Wetland name or number Wettout A

11 4 C Canadial Makillar Factures	1
H 1.6. Special habitat features Check the habitat features that are present in the wetland. The number of checks is the number of points. Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. Cattails or bulrushes are present within the wetland. Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. Emergent or shrub vegetation in areas that are permanently inundated/ponded. Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree	
slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of vegetation (conopy, sub-conopy, shrubs, herbaceous, moss/ground cover)	0
Total for H 1 Add the points in the boxes above	400

Rating of Site Potential If score is: 15-18 = H 7-14 = M V 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =% > ¹ / ₃ (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon <10% of 1 km Polygon <pre>points = 0</pre>	ı
H 2.2, Undisturbed habitat in 1 km Polygon around wetland. Colculote: % undisturbed habitat+ [(% moderate and low intensity land uses)/2] % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0	ø
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points (-2) Does not meet criterion above points = 0	- 2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs Yes = 3 Ves = 3	σ
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: 4-9 = H 1-3 = M V<1=L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policie that applies to the wetland being rated	s? Chaose the highest score
Site meets ANY of the following criteria:	points = 2
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
- It provides habitat for Threatened or Endangered species (any plant or an	imal on state or federal lists)
It is mapped as a location for an individual WDFW species	
- It is a Wetland of High Conservation Value as determined by the Departm	ent of Natural Resources
 It has been categorized as an important habitat site in a local or regional or 	comprehensive plan, in a
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	points = 1
Site does not meet any of the criteria above,	(points=0) O

Rating of Value If score is: 2=H _1=M V_0=L

Record the rating on the first page

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 wetlands should also be characterized based on their functions.

Wetland Type		Category
Check off any criterio that apply to the wetland. Circle the cate	egory when the appropriate criteria are met.	
a and vernar pools		
is the wetland less than 4000 ft ² , and does it meet at i	least two of the following criteria?	
input.	n a small contributing basin and has no groundwater	
 Wetland plants are typically present only in the spin annuals. If you find perennial, obligate, wetland plants 	ants, the wetland is probably NOT a versal goal	
 The soil in the wetland is shallow [< 1 ft (30 cm)dee basalt or clay. 		
 — Surface water is present for less than 120 days dur 	ing the wet season.	
	Yes - Go to SC 1.1 No - Not a vornal need	
SC 1.1. Is the vernal pool relatively undisturbed in February and	nd March?	
Yes - Go to \$C 1.2	No = Not a vernal pool with special characteristics	
SC 1.2. Is the vernal pool in an area where there are at least 3	separate aquatic resources within 0.5 mi (other	6.10
wetlands, rivers, lakes etc.)?	Yes = Category II No = Category III	Cat. II Cat. III
SC 2.0. Alkali wetlands		
Does the wetland meet one of the following criteria	a?	
 The wetland has a conductivity > 3.0 mS/cm. 		
 The wetland has a conductivity between 2.0 and wetland can be classified as "alkali" species (see 	3.0 mS, and more than 50% of the plant cover in the Table 4 for list of plants found in alkali systems).	
 If the wetland is dry at the time of your field visit salt. 	t, the central part of the area is covered with a layer of	
OR does the wetland unit meet two of the following	g three sub-criteria?	
 — Salt encrustations around more than 75% of the 	edge of the wetland	
 More than % of the plant cover consists of specie 	es listed on Table 4	
— A pH above 9.0. All alkali wetlands have a high p may also have a high pH. Thus, pH alone is not a	good indicator of alkali wetlands.	Cat. I
	Yes = Category I No= Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV)		
SC 3.1. Has the WA Department of Natural Resources updated	d their website to include the list of Wetlands of High	
Conservation Value?	Yes - Go to SC 3.2 No - Go to SC 3.3	
SC 3.2. Is the wetland listed on the WDNR database as a Wetl		1.25.3
	Yes = Category No = Not a WHCV	Cat. I
SC 3.3. Is the wetland in a Section/Township/Range that conta http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wr	hpwetlands.pdf	
Yes – Contact	t WNHP/WDNR and go to SC 3.4 No = Not a WHCV a Wetland of High Conservation Value and it is listed	
CC 2 A Line WOND identified the method within the FIT P		

		-
SC 4.0 Bogs and Calcareous Fens		
Does the wetland (or any par	t of the wetland unit) meet both the criteria for soils and vegetation in hogs or	
calcareous fens? Use the key	below to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the	wetland based on its functions.	
SC 4.1. Does an area within the wetla	and have organic soil horizons (i.e., layers of organic soil), either peats or	
	more of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic soils.	Yes - Go to SC 4.3 No - Go to SC 4.2	
SC 4.2. Does an area within the wetla	and have organic soils, either peats or mucks, that are less than 16 in deep over	
	hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond?	Yes - Go to SC 4.3 No = Is not a bog for rating	
SC 4.3. Does an area within the wetla	and have more than 70% cover of mosses at ground level AND at least 30% of	
the total plant cover consists		
	bout the extent of mosses in the understory, you may substitute that criterion	
	vater that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
	e 5 are present, the wetland is a bog.	
	is forested (> 30% cover) with subalpine fir, western red cedar, western	
	aking aspen, Engelmann spruce, or western white pine, AND any of the species	Cat. I
	isted in Table 5 provide more than 30% of the cover under the canopy?	cat. I
	Yes = Category bog No - Go to SC 4.5	
SC 4.5. Do the species listed in Table	6 comprise at least 20% of the total plant cover within an area of peats and	
mucks?	Yes = Is a Calcareous Fen for purpose of rating No - Go to SC 4.6	
SC 4.6. Do the species listed in Table	6 comprise at least 10% of the total plant cover in an area of peats and mucks,	
AND one of the two following		
	rbonate (CaCO ₃) precipitate) occur on the soil surface or plant stems	Cat. I
	6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the	
wetland	Yes = Is a Category I calcareous fen No = Is not a calcareous fen	

SC 5.0. Forested Wetlands			
Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified that a forested class is present			
in question H 1.1)			
 The wetland is within the 100 year floodplain of a river or stream 			
 Aspen (Populus tremuloides) represents at least 20% of the total cover of woody species 			
- There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or			
"old-growth" according to the definitions for these priority habitats developed by WDFW			
(see definitions in question H3.1)			
Yes - Go to SC 5.1 No = Not a forested wetland with special characteristics			
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I		
growing native trees (see Table 7)? Yes = Category I No - Go to SC 5.2			
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I		
of woody species? Yes = Category I No - Go to SC 5.3			
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? Yes = Category II No – Go to SC 5.4	Cat. II		
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	1.1.1		
Yes = Category II No = Not a forested wetland with special characteristics			
Category of wetland based on Special Characteristics	_		
Choose the highest rating if wetland falls into several categories			
If you answered No for all types, enter "Not Applicable" on Summary Form			

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Pish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/bbs/list/)

Count how many of the following priority liabitats are within 330 ft (100 m) of the wetland: NOTE: This question is independent of the land use between the wetland and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than I ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report)
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire. climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbb, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forgsts</u> = Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in oldgrowth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak: Woodland stands of pure oak or oak/confer associations where canopy coverage of the oak
 component is important (full descriptions in WDFW PHS report p. 158 see web link above).
- Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial
 ecosystems which mutually influence each other.
- 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.
- 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.
- Cliffs: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus: Romogenous areas of took rubble ranging in average size 0,5 6,5 ft (0,15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm) in eastern Washington
 and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- 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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flura (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria splcata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poo secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnotherum spp.*).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Hpdate Effective January 1, 2015 Appendix B

	NATING	Mattaul	R	rn Washin	site visit: 4/29/20
vame of v	wetland (or ID #)	We land	a p	Date o	site visit
Rated by_	Rachel L	Wetlani	_ Trained by Eco	ology? _ Yes	No Date of training
IGM Clas	s used for rating	Depression	wetlan	d has multiple HG	M classes? Y / N
27.272					- to combined
NOTE	: Form is not co	mplete without	the figures req	uested (figures co	in de combined).
		ial photo/map			

OVERALL WETLAND CATEGORY _____ (based on functions ____ or special characteristics _____

1. Category of wetland based on FUNCTIONS

_	Category I – Total score = 22-27
	_Category II – Total score = 19-21
	_Category III - Total score = 16-18
1	Category IV - Total score = 9-15

FUNCTION	Improving Water Quality			ydrole	ogic	15 . S.	Habit	at		
Circle the appropriate ratings							60			
Site Potential	H	(M)	L	н	(M)	L	H	М	(1)	
Landscape Potential	H	M) L	H	M	L	H	М	O	-
Value	H	M	(\mathbf{r})	н	(M)	L	н	м	(1)	TOTA
Score Based on Ratings		5			6			3		14

Score for ea function bas	ch
on three ratings	
(order of rati	ings
is not important)	

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- 6 = M,M,M 5 = H,L,L
- 5 = M,M,L

L

- 4 = M,L,L
- 3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	п т
Alkali	1
Wetland of High Conservation Value	1
Bog and Calcareous Fens	I
Old Growth or Mature Forest - slow growing	1
Aspen Forest	1
Old Growth or Mature Forest – fast growing	u
Floodplain forest	u/
None of the above	

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D1.3, H1.1, H1.5	
Hydroperiods (including area of open water for H 1 2)	D1.4, H1.2, H1.3	1
Location of outlet (can be added to man of hudron or add		
Boundary of area within 150 ft of the wetland (can be added to paother fine 1	01.1,04.1	
the contributing pasin		
1 km Polygon: Area that extends 1 km from the	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basis life and the	D3.1, D3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	-

Riverine Wetlands

1. Commercial and	140.2.4
	Figure #
H 1.1, H 1.5	
H 1.2, H 1.3	(***)
B11	
RZ4	
	-
	-
H 2.1, H 2.2, H 2.3	
R31	-
R 3.2, R 3.3	-
	R 1.1 / R 2.4 R 2.2, R 2.3, R 5.2 R 1.2, R 4.2 R 4.1 H 2.1, H 2.2, H 2.3 R 3.1

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L1.1, L4.1, H1.1, H1.5	
Plant cover of trees, shrubs, and herbaceous plants	L1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L3.1.L3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H1.2, H1.3	1
Plant cover of dense trees, shrubs, and herbaceous plants	S1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	1
Boundary of area within 150 ft of the wetland (can be added to another figure)	\$ 2.1, \$ 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	\$3.1, \$3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	\$ 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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

Does the entire unit meet both of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

NO-go to 2

YES - The wetland class is Lake Fringe (Lacustrine Fringe)

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

The wetland is on a slope (slope can be very gradual).

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

The water leaves the wetland without being impounded.

NO - go to 3

YES - The wetland class is Slope

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit meet all of the following criteria?
 - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river:
 - The overbank flooding occurs at least once every 10 years.

NO-go to 4

YES - The wetland class is Riverine NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. This means that any outlet, if present, is higher than the interior of the wetland.

NO - go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

÷-1

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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

B

Water Quality Functions - Indicators that the site functions to improve water quality	Points (only 1 score pe box)
D 1.0. Does the site have the potential to improve water quality?-	
D 1.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet Wetland has a permanently flowing, unconstricted, surface outlet D 1.1. <u>Characteristics of surface water outflows</u> points = Wetland has a permanently flowing, unconstricted, surface outlet points =	3 7
D 1.2. The soll 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils) YES = 3 NO =	N D
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ of area Wetland has persistent, ungrazed vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area Wetland has persistent, ungrazed vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area Wetland has persistent, ungrazed vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area Wetland has persistent, ungrazed vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area Wetland has persistent, ungrazed vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area Wetland has persistent, ungrazed vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area Wetland has persistent, ungrazed vegetation $\frac{1}{10}$ of area Wetland has persistent, ungrazed vegetation $\frac{1}{10}$ of area	5 1 7
D 1.4. <u>Characteristics of seasonal ponding or inundation</u> : This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded. Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is % - ½ total area of wetland Area seasonally ponded is < ½ total area of wetland points = 1 Area seasonally ponded is < ½ total area of wetland points = 0	
Total for D 1 / Add the points in the boxes above	7
D 2.0. Does the landscape have the potential to support the water quality function of the site? D 2.1. Does the wetland receive stormwater discharges? $(Yes = 1) No = 0$	
2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? (Yes = $1 \text{ No} = 0$	1
2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	
	0
D 2.1- D 2.3? Source Yes = 1 No = 0	1 2
D 2.1- D 2.3? SourceYes = 1 No = D total for D 2 Add the points in the boxes above ting of Landscape Potential If score is:3 or 4 = H 1 or 2 = M0 = L Record the rating on t	10
D 2.1- D 2.3? Source Yes = 1 No = D otal for D 2 Add the points in the boxes above ting of Landscape Potential If score is:3 or 4 = H I or 2 = M0 = L Record the rating on the site valuable to society? 3.0. Is the water quality improvement provided by the site valuable to society? Image: Constraint of the society improvement provided by the site valuable to society?	10
total for D 2 Add the points in the boxes above ting of Landscape Potential If score is:3 or 4 = H I or 2 = M 0 = L Record the rating on the site valuable to society? 3.0. Is the water quality improvement provided by the site valuable to society? 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	the first pag
D 2.1- D 2.3? Source Yes = 1 No = D otal for D 2 Add the points in the boxes above ting of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the site valuable to society? 0.3.0. Is the water quality improvement provided by the site valuable to society? 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list?	he first pag

Hydrologic Functions – Indicato	DEPRESSIONAL WETLANDS rs that the site functions to redu	the second se	Points (only 1 score) par box)
D 4.0. Does the site have the poter	itial to reduce flooding and erosion		-
D 4.1 Characteristics of surface water Wetland has no surface water o Wetland has an intermittently fi Wetland has a highly constricted Wetland has a permanently flow (If outlet is o ditch ond not perm	utiet lowing outlet	points = 8 points = 4 points = 4 points = 0 mittently flowing")	4
wetlands with no outlet, measu Seasonal ponding: > 3 ft above t	tland	of deepest part (if dry).	2
Total for D 4	1	Add the points in the boxes above	6

Rating of Site Potential If score is: 12-15 = H 16-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape hav	e the potential to support the hydrologic functio	ons of the site?	
D 5.1. Does the wetland receive :	stormwater discharges?	(Yes=1)No=0	
D 5.2. Is > 10% of the area within	150 ft of the wetland in a land use that generates ru	moff? Yes=1 (No=0)	
0 5.3. Is more than 25% of the co	ntributing basin of the wetland covered with intensiv	Yes = 1 No = 0	1
Total for D 5	Add	d the points in the boxes above 2	
Rating of Landscape Potential If	score is:3=H _1or2=M0=L	Record the rating on the first pe	ige

0.6.1. The wetland is in a landscape that has flooding problems.	1000	
Choose the description that best matches conditions around the wetland being rated. Do Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas damaged human or natural resources (e.g., houses or salmon redds), AND	10 Y 10 10 10	
Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient	points = 2 points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural water stored by the wetland cannot reach areas that flood.	1.1.1	
Explain why	points = 0	1
There are no problems with flooding downstream of the wetland	points = 0	
0.6.2. Has the site has been identified as important for flood storage or flood conveyance in a re plan?	gional flood control Yes = 2 (No = D	0
	ts in the boxes above	1

Rating of Value If score is _____2-4 = H ____1 = M ____0=L

Record the rating on the first page

	habitat for many species?	
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and cl category is >= % ac or >= 10% of the wetland if wetla Aquatic bed Emergent plants 0-12 in (0-30 cm) high are the h Emergent plants >12-40 in (>30-100 cm) high are Emergent plants > 40 in (> 100 cm) high are the Scrub-shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover)	highest layer and have > 30% cover e the highest layer with >30% cover highest layer with >30% cover	0
H 1,Z. Is one of the vegetation types Aquatic Bed?	Yes = 1 No = 0	0
10% of its area during the March to early Jun for Loke Fringe wetlands.	without emergent or shrub plants) over at least ½ ac OR ne OR in August to the end of September? Answer YES Yes = 3 points & go to H 1.4 No = go to H 1.3.2 rmanent, and unvegetated stream within its boundaries, of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0	0
 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that species can be combined to meet the size threshold. Y Do not include Eurasian milfoil, reed canarygrass, purp thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species 	You do not have to name the species.	0
1.5. Interspersion of habitats Decide from the diagrams below whether interspersio	on among types of plant structures (described in H 1.1), gh, moderate, low, or none. pared for questions H 1.1 and map of open water from	Figure_

H 1.6. Special habitat features	-
Check the habitat features that are present in the wetland. The number of checks is the number of points.	11
Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surfa ponding or in stream.	e
Cattails or bulrushes are present within the wetland.	
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.	
Emergent or shrub vegetation in areas that are permanently inundated/ponded.	
Stable steep banks of fine material that might be used by beaver or muskrat for denning. (> 45 degree slope) OR signs of recent beaver activity	
Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)	

Total for H 1

Rating of Site Potential If score is: ____15-18 = H ____

1

Add the points in the boxes above Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	-
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = % > ¹ / ₃ (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon <10% of 1 km Polygon points = 0 points = 0	r
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: % undisturbed habitat+ [(% moderate and low intensity land uses)/2] = % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon	0
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points (-2) Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs Yes = 3 No = 0	0
Total for H 2 Add the points in the boxes above	=1

7-14 = M V 0-6 = L

Rating of Landscape Potential If score is: 4-9 = H 1-3 = M $\sqrt{-1} = L$ Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	0
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that opplies to the wetland being rated	1
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
— It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	
 It is mapped as a location for an individual WDFW species. 	
 It is a Wetland of High Conservation Value as determined by the Department of Natural Resources 	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	1. 22.
Site does not meet any of the criteria above / points = 0	0

Rating of Value If score is: 2 = H 1=M ___0=L

Record the rating on the first page

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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	- The second
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft ² , and does it meet at least two of the following criteria?	
- Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater	
input	
 Wetland plants are typically present only in the spring; the summer vegetation is typically upland 	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as	
basalt or clay.	
 Surface water is present for less than 120 days during the wet season. 	
Yes - Go to SC 1.1 Vo= Not a vernal pool	
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	1
Yes - Go to SC 1.2 (No + Not a vernal pool with special characteristics	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	
wetlands, rivers, lakes etc.)? Yes = Category II (No) = Category III	Cat. II
	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
— The wetland has a conductivity > 3.0 mS/cm.	
- The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
- If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of	
salt.	
OR does the wetland unit meet two of the following three sub-criteria?	
 Salt encrustations around more than 75% of the edge of the wetland 	
 — More than ½ of the plant cover consists of species listed on Table 4 	
- A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands	Cat. I
may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	
Yes = Category I Ro= Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes - Go to SC 3.2 No- Go to SC 3.3	1.0.1
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	1200
Yes = Category I (No)= Not a WHCV	Cat. I
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes - Contact WNHP/WDNR and go to SC 3.4 (No) = Not a WHCV	
C 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category I (No)=Not a WHCV	

SC 4.0 Bogs and Calcareous Fens		1
	t of the wetland unit) meet both the criteria for soils and vegetation in bogs or	
calcareous lens? Use the key	below to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the	wetland based on its functions.	
5C 4.1. Does an area within the wetla	and have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or	more of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic sails,	Yes - Go to SC 4.3 (No)- Go to SC 4.2	
	and have organic soils, either peats or mucks, that are less than 16 in deep over	
bedrock or an impermeable f	hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond?	An apart such as clay or volcanic ash, or that are floating on top or a lake or	
	Yes—Go to SC 4.3 No= Is not a bog for rating and have more than 70% cover of mosses at ground level AND at least 30% of	
the total plant cover consists	of thereing in Table 53	
NOTE: If you are uncertain at	of species in Table 57 Yes = Category I bog (No) Go to SC 4.4 sout the extent of mosses in the understory, you may substitute that criterion	
by measuring the oH of the u	and the extent of mosses in the understory, you may substitute that criterion	
and the plant species in Table	vater that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 are present, the wetland is a bog.	
SC 4.4. Is an area with pears or much	is forested (> 30% cover) with subalpine fir, western red cedar, western	
hemiock ladepole pine out	s forested (> 50% cover) with subalpine fir, western red cedar, western	
(or combination of species) if	sking aspen, Engelmann spruce, or western white pine, AND any of the species	Cat. I
(en combinación of species/)).	sted in Table 5 provide more than 30% of the cover under the canopy?	1. 16- 1
SC 4.5 Do the species listed in Table	Yes = Category 1 $\log (N_0^2 - Go to SC 4.5)$ 6 comprise at least 20% of the total plant cover within an area of peats and	
mucks?	o comprise at least 20% or the total plant cover within an area of peats and	
1111 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Yes = Is a Calcareous Fen for purpose of rating No+ Go to SC 4.6	
AND one of the two following	6 comprise at least 10% of the total plant cover in an area of peats and mucks,	
		S
The main depusits [calcium bal	rbonate (CaCD ₃) precipitate) occur on the soil surface or plant stems	Cat. I
- the prior free water is 2 6	5.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the	
wetland	Yes = is a Category I calcareous fen(No = is not a calcareous fen	

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified that a forested class is present in question H 1.1)	
 The wetland is within the 100 year floodplain of a river or stream 	
 Aspen (Populus tremuloides) represents at least 20% of the total cover of woody species 	
— There is at least ½ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1) Yes - Go to SC 5.1 (No)= Not a forested wetland with special characteristics	
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? Yes = Category I No - Go to SC 5.2	Cat. I
SC 5.2 Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover of woody species? Yes = Category I (No - Go to SC 5.3	Cat. I
SC 5.3 Does the wetland have at least % acre with a forest canopy where more than 50% of the trae species (by cover) are fast growing species (see Table 7)? Yes = Category II Wo- Go to SC 5.4	Cat. II
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = Category II (No): Not a forested wetland with special characteristics	Cat. II
Calegory of wetland based on Special Characteristics	Not u
Choose the highest rating if wetland falls into several categories If you answered No for all types, enter "Not Applicable" on Summary Form	Applicate

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: NOTE: This question is independent of the land use between the wetland and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth, 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak
 component is important (full descriptions in WDFW PHS report p. 158 see web link above).
- Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial
 ecosystems which mutually influence each other.
- 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.
- 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.
- Cliffs: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus; Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tallings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- 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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca Idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum spp.*).
- Juniper Savannah: All juniper woodlands

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B 1

Wetland name or number Wetland C **RATING SUMMARY – Eastern Washington** 120 Name of westand (or 10 #); Wettand Date of site visit: L Rated by Lachel Trained by Ecology? __ Yes __ VNo Date of training HGM Class used for rating Depressional Wetland has multiple HGM classes? Y_N NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map _____ OVERALL WETLAND CATEGORY _____ (based on functions ___ or special characteristics ___

1. Category of wetland based on FUNCTIONS

_	Category I – Total score = 22-27
_	Category II – Total score = 19-21
-	_Category III - Total score = 16-18
J	Category IV - Total score = 9-15

FUNCTION		mpro iter Q	ving uality	H	ydrolo	ogic -	A State	Habit	ət	
			Circle	the a	ppropr	iate ra	otings	5	-	
Site Potential	H	М	(1)	н	(M)	L	H	M (1)	
Landscape Potential	H	(M)	Y	н	(M)	L	H	М	(5)	
Value (H)	M	L	н	M	0	H	М	(1)	TOTA
Score Based on Ratings		(0			5			3		14

Score for each
function based on three
ratings
(order of ratings is not
împortant)

- 9 = H,H,H 8 = H,H,M 7 = H,H,L 7 = H,M,M 6 = H,M,L 6 = M,M,M 5 = H,L,L 5 = M,M,L
- 4 = M, L, L

3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category		
Vernal Pools	пш		
Alkali	I		
Wetland of High Conservation Value	I		
Bog and Calcareous Fens	I.		
Old Growth or Mature Forest – slow growing	T		
Aspen Forest	1		
Old Growth or Mature Forest – fast growing	11		
Floodplain forest			
None of the above	V.		

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D1.3, H1.1, H1.5	-
Hydroperiods (including area of open water for H 1.3)	D1.4, H1.2, H1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	11
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

Riverine Wetlands

Map of the second se	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H1.2, H1.3	
Ponded depressions	R1.1	-
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	1
Plant cover of trees, shrubs, and herbaceous plants	R1.2, R4.2	-
Width of wetland vs. width of stream (con be odded to another figure)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #	
Cowardin plant classes and classes of emergents	L1.1, L4.1, H1.1, H1.5		
Plant cover of trees, shrubs, and herbaceous plants	L1.2		
Boundary of area within 150 ft of the wetland (can be added to another figure)	L2.2		
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2,1, H 2,2, H 2,3		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L3.1, L3.2	1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3		

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	-
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	5 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	\$ 3.1, 5 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	\$3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5-

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

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

NO go to 2

YES - The wetland class is Lake Fringe (Lacustrine Fringe)

- 2. Does the entire wetland unit meet all of the following criteria?
 - ____The wetland is on a slope (slope can be very gradual),
 - ____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks; _____The water leaves the wetland without being impounded.

NO)- go to 3

YES - The wetland class is Slope

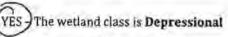
NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit meet all of the following criteria?
 - ____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
 - The overbank flooding occurs at least once every 10 years.

NO) go to 4 **NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

 Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. This means that any outlet, if present, is higher than the interior of the wetland.

NO-go to 5



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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form - Effective January 1, 2015 3

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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

	Points (only 1
Water Quality Functions' - Indicators that the site functions to improve water quality	score p box)
D 1.0. Does the site have the potential to improve water quality?	~
D 1.1. Characteristics of surface water outflows from the wetland: points = 5	
Wetland has no surface water outlet	
Wetland has an intermittently howing butlet	1.11
Wetland has a highly constricted permanently howing outer	
Wetland has a permanently flowing, unconstricted, surface outlet D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils) YES = 3 NO = 0	C
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)	10.000
Wetland has persistent, ungrazed, vegetation for > ² / ₃ of area points = 5	
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	
We than that persistent, ungrazed vegetation from 1_{10} to $< 1_3$ of area points = 1	2
We than the persistent, ungrazed vegetation $< 1/_{10}$ of area points = 0	-
D 1.4. Characteristics of seasonal ponding or inundation:	
This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.	
Area seasonally nonded is > % total area of wetland	
Area seasonally ponded is % -% total area of wetland	1
Area seasonally ponded is < ¼ total area of wetland points = 0	
Total for D 1 / Add the points in the boxes above	5
D 2.0. Does the landscape have the potential to support the water quality function of the site?	
	0
D.2.1. Does the wetland receive stormwater discharges? Yes = 1 (No = 0)	V
D.2.1. Does the wetland receive stormwater discharges:	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? (Yes = 1) No = 0	+0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? D 2.3. Are there septic systems within 250 ft of the wetland? D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions Ver = 1 $Ver = 0Ver = 1$ $Ver = 1$	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0 D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0 D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions Yes = 1 No = 0 D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions Yes = 1 No = 0	+0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0 D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0 D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions Yes = 1 No = 0 D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions Yes = 1 No = 0 D 2.1-D 2.3? Source Yes = 1 Yes = 1 Total for D 2 Add the points in the boxes above	+0 0 -
D. 2.1. Does the wetland receive stormwater discharges? D. 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? D. 2.3. Are there septic systems within 250 ft of the wetland? D. 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D. 2.1. D. 2.3? Source Fotal for D 2 Add the points in the boxes above ating of Landscape Potential If score is:3 or 4 = H	+0 0 -
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? D 2.3. Are there septic systems within 250 ft of the wetland? D 2.3. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source Total for D 2 Add the points in the boxes above ating of Landscape Potential If score is:3 or 4 = H $\sqrt{1 \text{ or } 2 = M} _0 = L$ Record the rating on the D 3.0. Is the water quality improvement provided by the site valuable to society?	+0 0 -
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? D 2.3. Are there septic systems within 250 ft of the wetland? D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source Total for D 2 Add the points in the boxes above atting of Landscape Potential If score is:3 or 4 = H $\sqrt{1 \text{ or } 2 = M} _0 = L$ D 3.0. Is the water quality improvement provided by the site valuable to society? D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0 Yes = 1 No = 0 Yes = 1 No = 0	+0 0 -
D 2.1. Does the wetland receive stormwater discharges? D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? D 2.3. Are there septic systems within 250 ft of the wetland? D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source	0 0 1 e first p
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? D 2.3. Are there septic systems within 250 ft of the wetland? D 2.3. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source Total for D 2 Add the points in the boxes above ating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L D 3.0. Is the water quality improvement provided by the site valuable to society? D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0 D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list?	0 0 1 e first p

Hydrologic Functions - Ind	DEPRESSIONAL WETLANDS icators that the site functions to reduce flooding and		oints only 1 sco er box)
et literation and	potential to reduce flooding and erosion?	10 - 10 - 50 - 50 - 10 - 10 - 10 - 10 -	2.27-1
0 4.0. Does the site have the	potential to reduce flooding and erosions		-
	water outflows from the wetland:	antine a P	
Wetland has no surface w		points = 8 points = 4	
Wetland has an intermitte	stricted permanently flowing outlet	points = 4	
Wetland has a permanent	thy flowing unconstricted surface outlet t permanently flowing treat wetland as "intermittently flowing"	points = 0	4
D 4.2. Depth of storage during w	et periods: Estimate the height of ponding above the bottom of	the outlet. For	
wetlands with no outlet, n	measure from the surface of permanent water or deepest part (i	f dry).	
Seasonal ponding: > 3 ft a	bove the lowest point in wetland or the surface of permanent p	onding points = 8	
	3 ft above the lowest point in wetland or the surface of perman	points = 4	
The wetland is a headwat Seasonal ponding: 1 ft - <		points = 4	£
Seasonal ponding: 6 in - <		points = 2	4
the second second to the second se	or wetland has only saturated soils	points = 0	
Total for D 4	/ Add the poin	ts in the boxes above	8
D 5.1. Does the wetland receive		Yes = 1 (No = 0)	0
D 5.2. Is > 10% of the area within	in 150 ft of the wetland in a land use that generates runoff?	(ves=1 No=0	1
D 5.3. Is more than 25% of the c	contributing basin of the wetland covered with intensive human	Ves=1 No=0	1
Total for D 5	/ Add the poir	nts in the boxes above	2
	fscore is: 3 = H 1 or 2 = M 0 = L ctions provided by the site valuable to society?	Record the rating on th	e first po
D 6.1. The wetland is in a landsc	ape that has flooding problems.	1. The second second	
Choose the highest score	nat best matches conditions around the wetland being rated. Do if more than one condition is met.	Latter and the latter	
damaged human or natur	face water that would otherwise flow down-gradient into areas ral resources (e.g., houses or salmon redds), AND		
Flooding occurs in su Surface flooding pro	ub-basin that is immediately down-gradient of wetland blems are in a sub-basin farther down-gradient	points = 2 points = 1	
The existing or potential o	outflow from the wetland is so constrained by human or natural and cannot reach areas that flood.	conditions that the	
Explain why		points = 0	-
There are no problems wi	th flooding downstream of the wetland	points = 0	0
	tified as important for flood storage or flood conveyance in a m	egional flood control	~
plan?		Yes = 2 (No = 0)	0

Total for D 6

Rating of Value If score is: 2-4 = H __1 = M V 0 = L

Record the rating on the first page

H 11. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is ≥ K at or >> 10% of the wetland if wetland is < 2.5 at. Aquatic bed	H 1.0. Does the wetland have the potential to provide habitat for many species?	box) ->-
H 1.2. Is one of the vegetation types Aquatic Bed? H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0 H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ⁻² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurosian milfoil, red conarygross, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and soltcedar (Tamarisk) # of species	H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= % ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover Scrub-shrub (areas where shrubs have >30% cover) Scrub-shrub (areas where trees have >30% cover) 	
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR is Awaust to the end of September? Answer YES for Lake Fringe wetlands. H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0 Z H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed conarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and soltcedar (Tamarisk) # of species		
H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in Angust to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1.4. No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0 Yes		O
Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and soltcedar (Tamarisk) of species	 H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0 	3
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points We three diagrams in this row are	Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same	
	Do not include Eurasian milfoil, reed conarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and soltcedor (Tamarisk) # of species	> 0

H 1.6. Special habitat features Check the habitat features that are present in the wetland. The number of checks is the number of paints. Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. Cattails or bulrushes are present within the wetland. Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. Emergent or shrub vegetation in areas that are permanently inundated/ponded. Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)	0
Total for H 1 Add the points in the boxes above	the S

-18 = H7-14	= M 10-6=L
ļ	-18 = H7-14 :

Record the rating on the first page

101

H 2.0. Does the landscape have the potential to support	in a state in an erions of the siter	_
H 2.1. Accessible habitat (only area of habitat abutting wetlan <i>Calculate:</i> % undisturbed habitat + [(% mode > ¹ / ₃ (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon <10% of 1 km Polygon	d). If total accessible habitat is: rate and low intensity land uses]/2] =% points = 3 points = 2 points = 0	3
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> % undisturbed habitat+ ((% mode Undisturbed habitat > 50% of Polygon Undisturbed habitat 10 - 50% and in 1-3 patches Undisturbed habitat 10 - 50% and > 3 patches Undisturbed habitat < 10% of Polygon	erate and low intensity land uses)/2] =% points = 3 points = 2 points = 1 points = 0	D
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use Does not meet criterion above	points (-2) points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less th irrigation practices, dams, or water control structures. G reclamation areas, irrigation districts, or reservoirs	an 12 in, and its water regime is not influenced by	0
Total for H 2	Add the points in the boxes above	-1

Rating of Landscape Potential If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? C that applies to the wetland being rated	hoose the highest score	
Site meets ANY of the following criteria:	points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 		
- It provides habitat for Threatened or Endangered species (any plant or anima	on state or federal lists)	
 It is mapped as a location for an individual WDFW species 	and the state water	
 It is a Wetland of High Conservation Value as determined by the Department 	of Natural Resources	
 It has been categorized as an important habitat site in a local or regional components 	prehensive plan, in a	
Shoreline Master Plan, or in a watershed plan		
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	points = 1	0
Site does not meet any of the criteria above /	points = 0	0

Rating of Value If score is: 2 = H 1=M V0=L

Record the rating on the first page

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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Grcle the category when the appropriate criteria are met.	he and
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft ² , and does it meet at least two of the following criteria?	
 Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. 	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool. The cell is the upsthered is shallow to 1.6 (20 cm) does lead to up define the probably NOT a vernal pool.	
 The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay. 	1
- Surface water is present for less than 120 days during the wet season.	
Yes – Go to SC 1.1 No = Not a vernal pool SC 1.1. Is the vernal pool relatively undisturbed in February and March?	
Yes - Go to SC 1.2 No = Not a vernal pool with special characteristics	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = Category II No = Category III	Cat. II Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
 The wetland has a conductivity > 3.0 mS/cm. 	
 The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems). 	
 If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. 	
OR does the wetland unit meet two of the following three sub-criteria?	
 — Salt encrustations around more than 75% of the edge of the wetland 	
- More than ¼ of the plant cover consists of species listed on Table 4	
— 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.	Cat.
Yes = Category I No= Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 3.2 No Go to SC 3.3	
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I (No)= Not a WHCV	Cat. I
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
Yes – Contact WNHP/WDNR and go to SC 3.4 No Not a WHCV SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = Category I (No -Not a WHCV	

SC 4.0 Bogs and Calcareous Fens		a provide a state of the second	
Does the wetland [or any part	elow to identify if the wetlar	oth the criteria for soils and vegetation in bogs or ad is a bog or calcareous fen. If you answer yes ns.	
		(i.e., layers of organic soil), either peats or soil profile? See Appendix C for a field key to Yes – Go to SC 4.3 No – Go to SC 4.2	
		peats or mucks, that are less than 16 in deep over ic ash, or that are floating on top of a lake or Yes – Go to SC 4.3 No = Is not a bog for rating	
the total plant cover consists o NOTE: If you are uncertain abo	of species in Table 5? But the extent of mosses in t ater that seeps into a hole du	er of mosses at ground level AND at least 30% of Yes = Category I bog No - Go to SC 4.4 he understory, you may substitute that criterion ag at least 16 in deep. If the pH is less than 5.0 is a bog.	
SC 4.4. Is an area with peats or mucks hemlock, lodgepole pine, qual	forested (> 30% cover) with sing aspen, Engelmann spruce	subalpine fir, western red cedar, western e, or western white pine, AND any of the species than 30% of the cover under the canopy? Yes = Category I bog No – Go to SC 4.5	Cat.)
mucks?	Yes = Is a Calcare	e total plant cover within an area of peats and bus Fen for purpose of rating No – Go to SC 4.6	
AND one of the two following	conditions is met:	e total plant cover in an area of peats and mucks,	12.14
	8 AND electrical conductivit	occur on the soil surface or plant stems γ is ≥ 200 uS/cm at multiple locations within the ry i calcareous fen 'No = is not a calcareous fen	Cat. I

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present	
in question H 1.1)	
 The wetland is within the 100 year floodplain of a river or stream 	
- Aspen (Populus tremuloides) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 No = Not a forested wetland with special characteristics	
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (see Table 7)? Yes = Category No – Go to SC 5.2	
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. I
cover) are fast growing species (see Table 7)? Yes = Category II No – Go to SC 5.4	
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
Yes = Category II No = Not a forested wetland with special characteristics	Cat. I
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	
If you answered No for all types, enter "Not Applicable" on Summary Form	_

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/pbs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: NOTE: This question is independent of the land use between the wetland and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak
 component is important (full descriptions in WDFW PHS report p. 158 see web link above).
- Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial
 ecosystems which mutually influence each other.
- 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.
- 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.
- Cliffs: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- 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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B

Wetland name or number	1	U	l
and a manage of multiper_		-	

RATING ame of wetland (or ID ated by <u>fach</u> J		d D		Date of site vi	in la la
GM Class used for ratio	ng slope	Wet	land has multi	ple HGM clas	sses?YN
NOTE: Form is not a Source of base a /ERALL WETLAND	erial photo/map				-
Categ	etland based ory I – Total sco ory II – Total sco ory III – Total sc ory III – Total sc ory IV – Total sc	re = 22-27 pre = 19-21 pore = 16-18	NS	*	Score for each function based on three ratings (order of ratings is not important)
FUNCTION	Improving Water Quality	Hydrologic	Habitat		9 = H,H,H 8 = H,H,M 7 = H,H,L
	Circle	the appropriate ro	ntings		7 = H,M,M
Site Potential	H (M) L	H (M) L	HMU	1	6 = H,M,L
Landscape Potential	HML	H (M) L	HM		6 = M,M,M
Value	(H) M L	HMU	H M (L)	TOTAL	5 = H,L,L 5 = M,M,L
Score Based on Batings	7	5	3	15	4 = M,L,L 3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the oppropriate category
Vernal Pools	и ш
Alkali	1
Wetland of High Conservation Value	1
Bog and Calcareous Fens	Í
Old Growth or Mature Forest – slow growing	1
Aspen Forest	1
Old Growth or Mature Forest – fast growing	п
Floodplain forest	U ,
None of the above	

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D1.3, H1.1, H1.5	
Hydroperiods (including area of open water for H 1.3)	D1.4, H1.2, H1.3	
Location of outlet (can be added to map of hydroperiods)	D1.1, D4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D2.2, D 5.2	
Map of the contributing basin	D 5.3	1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	1
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	1.

Riverine Wetlands

Map of the second s	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H1.1, H1.5	1
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	1

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L1.1, L4.1, H1.1, H1.5	
Plant cover of trees, shrubs, and herbaceous plants	L1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	1.2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L3.3	-

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H1.1, H1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	51.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	\$4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	\$2.1, \$5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	\$ 3.1, \$ 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	\$ 3.3	

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HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated

If the invitologic uniteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple NGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply and go to Question 5-

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

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size _At least 30% of the open water area is deeper than 10 ft (3 m)

NO-go to 2

YES - The wetland class is Lake Fringe (Lacustrine Fringe)

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

The wetland is on a slope (slope can be very gradual).

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

VThe water leaves the wetland without being impounded.

NO - go to 3

YES- The wetland class is Slope 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 <3 ft diameter and less than 1 foot deep).

3 Does the entire wetland unit meet all of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river:

The overbank flooding occurs at least once every 10 years.

NO-go to 4

YES - The wetland class is Riverine

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. This means that any putlet, if present, is higher than the interior of the wetland

NO - go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

ater quality (only I score pe
box)
in elevation for every 100 ft of
points = 3 points = 2 points = 1
CS definitions): Yes = 3 No=0
e wetland. Dense means you or mowed and plants are points = 3 points = 2 points = 1
points = 0 0 ne points in the boxes above 7

S 2.0. Does the landscape have the	potential to sup	port the water quality function at the site?	
S 2.1. Is > 10% of the area within 150 ft	on the uphill side	of the wetland in land uses that generate pollutiants? $Ves = \frac{1}{2} No = 0$	T
S 2.2. Are there other sources of pollut Other sources	ants coming into t	he wetland that are not listed in question S 2.1? Yes = 1 (No = 0)	0
Total for S 2	1	Add the points in the boxes above	1
Rating of Landscane Potential If score i	1 1 7 - 14	0-1	

Rating of Landscape Potential	If score is: $\sqrt{1-2} = M$	0=L
-------------------------------	-------------------------------	-----

Record the rating on the first page

S 3.1. Does the wetland discharge directly to a stream, river, o	Yes = 1 (No = 0)	0
S 3.2. Is the wetland in a basin or sub-basin where water qualit basin is on the 303(d) list.	ty is an issue? At least one aquatic resource in the Yes = $1 \text{ No} = 0$	0
S 3.3. Has the site been identified in a watershed or local plan YES if there is a TMDL for the drainage or basin in which		2
Total for S 3	Add the points in the boxes above	2

SLOPE WETLANDS	Points
Aydrologic Functions - Indicators that the site functions to reduce flooding and erosion	(oniy 1
and elosion	score per
4.0. Does the site have the potential to reduce flooding and erosion?	DOX
 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > 1/e in), or dense enough, to remain erect during surface flows. Dense, uncut, rigid plants cover > 90% of the area of the wetland All other conditions 	1
eting of Site Potential If score is: $\sqrt{1} = M$ _0 = L Record the rating on the	ne first po
	-1.0.8-
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses that generate excess surface runoff?	1
ating of Landscape Potential If score is: $\sqrt{1} = M = 0 = L$ Record the rating on the	e first pa
S 6.0. Are the hydrologic functions provided by the site valuable to society?	_
S 6.1. Distance to the nearest areas downstream that have flooding problems:	
The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	6
S 6.2. Has the site been identified as important for flood storage and flood conveyance in a regional flood control plan? Yes = 2 (No = 0)	0
Total for S 6 Add the points in the boxes above	n
Rating of Value If score is: 2-4 = H 1 = M 0 = L Record the rating on the	12

NOTES and FIELD OBSERVATIONS:

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H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= % ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover Scrub-shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover) Checks: points = 2 Checks: points = 2 Checks: points = 2 Checks: points = 2 Checks: points = 0	
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = No=0	0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0	3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and soltcedar (Tamarisk) # of species <u></u> 4-9 species: points = 0 4 species: points = 0	1
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and mop of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points Whether is now are	Figure
figh = 3 points	

11.6. Special habitat features Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.	
Cattails or bulrushes are present within the wetland.	
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.	
Emergent or shrub vegetation in areas that are permanently inundated/ponded.	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity	
Invasive species cover less than 20% in each stratum of vegetation (conopy, sub-conopy, shrubs,	D
herboceous, moss/ground cover)	0
otal for H 1 Add the points in the boxes above	6

Rating of Site Potential If score is: 15-18 = H __7-14 = M V 0-6 = L Record the roting on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1, Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate; % undisturbed habitat+ [(% moderate and low intensity land uses)/2] =% > ¹ / ₃ (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 1 <10% of 1 km Polygon points = 0	x
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Colculate: % Undisturbed habitat + [(% moderate and low intensity land uses)/2] = % Undisturbed habitat > 50% of Polygon points = 3. Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0	0
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs Yes = 3 N(=)	0
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: 4-9 = H 1-3 = M 1-3 = M 1-3 = M

H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies that opplies to the wetland being rated	Choose the highest score
Site meets ANY of the following criteria:	points = 2
- It has 3 or more priority habitats within 100 m (see Appendix B)	-
- It provides habitat for Threatened or Endangered species (any plant or an	nal on state or federal lists)
 It is mapped as a location for an individual WDFW species 	
- It is a Wetland of High Conservation Value as determined by the Departm	nt of Natural Resources
 It has been categorized as an important habitat site in a local or regional c Shoreline Master Plan, or in a watershed plan 	mprehensive plan, in a
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	points=1
Site does not meet any of the criteria above ,	(points = 0)

Wetland Rating System for Eastern WA: 2014 Update Rating Form - Effective January 1, 2015

Appendix B: WDFW Priority Habitats in Eastern Washington

Erronty habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Pish and Wildlife 2008. Priority Habitat and Species List Olympia, Washington 177 pp. http://wdfx_wil.gov/publications/00165/wdfw001165.pdf or access the list from here. http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: NOTE: This question is independent

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and
- Old-growth/Mature forests: Old-growth east of Cascade crest Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm] diameter. Downed logs may vary from abundant to absent Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests - Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in oldgrowth: 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 - see web link above).
- Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- 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.
- Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, itc, or other geological formations and is large enough to contain a human.
- Cliffs: Greater than 25 ft (7,6 m) high and occurring below 5000 ft elevation.
- Talus: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite. and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- 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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (Pseudoroegneria spicoto) is often the prevailing cover component along with Idaho fescue (Festuca idahoensis), Sandberg bluegrass (Poa secunda), rough fescue (F. campestris), or needlegrasses (Achnatherum spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere Wetland Rating System for Eastern WA: 2014 Update

Effective January 1, 2015 Appendix B

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lame of wetland (or ID a lated by Rachel	Locke	Trained by		Date of site vi Yes <u>V</u> No Da	The second se
IGM Class used for ration	ng Depressi	21		tiple HGM clas	
NOTE: Form is not of Source of base a	the second se		equested (fi	gures can be co	ombined).
VERALL WETLAND	CATEGORY	(based	l on function	s or special	characteristics)
Categ	etland based ory I – Total sco ory II – Total sco ory III – Total sc ory IV – Total sc	ore = 22-27 ore = 19-21 core = 16-18	NS	3. 3-1	Score for each function based on three ratings (order of ratings is not important) 9 = H,H,H
FUNCTION	Improving Water Quality	Hydrologic	Habitat		8 = H,H,M 7 = H,H,L
	Circle	the appropriate ro		_	7 = H,M,M
Site Potential	H M (L)	(H) M L	HML	2	6 = H,M,L
Landscape Potential	HMY	H (M) L	HML		6 = M,M,M 5 = H,L,L
	HML	н м 🖸	нмс	TOTAL	5 = M,M,L
Value	1.2.		3	15	4 = M,L,L

CHARACTERISTIC	CATEGORY Circle the appropriate category		
Vernal Pools	пш		
Alkali	1		
Wetland of High Conservation Value	1		
Bog and Calcareous Fens	1		
Old Growth or Mature Forest – slow growing	I		
Aspen Forest	1		
Old Growth or Mature Forest – fast growing	u		
Floodplain forest	п		
None of the above	\checkmark		

Wetland name or number_

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D1.3, H1.1, H1.5	
Hydroperiods (including area of open water for H 1.3)	D1.4, H1.2, H1.3	
Location of outlet (can be added to map of hydroperiods)	D1.1, D4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	-
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	1
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D3.3	

Riverine Wetlands

Map of state	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H1.2, H1.3	1
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (con be added to another figure)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R1.2, R4.2	
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L1.1, L4.1, H1.1, H1.5	1.0
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	1.1
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L3.1, L3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	5 4.1	
Boundary of area within 150 ft of the wetland (con be added to another figure)	\$ 2.1, \$ 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	\$ 3.1, \$ 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	\$ 3,3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated. 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 1-4 apply, and go to Question 5.

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

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

(NO) go to 2 YES - The wetland class is Lake Fringe (Lacustrine Fringe)

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

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

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

The water leaves the wetland without being impounded.

NO - go to 3

YES - The wetland class is Slope

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 <3 ft diameter and less than 1 foot deep).

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

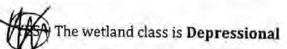
The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;

✓ The overbank flooding occurs at least once every 10 years.

NO - go to 4 YES – The wetland class is **Riverine NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. This means that any outlet, if present, is higher than the interior of the wetland.

NO-go to 5



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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 **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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating -
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

Wetland name or number

RIVERINE WETLANDS Water Quality Functions - Indicators that the site functions to it		Pounda Londy X wome
R 1.0. Does the site have the potential to improve water quality?	inthiose states donard	per box?
R 1.1. Area of surface depressions within the Riverine wetland that can trap so	ediments during a flooding event.	
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	0
R 1.2. Structure of plants in the wetland (areas with >90% cover at person hei	ght, not Cowardin classes):	
Forest or shrub $>$ ² / ₃ the area of the wetland	points = 10	
Forest or shrub $\frac{1}{3} - \frac{1}{3}$ area of the wetland	points = 5	
Ungrazed, herbaceous plants > ² / ₃ area of wetland	points = 5	
Ungrazed herbaceous plants $\frac{1}{3} - \frac{7}{3}$ area of wetland	Doints = 2	2
Forest, shrub, and ungrazed herbaceous < 1/2 area of wetland	points = 0	1
Total for R 1	Add the points in the boxes above	2

Rating of Site Potential If score is _____12-16 = H ____6-11 = M ____0-5 = L

Record the rating on the first page

R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2	(No=D)	o
R 2.2. Does the contributing basin include a UGA or incorporated area?	Yes = 1	10=0)	0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forer within the last 5 years?		No = 0	. 1
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutant	5 (TES =)	No=0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed R 2.1-R 2.4? Source		No = D	C
Total for R 2 Add the	points in the boxe	s above	1

Rating of Landscape Potential	11.2	score is	= n	1 OF 2	c = 191	-

Record the rating on the first page

R 3.1. Is the wetland along a stream or river that is on the 303(d) list o mi?	r on a tributary that drains to one within 1	
	Yes = 1 (No = 0)	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, o	or pathogens? Yes = 1	0
R 3.3. Has the site been identified in a watershed or local plan as impo YES if there is a TMDL for the drainage in which wetland is found		2
Total for R 3	Add the points in the Doves above	2

Wetland name or number

RIVERINE WETLANDS Hydrologic Functions - Indicators that site functions to reduce flo	oding and stream erosion	Points (anly 1 score per box)
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction stream or river channel (distance between banks). Calculate the ratio: (av width of stream between banks). If the ratio is more than 2 If the ratio is 1-2 If the ratio is ½-<1 If the ratio is ½-<½ If the ratio is ½-<½	of the flow and the width of the erage width of wetland)/(average points = 10 points = 8 points = 4 points = 2 points = 1	00
R 4.2. Characteristics of plants that slow down water velocities during floods: Tr shrub. Choose the points appropriate for the best description (polygons in height. These are NOT Cowardin classes). Forest or shrub for more than ² / ₃ the area of the wetland Forest or shrub for > ¹ / ₃ area OR emergent plants > ² / ₃ area Forest or shrub for > ¹ / ₁₀ area OR emergent plants > ¹ / ₃ area Plants do not meet above criteria	reat large woody debris as forest or need to have > 90% cover at person points = 6 points = 4 points = 2 points = 0	4
Total for R 5	Add the points in the boxes above	12

Rating of Site Potential If score is: v 12-16 = H 6-11 = M _____0-5 = L

Record the rating on the first page

110

R 5.0. Does the landscape have	e the potential to support the hydrologi	c functions of the site?		
R 5.1. Is the stream or river adjac	ent to the wetland downcut?	Yes=0	No = 1	0
R 5.2. Does the up-gradient wate	rshed include a UGA or incorporated area?	Yes = 1	No=0)	0
R 5.3. Is the up-gradient stream of	or river controlled by dams?	Yes = 0	No=1	
Total for R 5	1	Add the points in the boxe	above	1.
Rating of Landscape Potential If s	core is: 3=H v 1or 2=M 0=L	Record the	e rating on t	he first page

Rating of Landscape Potential If score is:3 = H1 or 2 = M0 = L	Record t
--	----------

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site. The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources Surface flooding problems are in a basin farther down-gradient No flooding problems anywhere downstream	0
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 9	0
Total for R 6 Add the points in the boxes above	0

Rating of Value If score is: 2-4 = H 1=M V 0=L Record the rating on the first page

Wetland name or number /

H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= % ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 12-40 in (>100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover Scrub-shrub (areas where shrubs have >30% cover) 4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	• 1
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	0
 H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1.4 10 go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 H 1.4. Richness of plant species 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 saltcedar (Tamarisk) # of species 3 	3
# of species _5 4-9 species: points = 1 4-9 species: points = 0	0
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points All three diagrams in this row are figh = 3 points	Figure_
	1
Riparian braided channels with 2 classes	

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14.1

 1.6. Special habitat features Check the habitat features that are present in the wetland. Th Loose rocks larger than 4 in OR large, downed, woody de ponding or in stream. Cattails or bulrushes are present within the wetland. Standing snags (diameter at the bottom > 4 in) in the wetland. Emergent or shrub vegetation in areas that are permanent. Stable steep banks of fine material that might be used by slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of wherbaceous, moss/ground cover) 	bris (> 4 in diameter) within the area of surface tland or within 30 m (100 ft) of the edge, ntly inundated/ponded. beaver or muskrat for denning (> 45 degree	0
Fotal for H 1	Add the points in the boxes above	5

H 2.0. Does the landscape have the potential to support habitat functions of the site?	1
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: Calculate: % undisturbed habitat+ [(% moderate and low intensity land uses)/2] = % > ¹ / ₃ (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 <10% of 1 km Polygon points = 0	x
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0	0
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points (-2) Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs Yes = 3 10=0	0
Total for H 2 . Add the points in the boxes above	-1-

Rating of Landscape Potential If score is: 4-9 = H 1-3 = M $\sqrt{-1} = L$ Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or poli- that applies to the wetland being rated	cies? Choose the highest score	
Site meets ANY of the following criteria:	points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) It provides habitat for Threatened or Endangered species (any plant or It is mapped as a location for an individual WDFW species It is a Wetland of High Conservation Value as determined by the Depar It has been categorized as an important habitat site in a local or regions Shoreline Master Plan, or in a watershed plan 	ment of Natural Resources	
Site has 1 or 2 priority habitats within 100 m (see Appendix B) Site does not meet any of the criteria above	points = 1 points = 0	0

Rating of Value If score is: 2 = H 1 = M $\sqrt{0} = L$ Record the rating on the first page

Worland name or number

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wotland meats the attributes described below and circle the appropriate cotegory. NOTE A wetland may meet the collection for more than one set of special characteristics. Record of those that apply. NOTE: A All wetlands should also be characterized based on their functions.

the second se	Category
NC 1.6. Vermal pools	
In the workland less than 4000 R ² and does it meet at less fees of the following criteria?	
- The service set success a mental as more than and the following setting?	
 We arrive value of water or recritabler preventiable from a small contributing basin and has no groundwater Head 	
Wattand plants and topologic pressure and on the spring, the currents regatation is topologic values	
the second provide straight a second side of the second in the second se	
 The vali in the sectore is visitized in 1.9 (8) constances and is undertain by an impermissible laser such as becally as says 	
- Therman water is present for two than 130 date sharing the wet season.	
New March 197 A	
The - Set to BC 1.1 Aug + Nept a versal pool	
Film - the till \$5, 3.2. Not - Next a vertical policy with special characteristics.	
12 1.3 to the operation are an an an an an area of each and a second and a second and a second and a second and	
worklands, means are it	Cat. II
and a resident in out a resident in	Cat. III
92 5.0. Adapti sostilanda	
Steen the wettlend mean ane of the following prisers."	
The evention of her a construction + 3.0 mS/cm	
- The exclured has a conductivity between 2.0 and 2.0 mS, and more than 50% of the plant cover in the	
eventions can be classified as "alkal" species loss fable 4 for los of plants found in alkali rathems)	
 If the welland is dry at the time of your field woll, the service pair of the area is covered with a laws of 	
reigi	
den alson the wettland unit mean two of the following three sub-primers?	
- Salt anometiations around more than 75% of the edge of the welland	
Were than is of the plant cover conside of species liesed on Takin a	
- A gift atterns \$ 3. All alkall wetlands have a high ph but alwass roots that some fractionate motionals	
wav alter have a high pla Thus, pla algent is not a good indicator of alkali wertantic	Cet. 1
Ves = Category I Foo-Net an alkali wetland	
SC 3.8. Wetlands of High Conservation Value (WMCV)	
52. 5 () Has the Mik Department of Natural Resources optioned their webbile to include the list of Metlands of High	
Ves - Go to SC 3.2 No - Go to SC 3.3 Ves - Go to SC 3.2 No - Go to SC 3.3 Ves - Go to SC 3.2 No - Go to SC 3.3	
Hes = Category & Not a WHCV	Cat. I
00.3.3 is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www.b.dhr.wo.apu.http:/refidence/dature/arch/wethpresitiands.pdf	
first - Contact WNINF/WONR and go to SC 3.6 Not a WHCV	
SC 3-8. Her WONR identified the sectional within the S/T/R as a Wetland of High Conservation Value and this base on their website?	
the their website?" This elect a WHCV	

Wetland name or number_

SC 4.0 Bogs and Calcareous Fens	
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and v	etation in bogs or
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen.	ou answer yes
you will still need to rate the wetland based on its functions.	
GC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), e	er peats or
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C	a field key to
identify organic soils. Yes – Go to SC 4.3	
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less	an 16 in deep over
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating or	p of a lake or
pond? Yes - Go to SC 4.3 No = Is	a bog for rating
5C 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level A	at least 30% of
the total plant cover consists of species in Table 5? Yes = Category I bog	lo - Go to SC 4.4
NOTE: If you are uncertain about the extent of mosses in the understory, you may subs	te that criterion
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the p	is less than 5.0
and the plant species in Table 5 are present, the wetland is a bog.	a second s
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red ce	, western
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AN	any of the species
(or combination of species) listed in Table 5 provide more than 30% of the cover under	canopy?
Yes = Category bog	
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an	a of peats and
mucks? Yes = Is a Calcareous Fen for purpose of rating	lo - Go to SC 4.6
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area	peats and mucks,
AND one of the two following conditions is met:	
 Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or pl 	t stems Cat. I
— The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple I	
wetland Yes = is a Category I calcareous fen No = is n	

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present	
in question H 1.1)	
 The wetland is within the 100 year floodplain of a river or stream 	
- Aspen (Populus tremuloides) represents at least 20% of the total cover of woody species	
 There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1) 	
Yes – Go to SC 5.1 No = Not a forested wetland with special characteristics	
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? Yes = Category 1 No - Go to SC 5.2	Cat. I
SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? Yes = Category 1 No - Go to SC 5.3	Cat. I
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? Yes = Category II No – Go to SC 5.4	Cat. I
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
Yes = Category II No = Not a forested wetland with special characteristics	Cat. I
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	
If you answered No for all types, enter "Not Applicable" on Summary Form	-

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: NOTE: This question is independent of the land use between the wetland and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Old-growth/Mature forests: Old-growth east of Cascade crest Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age. with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests - Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in oldgrowth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 - see web link above).
- Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- 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.
- 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.
- Cliffs: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- 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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (Pseudoroegneria spicata) is often the prevailing cover component along with Idaho fescue (Festuca idahoensis), Sandberg bluegrass (Poa secunda), rough fescue (F. campestris), or needlegrasses (Achnatherum spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B

Wetland name or number____

RATING SUMMARY – Eastern Washington Date of site visit: 5/1/20 Name of wetland (or ID #): Wetland Rated by Kachel Loche Yes No Date of training Trained by Ecology? Kiverne Wetland has multiple HGM classes? HGM Class used for rating NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map **OVERALL WETLAND CATEGORY** (based on functions or special characteristics 1. Category of wetland based on FUNCTIONS Score for each function based Category I - Total score = 22-27 on three ratings Category II - Total score = 19-21 (order of ratings is not Category III - Total score = 16-18 important) Category IV - Total score = 9-15 9 = H.H.H FUNCTION Improving Hydrologic Habitat 8 = H.H.M Water Quality 7 = H.H.L Circle the appropriate ratings 7 = H.M.M H Site Potential H M ſ١ M L н М 0 6 = H, M, L6 = M,M,M a Landscape Potential н ſΜ н M L н M Ł 5 = H.L.L H L н TOTAL н M Value M L М £ 5 = M.M.L Score Based on 3 4 = M.L.L 15 0 Ratings 3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARAGTERISTIC	CATEGORY Circle the appropriate category	
Vernal Pools	пп	
Alkali	I	
Wetland of High Conservation Value	1	
Bog and Calcareous Fens	T	
Old Growth or Mature Forest – slow growing	I.	
Aspen Forest	T	
Old Growth or Mature Forest – fast growing	n	
Floodplain forest	Π /	
None of the above	\checkmark	

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HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entry unit being rated, you probably have a unit work multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5-

Does the entire unit meet both of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is Lake Fringe (Lacustrine Fringe)

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

- The wetland is on a slope (slope can be very gradual),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland without being impounded.

NO - go to 3

YES - The wetland class is Slope

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 <3 ft diameter and less than 1 foot deep).

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

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river:

The overbank flooding occurs at least once every 10 years.

NO - go to 4

2 The wetland class is Riverine

NOTE: The Riverine wedland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. This means that any outlet, if present, is higher than the interior of the wetland.

NO-go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

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Wetland name or number_

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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated HGM class to use in ra	
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number_

RIVERINE WETLANDS Water Quality Functions - Indicators that the site functions to	improve water quality	Idonts (only 1-score per bax)
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap Depressions cover > 1/a area of wetland Depressions cover > 1/10 area of wetland Depressions present but cover < 1/10 area of wetland No depressions present	sediments during a flooding event: points = 6 points = 3 points = 1 points = 0	ı
R 1.2. Structure of plants in the wetland (areas with >90% cover at person h Forest or shrub > $^{2}/_{3}$ the area of the wetland Forest or shrub $^{1}/_{3} - ^{2}/_{3}$ area of the wetland Ungrazed, herbaceous plants > $^{2}/_{3}$ area of wetland Ungrazed herbaceous plants $^{1}/_{3} - ^{2}/_{3}$ area of wetland Forest, shrub, and ungrazed herbaceous < $^{1}/_{3}$ area of wetland	eight; not Cowardin classes): points = 10 points = 5 points = 5 points = 5 points = 2 points = 0	2
Total for R 1	Add the points in the boxes above	3

R 2.0. Does the landscape have the potential to support the water quality function on R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes=2 No=2	0
2.2. Does the contributing basin include a UGA or incorporated area?	Yes = 1 (No = 0	D
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests the within the last 5 years?	t have been clearcut Yes = 1) No = 0	1
2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants	Ves= No=0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in que R 2.1-R 2.4? Source	Yes=1 No=0	0
Total for R 2 Add the poin	ts in the boxes above	2

Rating of Landscape Potential If score is: 3-6 = H 1 or 2 = M

	ovement provided by the site valuable to society?		_
R 3.1. Is the wetland along a stream mi?	n or river that is on the 303(d) list or on a tributary tha	t drains to one within 1 Yes = $1(N_0 = 0)$	0
R 3.2. Does the river or stream hav	e TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
	n a watershed or local plan as important for maintainin a drainage in which wetland is found.	res No = 0	2
Total for R 3		oints in the boxes above	2
ating of Value If score is: V2-4 =	H 1=M 0=L	Record the rating on th	e first p

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015

Wetland name or number

RIVERINE WETLANDS	A TO SHARE A REAL AND A	Points
Hydrologic Functions - Indicators that site functions to reduce f	looding and stream erosion	ionly 1 sci
R 4.0. Does the site have the potential to reduce flooding and erosion?)	per box)
R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the overage width of the wetland perpendicular to the direction stream or river channel (distance between banks). Calculate the ratio: (width of stream between banks). If the ratio is more than 2 If the ratio is 1-2	on of the flow and the width of the average width of wetland)/(average points = 10	
If the ratio is ½-<1 If the ratio is ½-< ½	points = 8 points = 4 points = 2	~
If the ratio is < 1/2 R 4.2. Characteristics of plants that slow down water velocities during floods: shrub. Choose the points appropriate for the burget starting floods:	and and a state of the	8
height. These are NOT Cowardin classes). Forest or shrub for more than $^{2}/_{3}$ the area of the wetland Forest or shrub for >1/3 area OR emergent plants > $^{2}/_{3}$ area Forest or shrub for > $^{1}/_{3}$ area OR emergent plants > $^{2}/_{3}$ area Plants do not meet above criteria	s need to have > 90% cover at person points = 6 points = 4 points = 2 points = 0	ч
Total for R S	Add the points in the boxes above	12
ating of Site Potential If score is: $\sqrt{12-16} = H$ 6-11 = M0-5 = L	Record the rating on th	ne first pa
R 5.0. Does the landscape have the potential to support the hydrologic	functions of the site?	_
R 5.1. Is the stream or river adjacent to the wetland downcut?	(Yes = 0) No = 1	0
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 (No = 0)	0
R 5.3. Is the up-gradient stream or river controlled by dams?	() () () () () () () () () () () () () (i
Total for R 5	Add the points in the boxes above	1
Rating of Landscape Potential If score is: $3 = H \sqrt{1}$ or $2 = M = 0 = L$	Record the rating on th	e first po
R 6.0. Are the hydrologic functions provided by the site valuable to so		
R 6.1. Distance to the nearest areas downstream that have flooding problems the site. The sub-basin immediately down-gradient of site has surface flooding human or natural resources Surface flooding problems are in a basin farther down-gradient No flooding problems anywhere downstream	s? Choose the description that best fits	0

R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Total for R 6 Add the points in the boxes above

Rating of Value If score is: 2-4 = H __1 = M ___0 = L

Record the rating on the first page

Wetland name or number F

	iny species?	
 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emic category is >= % ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed Emergent plants 0-12 in (0-30 cm) high are the highest layer and Emergent plants >12-40 in (>30-100 cm) high are the highest layer and Emergent plants > 40 in (> 100 cm) high are the highest layer with Scrub-shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover) 	ergent plants. Size threshold for each 1 have > 30% cover ver with >30% cover	0
1.2. Is one of the vegetation types Aquatic Bed?	Yes = 1 10=0	0
 H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emerg 10% of its area during the March to early June OR in August for Lake Fringe wetlands. Yes = 3 H 1.3.2. Does the wetland have an intermittent or permanent, and u or along one side, over at least % ac or 10% of its area? Ans 	to the end of September 7 Answer 123 points & go to H 1.4 No= go to H 1.3.2 nvegetated stream within its boundaries,	3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least species can be combined to meet the size threshold. You do not have Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species	e to name the species.	0
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among type and unvegetated areas (open water or mudflats) is high, moderate, Use map of Cowardin and emergent plant classes prepared for quest	ow, or none.	Figure_

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015

1.6. Special habitat features	1.
Check the habitot features that are present in the wetland. The number of checks is the number of points. Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream.	
Cattails or bulrushes are present within the wetland.	
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.	
Emergent or shrub vegetation in areas that are permanently inundated/ponded.	0
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree , slope) OR signs of recent beaver activity	
Invasive species cover less than 20% in each stratum of vegetation (conopy, sub-conopy, shrubs,	1
herbaceous, moss/ground cover)	
Total for H 1 Add the points in the boxes above	L

H 2.0. Does the landscape have the p	potential to support habitat functions of the site?		
	abitat abutting wetland). If total accessible habitat is:		
Calculate: % undisturbed hab	itat + [(% moderate and low intensity land uses)/2]		%
> 1/3 (33.3%) of 1 km Polygon		points =	3
20-33% of 1km Polygon		points =	2
10-19% of 1km Polygon		points =	D
<10% of 1km Polygon		points =	
H 2.2. Undisturbed habitat in 1 km Polyg	gon around wetland.		
Calculate: % undisturbed hab	itat + [(% moderate and low intensity land uses)/2]	+	%
Undisturbed habitat > 50% of Poly	ygon	points =	3

Rating of Site Potential If score is: 15-18 = H ____7-14 = M ____0-6 = L Record the rating on the first page

Undisturbed habitat > 50% of Polygon	points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patches	points = 2	1
Undisturbed habitat 10 - 50% and > 3 patches	point(=1)	1
Undisturbed habitat < 10% of Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon:	2.4.4	
> 50% of Polygon is high intensity land use	points € (-2)	-2
Does not meet criterion above	points = 0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and Irrigation practices, dams, or water control structures. Generally, this		1
reclamation areas, irrigation districts, or reservoirs	Yes = 3 No = 0	0
Total for H 2	Add the points in the boxes above	0

Rating of Landscape Potential If score is: 4-9 = H 1-3 = M 1-3 = M 1-3 = K Record the rating on the first page

1 3.0. Is the habitat provided by the site valuable to society?		
13.1. Does the site provide habitat for species valued in laws, regulations, or policies that applies to the wetland being rated	Choose the highest score	
Site meets ANY of the following criteria:	points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 		
- It provides habitat for Threatened or Endangered species (any plant or anin	nal on state or federal lists)	
 It is mapped as a location for an individual WDFW species 		
- It is a Wetland of High Conservation Value as determined by the Departme	nt of Natural Resources	
 It has been categorized as an important habitat site in a local or regional co 	mprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	and the second se	
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	points = 1	-
Site does not meet any of the criteria above /	points = 0	O

Rating of Value If score is: 2=H _1=M V0=L

100

Record the rating on the first page

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 wetlands should also be characterized based on their functions.

Wetland Type	No. of the second se	Category
Check off any criterib that apply to the wetland. Circle the cate	egory when the appropriate criteria are met.	
SC 1.0. Vernal pools		
is the wetland less than 4000 ft ² and does it meet at l	east two of the following criteria?	
 Its only source of water is rainfall or snowmelt from input. 	n a small contributing basin and has no groundwater	
 Wetland plants are typically present only in the spr 	ring: the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland pla	ants, the wetland is probably NOT a vernal pool.	
- The soil in the wetland is shallow [< 1 ft (30 cm)dee	ep] and is underlain by an impermeable layer such as	10 M
basalt or clay.	A CARL CONTRACTOR AND A CARL OF	
- Surface water is present for less than 120 days dur	ing the wet season.	
	Yes – Go to SC 1.1 No = Not a vernal pool	
SC 1.1. Is the vernal pool relatively undisturbed in February ar	nd March?	
Yes - Go to SC 1.2	No = Not a vernal pool with special characteristics	
SC 1.2. Is the vernal pool in an area where there are at least 3	separate aquatic resources within 0.5 mi (other	Cat. II
wetlands, rivers, lakes etc.)?	Yes = Category II No = Category III	Cat. III
THE OF A DECK AND MADE TO BE A		Cat. III
SC 2.0. Alkali wetlands		
Does the wetland meet one of the following criteria	a?	
 The wetland has a conductivity > 3.0 mS/cm. 	Service and the service for the service of	
- The wetland has a conductivity between 2.0 and	3.0 mS, and more than 50% of the plant cover in the	
wetland can be classified as "alkali" species (see	Table 4 for list of plants found in alkali systems).	
 If the wetland is dry at the time of your field visit salt. 	t, the central part of the area is covered with a layer of	
OR does the wetland unit meet two of the following		
 — Salt encrustations around more than 75% of the 		
 More than % of the plant cover consists of specie 		1.000
— A pH above 9.0. All alkali wetlands have a high p		Cat. I
may also have a high pH. Thus, pH alone is not a	Yes = Category 1 No= Not an alkali wetland	
	res = category 1 No= Not an aikan wettand	_
SC 3.0. Wetlands of High Conservation Value (WHCV)		
SC 3.1. Has the WA Department of Natural Resources update	d their website to include the list of Wetlands of High	
Conservation Value?	Yes - Go to SC 3.2 No - Go to SC 3.3	
SC 3.2. Is the wetland listed on the WDNR database as a Wetl	land of High Conservation Value?	
	Yes = Category I No + Not a WHCV	Cat. I
SC 3.3. Is the wetland in a Section/Township/Range that cont		
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/w		
	t WNHP/WDNR and go to SC 3.4 (No)= Not a WHCV	
SC 3.4. Has WDNR identified the wetland within the S/T/R as		
on their website?	Yes = Category I No Not a WHCV	1

SC 4.0 Bogs and Calcareous Fens	-
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in hors or	
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer wes	
you will still need to rate the wetland based on its functions.	
SC 4.1: Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to identify organic soils.	
identify organic soils. Yes — Go to SC 4.3 No – Go to SC 4.2 SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over	
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes - Go to SC 4.3 No = is not a bog for rating	
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of	
the total plant cover consists of species in Table 5? Yes = Category I bog No - Go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion	
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western	
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	Cat.
Yes = Category 1 bog No - Go to SC 4.5	
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and	
mucks? Yes = is a Calcareous Fen for purpose of rating No - Go to SC 4.6	
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,	
AND one of the two following conditions is met:	
 Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or plant stems 	Cat. I
— The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 u5/cm at multiple locations within the wetland Yes = is a Category I calcareous fen No = is not a calcareous fen	

SC 5.0. Forested Wetlands		1
Does the wetland have an area of forest rooted with the following three criteria? (Continue only if you hi in question H 1.1) — The wetland is within the 100 year floodplain — Aspen (Populus tremuloides) represents at leas — There is at least ¼ at of trees (even in wetlands "old-growth" according to the definitions for th (see definitions in question H3.1) Yes – Go to SC 5.1 No = No	ove identified that a forested class is present of a river or stream t 20% of the total cover of woody species smaller than 2.5 ac) that are "mature" or	
SC 5.1 Does the wetland have a forest canopy where more than	50% of the tree species (by cover) are slow Yes = Category I No - Go to SC 5.2	Cat. I
growing native trees (see Table 7)? SC 5.2. Does the wetland have areas where aspen (Populus tren	nuloides) represents at least 20% of the total cover Yes = Category No - Go to SC 5.3	Cat. I
SC 5.3. Does the wetland have at least % acre with a forest canopy where more than 50% of the tree species (by		Cat. II
cover) are fast growing species (see Table 7)? SC 5.4. Is the forested component of the wetland within the 100		Cat. II

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife, 2008. Priority Habitat and Species List. Olympia, Washington, 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: NOTE: This question is independent of the land use between the wetland and the priority habitat.

- Aspen Stands: Pure or mixed stands of aspen greater than I ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Old-growth/Mature forests: Old-growth east of Cascade crest Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%: decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth: 80-200 years old west and 80-160 years old east of the Cascade crest.
- Oregon White Oak: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak
 component is important (full descriptions in WDFW PHS report p. 158 see web link above)
- Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial
 ecosystems which mutually influence each other.
- 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.
- 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.
- Cliffs: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm jin eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial hunchgrasses and a
 conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe: Nonforested vegetation type dominated by broadleal herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both, Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. compettrie*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B



C-1







Photo 1: SP 1 in Wetland A, facing SE towards upland habitat.



Photo 2: SP 2 in upland habitat facing west towards Wetland A.







Photo 3: SP 3 in upland habitat facing south.



Photo 4: SP 4 in Wetland B facing west toward Stream 1.





Photo 5: SP 5 in upland habitat facing south toward Wetland B.



Photo 6: SP 6 in Wetland C facing west.



Photo 7: SP 7 in upland habitat facing north toward Wetland C.



Photo 8: SP 8 in Wetland D facing west.





Photo 9: SP 9 in upland habitat facing east.



Photo 10: Stream 1 facing SW.





Photo 11: Bed and bank of Steam 2.



Photo 12: SP 10 in upland habitat facing SE.





Photo 13: SP 11 in upland habitat facing north.



Photo 14: SP 12 in Wetland E facing NE toward Stream 2.



Photo 15: SP 13 in upland habitat facing west toward Wetland E and Stream 2.



Photo 16: SP 14 in upland habitat facing north.







Photo 17: SP 17 in Wetland F facing north.



Photo 18: SP 18 in upland habitat facing south toward Wetland F.





Photo 19: UVP1 in upland habitat facing north.



Photo 20: UVP3 in upland habitat facing NW.



Photo 21: UVP4 in upland habitat facing west.



Photo 22: UVP5 in upland habitat facing south.





Photo 23: UVP6 in upland habitat facing south.



Photo 24: Culvert 4, approximately 36 inches in diameter and made of brick.



Photo 25: Culvert 9, approximately 12 inches in diameter and made of PVC.



Photo 26: Culvert 10, approximately 12 inches in diameter and made of PVC.





Photo 27: Culvert 11, approximately 12 inches in diameter.





Years with the firm

7

Years total

7

Professional registrations

Asbestos Inspector: WA (170936)

CAREER SUMMARY

Bridget Wojtala is an environmental scientist with background in environmental permitting and site assessments. Bridget has managed and performed numerous Phases I Environmental Site Assessments for commercial, residential, and industrial properties; wetland delineations; wetland functional assessments; fish and wildlife habitat surveys; monitoring for mitigation and restoration projects; soil, surface water, and groundwater characterizations; and emergency spill remedial activities. She also has experience in environmental regulations and environmental permitting, including National Environmental Policy Act documentation and Endangered Species Act consultation.

EDUCATION

BS, Natural Resources Mgmt., Grand Valley State University

2013

OTHER WSP EXPERIENCE

- SR 432/411 Road Improvements, Longview, Washington: environmental scientist responsible for assisting a professional wetland scientist in conducting a wetland delineation in accordance with the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region and the preparation of an associated delineation report for SR 432/411 road improvements in Longview, WA. (2019 – Present)
- State Route 503/502 Intersection and Shared-Use Pathway, Battle Ground, Washington: environmental scientist responsible for assisting a professional wetland scientist in conducting a wetland delineation and environmental assessment in accordance with the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region for a pathway project for the city of Battle Ground. Other responsibilities include the preparation of a city critical areas report. (2018 Present)
- NE 182nd Ave at State Route 500 Roundabout, Clark County, Washington: environmental scientist
 responsible for assisting a professional wetland scientist in conducting a wetland delineation and OHWM
 determination in accordance with the 2010 Regional Supplement to the Corps of Engineers Wetland
 Delineation Manual: Western Mountains, Valleys, and Coast Region and the preparation of an associated
 delineation report. (2019 Present)
- NE Lake Road and NE Everett Street Intersection Improvements, Camas, Washington: environmental scientist responsible for assisting a professional wetland scientist in conducting a wetland delineation and habitat assessment in accordance with the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region for an intersection improvements project for the city of Camas. Other responsibilities include the preparation of a city critical areas report. (2019 Present)
- NE 18th Street Project NE 97th Avenue to NE 107th Avenue, Vancouver, Washington: environmental scientist responsible for assisting a professional wetland scientist in conducting a wetland delineation and habitat assessment in accordance with the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region for NE 18th Street improvements for the city of Vancouver. Other responsibilities include the preparation of a city critical areas report and no effect letter. (2018 Present)
- Hood River White Salmon Bridge Replacement Project, Hood River, Oregon and White Salmon,
 Washington: environmental scientist responsible for preparing a report pursuant to Appendix A of the USCG Bridge Permit Application Guide to obtain a Preliminary Navigational Clearance Determination from the USCG which provides a level of certainty to the navigational clearance for the project.
 Reviewed previous navigation study, type, size and location reports, draft environmental impact studies, USACE documents, and other published sources. Environmental scientist responsible for assisting a



professional wetland scientist in conducting a wetland delineation in accordance with the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region and the preparation of an associated delineation report for the Hood River – White Salmon Bridge Replacement Project. (2018 – Present)

- 544 Reservoir Project, Camas, Washington: environmental scientist responsible for assisting a professsional wetland scientist in conducting a wetland delineation and habitat assessment in accordance with the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region for the city of Camas. Other responsibilities include conducting a Phase I ESA in accordance with ASTM E 1527-13 standards and preparing an update report to the existing Phase I summarizing any changes since the existing report was completed. (2018-2019)
- Port of Kalama warehouse property in Kalama, Washington: environmental scientist responsible for conducting a Phase I and II Environmental Site Assessment in accordance with ASTM E 1527-13 standards. Responsibilities included evaluating the potential risk and liability associated with dredged fill material on the site. Coordinated with driller to complete three sediment borings using direct-push drilling equipment. Collected continuous sediment samples from the borings to approximately 30 feet below ground surface or to groundwater for field screening. Submitted soil samples to analytical laboratory for chemical analysis. Collected and submitted groundwater samples from each boring. Prepared field logs for each exploration and recorded position of each exploration location using a GPS. (2019)
- Mills Family Property, Camas, Washington: environmental Scientist responsible for conducting a Phase I ESA, including performing a site reconnaissance to observe the site and adjacent properties, developing a photographic record of current site conditions, reviewing aerial photography, interviewing appropriate persons with knowledge of the site, and reviewing a search of federal, tribal, state, and local government databases (Environmental Data Resources report). Prepared and delivered a written summary of the draft and final Phase I ESA in accordance with ASTM E 1527-13 standards along with opinion and recommendations regarding the potential for contamination by hazardous substances at the site, provided as a PDF document. (2018)
- **US30: Kittridge St. Johns, Portland, Oregon:** environmental scientist responsible for conducting a Hazardous Materials Corridor Study for this highway rehabilitation project, including performing a site reconnaissance to observe the site and adjacent properties, developing a photographic record of current site conditions, reviewing aerial photography, interviewing appropriate persons with knowledge of the site, and reviewing a search of federal, tribal, state, and local government databases (Environmental Data Resources report). Prepared and delivered a written summary of the draft and final Hazardous Materials Corridor Study in accordance with ASTM E 1527-13 and ODOT standards along with opinion and recommendations regarding the potential for contamination by hazardous substances at the site, provided as a PDF document. (2019 to present)
- I-5 Coburg Interchange Design Project, Lane County, Oregon: environmental scientist responsible for preparing a Modified Hazardous Materials Corridor Assessment (HMCA) to identify potential sources of contamination that could impact the project. HMCA was conducted in accordance with generally accepted environmental procedures as outlined in the Hazardous Waste Guide for Project Development, by the American Association of State Highway and Transportation Officials Special Committee on Environment, Archeology, and Historic Preservation. (2019 – Present)
- New Fire Station, Stevenson, Washington: environmental scientist responsible for assisting a
 professional wetland scientist in conducting a wetland delineation in accordance with the 2010 Regional
 Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and
 Coast Region and the preparation of an associated delineation report for the City of Stevenson's fire
 station site. (2019)



Rachel has conducted fieldwork across a variety of ecosystems and will apply her experience and attention to detail to CPUC projects.

EDUCATION

B.S., Environmental Management and Protection, California Polytechnic State University at San Luis Obispo

CERTIFICATION Certified Erosion & Sediment Control Lead – CESCL

Rachel Locke

Environmental Scientist

Experienced working in a variety of ecosystems, including wetlands, prairies, and rugged mountains, Ms. Locke applies her fieldwork training and to provide accurate, detailed, and efficient data collection for energy development projects. She is familiar with site monitoring and maintenance, water quality sampling, National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) permit compliance. Ms. Locke has also applied her working knowledge of Oregon native plants and wetland delineation training into a number of site restoration projects.

Restoration at Ash Creek Forestry, Oregon. As a restoration technician for Ash Creek Forestry, Ms. Locke contributed to a number of projects geared toward restoring native habitats throughout northwestern Oregon. As part of this work, she identified and monitored native and invasive plants species; removed invasive plants using brush cutters, chainsaws, and machetes; planted native species in a number of ecosystems; and mixed and applied herbicides as necessary.

San Joaquin River Restoration Program, California. While working at the San Joaquin River Parkway Trust, Ms. Locke managed a

\$2-million grant funded through this Bureau of Reclamation restoration program. Her responsibilities included safety training, oversight of invasive plant removal and restoration projects, environmental compliance, applying herbicide treatments, and obtaining field data. She also ensured projects complied with permits and reports in accordance with NEPA and CEQA, and maintained relationships with local landowners and regulatory agencies to facilitate smoother project process.

Rand Historical Mining Complex, Randsburg, California. Ms. Locke was part of the E & E sampling team that analyzed the arsenic levels on a Bureau of Land Management (BLM) mining complex. She assisted with taking X-ray fluorescence (XRF) of samples, auguring for samples, equipment decontamination between samples, and characterizing routes of potential contamination to adjacent properties.

Natural Gas Pipeline Assessment. For a confidential client, Ms. Locke is responsible for post-construction monitoring along the right-of-way of this 24-mile pipeline intended to provide fuel to a proposed natural gas-fired, combined-cycle power plant. She is currently involved with erosion control monitoring and has led multiple of these field monitoring efforts. Ms. Locke used her prior permitting experience to assist with deliverables and permit tracking.

Ruby Natural Gas Pipeline, Wetland and Steam Monitoring, Wyoming to Oregon. For El Paso Corporation (now Kinder Morgan, Inc.), Ms. Locke worked as part of a team to monitor post-construction restoration efforts along the Ruby pipeline in Nevada. Her duties included vegetation monitoring, data collection (igeotrack), characterization of site conditions, and soil sampling. **Proposed Solar Generation Facility, Nevada.** Ms. Locke was part of the E & E team responsible for data collection and stream determination. She used her wetland delineation skills to assist with intermittent and ephemeral stream determination and characterization. She was also responsible for assisting with the jurisdictional permitting process for the USACE.

Carty Generating Station Natural Gas and Solar Expansion Assessment, Boardman, Oregon. For

Portland General Electric (PGE), Ms. Locke was part of the E & E team responsible for conducting biological surveys along the proposed expansion area, including transmission lines and project buffers. Surveys specifically targeted sensitive and endangered species such as the Washington ground squirrel. Additional biological surveys included vegetation and habitat mapping, as well as wetland delineations. Ms. Locke assisted with deliverables associated with Oregon's Energy Facility Siting Council process.

Jordan Cove LNG Project (Previously Pacific Connector Gas Pipeline), Oregon. For Williams Pacific Connector Gas Pipeline, LLC. Ms. Locke supported wetland delineation surveys for the 200+-mile pipeline proposed to extend along the coast of the Pacific Northwest Region. She has delineated and documented wetlands and other waters spanning several ecoregions and is assisting in the preparation of the wetland delineation report.

Additional Training

Ms. Locke completed her wetland delineation certification class with the Wetland Training Institute. She also received training from PSU Professional courses for Wetland Soils and Wetland Plant ID. She received her HAZWOPER training in 2015.

Employment:

Ecology and Environment, Inc., Portland, Oregon, 2015-present Ash Creek Forestry, Restoration Technician, 2014-2015 San Joaquin River Parkway and Conservation Trust, Inc., Project Manager, 2012-2013

Professional Affiliations:

Bibliography:

Language Capabilities: None

Ed. Dates: BS 2011

Wetland Training Institute (WTI) Wetland Delineation Training, 2015 Certified Erosion & Sediment Control Lead – CESCL, No. 45940, January 2017

References:

Keywordsearch:

Confidential, for In-House Use Only:

Proposed Solar Generation Facility, Nevada. *1004603.0029. Caballo Loco/Roadrunner Project Waters Delineation, Pahrump, Nevada. - 3/21/14 MSA-Company name, project data & reports; Company info for the term of the contract plus 5 yrs after term, unless public; notify if served subpoena so they can oppose. Written permission or becomes public; approval by legal.

Natural Gas Pipeline Assessment. *1003984.0002 GTN Carty Natural Gas Pipeline, Morrow County, Oregon - Prior written consent; 5 years following term. COMPLETELY Confidential; cannot use without expressed consent. *See project background file for more info. SQ e-mailed Eric White and Jim Thornton 08/26/15 about asking for permission.

Review Status: TO RL 09-17-15; 12/15; added Carty 4/16



E Waters of the State Memo and Concurrence

MEMO

FROM:	WSP
SUBJECT:	Stream 3 Jurisdictional Status
DATE:	October 27, 2020

EXECUTIVE SUMMARY

WSP (formerly Ecology & Environment) performed a delineation of wetlands and other waters of the United States for Cypress Creek Renewables, LLC and Carriger Solar, LLC on the Carriger Solar Project (Project; see Attachment 1, Figure 1) from April 29 through May 1, 2020, and May 5, 2020. On October 9, 2020, WSP conducted a site visit with staff from Washington Department of Ecology (DOE), Lori White, and U.S. Army Corps of Engineers (USACE), Evan Carnes, to verify boundaries of identified features.

DOE requests additional information for jurisdictional determination of one feature, Stream 3 (Attachment 1, Figure 2). WSP presents the following information utilizing Environmental Protection Agency (EPA), DOE, and USACE guidance in support of the feature not meeting criteria to be considered a water of the state.

RESULTS AND DISCUSSION

DOE has jurisdictional authority pursuant to Section 401 of the Clean Water Act (CWA) of surface waters of the state and waters of the state. Per WAC 173-226-030, a surface water of the state is defined as all water defined as "waters of the United States (WOTUS)" in 40. CRF 122.2 that are within the state of Washington. Waters of the state include surface waters of the state and waters of the state as defined in RCW 90.48.020. Waters of the state are defined as lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the state of Washington.

Stream 3 is not a WOTUS. Stream 3 does not have a direct surface connection with a navigable water or tributary. The feature lacks evidence of intermittent flow and does not meet the definition of a WOTUS.

Stream 3 lacks evidence of regular or seasonal conveyance of surface or groundwater.

WSP staff did not observe hydrology during the field site visits of April 29 through May 1, 2020, and May 5, 2020, nor during the site visit of October 9, 2020. The feature is vegetated with upland ruderal grasses and shrub-steppe community, indicating a lack of water conveyance, seeps, springs, or wetlands. The feature lacks a defined bed and bank, and at times is lost within the landscape. The feature does not have a hydrological connection to any other water features,

nor does it receive or convey water to a culvert feature. The feature is not within 300 feet of an ordinary high water mark, nor is it within the width of a floodplain. See site photographs located in Attachment 2.

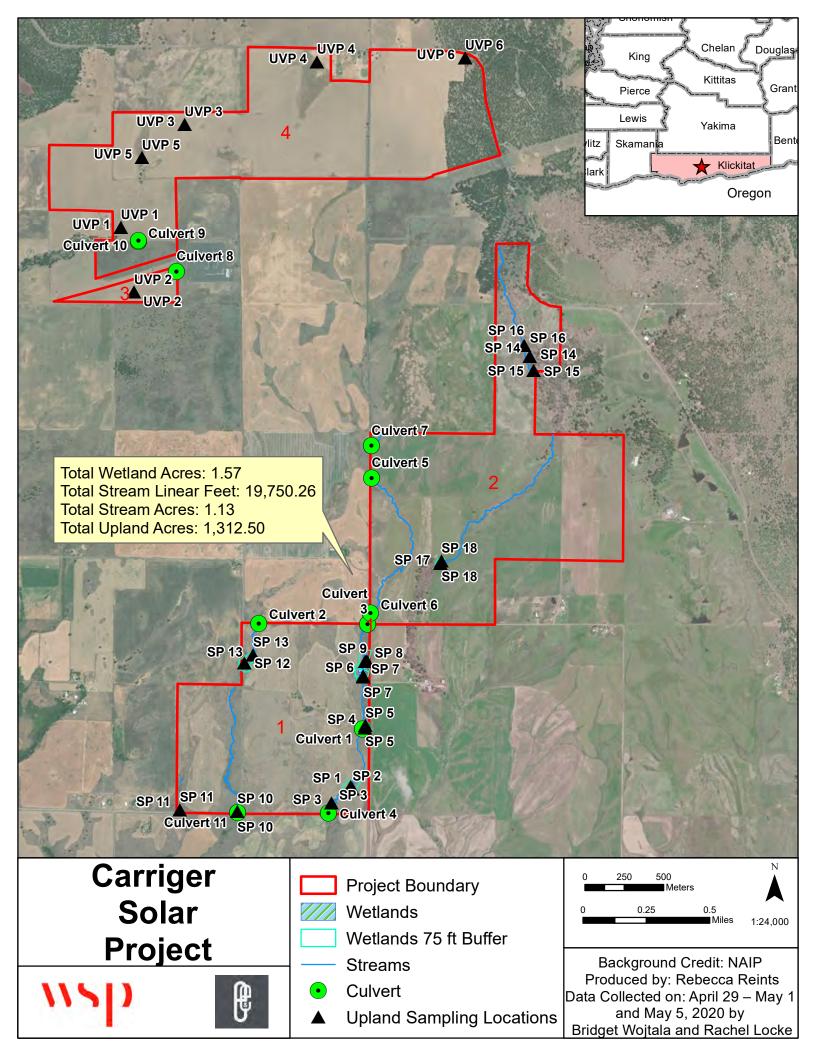
The location of Stream 3 is used as a wildlife trail. As discussed previously, Stream 3 lacks evidence of water conveyance. A path is evident periodically, though lost in the landscape at times. The line of the feature was walked in the north to south direction to the terminus of the project boundary at Fish Hatchery Road. At this location, a wildlife path is evident traversing the hillside and entering the project area at the path of Stream 3. See site photographs in Attachment 2.

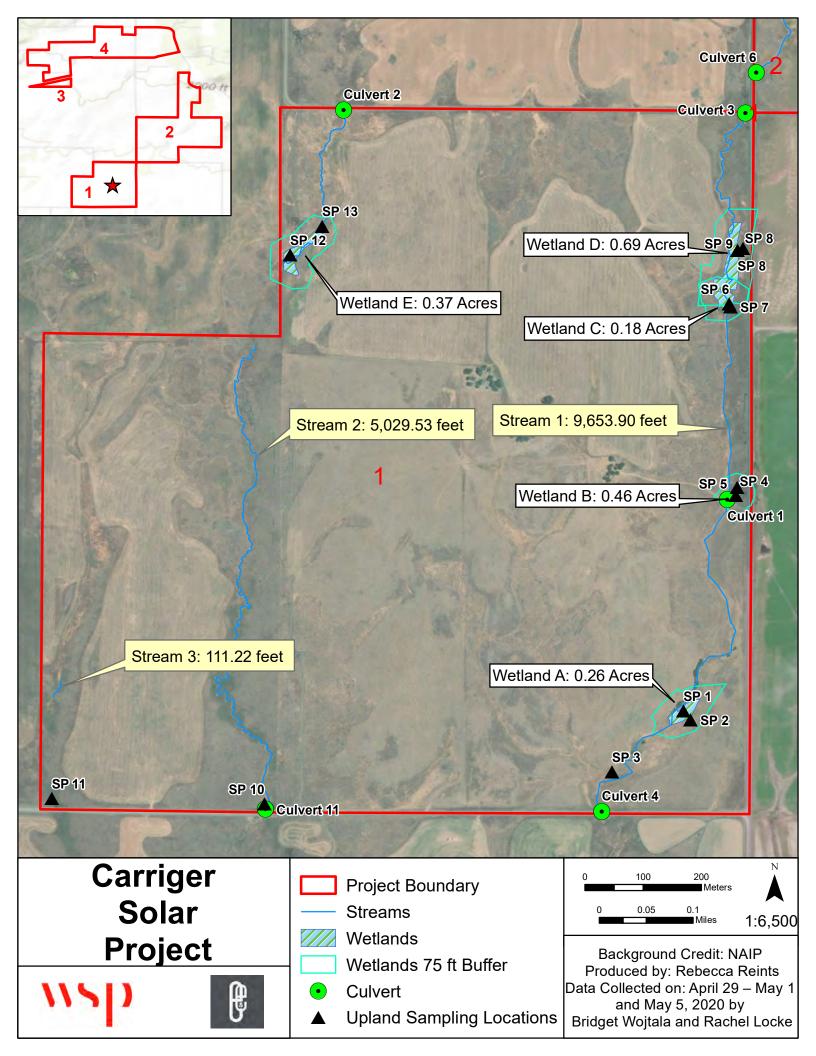
CONCLUSION

Stream 3 does not meet the definition of a surface water of the state nor a water of the state. Any definition of the feature evident in the landscape has not been created by seasonal or intermittent flow of water, but instead by wildlife crossings. WSP, on behalf of Cypress Creek Renewables, LLC and Carriger Solar, LLC, respectfully requests confirmation of this determination.



ATTACHMENT1







ATTACHMENT 2

wsp



Photo 1: October 9, 2020, location of Stream 3, facing south toward Fish Hatchery Road. Wildlife path traversing uphill.



Photo 2: October 9, 2020, location of Stream 3, facing southwest. Lack of defined bed and bank.





Photo 3: October 9, 2020, vegetated "bed" of Stream 3.



Photo 4: October 9, 2020, location of Stream 3, facing south. Feature is lost within the landscape.





Photo 5: October 9, 2020, location of Stream 3 facing south.



Photo 6: Location of Stream 3 facing north. Photo taken at time of wetland delineation from April 29 through May 1, 2020, and May 5, 2020.



Photo 7: Location of Stream 3 facing southwest. Photo taken at time of wetland delineation from April 29 through May 1, 2020, and May 5, 2020.

Leeson, Janelle

From:	White, Lori (ECY) <lowh461@ecy.wa.gov></lowh461@ecy.wa.gov>
Sent:	Thursday, November 5, 2020 10:27 AM
То:	Leeson, Janelle
Cc:	Carnes, Evan G CIV USARMY CENWS (USA); Gavin Berg; Emily Wheeler; Jain, Aaftab
Subject:	RE: Carriger Solar Waters of the State Memo

Good Morning Janelle,

Based on the information provided within the Stream 3 Jurisdictional Status, technical memo and observations from our site visit, I concur that Stream 3 is not a Water of the State and any impacts incurred to this area would not require a separate Administrative Order under RCW 90.48. Please let me know if you have any questions or comments.

Sincerely,

fori B White (she/her) Shoreland & Wetland Specialist

Department of Ecology • 1250 W Alder Street • Union Gap, WA 98903 • lori.white@ECY.WA.GOV • 509-575-2616



From: Leeson, Janelle <Janelle.Leeson@wsp.com>
Sent: Tuesday, October 27, 2020 4:40 PM
To: White, Lori (ECY) <lowh461@ECY.WA.GOV>
Cc: Carnes, Evan G CIV USARMY CENWS (USA) <Evan.G.Carnes@usace.army.mil>; Gavin Berg <gavinberg@gmail.com>;
Emily Wheeler <emily.wheeler@ccrenew.com>; Jain, Aaftab <Aaftab.Jain@wsp.com>
Subject: Carriger Solar Waters of the State Memo

THIS EMAIL ORIGINATED FROM OUTSIDE THE WASHINGTON STATE EMAIL SYSTEM - Take caution not to open attachments or links unless you know the sender AND were expecting the attachment or the link

Hi Lori,

Thank you for joining the site visit for the Carriger Solar Project earlier this month. Per our discussion in the field, I have attached a technical memo to support WSP's finding that Steam 3 is not a water of the State. Once you confirm your determination, we will update site maps accordingly, including revised site boundaries, for USACE and DOE determinations.

Thanks!

Janelle Leeson Regulatory Specalist

WSP USA (formerly Ecology and Environment, Inc.) Please note the new email address and phone number.



Email: <u>Janelle.Leeson@wsp.com</u> Phone: +1 971.599.1687 WSP USA Portland, OR

wsp.com





Wetland and Waterbodies Delineation Report

Carriger Solar, LLC KlickitatCounty, Washington

Prepared for Cypress Creek Renewables, LLC Santa Monica, California

January 20, 2022

Carriger Solar, LLC Wetland and Waterbodies Delineation Report

Submitted to

Cypress Creek Renewables, LLC Carriger Solar, LLC 3402 Pico Boulevard Santa Monica, California 90405

January 20, 2022

Submitted by

WSP USA 1001 Fourth Avenue, Suite 3100 Seattle, Washington 98154

EE1009812.0002

CARRIGER SOLAR, LLC WETLAND AND WATERBODIES DELINEATION CYPRESS CREEK RENEWABLES, LLC

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1.0 INTRODUCTION

WSP performed an additional delineation of wetlands and waterbodies for Cypress Creek Renewables, LLC (CCR) at the location of the Carriger Solar, LLC project (Appendix A; Figure 1). This document supplements the prior wetland report prepared for this project and encompasses the expanded project area. The original project area consisted of 1,260 acres and the expanded project area is an additional approximately 1,000 acres near the city of Goldendale in Klickitat County, Washington (Appendix A; Figure 2). The project area is in Township 5 North, Range 16 East; Township 5 North, Range 15 East; Township 4 North, Range 15 East; and Township 4 North, Range 14 East near the city of Goldendale, Klickitat County, Washington. Parcels are located along State Route 142 (SR 142), Knight Road, Mesecher Road West, Fish Hatchery Road, Hatchery Lane, Hill Road, Butts Road, and Fairgrounds Road West. The project area is in the Middle Columbia River Basin (Hydrologic Unit Code 170701060303). The purpose of the project is to expand CCR's renewable energy footprint within Klickitat County.

The study area for this wetland and waterbodies delineation is approximately 1,000 acres in size, including a 1-mile long stretch of right-of-way along Knight Road that would be used for the power generation interconnection to the Bonneville Power Administration substation. The study area is composed primarily of agricultural and residential land uses. The Goldendale Fish Hatchery, owned and operated by the Washington Department of Fish and Wildlife (WDFW), is located on the western boundary of one of the parcels.

The wetlands and streams identified in the study area were delineated based on U.S Army Corps of Engineers (USACE) and Washington State Department of Ecology (Ecology) field protocols and supplements. A preliminary jurisdictional status is provided for the aquatic features described in this report. The field surveys were initially conducted under the 2020 Waters of the US (WOTUS) Definition. After the completion of field work, the definition of WOTUS changed in response to a review required by Executive Order 13990. In August 2021 the US District Court of Arizona vacated the Navigable Waters Protection Rule. In light of the court order, the USACE has moved to using the Pre-2015 Definition. The jurisdictional status for Waters of the US in this report has taken into consideration the vacated and remanded Navigable Waters Protection Rule and follows the Pre-2015 regulatory definition. The prior report has been reviewed and is still consistent with the Pre-2015 definition.

Nine wetlands were identified within the project area and account for approximately 12.83 acres; one wetland was identified outside of the project area and is approximately 17 acres from on-site observations and best professional judgment. Six streams cross the project area and account for an additional 35,725 linear feet of waterway within the project area (Appendix A; Figures 8a to 8e). The project is located within one ecoregion and was delineated using the Arid West Regional Supplement.

A total of nine wetlands (seven palustrine emergent wetlands and two scrub-shrub wetlands) and six surface waterbodies (unnamed streams) were identified and delineated during the delineation. The naming conventions were continued from the previous wetland report (E&E/WSP 2020) submitted for this project. Of the nine delineated wetlands, six are anticipated to be regulated under Federal jurisdiction and all nine are

anticipated to be under State and Local jurisdiction. Of the six surface waterbodies, all six are anticipated to be under Federal, State, and Local jurisdiction.

1.1 REGULATORY CONTEXT

The purpose of this report is to document known aquatic features, including wetlands and streams, within the study area consistent with federal, state, and local regulations and guidance. Any impacts to these resources will need to comply with these regulations. The following laws and regulations likely apply to wetland and stream resources within the project study area.

Law/Regulation	Summary		
Federal			
Clean Water Act Section 404	Section 404 regulates the discharge or excavation of fill in jurisdictional waters and wetlands. The USACE administers oversight of these activities and issues Section 404 permits for activities occurring within waters of the United States.		
Clean Water Act Section 401	The issuance of a federal permit, such as a Section 404 permit, must comply with state water quality standards, In Washington the Department of Ecology has been delegated 401 review authority for federal permits outside of federal and tribal areas.		
State			
Hydraulic Code	WDFW administers the hydraulic code through issuance of hydraulic project approvals (HPAs). Project activities occurring within waters of the state, or adjacent areas defined by the code, that have the potential to impact fish life or fish habitat are subject to review WDFW.		
Local			
Klickitat County Critical Area Ordinance No. 0080613	The County regulates activities occurring within designated Critical Areas and their associated buffers. Wetlands and streams are considered Critical Areas.		

Table	1. Summary	of Applicable	Federal, State	, and Local Policies
			. odorally otato	

The following sections describe the delineation methods, site characteristics, survey results, and an overview of the applicable aquatic resource regulations.

2.0 METHODS

2.1 WETLAND DELINEATION

The project is located within the Middle Columbia River Basin ecoregion. Guidance for determining wetland boundaries in this ecoregion follows the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (USACE 2010) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (USACE 2008). According to the regional supplements, wetlands are defined as

... areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted

for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

The regional supplement outlines a three parameters approach to making wetland determinations: hydrophytic vegetation, hydric soils, and wetland hydrology.

- Hydrophytic vegetation consists of plants that, because of morphological, physiological, and/or reproductive adaptations, have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Plants can range from Obligate Wetland (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), and Obligate Upland (UPL); based on their probability of presence in wetland areas.
- Hydric soils are soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions.
- Wetland hydrology is present when an area is inundated, or the water table is within 12 inches of the surface for at least 14 consecutive days of the growing season at a minimum frequency of 5 years in 10. The growing season is defined as the portion of the year when soil temperature at 12 inches below the soil surface is greater than biologic zero (5 degrees C).

Except in atypical situations as defined in the regional supplement, evidence of a minimum of one positive wetland indicator from each of the three parameters (hydrology, vegetation, and soil) must be found in order to make a positive wetland determination.

WSP scientists used the following information to develop a preliminary indication of where potential wetlands and waterbodies might exist and to aid on-site data collection.

- Klickitat County Interactive Mapping Program GIS Database
- Hydric Soils List (U.S. Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS]) State Soil Data Access (SDA) Hydric Soils List (USDA-NRCS 2021a)
- National List of Plant Species that Occur in Wetlands: Northwest Region 9 (Reed 1988)
- National Wetland Plant List (Lichvar et al. 2016) (USACE 2021)
- Preliminary Monthly Climate Data: Vancouver (National Weather Service, National Oceanic and Atmospheric Administration [NOAA])
- Supplement to List of Plant Species that Occur in Wetlands: Northwest Region 9 (Reed 1993)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Online Mapper (USFWS 2021)
- Washington State Wetland Rating System for Eastern Washington—Revised (Hruby 2014) (2014 rating system)

- Web Soil Survey (USDA-NRCS 2021b)
- Wetlands Delineation Manual, Technical Report Y-87-1 (USACE 1987)

On July 26 through July 29, 2021, two WSP wetland scientists, Brandon Stimac and Bridget Wojtala, conducted a field investigation for the wetland delineation and assessment. Their qualifications are included in Appendix D. The scientists used the methodology discussed in the regional supplements, as well as technical guidance and documentation issued by USACE and the Washington State Department of Ecology (Ecology), to observe any visible wetland conditions. The scientists used a routine on-site wetland delineation method. They walked the entire site looking for visible indicators of wetland conditions. Once they had identified the general location of a wetland area, the scientists took paired data plots in areas that represented the conditions of the uplands and wetlands. In general, each plot was chosen in a uniform topographic position that was representative of a single plant community. Paired plots were generally located approximately 5 to 10 feet apart to minimize the margin of error. The scientists inspected the soils at each data point to a depth of 16 inches (or more, depending on conditions) to determine the presence or absence of hydric soil characteristics and/or wetland hydrology. Wetland and ordinary high water mark (OHWM) flagging was not hung due to the active agricultural activities and grazing occurring on the site.

The wetlands were classified according to the USFWS classification system (Cowardin et al. 1979) and the hydrogeomorphic (HGM) classification system (Adamus 2001) based on observations made in the field. In addition, the scientists recorded hydrologic conditions, soils, and vegetation at 18 sample plots; WSP used a GPS unit to record the sample plot locations and wetland boundaries. A soil pit was excavated in each sample plot. The wetlands were rated using the revised wetland rating form for eastern Washington developed by Ecology (Ecology 2014). Wetlands can range from Category IV (disturbed and easily replaceable) to Category I (rarest and most sensitive to disturbance), with scores ranging from 9 to 27 points. The wetlands in the study area are discussed in greater detail in Section 4.0.

2.2 ORDINARY HIGH WATER MARK DETERMINATION

Guidance for the OHWM determination came from Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State (Ecology 2016). The OHWM is defined as follows.

... that mark...found by examining the bed and banks of a body of water and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or Washington Department of Ecology (Ecology); Provided that in any area where the *OHWM* cannot be found, ... the *OHWM* adjoining fresh water shall be the line of mean higher water.¹

Waters identified and delineated were then typed as S (Shoreline), F (Fish-Bearing), Np (Non-Fish-Bearing Perennial), or Ns (Non-Fish-Bearing Seasonal); based on Washington Administrative Code (WAC) 222-16-030 and the WDNR definitions.

During the July 2021 site visits, the WSP scientists marked the OHWM of two Type F/Ns streams and four Type Ns streams within the study area. The scientists used a combination of field indicators (e.g., vegetation distribution, sediment lines on vegetation or other fixed objects, scour lines, etc.) to determine the OHWM for each stream. OHWM locations were recorded with a GPS unit.

2.3 JURISDICTIONAL DITCH ASSESSMENT

The existing ditches throughout the study area were reviewed based on Washington State Department of Transportation (WSDOT) guidance to determine if they are regulated under Section 404 of the Clean Water Act. Ditch sections can be identified through the review of site plans, including culverts, stormwater features, previous as-builts, and from boots on the ground surveys. The field assessment consists of filling out a ditch recommendation field form provided from WSDOT; this includes the location of the ditch, start and end point of the ditch, the depth and width, and any jurisdictional or non-jurisdictional features. The jurisdictional and non-jurisdictional features include describing the flow regimes, whether the ditch is located within or adjacent to a jurisdictional wetland or water, or whether the ditch is excavated in an upland and draining uplands. Once these features are described, a preliminary jurisdictional determination can be made and will be provided to the USACE for review.

3.0 SITE CHARACTERISTICS

The study area is located in rural Klickitat County, Washington, northwest of the city of Goldendale, Washington, and includes all or portions of the following parcels: 04151200000300, 04151100000600, 04151300000100, 04151400000100, 04151400000100, 04151400000100, 04151400000600 (Appendix A, Figures 1, 2, and 3).

Topographically, the areas within the parcels have elevation ranges from approximately 1,500 to 2,000 feet. The majority of the study area contains gentle rolling topography with one steeper slope located on the western portion of the study area (Appendix A, Figure 4).

The area is composed primarily of agricultural and residential land uses, with some forestland on the eastern portions of the subject property. Vegetation species noted throughout the study area include black hawthorn (*Crataegus douglasii*), reed canarygrass (*Phalaris arundinacea*), spike rush (*Elocharis palustris*), Kentucky bluegrass (*Poa pratensis*), broad leaf cat-tail (*Typha latifolia*), Himalayan blackberry (*Rubus*

¹ Revised Code of Washington (RCW) 90.58.030(2)(b) and WAC 173-22-030(6)

armeniacus), Pacific Willow (Salix lucida), and Oregon ash (Fraxinus latifolia), among others.

All streams flow in a general south-southwest direction through the study area. Several of the streams cross Knight Road, Fish Hatchery Road, Hill Road, and SR 142 through culverts. Portions of Stream 1 are located within the right-of-way portion of the study area along Knight Road.

3.1 PRECIPITATION AND HYDROLOGY

The growing season for Klickitat County is 331 days, starting on February 11 and ending on December 1. This growing season is based on 28 degrees F, 5 out of 10 years in the soil survey of Klickitat County (USDA-NRCS 1998). According to the USACE wetland delineation manual, flooding, ponding, or saturation in the upper 12 inches of the soil profile for a period of at least 14 consecutive days during the growing season is indicative of wetland hydrology.

Table 2 displays precipitation data for the 14 days prior to and including the site visit on July 26, 2021. The information comes from the NRCS National Water and Climate Center meteorological station in Goldendale, Washington (Goldendale 4.2 NNW), within 5 miles of the study area.

Rain (inches)	Date	Rain (inches)
0.00	July 20	0.00
0.00	July 21	0.00
0.00	July 22	0.00
0.00	July 23	0.00
0.00	July 24	0.00
0.00	July 25	0.00
0.00	July 26	0.00
0.00	Total:	0.00
	(inches) 0.00 0.00 0.00 0.00 0.00 0.00 0.00	(inches)Date0.00July 200.00July 210.00July 210.00July 220.00July 230.00July 240.00July 250.00July 26

Table 2. Precipitation Data for 14 Days Prior to July 26, 2021 Site Visit

Source: NRCS 2021

In addition to the daily rainfall total for the 14 days prior to the July 2021 site visit, the WSP wetland scientists reviewed historical precipitation data available on the NOAA website (NOAA 2021). That data shows the following.

- For the two weeks preceding and through the site visit on July 26, 2021, a total of 0.00 inch of precipitation was observed.
- During the month of July 2021 through the July 26, 2021 site visit, a total 0.00 inch of precipitation was observed, 0.19 inches below the historical normal of 0.19 inches.

The site conditions were drier than the historical normal at the time of the site visit, as there was a declared drought for all of eastern Washington. These conditions were

considered appropriate for conducting wetland delineation, the timing does present additional challenges to consider during field investigations. Dry and senesced vegetation can be difficult to identify. Drought conditions can obscure primary indicators and require investigators to use two or more secondary indicators of hydrology. Soils can be difficult to sample in drought areas due to a hardpan formed in the dry clay/silt soils common in the project area.

During the site investigation, the scientists documented the presence or absence of field indicators for wetland hydrology in each of the 18 soil pits excavated in the sample plots. The data recorded included the depth of surface water, depth of inundation, depth to water table, and/or soil saturation, when found, as well as primary and secondary indicators of wetland hydrology, including redoximorphic features along living roots, high water table, and saturation. Hydrologic inputs for the study area likely come from direct precipitation, overland flow from adjacent uplands, and a seasonally high water table.

During the site visit, the presence of redoximorphic features in the soil was identified as a primary hydrology indicator in most wetland sample plots. Adjacent upland sample plots generally exhibited no primary or secondary indicators of hydrology.

3.2 MAPPED SOILS

Review of the USDA-NRCS Web Soil Survey identifies the following 12 soil mapping units within the study area (Appendix A, Figure 5). The descriptions are excerpted from the Klickitat County soil survey (USDA-NRCS 1998).

- Leidl extremely cobbly ashy loam, 2 to 30 percent slopes (25A) The Leidl series consists of well drained soils with depths to lithic bedrock from 20 to 40 inches. The capacity of the most limiting soil layer to transmit water is moderately high. Available water capacity through the entire soil profile is very low at about 2.9 inches. The major use for these soils is livestock grazing. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is not listed as hydric in Klickitat County.
- **Rockly-Lorena complex, 2 to 15 percent slopes (30A)** The Rockly-Lorena series consists of well drained soils with depths to lithic bedrock from 5 to 12 inches. The capacity of the most limiting soil layer to transmit water is moderately high. Available water capacity through the entire soil profile is very low at about 1.1 inches. The major uses for these soils are livestock grazing and crop production. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is not listed as hydric in Klickitat County.
- **Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony (30B)** The Rockly-Lorena series consists of well drained soils with depths to lithic bedrock from 5 to 12 inches. The capacity of the most limiting soil layer to transmit water is moderately high. Available water capacity through the entire soil profile is very low at about 0.8 inches. The major uses for these soils are livestock grazing and crop production. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is not listed as hydric in Klickitat County.

- Goldendale silt loam, basalt substratum, 2 to 5 percent slopes (69) The Goldendale silt loam, basalt substratum series consists of well drained soils with depths to lithic bedrock from 40 to 60 inches. The capacity of the most limiting soil layer to transmit water is moderately high. Available water capacity through the entire soil profile is moderate at about 8.8 inches. The major uses for these soils are livestock grazing and crop production. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is not listed as hydric in Klickitat County.
- Goldendale silt loam, basalt substratum, 5 to 10 percent slopes (69A) The Goldendale silt loam, basalt substratum series consists of well drained soils with depths to lithic bedrock from 40 to 60 inches. The capacity of the most limiting soil layer to transmit water is moderately high. Available water capacity through the entire soil profile is moderate at about 8.8 inches. The major uses for these soils are livestock grazing and crop production. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is not listed as hydric in Klickitat County.
- *Goldendale silt loam, 2 to 5 percent slopes (93)* The Goldendale silt loam series consists of well drained soils with no restrictive features within a depth of 60 inches. The capacity of the most limiting soil layer to transmit water is moderately high. Available water capacity through the entire soil profile is high at more than 72 inches. The major uses for these soils are livestock grazing and crop production. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is not listed as hydric in Klickitat County.
- Goldendale silt loam, 15 to 30 percent slopes (93C) The Goldendale silt loam series consists of well drained soils with no restrictive features within a depth of 60 inches. The capacity of the most limiting soil layer to transmit water is moderately high. Available water capacity through the entire soil profile is high at more than 72 inches. The major uses for these soils are livestock grazing and crop production. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is not listed as hydric in Klickitat County.
- Lorena silt loam, 2 to 5 percent slopes (94) The Lorena silt loam series consists of well drained soils with depths to lithic bedrock from 20 to 40 inches. The capacity of the most limiting soil layer to transmit water is moderately high. Available water capacity through the entire soil profile is high at more than 72 inches. The major uses for these soils are livestock grazing and crop production. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is not listed as hydric in Klickitat County.
- *Konert silt loam, 0 to 2 percent slopes (95A)* The Konert silt loam series consists of somewhat poorly drained soils with no restrictive features within a depth of 60 inches. The capacity of the most limiting soil layer to transmit water is moderately low. Available water capacity through the entire soil profile is high at about 10.5 inches. The major uses for these soils are livestock grazing and crop production. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is listed as hydric in Klickitat County.

- *Blockhouse silt loam, 0 to 5 percent slopes (96)* The Blockhouse silt loam series consists of moderately well drained soils with no restrictive features within a depth of 60 inches. The capacity of the most limiting soil layer to transmit water is moderately high. Available water capacity through the entire soil profile is high at about 11.7 inches. The major uses for these soils are livestock grazing and crop production. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is listed as hydric in Klickitat County.
- Munset stony silt loam, 0 to 5 percent slopes (97) The Munset stony silt loam series consists of poorly drained soils with depths to lithic bedrock from 20 to 40 inches. The capacity of the most limiting soil layer to transmit water is very low. Available water capacity through the entire soil profile is low at about 4.2 inches. The major use for these soils is livestock grazing. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is listed as hydric in Klickitat County.
- Setnum silt loam, 0 to 3 percent slopes (97A) The Setnum silt loam series consists of somewhat poorly drained soils with depths to lithic bedrock from 20 to 40 inches. The capacity of the most limiting soil layer to transmit water is moderately low. Available water capacity through the entire soil profile is moderate at about 6.9 inches. The major use for these soils is livestock grazing. According to the state SDA hydric soil list (USDA-NRCS 2021a), this soil is listed as hydric in Klickitat County.

The locations of the 12 soil types within the study area were obtained from the USDA-NRCS Web Soil Survey (USDA-NRCS 2021b), and the hydric classifications came from the soil data access list of hydric soils (USDA-NRCS 2021a). The WSP scientists examined each soil pit for hydric soil indicators and recorded its soil profile and characteristics (matrix color, redoximorphic features, texture, and other features). Observations of soil conditions during the site visit were generally consistent with the map units described and identified in the USDA-NRCS soil survey.

3.3 MAPPED WETLANDS

Review of the NWI online mapper shows the presence of freshwater emergent wetlands (PEM), riverine habitat, freshwater ponds, and a freshwater forested/shrub wetland (PFO/SS) (Appendix A, Figure 6). These wetland features are mapped throughout the study area in various parcels.

The presence of wetlands generally matches the NWI online mapper (Appendix A, Figure 6).

These mapped wetland areas were investigated during the site visits and were either verified or not present. Most NWI mapped features were present, with a few not present, and others not shown on the NWI maps.

3.4 VEGETATION

The site is dominated by agricultural fields used to produce wheat and hay with some isolated and small emergent and scrub-shrub vegetated areas. These areas were typically

associated with the wetlands and streams that occur throughout the site. The vegetation within the wetland and riparian areas includes Oregon ash (FACW), Pacific willow (FACW), reed canarygrass (FACW), broad-leaf cat-tail (OBL), spike rush (OBL), black hawthorn (FAC), Kentucky bluegrass (FAC), Himalayan blackberry (FAC), among other plant species.

The vegetation within the adjacent agricultural and fringe upland areas includes common wheat (*Triticum aestivum L.*), Kentucky bluegrass, rough fescue (*Festuca altaica*), and Himalayan blackberry, among other plant species.

3.5 MAPPED HABITAT

The Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) on the Web database identifies aquatic habitat, oak/pine forest, freshwater emergent, scrub-shrub, and forested wetlands, rainbow trout (*Oncorhynchus mykiss*), and resident coastal cutthroat trout (*Oncorhynchus clarki*) (WDFW 2021a) within the study area and shown in Figure 7 of Appendix A.

4.0 WETLANDS

WSP's investigation of hydrology, soils, and vegetation identified nine wetland features within the study area and one outside of the study area (see Table 3, Appendix A, Figures 8A to 8E). Appendix B contains 18 wetland determination forms that show the data collected during the site visit at paired sample plots. The numbers assigned to the data sheets correspond to the sample plots, which were numbered sequentially SP1 to SP18 and the Eastern Washington wetland rating forms are included in Appendix C. The Categories assigned to the wetlands from the rating forms are used to establish protective buffer distances that are regulated under the Critical Areas Ordinance of Local jurisdictions, in this case by Klickitat County. Impacts to wetland buffers (i.e. critical fish and wildlife conservation areas) from construction of the project would require mitigation as described under the Klickitat County Critical Areas Ordinance, see Section 6 for more information.

Of the nine wetlands that were identified, Wetland G, Wetland K, Wetland L, Wetland M, Wetland O, and Wetland P received a Category III rating and Wetland H, Wetland I, and Wetland J received a Category IV rating. Figures 8A through 8E in Appendix A provide an overview of the locations of the delineated wetlands within the study area. Figure 9 in Appendix A provide representative photos of the study area taken during the field investigation.

Wetland	Wetland Classification			Area of Wetlands	Comula	Preliminary
	Cowardin ^a	HGM⁵	Wetland Rating ^c	within Study Area (acres)	Sample Plots	Jurisdictional Status
Wetland G	PEM/PSS	Riverine		7.09	14 and 15	Federal/State/Local
Wetland H	PEM	Depressional	IV	0.04	8 and 9	State/Local
Wetland I	PEM	Depressional	IV	0.11	10 and 11	State/Local
Wetland J	PEM	Depressional	IV	0.05	12 and 13	State/Local

Table 3. Identified Wetlands

Wetland	Wetland Classification			Area of Wetlands	Sampla	Preliminary
	Cowardin ^a	HGM⁵	Wetland Rating ^c	within Study Area (acres)	Sample Plots	Jurisdictional Status
Wetland K	PEM/PSS	Riverine		0.02	4 and 5	Federal/State/Local
Wetland L	PEM/PSS	Riverine	III	0.39	6 and 7	Federal/State/Local
Wetland M	PEM/PSS	Depressional	Ш	3.73	NA	Federal/State/Local
Wetland O	PEM/PSS	Riverine	Ξ	0.77	NA	Federal/State/Local
Wetland P	PSS	Depressional	III	0.63	NA	Federal/State/Local

Source: Wetland Rating System for Eastern WA 2014

Notes:

a Cowardin et al. (1979) or NWI class based on vegetation: PEM = palustrine emergent, PSS = palustrine scrub-shrub.

b HGM classification according to Hruby (2014). c Wetland rating according to Hruby (2014).

4.1 WETLAND G

Wetland G (7.09 acres) is in the southwest portion of the study area, northeast of the southern terminus of Hill Road. This wetland spans the western portion of Parcel 04151400000300. The wetland starts to the north at a culvert crossing on Hill Road and continues south to where it exits the property and was observed to continue to where it ends at a culvert on SR 142. This riverine wetland includes areas that are dominated by emergent wetland plant species, including mainly reed canarygrass (*Phalaris arundincea*) with some soft-stemmed bulrush (*Schoenoplectus tabernaemontani*) and pacific willow (*Salix lucida*). Hydrology is supported by Stream 1, precipitation, and a seasonally high water table. Indicators of hydrology within Wetland G include surface water (A1), high water table (A2), and saturation (A3).

Soils within Wetland G include a thick layer of a black (10YR 2/2) mucky loam/clay matrix to a depth of 18 plus inches with the last 4 inches containing 15 percent gray depletions (10YR4/2) in the matrix and pore linings. This soil profile meets the criteria for the thick dark surface (A12) hydric soil indicator. Wetland G was rated under the riverine HGM classification as a Category III rating with a score of 17.

The jurisdictional status of this wetland shown in Table 3 is based on the wetland being adjacent to a WOTUS constituting a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

4.2 WETLAND H

Wetland H (0.04 acres) is in the southwestern portion of the study area, in the northwest portion of Parcel 04151400000600. This depressional wetland is dominated by emergent plant species, including reed canarygrass, rough bentgrass (*Agrostis scabra*), and cutleaf teasel (*Dipsacus laciniatus*). Hydrology is supported by overland flow from adjacent uplands, direct precipitation, and a likely seasonally high water table. Indicators of hydrology within Wetland H includes drainage patterns (B10), dry-season water table (C2), saturation visible on aerial imagery (C9), and it passes the FAC-neutral test (D5).

Soils within Wetland H include a layer of a dark gray (10YR 3/2) silt loam matrix to 6 inches, a dark gray (10YR 3/2) with 5 percent brown (10YR 5/6) redox concentrations in the matrix and along pore linings, to a depth of 12 inches, and 15 percent redox concentrations from 12 to 16 inches. This soil profile meets the criteria for the redox dark surface (F6) hydric soil indicator. Wetland H was rated under the depressional HGM classification as a Category IV rating with a score of 15.

This wetland is isolated and doesn't meet the definition of an adjacent wetland under the WOTUS definition which precludes Federal jurisdiction. This wetland is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

4.3 WETLAND I

Wetland I (0.11 acres) is in the southwestern portion of the study area, in the southwest portion of Parcel 04151400000600. This depressional wetland is dominated by emergent plant species, including reed canarygrass (*Phalaris arundincea*) and spiny rush (*Juncus acutus*). Hydrology is supported by overland flow from adjacent uplands, direct precipitation, and a likely seasonally high water table. Indicators of hydrology within Wetland I includes surface soil cracks (B6), drainage patterns (B10), dry-season water table (C2), saturation visible on aerial imagery (C9), and it passes the FAC-neutral test (D5).

This wetland is isolated and doesn't meet the definition of an adjacent wetland under the WOTUS definition which precludes Federal jurisdiction. This wetland is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

Soils within Wetland I include a layer of a dark gray (10YR 3/2) silt loam matrix to 8 inches, a dark gray (10YR 3/2) with 10 percent brown (10YR 5/6) redox concentrations in the matrix and along pore linings, to a depth of 12 inches, and 5 percent redox concentrations and 10 percent gray (10YR 6/2) depletions from 12 to 16 inches. This soil profile meets the criteria for the redox dark surface (F6) hydric soil indicator. Wetland I was rated under the depressional HGM classification as a Category IV rating with a score of 15.

4.4 WETLAND J

Wetland J (0.05 acres) is in the southwestern portion of the study area, in the southwest portion of Parcel 04151400000600. This depressional wetland is dominated by emergent plant species, including reed canarygrass (*Phalaris arundincea*) and sedges (*Carex .spp*). Hydrology is supported by overland flow from adjacent uplands, direct precipitation, and a seasonally high water table. Indicators of hydrology within Wetland J includes surface water (A1), high water table (A2), saturation (A3), surface soil cracks (B6), biotic crust (B12), thin muck surface (C7), drainage patterns (B10), dry-season water table (C2), saturation visible on aerial imagery (C9), and it passes the FAC-neutral test (D5).

Soils within Wetland J include a layer of black (10YR 2/1) muck from 0 to 1 inch and a reddish-brown (10YR 5/6) reduced matrix with gray (10YR 5/2) depletions from 1 to 12 inches plus. This soil profile meets the criteria for the depleted matrix (F3) and redox

dark surface (F6) hydric soil indicator. Wetland J was rated under the depressional HGM classification as a Category IV rating with a score of 15.

This wetland is isolated and doesn't meet the definition of an adjacent wetland under the WOTUS definition which precludes Federal jurisdiction. This wetland is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

4.5 WETLAND K

Wetland K (0.02 acres) is in the southwestern portion of the study area, in the southern portion of Parcel 04151400000600. The wetland was observed to continue south out of the study area on the opposite side of SR 142. This riverine wetland includes areas that are dominated by emergent wetland plant species, including reed canarygrass and broad-leaf cat-tail. A Type F stream flows through the wetland. Hydrology is supported by the stream, overland flow from adjacent uplands and roads, direct precipitation, and a seasonally high water table. Indicators of hydrology within Wetland K include surface water (A1), high water table (A2), and saturation (A3).

Soils within Wetland K include a layer of a dark gray (10YR 3/2) silty loam matrix from 0 to 4 inches. The underlying layer consists of a dark gray (10YR 3/2) matrix with 5 percent reddish-brown (10YR 5/6) redox concentrations in the matrix, to a depth of 16 plus inches. This soil profile meets the criteria for the redox dark surface (F6) hydric soil indicator. Wetland K was rated under the riverine HGM classification as a Category III rating with a score of 17.

The jurisdictional status of this wetland shown in Table 3 is based on the wetland being adjacent a WOTUS constituting a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

4.6 WETLAND L

Wetland L (0.39 acres) is in the southwestern portion of the study area, in the southern portion of Parcel 04151400000600. This riverine wetland includes areas that are dominated by emergent and scrub-shrub wetland plant species, including reed canarygrass and Drummond's rush. A Type F stream flows through the wetland. Hydrology is supported by the stream, overland flow from adjacent uplands, direct precipitation, and a seasonally high water table. Indicators of hydrology within Wetland L include high water table (A2) and saturation (A3).

Soils within Wetland L include a layer of a dark gray (10YR 3/2) silty loam matrix from 0 to 6 inches. The underlying layer consists of a dark gray (10YR 3/2) matrix with 10 percent reddish-brown (10YR 5/6) redox concentrations in the matrix and pore linings, to a depth of 16 plus inches. This soil profile meets the criteria for the redox dark surface (F6) hydric soil indicator. Wetland L was rated under the riverine HGM classification a as a Category III rating with a score of 17.

The jurisdictional status of this wetland shown in Table 3 is based on the wetland being adjacent a WOTUS constituting a Federal nexus for jurisdiction under the Clean Water

Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

4.7 WETLAND M

Wetland M (3.73 acres) is in the western-central portion of the study area, located just east of the fish hatchery. The wetland was not able to be investigated in detail due to safety concerns associated with observed bear activity (fresh scat and tracks of an adult and two cubs) and visual confirmation from a nearby landowner. The wetland was observed to continue southwest out of the study area onto the fish hatchery property. This depressional wetland includes areas that are dominated by emergent and scrub-shrub wetland plant species, including reed canarygrass, broad-leaf cat-tail, black hawthorn, pacific willow, ponderosa pine to the south, and apple trees. Two Type Ns streams flows through the wetland. Hydrology is supported by the streams, the fish hatchery, overland flow from adjacent uplands, direct precipitation, and a seasonally high water table. Indicators of hydrology were observed at a distance within the cat-tail dominated portion of Wetland M that include standing water. The wetland meets the following indicators of hydrology: surface water (A1), high water table (A2), and saturation (A3).

Soils were unable to be sampled due to the safety issues. Wetland M was rated under the depressional HGM classification as a Category III rating with a score of 18.

The jurisdictional status of this wetland shown in Table 3 is based on the wetland being adjacent a WOTUS constituting a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

4.8 WETLAND N

Wetland N (16.93 acres) is in the western-central portion of the study area, located just southeast of the fish hatchery. The wetland was not able to be investigated due to a lack of right of entry onto the property. The wetland was observed to exhibit similar characteristics as Wetlands G and M. This assumed riverine wetland includes areas that are dominated by emergent and scrub-shrub wetland plant species, including reed canarygrass, broad-leaf cat-tail, black hawthorn, and pacific willow. A Type F stream flows through the wetland. Hydrology is supported by the stream, the fish hatchery, overland flow from adjacent uplands, direct precipitation, and a seasonally high water table. Indicators of hydrology were observed at a distance with western end of the wetland along Hill Road to include flowing and standing water prior to passing through the culvert under Hill Road. This meets the following indicators of hydrology: surface water (A1), high water table (A2), and saturation (A3).

Soils were unable to be sampled due to the right of entry issues. Wetland N was rated by professional judgment based on observed characteristics as a Category II rating.

The jurisdictional status of this wetland shown in Table 3 is based on the wetland being adjacent a WOTUS constituting a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

4.9 WETLAND O

Wetland O (0.77 acres) is in the central portion of the study area, in the southwestern portion of Parcel 04151200000300. The wetland was not investigated due to safety concerns associated with a large animal that would not leave the forested thicket in the wetland. This riverine wetland includes areas that are dominated by emergent and scrubshrub wetland plant species, including black hawthorn and pacific willow. A Type Ns stream flows through the wetland. Hydrology is supported by the stream, overland flow from adjacent uplands and roads, direct precipitation, and a seasonally high water table. Indicators of hydrology were not noted during the field visit but are assumed to be drainage patterns and dry-season water table.

Soils were unable to be sampled due to safety issues. Wetland O was rated by professional judgment based on observed characteristics as a Category III rating.

The jurisdictional status of this wetland shown in Table 3 is based on the wetland being adjacent a WOTUS constituting a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

4.10 WETLAND P

Wetland P (0.63 acres) is in the central portion of the study area, on the southern edge of Parcel 04151100000600 and the northern edge of Parcel 04151400000100. The wetland was not investigated due to safety concerns associated with a large animal that would not leave the central portion of the thicket. This depressional wetland includes areas that are dominated by scrub-shrub wetland plant species, including black hawthorn, Pacific willow, and western serviceberry (*Amelanchier ainfolia*). A Type Ns stream flows through the wetland. Hydrology is supported by the stream, overland flow from adjacent uplands and roads, direct precipitation, and a seasonally high water table. Indicators of hydrology were not noted during the field visit but are assumed to be drainage patterns and dry-season water table.

Soils were unable to be sampled due to the safety issues. Wetland P was rated by professional judgment based on observed characteristics as a Category III rating.

The jurisdictional status of this wetland shown in Table 3 is based on the wetland being adjacent a WOTUS constituting a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

5.0 STREAMS

During the July 2021 site visit, the WSP scientists marked the OHWM of portions of six unnamed streams (Streams 1, 2, 4, 6, 7, and 8) within the study area. All of the streams lacked large woody debris and, other than a few fragmented scrub-shrub/forested islands, there is little to no shading and riparian habitat within the project area. Riparian vegetation consisted of mostly senesced grasses and wheat throughout the project area. Stream channels were highly constrained and channelized between agricultural areas, with little to no gravels or cobbles and consisted of mainly fine sediments and angular rocks likely removed from the adjacent farmlands. One segment of Stream 1 below the fish hatchery had flowing water and the rest were dry. Streams are shown in Figures 8a through 8e in Appendix A.

5.1 STREAM 1

According to the Washington State Department of Natural Resources (DNR) Forest Practices Application Mapping Tool, Stream 1 is mapped as a Type Ns water from its headwaters to just upstream of the fish hatchery and a Type F water all the way to its confluence with the Little Klickitat River (DNR 2021). The stream flows generally southwest, passes through nine culverts and has four wetlands associated with this stream throughout the project area (Wetlands G, N, O, and P). The upstream portions of this stream vary in width from 1 to 2 feet, contains a lot of sinuosity, and has areas of braided channels. The downstream sections below the fish hatchery varies in width from 2 to 4 feet and is linear throughout Parcel 04151400000300. This stream is heavily disturbed throughout its entire reach, with most of the area adjacent to the stream in agricultural land use.

This water meets the definition of a WOTUS (Pre-2015 definition) as it is shown to be an intermittent water (WDNR 2021) and is a tributary to a traditional navigable water, this constitutes a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

5.2 STREAM 2

According to the DNR Forest Practices Application Mapping Tool, Stream 2 is mapped as a Type Ns water from its headwaters to its confluence with Stream 1 (DNR 2021). The stream passes through two culverts and has one wetland (Wetland M) associated with this stream throughout the project area. The stream flows generally southwest, varies in width from 1 to 2 feet and contains minimal sinuosity throughout the project area. This stream is heavily disturbed throughout the project area, with most of the area adjacent to the stream in agricultural land use.

This water meets the definition of a WOTUS (Pre-2015 definition) as it is shown to be an intermittent water (WDNR 2021) and is a tributary to a traditional navigable water, this constitutes a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

5.3 STREAM 4

According to the DNR Forest Practices Application Mapping Tool, Stream 4 is mapped as a Type Ns water from its headwaters to its confluence with Stream 6 (DNR 2021). The stream passes through four culverts and has no wetlands associated with it. The stream flows generally southwest, varies in width from 1 to 3 feet and contains a lot of sinuosity throughout its entire reach. This stream is heavily disturbed throughout the project area, with most of the area adjacent to the stream in agricultural land use.

This water meets the definition of a WOTUS (Pre-2015 definition) as it is shown to be an intermittent water (WDNR 2021) and is a tributary to a traditional navigable water, this

constitutes a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

5.4 STREAM 6

According to the DNR Forest Practices Application Mapping Tool, Stream 6 is mapped as a Type Ns water from its headwaters to where the stream switches in direction from west to south in Parcel 04151400000600, where it is then mapped as a Type F water to its confluence with Stream 1 (DNR 2021). The stream passes through two culverts and has two wetlands (Wetlands K and L) associated with it. The stream flows generally southwest, varies in width from 1 to 3 feet and contains a lot of sinuosity throughout its entire reach. Where the water type switches to Type F, there is a section of sheet flow where there is no defined bed or bank. This stream is heavily disturbed throughout the project area, with most of the area adjacent to the stream in agricultural land use.

This water meets the definition of a WOTUS (Pre-2015 definition) as it is shown to be an intermittent water (WDNR 2021) and is a tributary to a traditional navigable water, this constitutes a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

5.5 STREAM 7

According to the DNR Forest Practices Application Mapping Tool, Stream 7 is mapped as a Type Ns water from its headwaters to its confluence with Stream 1 (DNR 2021). There is one culvert and no wetlands associated with it. The stream flows generally southwest, is 1 to 2 feet in width, and contains a lot of sinuosity. This stream is heavily disturbed throughout the project area, with most of the area adjacent to the stream in agricultural land use.

This water meets the definition of a WOTUS (Pre-2015 definition) as it is shown to be an intermittent water (WDNR 2021) and is a tributary to a traditional navigable water, this constitutes a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

5.6 STREAM 8

According to the DNR Forest Practices Application Mapping Tool, Stream 8 is mapped as a Type Ns water from its headwaters to its confluence with Stream 1 (DNR 2021). The stream passes through no culverts and has one wetland associated with it within the project area. The stream flows generally southwest, varies in width from 1 to 2 feet and contains a minimal sinuosity with areas of sheet flow. This stream is heavily disturbed throughout the project area, with most of the area adjacent to the stream in agricultural land use other than the last quarter of its reach being with a scrub-shrub/forested area prior to flowing into Stream 1.

This water meets the definition of a WOTUS (Pre-2015 definition) as it is shown to be an intermittent water (WDNR 2021) and is a tributary to a traditional navigable water, this constitutes a Federal nexus for jurisdiction under the Clean Water Act, it is a water of the state of Washington, and is a Critical Area as defined under Klickitat County Code.

5.7 JURISDICTIONAL DITCHES

No jurisdictional ditches were identified, with one having evidence of past flows that was reviewed and called out. Other sections of "ditches" were seen along Knight Road, but none had signs of flow or features that would meet the definition of a WOTUS, Water of the State (WOTS), or Critical Area.

6.0 REGULATORY REVIEW

This section provides an overview of regulatory requirements as they pertain to wetlands, streams, riparian areas, aquatic habitats, and PHS within the study area.

6.1 WETLANDS

The study area is located within Klickitat County, and some site wetlands are adjacent to waters of the United States (WOTUS) and waters of the state (WOTS). Impacts to site waters and wetlands identified in this report would require the review and approval of Klickitat County, WDFW, Ecology, and the USACE under applicable regulations identified in Table 1.

The wetland section of the ordinance (KCC Ordinance No. 0080613, Chapter III) designates and classifies wetland areas, and provides measures to protect their functions and values. The ordinance establishes protective buffers associated with wetlands and specifies that certain permits or approvals must be obtained for projects containing wetlands and/or their buffers. KCC ordinance requires the use of Ecology's Washington State Wetland Rating System for Eastern Washington (Hruby 2014) to determine a wetland's category, which is based on its score for habitat, water quality, and hydrologic functions. WSP scientists rated the nine wetlands using the approved system based on their functions and special characteristics. Wetlands G, K, L, M, O, and P received Category III ratings, while wetlands H, I, and J received Category IV ratings. See Appendix C for the rating forms for the wetlands. Section 6.3 summarizes the buffer requirements and includes Table 3, which shows the characteristics and buffer widths of each wetland.

6.2 WATERBODIES

The study area is located within the County's jurisdiction and is, therefore, subject to the critical fish/wildlife habitat conservation areas chapter of the County's Critical Areas ordinance (KCC Ordinance No. 0080613, Chapter IV). As previously mentioned in Section 6.1, on-site waters meeting WOTUS and WOTS definitions, with impacts occurring to these waters will be regulated by the WDFW (Hydraulic Code), Ecology (Section 401), and USACE (Section 404 of the Clean Water Act). This chapter provides standards for classification and designation of critical fish/wildlife habitat conservation areas and provides guidance for protecting those critical fish/wildlife habitat conservation areas necessary to maintain the public health, safety, and welfare.

According to KCC Ordinance No. 0080613, Chapter IV.4.2(A), critical fish habitat conservation areas include WOTS, which are lakes, rivers, ponds, streams, inland waters, underground waters, saltwaters, and all other surface waters and watercourses within the jurisdiction of the state of Washington, as classified in WAC 222-16-031 or its successor.

The DNR indicates that there are three Type F streams (Streams 1, 2, and 6) in the study area (DNR 2021). However, the WDFW Fish Passage database (WDFW 2021b) shows that one of the Type F waters doesn't support fish use (Stream 2) and the scientists agreed with Streams 1 and 6 being fish-bearing.

As described in the last paragraph of Section 2.3, Section 404 Corps jurisdictional waters were initially identified in the field based on the 2020 WOTUS Definition and later reviewed to reflect the current Pre-2015 WOTUS Definition.

6.3 BUFFER WIDTHS

The County specifies the widths of protective buffers for wetlands (KCC Ordinance No. 0080613, Chapter III.3.3(A)) and fish habitat conservation areas (KCC Ordinance No. 0080613, Chapter IV.4.3(B)). Under the code, whichever ordinance is more protective is the one that will be used to address the protection and mitigation of the resource. The buffers of wetlands and fish habitat conservation areas are discussed below.

6.3.1 Wetland Buffers

The County specifies the widths of protective buffers for wetlands (KCC Ordinance No. 0080613, Chapter III.3.3(A)) based on wetland category and special characteristics. All wetland buffers are to be measured horizontally outward from the delineated wetland boundary, or in the case of a stream with no adjacent wetlands, the OHWM as surveyed in the field. Wetlands H, I, and J received Category IV ratings. Wetlands G, K, L, M, O, and P received a Category III rating. All nine wetlands require a 75-foot buffer.

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Wetland	HGM	Wetland Rating	Habitat Score	Buffer Width	Jurisdiction
Wetland G	Riverine	III	4	75	Federal/State/Local
Wetland H	Depressional	IV	3	75	State/Local
Wetland I	Depressional	IV	3	75	State/Local
Wetland J	Depressional	IV	3	75	State/Local
Wetland K	Riverine		5	75	Federal/State/Local
Wetland L	Riverine		5	75	Federal/State/Local
Wetland M	Depressional		5	75	Federal/State/Local
Wetland O	Riverine		5	75	Federal/State/Local
Wetland P	Depressional	III	5	75	Federal/State/Local

Table 4. Summary of Wetland Classification, Rating, and Buffer Width

Source: Wetland Rating System for Eastern Washington, 2014 and KCC Critical Areas Ordinance

6.3.2 Critical Fish and Wildlife Habitat Conservation Areas

According to KCC Ordinance No. 0080613, Chapter IV, the Critical Fish and Wildlife Habitat Conservation Areas extend outward on the horizontal plane from the OHWM, or from the top of bank if the OHWM cannot be identified. The buffers range from 200 feet for state shorelines, 150 feet for Type F waters, 50 feet for Type Np waters, and 25 feet for Type Ns waters. Critical Fish and Wildlife Habitat Conservation Areas also include areas where federal or state endangered, threatened, or sensitive species are known to occur, habitats of local importance defined under KCC Ordinance No. 0080613, Chapter II of the Critical Areas Code, and areas designated by the DNR as state natural area preserves and natural resource conservation areas. Table 5 below summarizes the stream types and buffer widths.

Stream	Туре	Buffer Width ¹	Jurisdiction
1	F/Ns	150/25	Federal/State/Local
2	Ns	25	Federal/State/Local
4	Ns	25	Federal/State/Local
6	F/Ns	150/25	Federal/State/Local
7	Ns	25	Federal/State/Local
8	Ns	25	Federal/State/Local

Table 5. Summary of Stream Typing and Buffer Width

1 – Streams with multiple buffer widths have water-type breaks along their length based on field observations. Source: DNR Stream Typing and KCC Critical Areas Ordinance

Stream's 1 and 6 both have water type breaks within the Study Area. Stream 1's water type break is due to the loss of perennial flow upstream of the fish hatchery and its bankfull width reduces to below 3 feet and becomes ditched throughout its upstream reach through farmland. Stream 6's water type break is due to a natural barrier of a waterfall and scour pit where the Stream 4 and 6 come to a confluence.

7.0 CONCLUSIONS

WSP's assessment determined the existence and extent of jurisdictional wetlands and waterbodies within the study area as they are defined and regulated by the USACE, Ecology, and the County. Nine wetlands (Wetlands G through P, excluding Wetland N), six streams, and one non-jurisdictional ditch were delineated and assessed within the study area.

Any fill placed within jurisdictional wetlands or streams would require a Section 404 permit through USACE, a Section 401 permit through Ecology, a Hydraulic Project Approval through WDFW, and Critical Areas review from the County before project activities could commence. Additionally, the County may require the submittal and approval of an application for a Critical Areas permit for any impacts to the associated wetland buffers or habitat conservation area buffers within the study area (KCC Ordinance No. 0080613, Chapter IV). Any required mitigation will be based on impact quantities and will be determined during the permitting processes.

Finally, it should be noted that the wetland and waterbodies boundaries and classifications in this report were determined using the most appropriate field techniques and best professional judgment of the WSP wetland scientists; Brandon Stimac and Bridget Wojtala, based on conditions observed during field investigations. Wetland conditions can change over time and future delineations may be needed if an agency determines conditions have changed. The County, Ecology, WDFW, and USACE have the final authority in the determination of the boundaries, categories, and jurisdictional status of wetlands and/or waterbodies under their respective jurisdictions. Therefore,

WSP recommends submitting this delineation and assessment report to these agencies for their concurrence before beginning any development activities that would affect the wetlands, waterbodies, and/or buffers on this site.

8.0 **REFERENCES**

- Adamus. 2001. HGM Classification Guidance. Accessed online at: https://www.oregon.gov/dsl/WW/Documents/hydro_guide_class.pdf
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, Washington, DC.
- E&E/WSP. 2020. Wetland and Other Waters of the United States Delineation Report for the Carriger Solar, LLC.
- Hruby, Thomas. 2014. Washington State Wetland Rating System for Western Washington: 2014 Update (Publication #14-06-029). Olympia, WA: Washington State Department of Ecology.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 Wetland Ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.
- National Oceanic and Atmospheric Administration (NOAA). 2021. Preliminary Monthly Climate Data: Goldendale. National Weather Service Forecast Office: Portland, Oregon. Accessed 7 January 2021 at: http://w2.weather.gov/climate/index.php?wfo=pqr.
- Reed, P.B., Jr. 1993. Supplement to List of Plant Species that Occur in Wetlands: Northwest Region 9. U.S. Fish and Wildlife Service National Ecology Research Center. St. Petersburg, FL.
- Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest Region 9. Biological Report 88 (26.9). U.S. Fish and Wildlife Service National Ecology Research Center, St. Petersburg, FL.
- U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region. (Version 2.0). ERDC/EL TR-10-03. Vicksburg, MS. Revised October 2016.
- U.S. Army Corps of Engineers (USACE). 2008.
- U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.
- U.S. Army Corps of Engineers (USACE). 2021. Corps of Engineers National Wetlands Plant List. Accessed online at: https://cwbiapp.sec.usace.army.mil/nwpl_static/v34/home/home.html.

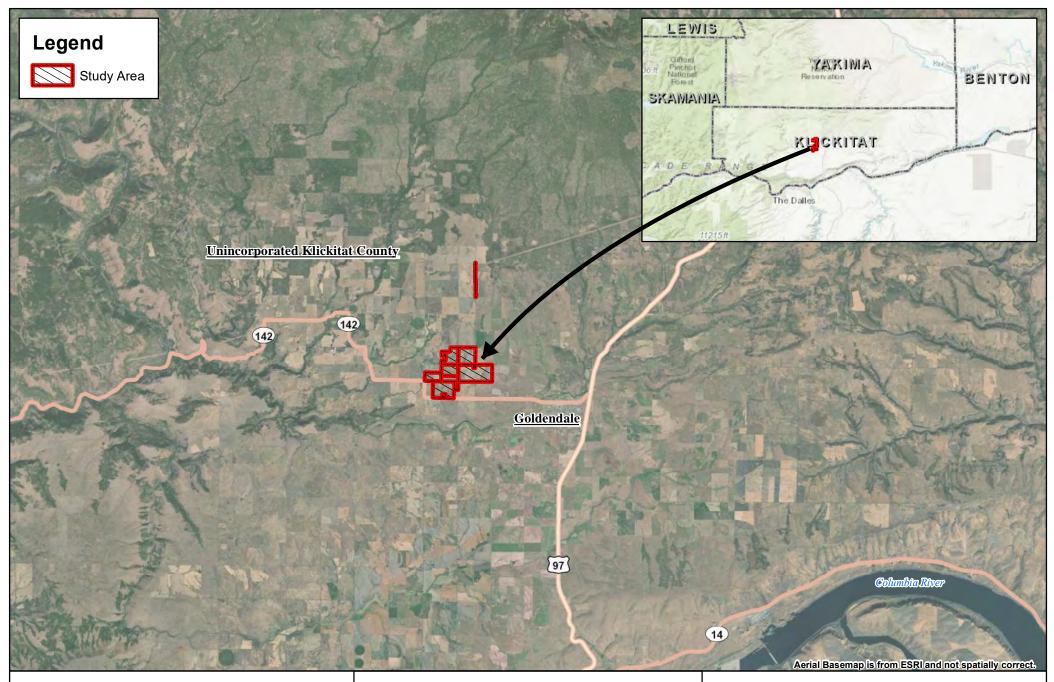
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2021a. State Soil Data Access (SDA) Hydric Soils List – Washington. Accessed 22 July 2021 at: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316619.html#t op.
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2021b. Web Soil Survey. Accessed 20 July 2021 at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 1998.
- U.S. Fish and Wildlife Service (USFWS). 2021. National Wetlands Inventory (NWI) Wetlands Mapper. Accessed 20 July 2021 at: https://www.fws.gov/wetlands/Data/Mapper.html.
- Washington Department of Fish and Wildlife (WDFW). 2021a. Priority Habitats and Species (PHS) on the Web. Accessed 23 July 2021 at: https://wdfw.wa.gov/species-habitats/at-risk/phs/maps.
- Washington Department of Fish and Wildlife (WDFW). 2021b. Fish Passage Database. Accessed 23 July 2021 at: https://geodataservices.wdfw.wa.gov/hp/fishpassage/index.html.
- Washington State Department of Ecology (Ecology). 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Accessed 07 January 2021 at: https://fortress.wa.gov/ecy/publications/documents/1606029.pdf.
- Washington State Department of Ecology (Ecology). 2014.
- Washington State Department of Natural Resources (DNR). 2021. Forest Practices Application Mapping Tool. Accessed on 7 January 2021 at: https://fortress.wa.gov/dnr/protectiongis/fpamt/default.aspx.

9.0 LIST OF ACRONYMS AND ABBREVIATIONS

CCR	Cypress Creek Renewables, LLC
County, the	Klickitat County (agency)
DNR	Washington State Department of Natural Resources
Ecology	Washington State Department of Ecology
FAC	facultative wetland
FACW	facultative wetland
HGM	hydrogeomorphic
KCC	Klickitat County Code
NA	not applicable
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	obligate wetland
OHWM	ordinary high water mark
PEM	palustrine emergent
PHS	priority habitat and species
PSS	palustrine scrub-shrub
RCW	Revised Code of Washington
SDA	Soil Data Access
SR 142	State Route 142
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation
WOTS	waters of the state
WOTUS	waters of the United States

APPENDIX A

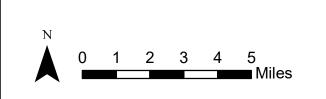
FIGURES



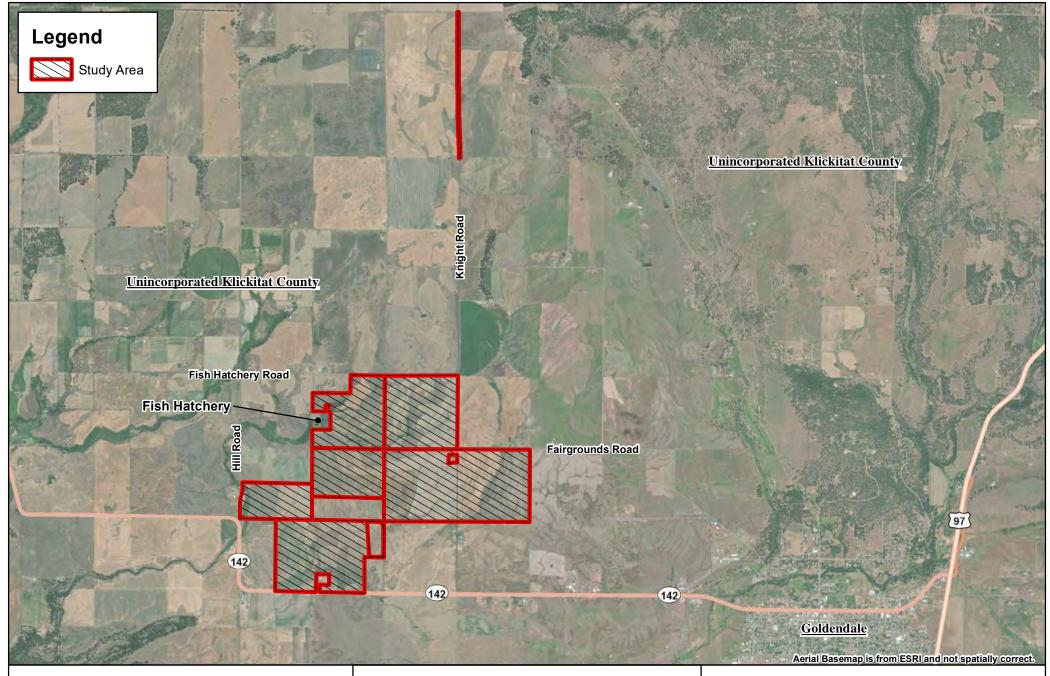
Project Name: Carriger Solar, LLC

In: Unincorporated Klickitat County At: 45°50'29.74"N 120°52'59.48"W County of: Klickitat State of: Washington Figure 1: Vicinity Map

wsp



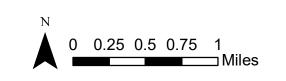
Appendix A: Figure 1 of 9

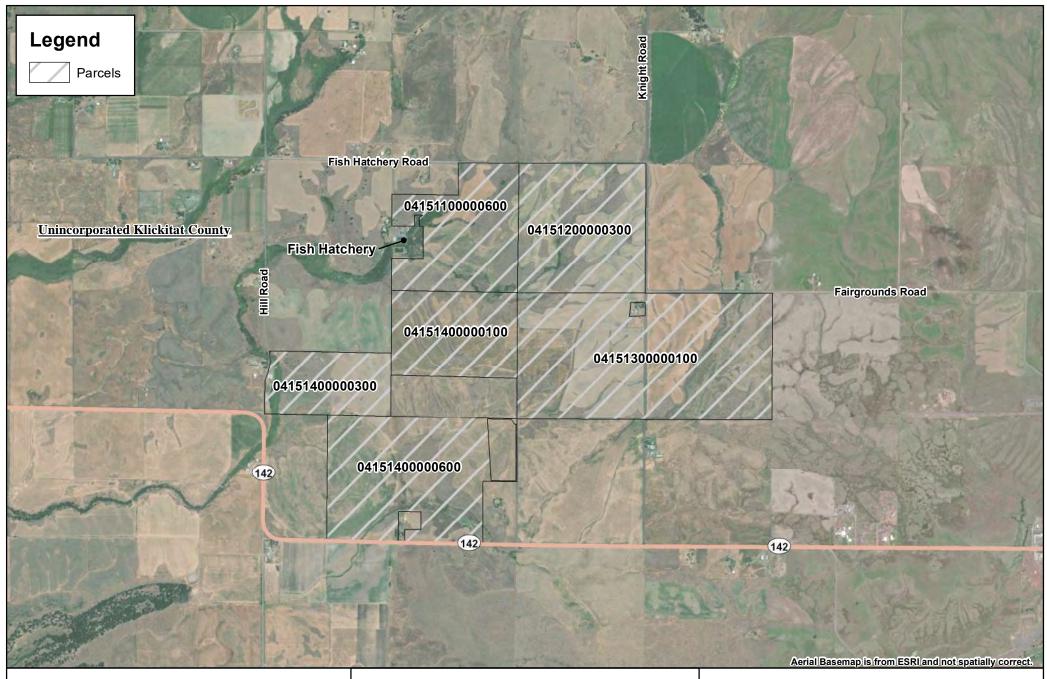


Project Name: Carriger Solar, LLC

In: Unincorporated Klickitat County At: 45°50'29.74"N 120°52'59.48"W County of: Klickitat State of: Washington Figure 2: Project Site

wsp

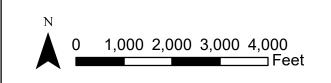


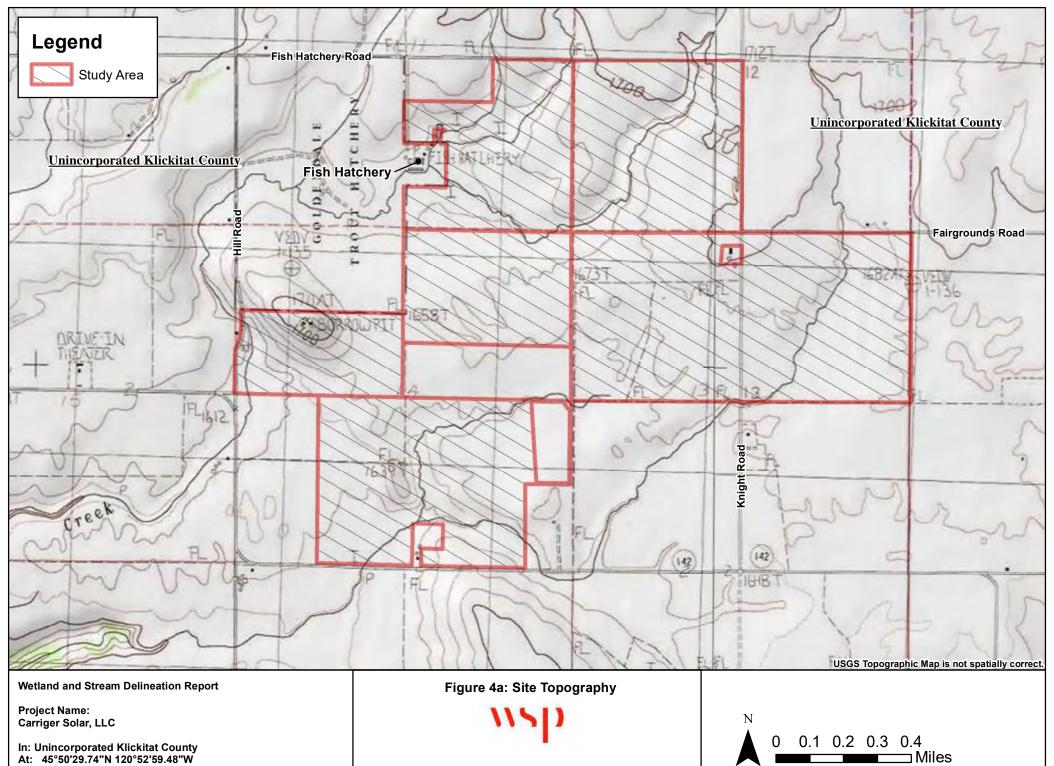


Project Name: Carriger Solar, LLC

In: Unincorporated Klickitat County At: 45°50'29.74"N 120°52'59.48"W County of: Klickitat State of: Washington Figure 3: Parcel Map

usp





In: Unincorporated Klickitat County At: 45°50'29.74"N 120°52'59.48"W County of: Klickitat State of: Washington

Appendix A: Figure 4a of 9

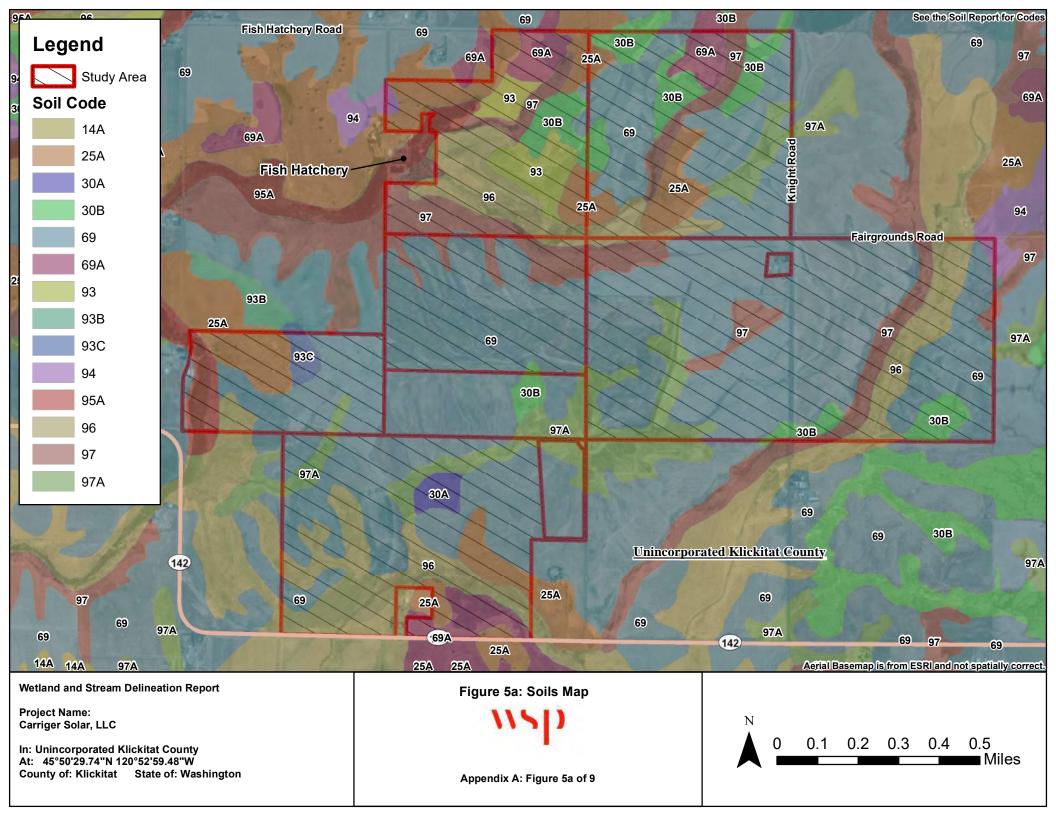


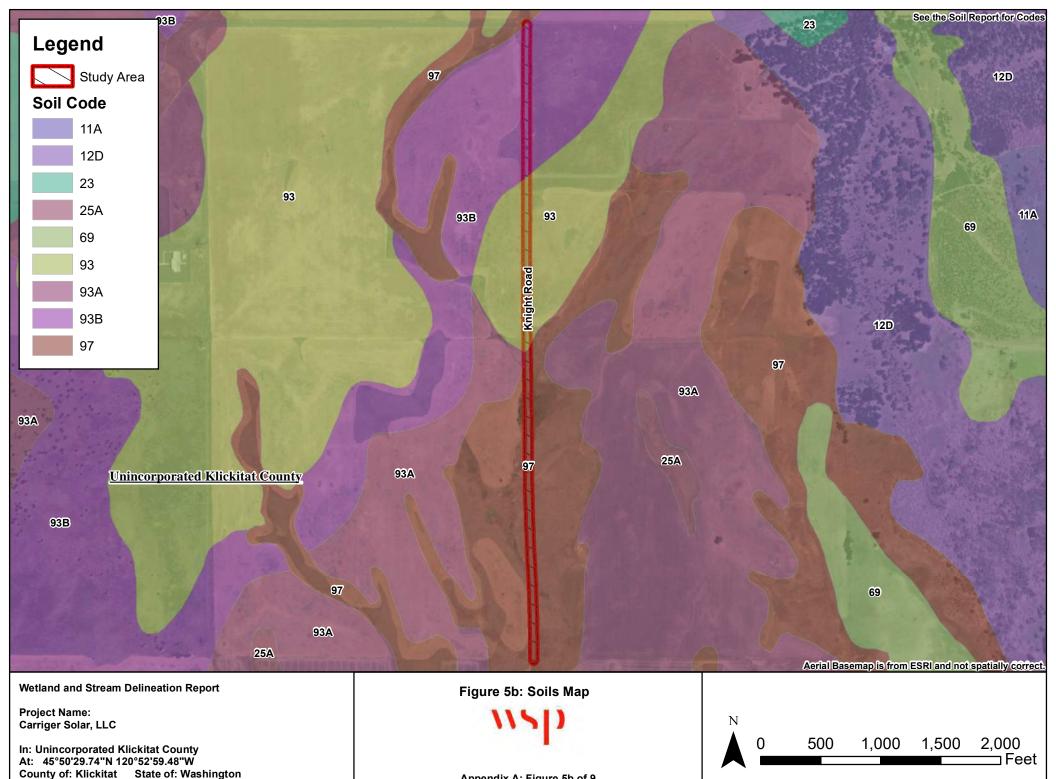
Project Name: Carriger Solar, LLC

In: Unincorporated Klickitat County At: 45°50'29.74"N 120°52'59.48"W County of: Klickitat State of: Washington Figure 4b: Site Topography

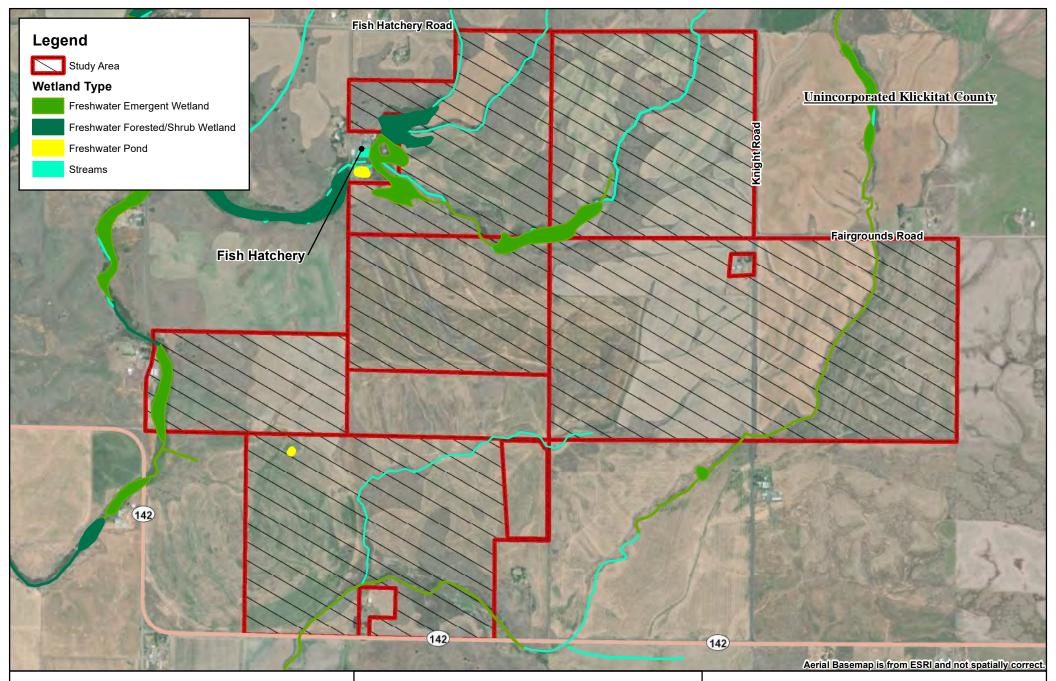
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Appendix A: Figure 5b of 9	Appe	ndix	A:	Figure	5b	of S	9
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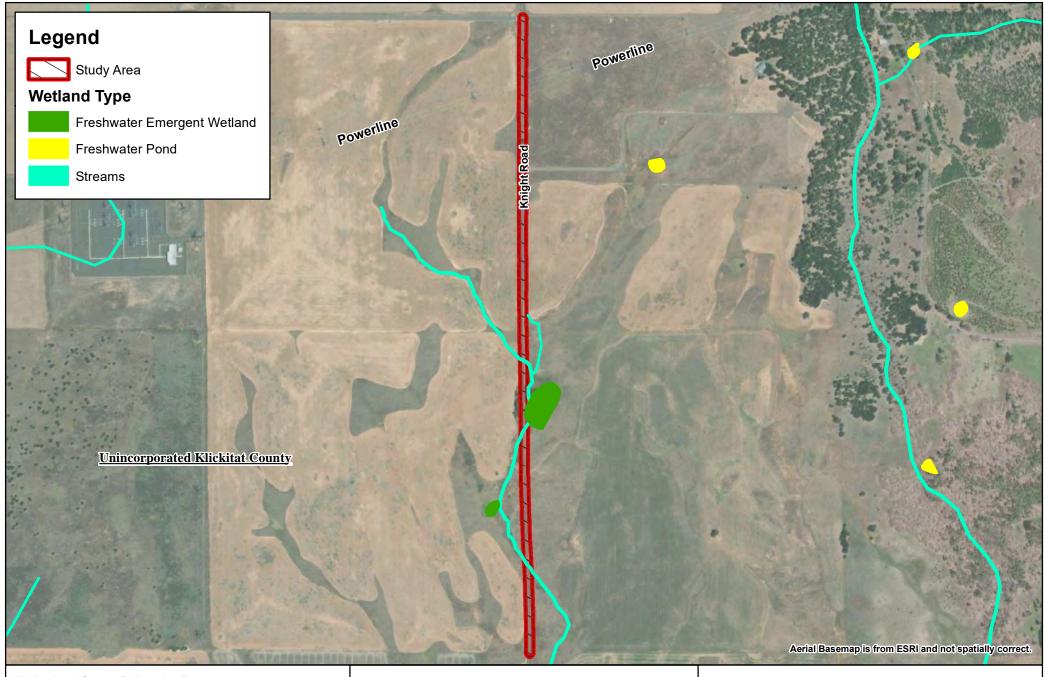
Project Name: Carriger Solar, LLC

In: Unincorporated Klickitat County At: 45°50'29.74"N 120°52'59.48"W County of: Klickitat State of: Washington Figure 6a: USFWS National Wetland Inventory Map

usp



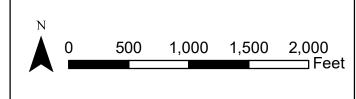
Appendix A: Figure 6a of 9



Project Name: Carriger Solar, LLC

In: Unincorporated Klickitat County At: 45°50'29.74"N 120°52'59.48"W County of: Klickitat State of: Washington Figure 6b: USFWS National Wetland Inventory Map

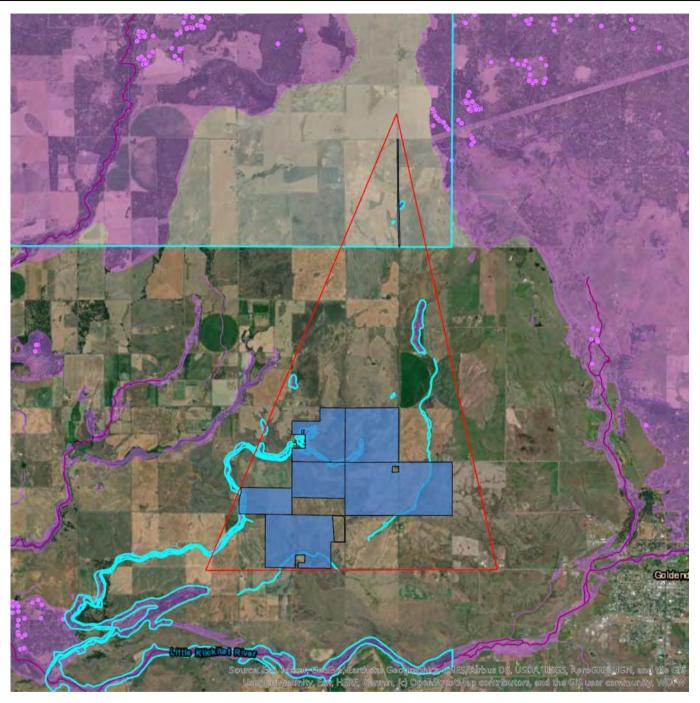
1150



Appendix A: Figure 6b of 9



Priority Habitats and Species on the Web



Report Date: 08/24/2021

PHS Species/Habitats Overview:

Northern Spotted Owl doesn't have any primary constituent elements present within the project area. No old growth or late seral forest characteristics were noted during field work.

8/24/2021

PHS Report

Occurence Name	Federal Status	State Status	Generalized Location
Resident Coastal Cutthroat	N/A	N/A	No
Rainbow Trout	N/A	N/A	No
Freshwater Emergent Wetland	N/A	N/A	No
Freshwater Forested/Shrub Wetland	N/A	N/A	No
Oak Forest	N/A	N/A	No
Oak/Pine Mixed Forest	N/A	N/A	No
Northern Spotted Owl	Threatened	Endangered	Yes

PHS Species/Habitats Details:

Resident Coastal Cutthroat	
Scientific Name	Oncorhynchus clarki
Priority Area	Occurrence/Migration
Site Name	Spring Creek
Accuracy	NA
Notes	LLID: 1209417458101, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Resident
Source Record	5492
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

PHS Report

	•
Rainbow Trout	
Scientific Name	Oncorhynchus mykiss
Priority Area	Occurrence/Migration
Site Name	Spring Creek
Accuracy	NA
Notes	LLID: 1209417458101, Fish Name: Rainbow Trout, Run Time: Unknown or not Applicable, Life History: Resident
Source Record	5493
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Rainbow Trout	
Scientific Name	Oncorhynchus mykiss
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1208945458404, Fish Name: Rainbow Trout, Run Time: Unknown or not Applicable, Life History: Resident
Source Record	5329
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

PHS Report

Rainbow Trout	
Scientific Name	Oncorhynchus mykiss
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1208945458404, Fish Name: Rainbow Trout, Run Time: Unknown or not Applicable, Life History: Resident
Source Record	5330
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Resident Coastal Cutthroat			
Scientific Name	Oncorhynchus clarki		
Priority Area	Occurrence/Migration		
Accuracy	NA		
Notes	LLID: 1208945458404, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Resident		
Source Record	5327		
Source Dataset	SWIFD		
Federal Status	N/A		
State Status	N/A		
PHS Listing Status	PHS Listed Occurrence		
Sensitive	Ν		
SGCN	Ν		
Display Resolution	AS MAPPED		
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm		
Geometry Type	Lines		

PHS Report

Resident Coastal Cutthroat	
Scientific Name	Oncorhynchus clarki
Priority Area	Occurrence/Migration
Accuracy	NA
Notes	LLID: 1208945458404, Fish Name: Cutthroat Trout, Run Time: Unknown or not Applicable, Life History: Resident
Source Record	5328
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Freshwater Emergent Wetland			
Priority Area	Aquatic Habitat		
Site Name	N/A		
Accuracy	NA		
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1Fh		
Source Dataset	NWIWetlands		
Source Name	Not Given		
Source Entity	US Fish and Wildlife Service		
Federal Status	N/A		
State Status	N/A		
PHS Listing Status	PHS Listed Occurrence		
Sensitive	Ν		
SGCN	Ν		
Display Resolution	AS MAPPED		
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html		
Geometry Type	Polygons		

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1Fh
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PFO/EM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PF01C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PF01C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PFO1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Oak Forest	
Priority Area	Terrestrial Habitat
Site Name	N/A
Accuracy	NA
Notes	Oak Forest with 25 to 75% canopy Closure.
Source Dataset	KlicOak
Source Name	Not Given
Source Entity	WDFW Wildlife Program
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00030
Geometry Type	Polygons

Oak/Pine Mixed Forest	
Priority Area	Terrestrial Habitat
Site Name	N/A
Accuracy	NA
Notes	Oak/Pine Mixed Forest with 0 to 25% canopy Closure.
Source Dataset	KlicOak
Source Name	Not Given
Source Entity	WDFW Wildlife Program
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00030
Geometry Type	Polygons

Oak/Pine Mixed Forest	
Priority Area	Terrestrial Habitat
Site Name	N/A
Accuracy	NA
Notes	Oak/Pine Mixed Forest with 25 to 75% canopy Closure.
Source Dataset	KlicOak
Source Name	Not Given
Source Entity	WDFW Wildlife Program
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00030
Geometry Type	Polygons

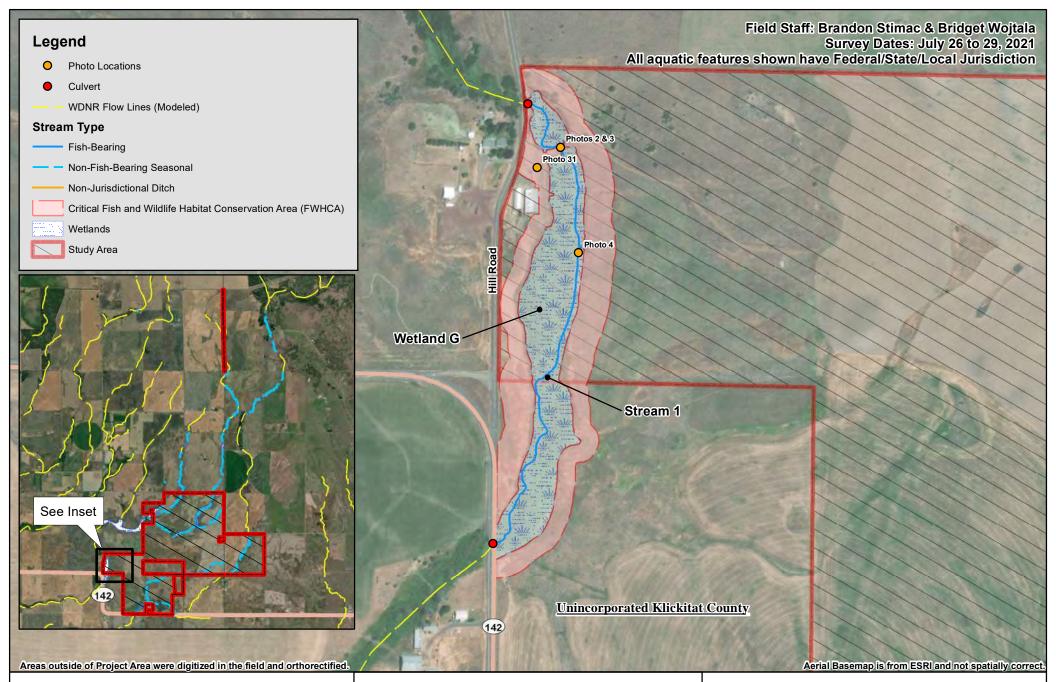
Oak/Pine Mixed Forest	
Priority Area	Terrestrial Habitat
Site Name	N/A
Accuracy	NA
Notes	Oak/Pine Mixed Forest with 25 to 75% canopy Closure.
Source Dataset	KlicOak
Source Name	Not Given
Source Entity	WDFW Wildlife Program
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00030
Geometry Type	Polygons

Oak/Pine Mixed Forest	
Priority Area	Terrestrial Habitat
Site Name	N/A
Accuracy	NA
Notes	Oak/Pine Mixed Forest with 25 to 75% canopy Closure.
Source Dataset	KlicOak
Source Name	Not Given
Source Entity	WDFW Wildlife Program
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00030
Geometry Type	Polygons

Oak/Pine Mixed Forest	
Priority Area	Terrestrial Habitat
Site Name	N/A
Accuracy	NA
Notes	Oak/Pine Mixed Forest with 25 to 75% canopy Closure.
Source Dataset	KlicOak
Source Name	Not Given
Source Entity	WDFW Wildlife Program
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	Ν
SGCN	Ν
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00030
Geometry Type	Polygons

Northern Spotted Owl	
Scientific Name	Strix occidentalis
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	Threatened
State Status	Endangered
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.



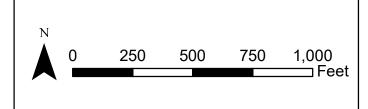
Wetland and Stream Delineation Report

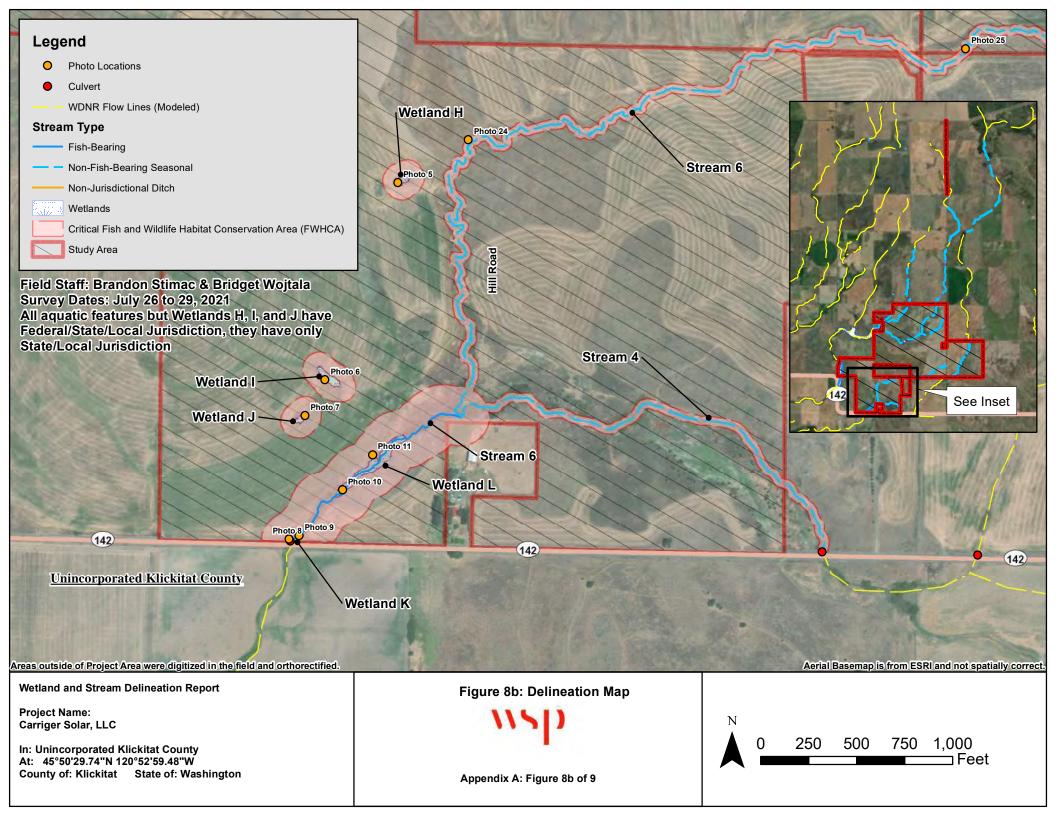
Project Name: Carriger Solar, LLC

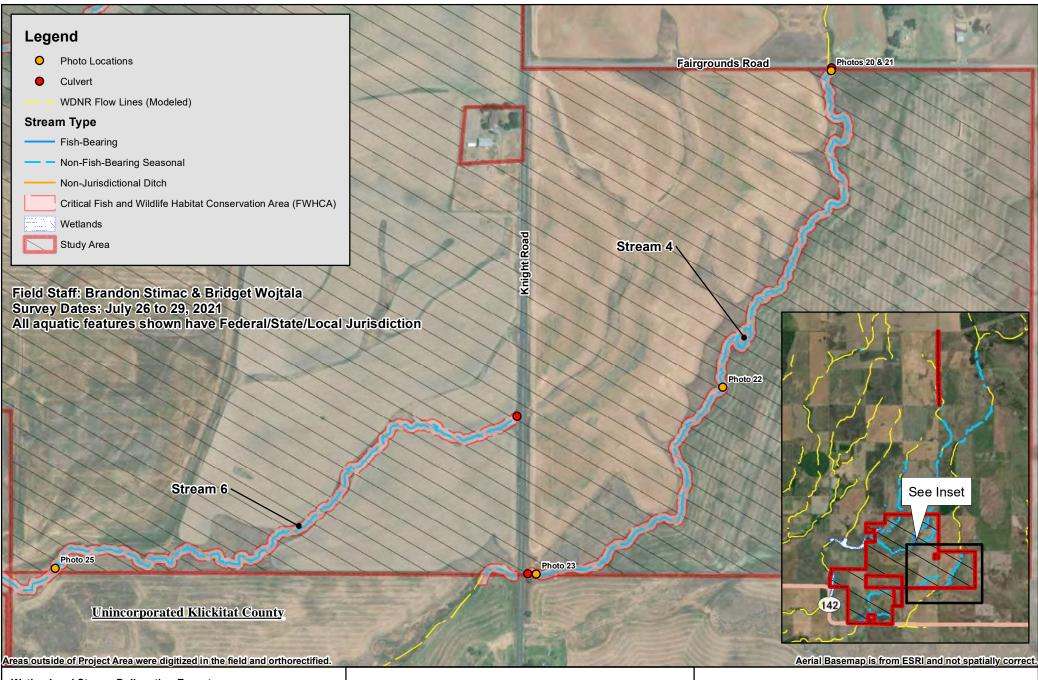
In: Unincorporated Klickitat County At: 45°50'29.74"N 120°52'59.48"W County of: Klickitat State of: Washington Figure 8a: Delineation Map

wsp

Appendix A: Figure 8a of 9





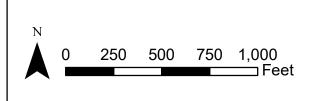


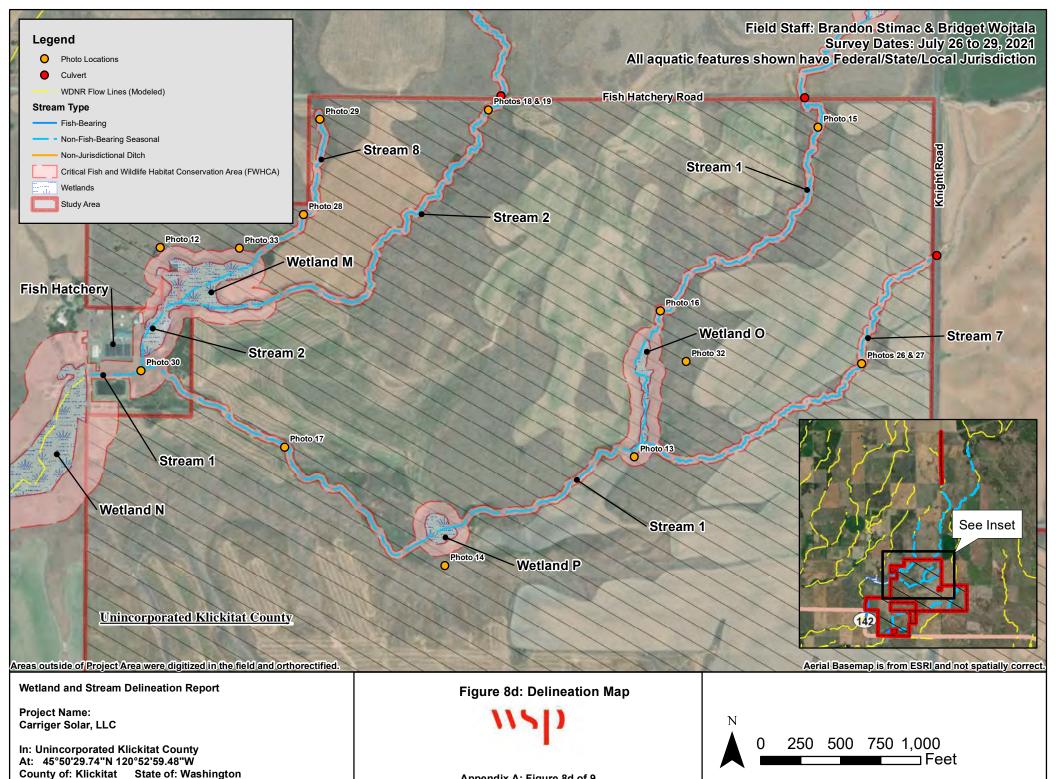
Wetland and Stream Delineation Report

Project Name: Carriger Solar, LLC

In: Unincorporated Klickitat County At: 45°50'29.74"N 120°52'59.48"W County of: Klickitat State of: Washington Figure 8c: Delineation Map

wsp





Appendix A: Figure 8d of 9

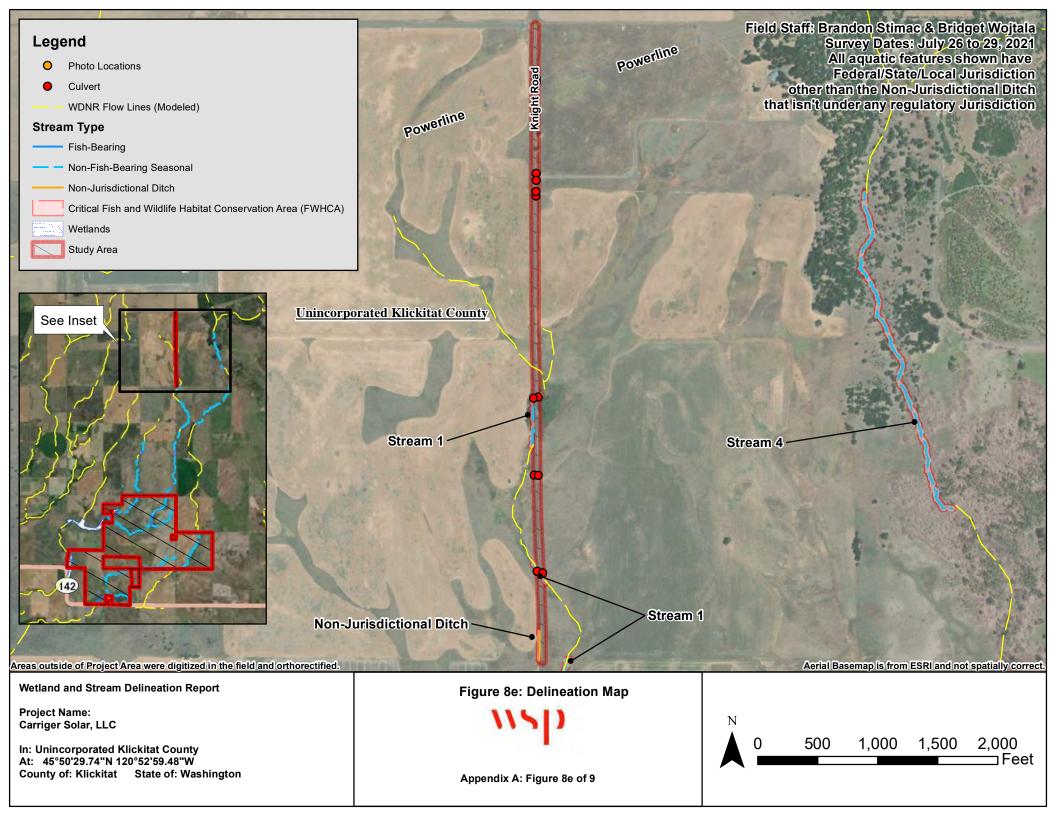




Figure 9-1. Photo Logs Appendix A: Figure 9 of 9

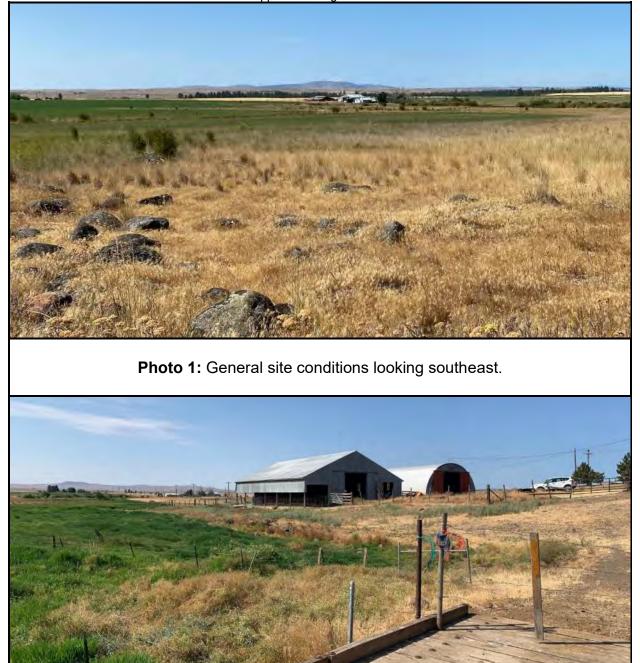


Photo 2: Wetland G looking southwest from Stream 1 crossing.



Figure 9-2. Photo Logs Appendix A: Figure 9 of 9

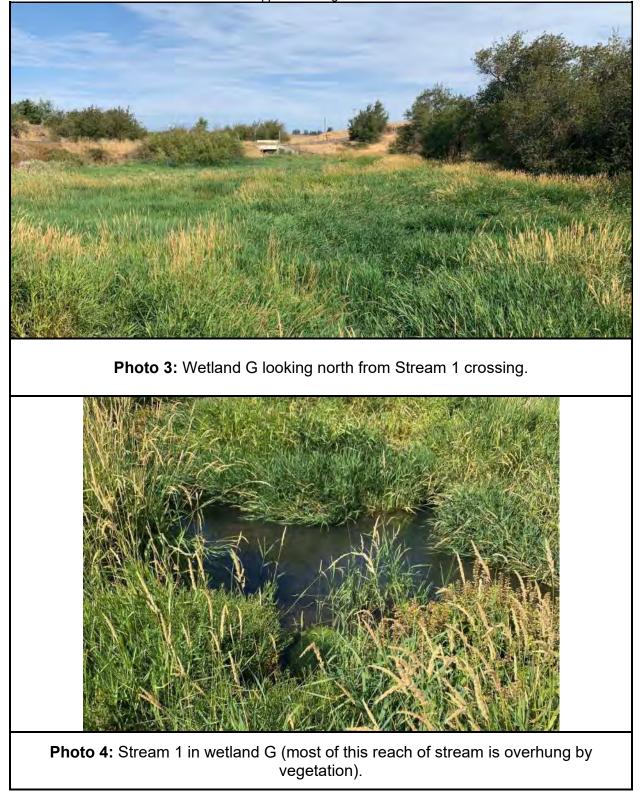




Figure 9-3. Photo Logs Appendix A: Figure 9 of 9





Figure 9-4. Photo Logs Appendix A: Figure 9 of 9

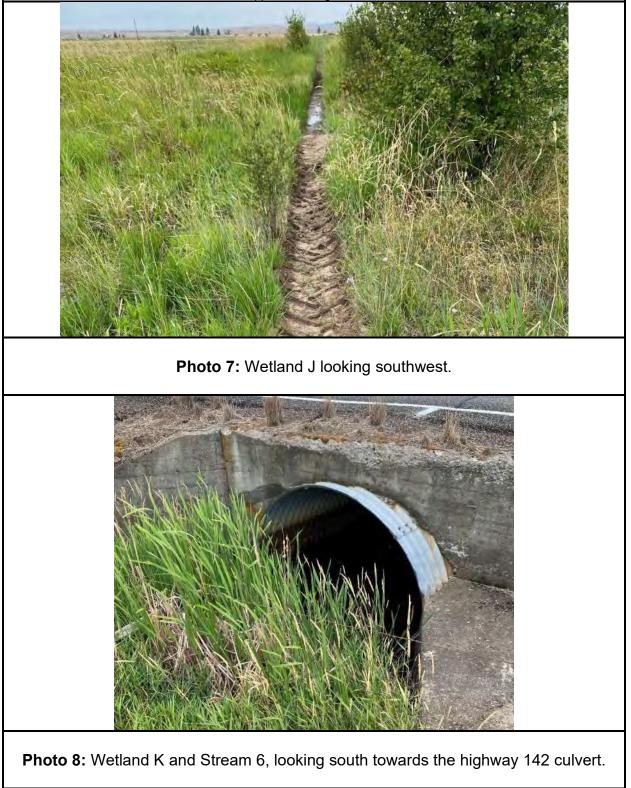




Figure 9-5. Photo Logs Appendix A: Figure 9 of 9

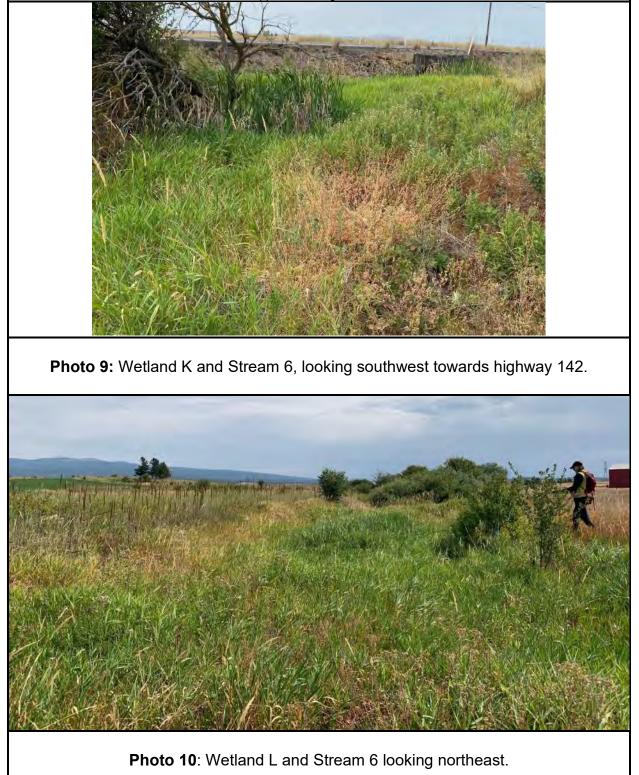




Figure 9-6. Photo Logs Appendix A: Figure 9 of 9

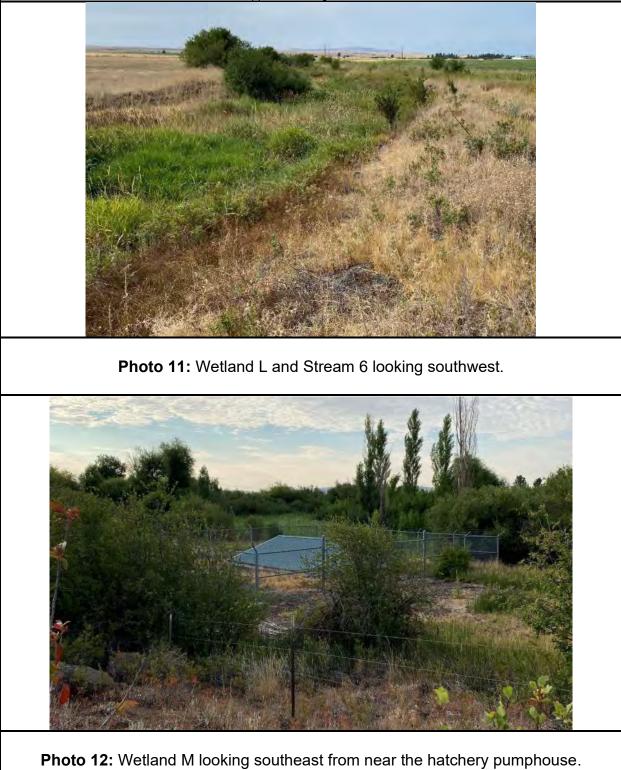




Figure 9-7. Photo Logs Appendix A: Figure 9 of 9



Photo 13: Wetland O and Stream 1 looking north.



Photo 14: Wetland P looking north.



Figure 9-8. Photo Logs Appendix A: Figure 9 of 9

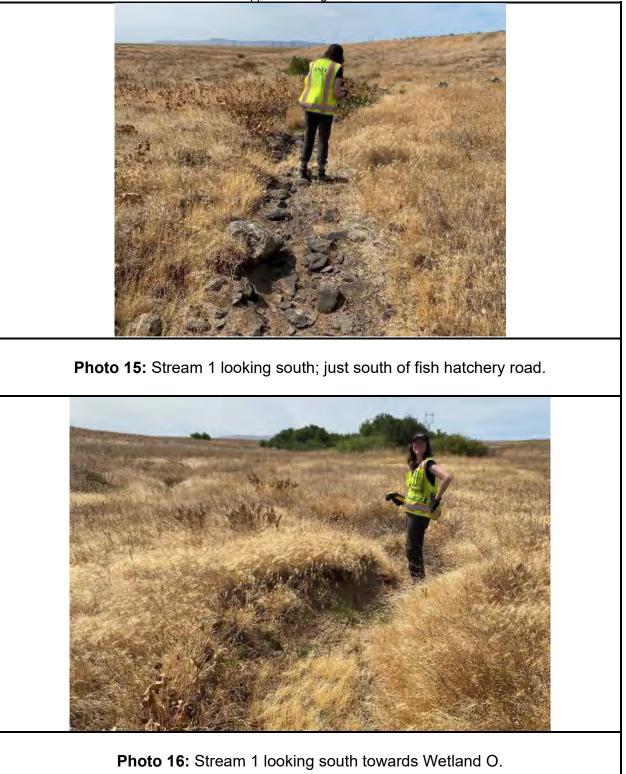




Figure 9-9. Photo Logs Appendix A: Figure 9 of 9



Photo 17: Stream 1 looking northwest towards the fish hatchery.



Photo 18: Stream 2 looking northeast towards fish hatchery road.



Figure 9-10. Photo Logs Appendix A: Figure 9 of 9



Photo 19: Stream 2 looking south from same location as Photo 18.





Figure 9-11. Photo Logs Appendix A: Figure 9 of 9





Photo 22: Stream 4 looking north from the center of the western portion of parcel 04151300000100.



Figure 9-12. Photo Logs Appendix A: Figure 9 of 9

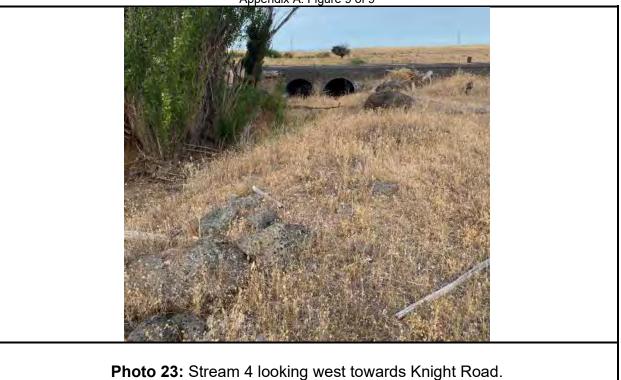




Photo 24: Stream 6 looking south where from the northern end of parcel 04151400000600.



Figure 9-13. Photo Logs Appendix A: Figure 9 of 9







Figure 9-14. Photo Logs Appendix A: Figure 9 of 9



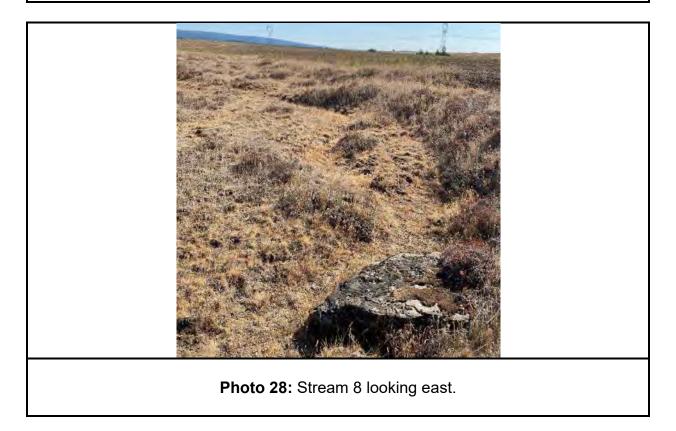




Figure 9-15. Photo Logs Appendix A: Figure 9 of 9



Photo 29: Stream 8 looking north towards fish hatchery road where a defined stream bed/bank ends.



Photo 30: Goats located adjacent to the confluence of Stream 4 and Stream 6.



Figure 9-16. Photo Logs Appendix A: Figure 9 of 9



Photo 31: Horses that graze within wetland G.





Figure 9-17. Photo Logs Appendix A: Figure 9 of 9



APPENDIX B

USACE WETLAND DETERMINATION DATA SHEETS

Project/Site: Carriger Solar	City/County: Klickitat County	Sampling Date: 2021-07-26			
Applicant/Owner: Cypress Creek Renewables	State: Washington	Sampling Point: DP-1			
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N R15E				
Landform (hillslope, terrace, etc.): Floodplain		Slope (%): 0			
Subregion (LRR): B 8 Lat: 45	5.837925 Long: -120.867955	Datum: WGS 84			
Soil Map Unit Name: Goldendale silt loam, basalt substratum					
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 Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Yes Yes	Within a wetland? Yes	No			

The area has been in drought for most of the year.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>1</u> (B)
4 Sapling/Shrub Stratum (Plot size: <u>5 ft r</u>)		_= Total Co		Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
1,		_		Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species <u>85</u> x 1 = <u>85</u>
4				FACW species 0 x 2 = 0
5				FAC species $0 x 3 = 0$
Eft r		= Total Co	over	FACU species 0 x 4 = 0
<u>Herb Stratum</u> (Plot size: <u>5 ft r</u>) 1. Eleocharis palustris	75	~	OBL	UPL species $0 \times 5 = 0$
2. Rorippa palustris			OBL	Column Totals: <u>85</u> (A) <u>85</u> (B)
				Prevalence Index = $B/A = 1.00$
3				Hydrophytic Vegetation Indicators:
5				✓ Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8	0 - 0/		·	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)	03/0	= Total Co	over	
1,				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		= Total Co	over	Hydrophytic Vegetation
% Bare Ground in Herb Stratum 15.0 % Cover	r of Biotic C	rust		Present? Yes <u>V</u> No
Remarks:				
All vegetation senesced.				
-				

Profile Des	cription: (Describe	to the dep	th needed to docun	nent the i	ndicator	or confirn	n the absence of indic	ators.)		
Depth	Matrix			Redox Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remar	ks	
0 - 8	10YR 3/3	100					Silty Clay			
-										
-										
-										
-										
-										
-										
							· 2,			
71	,	, , , , , , , , , , , , , , , , , , ,	=Reduced Matrix, CS LRRs, unless other			d Sand G	Indicators for Pro	L=Pore Lining	<u> </u>	
-					eu.)				TIC SOIIS .	
Histoso	、 ,		Sandy Redo				1 cm Muck (A9) (LRR C)			
	pipedon (A2)		Stripped Ma	• •			2 cm Muck (A10) (LRR B)			
Black H	istic (A3)		Loamy Mucl	ky Minera	l (F1)		Reduced Vertic (F18)			
Hydroge	en Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Red Parent Material (TF2)			
Stratifie	d Layers (A5) (LRR	C)	Depleted Ma	atrix (F3)			Other (Explain in Remarks)			
1 cm Mi	uck (A9) (LRR D)		Redox Dark	Surface (F6)					
Deplete	d Below Dark Surfac	ce (A11)	Depleted Da	ark Surfac	e (F7)					
Thick D	ark Surface (A12)	· · /	Redox Depr	essions (F	-8)		³ Indicators of hydro	phytic vegeta	tion and	
	Mucky Mineral (S1)		Vernal Pools	•	,		wetland hydrolog			
Sandy (Gleyed Matrix (S4)						unless disturbed	or problemati	с.	
Restrictive	Layer (if present):									
Type: Ha	ardpan									
Depth (in	ches): <u>8</u>						Hydric Soil Presen	? Yes	No 🖌	
Remarks:										

HYDROLOGY

Wetland Hydrology Indicators:				
Primary Indicators (minimum of one require		Secondary Indicators (2 or more required)		
Surface Water (A1)		Salt Crust (B11)		✓ Water Marks (B1) (Riverine)
High Water Table (A2)		Biotic Crust (B12)		Sediment Deposits (B2) (Riverine)
Saturation (A3)		Aquatic Invertebrates (B13)		Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)		_ Hydrogen Sulfide Odor (C1)		 Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine	nriverine) Oxidized Rhizospheres along Living Roots (C3)		ng Roots (C3)	 Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)			Crayfish Burrows (C8)
Surface Soil Cracks (B6)		Recent Iron Reduction in Tilled Soils (C6)		Saturation Visible on Aerial Imagery (C9)
Inundation Vis ble on Aerial Imagery (B7)	Thin Muck Surface (C7)		Shallow Aquitard (D3)
Water-Stained Leaves (B9)		Other (Explain in Remarks)		 FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present? Yes	_ No 🗹	Depth (inches):		
Water Table Present? Yes	No 🖌	Depth (inches):		
Saturation Present? Yes (includes capillary fringe)	No 🖌	_ Depth (inches):	Wetland Hyd	drology Present? Yes 🖌 No
Describe Recorded Data (stream gauge, n	nonitoring	well, aerial photos, previous inspec	tions), if availa	ble:
Remarks:				
	~			

Presence of surface water from adjacent stream would be the typical hydrology for this wetland.

Project/Site: Carriger Solar	City/County: Klickitat County	Sampling Date: 2021-07-27
Applicant/Owner: Cypress Creek Renewables	State: Washington	Sampling Point: DP-2
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N R15E	
Landform (hillslope, terrace, etc.): Floodplain		e Slope (%): 0
Subregion (LRR): B8 Lat: 45		
Soil Map Unit Name: Munset stony silt loam, 0 to 5 percent s		
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No 🖌 (If no, explain in R	(emarks.)
Are Vegetation, Soil, or Hydrology significantly	disturbed? Are "Normal Circumstances" r	present? Yes No
Are Vegetation, Soil, or Hydrology naturally pr		ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes <u> </u>	In the Completion	
Hydric Soil Present? Yes No 🖌	ie alle earlipies i a ea	No 🖌
Wetland Hydrology Present? Yes <u>V</u> No		NO
Remarks:		
Drought conditions and senesced vegetation	on.	

	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u>)	% Cover			Number of Dominant Species
1				That Are OBL, FACW, or FAC: 1 (A)
2				Total Number of Dominant
3			·	Species Across All Strata: <u>1</u> (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 5 ft r)		= Total Co	over	That Are OBL, FACW, or FAC: 100 (A/B)
				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				$\begin{array}{c c c c c c c c c c c c c c c c c c c $
3				
4				FACW species $\frac{0}{5}$ x 2 = $\frac{0}{15}$
5				FAC species $\frac{5}{2}$ x 3 = $\frac{15}{2}$
Herb Stratum (Plot size: 5 ft r)		= Total Co	over	FACU species 0 $x = 0$
1. Eleocharis palustris	65	~	OBL	UPL species $\frac{0}{75}$ x 5 = $\frac{0}{05}$
2. Poa palustris	5		FAC	Column Totals: <u>75</u> (A) <u>85</u> (B)
3 Rorippa palustris	5		OBL	Prevalence Index = $B/A = 1.13$
				Hydrophytic Vegetation Indicators:
4				✓ Dominance Test is >50%
5				$Prevalence Index is \le 3.0^{1}$
6				Morphological Adaptations ¹ (Provide supporting
7			·	data in Remarks or on a separate sheet)
8	75%		·	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)	75%	= Total Co	over	
1				¹ Indicators of hydric soil and wetland hydrology must
2.			·	be present, unless disturbed or problematic.
2		= Total Co		Hydrophytic
25.0		-		Vegetation
% Bare Ground in Herb Stratum 25.0 % Cov	er of Biotic C	rust		Present? Yes 🖌 No
Remarks:				
Everything is senesced				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix			x Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0 - 6	10YR 3/3	100					Silty Clay Hardpan at 6 inches			
-										
				·						
				·						
-		<u> </u>								
-										
				·						
				·						
71	oncentration, D=Dep	,	,			d Sand G			Pore Lining,	
-	Indicators: (Applic	able to all L	RRs, unless other	wise note	ed.)		Indicators for Problematic Hydric Soils ³ :			
Histosol	()		Sandy Redo	. ,				Muck (A9) (L	,	
	pipedon (A2)		Stripped Ma	. ,				Muck (A10) (,	
	stic (A3)		Loamy Muc		• •			ed Vertic (F	,	
, 0	en Sulfide (A4)		Loamy Gley		(F2)		Red Parent Material (TF2)			
	d Layers (A5) (LRR	C)	Depleted M	. ,			Other (Explain in Remarks)			
	ick (A9) (LRR D)		Redox Dark	•	,					
·	d Below Dark Surfac	e (A11)	Depleted Da		. ,					
	ark Surface (A12)		Redox Depr	•	-8)		³ Indicators of hydrophytic vegetation and			
	Aucky Mineral (S1)		Vernal Pool	s (⊦9)					ust be prese	ent,
-	Bleyed Matrix (S4)						unless o	listurbed or p	problematic.	
	Layer (if present):									
Type: <u>Ha</u>	arapan									
Depth (in	ches): <u>6</u>						Hydric Soi	Present?	Yes	No
Remarks:							•			

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of one required; ch	Primary Indicators (minimum of one required; check all that apply)				
Surface Water (A1)	✓ Water Marks (B1) (Riverine)				
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)			
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)			
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	 Drainage Patterns (B10) 			
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living Roots (C3) 🖌 Dry-Season Water Table (C2)			
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)			
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)			
Inundation Vis ble on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)			
Field Observations:					
Surface Water Present? Yes No _	Depth (inches):				
Water Table Present? Yes No _	Depth (inches):				
Saturation Present? Yes <u>No</u> (includes capillary fringe)	Depth (inches): Wetland	l Hydrology Present? Yes _ ✔ No			
Describe Recorded Data (stream gauge, monitor	ring well, aerial photos, previous inspections), if a	vailable:			
Remarks:					

Project/Site: Carriger Solar	City/County: Klickitat County Sampling Date: 2021-07-27			
Applicant/Owner: Cypress Creek Renewables	State: Washington Sampling Point: Dp-3			
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N R15E			
	_ Local relief (concave, convex, none): <u>Concave</u> Slope (%): <u>0</u>			
Subregion (LRR): B8 Lat: 45	5.833815 Long: -120.867476 Datum: WGS 84			
Soil Map Unit Name: Goldendale silt loam, basalt substratum	n, 2 to 5 percent slopes NWI classification: Upland			
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	y disturbed? Are "Normal Circumstances" present? Yes No			
Are Vegetation, Soil, or Hydrology naturally pr	roblematic? (If needed, explain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, important features, etc.			
Hydrophytic Vegetation Present? Yes <u>Ves</u> No	Is the Sampled Area			
Hydric Soil Present? Yes No 🔽	within a Wetland? Yes <u>No</u>			
Wetland Hydrology Present? Yes 🖌 No				
Remarks:				
Drought conditions				

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1.		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
23				Total Number of Dominant Species Across All Strata: 1 (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 5 ft r)		= Total Co	ver	That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species $0 x_1 = 0$
4				FACW species 0 x 2 = 0
5				FAC species <u>30</u> x 3 = <u>90</u>
		= Total Co		FACU species $0 x 4 = 0$
Herb Stratum (Plot size: 5 ft r)		-		UPL species $0 \times 5 = 0$
1. Poa palustris	30	 ✓ 	FAC	Column Totals: <u>30</u> (A) <u>90</u> (B)
2				
3				Prevalence Index = B/A = <u>3.00</u>
4				Hydrophytic Vegetation Indicators:
5				✓ Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8	000/		·	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)	50%	= Total Co	ver	
1				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		= Total Co	ver	Hydrophytic Vegetation
% Bare Ground in Herb Stratum 70.0 % Cove	er of Biotic C	rust		Present? Yes <u>V</u> No
Remarks:				
Sparsely vegetated concave surface	e betwe	en two	fields	
	0.00000			

Profile Desc	cription: (Describe	to the dep	th needed to docur	nent the i	indicator	or confirm	n the absence	of indicato	rs.)		
Depth	Matrix		Redo	x Feature	s						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	3	
0 - 2	10YR 4/6	100					Silty Clay	Surface cracks	due to bedrock	being close to s	urface
_											
				<u></u>	·						
-					·						
-											
-											
					·						
-					·						
-											
-											
¹ Type: C=C	oncentration. D=De	pletion. RM	=Reduced Matrix, CS	S=Covere	d or Coate	d Sand G	rains. ² Lo	cation: PL=	Pore Linina.	M=Matrix.	
71	,	,	LRRs, unless other					for Probler	, U		
Histosol	(A1)		Sandy Redo	ox (S5)			1 cm	Muck (A9) (L	RR C)		
Histic Ep	pipedon (A2)		Stripped Ma	atrix (S6)			2 cm	Muck (A10) (LRR B)		
Black Hi	istic (A3)		Loamy Muc	ky Minera	l (F1)			ced Vertic (F			
Hydroge	en Sulfide (A4)		Loamy Gleyed Matrix (F2)				Red Parent Material (TF2)				
Stratified	d Layers (A5) (LRR	C)	Depleted Matrix (F3)			Other	(Explain in F	Remarks)			
1 cm Mu	uck (A9) (LRR D)		Redox Dark Surface (F6)								
Deplete	d Below Dark Surfac	ce (A11)	Depleted Da	ark Surfac	e (F7)						
Thick Da	ark Surface (A12)		Redox Depressions (F8)				³ Indicators of hydrophytic vegetation and				
Sandy N	/lucky Mineral (S1)		Vernal Pools (F9)				wetland hydrology must be present,				
	Gleyed Matrix (S4)						unless o	disturbed or p	problematic.		
	Layer (if present):										
Type: Be	edrock										
Depth (in	ches): <u>2</u>						Hydric Soi	I Present?	Yes	No	
Remarks:							I				
No holes	s could be di	ug withi	in either of th	ne dep	ressio	ns due	e to shall	ow bedr	ock		

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that app	y) Secondary Indicators (2 or more required)
Surface Water (A1) Salt Crus	(B11) Water Marks (B1) (Riverine)
High Water Table (A2) Biotic Cru	st (B12) Sediment Deposits (B2) (Riverine)
Saturation (A3) Aquatic I	vertebrates (B13) Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine) Hydroger	Sulfide Odor (C1) Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine) Oxidized	Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine) Presence	of Reduced Iron (C4) Crayfish Burrows (C8)
✓ Surface Soil Cracks (B6) Recent Ir	n Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Vis ble on Aerial Imagery (B7) Thin Muc	Surface (C7) Shallow Aquitard (D3)
Water-Stained Leaves (B9) Other (Ex	plain in Remarks) FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (i	ches):
Water Table Present? Yes No 🖌 Depth (i	ches):
Saturation Present? Yes No 🖌 Depth (i	ches): Wetland Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aeria	photos, previous inspections), if available:
Remarks:	

Project/Site: Carriger Solar	_ City/County: Klickitat County Sampling Date: 2021-0					
Applicant/Owner: Cypress Creek Renewables	State: Washington	Sampling Point: DP-4 Wetland K				
Investigator(s): Brandon Stimac & Bridget Wojtala	_ Section, Township, Range: S36 T5N R15E					
Landform (hillslope, terrace, etc.): Hillslope		e Slope (%): <u>5</u>				
Subregion (LRR): B8 Lat: 4						
Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slo						
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Ves No	- Is the Sampled Area	No				

Drought Conditions; though this plot is within an area of irrigation.

20.4	Absolute Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1	<u>% Cover Species? Status</u>	- Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
2		- Total Number of Dominant
3		_ Species Across All Strata: <u>1</u> (B)
4	= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1		Prevalence Index worksheet:
2		Total % Cover of: Multiply by:
3		OBL species 0 x 1 = 0
4		FACW species $0 x 2 = 0$
5		FAC species 0 x 3 = 0
- 4	= Total Cover	FACU species $0 x 4 = 0$
Herb Stratum (Plot size: 5 ft r)		UPL species $0 \times 5 = 0$
1. Festuca altaica	<u>100</u> V NI	- Column Totals: <u>0</u> (A) <u>0</u> (B)
2		-
3		Prevalence Index = B/A = <u>NaN</u>
4		Hydrophytic Vegetation Indicators:
5		Dominance Test is >50%
6		_ Prevalence Index is ≤3.0 ¹
7		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Woody Vine Stratum (Plot size: 30 ft r)	100% = Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
1,		¹ Indicators of hydric soil and wetland hydrology must
2		be present, unless disturbed or problematic.
<u> </u>	= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % C	over of Biotic Crust	Present? Yes No 🖌
Remarks:		
Drought Conditions		

Profile Desc	cription: (Describe	to the dept	h needed to docun	nent the i	ndicator	or confirm	n the absence	of indicato	rs.)		
Depth	Matrix		Redo	x Features							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks		
0 - 12	10YR 4/3	100					Silt Loam	Edge of	agricultur	al field	
-											-
											-
		·									-
		· ·									-
							. <u> </u>				_
-											
-											-
-											-
17			De duce d Mateix, 00				21 -		Dens Lisian		-
71	oncentration, D=Dep Indicators: (Applic	,	,			d Sand G			Pore Lining, matic Hydric		
•					eu.)					. 30115 .	
Histosol	· · /		Sandy Redo					/luck (A9) (L	,		
·	pipedon (A2)		Stripped Ma					/luck (A10) (
	istic (A3)		Loamy Muc					ed Vertic (F			
Hydroge	en Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Red P	arent Materi	al (TF2)		
<u>Stratified</u>	d Layers (A5) (LRR	C)	Depleted Matrix (F3)			Other (Explain in Remarks)					
1 cm Mu	uck (A9) (LRR D)		Redox Dark	Redox Dark Surface (F6)							
Deplete	d Below Dark Surfac	e (A11)	Depleted Da	ark Surfac	e (F7)						
Thick Da	ark Surface (A12)	. ,	Redox Depressions (F8)				³ Indicators of hydrophytic vegetation and				
Sandy M	lucky Mineral (S1)		Vernal Pools (F9)			wetland hydrology must be present,					
	Gleyed Matrix (S4)						unless d	isturbed or	problematic.		
Restrictive	Layer (if present):										
Туре:											
Depth (in	ches):						Hydric Soil	Present?	Yes	No	-
Remarks:											

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1) Salt Crust (B	1) Water Marks (B1) (Riverine)
High Water Table (A2) Biotic Crust (312) Sediment Deposits (B2) (Riverine)
Saturation (A3) Aquatic Inver	bebrates (B13) Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine) Hydrogen Su	fide Odor (C1) Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine) Oxidized Rhiz	cospheres along Living Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine) Presence of I	Reduced Iron (C4) Crayfish Burrows (C8)
Surface Soil Cracks (B6) Recent Iron F	eduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Vis ble on Aerial Imagery (B7) Thin Muck Su	rface (C7) Shallow Aquitard (D3)
Water-Stained Leaves (B9) Other (Explain	n in Remarks) FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inche	s):
Water Table Present? Yes No Depth (inche	s):
Saturation Present? Yes <u>No</u> Depth (inche (includes capillary fringe)	s): Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspections), if available:
Remarks:	
Drought Conditions	

Project/Site: Carriger Solar	_ City/County: Klicki	tat County	_ Sampling Date: <u>2021-07-27</u>			
Applicant/Owner: Cypress Creek Renewables		State: Washington	_ Sampling Point: DP-5 Wetland K			
Investigator(s): Brandon Stimac & Bridget Wojtala	_ Section, Township,	Range: S36 T5N R15E				
Landform (hillslope, terrace, etc.): Riverine			ve Slope (%): 0			
Subregion (LRR): B8 Lat: 4	5.824703	Long: -120.897732	Datum: WGS 84			
Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slo	opes	NWI classifi	ication: Riverine			
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 significant	ly disturbed? A	re "Normal Circumstances"	present? Yes No _			
Are Vegetation, Soil, or Hydrology naturally p	problematic? (If	f needed, explain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes ✓ No Hydric Soil Present? Yes ✓ No	– is the samp	_	No			
Wetland Hydrology Present? Yes <u>V</u> No						

Remarks:

Drought conditions; though this plot is in an area near irrigation.

	Absolute		Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1.		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2 3				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
4 Sapling/Shrub Stratum (Plot size: 5 ft r)		_= Total Co	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1				Prevalence Index worksheet:
2.				Total % Cover of: Multiply by:
3.				OBL species 45 x 1 = 45
4				FACW species 50 x 2 = 100
5				FAC species 0 x 3 = 0
··		= Total Co	iver	FACU species $0 x 4 = 0$
Herb Stratum (Plot size: 5 ft r)				UPL species 0 x 5 = 0
_{1.} Phalaris arundinacea	50	~	FACW	Column Totals: 95 (A) 145 (B)
2. Typha angustifolia	40	~	OBL	
3. Eleocharis palustris	5		OBL	Prevalence Index = $B/A = 1.53$
4				Hydrophytic Vegetation Indicators:
5				✓ Dominance Test is >50%
6				✓ Prevalence Index is ≤3.0 ¹
7	<u></u>			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8	95%	= Total Co	over	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: <u>30 ft r</u>)				¹ Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2				Hydrophytic
		= Total Co		Vegetation
% Bare Ground in Herb Stratum 5.0 % Cover	of Biotic C	rust		Present? Yes 🖌 No
Remarks:				
Vegetation is highly disturbed from a	agricult	ural ac	tivities	

SOIL

Profile Desc	ription: (Describ	e to the dep	oth needed to docum	nent the	indicator	or confirm	n the absence	e of indicators.)	
Depth	Matrix			x Feature					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0 - 4	10YR 3/2	100		·	<u> </u>		Silt Loam		
4 - 16	10YR 3/2	95	10YR 5/6	5	С	М	Silt Loam		
-					<u> </u>				
-					<u> </u>				
-									
					<u> </u>				
					<u> </u>				
-					<u> </u>				
¹ Type: C=Co	oncentration, D=De	pletion, RM	=Reduced Matrix, CS	S=Covere	d or Coate	ed Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.	
Hydric Soil	ndicators: (Appli	cable to all	LRRs, unless other	wise not	ted.)		Indicators	s for Problematic Hydric Soils ³ :	
<u> </u>	(A1)		Sandy Redo	ox (S5)			1 cm I	Muck (A9) (LRR C)	
Histic Ep	oipedon (A2)		Stripped Ma	trix (S6)			2 cm I	Muck (A10) (LRR B)	
Black Hi	stic (A3)		Loamy Muc	ky Minera	al (F1)		Reduc	ced Vertic (F18)	
Hydroge	n Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Red P	Parent Material (TF2)	
Stratified	Layers (A5) (LRR	C)	Depleted Matrix (F3)				Other (Explain in Remarks)		
	ck (A9) (LRR D)	,	 Redox Dark Surface (F6) 						
	Below Dark Surfa	ce (A11)	Depleted Dark Surface (F7)						
	ark Surface (A12)		Redox Depressions (F8)				³ Indicators of hydrophytic vegetation and		
	lucky Mineral (S1)		Vernal Pools (F9)				wetland hydrology must be present,		
	leyed Matrix (S4)						unless disturbed or problematic.		
	_ayer (if present):						unicos c		
Type:									
	ches):						Hydric Soil	I Present? Yes _ ✔ No	
Remarks:									

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; c	Secondary Indicators (2 or more required)		
Surface Water (A1)	Salt Crust (B11)	✓ Water Marks (B1) (Riverine)	
 High Water Table (A2) 	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)	
✓ Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)	
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	 Drainage Patterns (B10) 	
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)	
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)	
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)	
Inundation Vis ble on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)	
Water-Stained Leaves (B9)	Other (Explain in Remarks)	 FAC-Neutral Test (D5) 	
Field Observations:			
Surface Water Present? Yes No	✓ Depth (inches):		
Water Table Present? Yes Yes No	Depth (inches): <u>12</u>		
Saturation Present? Yes <u>Ves</u> No (includes capillary fringe)	Depth (inches): 6 Wetland Hy	drology Present? Yes 🖌 No	
Describe Recorded Data (stream gauge, monito	pring well, aerial photos, previous inspections), if availa	ble:	
Remarks:			

Wetland starts at a culvert with backwater and continues northeast. Wetland continues on opposite side of the road.

Project/Site: Carriger Solar	_ City/County: Klickitat County Sampling Date: 2021-07-27					
Applicant/Owner: Cypress Creek Renewables	State: <u>Washington</u> Sampling Point: DP-6 Wetland					
Investigator(s): Brandon Stimac & Bridget Wojtala	_ Section, Township, Range: S36 T5N R15E					
Landform (hillslope, terrace, etc.): Riverine	Local relief (concave, convex, none): Concave Slope (%): 0					
Subregion (LRR): B 8 Lat: 45	45.825462 Long: -120.896649 Datum: WGS 84					
Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slop	NWI classification: Riverine					
Are climatic / hydrologic conditions on the site typical for this time of ye	year? Yes No (If no, explain in Remarks.)					
Are Vegetation, Soil, or Hydrology significantly	tly disturbed? Are "Normal Circumstances" present? Yes No					
Are Vegetation, Soil, or Hydrology _ 🖌 naturally pro	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 ✓	is the Sampleu Area					

Remarks:

Drought conditions

	Absolute	Dominant	t Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3			. <u> </u>	Species Across All Strata: <u>2</u> (B)
4				
		= Total Co	over	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r)		-		
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species <u>10</u> x 1 = <u>10</u>
4				FACW species 80 x 2 = 160
5				FAC species 0 x 3 = 0
		= Total Co	over	FACU species 0 x 4 = 0
Herb Stratum (Plot size: 5 ft r)				UPL species $0 \times 5 = 0$
_{1.} Juncus drummondii	40	~	FACW	Column Totals: 90 (A) 170 (B)
2. Phalaris arundinacea	40	~	FACW	
3. Eleocharis palustris	5		OBL	Prevalence Index = B/A = 1.89
4. Rorippa palustris	5		OBL	Hydrophytic Vegetation Indicators:
5				✓ Dominance Test is >50%
6				✓ Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
	90%	= Total Co	over	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)				
1				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		= Total Co	over	Hydrophytic
				Vegetation
% Bare Ground in Herb Stratum 5.0 % Cover	r of Biotic C	rust		Present? Yes <u>V</u> No
Remarks:				

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 - 6	10YR 3/2	100					Silt Loam		
6 - 16	10YR 3/2	90	10YR 5/6	10	С	PL / M	Silt Loam		
-									
		<u> </u>							
-		<u> </u>							
-									
-		<u> </u>		·					
-		<u> </u>		·					
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.									
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :									
Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C)							/luck (A9) (LRR C)		
Histic Epipedon (A2)			Stripped Matrix (S6)				2 cm Muck (A10) (LRR B)		
Black Hi	stic (A3)	Loamy Mucky Mineral (F1)				Reduced Vertic (F18)			
Hydroge	n Sulfide (A4)	Loamy Gleyed Matrix (F2)				Red Parent Material (TF2)			
Stratified	Layers (A5) (LRR (Depleted Matrix (F3)				Other (Explain in Remarks)			
	ick (A9) (LRR D)	 Redox Dark Surface (F6) 							
	d Below Dark Surfac	Depleted Dark Surface (F7)							
·	ark Surface (A12)	Redox Depressions (F8)				³ Indicators	of hydrophytic vegetation and		
	lucky Mineral (S1)	Vernal Pools (F9)				wetland hydrology must be present,			
	Bleyed Matrix (S4)						unless disturbed or problematic.		
	Layer (if present):							•	
Туре:									
Depth (ind	ches):					Hydric Soil	Present? Yes 🖌 No		
Remarks:									

HYDROLOGY

Wetland Hydrology Indicators:									
Primary Indicators (minimum of one required; ch	Secondary Indicators (2 or more required)								
Surface Water (A1)	Salt Crust (B11)	✓ Water Marks (B1) (Riverine)							
 High Water Table (A2) 	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)							
✓ Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)							
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	 Drainage Patterns (B10) 							
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living Roots (C	C3) 🖌 Dry-Season Water Table (C2)							
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)							
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)							
Inundation Vis ble on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)							
Water-Stained Leaves (B9)	Other (Explain in Remarks)	 FAC-Neutral Test (D5) 							
Field Observations:									
Surface Water Present? Yes No _	Depth (inches):								
Water Table Present? Yes <u>Yes</u> No	Depth (inches): <u>12</u>								
Saturation Present? Yes <u>Ves</u> No No	Depth (inches): <u>6</u> Wetland H	Hydrology Present? Yes 🖌 No							
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									

Project/Site: Carriger Solar	City/County:	Klickitat County		Sampling Date:	2021-07-27		
Applicant/Owner: Cypress Creek Renewables		Stat	e: Washington	Sampling Point:	DP-7 Wetland L		
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Tow	nship, Range: <u>S36</u>	T5N R15E				
Landform (hillslope, terrace, etc.): Hillslope				ve Slo	ope (%): <u>5</u>		
Subregion (LRR): B8 Lat:							
Soil Map Unit Name: Blockhouse silt Ioam, 0 to 5 percent s							
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 significar	ntly disturbed?	Are "Normal Cir	cumstances"	present? Yes	No 🖌		
Are Vegetation, Soil, or Hydrology _	problematic?	(If needed, expla	ain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showi	ing sampling	point locations	, transects	s, important fe	eatures, etc.		
Hydrophytic Vegetation Present? Yes No _	1- 4						
Hydric Soil Present? Yes No 🖌		Sampled Area	Vos	No 🖌			
Wetland Hydrology Present? Yes No _			res		-		
Remarks:	·						

Drought conditions

	Absolute	Dominon	t Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r)		Species?		
,				Number of Dominant Species
1				That Are OBL, FACW, or FAC: _0 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>1</u> (B)
4				
· · ·				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 5 ft r)		= Total Co	over	That Are OBL, FACW, or FAC: 0 (A/B)
				Prevalence Index worksheet:
1				
2				Total % Cover of: Multiply by:
3				OBL species 0 $x_1 = 0$
4				FACW species 0 x 2 = 0
5				FAC species 0 x 3 = 0
		= Total Co	- <u></u>	FACU species 10 $x = 40$
Herb Stratum (Plot size: 5 ft r)			Jver	UPL species $0 \times 5 = 0$
1 Festuca altaica	40	~	NI	· <u> </u>
2. Cichorium intybus	10		FACU	Column Totals: <u>10</u> (A) <u>40</u> (B)
3 Verbascum densiflorum	10		NI	Prevalence Index = $B/A = 4.00$
	10	·	<u></u>	
4				Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting
				data in Remarks or on a separate sheet)
8		·		Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)	60%	= Total Co	over	
1				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
		= Total Co	over	Hydrophytic
10.0		_		Vegetation
% Bare Ground in Herb Stratum 40.0 % Cove	r of Biotic C	rust		Present? Yes No V
Remarks:				
The plat is on the edge of an agricul	tural ar	00		
The plot is on the edge of an agricul	lui ai ai	ea.		

Profile Desc	ription: (Describe	to the depth	n needed to docun	nent the ir	ndicator o	or confirn	n the absence	of indicato	rs.)		
Depth	Matrix		Redo								
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks		_
0 - 12	10YR 3/3	100					Silt Loam	Edge of a	agricultura	al field	
-											•
-	-										-
		·									-
-		·									-
		·			·						-
											-
		·									-
-		·			<u> </u>						-
	oncentration, D=Dep					d Sand G			Pore Lining, N		
Hydric Soil I	ndicators: (Applic	able to all L	RRs, unless other	wise note	ed.)		Indicators	for Problen	natic Hydric	Soils [°] :	
Histosol	(A1)		Sandy Redo					/luck (A9) (L			
Histic Ep	oipedon (A2)		Stripped Ma			2 cm Muck (A10) (LRR B)					
Black Hi	stic (A3)		Loamy Mucl	(F1)		Reduced Vertic (F18)					
Hydroge	n Sulfide (A4)		Loamy Gley	(F2)		Red Parent Material (TF2)					
	Layers (A5) (LRR (C)	Depleted Matrix (F3)				Other (Explain in Remarks)				
	ick (A9) (LRR D)	,	Redox Dark				,				
	Below Dark Surface	e (A11)	Depleted Da	•	,						
	ark Surface (A12)	e (/(11)	·				³ Indicators of hydrophytic vegetation and			and	
	lucky Mineral (S1)		Redox Depressions (F8)								
-	leyed Matrix (S4)		Vernal Pools (F9)				wetland hydrology must be present, unless disturbed or problematic.			i i i,	
-	_ayer (if present):						uniess u				
Type:	· · · · · · · · · · · · · · · · · · ·										
								Duese with	Vee		
	ches):						Hydric Soil	Present?	Yes	No 🔽	
Remarks:											

HYDROLOGY

Wetland Hydrology Indicators:							
Primary Indicators (minimum of one required; ch	Primary Indicators (minimum of one required; check all that apply)						
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)					
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)					
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)					
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)					
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livin	ng Roots (C3) Dry-Season Water Table (C2)					
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)					
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled So	ils (C6) Saturation Visible on Aerial Imagery (C9)					
Inundation Vis ble on Aerial Imagery (B7)	Shallow Aquitard (D3)						
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)					
Field Observations:							
Surface Water Present? Yes No	Depth (inches):						
Water Table Present? Yes No	Depth (inches):						
Saturation Present? Yes <u>No</u> (includes capillary fringe)	✓ Depth (inches):	Wetland Hydrology Present? Yes No					
Describe Recorded Data (stream gauge, monito	oring well, aerial photos, previous inspect	ions), if available:					
Remarks:							

Project/Site: Carriger Solar	_ City/County: Klickitat County Sampling Date: 2021-07-27					
Applicant/Owner: Cypress Creek Renewables	State: <u>Washington</u> Sampling Point: DP-8 Wetland H					
Investigator(s): Brandon Stimac & Bridget Wojtala	_ Section, Township, Range: S36 T5N R15E					
Landform (hillslope, terrace, etc.): Floodplain	_ Local relief (concave, convex, none): <u>Concave</u> Slope (%): <u>5</u>					
	5.82988 Long: -120.895394 Datum: WGS 84					
Soil Map Unit Name: Goldendale silt loam, basalt substratun	n, 2 to 5 percent slopes NWI classification: Upland					
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 significantl	ly disturbed? Are "Normal Circumstances" present? Yes No					
Are Vegetation, Soil, or Hydrology _ ✓ _ naturally p	problematic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	− within a Wetland? Yes ✓ No					
Remarks:						

Drought conditions; plot had ongoing irrigation during field visit.

	Absolute		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u>) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
23				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
4 Sapling/Shrub Stratum (Plot size: 5 ft r)		_= Total Co	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species 0 $x_1 = 0$
4				FACW species 60 x 2 = 120
5			·	FAC species 20 x 3 = 60
		= Total Co	over	FACU species 5 x 4 = 20
Herb Stratum (Plot size: 5 ft r)				UPL species $0 \times 5 = 0$
1. Phalaris arundinacea	60	~	FACW	Column Totals: 85 (A) 200 (B)
2. Agrostis scabra	20	~	FAC	
3. Dipsacus laciniatus	5		FACU	Prevalence Index = $B/A = 2.35$
4				Hydrophytic Vegetation Indicators:
5				✓ Dominance Test is >50%
6				\checkmark Prevalence Index is ≤3.0 ¹
7	<u> </u>			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8	0 5 0/		·	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)	65%	= Total Co	over	
				¹ Indicators of hydric soil and wetland hydrology must
1			·	be present, unless disturbed or problematic.
2				Hydrophytic
		= Total Co		Vegetation
% Bare Ground in Herb Stratum % Cover	of Biotic C	rust		Present? Yes 🖌 No
Remarks:				
Vegetation is highly disturbed from a	adjacer	nt agric	ultural	activities.

SOIL

Profile Desc	ription: (Describe	e to the de	pth needed to docur	nent the	indicator	or confirm	n the absence	of indicators.)			
Depth	Matrix			Redox Features							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0 - 6	10YR 3/2	100				<u> </u>	Silt Loam				
6 - 12	10YR 3/2	95	10YR 5/6	5	С	PL / M	Silty Clay Loam				
12 - 16	10YR 3/2	85	10YR 5/6	5	С	PL / M	Silty Clay Loam				
12 - 16	10YR 3/2		10YR 6/2	10	D	М					
-											
_											
-											
-											
¹ Type: C=Co	oncentration. D=De	pletion. RM	I=Reduced Matrix, CS	S=Cover	ed or Coat	ed Sand G	rains. ² Loo	cation: PL=Pore Lining, M=Matrix.			
Hydric Soil	Indicators: (Appli	cable to al	I LRRs, unless othe	rwise no	oted.)			for Problematic Hydric Soils ³ :			
Histosol	(A1)		Sandy Red	ox (S5)			1 cm M	Muck (A9) (LRR C)			
Histic Ep	bipedon (A2)		Stripped Ma	atrix (S6)			2 cm N	Muck (A10) (LRR B)			
Black Hi	stic (A3)		Loamy Muc	ky Miner	al (F1)		Reduc	ced Vertic (F18)			
Hydroge	n Sulfide (A4)		Loamy Gley	-			Red P	arent Material (TF2)			
	Layers (A5) (LRR	C)	✓ Depleted M		. ,		Other (Explain in Remarks)				
	ick (A9) (LRR D)	,	Redox Dark								
	d Below Dark Surfa	ce (A11)	Depleted D		. ,						
	ark Surface (A12)		Redox Dep		• •		³ Indicators	of hydrophytic vegetation and			
	lucky Mineral (S1)		Vernal Pool		(10)			hydrology must be present.			
	Bleyed Matrix (S4)			5 (1 9)				listurbed or problematic.			
	Layer (if present):						uniess u	isturbed of problematic.			
· · ·	ches):						Hydric Soil	Present? Yes 🖌 No			
Remarks:											

HYDROLOGY

Wetland Hydrology Indicato	ors:							
Primary Indicators (minimum	of one requir	Secondary Indicators (2 or more required)						
Surface Water (A1)				Salt Crust (B11)		Water Marks (B1) (Riverine)		
High Water Table (A2)				Biotic Crust (B12)		Sediment Deposits (B2) (Riverine)		
✓ Saturation (A3)				Aquatic Invertebrates (B13)		Drift Deposits (B3) (Riverine)		
Water Marks (B1) (Nonri	verine)			Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)		
Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3)						 Dry-Season Water Table (C2) 		
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)					Crayfish Burrows (C8)			
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6)				✓ Saturation Visible on Aerial Imagery (C9)				
Inundation Vis ble on Aerial Imagery (B7) Thin Muck Surface (C7)					Shallow Aquitard (D3)			
Water-Stained Leaves (B	9)			Other (Explain in Remarks)		 FAC-Neutral Test (D5) 		
Field Observations:								
Surface Water Present?	Yes	No	~	Depth (inches):				
Water Table Present?	Yes	No	~	Depth (inches):				
Saturation Present? Yes <u>Ves</u> No Depth (inches): <u>10</u> Wetland Hy					drology Present? Yes 🖌 No			
Describe Recorded Data (stre	am gauge, r	nonito	ring v	well, aerial photos, previous inspec	tions), if availa	ble:		
Remarks:								

Drought Conditions with irrigation ongoing. Hydrology likely present for 14 days other than with the active irrigation.

Project/Site: Carriger Solar	City/County: Klickitat County	Sampling Date: 2021-07-27
Applicant/Owner: Cypress Creek Renewables	State: Washington	Sampling Point: DP-9 Wetland H
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N R15E	
Landform (hillslope, terrace, etc.): Basin	_ Local relief (concave, convex, none): Concave	e Slope (%): 0
Subregion (LRR): B8 Lat: 45	5.829929 Long: -120.895437	Datum: WGS 84
Soil Map Unit Name: Goldendale silt Ioam, basalt substratum	, 2 to 5 percent slopes NWI classific	ation: Upland
Are climatic / hydrologic conditions on the site typical for this time of year Vegetation $\underline{\checkmark}$, Soil $\underline{\checkmark}$, or Hydrology significantly		emarks.) present? Yes No
Are Vegetation, Soil, or Hydrology naturally pr		
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes	No
Remarks: Plot is in an area of tilling and agricultural activ	ities. Drought conditions with irrig	gation ongoing.

The Obstation (Distained 30 ft r	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
4 Sapling/Shrub Stratum (Plot size: 5 ft r)		_= Total Cov	/er	Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species 0 $x_1 = 0$
4				FACW species 0 x 2 = 0
5				FAC species $0 \times 3 = 0$
· ·		= Total Cov	/er	FACU species 0 x 4 = 0
Herb Stratum (Plot size: 5 ft r)				UPL species $0 \times 5 = 0$
1. Triticum aestivum			NI	Column Totals: 0 (A) 0 (B)
2				Prevalence Index = B/A = <u>NaN</u>
4				Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)	10%	_ = Total Cov	ver	
1				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
% Bare Ground in Herb Stratum 80.0 % Cove		_ = Total Cov		Hydrophytic Vegetation Present? Yes No
Remarks:	2.2.0.00			
Tilled farm field				

Profile Desc	ription: (Describe	to the depth	n needed to docum	nent the i	ndicator	or confirn	n the absence	of indicato	ors.)		
Depth	Matrix			Feature							
(inches)	Color (moist)	%	Color (moist)	olor (moist) <u>% Type¹ Loc² Texture</u>					Remarks		
0 - 12	10YR 3/3	100					Silt Loam	Edge of	agricultura	al field	
-											
					·						
-											
-											
-											
						·					
	oncentration, D=Dep					d Sand G			Pore Lining, N		
•	Indicators: (Applic	able to all L			ed.)				matic Hydric	Soils":	
Histosol	()		Sandy Redox (S5)				1 cm Muck (A9) (LRR C)				
	pipedon (A2)		Stripped Ma	• •			2 cm Muck (A10) (LRR B)				
Black Hi	stic (A3)		Loamy Mucl	ky Minera	l (F1)		Reduc	ed Vertic (F	18)		
Hydroge	en Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Red P	arent Mater	ial (TF2)		
<u>Stratified</u>	d Layers (A5) (LRR (C)	Depleted Ma	atrix (F3)			Other	(Explain in I	Remarks)		
1 cm Mu	ıck (A9) (LRR D)		Redox Dark	Surface (F6)						
Depleted	d Below Dark Surfac	e (A11)	Depleted Da	rk Surfac	e (F7)						
-	ark Surface (A12)		Redox Depressions (F8)				³ Indicators of hydrophytic vegetation and				
Sandy M	lucky Mineral (S1)		Vernal Pools (F9)				wetland hydrology must be present,				
Sandy G	Bleyed Matrix (S4)						unless d	listurbed or	problematic.		
Restrictive I	Layer (if present):										
Туре:											
Depth (in	ches):						Hydric Soil	Present?	Yes	No	
Remarks:							·				

HYDROLOGY

Wetland Hydrology Indicators	s:			
Primary Indicators (minimum of	one required; check		Secondary Indicators (2 or more required)	
Surface Water (A1)		_ Salt Crust (B11)		Water Marks (B1) (Riverine)
High Water Table (A2)		Biotic Crust (B12)		Sediment Deposits (B2) (Riverine)
Saturation (A3)	_	_ Aquatic Invertebrates (B13)		Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonrive	erine)	_ Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)
Sediment Deposits (B2) (N	onriverine)	Oxidized Rhizospheres along Livir	ng Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriv	erine)	Presence of Reduced Iron (C4)		Crayfish Burrows (C8)
Surface Soil Cracks (B6)	_	oils (C6)	Saturation Visible on Aerial Imagery (C9)	
Inundation Vis ble on Aerial Imagery (B7) Thin Muck Surface (C7)				Shallow Aquitard (D3)
Water-Stained Leaves (B9))	Other (Explain in Remarks)		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 Hyd	Irology Present? Yes No
Describe Recorded Data (stream	m gauge, monitoring	well, aerial photos, previous inspec	tions), if availa	ble:
Remarks:				
Drought conditions				

Project/Site: Carriger Solar	City/County: Klickitat County	Sampling Date: 2021-07-27				
Applicant/Owner: Cypress Creek Renewables	State:	ashington Sampling Point: DP-10 Wetland I				
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N	R15E				
Landform (hillslope, terrace, etc.): Depression						
Subregion (LRR): B 8 Lat: 45	5.827012 Long: -120.8	96942 Datum: WGS 84				
Soil Map Unit Name: Blockhouse silt Ioam, 0 to 5 percent slo	pesNWI	I classification: Upland				
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 Circums	tances" present? Yes No _				
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain an	ny answers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, tra	nsects, important features, etc.				
Hydrophytic Vegetation Present? Yes No	Is the Complete Area					
Hydric Soil Present? Yes 🔽 No	Is the Sampled Area within a Wetland? Y	∕es No				
Wetland Hydrology Present? Yes <u>V</u> No						
Remarks:						
Drought conditions; plot was actively irriga	ted.					

	Absolute	Dominan	t Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2				
3.				Total Number of Dominant Species Across All Strata: 1 (B)
4				
		= Total Co	over	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r)				
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				OBL species $0 x 1 = 0$
4				FACW species 100 x 2 = 200
5				FAC species 0 x 3 = 0
		= Total Co	over	FACU species 0 x 4 = 0
Herb Stratum (Plot size: 5 ft r)				UPL species 0 x 5 = 0
_{1.} Phalaris arundinacea	95	~	FACW	Column Totals: 100 (A) 200 (B)
2. Juncus acutus	5		FACW	
3.			·	Prevalence Index = B/A = 2.00
4				Hydrophytic Vegetation Indicators:
5				✓ Dominance Test is >50%
6				✓ Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
20 ft -	100%	= Total Co	over	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)				1
1				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2				
		= Total Co	over	Hydrophytic
% Bare Ground in Herb Stratum % Cove	r of Biotic C	rust		Vegetation Present? Yes <u> V</u> No
Remarks:				
Vagatation is disturbed from adjace	nt agric	ultural	activiti	06
Vegetation is disturbed from adjace	in ayın	ununal	activiti	63.

SOIL

Profile Desc	ription: (Describe	to the de	pth needed to docur	nent the	indicator	or confirn	n the absence	of indicators.)	
Depth	Matrix		Redo	x Featur	es				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0 - 8	10YR 3/2	100					Silt Loam		
8 - 12	10YR 3/2	90	10YR 5/6	10	С	PL / M	Silty Clay Loam		
12 - 16	10YR 3/2	85	10YR 5/6	5	С	PL / M	Silty Clay Loam		
12 - 16	10YR 3/2		10YR 6/2	10	D	Μ			
-		<u></u>							
		<u></u>							
-									
-		<u> </u>							
			I=Reduced Matrix, CS			ed Sand G		cation: PL=Pore Lining, M=Matrix.	
Hydric Soil I	Indicators: (Applic	able to a	II LRRs, unless other	rwise no	ted.)		Indicators	for Problematic Hydric Soils ³ :	
Histosol	(A1)		Sandy Redo	ox (S5)			1 cm I	Muck (A9) (LRR C)	
Histic Ep	oipedon (A2)		Stripped Ma	atrix (S6)			2 cm I	Muck (A10) (LRR B)	
Black Hi	stic (A3)		Loamy Muc	ky Miner	al (F1)		Reduced Vertic (F18)		
Hydroge	Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)						Red Parent Material (TF2)		
	l Layers (A5) (LRR (R C) Depleted Matrix (F3)					Other	(Explain in Remarks)	
1 cm Mu	1 cm Muck (A9) (LRR D) ✓ Redox Dark Surface (F6)								
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)						<u>_</u>			
Thick Da	ark Surface (A12)		Redox Depressions (F8)				³ Indicators of hydrophytic vegetation and		
Sandy M	lucky Mineral (S1)		Vernal Pool	s (F9)			wetland hydrology must be present,		
Sandy Gleyed Matrix (S4) unless di					disturbed or problematic.				
Restrictive L	_ayer (if present):								
Туре:									
Depth (inc	ches):						Hydric Soil	l Present? Yes 🔽 No	
Remarks:									
Portion of	of wetland re	cently	/ tilled.						
		Joonna							
HYDROLO	GY								
Wetland Hyd	drology Indicators:								
Primary Indic	ators (minimum of c	ne requir	ed; check all that appl	y)			Seco	ndary Indicators (2 or more required)	
Surface	Water (A1)		Salt Crust	(B11)			V	Vater Marks (B1) (Riverine)	
High Wa	iter Table (A2)		Biotic Crus	st (B12)			S	Sediment Deposits (B2) (Riverine)	
Saturatio	on (A3)	Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine)							
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) V Drainage Patterns (B10)									
	nt Deposits (B2) (No				. ,	Living Roo		Dry-Season Water Table (C2)	

Primary Indicators (minimum of one required; check	Primary Indicators (minimum of one required; check all that apply)						
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)					
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)					
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)					
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)					
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living	Roots (C3) 🖌 Dry-Season Water Table (C2)					
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)					
 Surface Soil Cracks (B6) 	Recent Iron Reduction in Tilled Soils	s (C6) <u>V</u> Saturation Visible on Aerial Imagery (C9)					
Inundation Vis ble on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)					
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)					
Field Observations:							
Surface Water Present? Yes No _	_ Depth (inches):						
Water Table Present? Yes No _	Depth (inches):						
Saturation Present? Yes No _	_ Depth (inches):	Netland Hydrology Present? Yes 🖌 No					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Remarks:							
Drought Conditions; actively irrig	jated						

Project/Site: Carriger Solar		City/County:	Klickitat	County		Sampling Date: 2021-07-27		7
Applicant/Owner: Cypress Creek Renewables		State: <u>Washington</u> Sampling Point: <u>DP-11 Wetlar</u>			nd I			
Investigator(s): Brandon Stimac & Bridget Wojtala		Section, Tov	vnship, Rai	nge: S36 T5N R	15E			
Landform (hillslope, terrace, etc.): Basin						SI	ope (%): 0	
Subregion (LRR): B 8	_at: 45.8	827019		Long: -120.89	6834	Dat	um: WGS 84	ł
Soil Map Unit Name: Blockhouse silt loam, 0 to 5 perce								
Are climatic / hydrologic conditions on the site typical for this tin								
Are Vegetation, Soil, or Hydrologysigni	-			Normal Circumsta			No 🕨	/
Are Vegetation, Soil, or Hydrology natu				eded, explain any				
SUMMARY OF FINDINGS – Attach site map she						,	eatures, et	c.
Hydrophytic Vegetation Present? Yes No	~							
Hydric Soil Present? Yes No			e Sampled					
Wetland Hydrology Present? Yes No		with	n a Wetlan	id? Yes	s	No 🖌	_	
Remarks:		I						
Agricultural fields recently tilled, planted, a	and irr	rigated.	Data po	pints 16 and $^{\prime}$	17 are l	basically	the same;	
though these plots were deemed artificial		-	-			···· ,		
VEGETATION – Use scientific names of plants.			J					
	bsolute	Dominant	Indicator	Dominance Tes	tworksh	oot:		_
00.0		Species?		Number of Domi				
1				That Are OBL, F.			(A)	
2				Total Number of	Dominant	t		
3				Species Across	All Strata:	1	(B)	
4				Percent of Domin				
Sapling/Shrub Stratum (Plot size: 5 ft r)		= Total Cov	/er	That Are OBL, F.	ACW, or F	AC: 0	(A/B)
1				Prevalence Inde	ex worksł	neet:		
2						Multip		
3						x 1 = <u>0</u>		
4		<u> </u>		FACW species				
5				-		$x_3 = \frac{0}{0}$		
Herb Stratum (Plot size: 5 ft r)		= Total Cov	/er	FACU species				
1. Triticum aestivum	0	~	NI			x 5 = 0 (A) 0		
2				Column Totals:	0	(A) <u>0</u>	(B)	'
3				Prevalence	e Index =	B/A = <u>NaN</u>		
4.				Hydrophytic Ve	getation	Indicators:		
5				Dominance	Test is >5	0%		
6				Prevalence				
7						tions ¹ (Provid r on a separat		
8				Problematic		•	,	
Woody Vine Stratum (Plot size: 30 ft r)	0%	= Total Cov	/er		riyaropity			
· · · · · · · · · · · · · · · · · · ·				¹ Indicators of hyd	dric soil ar	nd wetland hv	droloav must	
1				be present, unles				
		= Total Cov	/er	Hydrophytic				╡
We are Ground in Herb Stratum 80.0 Stratum 80.0				Vegetation	Ver	N.	~	
		ust		Present?	res_	No	-	\square
Remarks:								
Recently planted farm field								

SOIL

Profile Desc	ription: (Describe	e to the dep	th needed to document	the indicator	or confirn	n the absence	of indicators.)	
Depth	Matrix		Redox Fea	atures				
(inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks	
0 - 8	10YR 4/3	100				Silt Loam	Edge of agricultural field	
8 - 16	10YR 3/2	100						
-								
-								
-								
-								
-					·			
-								
¹ Type: C=Ce	oncentration. D=De	pletion. RM=		overed or Coate	d Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.	
			LRRs, unless otherwise				for Problematic Hydric Soils ³ :	
Histosol	(A1)		Sandy Redox (S	5)		1 cm M	Muck (A9) (LRR C)	
Histic Epipedon (A2)		Stripped Matrix (S6)			2 cm Muck (A10) (LRR B)			
Black Histic (A3)		Loamy Mucky M	lineral (F1)		Reduced Vertic (F18)			
Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)			Red P	arent Material (TF2)		
Stratified Layers (A5) (LRR C)		Depleted Matrix (F3)			Other (Explain in Remarks)			
1 cm Mu	ıck (A9) (LRR D)		Redox Dark Sur	face (F6)				
Depleted	d Below Dark Surfa	ce (A11)	Depleted Dark S	Surface (F7)				
Thick Da	ark Surface (A12)		Redox Depressi	ons (F8)		³ Indicators of hydrophytic vegetation and		
Sandy M	lucky Mineral (S1)		Vernal Pools (F9	9)		wetland hydrology must be present,		
	Gleyed Matrix (S4)			,		unless disturbed or problematic.		
Restrictive I	Layer (if present):							
Туре:								
Depth (in	ches):					Hydric Soil	Present? Yes No	
Remarks:								
Recently	/ tilled fields							
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
Primary India	cators (minimum of	one required	d; check all that apply)			Seco	ndary Indicators (2 or more required)	

Primary Indicators (minimum of one required; of	Secondary Indicators (2 or more required)	
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livir	g Roots (C3) 🗹 Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled So	ils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Vis ble on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes No	✓ Depth (inches):	
Water Table Present? Yes No	✓ Depth (inches):	
Saturation Present? Yes <u>No</u> (includes capillary fringe)	✓ Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, previous inspect	ions), if available:
Remarks:		
Drought conditions; actively i	rrigated.	

Project/Site: Carriger Solar	City/County: Klickitat County	Sampling Date: 2021-07-27				
Applicant/Owner: Cypress Creek Renewables	State: <u>Washin</u>	gton Sampling Point: DP-12 Wetland J				
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N R15	5E				
Landform (hillslope, terrace, etc.): Floodplain						
Subregion (LRR): B 8 Lat: 45	5.826456 Long: -120.8975	552 Datum: WGS 84				
Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slo	pes NWI cla	ssification: Upland				
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 Circumstanc	es" present? Yes No				
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain any ar	nswers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transe	ects, important features, etc.				
Hydrophytic Vegetation Present? Yes _ Ves _ No						
Hydric Soil Present? Yes 🖌 No	Is the Sampled Area within a Wetland? Yes	✓ No				
Wetland Hydrology Present? Yes <u>Ves</u> No		NO				
Remarks:						
Drought conditions; plot is actively irrigate	d.					

The second secon	Absolute		t Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1	<u>% Cover</u>			Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4 Sapling/Shrub Stratum (Plot size: 5 ft r)		= Total Co	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				$\begin{array}{c c c c c c c c c c c c c c c c c c c $
4				FACW species 70 x 2 = 140
5				FAC species $0 \times 3 = 0$
···		= Total Co		FACU species $0 x 4 = 0$
Herb Stratum (Plot size: 5 ft r)				UPL species 0 x 5 = 0
1. Phalaris arundinacea	40		FACW	Column Totals: 70 (A) 140 (B)
2. Carex .spp	30	~	FACW	
3				Prevalence Index = B/A = 2.00
4				Hydrophytic Vegetation Indicators:
5				✓ Dominance Test is >50%
6				\checkmark Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8	700/	= Total Co	over	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)				
1				¹ Indicators of hydric soil and wetland hydrology must
2				be present, unless disturbed or problematic.
		= Total Co	over	Hydrophytic Versteijen
	er of Biotic C	rust 25		Vegetation Present? Yes <u>V</u> No
Remarks:				
Disturbed vegetation from adjacent	agricul	tural ad	ctivities	
	5			

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Redo	x Feature	es				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks		
0 - 1	10YR 2/1	100			_		Muck		
1 - 12	10YR 5/6	60	10YR 5/2	40	RM	PL / M	Mucky Loam/Clay	_	
-									
-								_	
-									
_									
-						. <u></u>			
¹ Type: C=Co	oncentration, D=Dep	oletion, RM	I=Reduced Matrix, CS	=Covere	ed or Coate	ed Sand G	Grains. ² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil	ndicators: (Applic	able to al	I LRRs, unless other	wise no	ted.)		Indicators for Problematic Hydric Soils ³ :		
Histosol	(A1)		Sandy Redo	ox (S5)			1 cm Muck (A9) (LRR C)		
Histic Ep	pipedon (A2)		Stripped Ma	trix (S6)			✓ 2 cm Muck (A10) (LRR B)		
Black Hi	Black Histic (A3) Loamy Mucky Mineral (F1)					Reduced Vertic (F18)			
Hydroge	Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)					Red Parent Material (TF2)			
Stratified	Layers (A5) (LRR	C)	Depleted Ma	atrix (F3)	1		Other (Explain in Remarks)		
1 cm Mu	ck (A9) (LRR D)	,	Redox Dark	Surface	(F6)				
	Below Dark Surfac	e (A11)	Depleted Da		. ,				
·	ark Surface (A12)		Redox Depr		. ,		³ Indicators of hydrophytic vegetation and		
	lucky Mineral (S1)		Vernal Pool		(10)		wetland hydrology must be present,		
	leyed Matrix (S4)			3(10)			unless disturbed or problematic.		
	ayer (if present):						uniess disturbed of problematic.		
Type:									
Depth (inc	ches):						Hydric Soil Present? Yes 🖌 No	_	
Remarks:									
Portion of wetland recently tilled.									
HYDROLO	GY								

Wetland Hydrology Indicators:							
Primary Indicators (minimum of one required; chee	eck all that apply)	Secondary Indicators (2 or more required)					
✓ Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)					
High Water Table (A2)	 Biotic Crust (B12) 	Sediment Deposits (B2) (Riverine)					
✓ Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)					
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	 Drainage Patterns (B10) 					
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livir	ng Roots (C3) 🗹 Dry-Season Water Table (C2)					
Drift Deposits (B3) (Nonriverine)	Crayfish Burrows (C8)						
 Surface Soil Cracks (B6) 	Recent Iron Reduction in Tilled Sc	ils (C6)					
Inundation Vis ble on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)					
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)					
Field Observations:							
Surface Water Present? Yes 🖌 No	Depth (inches): 0.5						
Water Table Present? Yes <u>Ves</u> No	Depth (inches): surface						
Saturation Present? Yes <u>Ves</u> No No	Depth (inches): surface	Wetland Hydrology Present? Yes 🖌 No					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Remarks:							
Drought Conditions; actively irr	rigated						
Drought Conditions, actively in	igateu.						

Project/Site: Carriger Solar	City/County: Klickitat County	Sampling Date: 2021-07-27				
Applicant/Owner: Cypress Creek Renewables	State: Was	shington Sampling Point: DP-13 Wetland J				
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N F	R15E				
Landform (hillslope, terrace, etc.): Basin						
Subregion (LRR): B 8 Lat: 45	5.826492 Long: -120.89	97682 Datum: WGS 84				
Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slo	pes NWI	classification: Upland				
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 Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: No		es No				

Plot is tilled, planted, and irrigated. Drought conditions are present.

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u>) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
2 3				Total Number of Dominant Species Across All Strata: (B)
4		_= Total Co		Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species 0 x 1 = 0
4.				FACW species 0 x 2 = 0
5				FAC species 0 x 3 = 0
		= Total Co		FACU species $0 x 4 = 0$
Herb Stratum (Plot size: 5 ft r)		_		UPL species 0 x 5 = 0
1. Triticum aestivum	10	~	NI	Column Totals: 0 (A) 0 (B)
2				
3				Prevalence Index = B/A = NaN
4				Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8 20.4t r	400/	= Total Co	over	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1. 2.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Co	over	Hydrophytic Vegetation
% Bare Ground in Herb Stratum 90 % Cove	er of Biotic C	rust		Present? Yes No V
Remarks:				
Planted farm field				

		e to the dep	oth needed to docu			or confirr	n the absence	of indicato	ors.)	
Depth (inches)	<u>Matrix</u> Color (moist)	%	Color (moist)	<u>x Feature</u> %	s Type ¹	Loc ²	Texture		Remarks	
0 - 6	10YR 3/3	100		/0	туре	LUC		Edge of	agricultura	al field
					·			Luge of	agriculture	
6 - 12	10YR 3/2	100					Silt Loam			
-										
-										
					·					
-										
-										
-										
¹ Type: C=C	oncentration D=De	pletion RM	=Reduced Matrix, CS	S=Covere	d or Coate	d Sand G	rains ² Lo	cation: PI =	Pore Lining, I	M=Matrix
			LRRs, unless othe						matic Hydric	
Histosol	(A1)		Sandy Red	ox (S5)			1 cm I	Muck (A9) (L	RR C)	
Histic E	pipedon (A2)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR B)					
Black H	istic (A3)		Loamy Mucky Mineral (F1)		Reduced Vertic (F18)					
Hydroge	en Sulfide (A4)	· · · · · · · · · · · · · · · · · · ·				Red Parent Material (TF2)				
Stratifie	tified Layers (A5) (LRR C) Depleted Matrix (F3)			Other (Explain in Remarks)						
1 cm Mi	uck (A9) (LRR D)		Redox Dark	< Surface ((F6)					
Deplete	d Below Dark Surfa	ce (A11)	Depleted D	ark Surfac	e (F7)					
Thick D	ark Surface (A12)		Redox Dep	ressions (F8)		³ Indicators of hydrophytic vegetation and			
	Aucky Mineral (S1)		Vernal Poo	ls (F9)			wetland hydrology must be present,			
	Gleyed Matrix (S4)						unless c	listurbed or	problematic.	
Restrictive	Layer (if present):									
Туре:										
Depth (in	ches):						Hydric Soil	Present?	Yes	No 🗸
Remarks:							•			
Tilled fa	rm field									
	-									
IYDROLO	GY									
Wetland Hy	drology Indicators	:								

Primary Indicators (minimum of	one required; ch	eck all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)		Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)		Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)		Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonrive	ərine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (N	onriverine)	Oxidized Rhizospheres along Livir	ng Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriv	/erine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6		oils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Vis ble on Aeria	l Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9))	Other (Explain in Remarks)	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 (strea	m gauge, monitor	ring well, aerial photos, previous inspec	tions), if available:
Remarks:			
Drought conditions;	active irriç	gation.	

Project/Site: Carriger Solar	City/County: Klickitat County Sampling Date: 2021-07-28					
Applicant/Owner: Cypress Creek Renewables	State: <u>Washington</u> Sampling Point: <u>DP-14 Wetland G</u>					
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N R15E					
	_ Local relief (concave, convex, none): <u>Concave</u> Slope (%): <u>0</u>					
Subregion (LRR): B8 Lat: 45	5.834579 Long: -120.904791 Datum: WGS 84					
Soil Map Unit Name: Konert silt Ioam, 0 to 2 percent slopes NWI classification: PEM						
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	y disturbed? Are "Normal Circumstances" present? Yes No					
Are Vegetation, Soil, or Hydrology _ 🖌 naturally pro	roblematic? (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 <u>V</u> No	is the Samplet Area					
Hydric Soil Present? Yes <u>V</u> No <u>Ves</u> Vo	within a Wetland? Yes No					
Wetland Hydrology Present? Yes No Remarks: No						

Drought conditions; the wetland is grazed by horses and has artificial hydrology from an upstream fish hatchery.

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1.		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2 3				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
4 Sapling/Shrub Stratum (Plot size: 5 ft r)				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3				$\overline{\text{OBL species}} \underline{0} \qquad x \ 1 = \ \underline{0}$
4				FACW species 100 x 2 = 200
				FAC species 0 $x = 0$
5		= Total Co		FACU species 0 $x 4 = 0$
Herb Stratum (Plot size: 5 ft r)		10(a) CC		UPL species 0 $x = 0$
1. Phalaris arundinacea	95	~	FACW	Column Totals: 100 (A) 200 (B)
2. Scirpus lacustris	5		FACW	
3				Prevalence Index = $B/A = 2.00$
4.				Hydrophytic Vegetation Indicators:
5				✓ Dominance Test is >50%
6				✓ Prevalence Index is $\leq 3.0^1$
7				Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
Woody Vine Stratum (Plot size: 30 ft r)	100%	= Total Co	over	Problematic Hydrophytic Vegetation ¹ (Explain)
· · · · · · · · · · · · · · · · · · ·				¹ Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2				
% Bare Ground in Herb Stratum % Cove		_= Total Co rust		Hydrophytic Vegetation Present? Yes <u>/</u> No
Remarks:				
Wetland vegetation is disturbed by g	grazing	horses	5.	

SOIL

Profile Desc	ription: (Describe	e to the de	pth needed to docur	nent the	indicator	or confirm	n the absence	of indicators.)		
Depth	Matrix		Redo	x Feature	es					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0 - 14	10YR 2/2	100		<u> </u>			Mucky Loam/Clay	Other holes dug to the east of the wetland had redox and depletions in the matrix and pore linings around 10 inches.		
14 - 18	10YR 2/2	85	10YR 4/2	15	D	PL / M	Mucky Loam/Clay	Other holes dug to the east of the wetland had redox and depletions in the matrix and pore likings around 10 inches.		
-					_					
-										
-										
-										
-										
-										
¹ Type: C=Ce	oncentration. D=De	pletion. RM	I=Reduced Matrix, CS	S=Covere	ed or Coat	ed Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.		
71	,		I LRRs, unless other					for Problematic Hydric Soils ³ :		
Histosol	(A1)		Sandy Rede	ox (S5)			1 cm I	Muck (A9) (LRR C)		
Histic Ep	pipedon (A2)		Stripped Ma	atrix (S6)			2 cm Muck (A10) (LRR B)			
Black Hi	stic (A3)		Loamy Muc	ky Miner	al (F1)		Reduced Vertic (F18)			
Hydroge	n Sulfide (A4)		Loamy Gley	•	. ,		Red Parent Material (TF2)			
	Layers (A5) (LRR	C)	Depleted M				Other (Explain in Remarks)			
	ick (A9) (LRR D)	-,	Redox Dark	· · ·				()		
	d Below Dark Surfa	ce (A11)	Depleted Da		. ,					
·	ark Surface (A12)						³ Indicators	of hydrophytic vegetation and		
	lucky Mineral (S1)		Redox Depressions (F8) Vernal Pools (F9)				wetland hydrology must be present,			
	Bleyed Matrix (S4)			3(13)			unless disturbed or problematic.			
	Layer (if present):						uniess c	isturbed of problematic.		
Type: Ro	• • • •									
	ches): <u>18</u>						Hydric Soil	Present? Yes <u> </u>		
Remarks:							-			
r tomanto.										

HYDROLOGY

Wetland Hydrology Indicators:						
Primary Indicators (minimum c	of one required; che	ck all that apply)	Secondary Indicators (2 or more required)			
Surface Water (A1)		Salt Crust (B11)	✓ Water Marks (B1) (Riverine)			
 High Water Table (A2) 		Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)			
Saturation (A3)		Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)			
Water Marks (B1) (Nonriv	/erine)	Hydrogen Sulfide Odor (C1)	 Drainage Patterns (B10) 			
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livi	ng Roots (C3) 🗹 Dry-Season Water Table (C2)			
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)			Crayfish Burrows (C8)			
Surface Soil Cracks (B6)		Recent Iron Reduction in Tilled So	ils (C6) Saturation Visible on Aerial Imagery (C9)			
Inundation Vis ble on Aerial Imagery (B7)		Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Water-Stained Leaves (B9)		Other (Explain in Remarks)	FAC-Neutral Test (D5)			
Field Observations:						
Surface Water Present?	Yes No	Depth (inches):				
Water Table Present?	Yes 🖌 No _	Depth (inches): <u>16</u>				
Saturation Present? Yes <u>Ves</u> No No		Depth (inches): <u>1</u>	Wetland Hydrology Present? Yes 🖌 No			
Describe Recorded Data (strea	am gauge, monitori	ng well, aerial photos, previous inspec	tions), if available:			
Remarks:						
Drought conditions	; hydrology	comes from the fish hat	chery upstream of the wetland.			

Project/Site: Carriger Solar	City/County: Klickitat County	Sampling Date: 2021-07-28		
Applicant/Owner: Cypress Creek Renewables	State: Washington	ⁿ Sampling Point: DP-15 Wetland G		
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N R15E			
Landform (hillslope, terrace, etc.): Basin	_ Local relief (concave, convex, none): <u>Conca</u>	Ve Slope (%): 5		
Subregion (LRR): B 8 Lat: 4	5.834537 Long: -120.90482	9 Datum: WGS 84		
Soil Map Unit Name: Konert silt Ioam, 0 to 2 percent slopes	NWI classi	fication: PEM		
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 Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc				
Hydrophytic Vegetation Present? Yes No _	Is the Sampled Area	.s, important reatures, etc.		
Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	within a Wetland? Yes	No		

Remarks:

Drought conditions present; fill from the driveway and adjacent developments present throughout uplands.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft r</u>)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>1</u> (B)
4				Percent of Dominant Species
Eft.		= Total Co	ver	That Are OBL, FACW, or FAC: 0 (A/B)
Sapling/Shrub Stratum (Plot size: 5 ft r)				
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species $0 x_1 = 0$
4				FACW species 0 $x 2 = 0$
5				FAC species 0 x 3 = 0
		= Total Co		FACU species 25 x 4 = 100
Herb Stratum (Plot size: <u>5 ft r</u>)			ver	$\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 $
	60	~	NI	Column Totals: 25 (A) 100 (B)
2. Rubus laciniatus	15		FACU	
3. Anthemis cotula	10		FACU	Prevalence Index = $B/A = 4.00$
4				Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7				Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
0	0 5 0/	T-1-1-0-		Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r	0070	= Total Co	ver	
				¹ Indicators of hydric soil and wetland hydrology must
1				be present, unless disturbed or problematic.
2				
		= Total Co	ver	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % Cover	of Biotic C	rust		Present? Yes No V
Remarks:				
Invasive and disturbed vegetation a	re domi	inant sr	pecies	
	5 40111			

Profile Desc	cription: (Describe t	o the depth r	needed to docum	ent the i	ndicator	or confirm	the absence of indic	ators.)		
Depth	Matrix		Redox	Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	3	
0 - 4	10YR 3/3									
-										
						·				
						. <u> </u>	·			
-										
-										
-										
-										
¹ Type: C=C	oncentration, D=Deple	tion RM=Re	educed Matrix CS	=Covered	or Coate	d Sand Gra	ains ² Location: P	L=Pore Lining,	M=Matrix	
	Indicators: (Applica						Indicators for Prot			
Histosol	(A1)		Sandy Redo	x (S5)			1 cm Muck (A9) (LRR C)		
	pipedon (A2)		Stripped Ma				2 cm Muck (A10) (LRR B)			
Black Hi	istic (A3)		Loamy Muck	• •	(F1)		Reduced Vertic (F18)			
	en Sulfide (A4)		Loamy Gley		. ,		Red Parent Material (TF2)			
	d Layers (A5) (LRR C)	Depleted Ma		()		Other (Explain in Remarks)			
	uck (A9) (LRR D)	,	Redox Dark	• •	F6)		、 '	,		
	d Below Dark Surface	(A11)	Depleted Da	•	,					
·	ark Surface (A12)		Redox Depr				³ Indicators of hydrophytic vegetation and			
	lucky Mineral (S1)		Vernal Pools		- /		wetland hydrolog			
	Gleyed Matrix (S4)						unless disturbed			
Restrictive	Layer (if present):									
_{Type:} Ro	ock\Fill Material									
Depth (in	ches): <u>4</u>		_				Hydric Soil Present	? Yes	No 🖌	
Remarks:										

HYDROLOGY

Wetland Hydrology Indicators:						
Primary Indicators (minimum of one required	Primary Indicators (minimum of one required; check all that apply)					
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)				
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)				
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)				
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	 Drainage Patterns (B10) 				
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living	Roots (C3) 🗹 Dry-Season Water Table (C2)				
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)				
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils	(C6) Saturation Visible on Aerial Imagery (C9)				
Inundation Vis ble on Aerial Imagery (B7) Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)				
Field Observations:						
Surface Water Present? Yes N	o Depth (inches):					
Water Table Present? Yes N	o Depth (inches):					
Saturation Present? Yes I (includes capillary fringe)	o Depth (inches): 🛛 🛛	/etland Hydrology Present? Yes 🖌 No				
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspectior	ns), if available:				
Remarks:						
Restrictive layer; may have	nigh water table or saturation	n present.				

Project/Site: Carriger Solar	City/County: Klickitat County	_ Sampling Date: 2021-07-28			
Applicant/Owner: Cypress Creek Renewables	State:	Sampling Point: DP-18			
Investigator(s): Brandon Stimac & Bridget Wojtala	Section, Township, Range: S36 T5N R15E				
Landform (hillslope, terrace, etc.): Depression		ve Slope (%): 0			
Subregion (LRR): B8 Lat: 45					
Soil Map Unit Name: Setnum silt loam, 0 to 3 percent slopes NWI classification: PEM					
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks:		No			

Irrigation occurring at time of delineation. Soil is still dry.

20 ft -	Absolute	Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: 1
2 3			Total Number of Dominant Species Across All Strata: <u>1</u> (B)
4 Sapling/Shrub Stratum (Plot size: 5 ft r)		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
1,			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3.			$\frac{1}{OBL \text{ species } 0} x_1 = 0$
4			FACW species 100 x 2 = 200
			FAC species 0 $x_3 = 0$
5		= Total Cover	FACU species 0 $x 4 = 0$
Herb Stratum (Plot size: 5 ft r)			UPL species 0 x 5 = 0
1. Phalaris arundinacea	100	✓ FACW	- Column Totals: 100 (A) 200 (B)
2			(A) = (A) = (A) = (A) = (A)
3.			Prevalence Index = $B/A = 2.00$
4			- Hydrophytic Vegetation Indicators:
			Dominance Test is >50%
5			
6			Morphological Adaptations ¹ (Provide supporting
7			data in Remarks or on a separate sheet)
8		·	Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r)	100%	_ = Total Cover	
1) 2			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		_= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum % Cove	r of Biotic C	rust	Present? Yes No 🔽
Remarks:			

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)							
0 - 6	10YR 3/2	100					Silt Loam			
6 - 16	10YR 4/3	100					Silt Loam	Bone dry s	oil at 16"	
-										
-				<u> </u>						
-										
-										
-				<u> </u>						
¹ Type: C=Ce	oncentration, D=Dep	oletion, RM=	Reduced Matrix, CS	S=Covered	or Coate	d Sand G	rains. ² Loo	cation: PL=Por	e Lining, M=	Matrix.
Hydric Soil	Indicators: (Applie	cable to all	LRRs, unless other	rwise note	d.)		Indicators	for Problemat	ic Hydric S	ioils³:
Histosol	(A1)		Sandy Red	ox (S5)			1 cm N	Muck (A9) (LRR	C)	
Histic Ep	pipedon (A2)		Stripped Ma	atrix (S6)			2 cm Muck (A10) (LRR B)			
Black Hi	stic (A3)		Loamy Muc	ky Mineral	(F1)		Reduc	ed Vertic (F18)		
Hydroge	en Sulfide (A4)		Loamy Gley	ved Matrix (F2)		Red P	arent Material (TF2)	
Stratified	Layers (A5) (LRR	C)	Depleted M	atrix (F3)	. ,			(Explain in Rem	,	
	ick (A9) (LRR D)	/	Redox Dark	. ,	-6)				/	
	d Below Dark Surfac	ce (A11)	Depleted Da		,					
·	ark Surface (A12)		Redox Dep		. ,		³ Indicators	of hydrophytic	vegetation a	and
	fucky Mineral (S1)		Vernal Pool	•	•)			hydrology must	-	
-	Bleyed Matrix (S4)							listurbed or prot	•	,
-	Layer (if present):									
Type:										
Depth (in	ches):						Hydric Soil	Present? Y	es	No 🖌
Remarks:							-			

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; ch	Secondary Indicators (2 or more required)	
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	 Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living Root	ts (C3) 🖌 Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils (C6)) Saturation Visible on Aerial Imagery (C9)
Inundation Vis ble on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes No	✓ Depth (inches):	
Water Table Present? Yes No	✓ Depth (inches):	
Saturation Present? Yes <u>No</u> (includes capillary fringe)	Depth (inches): Wetla	nd Hydrology Present? Yes 🖌 No
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspections), i	f available:
Remarks:		

APPENDIX C

EASTERN WASHINGTON WETLAND RATING FORMS

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):	G	_ Date of site visit: <u>7/24</u> /2021
Rated by Brandon Stimac and Bridget Wojtala	_ Trained by Ecology? _X	Yes No Date of training Oct. 2020
HGM Class used for rating_Riverine	Wetland has mu	ultiple HGM classes?Y <u>X</u> N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ______ESRI

OVERALL WETLAND CATEGORY Cat. III (based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 22-27

_____Category II – Total score = 19-21

X Category III – Total score = 16-18

___Category IV – Total score = 9-15

FUNCTION	Improving Water Quality		Hydrologic		Habitat					
Circle the appropriate ratings										
Site Potential	Н	Μ		(H)	М	L	Н	Μ		
Landscape Potential	H	Μ	L	Н	M	L	Н	Μ	L	
Value	Н	Μ	Ŀ	H	Μ	L	Н	M	L	ΤΟΤΑ
Score Based on Ratings		5			8			4		17

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H, M, M6 = H, M, L6 = M,M,M5 = H,L,L5 = M, M, L4 = M, L, L3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	п ш
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	Ι
Old Growth or Mature Forest – slow growing	Ι
Aspen Forest	Ι
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	Х

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	Н 1.1, Н 1.5	1
Hydroperiods	Н 1.2, Н 1.3	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1-2
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	6

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5.

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

G

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

 \bigcirc NO – go to 2

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 2. Does the entire wetland unit **meet all** of the following criteria?
 - _____The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
 - _____The water leaves the wetland **without being impounded**.

NO - go to 3

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
 - X The overbank flooding occurs at least once every 10 years.

 $\sqrt{N0}$ - go to 4

YES – The wetland class is **Riverine**

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

NO - go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 **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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within	Depressional
the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

RIVERINE WETLANDS	Points (only 1 score
Water Quality Functions - Indicators that the site functions to improve water quality	per box)
R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:	
Depressions cover $>^{1}/_{3}$ area of wetland points = 6	
$\bigcirc \text{Depressions cover} > \frac{1}{10} \text{ area of wetland} \qquad \qquad \bigcirc \text{points = 3}$	$>_{3}$
Depressions present but cover $< \frac{1}{10}$ area of wetland points = 1	
No depressions present points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; not Cowardin classes):	
Forest or shrub $> ^{2}/_{3}$ the area of the wetland points = 10	
Forest or shrub $\frac{1}{3} - \frac{2}{3}$ area of the wetland points = 5	
Ungrazed, herbaceous plants > ² / ₃ area of wetland points = 5	2
Ungrazed herbaceous plants $\frac{1}{3} - \frac{2}{3}$ area of wetland points = 2	\geq
Forest, shrub, and ungrazed herbaceous $< \frac{1}{3}$ area of wetland points = 0	
Total for R 1 Add the points in the boxes above	5

<u>Rating of Site Potential</u> If score is: 12-16 = H <u>6-11 = M</u> <u>X</u> 0-5 = L

Record the rating on the first page

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 $(No = 0)$	0
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = $1 \sqrt{9} = 0$	0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	1
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants $\forall es = 1$ No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Source Septic tank and adjacent horse pasture e^{1} No = 0	1
Total for R 2 Add the points in the boxes above	3
Rating of Landscape Potential If score is: X_3-6 = H1 or 2 = M0 = L Record the rating on t	he first page

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1	
mi? Yes = $1 (No = 0)$	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = $1 (N_0 = 0)$	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? AnswerYES if there is a TMDL for the drainage in which wetland is found.Yes = 2 $(No = 0)$	0
Total for R 3Add the points in the boxes above	0

Rating of Value If score is: 2-4 = H ___1 = M X_0 = L

Record the rating on the first page

<u>RIVERINE WETLANDS</u> Hydrologic Functions - Indicators that site functions to reduce flooding	ng and stream erosion	Points (only 1 score per box)
R 4.0. Does the site have the potential to reduce flooding and erosion?		· ·
R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the stream or river channel (distance between banks). Calculate the ratio: (average width of stream between banks). If the ratio is more than 2 If the ratio is 1-2 If the ratio is ½-<1 If the ratio is ½-<1 If the ratio is ½-<1 If the ratio is ½-<1 If the ratio is ½-<1		10
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat I shrub. Choose the points appropriate for the best description (polygons need height. These are NOT Cowardin classes). Forest or shrub for more than $^2/_3$ the area of the wetland Forest or shrub for >1/3 area OR emergent plants > $^2/_3$ area Forest or shrub for > $^1/_{10}$ area @ emergent plants > $^1/_3$ area Plants do not meet above criteria		2
Total for R 5 Add	the points in the boxes above	12

R 5.0. Does the landscape have the potential to support the hydrologic	functions of the site?	
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 (No = 1)	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 (No = 0)	0
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 (No = 1)	1
Total for R 5	Add the points in the boxes above	2
Rating of Landscape Potential If score is: 3 = H X 1 or 2 = M 0 = L	Record the rating on th	he first page

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i>	
The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resourcesSurface flooding problems are in a basin farther down-gradientpoints = 2 points = 1 points = 0No flooding problems anywhere downstreampoints = 0	2
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for R 6Add the points in the boxes above	2

Rating of Value If score is: X 2-4 = H ___1 = M ___0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes.	(only 1 score per
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.	1
2 checks: points = 1	>
1 check: points = 0 H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 (No = 0)	0
	0
 H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. 	> 3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species X Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	0
	F ¹ 1
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points All three diagrams in this row are High = 3 points Riparian braided channels with 2 classes	Figure <u>1</u>

Wetland name or number_____G

H 1.6. <u>Special habitat features</u>	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface	
ponding or in stream.	
Cattails or bulrushes are present within the wetland.	
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.	
Emergent or shrub vegetation in areas that are permanently inundated/ponded.	0
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree	•
slope) OR signs of recent beaver activity	
Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs,	
herbaceous, moss/ground cover)	
Total for H 1Add the points in the boxes above	5

Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:	
<i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>5.6</u> = <u>5.6</u> %	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	
20-33% of 1km Polygon points = 2	0
10-19% of 1km Polygon points = 1	0
<10% of 1km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.	
<i>Calculate:</i> % undisturbed habitat <u>2.0</u> + [(% moderate and low intensity land uses)/2] <u>21.4</u> = <u>23.4</u> %	
Undisturbed habitat > 50% of Polygon points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2	1
Undisturbed habitat 10 - 50% and > 3 patches points = 1	I
Undisturbed habitat < 10% of Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon:	
	-2
Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by	
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of	0
reclamation areas, irrigation districts, or reservoirs Hatchery is upstream Yes = $3 (No = 0)$	
Total for H 2 Add the points in the boxes above	-1
Total for H 2 Add the points in the boxes above	-1

<u>Rating of Landscape Potential</u> If score is: 4-9 = H 1-3 = M X < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score	
that applies to the wetland being rated	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
— It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	1
 It is mapped as a location for an individual WDFW species 	1
 It is a Wetland of High Conservation Value as determined by the Department of Natural Resources 	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	
Site does not meet any of the criteria above points = 0	
	.1

<u>Rating of Value</u> If score is: $2 = H \times 1 = M = 0 = L$ Record the rating on the first page

G

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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater	
input.	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as	
basalt or clay. — Surface water is present for less than 120 days during the wet season.	
- Surface water is present for less than 120 days during the wet season. Yes – Go to SC 1.1 No = Not a vernal pool	
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	Cat. II
wetlands, rivers, lakes etc.)? Yes = Category IK No = Category III	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
— The wetland has a conductivity > 3.0 mS/cm.	
— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
 If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. 	
OR does the wetland unit meet two of the following three sub-criteria?	
— Salt encrustations around more than 75% of the edge of the wetland	
— More than ¾ of the plant cover consists of species listed on Table 4	
— 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.	Cat. I
Yes = Category KNo= Not an alkali wetland	*
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3	,
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
Yes = Category I No = Not a WHCV	Cat. I
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 3.4 (No = Not a WHCV)	
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category I No =Not a WHCV	1

SC 4.0 Bogs and Calcareous Fens	
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or	
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the wetland based on its functions.	
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic soils. Yes – Go to SC 4.3 No – Go to SC 4.2	•
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over	
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 4.3 No = Is not a bog for rating	>
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of	
the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion	
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western	
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species	Cat. I
(or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	cut. I
Yes = Category I bog No – Go to SC 4.5	
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and	
mucks? Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6	r.
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,	
AND one of the two following conditions is met:	
 Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or plant stems 	Cat. I
— The pH of free water is \geq 6.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the	
wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen	

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present	
in question H 1.1)	
 The wetland is within the 100 year floodplain of a river or stream 	
— Aspen (Populus tremuloides) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 No = Not a forested wetland with special characteristics	\geq
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (<i>see Table 7</i>)? Yes = Category I No – Go to SC 5.2	
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. II
cover) are fast growing species (<i>see Table 7</i>)? Yes = Category II \mathbb{N}_0 – Go to SC 5.4	
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	Cat. II
Yes = Category No = Not a forested wetland with special characteristics	_
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	N/A
If you answered No for all types, enter "Not Applicable" on Summary Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: *NOTE: This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- X **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- X **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.
- **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.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B

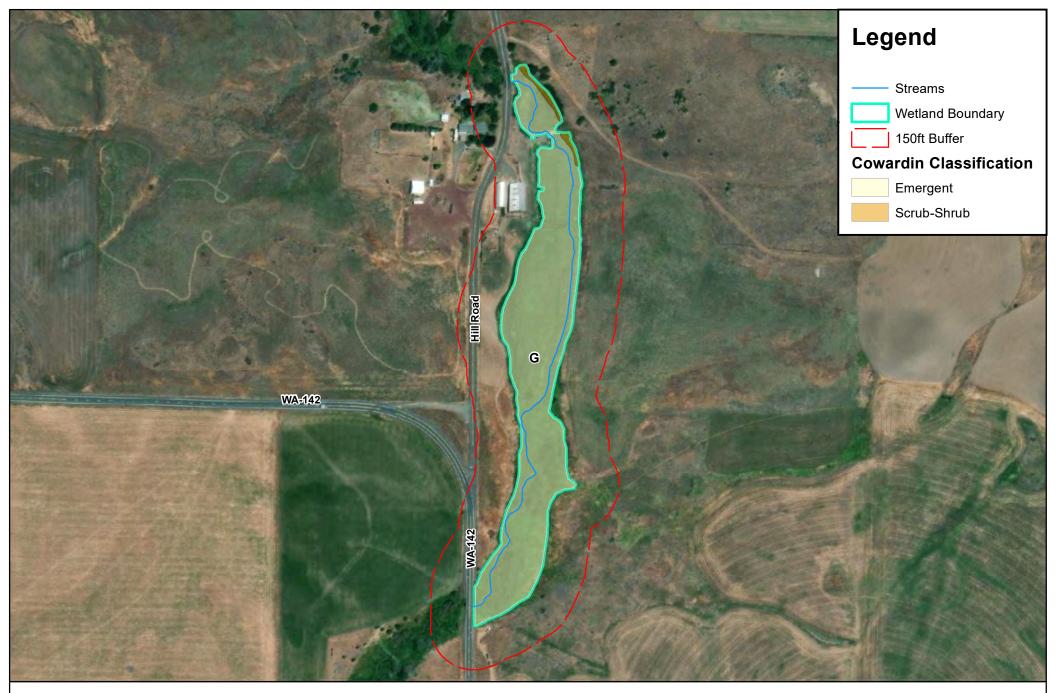
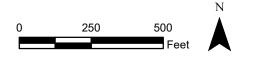


Figure 1. Wetland G Cowardin Classifications Carriger Solar, LLC | Wetland Ratings | August 2021

115



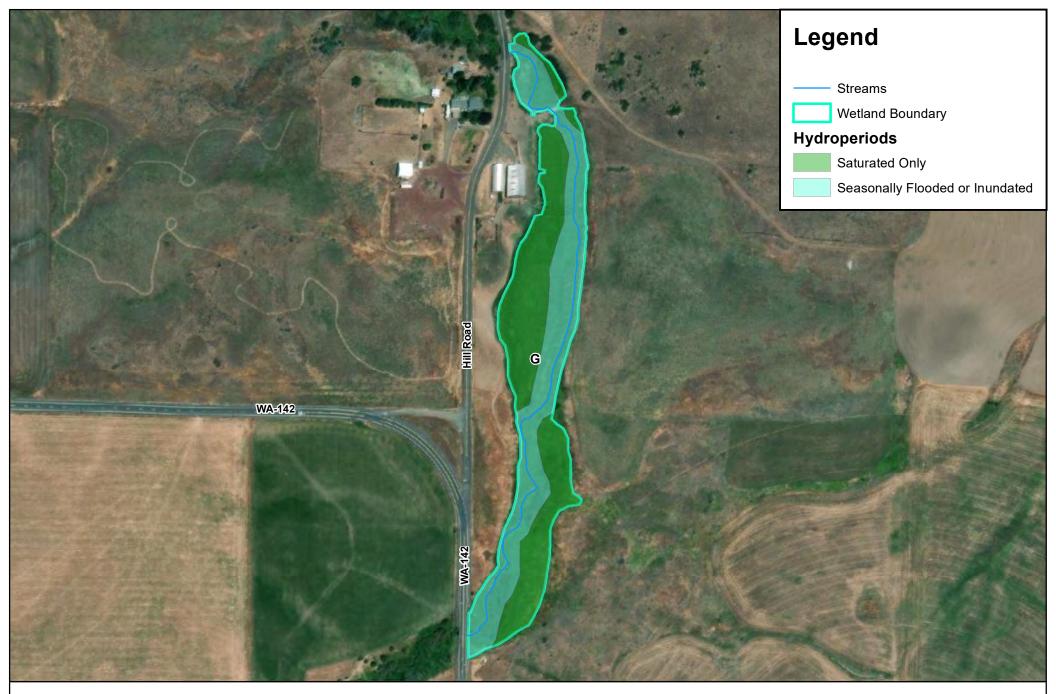


Figure 2. Wetland G Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021

0 200 400

wsp

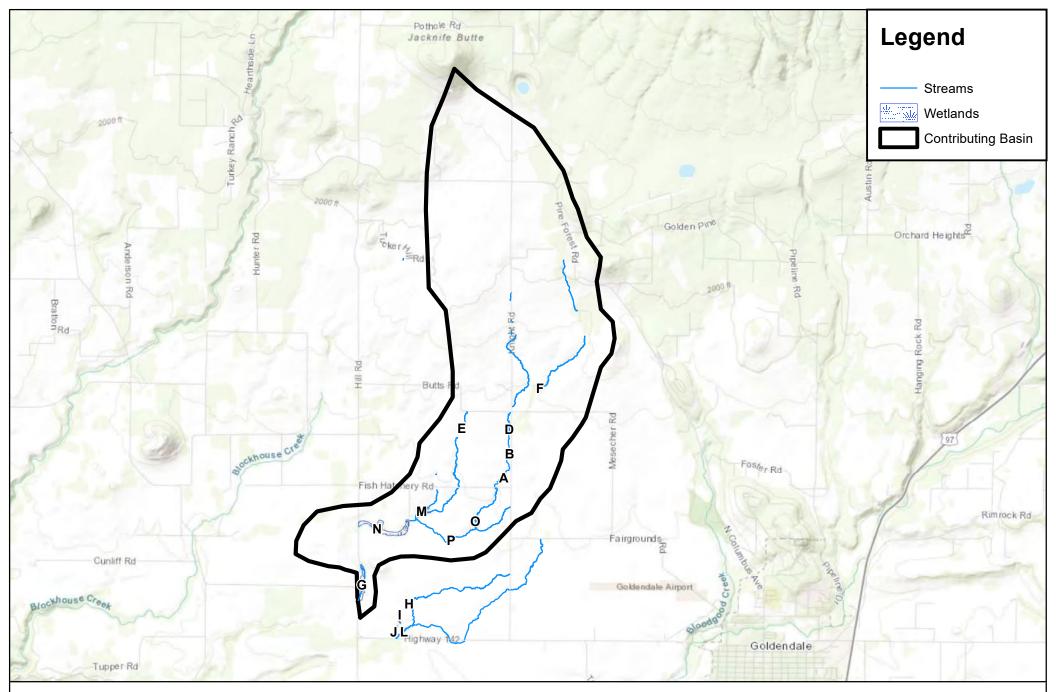


Figure 3. Wetland G Contributing Basin Carriger Solar, LLC | Wetland Ratings | August 2021

0 0.5

Ν

1.5

2

Miles



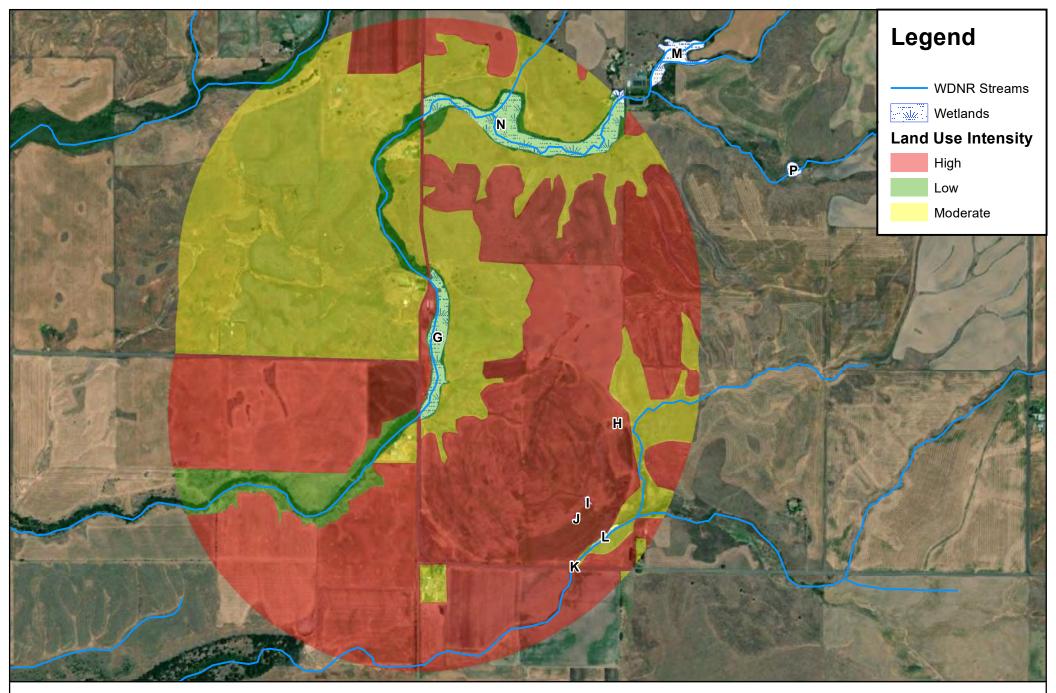


Figure 4. Wetland G Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021

usp



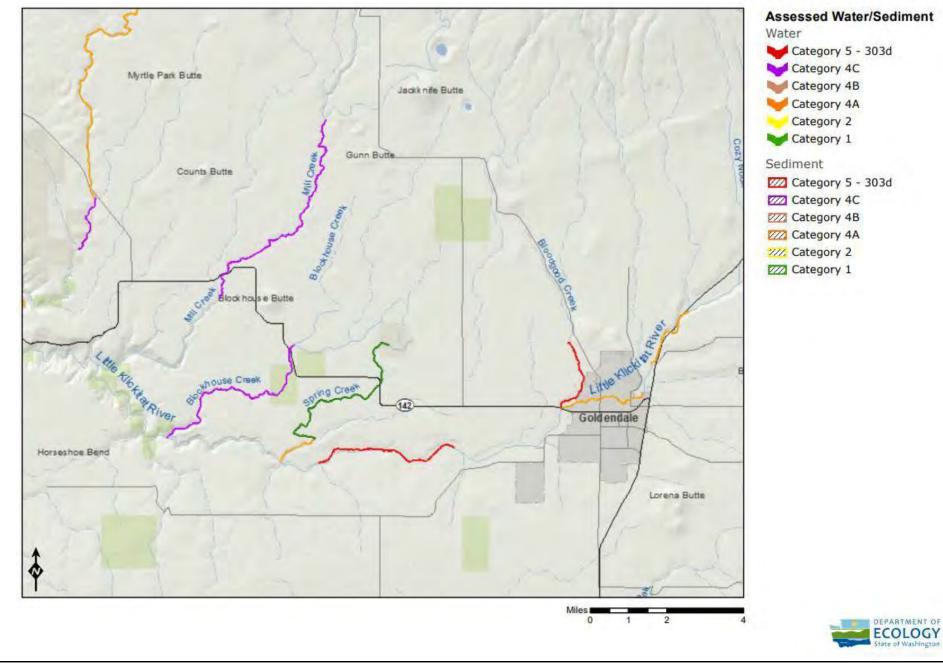


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30) Carriger Solar, LLC | Wetland Ratings | August 2021



Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Little Klickitat River	BOD (5-day) Chlorine	EPA approved	Mark Peterschmidt 509-454-7843
Little Klickitat River Watershed	Temperature	EPA approved and Has an implementation plan	Mark Peterschmidt 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):	Н	Date of site visit: <u>7/24/2</u> 021
Rated by Brandon Stimac and Bridget Wojtala	_ Trained by Ecology? <u>X</u>	Yes No Date of training Oct. 2020
HGM Class used for rating Depressiona	Wetland has mult	tiple HGM classes?Y <u>X</u> N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ______ESRI

OVERALL WETLAND CATEGORY Cat. IV(based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 22-27

_____Category II – Total score = 19-21

_____Category III – Total score = 16-18

X Category IV – Total score = 9-15

FUNCTION		nprov iter Qi	-	Н	ydrolo	ogic		Habit	at	
			Circle	the a	ppropi	riate ra	atings	;		
Site Potential	Н	M	L	Н	M	L	Н	Μ		
Landscape Potential	Н	M	L	Н	M	L	Н	Μ	Ŀ	
Value	(H)	М	L	н	М		Н	Μ	Ŀ	TOTA
Score Based on Ratings		7			5			3		15

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H, M, M6 = H, M, L6 = M,M,M5 = H,L,L 5 = M, M, L4 = M, L, L3 = L, L, L

۱L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	п ш
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	Ι
Old Growth or Mature Forest – slow growing	Ι
Aspen Forest	Ι
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	Х

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	Н 1.1, Н 1.5	
Hydroperiods	Н 1.2, Н 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5.

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

Н

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

 \bigcirc NO – go to 2

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 2. Does the entire wetland unit **meet all** of the following criteria?
 - ____The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
 - _____The water leaves the wetland **without being impounded**.

NO - go to 3

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - ____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
 - ____ The overbank flooding occurs at least once every 10 years.

 $\overline{\text{NO}}$ - go to 4

YES – The wetland class is **Riverine**

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

NO – go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 **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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within	Depressional
the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

DEPRESSIONAL WETLANDS	Points (only 1
Water Quality Functions - Indicators that the site functions to improve water quality	score per box)
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet	5
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils) YES = 3 $(NO = 0)$	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for $> ^2/_3$ of area Wetland has persistent, ungrazed, vegetation from $^1/_3$ to $^2/_3$ of area Wetland has persistent, ungrazed vegetation from $^1/_{10}$ to $< ^1/_3$ of area Wetland has persistent, ungrazed vegetation $^1/_{10}$ to $< ^1/_3$ of area Wetland has persistent, ungrazed vegetation $< ^1/_{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded. Area seasonally ponded is >½ total area of wetland points = 3 Area seasonally ponded is ½ -½ total area of wetland points = 1 Area seasonally ponded is <¼ total area of wetland	0
Total for D 1Add the points in the boxes above	8
Rating of Site Potential If score is: 12- 16 = H X_6- 11 = M 0- 5 = L Record the rating on the site? D 2.0. Does the landscape have the potential to support the water quality function of the site? Image: Comparison of the site? Image: Comparison of the site?	1e first page
D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? $(Yes = 1) No = 0$	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = $1 (N_0 = 0)$ D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions	0
D 2.1- D 2.3? Source Yes = 1 No = 0 Total for D 2 Add the points in the boxes above	1
<u>Rating of Landscape Potential</u> If score is: <u>3 or 4 = H</u> <u>X</u> 1 or 2 = M <u>0 = L</u> Record the rating on the second the s	he first page
D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)? (Yes = 2 No = 0	2
Total for D 3Add the points in the boxes above	3

Rating of Value If score is: X 2-4 = H 1 = M 0 = L

Record the rating on the first page

Н

DEPRESSIONAL WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.	Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconstricted surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8 Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent pondingpoints = 6 The wetland is a headwater wetland points = 1 ft points = 2 Seasonal ponding: < 6 in or wetland has only saturated soils points = 0	0
Total for D 4Add the points in the boxes above	8

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?			
D 5.1. Does the wetland receive stormwater discharges? Yes = $1 (N_0 = 0)$	0		
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? $Ves = 1$ No = 0	1		
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1No = 0			
Total for D 5Add the points in the boxes above	2		
Rating of Landscape Potential If score is: $3 = H \times 1$ or $2 = M = 0 = L$ Record the rating on the second secon	he first page		

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
 D 6.1. <u>The wetland is in a landscape that has flooding problems</u>. Choose the description that best matches conditions around the wetland being rated. <i>Do not add points</i>. <i>Choose the highest score if more than one condition is met</i>. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND 	
Flooding occurs in sub-basin that is immediately down-gradient of wetlandpoints = 2Surface flooding problems are in a sub-basin farther down-gradientpoints = 1	0
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	0
Explain whyThe wetland recieves and stores very little water in the watershed.points = 0There are no problems with flooding downstream of the wetlandpoints = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6Add the points in the boxes above	0

Rating of Value If score is: 2-4 = H 1 = M $X_0 = L$

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat H 1.0. Does the wetland have the potential to provide habitat for many species? H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover	score per box)
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed X_Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover	-
Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed Aquatic bed Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover	T
X Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover Scrub-shrub (areas where shrubs have >30% cover) 4 or more checks: points = 3 Forested (areas where trees have >30% cover) 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	1
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = $1 \sqrt{N = 0}$	1
 H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1. No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0 	> 0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species <u>6</u> Scoring: > 9 species: points = 2 <u>4-9 species: points = 1</u> < 4 species: points = 0	1
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.	Figure <u>1</u>
None = 0 points Low = 1 point Moderate = 2 points High = 3 points Kiparian braided channels with 2 classes	0

Wetland name or number_____H

0
0
2

<u>Rating of Site Potential</u> If score is: 15-18 = H 7-14 = M $X_0-6 = L$ Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?					
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:					
Calculate: % undisturbed habitat _ 0 _ + [(% moderate and low intensity land uses)/2] _ 0 = _ 0 _%					
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3					
20-33% of 1km Polygon points = 2	0				
10-19% of 1km Polygon points = 1	U				
<10% of 1km Polygon (points = 0)					
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.					
Calculate: % undisturbed habitat _0+ [(% moderate and low intensity land uses)/2] <u>14.9</u> = <u>14.9</u> %					
Undisturbed habitat > 50% of Polygon points = 3					
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2	1				
Undisturbed habitat 10 - 50% and > 3 patches points = 1					
Undisturbed habitat < 10% of Polygon points = 0					
H 2.3. Land use intensity in 1 km Polygon:					
50% of Polygon is high intensity land use points = (-2)	-2				
Does not meet criterion above points = 0	-2				
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by					
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of					
reclamation areas, irrigation districts, or reservoirs $Yes = 3 No = 0$					
Total for H 2Add the points in the boxes above	-1				

Rating of Landscape Potential If score is: 4-9 = H 1-3 = M X < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
— It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	0
 It is mapped as a location for an individual WDFW species 	0
 It is a Wetland of High Conservation Value as determined by the Department of Natural Resources 	
 It has been categorized as an important habitat site in a local or regional comprehensive plan, in a 	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1	
Site does not meet any of the criteria above	

<u>Rating of Value</u> If score is: 2 = H 1 = M $X_0 = L$ Record the rating on the first page

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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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater	
input.	
 Wetland plants are typically present only in the spring; the summer vegetation is typically upland 	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as	
basalt or clay.	
 Surface water is present for less than 120 days during the wet season. 	
Yes – Go to SC 1.1 No = Not a vernal pool	>
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	\triangleright
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	
wetlands, rivers, lakes etc.)? Yes = Category IK No = Category III	Cat. II
	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
— The wetland has a conductivity > 3.0 mS/cm.	
— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
 If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. 	
OR does the wetland unit meet two of the following three sub-criteria?	
— Salt encrustations around more than 75% of the edge of the wetland	
— More than ¾ of the plant cover consists of species listed on Table 4	
— 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.	Cat. I
Yes = Category No= Not an alkali wetland	>
CC 2.0. Methods of the Concernation Velue (MUC)	
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3	
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	Cat. I
Yes = Category I No = Not a WHCV SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 3.4 (No = Not a WHCV)	
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category I No =Not a WHCV	1
on their website: Tes = Category (100 =Not a WHCV	1

SC 4.0 Bogs and Calcareous Fens			
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or			
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes			
you will still need to rate the wetland based on its functions.			
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or			
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to			
identify organic soils. Yes – Go to SC 4.3 $(NO - GO to SC 4.2)$			
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over			
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or			
pond? Yes – Go to SC 4.3 No = Is not a bog for rating	Þ		
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of	Í		
the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4			
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion			
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0			
and the plant species in Table 5 are present, the wetland is a bog.			
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western			
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species			
(or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	Cat. I		
For combination of species) listed in Table 5 provide more than 50% of the cover under the canopy: Yes = Category I bog $No - Go to SC 4.5$	l I		
	ļ		
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and	l		
mucks? Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6	1		
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,			
AND one of the two following conditions is met:			
 Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or plant stems 	Cat. I		
— The pH of free water is \geq 6.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the	l		
wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen	P		
	[

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present	
in question H 1.1)	
— The wetland is within the 100 year floodplain of a river or stream	
— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 < No = Not a forested wetland with special characteristics	\triangleright
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (<i>see Table 7</i>)? Yes = Category I No – Go to SC 5.2	
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. II
cover) are fast growing species (<i>see Table 7</i>)? Yes = Category II No – Go to SC 5.4	
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	Cat. II
Yes = Category No = Not a forested wetland with special characteristics	
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	N/A
If you answered No for all types, enter "Not Applicable" on Summary Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: *NOTE: This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **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.
- 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.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B

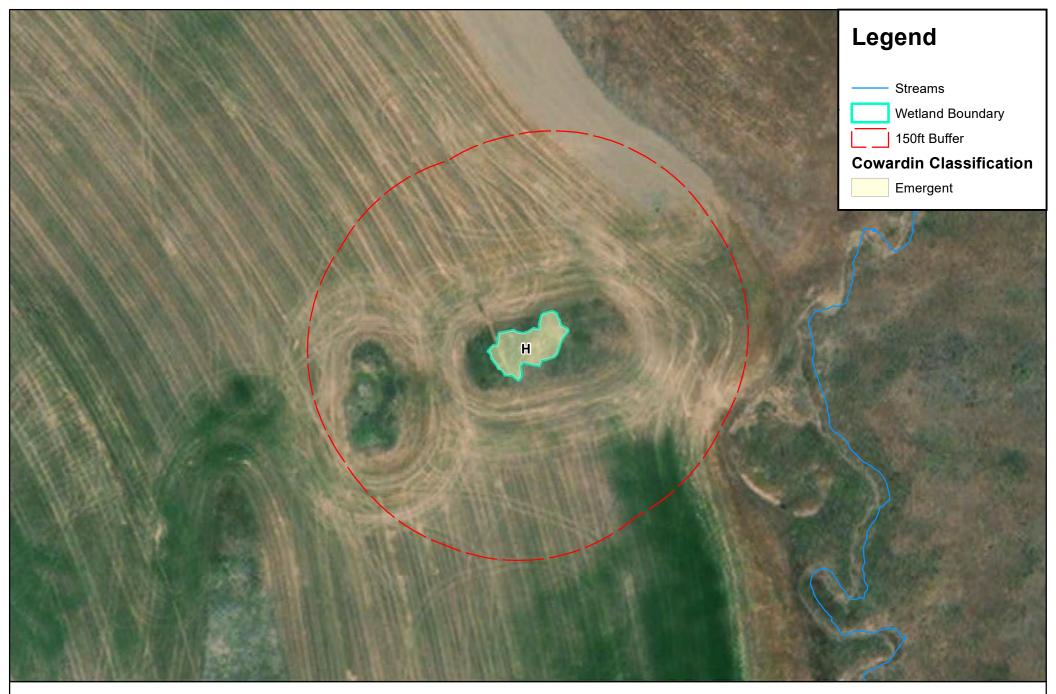


Figure 1. Wetland H Cowardin Classifications Carriger Solar, LLC | Wetland Ratings | August 2021

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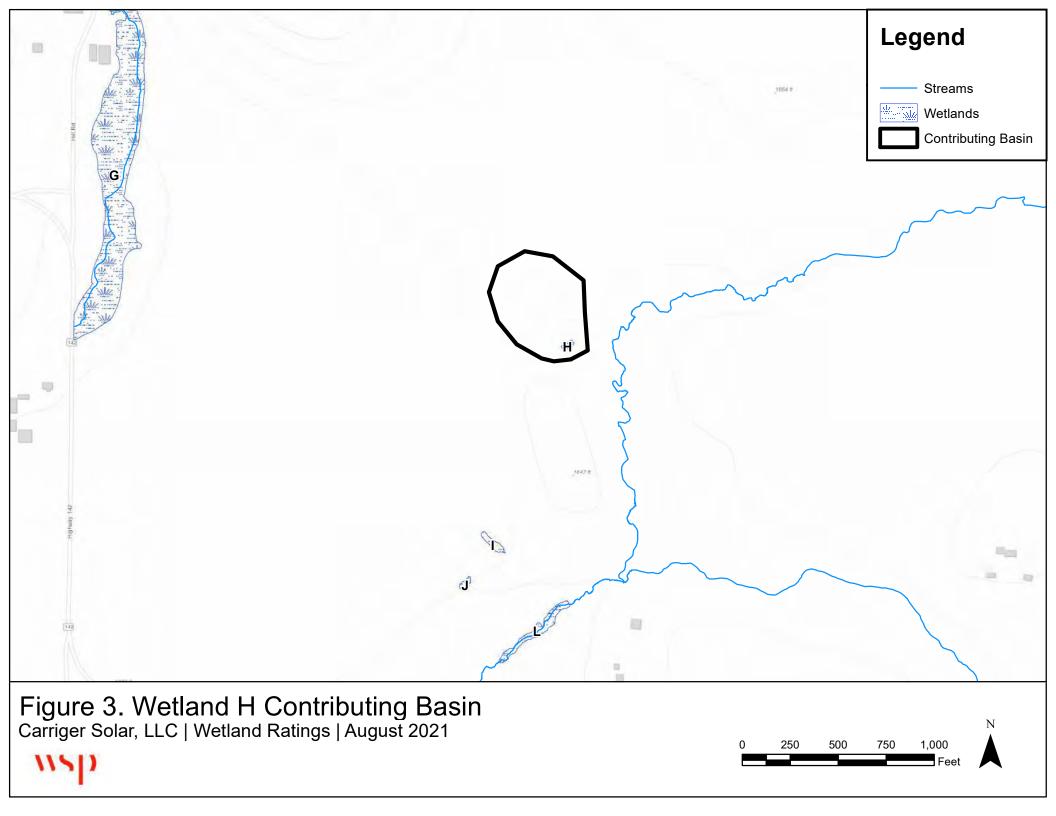




Figure 2. Wetland H Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021

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0 50 100



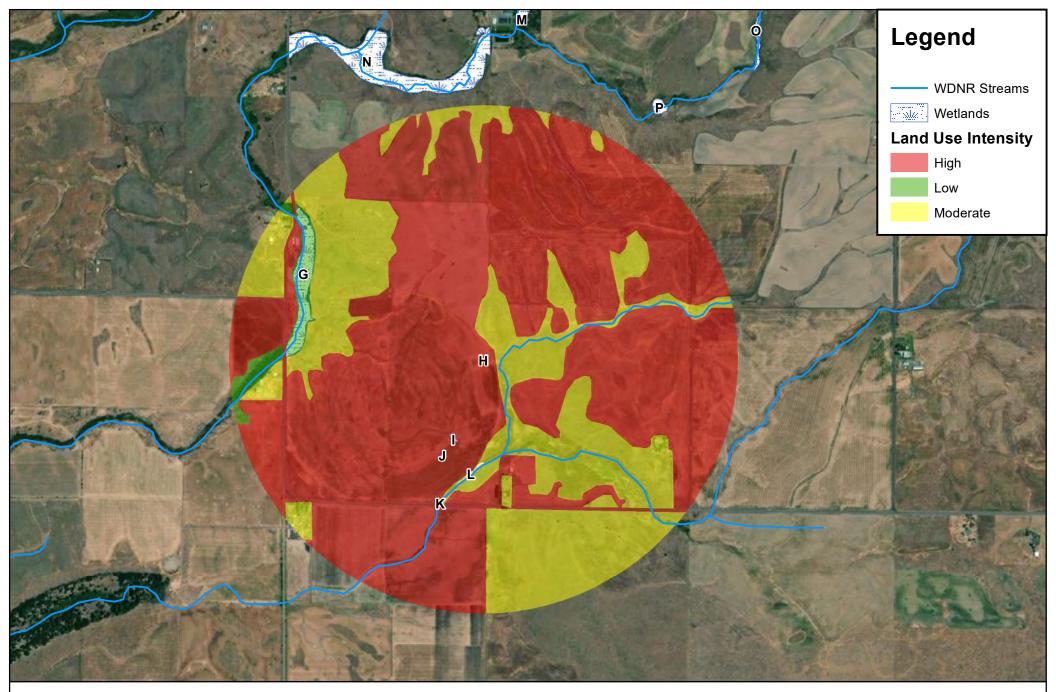


Figure 4. Wetland H Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021

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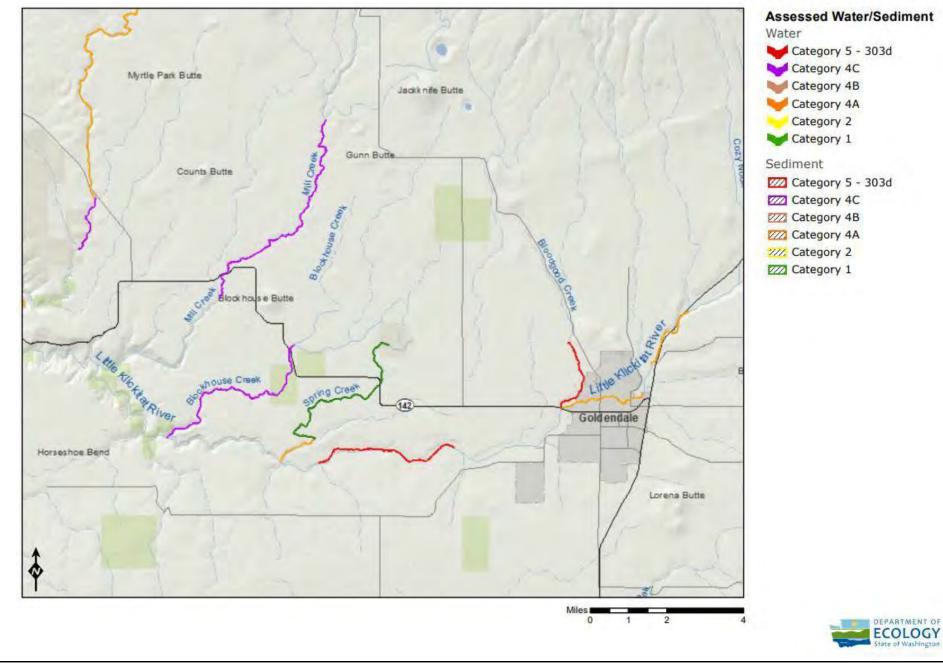


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30) Carriger Solar, LLC | Wetland Ratings | August 2021



Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)		
Little Klickitat River	BOD (5-day) Chlorine	EPA approved	Mark Peterschmidt 509-454-7843		
Little Klickitat River Watershed	Temperature	EPA approved and Has an implementation plan	Mark Peterschmidt 509-454-7843		

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):	Date of site visit: <u>7/24</u> /2021
Rated by Brandon Stimac and Bridget Wojtala	Trained by Ecology? X Yes No Date of training Oct. 2020
HGM Class used for rating_Depressional	Wetland has multiple HGM classes?Y <u>X</u> N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ______ESRI

OVERALL WETLAND CATEGORY Cat. IV(based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 22-27

_____Category II – Total score = 19-21

____Category III – Total score = 16-18

X Category IV – Total score = 9-15

FUNCTION	Improving Water Quality		Hydrologic		Habitat					
Circle the appropriate ratings										
Site Potential	Н	M	L	Н	M	L	Н	Μ		
Landscape Potential	Н	M	L	н	M	L	Н	Μ	Ŀ	
Value	(H)	Μ	L	н	М	L	н	Μ	Ŀ	ΤΟΤΑ
Score Based on Ratings		7			5			3		15

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H, M, M6 = H, M, L6 = M,M,M5 = H,L,L 5 = M, M, L4 = M, L, L3 = L, L, L

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2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	II III
Alkali	Ι
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	Ι
Aspen Forest	Ι
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	Х

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	Н 1.1, Н 1.5	
Hydroperiods	Н 1.2, Н 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5.

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

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

 \bigcirc NO – go to 2

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 2. Does the entire wetland unit meet all of the following criteria?
 - _____The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
 - _____The water leaves the wetland **without being impounded**.

NO - go to 3

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - ____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
 - ____ The overbank flooding occurs at least once every 10 years.

(NO - go to 4)

YES – The wetland class is **Riverine**

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

NO – go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 **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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within	Depressional
the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

DEPRESSIONAL WETLANDS	Points (only 1
Water Quality Functions - Indicators that the site functions to improve water quality	score per box)
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland has no surface water outlet	P
Wetland has an intermittently flowing outlet points = 3	5
Wetland has a highly constricted permanently flowing outletpoints = 3Wetland has a permanently flowing, unconstricted, surface outletpoints = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)	
YES = 3 (NO = 0)	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)	
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area points = 5	<u> </u>
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of areapoints = 3Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $\frac{1}{3}$ of areapoints = 1	3
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $\frac{1}{3}$ of areapoints = 1Wetland has persistent, ungrazed vegetation $\frac{1}{10}$ of areapoints = 0	
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>	
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland points = 3	0
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland points = 1	0
	P
Total for D 1 Add the points in the boxes above	8
<u>Rating of Site Potential</u> If score is: 12-16 = H X6-11 = M O-5 = L Record the rating on the second secon	ne first page
D 2.0. Deac the landscape have the notantial to support the water quality function of the site?	
D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? $Yes = 1$ No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = $1 (N_0 = 0)$	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions	0
D 2.1- D 2.3? Source Yes = 1 (No = 0)	
Total for D 2Add the points in the boxes above	1
<u>Rating of Landscape Potential</u> If score is: <u>3 or 4 = H</u> <u>X</u> 1 or 2 = M <u>0 = L</u> Record the rating on the second the secon	ie first page
D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)? (Yes = 2) No = 0	2
Total for D 3 Add the points in the boxes above	3
	5

Rating of Value If score is: X 2-4 = H 1 = M 0 = L

Record the rating on the first page

DEPRESSIONAL WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.	Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconstricted surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	8
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent pondingpoints = 0 The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	5 0
Total for D 4Add the points in the boxes above	8

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = $1 \sqrt{N_0} = 0$	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? (Yes = 1 No = 0)	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0	1
Total for D 5Add the points in the boxes above	2
Rating of Landscape Potential If score is: $3 = H \times 1$ or $2 = M = 0 = L$ Record the rating on the second secon	he first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
 D 6.1. <u>The wetland is in a landscape that has flooding problems</u>. Choose the description that best matches conditions around the wetland being rated. <i>Do not add points</i>. <i>Choose the highest score if more than one condition is met</i>. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND 	
Flooding occurs in sub-basin that is immediately down-gradient of wetlandpoints = 2Surface flooding problems are in a sub-basin farther down-gradientpoints = 1	0
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	
Explain whyThe wetland recieves and stores very little water in the watershed.points = 0There are no problems with flooding downstream of the wetlandpoints = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Total for D 6Add the points in the boxes above	0

Rating of Value If score is: 2-4 = H 1 = M $X_0 = L$

These questions apply to wetlands of all HGM classes.	(only 1
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	-
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover Scrub-shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover) 1 check: points = 1 1 check: points = 0	1
H 1.2. Is one of the vegetation types Aquatic Bed? $Yes = 1 No = 0$	1
 H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1. No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0 	> 0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species 7 Scoring: > 9 species: points = 2 4-9 species: points = 0	1
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points All three diagrams in this row are High = 3 points	Figure <u>1</u>
Riparian braided channels with 2 classes	

Wetland name or number_____

0
0
3
_

Rating of Site Potential If score is: 15-18 = H 7-14 = M $X_0-6 = L$ Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:	
<i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>0</u> %	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	
20-33% of 1km Polygon points = 2	0
10-19% of 1km Polygon points = 1	0
<10% of 1km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.	
<i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>16.4</u> = <u>16.4</u> %	
Undisturbed habitat > 50% of Polygon points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2	1
Undisturbed habitat 10 - 50% and > 3 patches points = 1	1
Undisturbed habitat < 10% of Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon:	
	-2
Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by	
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of	0
reclamation areas, irrigation districts, or reservoirs Yes = $3 \sqrt{0} = 0$	-
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: _____4-9 = H ____1-3 = M ____X < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) It is mapped as a location for an individual WDFW species It is a Wetland of High Conservation Value as determined by the Department of Natural Resources It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan 	0
Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	

<u>**Rating of Value</u>** If score is: 2 = H 1 = M X = 0 = L Record the rating on the first page</u>

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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater	
input.	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.	
 Surface water is present for less than 120 days during the wet season. 	
Yes – Go to SC 1.1 No = Not a vernal pool	\triangleright
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	\square
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	
wetlands, rivers, lakes etc.)? Yes = Category IK No = Category III	Cat. II
	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
 The wetland has a conductivity > 3.0 mS/cm. The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the 	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of	
salt.	
OR does the wetland unit meet two of the following three sub-criteria?	
— Salt encrustations around more than 75% of the edge of the wetland	
— More than ¾ of the plant cover consists of species listed on Table 4	
— 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.	Cat. I
Yes = Category K No= Not an alkali wetland	>
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3	
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
Yes = Category I No = Not a WHCV	Cat. I
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 3.4 (No = Not a WHCV)	1
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category I No =Not a WHCV	*

T

SC 4.0 Bogs and Calcareous Fens	
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or	
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the wetland based on its functions.	
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic soils. Yes – Go to SC 4.3 No – Go to SC 4.2	>
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over	
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 4.3 No = Is not a bog for rating	>
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of	
the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion	
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western	
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species	Cat. I
(or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	Cal. I
Yes = Category I bog No – Go to SC 4.5	
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and	
mucks? Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6	
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,	
AND one of the two following conditions is met:	
— Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	Cat. I
— The pH of free water is \geq 6.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the	
wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen	>

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)	
— The wetland is within the 100 year floodplain of a river or stream	
— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 < No = Not a forested wetland with special characteristics	\geq
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (<i>see Table 7</i>)? Yes = Category I No – Go to SC 5.2	
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. II
cover) are fast growing species (see Table 7)? Yes = Category II No – Go to SC 5.4	
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	Cat. II
Yes = Category No = Not a forested wetland with special characteristics	
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	N/A
If you answered No for all types, enter "Not Applicable" on Summary Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: *NOTE: This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **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.
- 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.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B



Figure 1. Wetland I Cowardin Classifications Carriger Solar, LLC | Wetland Ratings | August 2021

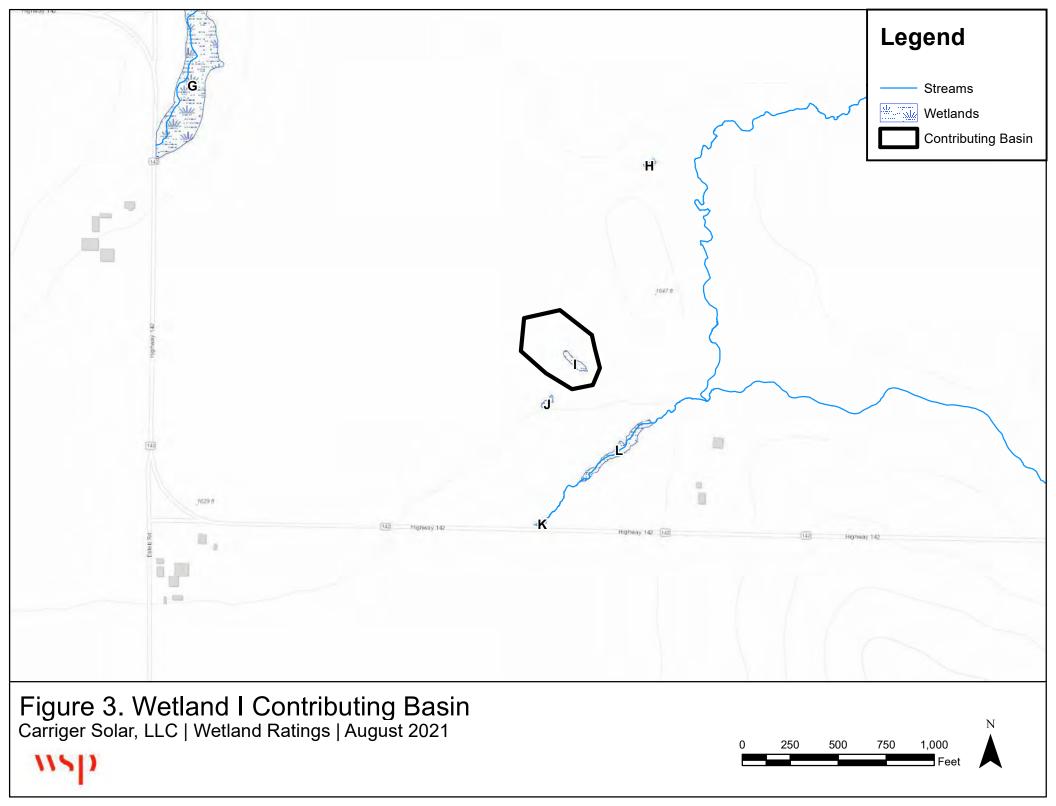
0 50 100



Figure 2. Wetland I Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021

115

0 50 100



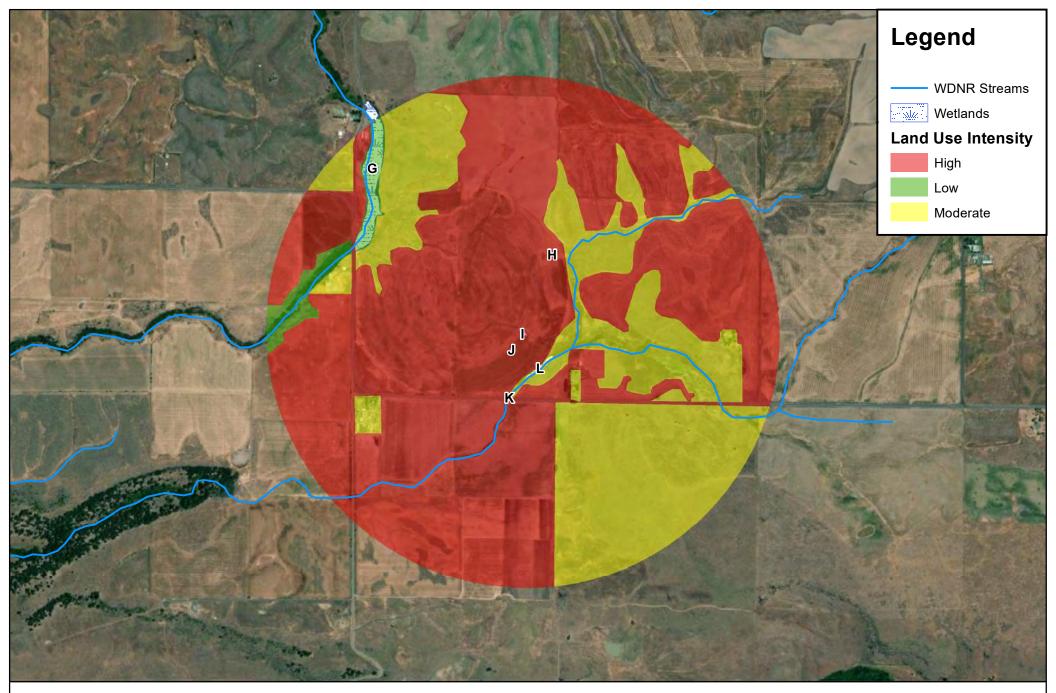


Figure 4. Wetland I Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021

0 0.25 0.5 Miles

wsp

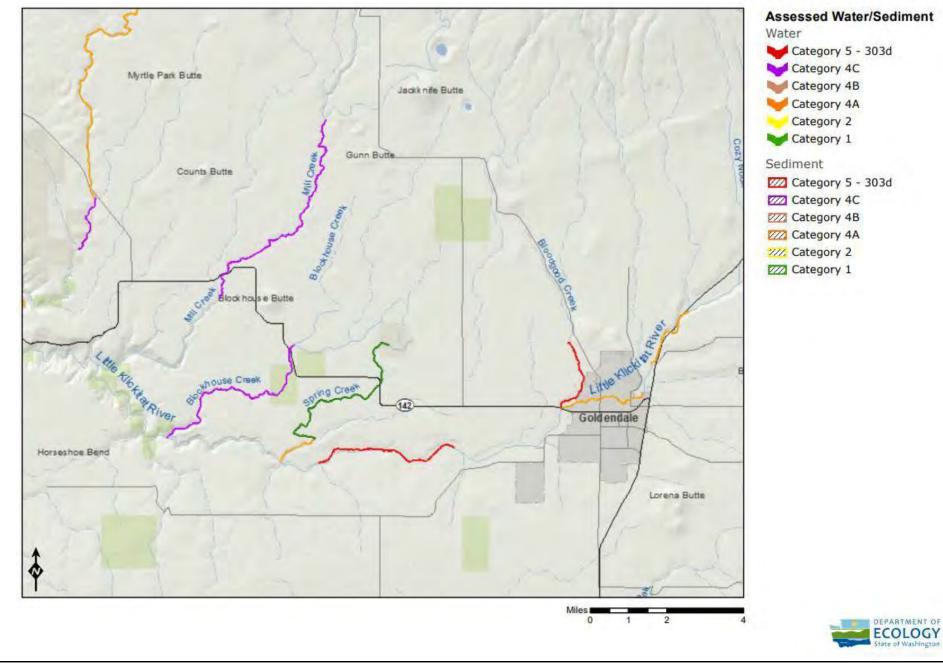


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30) Carriger Solar, LLC | Wetland Ratings | August 2021



Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Little Klickitat River	BOD (5-day) Chlorine	EPA approved	Mark Peterschmidt 509-454-7843
Little Klickitat River Watershed	Temperature	EPA approved and Has an implementation plan	Mark Peterschmidt 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):	J	Date of site visit:	7/24/2021
Rated by Brandon Stimac and Bridget Wojtala	_ Trained by Ecology? <u>X</u>	<pre> <u> Yes No Date c</u> </pre>	of trainin <u>g Oct. 2</u> 020
HGM Class used for rating Depressiona	l Wetland has mu	ultiple HGM classes?	?Y_X_N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ______

OVERALL WETLAND CATEGORY Cat. IV(based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 22-27

_____Category II – Total score = 19-21

_____Category III – Total score = 16-18

X Category IV – Total score = 9-15

FUNCTION		nprov iter Qi	-	Н	ydrolo	ogic		Habit	at	
			Circle	the a	ppropi	riate ra	atings	;		
Site Potential	Н	M	L	Н	M	L	Н	Μ		
Landscape Potential	Н	M	L	Н	M	L	Н	Μ	Ŀ	
Value	(H)	М	L	н	М		Н	Μ	Ŀ	TOTA
Score Based on Ratings		7			5			3		15

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H, M, M6 = H, M, L6 = M,M,M5 = H,L,L 5 = M, M, L4 = M, L, L3 = L, L, L

۱L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category	
Vernal Pools	II III	
Alkali	Ι	
Wetland of High Conservation Value	Ι	
Bog and Calcareous Fens	I	
Old Growth or Mature Forest – slow growing	Ι	
Aspen Forest	Ι	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above	Х	

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	Н 1.1, Н 1.5	
Hydroperiods	Н 1.2, Н 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5.

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

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

 \bigcirc NO – go to 2

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 2. Does the entire wetland unit **meet all** of the following criteria?
 - _____The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
 - _____The water leaves the wetland **without being impounded**.

NO - go to 3

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - ____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
 - ____ The overbank flooding occurs at least once every 10 years.

 $\sqrt{N0}$ - go to 4

YES – The wetland class is **Riverine**

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

NO – go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 Wetland name or number_____J

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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating	
Slope + Riverine	Riverine	
Slope + Depressional	Depressional	
Slope + Lake Fringe	Lake Fringe	
Depressional + Riverine (the riverine portion is within	Depressional	
the boundary of depression)	Depressional	
Depressional + Lake Fringe	Depressional	
Riverine + Lake Fringe	Riverine	

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

DEPRESSIONAL WETLANDS	Points
Water Quality Functions - Indicators that the site functions to improve water quality	(only 1 score per
	box)
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland has no surface water outlet Opints = 5 Opints = 5	\diamond
Wetland has an intermittently flowing outlet points = 3	5
Wetland has a highly constricted permanently flowing outlet points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet points = 1 D.1.2. The soil 2 in below the surface (or duff lower) is true alow or true excepts (use NBCS definitions of soils)	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils) YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)	
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area points = 3	3
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $\frac{1}{3}$ of area points = 1	
Wetland has persistent, ungrazed vegetation < $1/10$ of areapoints = 0	
D 1.4. Characteristics of seasonal ponding or inundation:	
This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.	
Area seasonally ponded is > ½ total area of wetland points = 3	0
Area seasonally ponded is $\frac{1}{4} - \frac{1}{2}$ total area of wetland points = 1	-
Area seasonally ponded is < ¼ total area of wetland points = 0	
Total for D 1Add the points in the boxes above	8
<u>Rating of Site Potential</u> If score is: $12 - 16 = H$ $\chi_6 - 11 = M$ $0 - 5 = L$ Record the rating on the second secon	ne first page
D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? (Yes = 1) to = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions	0
D 2.1- D 2.3? SourceYes = 1 No = 0	-
Total for D 2Add the points in the boxes above	1
Rating of Landscape Potential If score is: 3 or 4 = H X 1 or 2 = M 0 = L Record the rating on the	ne first page
D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]? (Yes = 1)No = 0	1
	-
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)? (Yes = No = 0	2
Total for D 3Add the points in the boxes above	3

Rating of Value If score is: X 2-4 = H 1 = M 0 = L

nts in the boxes above3Record the rating on the first page

DEPRESSIONAL WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.	Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	8
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8 Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent pondingpoints = The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	
Total for D 4 Add the points in the boxes above	8

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = $1 (N_0 = 0)$	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? $Ves = 1$ No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1No = 0	
Total for D 5Add the points in the boxes above	2
Rating of Landscape Potential If score is: 3 = H X_1 or 2 = M0 = L Record the rating on the second th	he first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
 D 6.1. <u>The wetland is in a landscape that has flooding problems</u>. Choose the description that best matches conditions around the wetland being rated. <i>Do not add points</i>. <i>Choose the highest score if more than one condition is met</i>. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND 	
Flooding occurs in sub-basin that is immediately down-gradient of wetlandpoints = 2Surface flooding problems are in a sub-basin farther down-gradientpoints = 1The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	0
Explain whyThe wetland recieves and stores very little water in the watershed.points = 0There are no problems with flooding downstream of the wetlandpoints = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Total for D 6Add the points in the boxes above	0

 Rating of Value
 If score is: ____2-4 = H ____1 = M ___X_0 = L

Wetland name or number_____J

Wetland name or number_____

0
Ū
3

Rating of Site Potential If score is: 15-18 = H 7-14 = M $X_0-6 = L$ Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:	
Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>0</u> %	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	
20-33% of 1km Polygon points = 2	0
10-19% of 1km Polygon points = 1	0
<10% of 1km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.	
Calculate: % undisturbed habitat _0+ [(% moderate and low intensity land uses)/2] _16.3 =16.3 %	
Undisturbed habitat > 50% of Polygon points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2	1
Undisturbed habitat 10 - 50% and > 3 patches points = 1	
Undisturbed habitat < 10% of Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon:	
	-2
Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by	
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of	0
reclamation areas, irrigation districts, or reservoirs Yes = $3 \sqrt{N_0 = 0}$	
Total for H 2 Add the points in the boxes above	-1

<u>Rating of Landscape Potential</u> If score is: _____4-9 = H ____1-3 = M ____X < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score	
that applies to the wetland being rated	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
— It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	0
 It is mapped as a location for an individual WDFW species 	0
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1	
\bigtriangleup te does not meet any of the criteria above points = 0	

<u>Rating of Value</u> If score is: 2 = H 1 = M $X_0 = L$ Record the rating on the first page

J

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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater	
input.	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.	
 Surface water is present for less than 120 days during the wet season. 	
Yes – Go to SC 1.1 No = Not a vernal pool	Ь
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	F
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	\triangleright
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	
wetlands, rivers, lakes etc.)? Yes = Category IK No = Category III	Cat. II
	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
 The wetland has a conductivity > 3.0 mS/cm. The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the 	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of	
salt.	
OR does the wetland unit meet two of the following three sub-criteria?	
— Salt encrustations around more than 75% of the edge of the wetland	
— More than ¾ of the plant cover consists of species listed on Table 4	
— 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.	Cat. I
Yes = Category KNo= Not an alkali wetland	2
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3	,
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	Cat. I
Yes = Category I No = Not a WHCV	
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 3.4 (No = Not a WHCV)	
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category I No = Not a WHCV	>

e.

SC 4.0 Bogs and Calcareous Fens	
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or	
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the wetland based on its functions.	
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic soils. Yes – Go to SC 4.3 $(NO - GO to SC 4.2)$	Þ
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over	
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 4.3 No = Is not a bog for rating	\triangleright
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of	Į į
the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion	
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western	
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species	
(or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	Cat. I
Yes = Category I bog No - Go to SC 4.5	ļ
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and	
mucks? Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6	ļ
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,	ļ
AND one of the two following conditions is met:	
— Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	Cat. I
— The pH of free water is \geq 6.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the	L
wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen	ر
	1

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present	
in question H 1.1)	
— The wetland is within the 100 year floodplain of a river or stream	
— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 < No = Not a forested wetland with special characteristics	\geq
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (<i>see Table 7</i>)? Yes = Category I No – Go to SC 5.2	•
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. II
cover) are fast growing species (<i>see Table 7</i>)? Yes = Category II No – Go to SC 5.4	
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	Cat. II
Yes = Category No = Not a forested wetland with special characteristics	
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	N/A
If you answered No for all types, enter "Not Applicable" on Summary Form	1

Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: *NOTE: This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **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.
- 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.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B



Figure 1. Wetland J Cowardin Classifications Carriger Solar, LLC | Wetland Ratings | August 2021

wsp

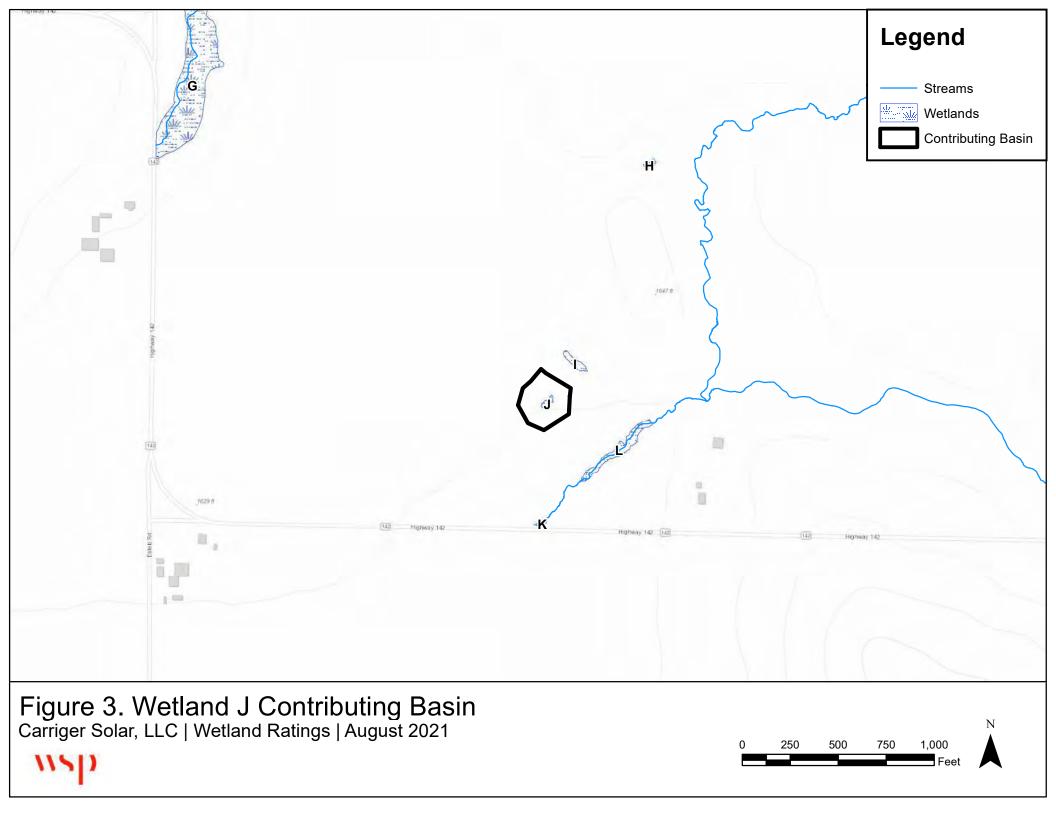




Figure 2. Wetland J Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021

wsp





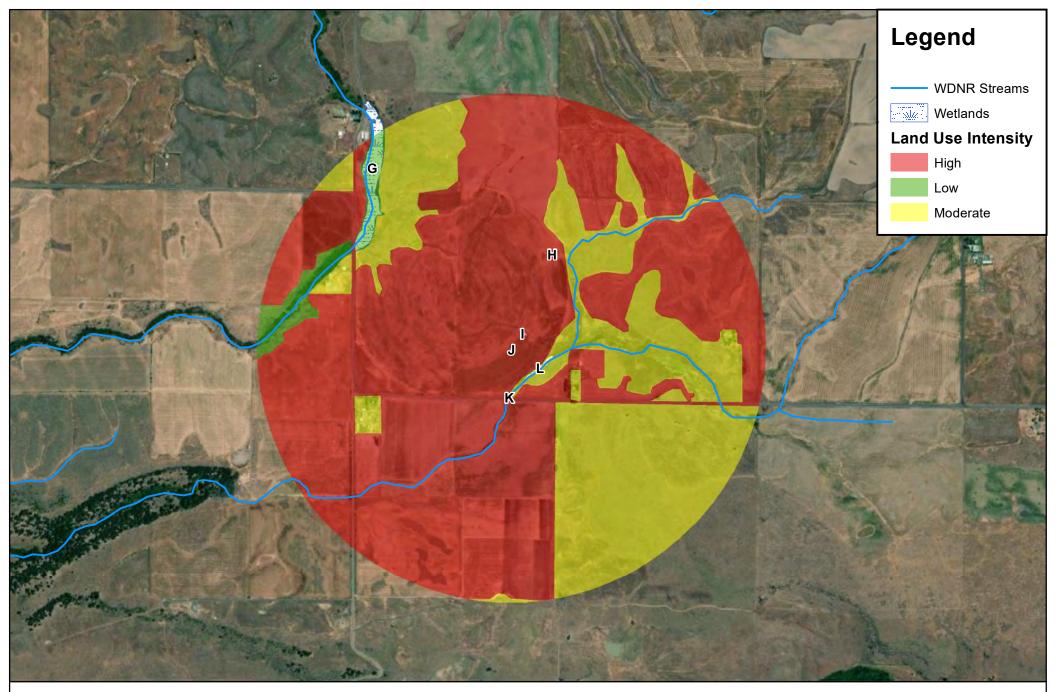


Figure 4. Wetland J Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021

0 0.25 0.5 Miles

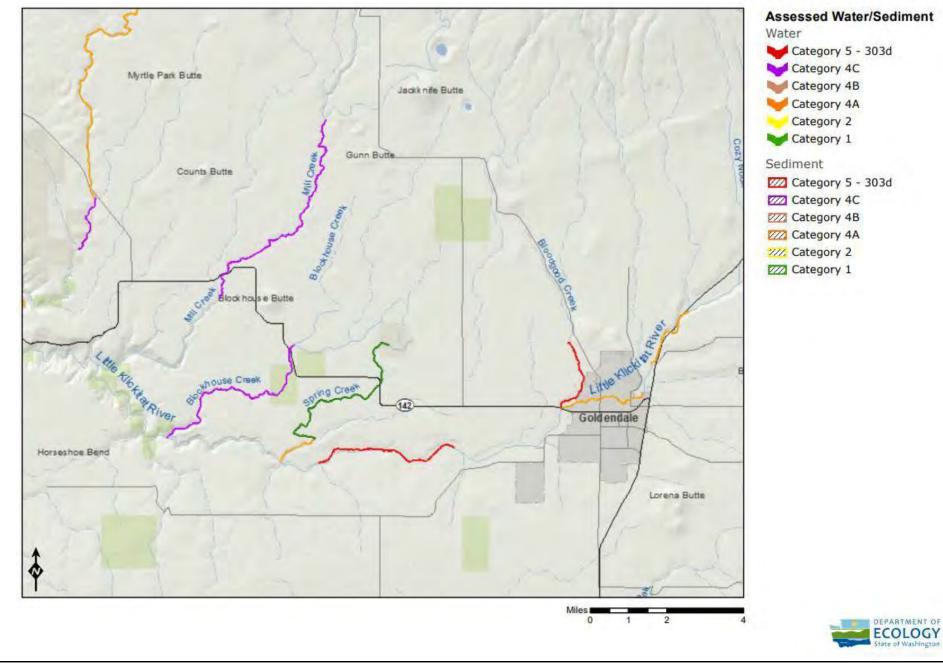


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30) Carriger Solar, LLC | Wetland Ratings | August 2021



Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Little Klickitat River	BOD (5-day) Chlorine	EPA approved	Mark Peterschmidt 509-454-7843
Little Klickitat River Watershed	Temperature	EPA approved and Has an implementation plan	Mark Peterschmidt 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):	K	_ Date of site visit: <u>7/24</u> /2021
Rated by Brandon Stimac and Bridget Wojtala	Trained by Ecology?	Yes No Date of training Oct. 2020
HGM Class used for rating_Riverine	Wetland has mu	ultiple HGM classes?Y <u>X</u> N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ______ESRI

OVERALL WETLAND CATEGORY Cat. III (based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 22-27

Category II – Total score = 19-21

X Category III – Total score = 16-18

___Category IV – Total score = 9-15

FUNCTION		mpro Iter Q	ving uality	Hy	/drolo	ogic		Habita	at	
		Circle the appropriate ratings								
Site Potential	Н	Μ	L	H	М	L	Н	M	L	
Landscape Potential	Н	M	L	Н	M	L	Н	M		
Value	н	Μ	(H	Μ	L	Н	M	L	ΤΟΤΑ
Score Based on Ratings		4			8			5		17

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H, M, M6 = H, M, L6 = M,M,M5 = H,L,L5 = M, M, L4 = M, L, L3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	п ш
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	Ι
Old Growth or Mature Forest – slow growing	Ι
Aspen Forest	Ι
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	Х

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H 1.2, H 1.3	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1-2
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	6

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5.

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

Κ

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

 \bigcirc NO – go to 2

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 2. Does the entire wetland unit **meet all** of the following criteria?
 - _____The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
 - _____The water leaves the wetland **without being impounded**.

NO - go to 3

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
 - X The overbank flooding occurs at least once every 10 years.

 $\sqrt{N0}$ - go to 4

YES – The wetland class is **Riverine**

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

(NO - go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 **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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within	Depressional
the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

RIVERINE WETLANDS		Points (only 1 score
Water Quality Functions - Indicators that the site functions to improve wa	ater quality	per box)
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments due	ring a flooding event:	
Depressions cover $>^{1}/_{3}$ area of wetland	points = 6	
Depressions cover $> 1/_{10}$ area of wetland	points = 3	0
Depressions present but cover $< 1/10$ area of wetland	points = 1	
No depressions present	points = 0	>
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; not Cow	vardin classes):	
Forest or shrub $> \frac{2}{3}$ the area of the wetland	points = 10	
Forest or shrub $\frac{1}{3} - \frac{2}{3}$ area of the wetland	points = 5	
Ungrazed, herbaceous plants $> ^{2}/_{3}$ area of wetland	points = 5	2
Ungrazed herbaceous plants $\frac{1}{3} - \frac{2}{3}$ area of wetland	points = 2	> _
Forest, shrub, and ungrazed herbaceous $< \frac{1}{3}$ area of wetland	points = 0	
Total for R 1 Add the po	pints in the boxes above	2
Rating of Site Potential If score is: 12-16 = H 6-11 = M X 0-5 = L	Record the rating on	the first page

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 \sqrt{N} Ves = 2 $$	0
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = $1 \sqrt{N} = 0$	0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? $Ves = 1$ No = 0	1
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants $ves = 1$ No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questionsR 2.1-R 2.4?SourceYes = 1 $\sqrt{0} = 0$	0
Total for R 2Add the points in the boxes above	2
Rating of Landscape Potential If score is: 3-6 = H X 1 or 2 = M 0 = L Record the rating on a	the first page

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1	
mi? Yes = 1 $(No = 0)$	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = $1 \sqrt{N} = 0$	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the drainage in which wetland is found. Yes = 2 No = 0	0
Total for R 3Add the points in the boxes above	0

Rating of Value If score is: 2-4 = H 1 = M X 0 = L

Record the rating on the first page

<u>RIVERINE WETLANDS</u> Hydrologic Functions - Indicators that site functions to reduce floor	ding and stream erosion	Points (only 1 score per box)
R 4.0. Does the site have the potential to reduce flooding and erosion?		· · · ·
R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of stream or river channel (distance between banks). Calculate the ratio: (aver width of stream between banks). If the ratio is more than 2 If the ratio is 1-2 If the ratio is ½-<1 If the ratio is ½-<1 If the ratio is ½-<½ If the ratio is ½-<½		10
R 4.2. Characteristics of plants that slow down water velocities during floods: Treas shrub. Choose the points appropriate for the best description (polygons nee height. These are NOT Cowardin classes). Forest or shrub for more than $^2/_3$ the area of the wetland Forest or shrub for > $^1/_3$ area OK emergent plants > $^2/_3$ area Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area Plants do not meet above criteria	nt large woody debris as forest or	4
Total for R 5 Ac	d the points in the boxes above	14
Rating of Site Potential If score is: $X_12-16 = H_6-11 = M_0-5 = L_6$	Record the rating on	the first page
R 5.0. Does the landscape have the potential to support the hydrologic fun	\sim	
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 (No = 1)	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 (No = 0)	0
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 (No = 1)	1

Rating of Landscape Potential If score is: 3 = H X 1 or 2 = M 0 = L

Total for R 5

Record the rating on the first page

2

Add the points in the boxes above

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site.	
The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resourcesSurface flooding problems are in a basin farther down-gradientpoints = 2 points = 1 points = 1No flooding problems anywhere downstreampoints = 0	2
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Total for R 6 Add the points in the boxes above	2

<u>Rating of Value</u> If score is: X = 2 - 4 = H = 1 = M = 0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes.	(only 1
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover X Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover X Scrub-shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover) A believe to the structure of the	2
2 checks: points = 1 1 check: points = 0	
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = $1 (No = 0)$	
	0
 H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1.4 to be a go to H 1.3.2 to be an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0 	3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species <u>5</u> Scoring: > 9 species: points = 2 <u>4-9 species: points = 1</u> < 4 species: points = 0	1
H 1.5. Interspersion of habitats	Figure 1
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points All three diagrams in this row are High = 3 points	1

Wetland name or number____K

H 1.6. <u>Special habitat features</u>	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface	
ponding or in stream.	
X Cattails or bulrushes are present within the wetland.	
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.	
Emergent or shrub vegetation in areas that are permanently inundated/ponded.	1
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree	•
slope) OR signs of recent beaver activity	
Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs,	
herbaceous, moss/ground cover)	
Total for H 1Add the points in the boxes above	8

Rating of Site Potential If score is: **15-18 = H** χ **7-14 = M 0-6 = L** Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:	
Calculate: % undisturbed habitat _0+ [(% moderate and low intensity land uses)/2] 4.7 = 4.7 %	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	
20-33% of 1km Polygon points = 2	0
10-19% of 1km Polygon points = 1	0
<10% of 1km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.	
Calculate: % undisturbed habitat _0 + [(% moderate and low intensity land uses)/2] <u>18.8</u> = <u>18.8</u> %	
Undisturbed habitat > 50% of Polygon points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2	1
Undisturbed habitat 10 - 50% and > 3 patches Qoints = 1	1
Undisturbed habitat < 10% of Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon:	
	-2
Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by	
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of	0
reclamation areas, irrigation districts, or reservoirs Hatchery is upstream Yes = $3 (No = 0)$	
Total for H 2Add the points in the boxes above	-1
A = A = A	

<u>Rating of Landscape Potential</u> If score is: 4-9 = H 1-3 = M X < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score	
that applies to the wetland being rated	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
— It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	1
 It is mapped as a location for an individual WDFW species 	I
 It is a Wetland of High Conservation Value as determined by the Department of Natural Resources 	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	
Site does not meet any of the criteria above points = 0	

<u>Rating of Value</u> If score is: $2 = H \times 1 = M = 0 = L$ Record the rating on the first page

Κ

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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater	
input.	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.	
 Surface water is present for less than 120 days during the wet season. 	
Yes – Go to SC 1.1 No = Not a vernal pool	\triangleright
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	\supset
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	
wetlands, rivers, lakes etc.)? Yes = Category IK No = Category III	Cat. II
	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
 The wetland has a conductivity > 3.0 mS/cm. The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the 	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of	
salt.	
OR does the wetland unit meet two of the following three sub-criteria?	
— Salt encrustations around more than 75% of the edge of the wetland	
— More than ¾ of the plant cover consists of species listed on Table 4	
— 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.	Cat. I
Yes = Category K No= Not an alkali wetland	2
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3	
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
Yes = Category I No = Not a WHCV	Cat. I
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 3.4 (No = Not a WHCV)	
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category I No =Not a WHCV	4

SC 4.0 Bogs and Calcareous Fens	
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or	
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the wetland based on its functions.	
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic soils. Yes – Go to SC 4.3 No – Go to SC 4.2)
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over	
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 4.3 No = Is not a bog for rating	>
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of	
the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion	
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western	
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species	Cat I
(or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	Cat. I
Yes = Category I bog No – Go to SC 4.5	
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and	
mucks? Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6	,
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,	
AND one of the two following conditions is met:	
— Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	Cat. I
— The pH of free water is \geq 6.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the	
wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen	>

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present	
in question H 1.1)	
— The wetland is within the 100 year floodplain of a river or stream	
— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 \leq No = Not a forested wetland with special characteristics	\geq
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (<i>see Table 7</i>)? Yes = Category I No – Go to SC 5.2	
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. II
cover) are fast growing species (<i>see Table 7</i>)? Yes = Category II No – Go to SC 5.4	
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	Cat. II
Yes = Category No = Not a forested wetland with special characteristics	
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	N/A
If you answered No for all types, enter "Not Applicable" on Summary Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: *NOTE: This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest –</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests –</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- X **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- X **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.
- **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.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B

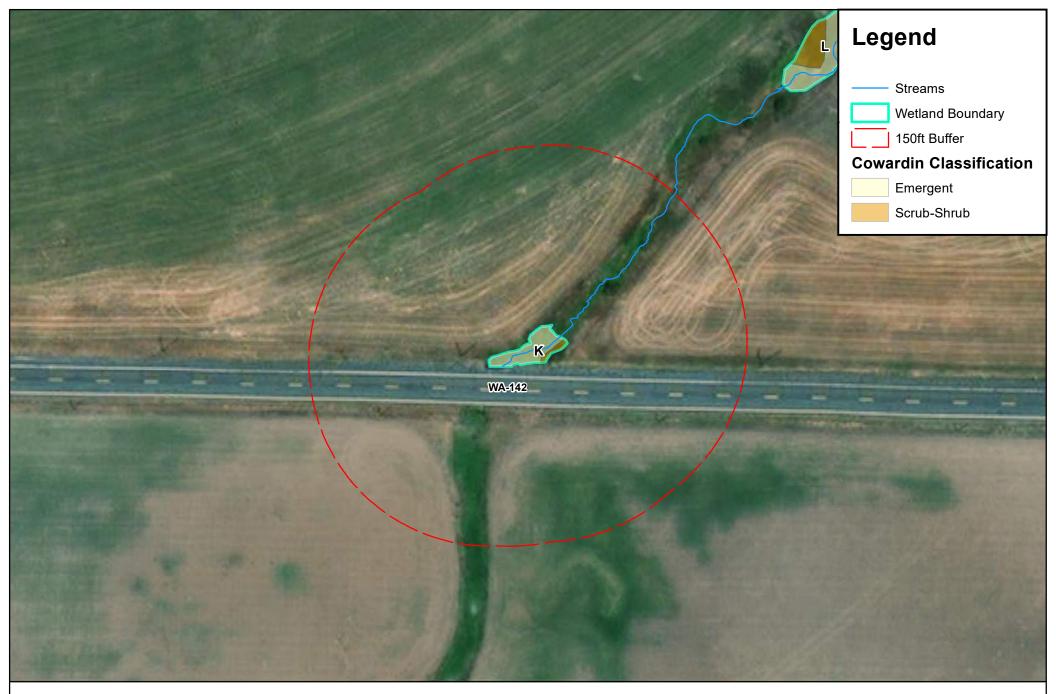


Figure 1. Wetland K Cowardin Classifications Carriger Solar, LLC | Wetland Ratings | August 2021

wsp



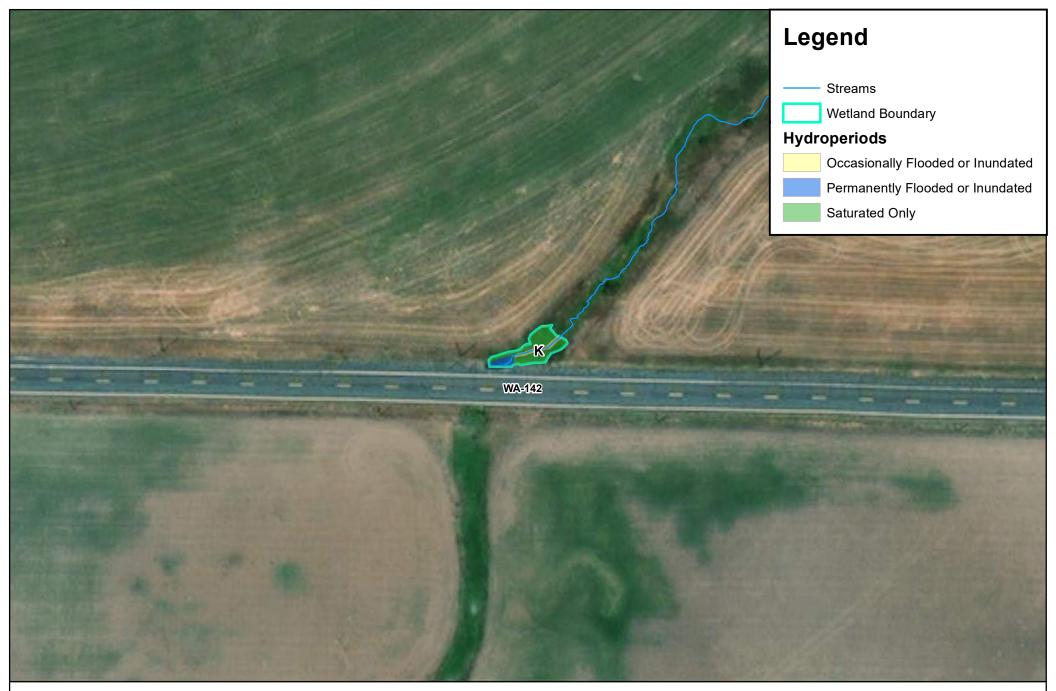


Figure 2. Wetland K Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021

0 50 100

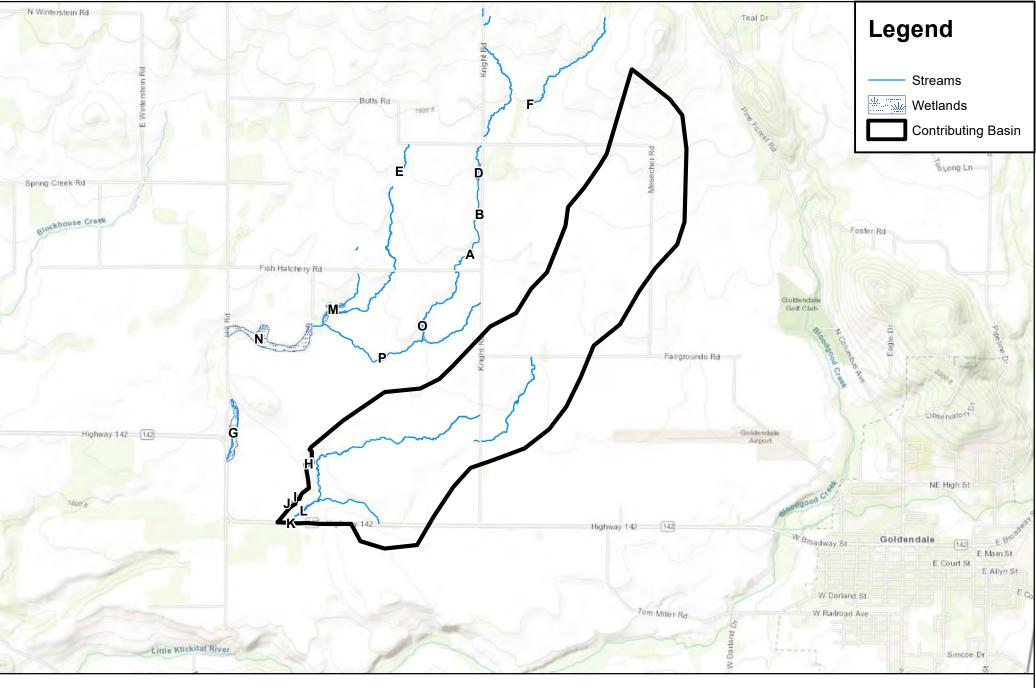


Figure 3. Wetland K Contributing Basin Carriger Solar, LLC | Wetland Ratings | August 2021



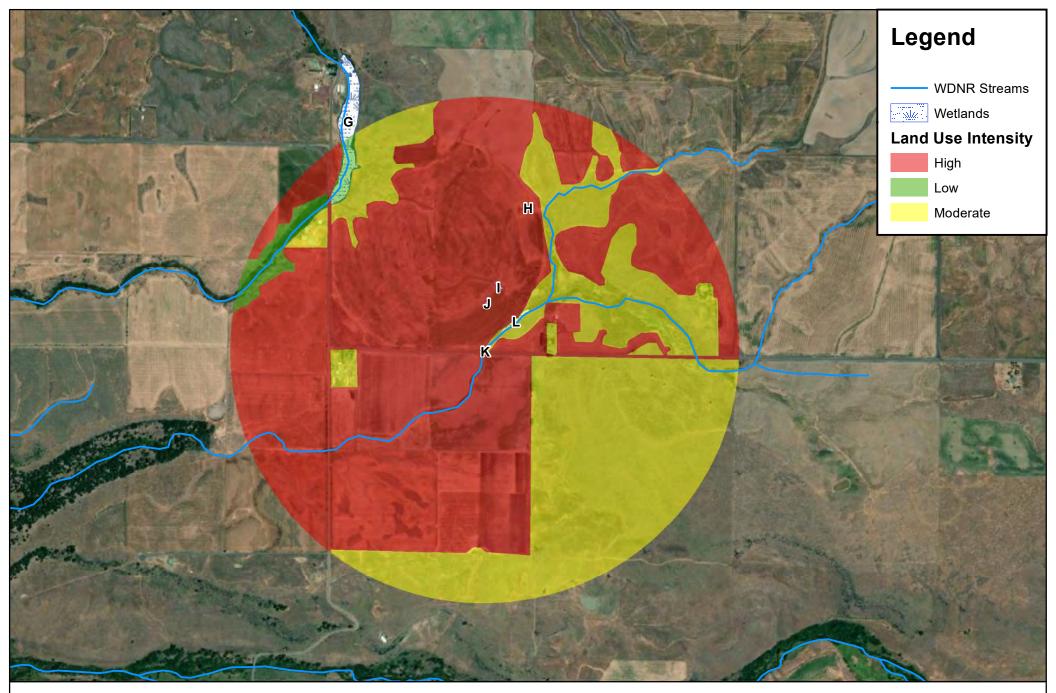


Figure 4. Wetland K Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021

0 0.25 0.5 Miles

wsp

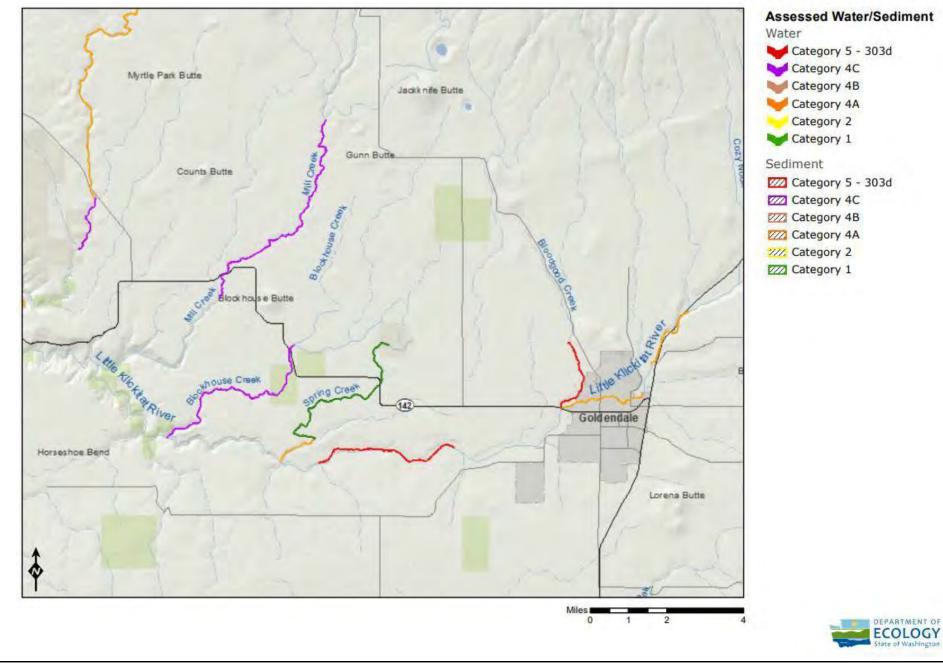


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30) Carriger Solar, LLC | Wetland Ratings | August 2021



Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Little Klickitat River	BOD (5-day) Chlorine	EPA approved	Mark Peterschmidt 509-454-7843
Little Klickitat River Watershed	Temperature	EPA approved and Has an implementation plan	Mark Peterschmidt 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):	L	_ Date of site visit: <u>7/24</u> /2021
Rated by Brandon Stimac and Bridget Wojtala	_ Trained by Ecology? _X	Yes No Date of training Oct. 2020
HGM Class used for rating_Riverine	Wetland has mu	ultiple HGM classes?Y <u>X</u> N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ______ESRI

OVERALL WETLAND CATEGORY Cat. III (based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 22-27

Category II – Total score = 19-21

X Category III – Total score = 16-18

___Category IV – Total score = 9-15

FUNCTION		mpro ater Q	ving Juality	Hy	ydrolo	ogic		Habita	ət	
			Circle	the a	opropi	riate r	ating	s		
Site Potential	Н	Μ	(H	Μ	L	Н	M	L	
Landscape Potential	Н	M	L	Н	M	L	Н	M	L	
Value	н	Μ	((H)	Μ	L	Н	M	L	ΤΟΤΑ
Score Based on Ratings		4			8			5		17

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H, M, M6 = H, M, L6 = M,M,M5 = H,L,L 5 = M, M, L4 = M, L, L3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	п ш
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	Ι
Old Growth or Mature Forest – slow growing	Ι
Aspen Forest	Ι
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	Х

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H 1.2, H 1.3	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1-2
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	6

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5.

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

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

 \bigcirc NO – go to 2

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 2. Does the entire wetland unit **meet all** of the following criteria?
 - _____The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
 - _____The water leaves the wetland **without being impounded**.

NO - go to 3

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
 - X The overbank flooding occurs at least once every 10 years.

(NO - go to 4)

YES – The wetland class is **Riverine**

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

(NO - go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 **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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within	Depressional
the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

		Points
Water Quality Functions - Indicators that the site functions to improve v	water quality	(only 1 score per box)
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments of	during a flooding event:	
Depressions cover $>^{1}/_{3}$ area of wetland	points = 6	
Depressions cover $> 1/10$ area of wetland	points = 3	0
Depressions present but cover $< \frac{1}{10}$ area of wetland	points = 1	-
No depressions present	points = 0	>
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; not Cowardin classes):		
Forest or shrub $> ^{2}/_{3}$ the area of the wetland	points = 10	
Forest or shrub $\frac{1}{3} - \frac{2}{3}$ area of the wetland	points = 5	
Ungrazed, herbaceous plants $> 2/3$ area of wetland	points = 5	2
Our set of we that $\frac{1}{3} - \frac{2}{3}$ area of we that $\frac{1}{3} - \frac{2}{3}$ or $\frac{1}{3} - \frac{2}{3}$ of we that $\frac{1}{3} - \frac{2}{3}$	points = 2	>
Forest, shrub, and ungrazed herbaceous $< 1/3$ area of wetland	points = 0	
Total for R 1 Add the	points in the boxes above	2
Rating of Site Potential If score is: 12-16 = H 6-11 = M X 0-5 = L	Record the rating on	the first page

R 2.0. Does the landscape have the potential to support the water quality function of the site?		
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = $2 \sqrt{No} = 0$	0	
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = $1 \sqrt{9} = 0$	0	
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	1	
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants $(Yes = 1)$ No = 0	1	
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Source Yes = 1 Yes = 0	0	
Total for R 2Add the points in the boxes above	2	
Rating of Landscape Potential If score is: 3-6 = H X 1 or 2 = M 0 = L Record the rating on	the first page	

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1	
mi? Yes = 1 $(No = 0)$	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = $1 \sqrt{N} = 0$	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the drainage in which wetland is found. Yes = 2 No = 0	
Total for R 3Add the points in the boxes above	0

<u>Rating of Value</u> If score is: 2-4 = H 1 = M $X_0 = L$

Record the rating on the first page

RIVERINE WETLANDS Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
R 4.0. Does the site have the potential to reduce flooding and erosion?	
R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(averawidth of stream between banks). If the ratio is more than 2 If the ratio is 1-2 If the ratio is ½-<1 If the ratio is ¼-< ½ If the ratio is ¼-< ½ If the ratio is <¼ If the ratio is <¼	nge 10 = 8 = 4 = 2 10
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as fores shrub. Choose the points appropriate for the best description (polygons need to have > 90% cover at perheight. These are NOT Cowardin classes). Forest or shrub for more than ² / ₃ the area of the wetland points = Forest or shrub for > ¹ / ₃ area OR emergent plants > ² / ₃ area points = Forest or shrub for > ¹ / ₁₀ area OR emergent plants > ¹ / ₃ area points = Plants do not meet above criteria points	$\begin{array}{c} \text{t or} \\ \text{son} \\ = 6 \\ = 4 \\ = 2 \end{array} \qquad 4$
Total for R 5 Add the points in the boxes abore	ove 14
Rating of Site PotentialIf score is: $X_12-16 = H_6-11 = M_0-5 = L$ Record the ratR 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	ing on the first page

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 (No = 1)	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	0
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 (No = 1)	1
Total for R 5	Add the points in the boxes above	2
Rating of Landscape Potential If score is: 3 = H X 1 or 2 = M 0 = L	= L Record the rating on the first page	

Rating of Landscape Potential	If score is:	3 = H	<u>X</u> 1 or 2 = M	0
--------------------------------------	--------------	-------	---------------------	---

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site.	
The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resourcesSurface flooding problems are in a basin farther down-gradientpoints = 2 points = 1 points = 0No flooding problems anywhere downstreampoints = 0	2
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for R 6Add the points in the boxes above	2
	C' 1

 Rating of Value
 If score is: X 2-4 = H
 1 = M
 0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes.	(only 1
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	-
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover A Scrub-shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover)	2
2 checks: points = 1 1 check: points = 0	
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = $1 (No = 0)$	0
	0
 H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. 	> 3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species <u>8</u> Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	1
H 1.5. Interspersion of habitats	Figure 1
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points All three diagrams in this row are High = 3 points)

Wetland name or number_____L

H 1.6. Special habitat features	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface	
ponding or in stream.	
Cattails or bulrushes are present within the wetland.	
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.	
Emergent or shrub vegetation in areas that are permanently inundated/ponded.	0
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree	Ŭ
slope) OR signs of recent beaver activity	
Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs,	
herbaceous, moss/ground cover)	
Total for H 1Add the points in the boxes above	8

Rating of Site Potential If score is: **15-18 = H** χ **7-14 = M 0-6 = L** Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:	
<i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>4.7</u> = <u>4.7</u> %	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	
20-33% of 1km Polygon points = 2	0
10-19% of 1km Polygon points = 1	0
<10% of 1km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.	
<i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>18.6</u> = <u>18.6</u> %	
Undisturbed habitat > 50% of Polygon points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2	1
Undisturbed habitat 10 - 50% and > 3 patches Opints = 1	
Undisturbed habitat < 10% of Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon:	
	-2
Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by	
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of	0
reclamation areas, irrigation districts, or reservoirs Hatchery is upstream Yes = $3 (No = 0)$	
Total for H 2 Add the points in the boxes above	-1
A = H $A = H$	

<u>Rating of Landscape Potential</u> If score is: 4-9 = H 1-3 = M X < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score	
that applies to the wetland being rated	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
— It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	1
 It is mapped as a location for an individual WDFW species 	1
 It is a Wetland of High Conservation Value as determined by the Department of Natural Resources 	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	
Site does not meet any of the criteria above points = 0	

<u>**Rating of Value</u>** If score is: $2 = H \times 1 = M = 0 = L$ Record the rating on the first page</u>

L

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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater	
input.	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.	
 Surface water is present for less than 120 days during the wet season. 	
Yes – Go to SC 1.1 No = Not a vernal pool	Ь
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	F
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	\triangleright
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	
wetlands, rivers, lakes etc.)? Yes = Category IK No = Category III	Cat. II
	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
 The wetland has a conductivity > 3.0 mS/cm. The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the 	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of	
salt.	
OR does the wetland unit meet two of the following three sub-criteria?	
— Salt encrustations around more than 75% of the edge of the wetland	
— More than ¾ of the plant cover consists of species listed on Table 4	
— 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.	Cat. I
Yes = Category KNo= Not an alkali wetland	2
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3	,
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	Cat. I
Yes = Category I No = Not a WHCV	
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 3.4 (No = Not a WHCV)	
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category I No = Not a WHCV	>

SC 4.0 Bogs and Calcareous Fens	
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or	
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the wetland based on its functions.	
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic soils. Yes – Go to SC 4.3 No – Go to SC 4.2	
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over	
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 4.3 No = Is not a bog for rating)
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of	
the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion	
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western	
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species	Cat. I
(or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	Cal. I
Yes = Category I bog No – Go to SC 4.5	
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and	
mucks? Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6	
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,	
AND one of the two following conditions is met:	
 Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or plant stems 	Cat. I
— The pH of free water is \geq 6.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the	
wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen	

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present in question H 1.1)	
— The wetland is within the 100 year floodplain of a river or stream	
— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 < No = Not a forested wetland with special characteristics	\triangleright
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (<i>see Table 7</i>)? Yes = Category I No – Go to SC 5.2	>
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. II
cover) are fast growing species (see Table 7)? Yes = Category II No – Go to SC 5.4	}
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	Cat. II
Yes = Category No = Not a forested wetland with special characteristics	
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	N/A
If you answered No for all types, enter "Not Applicable" on Summary Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: *NOTE: This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest –</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests –</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- X **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- X **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.
- **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.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B

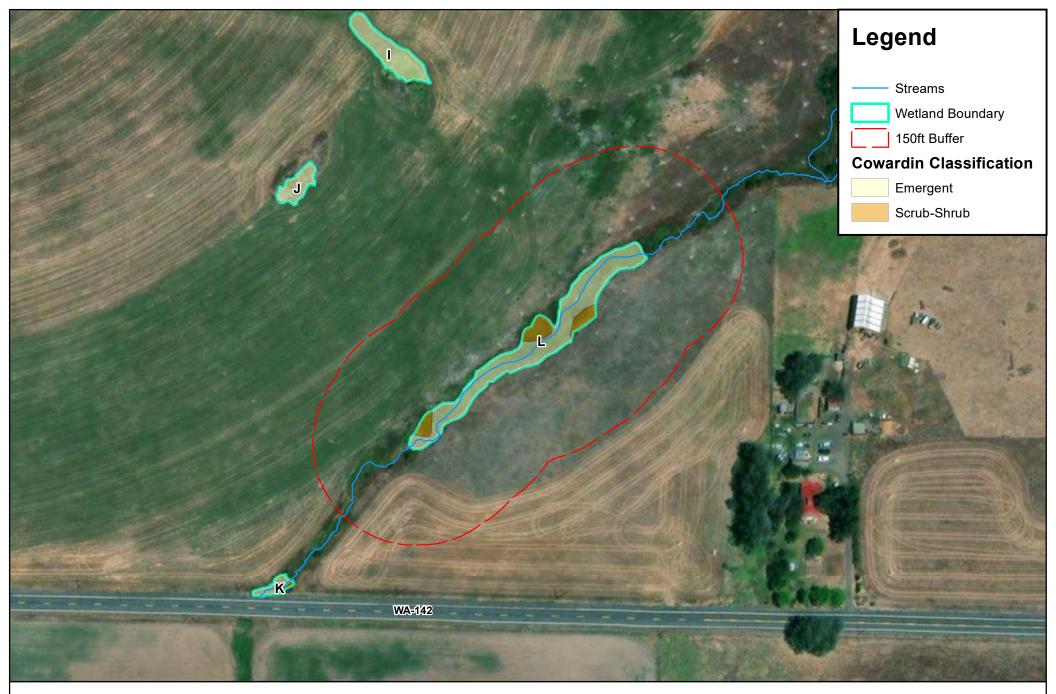
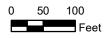


Figure 1. Wetland L Cowardin Classifications Carriger Solar, LLC | Wetland Ratings | August 2021

wsp



Ν

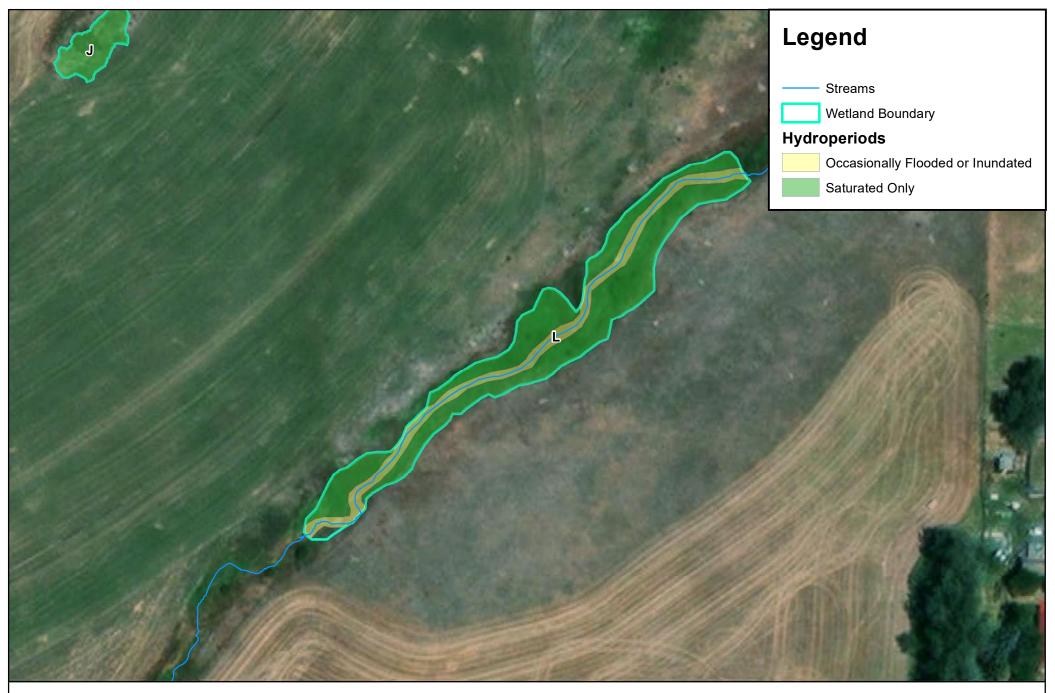


Figure 2. Wetland L Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021

0 50 100

usp

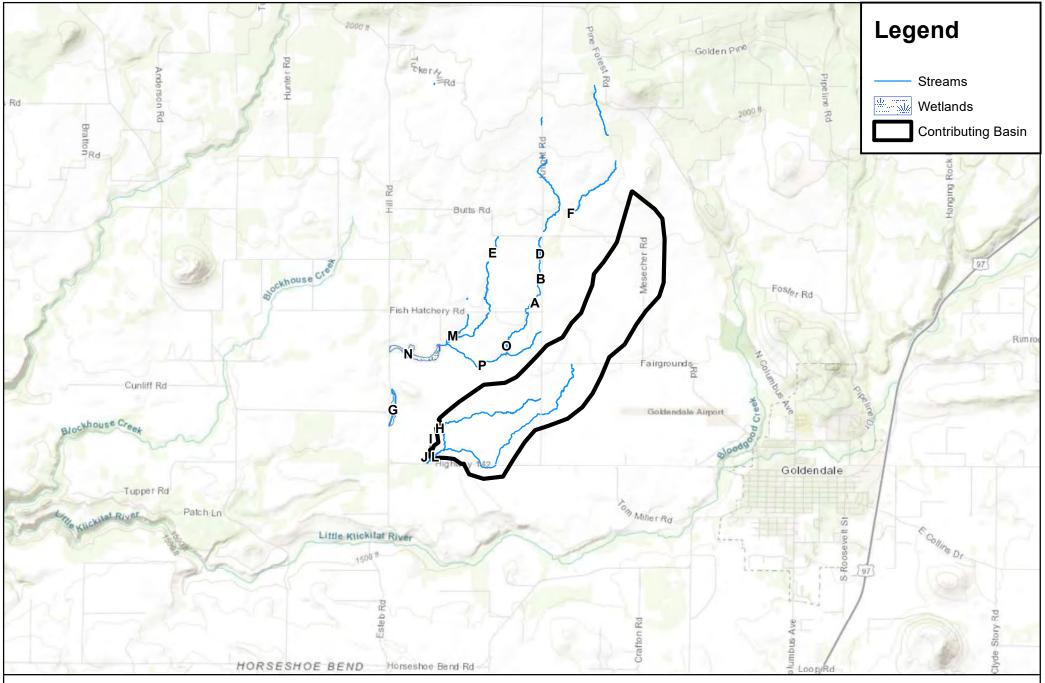


Figure 3. Wetland L Contributing Basin Carriger Solar, LLC | Wetland Ratings | August 2021

1151



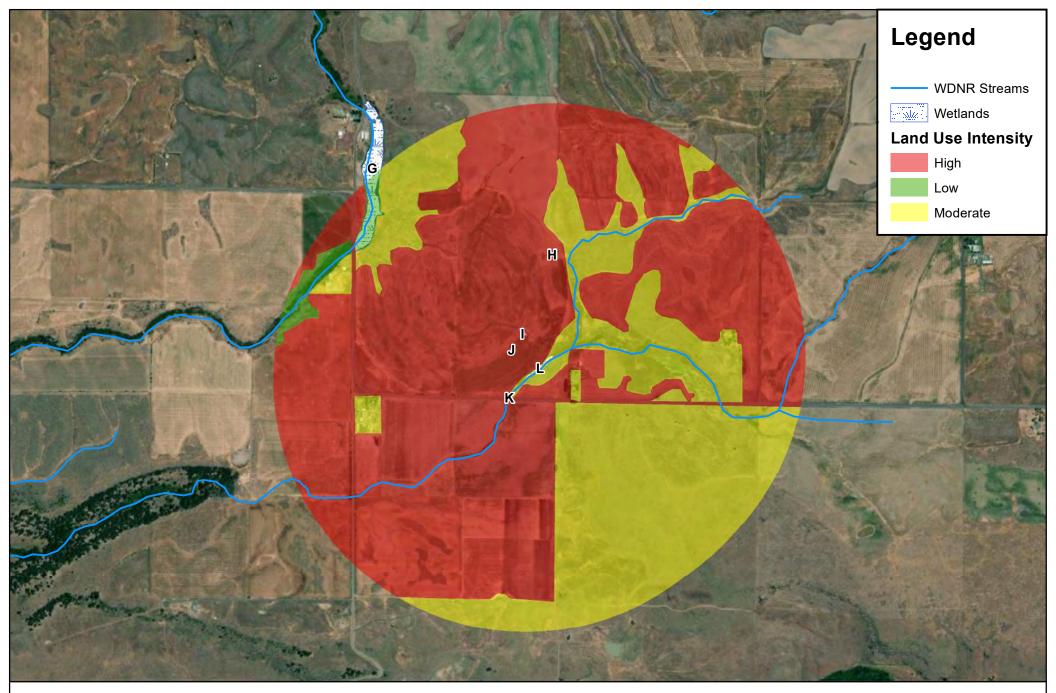


Figure 4. Wetland L Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021

0 0.25 0.5 Miles

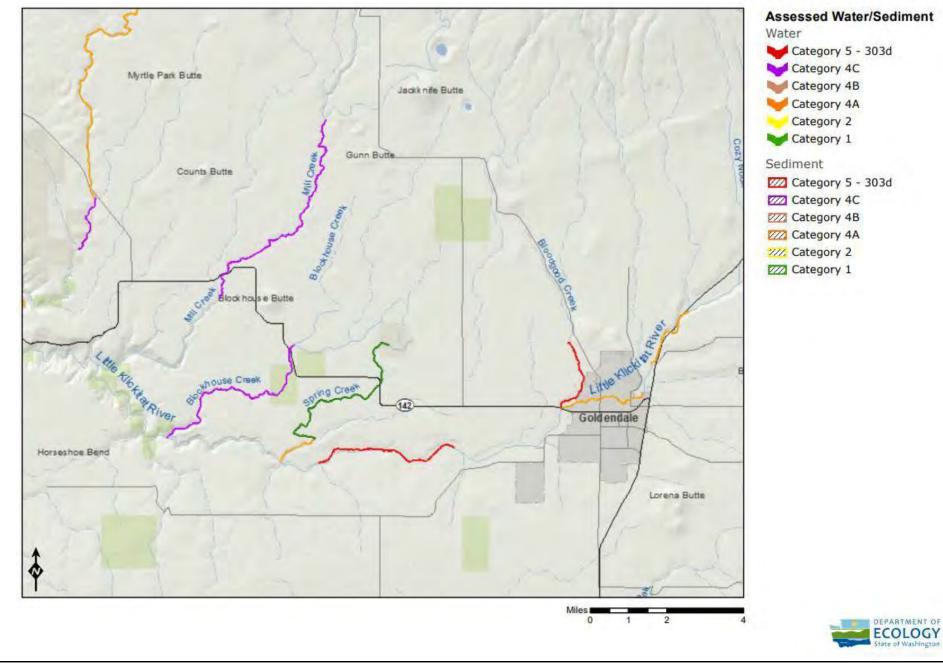


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30) Carriger Solar, LLC | Wetland Ratings | August 2021

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Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Little Klickitat River	BOD (5-day) Chlorine	EPA approved	Mark Peterschmidt 509-454-7843
Little Klickitat River Watershed	Temperature	EPA approved and Has an implementation plan	Mark Peterschmidt 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

usp

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):	Μ	_ Date of site visit: _	7/24/2021
Rated by Brandon Stimac and Bridget Wojtala	_ Trained by Ecology? X	Yes No Date c	of trainin <u>g Oct. 2</u> 020
HGM Class used for rating Depressiona	Wetland has mu	Itiple HGM classes?	<u>X</u> YN

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ______ESRI

OVERALL WETLAND CATEGORY Cat. III (based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 22-27

Category II – Total score = 19-21

X Category III – Total score = 16-18

Category IV – Total score = 9-15

FUNCTION		nprov ter Q	-	Н	ydrolo	gic		Habit	at	
			Circle	the a	ppropr	iate ra	atings	5		
Site Potential	Н	M	L	Н	M	L	Н	M	L	
Landscape Potential	Н	M	L	Н	M	L	Н	Μ	Ŀ	
Value	(H)	Μ	L	Н	M	L	Н	\mathbb{M}	L	ΤΟΤΑ
Score Based on Ratings		7			6			5		18

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H, M, M6 = H, M, L6 = M,M,M5 = H,L,L 5 = M, M, L4 = M, L, L3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	п ш
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	Ι
Old Growth or Mature Forest – slow growing	Ι
Aspen Forest	Ι
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	Х

Maps and figures required to answer questions correctly for Eastern Washington <u>Depressional Wetlands</u>

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	Н 1.1, Н 1.5	
Hydroperiods	Н 1.2, Н 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5.

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

Μ

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

 \bigcirc NO – go to 2

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 2. Does the entire wetland unit **meet all** of the following criteria?
 - ____The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
 - _____The water leaves the wetland **without being impounded**.

NO - go to 3

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that x stream or river;
 - X The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES – The wetland class is **Riverine**

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

NO – go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 **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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

	HGM classes within the wetland unit being rated	HGM Class to use in rating	
	Slope + Riverine	Riverine	
	Slope + Depressional	Depressional	
	Slope + Lake Fringe	Lake Fringe	
	Depressional + Riverine (the riverine portion is within	Depressional	$\overline{}$
	the boundary of depression)	Depressional	/
	Depressional + Lake Fringe	Depressional	
	Riverine + Lake Fringe	Riverine	

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

DEPRESSIONAL WETLANDS Water Quality Functions - Indicators that the site functions to improve water quality	Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?	507)
D 1.1. Characteristics of surface water outflows from the wetland: points = 5 Wetland has an intermittently flowing outlet points = 3 Wetland has a permanently flowing, unconstricted, surface outlet points = 1	3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils) YES = 3 $\sqrt[6]{O}$ = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for $> 2/3$ of area Wetland has persistent, ungrazed, vegetation from $1/3$ to $2/3$ of area Wetland has persistent, ungrazed vegetation from $1/3$ to $2/3$ of area Wetland has persistent, ungrazed vegetation from $1/10$ to $< 1/3$ of area Wetland has persistent, ungrazed vegetation $< 1/10$ of area points = 0	5 3
D 1.4. Characteristics of seasonal ponding or inundation: This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded. Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is ¼ - ½ total area of wetland Area seasonally ponded is < ¼ total area of wetland Points = 1 points = 0	, 1
Total for D 1Add the points in the boxes above	7
Rating of Site PotentialIf score is:12-16 = HX 6-11 = M0-5 = LRecord the rating on theD 2.0. Does the landscape have the potential to support the water quality function of the site?	ne first page
D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? (Yes = 1) to = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? $Yes = 1$ No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? SourceYes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2
Rating of Landscape Potential If score is: 3 or 4 = H X 1 or 2 = M 0 = L Record the rating on the control of the state valuable to control of the rating on the state valuable to control of the state valuable to control o	ie first page
D 3.0. Is the water quality improvement provided by the site valuable to society? D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)? (Yes = 2 No = 0	2

Total for D 3

Rating of Value If score is: X 2-4 = H 1 = M 0 = L

Record the rating on the first page

3

Add the points in the boxes above

Μ

DEPRESSIONAL WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.		Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland</u> : Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconstricted surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 8 points = 4 points = 0	4
 D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils 	points = 8	4
Total for D 4Add the points in the be	oxes above	8
<u>Rating of Site Potential</u> If score is: $12-16 = H \times 6-11 = M = 0-5 = L$ Record the	rating on th	he first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? $Yes = 1$ No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0	1
Total for D 5Add the points in the boxes above	2
Rating of Landscape Potential If score is: $3 = H \times 1$ or $2 = M = 0 = L$ Record the rating on t	he first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The wetland is in a landscape that has flooding problems.	
Choose the description that best matches conditions around the wetland being rated. Do not add points.	
Choose the highest score if more than one condition is met.	
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND	
Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2	
Surface flooding problems are in a sub-basin farther down-gradient points = 1	1
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	
Explain why points = 0	
There are no problems with flooding downstream of the wetland points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Total for D 6Add the points in the boxes above	1

<u>Rating of Value</u> If score is: $2-4 = H \times 1 = M = 0 = L$

Record the rating on the first page

М

These questions apply to wetlands of all HGM classes.	(only 1
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover X Scrub-shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover) C checks: points = 1 1 check: points = 0	2
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = $1 \sqrt{N0 = 0}$	0
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0	3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species <u>6</u> Scoring: > 9 species: points = 2 <u>4-9 species: points = 1</u> < 4 species: points = 0	1
H 1.5. Interspersion of habitats	Figure <u>1</u>
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points All three diagrams in this row are High = 3 points	1

Wetland name or number_____M

3
0
10

Rating of Site Potential If score is: $15-18 = H \times 7-14 = M = 0-6 = L$ Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:	
<i>Calculate:</i> % undisturbed habitat <u>3.7</u> + [(% moderate and low intensity land uses)/2] <u>12.7</u> = <u>16.4</u> %	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	
20-33% of 1km Polygon points = 2	1
10-19% of 1km Polygon Qoints = 1	I
<10% of 1km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.	
<i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>20.9</u> = <u>20.9</u> %	
Undisturbed habitat > 50% of Polygon points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2	1
Undisturbed habitat 10 - 50% and > 3 patches points = 1	I
Undisturbed habitat < 10% of Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon:	
	-2
Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by	
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of	0
reclamation areas, irrigation districts, or reservoirs Yes = $3 \sqrt{0} = 0$	
Total for H 2Add the points in the boxes above	0

Rating of Landscape Potential If score is: _____4-9 = H ____1-3 = M ____X < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score	
that applies to the wetland being rated	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
— It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	4
 It is mapped as a location for an individual WDFW species 	I
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	
Site does not meet any of the criteria above points = 0	

<u>Rating of Value</u> If score is: <u>2 = H X 1 = M</u> 0 = L *Record the rating on the first page*

Μ

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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater	
input.	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as	
basalt or clay. — Surface water is present for less than 120 days during the wet season.	
Yes – Go to SC 1.1 No = Not a vernal pool	6
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	F
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	\triangleright
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	
wetlands, rivers, lakes etc.)? Yes = Category IC No = Category III	Cat. II
	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria? — The wetland has a conductivity > 3.0 mS/cm.	
— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
 If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of 	
salt.	
OR does the wetland unit meet two of the following three sub-criteria?	
 — Salt encrustations around more than 75% of the edge of the wetland 	
— More than ¾ of the plant cover consists of species listed on Table 4	
— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands	Cat. I
may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	
Yes = Category No= Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3 SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
Yes = Category I No = Not a WHCV	Cat. I
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 3.4 No = Not a WHCV	
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category I No =Not a WHCV	ł

E.

SC 4.0 Bogs and Calcareous Fens		
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or		
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes		
you will still need to rate the wetland based on its functions.		
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or		
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to		
identify organic soils. Yes – Go to SC 4.3 $(NO - GO to SC 4.2)$	p	
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over		
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or		
pond? Yes – Go to SC 4.3 No = Is not a bog for rating		
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of		
the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4		
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion		
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0		
and the plant species in Table 5 are present, the wetland is a bog.		
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western		
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species		
(or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	Cat. I	
	Į	
Yes = Category I bog No – Go to SC 4.5		
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and		
mucks? Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6	,	
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,		
AND one of the two following conditions is met:		
 Marl deposits [calcium carbonate (CaCO₃) precipitate] occur on the soil surface or plant stems 	Cat. I	
— The pH of free water is \geq 6.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the		
wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen	>	

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present	
in question H 1.1)	
— The wetland is within the 100 year floodplain of a river or stream	
— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 < No = Not a forested wetland with special characteristics	\geq
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (<i>see Table 7</i>)? Yes = Category I No – Go to SC 5.2	>
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. II
cover) are fast growing species (<i>see Table 7</i>)? Yes = Category II No – Go to SC 5.4	1
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	Cat. II
Yes = Category No = Not a forested wetland with special characteristics	
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	N/A
If you answered No for all types, enter "Not Applicable" on Summary Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: *NOTE: This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- X **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- X **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.
- **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.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B

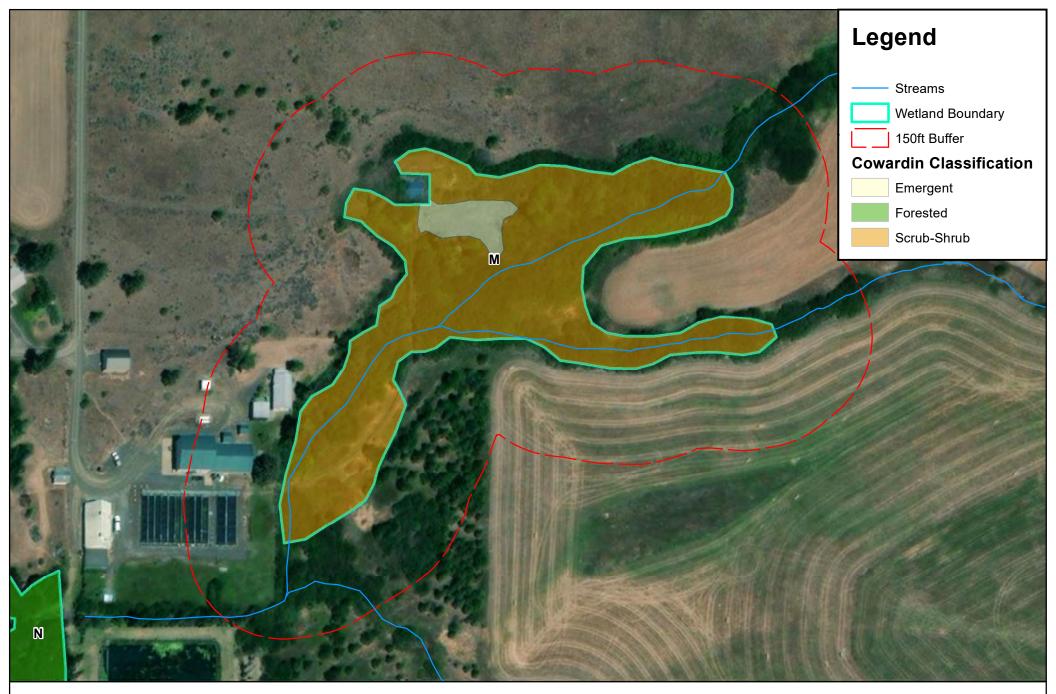


Figure 1. Wetland M Cowardin Classifications Carriger Solar, LLC | Wetland Ratings | August 2021





Figure 2. Wetland M Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021



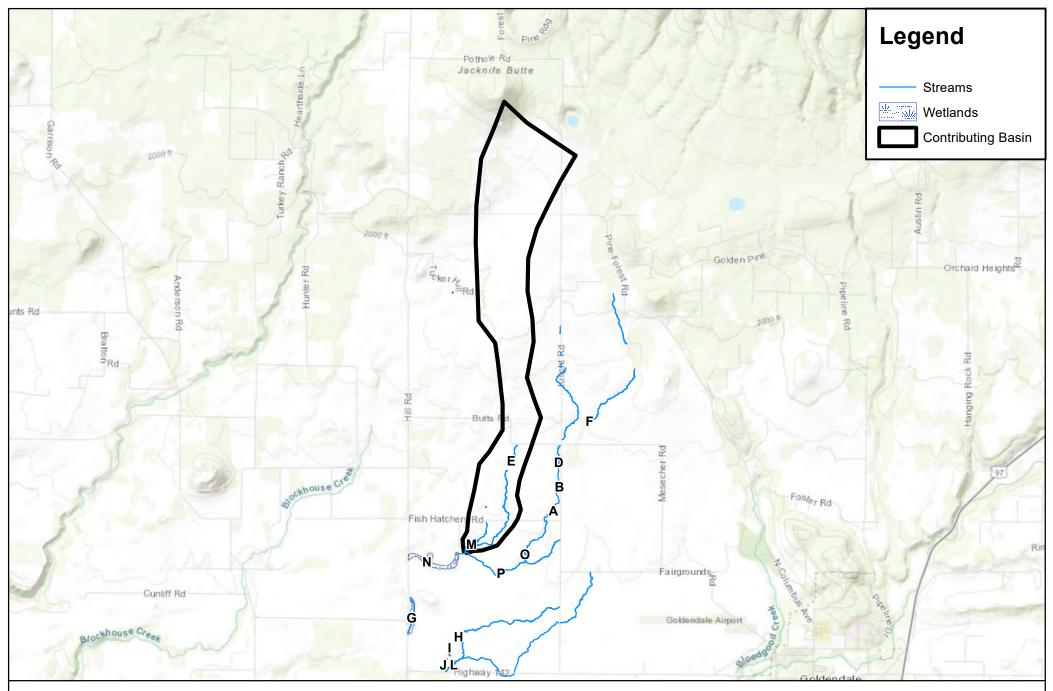


Figure 3. Wetland M Contributing Basin Carriger Solar, LLC | Wetland Ratings | August 2021



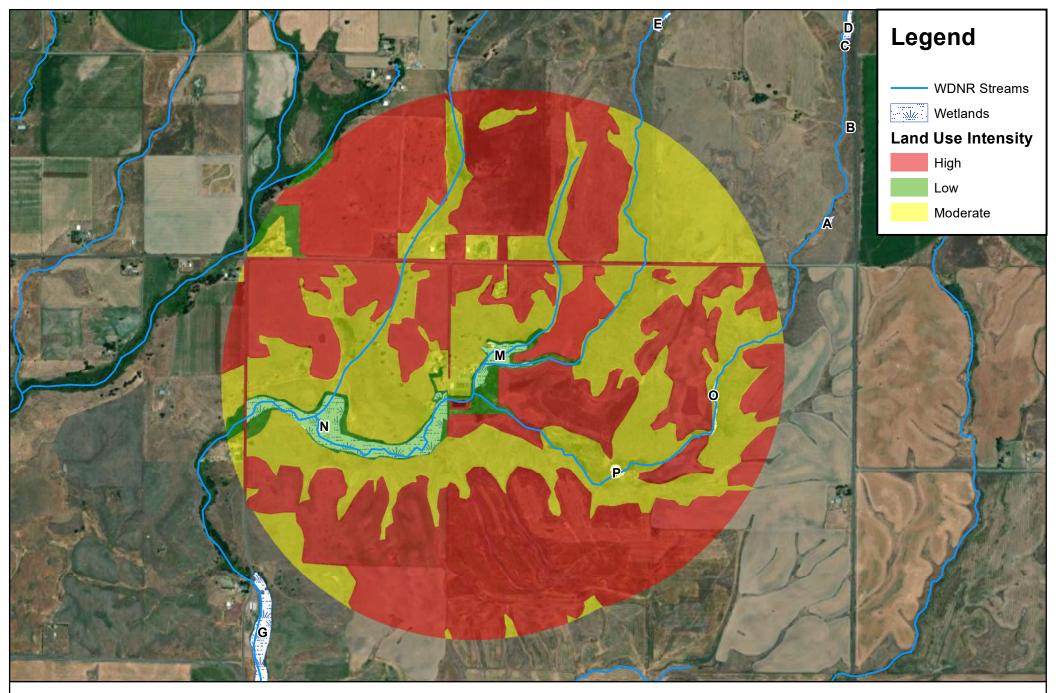


Figure 4. Wetland M Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021



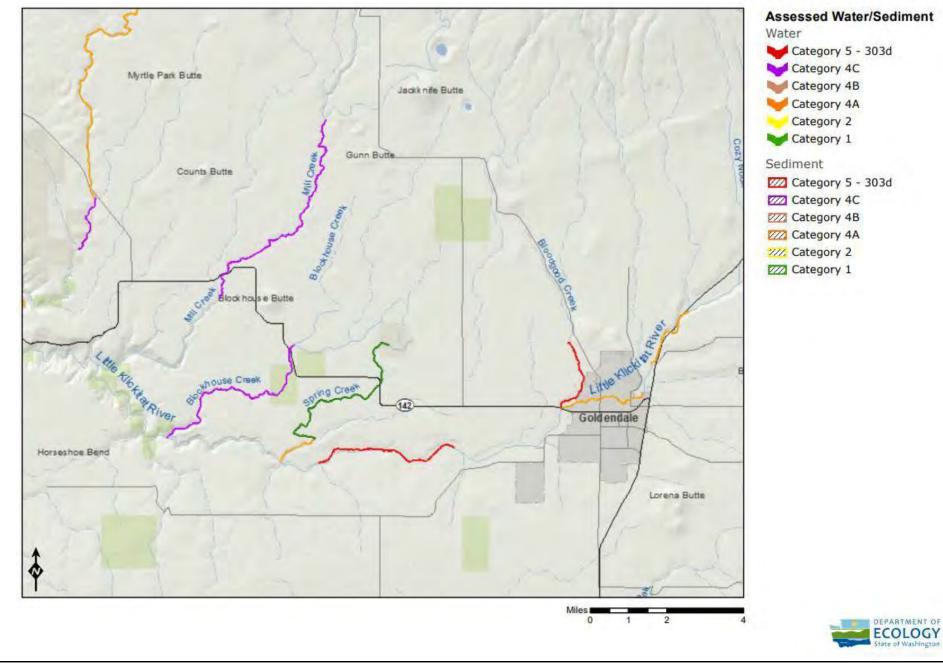


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30) Carriger Solar, LLC | Wetland Ratings | August 2021

usp



Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Little Klickitat River	BOD (5-day) Chlorine	EPA approved	Mark Peterschmidt 509-454-7843
Little Klickitat River Watershed	Temperature	EPA approved and Has an implementation plan	Mark Peterschmidt 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

usp



Figure 2. Wetland M Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021



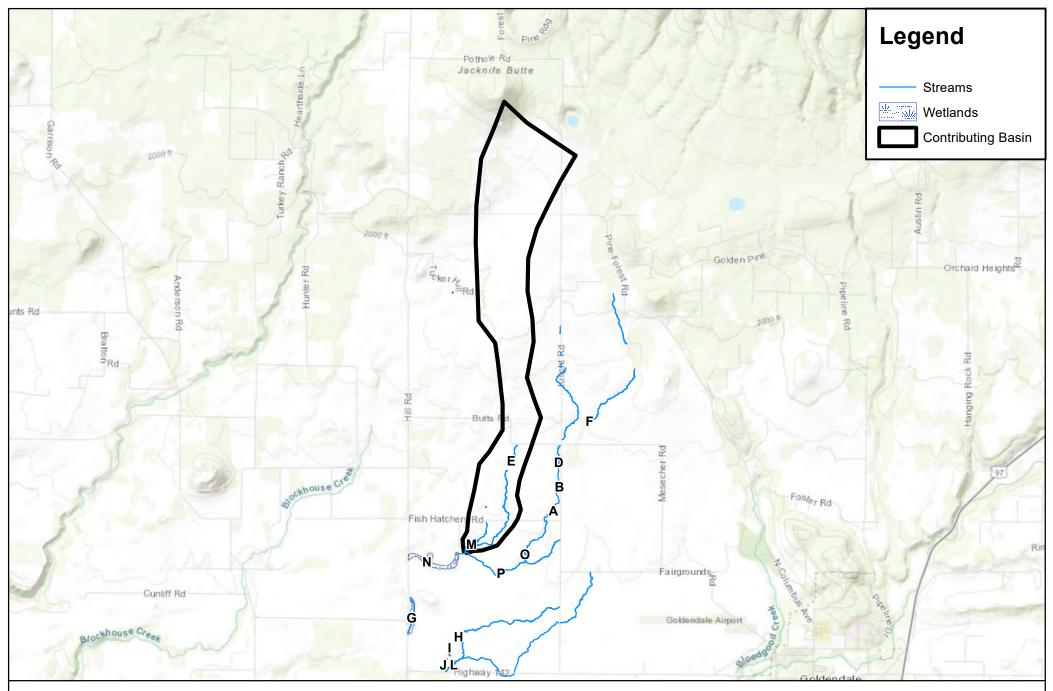


Figure 3. Wetland M Contributing Basin Carriger Solar, LLC | Wetland Ratings | August 2021



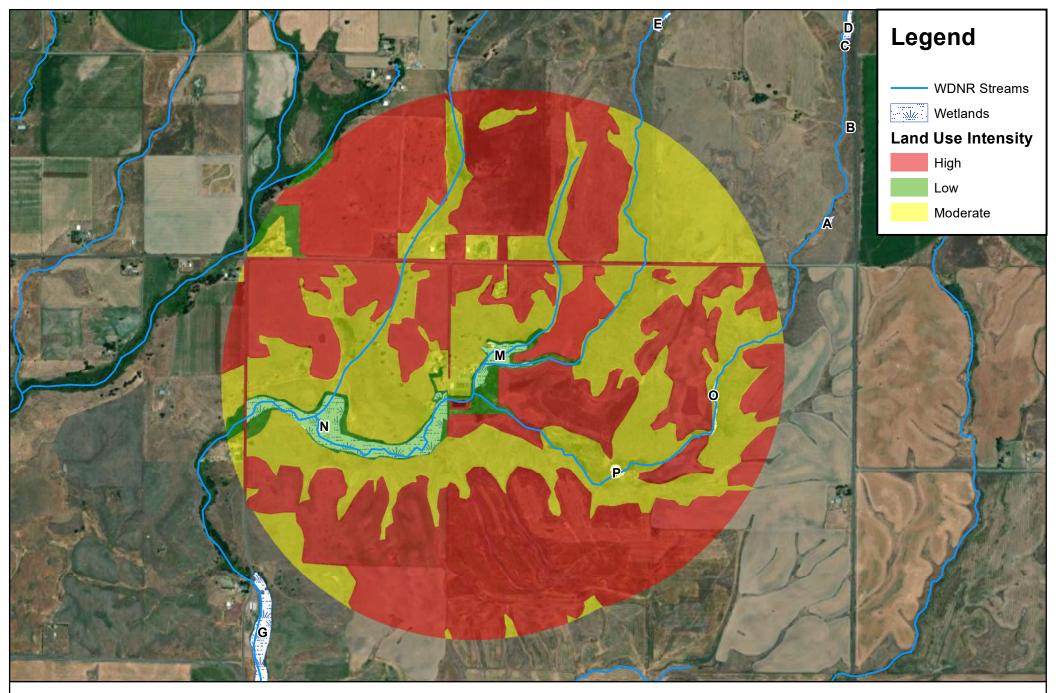


Figure 4. Wetland M Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021



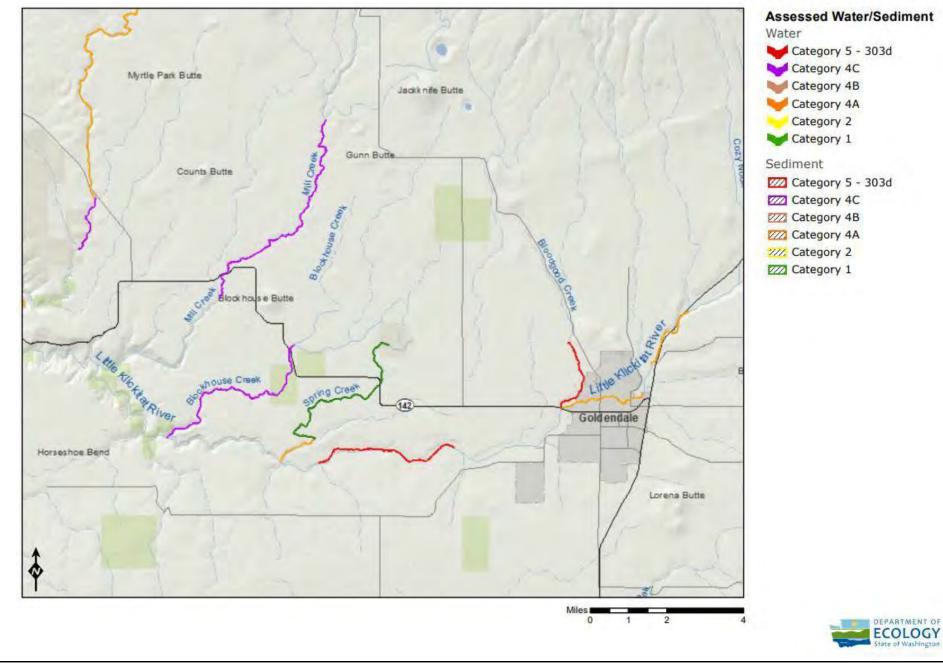


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Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):	0	_ Date of site visit:	7/24/2021
Rated by Brandon Stimac and Bridget Wojtala	Trained by Ecology?	Yes No Date	of trainin <u>g Oct. 2</u> 020
HGM Class used for rating Riverine	Wetland has mu	ultiple HGM classes	? Y X N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ______ESRI

OVERALL WETLAND CATEGORY Cat. III (based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 22-27

Category II – Total score = 19-21

X Category III – Total score = 16-18

___Category IV – Total score = 9-15

FUNCTION	Improving Water Quality		Ну	Hydrologic		Habitat				
			Circle	the a	opropi	riate r	atings	5		
Site Potential	Н	M	L	H	М	L	Н	M	L	
Landscape Potential	Н	M	L	Н	M	L	Н	M		
Value	Н	Μ	(H	Μ	L	Н	M	L	ΤΟΤΑ
Score Based on Ratings		5			8			5		18

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H,M,M6 = H, M, L6 = M,M,M5 = H,L,L 5 = M, M, L4 = M, L, L3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	п ш
Alkali	Ι
Wetland of High Conservation Value	Ι
Bog and Calcareous Fens	Ι
Old Growth or Mature Forest – slow growing	Ι
Aspen Forest	Ι
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	Х

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H 1.2, H 1.3	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1-2
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	6

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	Н 1.1, Н 1.5	
Hydroperiods	Н 1.2, Н 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5.

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

Ο

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

 \bigcirc NO – go to 2

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 2. Does the entire wetland unit **meet all** of the following criteria?
 - _____The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
 - _____The water leaves the wetland **without being impounded**.

NO - go to 3

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
 - X The overbank flooding occurs at least once every 10 years.

(NO - go to 4)

YES – The wetland class is **Riverine**

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

NO - go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 **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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within	Depressional
the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

<u>RIVERINE WETLANDS</u> Water Quality Functions - Indicators that the site functions to improve water quality	Points (only 1 score per box)
R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:Depressions cover > $^{1}/_{3}$ area of wetlandDepressions cover > $^{1}/_{10}$ area of wetlandDepressions present but cover < $^{1}/_{10}$ area of wetlandNo depressions present	0
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; not Cowardin classes):	
Forest or shrub > $^2/_3$ the area of the wetlandpoints = 10Forest or shrub $^1/_3 - ^2/_3$ area of the wetlandpoints = 5Ungrazed, herbaceous plants > $^2/_3$ area of wetlandpoints = 5Ungrazed herbaceous plants > $^2/_3$ area of wetlandpoints = 5Ungrazed herbaceous plants > $^2/_3$ area of wetlandpoints = 2Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetlandpoints = 0	10
Total for R 1Add the points in the boxes above	10
g of Site Potential If score is: 12-16 = H X 6-11 = M 0-5 = L Record the rating on the first page	

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 $(N_0 = 0)$	0
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = $1 \sqrt{N} = 0$	0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants $(Yes = 1)$ No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? SourceYes = 1 (No = 0)	0
Total for R 2Add the points in the boxes above	2
ting of Landscape Potential If score is: 3-6 = H X 1 or 2 = M 0 = L Record the rating on the first	

R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?0Yes = 1 No = 00R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?Yes = 1 No = 00		R 3.0. Is the water quality improvement provided by the site valuable to society?
Yes = 1 (No = 0) 0		R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = $1 \sqrt{N} = 0$ 0	0	
	> 0	R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = $1 \text{ No} = 0$
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the drainage in which wetland is found. Yes = 2 No = 0		
Total for R 3Add the points in the boxes above0	0	Total for R 3Add the points in the boxes above

Rating of Value If score is: 2-4 = H 1 = M X 0 = L

Record the rating on the first page

<u>RIVERINE WETLANDS</u> Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
R 4.0. Does the site have the potential to reduce flooding and erosion?	
R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks). If the ratio is more than 2 If the ratio is ½-<1 If the ratio is ½-<1 If the ratio is ½-<1 If the ratio is ½-<½ If the ratio is <½	10
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have > 90% cover at person height. These are NOT Cowardin classes).</i> Forest or shrub for more than ² / ₃ the area of the wetland Forest or shrub for > ¹ / ₃ area OR emergent plants > ² / ₃ area Forest or shrub for > ¹ / ₁₀ area OR emergent plants > ¹ / ₃ area Plants do not meet above criteria Forest or Shrub for > ¹ / ₁₀ area DR emergent plants > ¹ / ₃ area Plants do not meet above criteria Forest or Shrub for D 5	6
Total for R 5Add the points in the boxes above	16

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?			
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	1	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 (No = 0)	0	
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 (No = 1)	1	
Total for R 5	Add the points in the boxes above	2	
Rating of Landscape Potential If score is: $3 = H \times 1$ or $2 = M = 0 = L$ Record the rating on t		he first page	

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site.	
The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resourcesSurface flooding problems are in a basin farther down-gradientpoints = 2 points = 1 points = 0No flooding problems anywhere downstreampoints = 0	2
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	
Total for R 6Add the points in the boxes above	2
Rating of Value If score is: X 2-4 = H 1 = M 0 = L Record the rating on t	he first page

0

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat H 1.0. Does the wetland have the potential to provide habitat for many species? H 1.1. Structure of the plant community:	score per box)
	JON
- 1 1 Structure of the plant community:	
Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed	
X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover	1
X Scrub-shrub (areas where shrubs have >30% cover) 4 or more checks: points = 3 Forested (areas where trees have >30% cover) 3 checks: points = 2 2 2 checks: points = 1 1 check: points = 0	
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	0
1 1.3. <u>Surface water</u>	
 H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. 	3
 1.4. <u>Richness of plant species</u> 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 saltcedar (Tamarisk) # of species 8 Scoring: > 9 species: points = 2 4-9 species: points = 0 	1
H 1.5. Interspersion of habitats	Figure 1
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points All three diagrams in this row are High = 3 points) 2

Wetland name or number____O

H 1.6. Special habitat features		
Check the habitat features that are present in the wetland. The number of checks is the number of points.		
Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface		
ponding or in stream.		
Cattails or bulrushes are present within the wetland.		
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.		
Emergent or shrub vegetation in areas that are permanently inundated/ponded.		
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree	•	
slope) OR signs of recent beaver activity		
X Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs,		
herbaceous, moss/ground cover)		
Total for H 1Add the points in the boxes above	8	

Rating of Site Potential If score is: **15-18 = H** χ **7-14 = M 0-6 = L** Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:	
Calculate: % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 7.5 = 7.5 %	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	
20-33% of 1km Polygon points = 2	0
10-19% of 1km Polygon points = 1	0
<10% of 1km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] <u>18.1</u> = <u>18.1</u> %	
Undisturbed habitat > 50% of Polygon points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2	1
Undisturbed habitat 10 - 50% and > 3 patches Quints = 1	I
Undisturbed habitat < 10% of Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon:	
∑50% of Polygon is high intensity land use points = (-2)	-2
Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, 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 districts, or reservoirs</i> Hatchery is upstream Yes = 3 No = 0	0
Total for H 2 Add the points in the boxes above	-1
$\frac{1}{2}$	8

<u>Rating of Landscape Potential</u> If score is: 4-9 = H 1-3 = M X < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score	
that applies to the wetland being rated	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
— It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	1
 It is mapped as a location for an individual WDFW species 	1
 It is a Wetland of High Conservation Value as determined by the Department of Natural Resources 	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	
Site does not meet any of the criteria above points = 0	
	4

<u>Rating of Value</u> If score is: $2 = H \times 1 = M = 0 = L$ Record the rating on the first page

0

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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater	
input.	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.	
 — Surface water is present for less than 120 days during the wet season. 	
Yes – Go to SC 1.1 No = Not a vernal pool	\triangleright
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	\triangleright
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	
wetlands, rivers, lakes etc.)? Yes = Category IK No = Category III	Cat. II
	Cat. III
CC 2.0. Alkeli wetlende	
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria? — The wetland has a conductivity > 3.0 mS/cm.	
— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	
— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of	
salt.	
OR does the wetland unit meet two of the following three sub-criteria?	
— Salt encrustations around more than 75% of the edge of the wetland	
— More than ¾ of the plant cover consists of species listed on Table 4	
— 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.	Cat. I
Yes = Category K No= Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3 SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	1
Yes = Category I No = Not a WHCV	Cat. I
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 3.4 (No = Not a WHCV)	
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category I No =Not a WHCV	1

SC 4.0 Bogs and Calcareous Fens	
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or	
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the wetland based on its functions.	
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic soils. Yes – Go to SC 4.3 No – Go to SC 4.2	b
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over	
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 4.3 No = Is not a bog for rating	>
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of	-
the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion	
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western	
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species	
(or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	Cat. I
Yes = Category I bog No - Go to SC 4.5	
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and	
mucks? $Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6$	
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,	
AND one of the two following conditions is met:	
	Cat. I
— Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	Cal. I
— The pH of free water is \geq 6.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the	
wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen	ノ

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present	
in question H 1.1)	
— The wetland is within the 100 year floodplain of a river or stream	
— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 < No = Not a forested wetland with special characteristics	>
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (<i>see Table 7</i>)? Yes = Category I No – Go to SC 5.2	
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. II
cover) are fast growing species (<i>see Table 7</i>)? Yes = Category II No – Go to SC 5.4	
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	
Yes = Category No = Not a forested wetland with special characteristics	Cat. II
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	N/A
If you answered No for all types, enter "Not Applicable" on Summary Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: *NOTE: This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest –</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests –</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- X **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- X 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.
- **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.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B



Figure 1. Wetland O Cowardin Classifications Carriger Solar, LLC | Wetland Ratings | August 2021

wsp



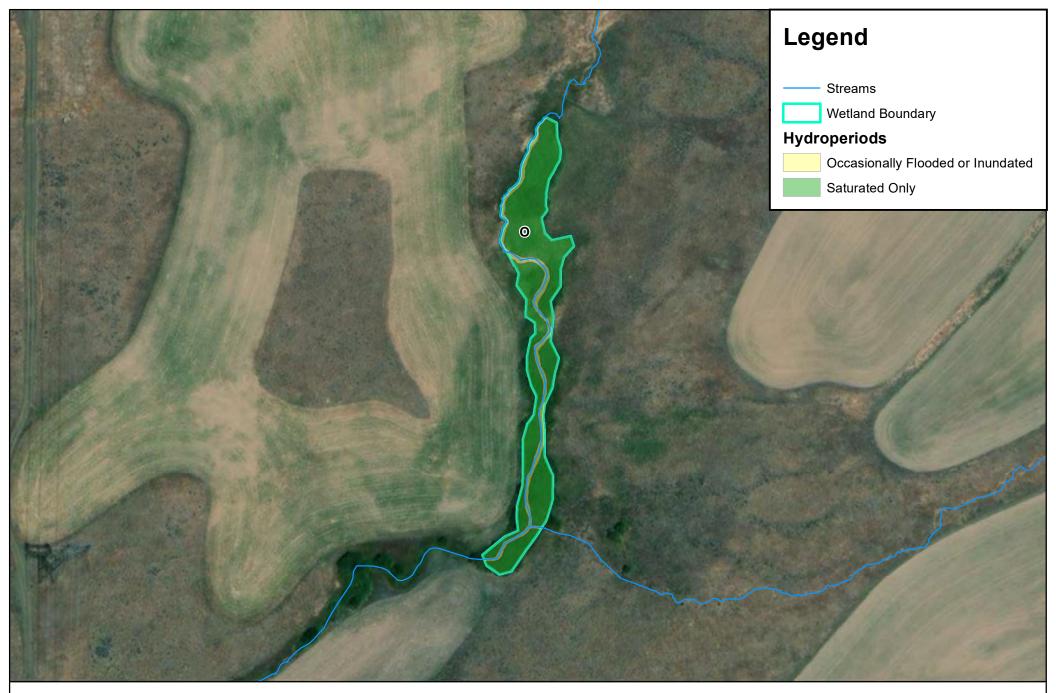


Figure 2. Wetland O Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021





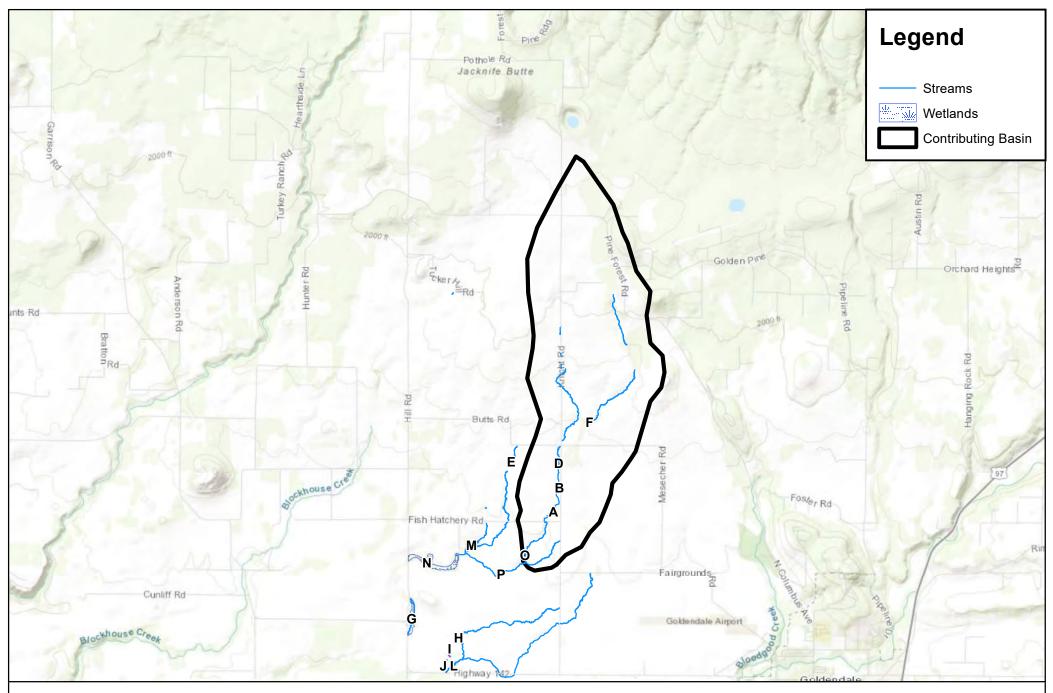


Figure 3. Wetland O Contributing Basin Carriger Solar, LLC | Wetland Ratings | August 2021

wsp



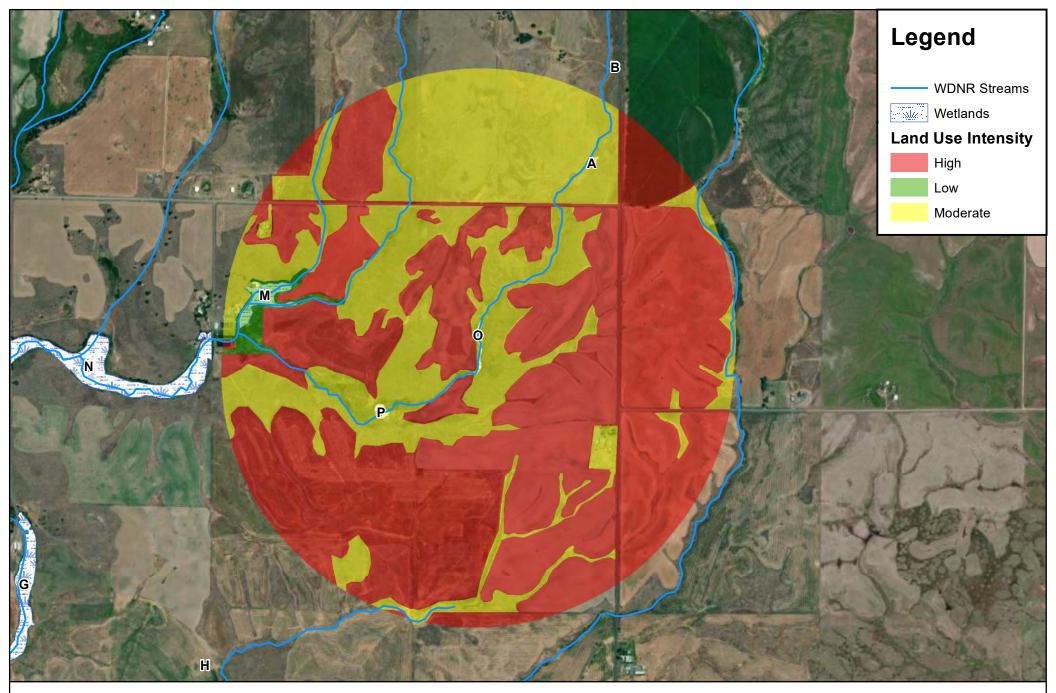


Figure 4. Wetland O Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021



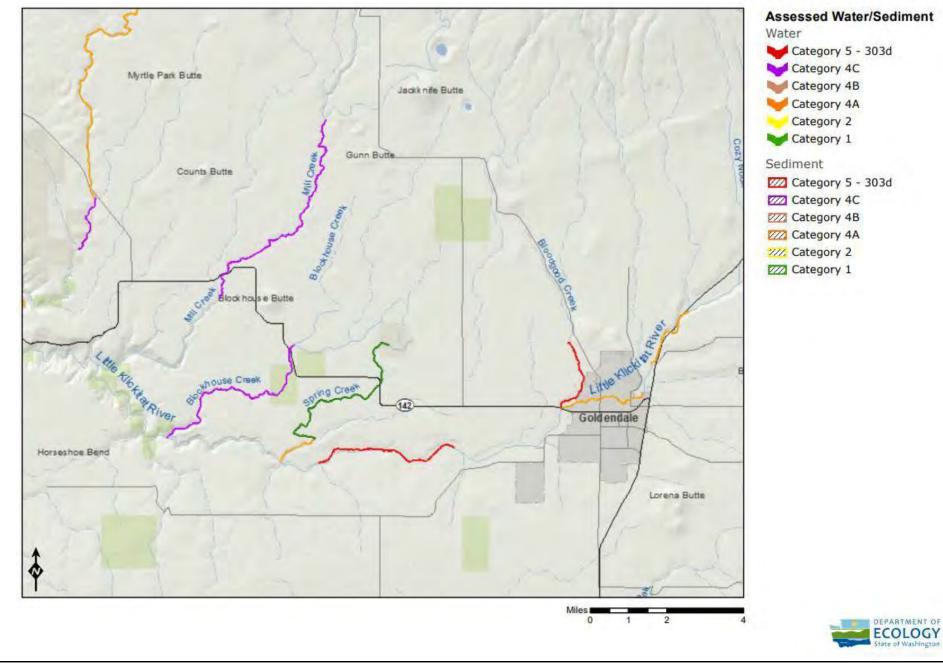


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30) Carriger Solar, LLC | Wetland Ratings | August 2021



Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Little Klickitat River	BOD (5-day) Chlorine	EPA approved	Mark Peterschmidt 509-454-7843
Little Klickitat River Watershed	Temperature	EPA approved and Has an implementation plan	Mark Peterschmidt 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):	Р	Date of site visit: 7/24/2021	
Rated by Brandon Stimac and Bridget Wojtala	_ Trained by Ecology? <u>X</u>	Yes No Date of training Oct.	<u>2</u> 020
HGM Class used for rating Depressional	Wetland has mul	tiple HGM classes?Y <u>X</u> N	

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map ______ESRI

OVERALL WETLAND CATEGORY Cat. III (based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

____Category I – Total score = 22-27

Category II – Total score = 19-21

X Category III – Total score = 16-18

____Category IV – Total score = 9-15

FUNCTION		nprov ter Qı	-	H	ydrolo	ogic		Habita	ət	
		Circle the appropriate ratings								
Site Potential	Н	M	L	Н	М		Н	M	L	
Landscape Potential	Н	\mathbb{M}	L	Н	M	L	Н	М	Ŀ	
Value	(H)	Μ	L	н	М		Н	\mathbb{M}	L	ΤΟΤΑ
Score Based on Ratings		7			4			5		16

Score for each function based on three ratings (order of ratings ìs not *important*) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H, M, M6 = H, M, L6 = M,M,M5 = H,L,L 5 = M, M, L4 = M, L, L3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	II III
Alkali	Ι
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	Ι
Aspen Forest	Ι
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	Х

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	Н 1.1, Н 1.5	
Hydroperiods	Н 1.2, Н 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	Н 1.1, Н 1.5	
Hydroperiods	Н 1.2, Н 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

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 1-4 apply, and go to Question 5.

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

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)

 \bigcirc NO – go to 2

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 2. Does the entire wetland unit **meet all** of the following criteria?
 - ____The wetland is on a slope (*slope can be very gradual*),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
 - _____The water leaves the wetland **without being impounded**.

NO - go to 3

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 foot deep).

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - ____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
 - ____ The overbank flooding occurs at least once every 10 years.

 $\sqrt{N0}$ - go to 4

YES – The wetland class is **Riverine**

NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

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

NO – go to 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 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 the wetland unit being scored.

Wetland Rating System for Eastern WA: 2014 Update Rating Form – Effective January 1, 2015 **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 HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within	Depressional
the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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

Water Quality Functions - Indicators that the site functions to improve water quality (only 1 score per box) D 1.0. Does the site have the potential to improve water quality? 0 D 1.1. Characteristics of surface water outflows from the wetland: Wetland has an intermittently flowing outflet. points = 3 wetland has a permanently flowing. unconstricted, surface outflet. points = 3 wetland has persistent. 0 D 1.3. Characteristics of cersistent vegetation for > ⁷ /s of area Wetland has persistent. points = 5 wetland has persistent. 0 Wetland has persistent. ungrazed vegetation for > ⁷ /s of area Wetland has persistent. points = 1 wetland has persistent. 0 D 1.4. Characteristics of second ponding or inmodation: This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded. 0 Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is < ½ total area of wetland Area seasonally ponded is < ½ total area of wetland Area seasonally ponded is < ½ total area of wetland? 0 1 D 2.1. Does the wetland receive stormwater discharges? Yes = 1 (No =) 0 1 D 2.2. Does the landscape have the potential to support the water quality function of the site? 0	DEPRESSIONAL WETLANDS	Points
D 1.1. Characteristics of surface water outflows from the wetland: points = 5 Wetland has an interre water outflet points = 5 Wetland has an interretently flowing outlet points = 3 Wetland has an interretently flowing outlet points = 1 D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils) 0 D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) vets = 3 0 Wetland has persistent, ungrazed, vegetation for > ² / ₁ of area points = 5 0 Wetland has persistent, ungrazed, vegetation for > ¹ / ₁ to < ¹ / ₁ of area points = 0 0 Netland has persistent, ungrazed vegetation for > ¹ / ₁ to < ¹ / ₁ of area points = 0 0 Netland has persistent, ungrazed vegetation for > ¹ / ₁ to < ¹ / ₁ of area points = 0 0 Area seasonally ponded is > ½ total area of wetland points = 1 0 Area seasonally ponded is > ½ total area of wetland points = 1 0 Area seasonally ponded is < ½ total area of wetland	Water Quality Functions - Indicators that the site functions to improve water quality	score per
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Wetland has persistent, ungrazed vegetation < 1/10 of area		1
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This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded. 0 Area seasonally ponded is >% total area of wetland points = 1 Area seasonally ponded is <% -% total area of wetland		
Area seasonally ponded is $\frac{1}{4}$ total area of wetlandpoints = 1Area seasonally ponded is < $\frac{1}{4}$ total area of wetlandpoints = 0Total for D 1Add the points in the boxes above6Rating of Site PotentialIf score is:12-16 = HX6-11 = MO-5 = LRecord the rating on the first pageD 2.0. Does the landscape have the potential to support the water quality function of the site?0D 2.1. Does the wetland receive stormwater discharges?Yes = 1 No = 00D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?Yes = 1 No = 01D 2.3. Are there septic systems within 250 ft of the wetland?Yes = 1 No = 000D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? SourceYes = 1 No = 000D 3.0. Is the water quality improvement provided by the site valuable to society?00D 3.0. Is the water quality improvement provided by the site valuable to society?00D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?0D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?2		
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D 3.0. Is the water quality improvement provided by the site valuable to society? D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? 0 Yes = 1 No = 0 0 D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]? 0 D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)? 1	Rating of Landscape Potential If score is: 3 or 4 = H X 1 or 2 = M 0 = L Record the rating on t.	he first page
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Yes = 1 No = 0 P 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]? 1 D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)? 2	D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]? 1 D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)? 1		0
eutrophic lakes, problems with nuisance and toxic algae]?Yes = 1 No = 01D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?2		+
if there is a TMDL for the drainage or basin in which the wetland is found)? $Yes = 2$ No = 0 2		1
		2
	Total for D 3 Add the points in the boxes above	3

 Rating of Value
 If score is: X 2-4 = H
 1 = M
 0 = L

Record the rating on the first page

Ρ

DEPRESSIONAL WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.		Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?		
Wetland has an intermittently flowing outlet G Wetland has a highly constricted permanently flowing outlet G	points = 8 points = 4 points = 4 points = 0	4
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft	points = 8	0
Total for D 4Add the points in the box	xes above	4
Rating of Site Potential If score is: 12-16 = H 6-11 = M X 0-5 = L Record the r	ating on th	he first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? (Yes = 1) No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0	
Total for D 5Add the points in the boxes above	2
Rating of Landscape Potential If score is: 3 = H X 1 or 2 = M 0 = L Record the rating on a	the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
 D 6.1. <u>The wetland is in a landscape that has flooding problems</u>. Choose the description that best matches conditions around the wetland being rated. <i>Do not add points</i>. <i>Choose the highest score if more than one condition is met</i>. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND 	
Flooding occurs in sub-basin that is immediately down-gradient of wetlandpoints = 2Surface flooding problems are in a sub-basin farther down-gradientpoints = 1	0
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	
Explain whyThe wetland stores very little water in the watershed.points = 0There are no problems with flooding downstream of the wetlandpoints = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Total for D 6Add the points in the boxes above	0

Rating of Value If score is: 2-4 = H 1 = M $X_0 = L$

These questions apply to wetlands of all HGM classes.	(only 1
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.	1
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	1
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Ves = 3 No = 0	> 3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species <u>7</u> Scoring: > 9 species: points = 2 <u>4-9 species: points = 1</u> < 4 species: points = 0	1
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points All three diagrams in this row are High = 3 points	Figure <u>1</u>
Riparian braided channels with 2 classes	

Wetland name or number P

H 1.6. <u>Special habitat features</u>	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface	
ponding or in stream.	
Cattails or bulrushes are present within the wetland.	
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.	
Emergent or shrub vegetation in areas that are permanently inundated/ponded.	1
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 (canopy, sub-canopy, shrubs,	
herbaceous, moss/ground cover)	
Total for H 1Add the points in the boxes above	7
$\mathbf{P}_{\mathbf{r}} = \mathbf{P}_{\mathbf{r}} $	

Rating of Site Potential If score is: **15-18 = H** X **7-14 = M 0-6 = L** Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:	
<i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>7.5</u> = <u>7.5</u> %	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	
20-33% of 1km Polygon points = 2	0
10-19% of 1km Polygon points = 1	0
<10% of 1km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.	
<i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>18.1</u> = <u>18.1</u> %	
Undisturbed habitat > 50% of Polygon points = 3	
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2	1
Undisturbed habitat 10 - 50% and > 3 patches points = 1	I
Undisturbed habitat < 10% of Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon:	
	2
Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by	
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of	0
reclamation areas, irrigation districts, or reservoirs Yes = $3 \sqrt{N} = 0$	Ĵ
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: _____4-9 = H ____1-3 = M ____X < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score	
that applies to the wetland being rated	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see Appendix B) 	
— It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	4
 It is mapped as a location for an individual WDFW species 	I
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats within 100 m (see Appendix B)	
Site does not meet any of the criteria above points = 0	

<u>Rating of Value</u> If score is: 2 = H $X_1 = M$ 0 = L Record the rating on the first page

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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 wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft² , and does it meet at least two of the following criteria?	
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwate	
input.	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.	
 Surface water is present for less than 120 days during the wet season. 	
Yes – Go to SC 1.1 No = Not a vernal poo	\rightarrow
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristic	\rightarrow
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other	
wetlands, rivers, lakes etc.)? Yes = Category IK No = Category IK	Cat. II
	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
 The wetland has a conductivity > 3.0 mS/cm. The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the 	
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	:
— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer	of
salt.	51
OR does the wetland unit meet two of the following three sub-criteria?	
— Salt encrustations around more than 75% of the edge of the wetland	
— More than ¾ of the plant cover consists of species listed on Table 4	
— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands	a
may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I
Yes = Category KNo= Not an alkali wetland	2
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of Hig	
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3	\geq
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	Cat. I
Yes = Category I No = Not a WHC	
SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 3.4 (No = Not a WHC)	
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
the second s	

SC 4.0 Bogs and Calcareous Fens	
Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or	
calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the wetland based on its functions.	
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic soils. Yes – Go to SC 4.3 No – Go to SC 4.2	>
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over	
bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 4.3 No = Is not a bog for rating	>
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of	
the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion	
by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western	
hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species	Cat. I
(or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?	Cal. I
Yes = Category I bog No – Go to SC 4.5	
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and	
mucks? Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6	
SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,	
AND one of the two following conditions is met:	
— Marl deposits [calcium carbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems	Cat. I
— The pH of free water is \geq 6.8 AND electrical conductivity is \geq 200 uS/cm at multiple locations within the	
wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen	>

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of	
the following three criteria? (Continue only if you have identified that a forested class is present	
in question H 1.1)	
— The wetland is within the 100 year floodplain of a river or stream	
— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or	
"old-growth" according to the definitions for these priority habitats developed by WDFW	
(see definitions in question H3.1)	
Yes – Go to SC 5.1 < No = Not a forested wetland with special characteristics	\supset
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow	Cat. I
growing native trees (see Table 7)? Yes = Category I No – Go to SC 5.2	}
SC 5.2. Does the wetland have areas where aspen (Populus tremuloides) represents at least 20% of the total cover	Cat. I
of woody species? Yes = Category No – Go to SC 5.3	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by	Cat. II
cover) are fast growing species (<i>see Table 7</i>)? Yes = Category II No – Go to SC 5.4	}
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?	Cat. II
Yes = Category No = Not a forested wetland with special characteristics	
Category of wetland based on Special Characteristics	
Choose the highest rating if wetland falls into several categories	N/A
If you answered No for all types, enter "Not Applicable" on Summary Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u> or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: *NOTE: This question is independent of the land use between the wetland and the priority habitat.*

- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Old-growth/Mature forests: <u>Old-growth east of Cascade crest</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- X **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- X **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.
- **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.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **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).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B

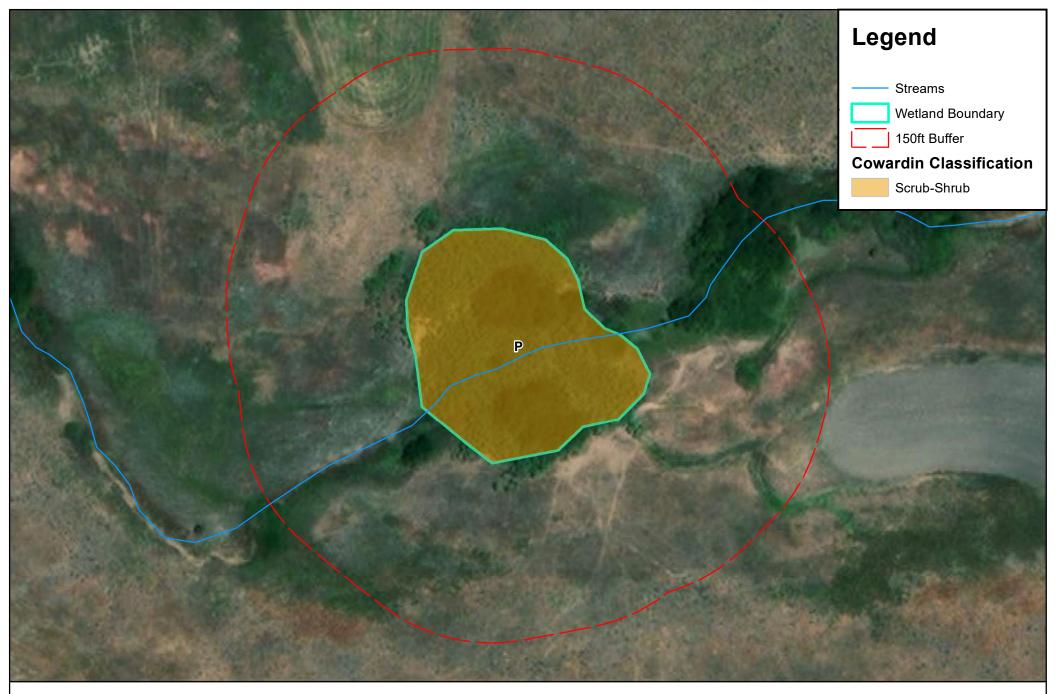


Figure 1. Wetland P Cowardin Classifications Carriger Solar, LLC | Wetland Ratings | August 2021





Figure 2. Wetland P Hydroperiods Carriger Solar, LLC | Wetland Ratings | August 2021

115

0 50 100

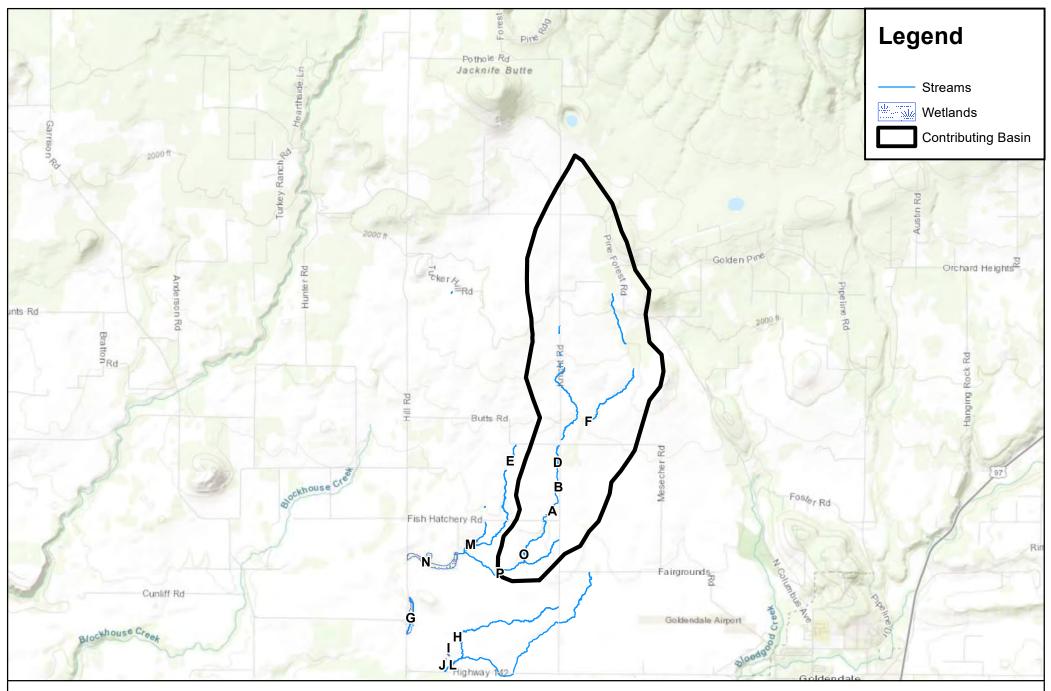


Figure 3. Wetland P Contributing Basin Carriger Solar, LLC | Wetland Ratings | August 2021

0 0.5 1 1.5 2 Miles

wsp

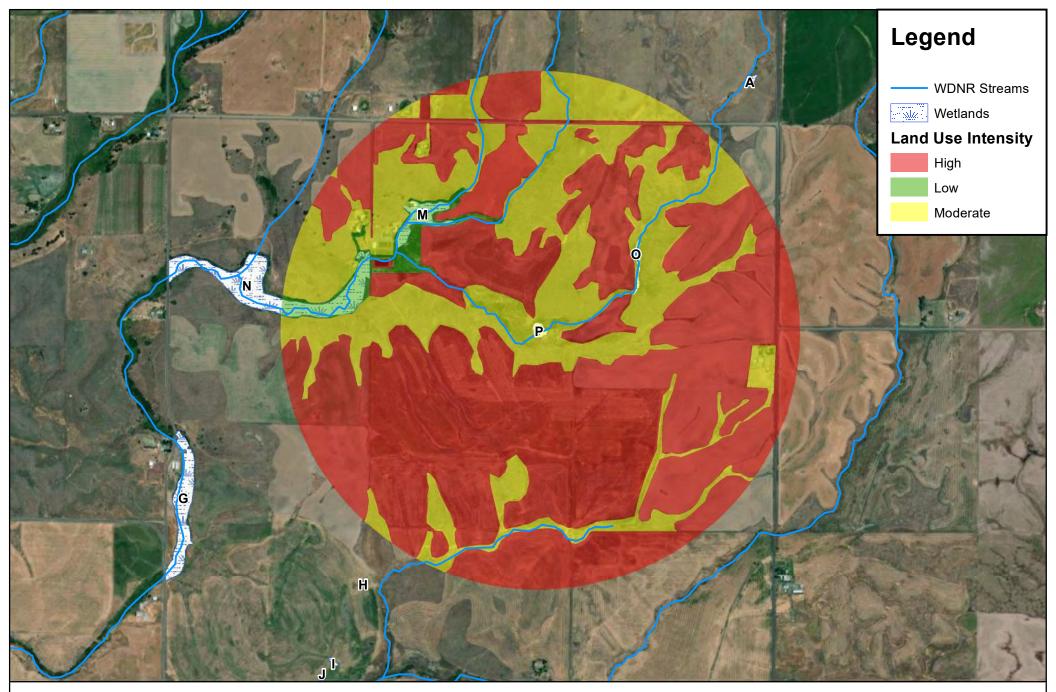


Figure 4. Wetland P Land Use and Habitat Map Carriger Solar, LLC | Wetland Ratings | August 2021

0 0.25 0.5 Miles

wsp

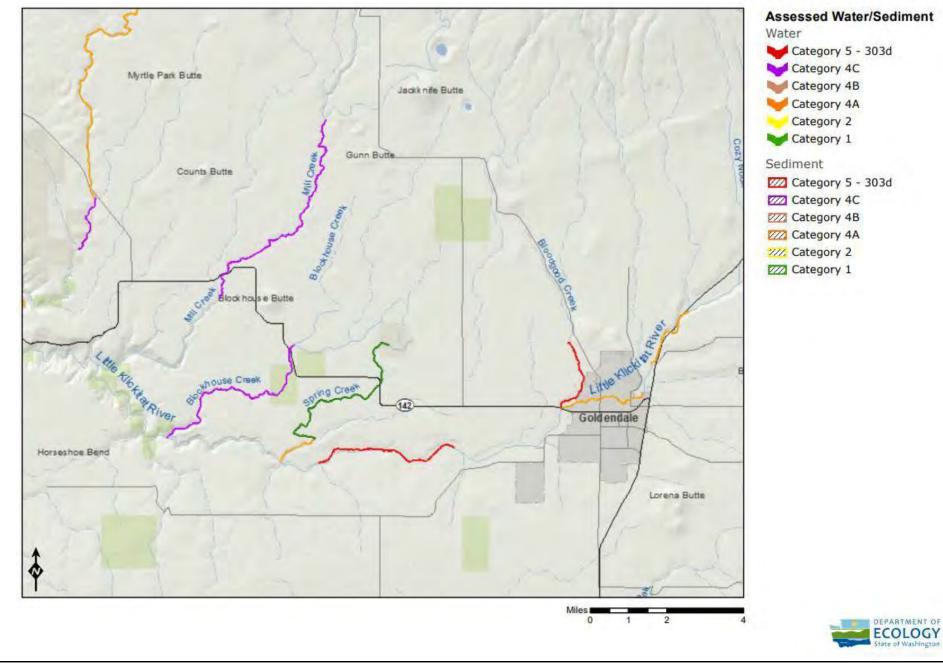


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30) Carriger Solar, LLC | Wetland Ratings | August 2021



Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Little Klickitat River	BOD (5-day) Chlorine	EPA approved	Mark Peterschmidt 509-454-7843
Little Klickitat River Watershed	Temperature	EPA approved and Has an implementation plan	Mark Peterschmidt 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37) Carriger Solar, LLC | Wetland Ratings | August 2021

APPENDIX D

STAFF QUALIFICATIONS

BRIDGET WOJTALA

CAREER SUMMARY

Consultant, Environmental Scientist

Years of Experience

9

Years with the Firm

3

Education

BS, Natural Resources Mgmt.,Grand Val St U, 2013

Professional Registrations

Asbestos Inspector: WA (179867) Bridget is an environmental scientist and Environmental Professional with background in environmental permitting and site assessments. Bridget has managed and performed numerous Phases I Environmental Site Assessments for commercial, residential, and industrial properties; hazardous material corridor studies; asbestos assessments; mold surveys; wetland delineations; wetland functional assessments; fish and wildlife habitat surveys; monitoring for mitigation and restoration projects; soil, surface water, and groundwater characterizations; and emergency spill remedial activities. She also has experience in environmental regulations and environmental permitting, including NEPA documentation and ESA consultation.

PROFESSIONAL EXPERIENCE

South Cloverdale Road Project, Cowlitz County, Washington: Environmental scientist responsible for assisting with environmental resource inventory and permitting for this Cowlitz County road-widening project. Tasks included performing a Low-Level Hazardous Materials Assessment in general conformance with the All Appropriate Inquiries Final Rule (AAI Rule) per Code of Federal Regulations (CFR) 40 CFR 312, ASTM International's Standard Practice for Environmental Site Assessments (ASTM E 1527-13), and the Washington State Department of Transportation's (WSDOT) Environmental Procedures Manual (EPM). Assisted with wetland and ordinary high-water mark delineation within the project right-of-way, and assisted with USACE and Washington State Department of Ecology (Ecology) review and approval of the delineation. Assisted with compensatory mitigation strategy.

State Routes 503 and 502 Intersection and Shared-Use Pathway, Battle Ground, Washington: Environmental scientist responsible for assisting a professional wetland scientist in securing the necessary permits for this intersection improvements project for the city of Battle Ground. Tasks included conducting a wetland delineation and environmental assessment in accordance with the 2010 Regional Supplement to the USACE Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region. Other responsibilities include the preparation of a city critical areas report. WSP provided environmental resource documentation and federal, state, and local permitting services for this federally funded intersection improvements project for the City of Battle Ground.

City of Vancouver Southeast 18th Street Improvements, Vancouver, Washington: Environmental scientist responsible for assisting a senior scientist in securing the necessary permits for this road completion project. Tasks to obtain permits included conducting a wetland delineation and habitat assessment in accordance with the 2010 Regional Supplement to the USACE Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region. Other responsibilities include the preparation of a city critical areas report and no effect letter. WSP provided environmental resource documentation and federal, state, and local permitting services for this federally funded corridor completion project that will upgrade and extend NE 18th Street between NE 97th Avenue and NE 107th Avenue with three roundabouts for the City of Vancouver.

Hood River – White Salmon Bridge Replacement Project, Hood River, Oregon and White Salmon, Washington: Environmental scientist responsible for preparing a report pursuant to Appendix A of the USCG Bridge Permit Application Guide to obtain a Preliminary Navigational Clearance Determination from the USCG which provides a level of certainty to the navigational clearance for the project. Reviewed previous navigation study, type, size and location reports, draft environmental impact studies, USACE documents, and other published sources. Environmental scientist responsible for assisting a professional wetland scientist in conducting a wetland delineation in accordance with the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region and the preparation of an associated delineation report for the Hood River – White Salmon Bridge Replacement Project.

- US30: Kittridge St. Johns, Portland, Oregon: Environmental scientist responsible for conducting a Hazardous Materials Corridor Study for this highway rehabilitation project, including performing a site reconnaissance to observe the site and adjacent properties, developing a photographic record of current site conditions, reviewing aerial photography, interviewing appropriate persons with knowledge of the site, and reviewing a search of federal, tribal, state, and local government databases (Environmental Data Resources report). Prepared and delivered a written summary of the draft and final Hazardous Materials Corridor Study in accordance with ASTM E 1527-13 and ODOT standards along with opinion and recommendations regarding the potential for contamination by hazardous substances at the site, provided as a PDF document.
- Port of Kalama warehouse property in Kalama, Washington: Environmental scientist responsible for conducting a Phase I and II Environmental Site Assessment in accordance with ASTM E 1527-13 standards. Responsibilities included evaluating the potential risk and liability associated with dredged fill material on the site. Coordinated with driller to complete three sediment borings using direct-push drilling equipment. Collected continuous sediment samples from the borings to approximately 30 feet below ground surface or to groundwater for field screening. Submitted soil samples to analytical laboratory for chemical analysis. Collected and submitted groundwater samples from each boring. Prepared field logs for each exploration and recorded position of each exploration location using a GPS.
- Salem Hollywood Station USPS Asbestos and Lead-Based Paint Assessment in Salem, Oregon: Environmental scientist responsible for conducting sampling of asbestos containing building materials and lead-based paint, including review of existing surveys, determining quantities of damaged ACM and LBP, identifying areas requiring necessary remediation and/or renovation, conducting a condition assessment of the identified impacted materials, including delineating the extent, location, types, and quantity of damaged materials, determining the probable cause of material failure, and preparation of an abatement scope of work to determine the most appropriate and cost effective abatement and repair methods.
- North Bonneville Substation and Powerline Project, Skamania County, Washington: Environmental scientist responsible for assisting a professional wetland scientist in conducting a wetland delineation in accordance with the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region and the preparation of an associated delineation report for Skamania PUD North Bonneville Substation and Powerline Project in North Bonneville, Stevenson, and Skamania County, WA.
- I-5 Coburg Interchange Design Project, Lane County, Oregon: Environmental scientist responsible for preparing a Modified Hazardous Materials Corridor Assessment (HMCA) to identify potential sources of contamination that could impact the project. HMCA was conducted in accordance with generally accepted environmental procedures as outlined in the Hazardous Waste Guide for Project Development, by the American Association of State Highway and Transportation Officials Special Committee on Environment, Archeology, and Historic Preservation.

CAREER SUMMARY

Years with the firm

2

Years total

4

Professional Affiliations

Society of Wetland Scientists

Professional Trainings

Washington Department of Ecology Wetland Rating Class (October 2020)

Washington Department of Ecology How to Determine the Ordinary High Water Mark in Western Washington Class (October 2021) Brandon Stimac is an environmental scientist with four years of professional experience working for, and with, public and private entities in the Midwest and the Western United States. He has developed an understanding of federal, state, and local environmental regulations and permitting and is particularly well versed in topics relating to wetlands, streams, and natural resource inventories. Brandon works to meet client needs and ensure environmental requirements are taken into consideration through a projects design into construction.

EDUCATION

BS, Environmental Engineering, Michigan Technological University

2016

PROFESSIONAL EXPERIENCE

- Canyon Road Northeasterly Extension (CRP5498), Pierce County, Washington: project scientist providing Pierce County with services for National Environmental Policy Act (NEPA) compliance. The project is going through an Environmental Assessment and is developing Discipline Reports to meet NEPA requirements. The project is a proposed freight corridor project, with new roadways and bridges spanning the Puyallup River and Clarks Creek. The field services included wetland and stream delineations. Documentation included a Wetland and Stream Assessment Discipline Report, a Biological Assessment and a mitigation plan.
 - State Route 18 Widening Deep Creek to Issaquah-Hobart Road, King County,
 Washington: project scientist providing WSDOT NW Region with services for local, state, and federal permitting compliance for a proposed roadway widening to improve safety and mobility through the SR-18 corridor. The field services included three months of wetland and stream delineations and two weeks of ESA habitat assessments for Marbled Murrelets. Documentation included a Wetlands and Stream Assessment Report, Wetland Rating Forms, a Conceptual Mitigation Plan, Marbled Murrelet Habitat Memorandum, and ESA sections for use in the Project Biological Assessment.
- 33rd Avenue Pedestrian Bridge, City of Seattle, Washington: project scientist providing the City of Seattle with services for local and state permit compliance for a proposed pedestrian bridge replacement spanning a BNSF railroad. The field services included wetland and stream delineations. Documentation included a Critical Areas Report and Wetland Rating Forms.
- Pierce County Single-Family Wetland Verifications, Various, Washington: environmental scientist providing Pierce County with on-call services for single-family and parcel development wetland verifications. Services include field visits to identify any critical areas present near the proposed developments and determining consistency with County critical area regulations.
- Summit-at-Snoqualmie Mountain Bike Park, Snoqualmie Pass, Washington: project scientist providing the Summit-at-Snoqualmie with services for National Environmental Policy Act (NEPA) compliance for a proposed lift-operated mountain bike park on U.S. Forest Service and privately held land. The services included amphibian surveys, forest stand assessment, habitat assessments and wetland and stream delineations.

Documentation included a Botanical, Aquatic and Wildlife resource reports with calculations and figure production in ArcGIS.

- Grove Street Overcrossing, Marysville, Washington: project scientist providing design and NEPA documentation support for the City of Marysville. The project proposes to construct an overcrossing that would span the BNSF Railway track on Grove Street between State Avenue and Cedar Avenue.
- **Factoria Boulevard Stormwater Conveyance Improvements, Bellevue, Washington:** project scientist providing permit support for the City of Bellevue on a project proposing to replace stormwater conveyance structures with impacts to a critical area. Services included a Critical Areas Report, Conceptual Mitigation Plan, SEPA checklist, Hydraulic Project Approval and JARPA application.
- NBK Railroad Culvert Repair, City of Bremerton, Washington: project scientist providing services for replacement of a culvert on NAVFAC right-of-way that is below an active railway. Conducted wetland and stream delineations to evaluate potential project impacts. Prepared a findings memo, permitting matrix, critical areas report, and mitigation plan to support the design and future construction of the project.
- FY22 MCON Project P-260 P-8A Airfield Pavements, Whidbey Island, Washington: project scientist providing services for the repair and replacement of infrastructure at Naval Air Station Whidbey Island. Conducted wetland delineations within a 30-acre study area to evaluate potential project impacts. Prepared a delineation report, preliminary jurisdictional determination and calculations and figure preparation in ArcGIS.
- **South Cloverdale Road, Kalama, Washington**: project scientist providing documentation for compliance with Section 7 of the Endangered Species Act for a WSDOT Local Programs and Cowlitz County roadway project. The project aims to realign a section of roadway and replace two culverts with fish passable structures.
- Thornton Creek Bridge Rehabilitation, Seattle, Washington: project scientist providing permit services for the City of Seattle's Thornton Creek project. Evaluated project impacts to critical area and buffers at four bridge replacement locationson Thornton Creek. Services included a Critical Areas Report, SEPA checklist and Permitting Compliance Strategy and Matrix.
- Nintendo 150th Avenue NE Stormwater Infrastructure Replacement, Redmond, Washington: project scientist supporting State Environmental Policy Act documentation for a stormwater infrastructure repair and replacement for the City of Redmond on the Nintendo Campus:
- Valley Creek Culvert Replacement, Bellevue, Washington: project scientist providing federal, state, and local permit support for the City of Bellevue. The project proposes to replace a culvert within a critical area.