X

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

X	no	<input type="text"/>
	no	<input type="text"/>
X	no	<input type="text"/>
	no	X
		<input type="text"/>
	no	X
	no	X
	no	<input type="text"/>

on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	9

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Weeping Willow	T	25	Fac+				
Horsetail	H	10	FacW				
Y Flag Iris	H	1	Obl				
Reed Canary Gr	H	29	FacW				
Red Os Dwood	H	15	FacW				
Elm	T	15	No				
Willow (native)	S	5	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Date, plant growth

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no

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no

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no

on

Wetland hydrology present? yes no

Aerial photographs:

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Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	10

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Spp cover	Stratum	% cover	Indicator	Dominant Plant Spp cover	Stratum	% cover	Indicator
Weeping Willow	T	25	Fac+				
Horsetail	H	10	FacW				
Y Flag Iris	H	1	Obl				
Reed Canary Gr	H	29	FacW				
Red Os Dwood	H	15	FacW				
Elm	T	15	No				
Willow (native)	S	5	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Date, plant growth

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no

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no

no

no

no

on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	11

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Weeping Willow	T	25	Fac+				
Horsetail	H	10	FacW				
Y Flag Iris	H	1	Obl				
Reed Canary Gr	H	29	FacW				
Red Os Dwood	H	15	FacW				
Elm	T	15	No				
Willow (native)	S	5	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

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Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>

HYDROLOGY

Is it the growing season? yes no

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Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Date, plant growth

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no

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on

Wetland hydrology present? yes no

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Rationale for decision/Remarks:

Aerial photographs:

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Other:

**DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation
Manual or 1987 Corps Wetland Delineation Manual)**

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	12

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Cattails	H	10	Obl				
Horsetail	H	15	FacW	Kent Blu Gr	H	5	No
Red Os Dwood	S	15	FacW				
Reed Canary Gr	H	35	FacW				
Walnut	T	5	No				
Water birch	T	10	Obl				
Willow (native)	S	5	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Water Marks: yes

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no

on

Drift Lines: yes

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no

Sediment Deposits: yes

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no

Drainage Patterns: yes

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no

Oxidized Root (live)

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Channels <12 in. yes

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no

Local Soil Survey: yes

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no

FAC Neutral: yes

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no

Other (explain):

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

**DATA FORM 1 (Revised) Routine Wetland Determination (WA State Wetland Delineation
Manual or 1987 Corps Wetland Delineation Manual)**

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	13

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Cattails	H	10	Obl				
Horsetail	H	15	FacW	Kent Blu Gr	H	5	No
Red Os Dwood	S	15	FacW				
Reed Canary Gr	H	35	FacW				
Walnut	T	5	No				
Water birch	T	10	Obl				
Willow (native)	S	5	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

<input type="text"/>
X
X
<input type="text"/>

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Date, plant growth

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no

no

no

no

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no

no

no

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on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	14

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Nutka Rose	T	20	FacW	Cattails	H	20	Obl
Horsetail	H	10	FacW	Kent Blu Gr	H	5	No
Red Os Dwood	S	15	FacW	Willow- Non na	T	5	Fac+
Reed Canary Gr	H	10	FacW	Black Cottonwo	T	5	FacW
Water birch	T	5	Obl				
Willow (native)	S	5	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Date, plant growth

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no

no

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no

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no

no

no

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on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	15

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Black cottonwood	T	5	FacW	Horsetail	H	15	FacW
Snowberry	S	3	No	Red Os Dwood	S	15	FacW
Y Flag Iris	H	1	Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H	10	FacW				
Cattails	H	15	Obl				
Water Birch	T	5	Obl				
Nutka Rose		30	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

X
X

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Date, plant growth

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no

no

no

no

no

on

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Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	16

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Black cottonwood	T	5	FacW	Horsetail	H	15	FacW
Snowberry	S	3	No	Red Os Dwood	S	15	FacW
Y Flag Iris	H	1	Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H	10	FacW				
Cattails	H	15	Obl				
Water Birch	T	5	Obl				
Nutka Rose		30	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Date, plant growth

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no ☐

no ☐

no ☐

no ☐

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no ☒

no ☒

no ☐

no ☐

on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	17

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Black cottonwood	T	5	FacW	Horsetail	H	15	FacW
Snowberry	S	3	No	Red Os Dwood	S	15	FacW
Y Flag Iris	H	1	Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H	10	FacW				
Cattails	H	15	Obl				
Water Birch	T	5	Obl				
Nutka Rose		30	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

X
X

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Date, plant growth

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no ☐

no ☐

no ☐

no ☐

no ☒

no ☒

no ☐

no ☐

on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM 1 (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Plot ID	18

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Black cottonwood	T		5 FacW	Horsetail	H	15	FacW
Snowberry	S		3 No	Red Os Dwood	S	15	FacW
Y Flag Iris	H		1 Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H		10 FacW				
Cattails	H		15 Obl				
Water Birch	T		5 Obl				
Nutka Rose			30 FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

X
X

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no

no

no

no

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no

no

no

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on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	19

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Black cottonwood	T	5	FacW	Horsetail	H	15	FacW
Snowberry	S	3	No	Red Os Dwood	S	15	FacW
Y Flag Iris	H	1	Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H	10	FacW				
Cattails	H	15	Obl				
Water Birch	T	5	Obl				
Nutka Rose		30	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

<input type="text"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="text"/>

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

<input checked="" type="checkbox"/>	no	<input type="text"/>
<input type="checkbox"/>	no	<input type="text"/>
<input checked="" type="checkbox"/>	no	<input type="text"/>
<input checked="" type="checkbox"/>	no	<input type="text"/>
<input type="checkbox"/>	no	<input type="text"/>
<input type="checkbox"/>	no	<input type="text"/>
<input type="checkbox"/>	no	<input type="text"/>
<input type="checkbox"/>	no	<input type="text"/>

on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

**DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation
Manual or 1987 Corps Wetland Delineation Manual)**

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	20

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant				Dominant Plant			
Spp cover	Stratum	% cover	Indicator	Spp cover	Stratum	% cover	Indicator
Black cottonwood	T	5	FacW	Horsetail	H	15	FacW
Snowberry	S	3	No	Red Os Dwood	S	15	FacW
Y Flag Iris	H	1	Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H	10	FacW				
Cattails	H	15	Obl				
Water Birch	T	5	Obl				
Nutka Rose		30	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

<input type="text"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="text"/>

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Wetland hydrology present? yes no

Rationale for decision/Remarks:

Date, plant growth

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

Aerial photographs:

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no

no

no

no

no ☒

no ☒

no

no

on

Other:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	21

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Black cottonwood	T	5	FacW	Horsetail	H	15	FacW
Snowberry	S	3	No	Red Os Dwood	S	15	FacW
Y Flag Iris	H	1	Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H	10	FacW	Elm	T	3	No
Cattails	H	15	Obl				
Water Birch	T	5	Obl				
Nutka Rose		27	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

X
X

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Date, plant growth

>24 in

>24 in

Stream

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no ☐

no ☐

no ☐

no ☐

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no ☒

no ☒

no ☐

no ☐

on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	22

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Black cottonwood	T	5	FacW	Horsetail	H	15	FacW
Snowberry	S	3	No	Red Os Dwood	S	15	FacW
Y Flag Iris	H	1	Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H	10	FacW	Elm	T	3	No
Cattails	H	15	Obl				
Water Birch	T	5	Obl				
Nutka Rose		27	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation

Morphological adaptations

Physiological/reproductive adaptations	<input type="text"/>
Wetland plant database	<input checked="" type="checkbox"/>
Pers knowledge of reg plant comm	<input checked="" type="checkbox"/>
Other (explain)	<input style="width: 100px;" type="text"/>

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? yes no	<input style="width: 50px;" type="text" value="Y"/>	Water Marks: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	on <input style="width: 50px;" type="text" value="OHWM"/>
Based on: soil temp	<input style="width: 50px;" type="text"/>	Drift Lines: yes	<input type="checkbox"/>	no <input type="checkbox"/>	
<input style="width: 50px;" type="text"/> other (explain)	<input style="width: 50px;" type="text" value="Date, plant growth"/>	Sediment Deposits: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	
		Drainage Patterns: yes	<input checked="" type="checkbox"/>	no <input type="checkbox"/>	

Dept. of inundation: inches	<input style="width: 50px;" type="text"/>	Oxidized Root (live)	<input type="checkbox"/>	no <input type="checkbox"/>	<input type="checkbox"/>
Depth to free water in pit: inches	<input style="width: 50px;" type="text" value=">24 in"/>	Channels <12 in. yes	<input type="checkbox"/>	no <input checked="" type="checkbox"/>	
Depth to saturated soil: inches	<input style="width: 50px;" type="text" value=">24 in"/>	Local Soil Survey: yes	<input type="checkbox"/>	no <input checked="" type="checkbox"/>	
Check all that apply & explain below:		FAC Neutral: yes	<input type="checkbox"/>	no <input type="checkbox"/>	
Stream, Lake or gage data:	<input style="width: 50px;" type="text" value="Stream"/>	Other (explain):	<input style="width: 100px;" type="text"/>		

Wetland hydrology present? yes no Aerial photographs: Other:

Rationale for decision/Remarks:

DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project Site:	Cashmere Mill Site	Date:	5/29/2008
Applicant/owner:	Chelan County Port District	County:	Chelan
		State:	WA
Investigator(s):	Chuck Jones, Alliance Consulting Group Inc	T/R/S:	29-19-05

Do Normal Circumstances exist on the site?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Comm ID	<input type="text"/>
Is the site significantly disturbed (atypical situation)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Transect ID	<input type="text"/>
Is the area a potential Problem Area?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Plot ID	23

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Black cottonwood	T	5	FacW	Horsetail	H	15	FacW
Snowberry	S	3	No	Red Os Dwood	S	15	FacW
Y Flag Iris	H	1	Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H	10	FacW	Elm	T	3	No
Cattails	H	15	Obl				
Water Birch	T	5	Obl				
Nutka Rose		27	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

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no ☐

no ☐

no ☐

no ☐

no ☒

no ☒

no ☐

no ☐

on

Wetland hydrology present? yes no

Aerial photographs:

Other:

Rationale for decision/Remarks:

**DATA FORM I (Revised) Routine Wetland Determination (WA State Wetland Delineation
Manual or 1987 Corps Wetland Delineation Manual)**

Project Site: Cashmere Mill Site Date: 5/29/2008
 Applicant/owner: Chelan County Port District County: Chelan
 State: WA
 Invesitgator(s): Chuck Jones, Alliance Consulting Group Inc T/R/S: 29-19-05

Do Normal Circumstances exist on the site? Yes ☒ No ☐ Comm ID
 Is the site significantly disturbed (atypical situation)? Yes ☒ No ☐ Transect ID
 Is the area a potential Problem Area? Yes ☒ No ☐ Plot ID 24

Explanation of atypical or problem area: Site is an old lumber mill, then converted to a recreational/camping area. Most of the stream is confined by a large berm, likely there more than 50 years. Form 2 not used. Site has many beaver dams

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant	Stratum	% cover	Indicator	Dominant Plant	Stratum	% cover	Indicator
Spp cover				Spp cover			
Black cottonwood	T	5	FacW	Horsetail	H	15	FacW
Snowberry	S	3	No	Red Os Dwood	S	15	FacW
Y Flag Iris	H	1	Obl	Willow (native)	S	1	FacW
Reed Canary Gr	H	10	FacW	Elm	T	3	No
Cattails	H	15	Obl				
Water Birch	T	5	Obl				
Nutka Rose		27	FacW				

HYDROPHYTIC VEGETATION INDICATORS

Note: no alder anywhere on site- unusual

% of dominants OBL, FACW, & FAC 94

Check all indicators that apply & explain below:

Visual observation of plant species growing in

areas of prolonged inundation/saturation

Morphological adaptations

Technical Literature

Ecology Publication #96-94

Western Wetland Flora Field Guide- NRCS Publication under contract #54-0484-1-20

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

Physiological/reproductive adaptations

Wetland plant database

Pers knowledge of reg plant comm

Other (explain)

HYDROLOGY

Is it the growing season? yes no

Based on: soil temp

other (explain)

Dept. of inundation: inches

Depth to free water in pit: inches

Depth to saturated soil: inches

Check all that apply & explain below:

Stream, Lake or gage data:

Wetland hydrology present? yes no

Rationale for decision/Remarks:

Y

Date, plant growth

>24 in

>24 in

Stream

Y

Water Marks: yes

Drift Lines: yes

Sediment Deposits: yes

Drainage Patterns: yes

Oxidized Root (live)

Channels <12 in. yes

Local Soil Survey: yes

FAC Neutral: yes

Other (explain):

Aerial photographs:

☒ X

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☒ X

☒ X

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Y

no

no

no

no

no

no

no

Other:

on OHWM

SOILS		Plot	I	
Map Unit Name	Alluvial Land		Drainage Class	Moderately well drained
(Series & Phase)	Hydric in wetpots		Field observations confirm Yes No	Y
Taxonomy (subgroup)			mapped type?	Y

Profile Description (Munsell moist)						
Depth (inches)	Horizon	Matrix color	Mottle colors	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
>24					Sandy, gravelly, stony	

Hydric Soil Indicators: (check all that apply)		Below depth of pit	
Histosol	<input type="checkbox"/>	Gleyed or Low-Chroma (=1) matrix H	<input type="checkbox"/>
Histic Epipedon	<input type="checkbox"/>	Matrix chroma <= 2 with mottles	<input type="checkbox"/>
Sulfidic Odor	<input type="checkbox"/>	High Organic Content in Surface Layer of Sandy Soils	<input type="checkbox"/>
Aquic Moisture Regime	<input type="checkbox"/>	Organic Streaking in Sandy Soils	<input type="checkbox"/>
Mg or Fe Concretions	<input type="checkbox"/>	Listed on National/Local Hydric Soils List	<input type="checkbox"/>
Reducing Conditions	<input type="checkbox"/>	Other (explain in remarks)	<input type="checkbox"/>

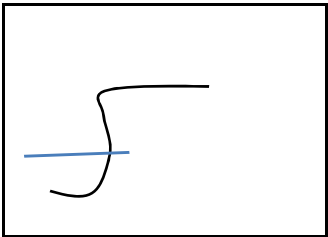
Hydric soils present? yes no

Rationale for decision/Remarks:
 Limited depth of pit due to rocks

Beaver dam inundated area

Wetland Determination (circle)	
Hydrophytic vegetation present? yes no	<input type="text" value="Y"/>
Hydric soils present? yes no	<input type="text" value="Y"/> Below pit depth highly likley
Wetland hydrology present? yes no	<input type="text" value="Y"/> Is the sampling point within a wetland? yes no
Rationale/Remarks:	<div> <div>Y</div> </div>

See drawing and description above. Pit was dug within are with hydrophylic veg edge
 1-3 feet between the water level and the top of the bank



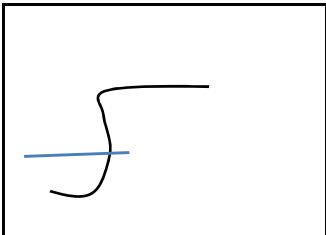
SOILS	Plot	2
Map Unit Name	Alluvial Land	
(Series & Phase)	Hydric in wetpots	
Taxonomy (subgroup)	Drainage Class	Moderately well drained
	Field observations confirm Yes No	Y
	mapped type?	Y

Profile Description (Munsell moist)						
Depth (inches)	Horizon	Matrix color	Mottle colors	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
>24					Sandy, gravelly, stony	

Hydric Soil Indicators: (check all that apply)		Below depth of pit	
Histosol		Gleyed or Low-Chroma (=1) matrix H	
Histic Epipedon		Matrix chroma <= 2 with mottles	
Sulfidic Odor		High Organic Content in Surface Layer of Sandy Soils	
Aquic Moisture Regime		Organic Streaking in Sandy Soils	
Mg or Fe Concretions		Listed on National/Local Hydric Soils List	
Reducing Conditions		Other (explain in remarks)	

Hydric soils present? yes no	N
Rationale for decision/Remarks:	Limited depth of pit due to rocks

		Beaver dam inundated area	
Wetland Determination (circle)			
Hydrophytic vegetation present? yes no	Y		
Hydric soils present? yes no	Y	Below pit depth highly likley	
Wetland hydrology present? yes no	Y	Is the sampling point within a wetland? yes no	Y
Rationale/Remarks:	See drawing and description above. Pit was dug within are with hydrophylic veg edge 1-3 feet between the water level and the top of the bank		



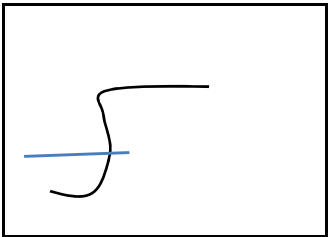
SOILS	Plot	3
Map Unit Name	Alluvial Land	
(Series & Phase)	Hydric in wetpots	
Taxonomy (subgroup)	Drainage Class	Moderately well drained
	Field observations confirm	Yes No
	mapped type?	Y

Profile Description		(Munsell moist)				
Depth (inches)	Horizon	Matrix color	Mottle colors	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
12	A	Black/brn			Sandy, organic	
	B	Black			Organic/loamy	

Hydric Soil Indicators: (check all that apply)			
Histosol	<input type="checkbox"/>	Gleyed or Low-Chroma (=1) matrix H	<input type="checkbox"/>
Histic Epipedon	<input type="checkbox"/>	Matrix chroma <= 2 with mottles	2/1
Sulfidic Odor	Y	High Organic Content in Surface Layer of Sandy Soils	Y
Aquic Moisture Regime	Y	Organic Streaking in Sandy Soils	<input type="checkbox"/>
Mg or Fe Concretions	<input type="checkbox"/>	Listed on National/Local Hydric Soils List	<input type="checkbox"/>
Reducing Conditions	<input type="checkbox"/>	Other (explain in remarks)	<input type="checkbox"/>

Hydric soils present? yes no	<input type="checkbox"/>
Rationale for decision/Remarks:	

		Beaver dam inundated area	
Wetland Determination (circle)			
Hydrophytic vegetation present? yes no	<input type="checkbox"/>		
Hydric soils present? yes no	<input type="checkbox"/>	Below pit depth highly likley	
Wetland hydrology present? yes no	<input type="checkbox"/>	Is the sampling point within a wetland? yes no	<input type="checkbox"/>
Rationale/Remarks:		See drawing and description above. Pit was dug within are with hydrophylic veg edge 1.5 feet between the water level and the top of the bank	



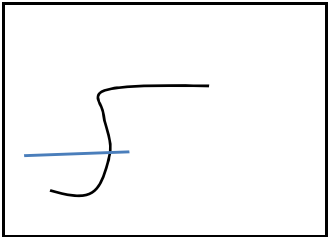
SOILS		Plot	4	
Map Unit Name	Alluvial Land		Drainage Class	Moderately well drained
(Series & Phase)	Hydric in wetpots		Field observations confirm Yes No	Y
Taxonomy (subgroup)			mapped type?	Y

Profile Description		(Munsell moist)				
Depth (inches)	Horizon	Matrix color	colors	abundance size	Texture, concretions,	Drawing of soil profile
6	A	Black/brn			Sandy, organic	
	B	Black			Organic/loamy	

Hydric Soil Indicators: (check all that apply)			
Histosol		Gleyed or Low-Chroma (=1) matrix H	
Histic Epipedon		Matrix chroma <= 2 with mottles	2/1
Sulfidic Odor	Y	High Organic Content in Surface Layer of Sandy Soils	Y
Aquic Moisture Regime	Y	Organic Streaking in Sandy Soils	
Mg or Fe Concretions		Listed on National/Local Hydric Soils List	
Reducing Conditions		Other (explain in remarks)	

Hydric soils present? yes no	Y
Rationale for decision/Remarks:	

Beaver dam inundated area			
Wetland Determination (circle)			
Hydrophytic vegetation present? yes no	Y		
Hydric soils present? yes no	Y	Below pit depth highly likley	
Wetland hydrology present? yes no	Y	Is the sampling point within a wetland? yes no	Y
Rationale/Remarks:		See drawing and description above. Pit was dug within are with hydrophylic veg edge 1 foot between the water level and the top of the bank	



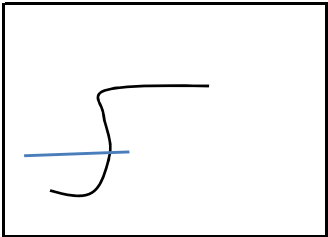
SOILS	Plot	5	This plot represents areas to Plot 10	
Map Unit Name	Alluvial Land		Drainage Class	Moderately well drained
(Series & Phase)	Hydric in wetpots		Field observations confirm Yes No	Y
Taxonomy (subgroup)			mapped type?	Y

Profile Description		(Munsell moist)				
Depth (inches)	Horizon	Matrix color	Mottle colors	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
8	A	Brn/Blk			Sandy, gravelly	
	B	Lt brown			Impenetrable hardpan	

Hydric Soil Indicators: (check all that apply)		Below depth of pit	
Histosol	<input type="checkbox"/>	Gleyed or Low-Chroma (=1) matrix H	<input type="checkbox"/>
Histic Epipedon	<input type="checkbox"/>	Matrix chroma <= 2 with mottles	<input type="checkbox"/>
Sulfidic Odor	<input type="checkbox"/>	High Organic Content in Surface Layer of Sandy Soils	<input type="checkbox"/>
Aquic Moisture Regime	<input type="checkbox"/>	Organic Streaking in Sandy Soils	<input type="checkbox"/>
Mg or Fe Concretions	<input type="checkbox"/>	Listed on National/Local Hydric Soils List	<input type="checkbox"/>
Reducing Conditions	<input type="checkbox"/>	Other (explain in remarks)	<input type="checkbox"/>

Hydric soils present? yes no	<input type="checkbox"/>
Rationale for decision/Remarks:	Limited depth of pit to a hard pan layer Beaver dam inundated area

Wetland Determination (circle)		
Hydrophytic vegetation present? yes no	<input type="checkbox"/>	
Hydric soils present? yes no	<input type="checkbox"/>	Below pit depth highly likley
Wetland hydrology present? yes no	<input type="checkbox"/>	Is the sampling point within a wetland? yes no
Rationale/Remarks:	See drawing and description above. Pit was dug within are with hydrophylic veg edge 1 foot between the water level and the top of the bank	



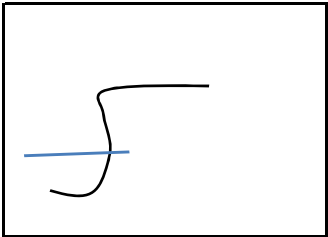
SOILS	Plot	10	This plot represents all areas downstream	
Map Unit Name	Alluvial Land		Drainage Class	Moderately well drained
(Series & Phase)	Hydric in wetpots		Field observations confirm Yes No	<input type="text" value="Y"/>
Taxonomy (subgroup)			mapped type?	<input type="text" value="Y"/>

Profile Description		(Munsell moist)				
Depth (inches)	Horizon	Matrix color	Mottle colors	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
>24	A	Brn/Blk			Loamy/sandy/gravelly	

Hydric Soil Indicators: (check all that apply)		Below depth of pit	
Histosol	<input type="text"/>	Gleyed or Low-Chroma (=1) matrix H	<input type="text"/>
Histic Epipedon	<input type="text"/>	Matrix chroma <= 2 with mottles	<input type="text"/>
Sulfidic Odor	<input type="text"/>	High Organic Content in Surface Layer of Sandy Soils	<input type="text"/>
Aquic Moisture Regime	<input type="text"/>	Organic Streaking in Sandy Soils	<input type="text"/>
Mg or Fe Concretions	<input type="text"/>	Listed on National/Local Hydric Soils List	<input type="text"/>
Reducing Conditions	<input type="text"/>	Other (explain in remarks)	<input type="text"/>

Hydric soils present? yes no	<input type="text" value="N"/>
Rationale for decision/Remarks:	Limited depth of pit due to depth or soil type Beaver dam inundated area

Wetland Determination (circle)		
Hydrophytic vegetation present? yes no	<input type="text" value="Y"/>	
Hydric soils present? yes no	<input type="text" value="Y"/>	Below pit depth highly likley
Wetland hydrology present? yes no	<input type="text" value="Y"/>	Is the sampling point within a wetland? yes no
Rationale/Remarks:	See drawing and description above. Pit was dug within are with hydrophylic veg edge 3 or more feet between the water level and the top of the bank	



WETLAND RATING FORM – EASTERN WASHINGTON

Wetland Name: Cashmere Mill Site

Date: 6/25/08

Name of wetland (if known):

Location: SEC: 5 TWSHP: 23 RGE: 19 (attach map with outline of wetland to rating form)

Person(s) Rating Wetland: Chuck Jones Affiliation: ACG, Inc Date of site visit: 5/29/08

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☒ II ☐ 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

22

Score for Hydrologic Functions

24

Score for Habitat Functions

27

TOTAL score for functions

73

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☐ III ☐ Does not Apply ☒

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

I

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Vernal Pool		Depressional	
Alkali		Riverine	X
Natural Heritage Wetland		Lake-fringe	
Bog		Slope	
Forest			
None of the above	X		

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
A1. Has the wetland been documented as a habitat for any Federally listed Threatened or Endangered plant or animal species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.	X	
A2. Has the wetland been documented as habitat for any State listed Threatened or Endangered plant or animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database.	X	
A3. Does the wetland contain individuals of Priority species listed by the WDFW for the state?	X	
A4. Does the wetland 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.

Classification of Vegetated Wetlands for Eastern Washington

Wetland Name:

Date:

6/25/08

☐ 1. Does the wetland 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) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);

☐ 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 wetland 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 wetland 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 wetland 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 seems to be difficult to classify. 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. Sometimes we find characteristics of several different hydrogeomorphic classes within one wetland boundary. If you have a wetland with several HGM classes present within its boundaries use the following table to identify the appropriate class to use for the rating system. 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 being rated.

HGM Classes Within One Delineated Wetland Boundary	Class to Use in Rating if area of this class > 10% total
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.

R Riverine Wetlands**Points****WATER QUALITY FUNCTIONS - Indicators that the wetland functions to improve water quality****1.0 Does the wetland have the potential to improve water quality? (see p. 45)**

1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event:

6

Depressions cover >1/3 area of wetland	points = 6
Depressions cover > 1/10 area of wetland	points = 3
Depressions present but cover < 1/10 area of wetland	points = 1
No depressions present	points = 0

1.2 Characteristics of the vegetation in the wetland:

5

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, emergent plants > 2/3 area of wetland	points = 5
Ungrazed emergent plants 1/3 – 2/3 area of wetland	points = 2
Forest, shrub, and ungrazed emergent < 1/3 area of wetland	points = 0

Total for R1

11

2.0 Does the wetland have the opportunity to improve water quality? (see p.46)

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.

- 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

X
X
X
X
X
X

YES multiplier is 2**NO multiplier is 1****Multiplier**

2

TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2

22

Record score on p. 1 of field form

R Riverine Wetlands Points**Points****HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation****3.0 Does the wetland have the potential to reduce flooding and erosion?****(see p. 47)****3.1 Amount overbank storage the wetland provides:****8**

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 $\frac{1}{2}$ to < 1

points = 4

If the ratio is $\frac{1}{4}$ to < $\frac{1}{2}$

points = 2

If the ratio is < $\frac{1}{4}$

points = 1

3.2 Characteristics of vegetation that slow down water velocities during floods:**4**

Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.

Forest or shrub for more than $\frac{2}{3}$ the area of the wetland.

points = 6

Forest or shrub for $> \frac{1}{3}$ area OR Emergent plants $> \frac{2}{3}$ area

points = 4

Forest or shrub for $> \frac{1}{10}$ area OR Emergent plants $> \frac{1}{3}$ area

points = 2

Vegetation does not meet above criteria

points = 0

Total for R3**12****4.0 Does the wetland have the opportunity to reduce flooding and erosion?****(see p. 50)**

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.

X

– There are natural resources downstream (e.g. salmon redds) than can be damaged by flooding

X

– Other

YES multiplier is 2**NO multiplier is 1****Multiplier****2****TOTAL - Water Quality Functions Multiply the score from R1 by the multiplier in R2****24****Record score on p. 1 of field form**

These questions apply to wetlands of all HGM classes.

Points

HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat

H 1. Does the wetland have the potential to provide habitat for many species?

H 1.1 Vegetation structure (see p.62)

Check the types of vegetation present if the type covers more than 10% of the area of the wetland or ¼ acre.

Aquatic bed

Emergent plants 0-12 inches high (0 – 30 cm)

Emergent plants >12 – 40 inches high (>30 – 100cm)

Emergent plants > 40 inches high (> 100 cm)

Scrub/shrub (areas where shrubs have >30% cover)

Forested (areas where trees have >30% cover)

X
X
X

Add the number of vegetation types that qualify. If you have:

4-6 types record points = 3

3 types points = 2

2 types points = 1

1 type points = 0

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 wetland have areas of “open” water (without emergent 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

3

H 1.3.2 Does the wetland have an intermittent or permanent stream within its boundaries, or along one side, that has an unvegetated bottom (answer yes only if H 1.3.1 is NO)?

YES = 3 points

NO = 0 points

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 ft². (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 Eurasian 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

< 4 species

points = 0 points

2

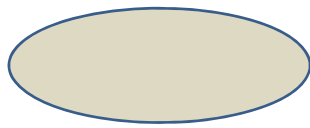
of species

10

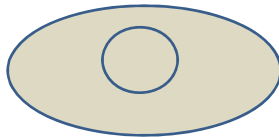
H 1.5. Interspersion of habitats (see p. 67)

Points

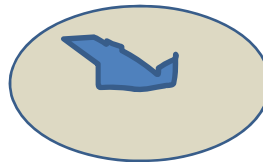
Decided from the diagrams below whether interspersion between types of vegetation (described in H 1.1), or vegetation types and un-vegetated areas (can include open water or mudflats) is high, medium, low, or none.



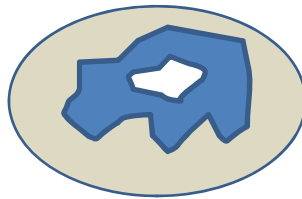
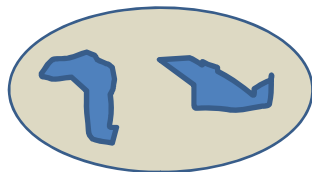
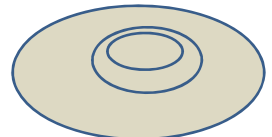
None = 0 points



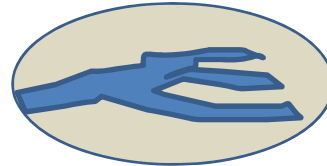
Low = 1 point



Moderate = 2 points



High = 3 points



[Riparian braided channel]

3

NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".

H 1.6. Special Habitat Features: (see p. 68)

Check the habitat features that are present in the wetland. 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.

X

Cattails or bulrushes are present within the wetland.

X

Standing snags (diameter at the bottom > 4 inches) in the wetland or within 30 m (100 ft) 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.

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

X

Invasive species cover less than 20% in each stratum of vegetation

Maximum score possible = 6

4

TOTAL Potential to provide habitat
Add the scores in the column above

14

H 2.0 Does the wetland have the opportunity to provide habitat for many species?

Points

Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."

2

– 330ft (100 m) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) **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. Lt 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**

H 2.2 Wet Corridors (see p. 72)

H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken 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 wetland part of a relatively undisturbed and unbroken, 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

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 74)

Points

Which of the following priority habitats are within 330ft (100m) of the wetland?
(see text for a more detailed description of these priority habitats)

Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

X

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 than 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

2

H 2.4 Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 76)

Points
5

– The wetland 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

H 2. TOTAL Score - opportunity for providing habitat
Add the scores in the column above

H 3.0 Does the wetland 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 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

Total Score for Habitat Functions – add the points for H 1, H 2, and H 3 and record the result on p. 1

**Note- no special characteristics/habitat types present,
so not included in the rating form or category classification**

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