Wetland name or number 21.4 M

Classification of Vegetated Wetlands for Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
   NO – go to 2 **YES** – the wetland class is **Tidal Fringe**
   If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
   YES – Freshwater Tidal Fringe **NO – Saltwater Tidal Fringe (Estuarine)**
   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is a Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland meet both of the following criteria?
   _____ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
   _____ At least 30% of the open water area is deeper than 6.6 (2 m)?
   NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland meet all of the following criteria?
   _____ The wetland is on a slope *(slope can be very gradual)*.
   _____ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   _____ The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these types 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).*
   NO – go to 5 **YES** – The wetland class is **Slope**

5. Does the entire wetland 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 two years.
   NOTE: *The riverine unit can contain depressions that are filled with water when the river is not flooding..*
   NO – go to 6 **YES** – The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding.. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
   No – go to 8 YES – The wetland class is Depressional

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

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 along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

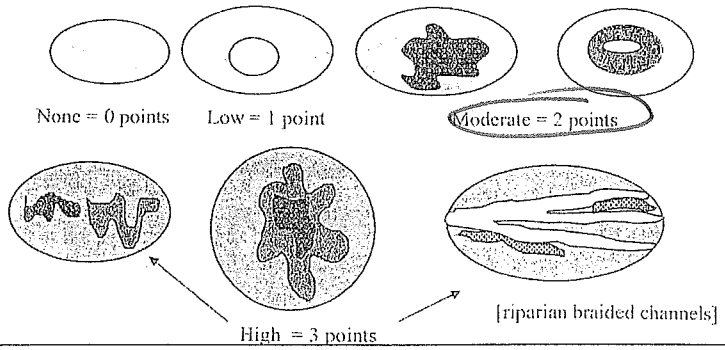
If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number 21.4 M

S	Slope Wetlands	Points (only 1 score per box)
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	
S 1	**Does the wetland have the potential to improve water quality?**	*(see p.64)*
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less *(a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)*..... points = 3 • Slope is 1% - 2%..... points = 2 • Slope is 2% - 5%..... points = 1 • Slope is greater than 5%..... points = 0	1
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic *(Use NRCS definitions)*. **YES** = 3 points **NO** = 0 points	Ø
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.* • Dense, uncut, herbaceous vegetation > 90% of the wetland area..... points = 6 • Dense, uncut, herbaceous vegetation > 1/2 of area..... points = 3 • Dense, woody, vegetation > 1/2 of area..... points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area..... points = 1 • Does not meet any of the criteria above for vegetation..... points = 0 **Aerial photo or map with vegetation polygons**	**Figure ___** 2
	Total for S 1 *Add the points in the boxes above*	3
S 2	**Does the wetland have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ___ Grazing in the wetland or within 150 ft ✓ Untreated stormwater discharges to wetland ___ Tilled fields, logging, or orchards within 150 ft. of wetland ✓ Residential, urban areas, or golf courses are within 150 ft. upslope of wetland ___ Other _____ **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 67)* Multiplier 2
◆	**TOTAL – Water Quality Functions** Multiply the score from S1 by S2; then ***add score to table on p. 1***	6
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	**Does the wetland have the potential to reduce flooding and stream erosion?**	*(see p.68)*
	S 3.1 Characteristics of vegetation 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 > 1/8in), or dense enough to remain erect during surface flows).* • Dense, uncut, **rigid** vegetation covers > 90% of the area of the wetland..... points = 6 • Dense, uncut, **rigid** vegetation> 1/2 area of wetland..... points = 3 • Dense, uncut, **rigid** vegetation > 1/4 area..... points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid..... points = 0	3
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. **YES** = 2 points **NO** = 0 points	Ø
	Add the points in the boxes above	3
S 4	**Does the wetland have the opportunity to reduce flooding and erosion?** Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? *Note which of the following conditions apply.* ✓ Wetland has surface runoff that drains to a river or stream that has flooding problems ___ Other _____ *(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)* **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 70)* Multiplier 2
◆	**TOTAL – Hydrologic Functions** Multiply the score from S3 by S4; then ***add score to table on p. 1***	6

Comments:

Wetland name or number 21.4 M

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	Points (only 1 score per box)
H 1 Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see P. 72)*: *Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.* ✓ Aquatic Bed ✓ Emergent plants ✓ Scrub/shrub (areas where shrubs have > 30% cover) ✓ Forested (areas where trees have > 30% cover) *If the unit has a forested class check if:* ___ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. *Add the number of vegetation types that qualify. If you have:* **Map of Cowardin vegetation classes** 4 structures or more.....points = 4 — 3 structures.....points = 2 2 structures.....points = 1 — 1 structure.....points = 0	**Figure ___** 2
H 1.2 Hydroperiods *(see p.73)*: *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).* ___ Permanently flooded or inundated — 4 or more types present points = 3 ✓ Seasonally flooded or inundated — 3 or more types present.....points = 2 ___ Occasionally flooded or inundated — 2 types present.....points = 1 ✓ Saturated only — 1 type present.....points = 0 ___ Permanently flowing stream or river in, or adjacent to, the wetland ___ Seasonally flowing stream in, or adjacent to, the wetland ___ **Lake-fringe wetland.....= 2 points** ___ **Freshwater tidal wetland.....= 2 points** **Map of hydroperiods**	**Figure ___** 2
H 1.3 Richness of Plant Species *(see p. 75)*: 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, Canadian Thistle.* If you counted: > 19 species.....points = 2 5 – 19 species.....points = 1 List species below if you want to: < 5 species.....points = 0 _____ _____ _____ _____	1
H 1.4 Interspersion of Habitats *(see p. 76)*: Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". **Use map of Cowardin classes.**	**Figure ___** 2
H 1.5 Special Habitat Features *(see p. 77)*: *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* ✓ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) ✓ Standing snags (diameter at the bottom > 4 inches) in the wetland ___ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* ___ At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ___ Invasive plants cover less than 25% of the wetland area in each stratum of plants *NOTE: The 20% stated in early printings of the manual on page 78 is an error.*	2
H 1 TOTAL Score – potential for providing habitat *Add the points in the column above*	9

Wetland name or number 21.4 M

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers *(see P. 80)*: *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".* ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use).. .....**points = 5** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference.....**points = 4** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference.....**points = 4** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference.....**points = 3** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference .....**points = 3** **If buffer does not meet any of the criteria above:** ____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ Heavy grazing in buffer .....**points = 1** ____ Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).....**points = 0** ____ Buffer does not meet any of the criteria above .....**points = 1** **Arial photo showing buffers**	**Figure ___** 1
	H 2.2 Corridors and Connections *(see p. 81)* H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? *(Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).* **YES = 4 points** (go to H 2.3) **NO** = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR a Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? **YES = 2 points** (go to H 2.3) **NO** = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR **YES** = 1 point • Within 1 mile of a lake greater than 20 acres? **NO** = 0 points	Ø

Comments:

Wetland name or number 21.4 M

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82):
Which of the following priority habitats are within 330 ft. (100m) of the wetland? *NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.*

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

____ **Aspen Stands**: Pure or mixed stands of aspen greater than 0.8 ha (2 acres)

____ **Cliffs**: Greater than 7.6m (25 ft) high and occurring below 5000 ft.

____ **Old-growth forests**: (Old growth west of Cascade Crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings, with at least 20 trees/ha (8 trees/acre) > 81cm (32 in) dbh or > 200 years of age.

____ **Mature forests**: Stands with average diameters exceeding 53cm (21 in) 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 of the Cascade Crest.

____ **Prairies**: Relatively undisturbed areas (as indicated by dominance of native plants) where greases and/or forbs form the natural climax plant community.

____ **Talus**: Homogenous areas of rock rubble ranging in average size 0.15 – 2.0m (0.5 – 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. Ø

____ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages.

____ **Oregon white Oak**: Woodlands stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.

____ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.

____ **Estuary/Estuary-like**: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5 ppt. during the period of average annual low flow. Includes both estuaries and lagoons.

____ **Marine/Estuarine Shorelines**: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).

If wetland has 3 or more priority habitats .= 4 points — If wetland has 1 priority habit ...= 1 point
If wetland has 2 priority habitats .....= 3 points — No habitats.....= 0 points
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. (Nearby wetlands are addressed in question H 2.4).

H 2.4 Wetland Landscape: *Choose the **one** description of the landscape around the wetland that best fits (see p. 84)*

- There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.....points = 5
- The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 5 — 3
- There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. .....points = 3
- The wetland fringe on a lake **with** disturbance and there are 3 other lake-fringe wetlands within 1/2 mile.....points = 3
- There is at least 1 wetland within 1/2 mile.....points = 2
- There are no wetlands within 1/2 mile .....points = 0

H 2 TOTAL Score – opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4* — 9

TOTAL for H 1 from page 8 — 4

◆ **Total Score for Habitat Functions** Add the points for H 1 and H 2; then ***record the result on p. 1*** — 13

Comments:

Wetland name or number 21.4 M

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

	Wetland Type – *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	
SC1	**Estuarine wetlands?** *(see p.86)* Does the wetland unit meet the following criteria for Estuarine wetlands? ____ The dominant water regime is tidal, ____ Vegetated, and ____ With a salinity greater than 0.5 ppt. **YES** = Go to SC 1.1 **NO** _____	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? **YES** = Category I **NO** = go to SC 1.2	**Cat. 1**
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? **YES** = Category I **NO** = Category II ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland ____ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual Rating I/II**
SC2	**Natural Heritage Wetlands** *(see p. 87)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? *(This question is used to screen out most sites before you need to contact WNHP/DNR.)* S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site _____ **YES** _____ Contact WNHP/DNR (see p. 79) and go to SC 2.2 **NO** _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? **YES** = Category 1 **NO** _____ not a Heritage Wetland	**Cat I**
SC3	**Bogs** *(see p. 87)* Does the wetland **(or any part of the unit)** meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. ***If you answer yes you will still need to rate the wetland based on its function.*** 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? **YES** = go to question 3 **NO** = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? **YES** = go to question 3 **NO** = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? **YES** = Is a bog for purpose of rating **NO** = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)*? **YES** = Category I **NO** = Is not a bog for purpose of rating	**Cat. I**

Wetland name or number 21.4 M

SC4	**Forested Wetlands** *(see p. 90)* Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its function.* ____ **Old-growth forests**: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. ____ **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. **YES** = Category I **NO** = ____ not a forested wetland with special characteristics	**Cat. I**
SC5	**Wetlands in Coastal Lagoons** *(see p. 91)* Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks. ____ The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom.)* **YES** = Go to SC 5.1 **NO** ____ not a wetland in a coastal lagoon SC 5.1 Does the wetland meet all of the following three conditions? ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. ____ The wetland is larger than 1/10 acre (4350 square ft.) **YES** = Category I **NO** = Category II	**Cat. I** **Cat. II**
SC6	**Interdunal Wetlands** *(see p. 93)* Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? **YES** = Go to SC 6.1 **NO** ____ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis -- lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? **YES** = Category II **NO** = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? **YES** = Category III	**Cat. II** **Cat. III**
◆	**Category of wetland based on Special Characteristics** *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered **NO** for all types enter "Not Applicable" on p. 1	NA

Comments:

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

Project/Site: Kirkland Nickel - I-405 Applicant/owner: WSDOT Investigator(s): LK JC	Date: 3-2-04 County: King State: WA S/T/R: 20/26N/5E
Do Normal Circumstances exist on the site? (yes) no Is the site significantly disturbed (atypical situation)? yes (no) Is the area a potential Problem Area? yes (no) Explanation of atypical or problem area:	Community ID: Transect ID: Plot ID: DP 21.5 M - A

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

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Rubus discolor	V	100	FACU				
Thuja plicata	T	30	FAC				
Acer macrophyllum	T	30	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 33%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation	___	Physiological/reproductive adaptations	___
Morphological adaptations	___	Wetland plant database	✓
Technical Literature	___	Personal knowledge of regional plant communities	___
		Other (explain)	___

Hydrophytic vegetation present? yes (no)
Rationale for decision/Remarks:
The plot is not dominated by hydrophytic vegetation

HYDROLOGY

Is it the growing season? (yes) no March 2

Based on: ___ soil temp (record temp ___)
___ other (explain)

Dept. of inundation:	— inches	Water Marks: yes (no) on ___	Sediment Deposits: yes (no)
		Drift Lines: yes (no)	Drainage Patterns: yes (no)
Depth to free water in pit:	— inches	Oxidized Root (live roots) Channels <12 in. yes (no)	Local Soil Survey: yes (no)
Depth to saturated soil:	— inches	FAC Neutral: yes (no)	Water-stained Leaves yes (no)

Check all that apply & explain below:
Stream, Lake or gage data: ___
Aerial photographs: ___ Other: ___

Other (explain):

Wetland hydrology present? yes (no)
Rationale for decision/Remarks:
No indicators of wetland hydrology are present

SOILS

Map Unit Name (Series & Phase) Raghar fine sandy loam 6 to 15% slopes

Drainage Class well drained

Taxonomy (subgroup) Dystric Xerochrepts

Field observations confirm mapped type? Yes (No)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-5"	10A	10YR2/1			silt loam	
5-16"	B	10YR3/6			sand loam	

Hydric Soil Indicators: (check all that apply)

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

Hydric soils present? yes (no)

Rationale for decision/Remarks:

No hydric indicators are present

Wetland Determination (circle)

Hydrophytic vegetation present? yes (no)

Hydric soils present? yes (no)

Wetland hydrology present? yes (no)

Is the sampling point within a wetland? yes (no)

Rationale/Remarks:

The three wetland parameters are not met

NOTES:

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

Project/Site: WSDOT I-405 Kirkland - Nickel
Date: 3/2/04
Applicant/owner: WSDOT
County: KING
State: WA
Investigator(s): JC, LK, AM
S/T/R: 20/26N/5E

Do Normal Circumstances exist on the site? (yes) no
Is the site significantly disturbed (atypical situation)? yes (no)
Is the area a potential Problem Area? yes (no)
Explanation of atypical or problem area:

Community ID: Wetland
Transect ID:
Plot ID: 21.5 M - B

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

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Rubus discolor	S	100	FACU				
Acer macrophyllum	T	20	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 0

Skunk cabbage is present at other locations Not a good indicator of wetland conditions in this case

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation ____
Morphological adaptations ____
Technical Literature ____
Physiological/reproductive adaptations ____
Wetland plant database X
Personal knowledge of regional plant communities ____
Other (explain) ____

Hydrophytic vegetation present? yes (no) The maple is not rooted in the wetland
Rationale for decision/Remarks:
The ~~[illegible]~~ dominate plants are invasive and will grow in wetlands.

HYDROLOGY

Is it the growing season? (yes) no

Based on: DATE soil temp (record temp ____)
DATE other (explain)

Dept. of inundation: — inches
Depth to free water in pit: 7 inches
Depth to saturated soil: 0 inches

Water Marks: yes (no) on ____
Sediment Deposits: yes (no)
Drift Lines: yes (no)
Drainage Patterns: yes (no)
Oxidized Root (live roots) Channels <12 in. yes (no)
Local Soil Survey: yes (no)
FAC Neutral: yes (no)
Water-stained Leaves yes (no)

Check all that apply & explain below:
Stream, Lake or gage data: ____
Aerial photographs: ____ Other: ____

Other (explain):

Wetland hydrology present? (yes) no
Rationale for decision/Remarks:
Water seeping into pit at 7 inches from surface

SOILS

Map Unit Name (Series & Phase) Ragnar fine sandy loam 6 to 15% slopes

Drainage Class well drained

Field observations confirm mapped type? Yes (No)

Taxonomy (subgroup) Dystric Xerochrepts

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-13	A	7.5YR 2.5/1	—	—	silt loam	
13-16	B	GLEY1 3/5GY	—	—	sandy clay loam	

Hydric Soil Indicators: (check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- X Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma (=1) matrix
- ____ Matrix chroma ≤ 2 with mottles
- ____ Mg or Fe Concretions
- ____ High Organic Content in Surface Layer of Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on National/Local Hydric Soils List
- ____ Other (explain in remarks)

Hydric soils present? (yes) no

Rationale for decision/Remarks:
Soils are low chroma and Gleyed in lower layer.

Wetland Determination (circle)

Hydrophytic vegetation present?	yes	(no)			
Hydric soils present?	(yes)	no	Is the sampling point within a wetland?	(yes)	no
Wetland hydrology present?	(yes)	no			

Rationale/Remarks:
Hydric soils & wetland hydrology are strong indicators. The vegetation is dominated by Himalayan blackberry, known to grow in wetlands despite its indicator status.

NOTES: Wetland located in freeway median. PFO

Revised 4/97

Wetland name or number 21.5 M

[redacted]

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): 21.5 M Date of site visit: 3/6/07

Rated by: C. Douglas, J. Burley Trained by Ecology? Yes____ No ✓ Date of training: —

SEC: 20 TWNSHP: 26N RNGE: 5E Is S/T/R in Appendix D? Yes____ No ✓

Map of wetland unit: Figure_____ **Estimated size** 0.1 acre

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I_____ **II**_____ **III**_____ **IV**_____

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

Score for Water Quality Functions	6
Score for Hydrologic Functions	10
Score for Habitat Functions	13
TOTAL Score for Functions	29

Category based on SPECIAL CHARACTERISTCS of Wetland I_____ **II**_____ **Does not apply** ✓

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

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		**Depressional**	
Natural Heritage Wetland		**Riverine**	
Bog		**Lake-fringe**	
Mature Forest		**Slope**	✓
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above		Check if unit has multiple HGM classes present	☐

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	**YES**	**NO**
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✓
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		✓
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*		✓
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		✓

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number 21.5 M

Classification of Vegetated Wetlands for Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
   NO – go to 2 **YES** – the wetland class is **Tidal Fringe**
   If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
   YES – Freshwater Tidal Fringe **NO – Saltwater Tidal Fringe (Estuarine)**
   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is a Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland meet both of the following criteria?
   _____ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
   _____ At least 30% of the open water area is deeper than 6.6 (2 m)?
   NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland meet all of the following criteria?
   ✓ The wetland is on a slope *(slope can be very gradual)*.
   ✓ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   _____ The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these types 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).*
   NO – go to 5 **YES** – The wetland class is **Slope**

5. Does the entire wetland 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 two years.
   NOTE: *The riverine unit can contain depressions that are filled with water when the river is not flooding..*
   NO – go to 6 **YES** – The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
   No – go to 8 YES – The wetland class is Depressional

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

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 along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

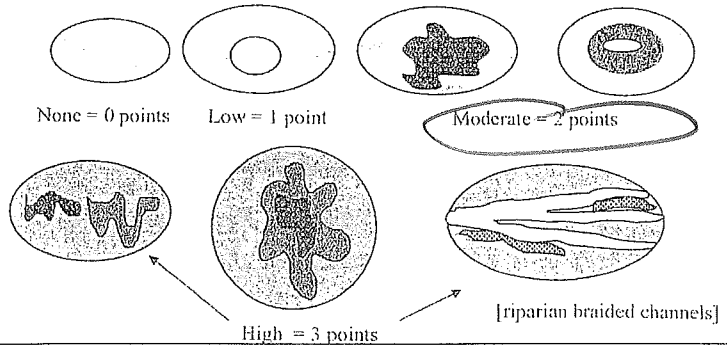
If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number 21.5 M

S	Slope Wetlands	Points (only 1 score per box)
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	
S 1	**Does the wetland have the potential to improve water quality?**	*(see p.64)*
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less *(a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)*..... points = 3 • Slope is 1% - 2% ..... points = 2 • Slope is 2% - 5%. ..... points = 1 • Slope is greater than 5% ..... points = 0	1
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic *(Use NRCS definitions).* **YES** = 3 points **NO** = 0 points	Ø
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.* • Dense, uncut, herbaceous vegetation > 90% of the wetland area ..... points = 6 • Dense, uncut, herbaceous vegetation > 1/2 of area ..... points = 3 • Dense, woody, vegetation > 1/2 of area. ..... points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area ..... points = 1 • Does not meet any of the criteria above for vegetation ..... points = 0 **Aerial photo or map with vegetation polygons**	**Figure ___** 2
	Total for S 1 *Add the points in the boxes above*	3
S 2	**Does the wetland have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ___ Grazing in the wetland or within 150 ft ✓ Untreated stormwater discharges to wetland ___ Tilled fields, logging, or orchards within 150 ft. of wetland ✓ Residential, urban areas, or golf courses are within 150 ft. upslope of wetland ___ Other _____ **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 67)* Multiplier 2
◆	**TOTAL – Water Quality Functions** Multiply the score from S1 by S2; then ***add score to table on p. 1***	6
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	**Does the wetland have the potential to reduce flooding and stream erosion?**	*(see p.68)*
	S 3.1 Characteristics of vegetation 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 > 1/8in), or dense enough to remain erect during surface flows).* • Dense, uncut, **rigid** vegetation covers > 90% of the area of the wetland..... points = 6 • Dense, uncut, **rigid** vegetation> 1/2 area of wetland ..... points = 3 • Dense, uncut, **rigid** vegetation > 1/4 area..... points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid..... points = 0	3
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. **YES** = 2 points **NO** = 0 points	2
	Add the points in the boxes above	5
S 4	**Does the wetland have the opportunity to reduce flooding and erosion?** Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? *Note which of the following conditions apply.* ✓ Wetland has surface runoff that drains to a river or stream that has flooding problems ___ Other _____ *(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)* **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 70)* Multiplier 2
◆	**TOTAL – Hydrologic Functions** Multiply the score from S3 by S4; then ***add score to table on p. 1***	10

Comments:

Wetland name or number 21.5 M ____

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	Points (only 1 score per box)
H 1 Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see P. 72)*: *Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.* ✓ Aquatic Bed ✓ Emergent plants ✓ Scrub/shrub (areas where shrubs have > 30% cover) ✓ Forested (areas where trees have > 30% cover) *If the unit has a forested class check if:* ____ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. *Add the number of vegetation types that qualify. If you have:* **Map of Cowardin vegetation classes** 4 structures or more.....points = 4 — 3 structures.....points = 2 2 structures.....points = 1 — 1 structure.....points = 0	**Figure ___** 2
H 1.2 Hydroperiods *(see p.73)*: *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).* ✓ Permanently flooded or inundated — 4 or more types present points = 3 ✓ Seasonally flooded or inundated — 3 or more types present....points = 2 ✓ Occasionally flooded or inundated — 2 types present.....points = 1 ✓ Saturated only — 1 type present.....points = 0 ____ Permanently flowing stream or river in, or adjacent to, the wetland ____ Seasonally flowing stream in, or adjacent to, the wetland ____ **Lake-fringe wetland.....= 2 points** ____ **Freshwater tidal wetland.....= 2 points** **Map of hydroperiods**	**Figure ___** 2
H 1.3 Richness of Plant Species *(see p. 75)*: 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, Canadian Thistle.* If you counted: > 19 species.....points = 2 5 – 19 species.....points = 1 < 5 species.....points = 0 List species below if you want to: _____ _____ _____ _____	1
H 1.4 Interspersion of Habitats *(see p. 76)*: Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". **Use map of Cowardin classes.**	**Figure ___** 2
H 1.5 Special Habitat Features *(see p. 77)*: *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* ✓ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) ____ Standing snags (diameter at the bottom > 4 inches) in the wetland ____ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) ____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* ____ At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ____ Invasive plants cover less than 25% of the wetland area in each stratum of plants *NOTE: The 20% stated in early printings of the manual on page 78 is an error.*	2
H 1 TOTAL Score – potential for providing habitat *Add the points in the column above*	4

Wetland name or number 21.5 M

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers *(see P. 80)*: *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".* ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use).. .....**points = 5** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference.....**points = 4** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference.....**points = 4** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference.....**points = 3** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference .....**points = 3** **If buffer does not meet any of the criteria above:** ____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ Heavy grazing in buffer.....**points = 1** ____ Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).....**points = 0** ____ Buffer does not meet any of the criteria above .....**points = 1** **Arial photo showing buffers**	**Figure ___** 1
	H 2.2 Corridors and Connections *(see p. 81)* H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? *(Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).* **YES = 4 points** (go to H 2.3) **NO** = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR a Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? **YES = 2 points** (go to H 2.3) **NO** = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR • Within 1 mile of a lake greater than 20 acres? **YES** = 1 point **NO** = 0 points	Ø

Comments:

Wetland name or number 21.5 M

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82):
Which of the following priority habitats are within 330 ft. (100m) of the wetland? *NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.*

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

____ **Aspen Stands**: Pure or mixed stands of aspen greater than 0.8 ha (2 acres)

____ **Cliffs**: Greater than 7.6m (25 ft) high and occurring below 5000 ft.

____ **Old-growth forests**: (Old growth west of Cascade Crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings, with at least 20 trees/ha (8 trees/acre) > 81cm (32 in) dbh or > 200 years of age.

____ **Mature forests**: Stands with average diameters exceeding 53cm (21 in) 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 of the Cascade Crest.

____ **Prairies**: Relatively undisturbed areas (as indicated by dominance of native plants) where greases and/or forbs form the natural climax plant community.

____ **Talus**: Homogenous areas of rock rubble ranging in average size 0.15 – 2.0m (0.5 – 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

____ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages.

____ **Oregon white Oak**: Woodlands stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.

____ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.

____ **Estuary/Estuary-like**: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5 ppt. during the period of average annual low flow. Includes both estuaries and lagoons.

____ **Marine/Estuarine Shorelines**: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).

If wetland has 3 or more priority habitats .= 4 points — If wetland has 1 priority habit ...= 1 point
If wetland has 2 priority habitats .....= 3 points — No habitats.....= 0 points
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. (Nearby wetlands are addressed in question H 2.4).

Ø

H 2.4 Wetland Landscape: *Choose the **one** description of the landscape around the wetland that best fits (see p. 84)*

- There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.....points = 5
- The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 5
- There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. .....points = 3
- The wetland fringe on a lake **with** disturbance and there are 3 other lake-fringe wetlands within 1/2 mile.....points = 3
- There is at least 1 wetland within 1/2 mile.....points = 2
- There are no wetlands within 1/2 mile .....points = 0

3

	H 2 TOTAL Score – opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4*	9
	TOTAL for H 1 from page 8	4
◆	**Total Score for Habitat Functions** Add the points for H 1 and H 2; then ***record the result on p. 1***	13

Comments:

Wetland name or number 21.5 M

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

	Wetland Type – *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	
SC1	**Estuarine wetlands?** *(see p.86)* Does the wetland unit meet the following criteria for Estuarine wetlands? ____ The dominant water regime is tidal, ____ Vegetated, and ____ With a salinity greater than 0.5 ppt. **YES** = Go to SC 1.1 **NO** _____	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? **YES** = Category I **NO** = go to SC 1.2	**Cat. 1**
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? **YES** = Category I **NO** = Category II ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland ____ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual Rating I/II**
SC2	**Natural Heritage Wetlands** *(see p. 87)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? *(This question is used to screen out most sites before you need to contact WNHP/DNR.)* S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site _____ **YES** _____ Contact WNHP/DNR (see p. 79) and go to SC 2.2 **NO** _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? **YES** = Category 1 **NO** _____ not a Heritage Wetland	**Cat I**
SC3	**Bogs** *(see p. 87)* Does the wetland **(or any part of the unit)** meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. ***If you answer yes you will still need to rate the wetland based on its function.*** 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? **YES** = go to question 3 **NO** = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? **YES** = go to question 3 **NO** = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? **YES** = Is a bog for purpose of rating **NO** = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)*? **YES** = Category 1 **NO** = Is not a bog for purpose of rating	**Cat. I**

Wetland name or number 21.5 M

SC4	**Forested Wetlands** *(see p. 90)* Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its function.* ____ **Old-growth forests**: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. ____ **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. **YES** = Category I **NO** = ____ not a forested wetland with special characteristics	**Cat. I**
SC5	**Wetlands in Coastal Lagoons** *(see p. 91)* Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks. ____ The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom.)* **YES** = Go to SC 5.1 **NO** ____ not a wetland in a coastal lagoon SC 5.1 Does the wetland meet all of the following three conditions? ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. ____ The wetland is larger than 1/10 acre (4350 square ft.) **YES** = Category I **NO** = Category II	**Cat. I** **Cat. II**
SC6	**Interdunal Wetlands** *(see p. 93)* Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? **YES** = Go to SC 6.1 **NO** ____ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? **YES** = Category II **NO** = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? **YES** = Category III	**Cat. II** **Cat. III**
◆	**Category of wetland based on Special Characteristics** *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered **NO** for all types enter "Not Applicable" on p. 1	NA

Comments:

Routine Wetland Determination

21.5R

DATA FORM 1 *(Revised)*

WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project/Site: 520 - I5 Applicant/owner: WSDOT Investigator(s): Thiele, Douglas, Purslay	Date: 8/22/06 County: King State: WA S/T/R: 20/26N/R5E
Do normal circumstances exist on the site? ☑ Yes ☐ No Is the site significantly disturbed (atypical situation)? ☐ Yes ☑ No Is the area a potential problem area? ☐ Yes ☑ No Explanation of atypical or problem area:	Community ID: WET Transect ID: Plot ID: 21.5R Sp #2

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

Dominant Plant Species	*Stratum	% cover	Indicator	Dominant Plant Species	*Stratum	% cover	Indicator
Red Alder	T	20	FAC				
Himalayan Blackberry	S	80	FACU				
Salmon Berry	S	20	FAC-				
Equisetum Telmateia	H	30	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 75%

Check all indicators that apply and explain below:

- ☐ Visual observation of plant species growing in areas of prolonged inundation/saturation
- ☐ Morphological adaptations
- ☐ Technical Literature
- ☐ Physiological/reproductive adaptations
- ☑ Wetland plant database
- ☐ Personal knowledge of regional plant communities
- ☐ Other (explain)

Hydrophytic vegetation present? ☑ Yes ☐ No

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? ☑ Yes ☐ No Based on: ☐ Soil temp (record temp) ☑ Other (explain) Date	Water Marks: ☐ Yes ☑ No on Drift Lines: ☐ Yes ☑ No	Sediment Deposits: ☐ Yes ☑ No Drainage Patterns: ☐ Yes ☑ No
Depth of inundation: inches Depth to free water in pit: Depth to saturated soil: 10"	Oxidized Root (live roots) Channels <12 in.: ☐ Yes ☑ No FAC Neutral: ☐ Yes ☑ No	Local Soil Survey: ☐ Yes ☐ No Water-stained Leaves: ☐ Yes ☑ No
Check all that apply & explain below: ☐ Stream, lake or gage data ☐ Aerial photographs ☐ Other	Other (explain):	

Wetland hydrology present? ☑ Yes ☐ No

Rationale for decision/remarks:

Saturated soils at Depth in August during drought conditions

SOILS

Map Unit Name (Series and Phase): Ragnar – Indianola association, Slopes

Drainage Class

Field observations confirm mapped type? ☐ Yes ☑ No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-10		10YR 2/1	—	—	Silt loam	
10-16		5Y 5/1	—	—	Sandy loam	

Hydric Soil Indicators: (check all that apply)

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☑ Gleyed or Low-Chroma (=1) matrix
- ☐ Matrix chroma ≤ 2 with mottles
- ☐ Mg or Fe Concretions
- ☐ High Organic Content in Surface Layer of Sandy Soils
- ☑ Organic Streaking in Sandy Soils
- ☐ Listed on National/Local Hydric Soils List
- ☐ Other (explain in remarks)

Hydric soils present? ☑ Yes ☐ No

Rationale for decision/Remarks: ~~Per~~ Streaking in Sandy layer w/ Black soils above. Some mixing of layer.

Wetland Determination

Hydrophytic vegetation present?	☑ Yes	☐ No
Hydric soils present?	☑ Yes	☐ No
Wetland hydrology present?	☑ Yes	☐ No
Is the sampling point within a wetland?	☑ Yes	☐ No

Rationale/Remarks: 3 of 3 parameters

NOTES:

Revised 4/97

Inner parts of wetland have saturated soils & skunk cabbage. Blackberry is encroaching into "drier" ~~parts~~ fringes of the wetland

Routine Wetland Determination

DATA FORM 1 *(Revised)*

WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project/Site: 520 - I 5 Applicant/owner: WSDOT Investigator(s): Thiele, Douglas, Purdey	Date: 8/22/06 County: King State: WA S/T/R: 20/26N/05E
Do normal circumstances exist on the site? ☑ Yes ☐ No Is the site significantly disturbed (atypical situation)? ☐ Yes ☑ No Is the area a potential problem area? ☐ Yes ☑ No Explanation of atypical or problem area:	Community ID: UPL Transect ID: — Plot ID: 21.5R SP#2

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

Dominant Plant Species	*Stratum	% cover	Indicator	Dominant Plant Species	*Stratum	% cover	Indicator
Himalayan blackberry	S	35	FACU				
Salmonberry	S	35	FAC-				
Equisetum Telmateia	H	20	FACW				

HYDROPHYTIC VEGETATION INDICATORS: BLM is 90% aerial cover but not rooted in plot. Swordfern is present upgradient of site

% of dominants OBL, FACW, & FAC: 86%

Check all indicators that apply and explain below:

- ☐ Visual observation of plant species growing in areas of prolonged inundation/saturation
- ☐ Morphological adaptations
- ☐ Technical Literature
- ☐ Physiological/reproductive adaptations
- ☑ Wetland plant database
- ☐ Personal knowledge of regional plant communities
- ☐ Other (explain)

Hydrophytic vegetation present? ☑ Yes ☐ No

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? ☑ Yes ☐ No Based on: ☐ Soil temp (record temp) ☑ Other (explain) August	Water Marks: ☐ Yes ☑ No on	Sediment Deposits: ☐ Yes ☑ No
	Drift Lines: ☐ Yes ☑ No	Drainage Patterns: ☐ Yes ☑ No
Depth of inundation: — inches Depth to free water in pit: — Depth to saturated soil: —	Oxidized Root (live roots) Channels <12 in.: ☐ Yes ☑ No FAC Neutral: ☐ Yes ☑ No	Local Soil Survey: ☐ Yes ☑ No Water-stained Leaves: ☐ Yes ☑ No
Check all that apply & explain below: ☐ Stream, lake or gage data ☐ Aerial photographs ☐ Other	Other (explain):	

Wetland hydrology present? ☐ Yes ☑ No

Rationale for decision/remarks:

No apparent Hydrology

SOILS

Map Unit Name (Series and Phase): Rasner – Indianola Association 1

Drainage Class

Field observations confirm mapped type? ☐ Yes ☑ No

Taxonomy (subgroup) Slopings

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-8		10YR 2/2	–	–	loam	
8-14		2.5Y 4/2	–	–	Sandy loam	

Hydric Soil Indicators: (check all that apply)

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

Hydric soils present? ☐ Yes ☑ No

Rationale for decision/Remarks: lacks hydric characters – Sandy loam lacks streaking in TP-1

Wetland Determination

Hydrophytic vegetation present?	☑ Yes	☐ No
Hydric soils present?	☐ Yes	☑ No
Wetland hydrology present?	☐ Yes	☑ No
Is the sampling point within a wetland?	☐ Yes	☑ No

Rationale/Remarks: lacks soil & hydrology / 1 of 3 parameters

NOTES:

SP-2 on fringe of wetland

Revised 4/97

Routine Wetland Determination

DATA FORM 1 *(Revised)*

WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project/Site: 520 - to I-5 Applicant/owner: WSDOT Investigator(s): Thiele, Pursley, Douglas	Date: 8/22/06 County: King State: WA S/T/R: 26N/R5E
Do normal circumstances exist on the site? ☑ Yes ☐ No Is the site significantly disturbed (atypical situation)? ☐ Yes ☑ No Is the area a potential problem area? ☐ Yes ☑ No Explanation of atypical or problem area:	Community ID: WCT Transect ID: Plot ID: SP #3 21.5R

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

Dominant Plant Species	*Stratum	% cover	Indicator	Dominant Plant Species	*Stratum	% cover	Indicator
Alder	T	40	FAC				
Himalayan blackberry	S	30	FACU				
Lady Fern	H	20	FAC				
Scirpus ~~Americanus~~ microcarpus	H	20	OBL				
Mint ?? Cooley Hedge nettle		10	FACW				
Equisetum ~~sp~~ Telmateia	H	80	FACW				

HYDROPHYTIC VEGETATION INDICATORS: 1

% of dominants OBL, FACW, & FAC: 100 %

Check all indicators that apply and explain below:

- ☐ Visual observation of plant species growing in areas of prolonged inundation/saturation
- ☐ Morphological adaptations
- ☐ Technical Literature
- ☐ Physiological/reproductive adaptations
- ☑ Wetland plant database
- ☑ Personal knowledge of regional plant communities
- ☐ Other (explain)

Hydrophytic vegetation present? ☑ Yes ☐ No

Rationale for decision/Remarks: wet community

HYDROLOGY

Is it the growing season? ☑ Yes ☐ No	Water Marks: ☐ Yes ☑ No on	Sediment Deposits: ☐ Yes ☑ No
Based on: ☐ Soil temp (record temp) ☑ Other (explain) August	Drift Lines: ☐ Yes ☑ No	Drainage Patterns: ☐ Yes ☑ No
Depth of inundation: inches	Oxidized Root (live roots) Channels <12 in.: ☐ Yes ☑ No	Local Soil Survey: ☐ Yes ☑ No
Depth to free water in pit: —	FAC Neutral: ☐ Yes ☑ No	Water-stained Leaves: ☐ Yes ☑ No
Depth to saturated soil: 10"		
Check all that apply & explain below: ☐ Stream, lake or gage data ☐ Aerial photographs ☐ Other	Other (explain):	

Wetland hydrology present? ☑ Yes ☐ No

Rationale for decision/remarks:

Saturated soils in August - Ditch downgradient has flowing water

SOILS

Map Unit Name (Series and Phase): Lagner – Indianola association, Slopings

Drainage Class

Field observations confirm mapped type? ☐ Yes ☑ No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16		10YR 2/1	—	—	muck	

Hydric Soil Indicators: (check all that apply)

- ☐ Histosol
- ☐ Histic Epipedon – ? organic soil
- ☑ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☑ Gleyed or Low-Chroma (=1) matrix
- ☐ Matrix chroma ≤ 2 with mottles
- ☐ Mg or Fe Concretions
- ☐ High Organic Content in Surface Layer of Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on National/Local Hydric Soils List
- ☐ Other (explain in remarks)

Hydric soils present? ☑ Yes ☐ No

Rationale for decision/Remarks: Sulfidic odor

Wetland Determination

Hydrophytic vegetation present?	☑ Yes	☐ No
Hydric soils present?	☑ Yes	☐ No
Wetland hydrology present?	☑ Yes	☐ No
Is the sampling point within a wetland?	☑ Yes	☐ No

Rationale/Remarks: groundwater fed wetland, 3 of 3 parameters

NOTES:

Revised 4/97

Routine Wetland Determination

DATA FORM 1 *(Revised)*

WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project/Site: 520 - I-5 Applicant/owner: WSDOT Investigator(s): Thiele, Pursley, Douglas	Date: 8/22 County: King State: WA S/T/R: 20/26N/05E
Do normal circumstances exist on the site? ☑ Yes ☐ No Is the site significantly disturbed (atypical situation)? ☐ Yes ☑ No Is the area a potential problem area? ☐ Yes ☑ No Explanation of atypical or problem area:	Community ID: VP Transect ID: Plot ID: SP # 4 21.5 R

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

Dominant Plant Species	*Stratum	% cover	Indicator	Dominant Plant Species	*Stratum	% cover	Indicator
Red Alder	T	60	FAC				
Himalayan Blackberry	S	100	FACU				
Equisetum Telmateia	H	10	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 50%

Check all indicators that apply and explain below:

- ☐ Visual observation of plant species growing in areas of prolonged inundation/saturation
- ☐ Morphological adaptations
- ☐ Technical Literature
- ☐ Physiological/reproductive adaptations
- ☐ Wetland plant database
- ☐ Personal knowledge of regional plant communities
- ☐ Other (explain)

Hydrophytic vegetation present? ☑ Yes ☐ No

Rationale for decision/Remarks: Barely makes Hydric characteristics

HYDROLOGY

Is it the growing season? ☑ Yes ☐ No	Water Marks: ☐ Yes ☑ No on	Sediment Deposits: ☐ Yes ☑ No
Based on: ☐ Soil temp (record temp) ☐ Other (explain) August	Drift Lines: ☐ Yes ☑ No	Drainage Patterns: ☐ Yes ☑ No
Depth of inundation: inches	Oxidized Root (live roots) Channels <12 in.: ☐ Yes ☑ No	Local Soil Survey: ☐ Yes ☑ No
Depth to free water in pit: —	FAC Neutral: ☐ Yes ☑ No	Water-stained Leaves: ☐ Yes ☑ No
Depth to saturated soil: —		
Check all that apply & explain below: ☐ Stream, lake or gage data ☐ Aerial photographs ☐ Other	Other (explain):	

Wetland hydrology present? ☐ Yes ☑ No

Rationale for decision/remarks:

No hydrology Apparent

SOILS

Map Unit Name (Series and Phase): Ragner – Indianola association, sloping

Drainage Class

Field observations confirm mapped type? ☐ Yes ☑ No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12		10YR 4/3	—	—	Loam	
12 –		2.5Y 4/2	—	—	Sandy loam	

Hydric Soil Indicators: (check all that apply)

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

Hydric soils present? ☐ Yes ☑ No

Rationale for decision/Remarks:

Wetland Determination

Hydrophytic vegetation present?	☑ Yes	☐ No
Hydric soils present?	☐ Yes	☑ No
Wetland hydrology present?	☐ Yes	☑ No
Is the sampling point within a wetland?	☐ Yes	☑ No

Rationale/Remarks: Plant community marginally wet – no other indicators – not a wetland

NOTES:

Revised 4/97

Wetland name or number 21.5R

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): 21.5R Date of site visit: 8/22

Rated by: Thiele, Douglas Trained by Ecology? Yes X No____ Date of training: May 2005

SEC: 20 TWNSHP: 26N RNGE: R5E Is S/T/R in Appendix D? Yes____ No ✓

Map of wetland unit: Figure____ **Estimated size** 0.17 acre

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I____ **II**____ **III** ✓ **IV**____

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

Score for Water Quality Functions	14
Score for Hydrologic Functions	6
Score for Habitat Functions	17
TOTAL Score for Functions	27

Category based on SPECIAL CHARACTERISTCS of Wetland I____ **II**____ **Does not apply** NA

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

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics	
Estuarine	
Natural Heritage Wetland	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	

Wetland HGM Class used for Rating	
Depressional	
Riverine	
Lake-fringe	
Slope	X
Flats	
Freshwater Tidal	
Check if unit has multiple HGM classes present	

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number 21.50L

Classification of Vegetated Wetlands for Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
   NO – go to 2 **YES** – the wetland class is **Tidal Fringe**
   If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
   YES – Freshwater Tidal Fringe **NO – Saltwater Tidal Fringe (Estuarine)**
   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is a Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland meet both of the following criteria?
   _____ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
   _____ At least 30% of the open water area is deeper than 6.6 (2 m)?
   NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland meet all of the following criteria?
   X The wetland is on a slope *(slope can be very gradual)*.
   X 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.
   X The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).*
   NO – go to 5 **YES** – The wetland class is **Slope**

5. Does the entire wetland 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 two years.
   NOTE: *The riverine unit can contain depressions that are filled with water when the river is not flooding..*
   NO – go to 6 **YES** – The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
   No – go to 8 YES – The wetland class is Depressional

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

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 along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

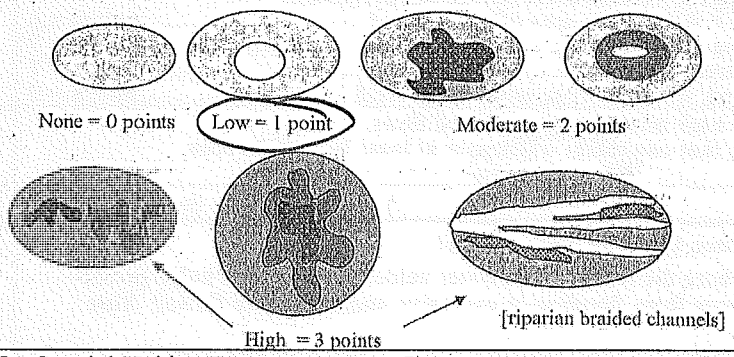
If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number 21.5 R

S	Slope Wetlands	Points (only 1 score per box)
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	
S 1	**Does the wetland have the potential to improve water quality?**	*(see p.64)*
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less *(a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)* .....points = 3 • Slope is 1% - 2%.....points = 2 • Slope is 2% - 5%.....points = 1 • Slope is greater than 5%.....points = 0	1
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic *(Use NRCS definitions)*. **YES** = 3 points **NO** = 0 points	Ø
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.* • Dense, uncut, herbaceous vegetation > 90% of the wetland area .....points = 6 • Dense, uncut, herbaceous vegetation > 1/2 of area.....points = 3 • Dense, woody, vegetation > 1/2 of area. .....points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area.....points = 1 • Does not meet any of the criteria above for vegetation .....points = 0 **Aerial photo or map with vegetation polygons**	**Figure ___** 6
	Total for S 1 *Add the points in the boxes above*	7
S 2	**Does the wetland have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ___ Grazing in the wetland or within 150 ft X Untreated stormwater discharges to wetland ___ Tilled fields, logging, or orchards within 150 ft. of wetland ___ Residential, urban areas, or golf courses are within 150 ft. upslope of wetland ___ Other _____ **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 67)* Multiplier 2
◆	**TOTAL – Water Quality Functions** Multiply the score from S1 by S2; then ***add score to table on p. 1***	14
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	**Does the wetland have the potential to reduce flooding and stream erosion?**	*(see p.68)*
	S 3.1 Characteristics of vegetation 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 > 1/8in), or dense enough to remain erect during surface flows).* • Dense, uncut, **rigid** vegetation covers > 90% of the area of the wetland .....points = 6 • Dense, uncut, **rigid** vegetation> 1/2 area of wetland.....points = 3 • Dense, uncut, **rigid** vegetation > 1/4 area. .....points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid .....points = 0	3
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. **YES** = 2 points **NO** = 0 points	Ø
	Add the points in the boxes above	3
S 4	**Does the wetland have the opportunity to reduce flooding and erosion?** Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? *Note which of the following conditions apply.* X Wetland has surface runoff that drains to a river or stream that has flooding problems ___ Other _____ *(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)* **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 70)* Multiplier 2
◆	**TOTAL – Hydrologic Functions** Multiply the score from S3 by S4; then ***add score to table on p. 1***	6

Comments:

Wetland name or number 21.2 DL

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	Points (only 1 score per box)
H 1 Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see P. 72)*: *Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.* ___ Aquatic Bed ___ Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) *If the unit has a forested class check if:* ___ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. *Add the number of vegetation types that qualify. If you have:* **Map of Cowardin vegetation classes** 4 structures or more .....points = 4 — 3 structures .....points = 2 2 structures .....points = 1 — 1 structure.....points = 0	**Figure ___** 1
H 1.2 Hydroperiods *(see p.73)*: *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).* ___ Permanently flooded or inundated — 4 or more types present points = 3 X Seasonally flooded or inundated — 3 or more types present..... points = 2 ___ Occasionally flooded or inundated — 2 types present ..... points = 1 X Saturated only — 1 type present..... points = 0 ___ Permanently flowing stream or river in, or adjacent to, the wetland ___ Seasonally flowing stream in, or adjacent to, the wetland ___ **Lake-fringe wetland .....= 2 points** ___ **Freshwater tidal wetland .....= 2 points** **Map of hydroperiods**	**Figure ___** 1
H 1.3 Richness of Plant Species *(see p. 75)*: 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, Canadian Thistle.* If you counted: > 19 species.....points = 2; 5 – 19 species .....points = 1; < 5 species.....points = 0 List species below if you want to:	1
H 1.4 Interspersion of Habitats *(see p. 76)*: Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". **Use map of Cowardin classes.**	**Figure ___** 1
H 1.5 Special Habitat Features *(see p. 77)*: *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland ___ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* ___ At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* X Invasive plants cover less than 25% of the wetland area in each stratum of plants *NOTE: The 20% stated in early printings of the manual on page 78 is an error.*	3
H 1 TOTAL Score – potential for providing habitat *Add the points in the column above*	7

Wetland name or number 21.5R

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers *(see P. 80)*: *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".* ___ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use).. ..... **points = 5** ___ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference ..... **points = 4** ___ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference ..... **points = 4** X 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference ..... **points = 3** ___ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference ..... **points = 3** **If buffer does not meet any of the criteria above:** ___ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK ..... **points = 2** ___ No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK ..... **points = 2** ___ Heavy grazing in buffer..... **points = 1** ___ Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) ..... **points = 0** ___ Buffer does not meet any of the criteria above..... **points = 1** **Arial photo showing buffers**	**Figure ___** 3
	H 2.2 Corridors and Connections *(see p. 81)* H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? *(Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor)* **YES = 4 points** (go to H 2.3) **NO** = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR a Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? **YES = 2 points** (go to H 2.3) **NO** = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR **YES** = 1 point • Within 1 mile of a lake greater than 20 acres? **NO** = 0 points	4

Comments:

Wetland name or number 21.5 OL

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82):
Which of the following priority habitats are within 330 ft. (100m) of the wetland? *NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.*

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

____ **Aspen Stands**: Pure or mixed stands of aspen greater than 0.8 ha (2 acres)

____ **Cliffs**: Greater than 7.6m (25 ft) high and occurring below 5000 ft.

____ **Old-growth forests**: (Old growth west of Cascade Crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings, with at least 20 trees/ha (8 trees/acre) > 81cm (32 in) dbh or > 200 years of age.

____ **Mature forests**: Stands with average diameters exceeding 53cm (21 in) 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 of the Cascade Crest.

____ **Prairies**: Relatively undisturbed areas (as indicated by dominance of native plants) where greases and/or forbs form the natural climax plant community.

____ **Talus**: Homogenous areas of rock rubble ranging in average size 0.15 – 2.0m (0.5 – 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

____ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages.

____ **Oregon white Oak**: Woodlands stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.

____ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.

____ **Estuary/Estuary-like**: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5 ppt. during the period of average annual low flow. Includes both estuaries and lagoons.

____ **Marine/Estuarine Shorelines**: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).

If wetland has 3 or more priority habitats . = 4 points
If wetland has 2 priority habitats ..... = 3 points
If wetland has 1 priority habit... = 1 point
No habitats ..... = 0 points
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. (Nearby wetlands are addressed in question H 2.4).

Ø

H 2.4 Wetland Landscape: *Choose the **one** description of the landscape around the wetland that best fits (see p. 84)*

- There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development ..... points = 5
- The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile ..... points = 5
- There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed ..... points = 3 ?
- The wetland fringe on a lake **with** disturbance and there are 3 other lake-fringe wetlands within 1/2 mile ..... points = 3
- There is at least 1 wetland within 1/2 mile ..... points = 2
- There are no wetlands within 1/2 mile ..... points = 0

H 2 TOTAL Score – opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4*	7
TOTAL for H 1 from page 8	10
◆ **Total Score for Habitat Functions** Add the points for H 1 and H 2; then ***record the result on p. 1***	17

Comments:

Wetland name or number 27.5a

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

	Wetland Type – *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	
SC1	**Estuarine wetlands?** *(see p.86)* Does the wetland unit meet the following criteria for Estuarine wetlands? ____ The dominant water regime is tidal, ____ Vegetated, and ____ With a salinity greater than 0.5 ppt. **YES** = Go to SC 1.1 **NO** ____	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? **YES** = Category I **NO** = go to SC 1.2	**Cat. 1**
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? **YES** = Category I **NO** = Category II ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland ____ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual Rating I/II**
SC2	**Natural Heritage Wetlands** *(see p. 87)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? *(This question is used to screen out most sites before you need to contact WNHP/DNR.)* S/T/R information from Appendix D ____ or accessed from WNHP/DNR web site ____ **YES** ____ Contact WNHP/DNR (see p. 79) and go to SC 2.2 **NO** ____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? **YES** = Category 1 **NO** ____ not a Heritage Wetland	**Cat I**
SC3	**Bogs** *(see p. 87)* Does the wetland (**or any part of the unit**) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. ***If you answer yes you will still need to rate the wetland based on its function.*** 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? **YES** = go to question 3 **NO** = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? **YES** = go to question 3 **NO** = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? **YES** = Is a bog for purpose of rating **NO** = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)*? **YES** = Category I **NO** = Is not a bog for purpose of rating	**Cat. I**

Wetland name or number 21.24

SC4	**Forested Wetlands** *(see p. 90)* Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its function.* ____ **Old-growth forests:** (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. ____ **Mature forests:** (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. **YES** = Category I **NO** = ____ not a forested wetland with special characteristics	**Cat. I**
SC5	**Wetlands in Coastal Lagoons** *(see p. 91)* Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks. ____ The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom.)* **YES** = Go to SC 5.1 **NO** ____ not a wetland in a coastal lagoon SC 5.1 Does the wetland meet all of the following three conditions? ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. ____ The wetland is larger than 1/10 acre (4350 square ft.) **YES** = Category I **NO** = Category II	**Cat. I** **Cat. II**
SC6	**Interdunal Wetlands** *(see p. 93)* Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? **YES** = Go to SC 6.1 **NO** ____ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? **YES** = Category II **NO** = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? **YES** = Category III	**Cat. II** **Cat. III**
◆	**Category of wetland based on Special Characteristics** *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered **NO** for all types enter "Not Applicable" on p. 1	NA

Comments:

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

Project/Site: WSDOT I-405 KIRKLAND NICKEL	Date: 3/4/04
Applicant/owner: WSDOT	County: KING State: WA
Investigator(s): I. Logan + S. Noland	S/T/R: 17/26N/5E
Do Normal Circumstances exist on the site? (yes) no Is the site significantly disturbed (atypical situation)? yes (no) Is the area a potential Problem Area? yes (no) Explanation of atypical or problem area:	Community ID: U Transect ID: Plot ID: DP 22.5L-A

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

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Rubus discolor	S	30	FACU*	Polystichum munitum	H	20	FACU*
Cytisus scoparius	S	5	NL	Maianthemum dilatum	H	10	FACU
Populus balsamifera	T	10	FAC*				
Alnus rubra	T	30	FAC*				
Thuja plicata	T	10	FAC				
Rubus spectabilis	S	40	FAC+*				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 50%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation ____
Morphological adaptations ____
Technical Literature ____
Physiological/reproductive adaptations ____
Wetland plant database ____
Personal knowledge of regional plant communities ____
Other (explain) ____

Hydrophytic vegetation present? yes (no)
Rationale for decision/Remarks:
Vegetation does not contain more than 50% of dominants that are OBL, FACW, FAC.

HYDROLOGY

Is it the growing season? (yes) no

Based on: ____ soil temp (record temp ____)
DATE other (explain)

Dept. of inundation: — inches

Depth to free water in pit: >16 inches
Depth to saturated soil: >16 inches

Check all that apply & explain below:
Stream, Lake or gage data: ____
Aerial photographs: ____ Other: ____

Water Marks: yes (no) on ____	Sediment Deposits: yes (no)
Drift Lines: yes (no)	Drainage Patterns: yes (no)
Oxidized Root (live roots) Channels <12 in. yes (no)	Local Soil Survey: yes (no)
FAC Neutral: yes no	Water-stained Leaves yes (no)
Other (explain):	

Wetland hydrology present? yes (no)
Rationale for decision/Remarks:
No indicators present.

SOILS

Map Unit Name (Series & Phase) Alderwood gravelly sandy loam 6 to 15% slopes

Drainage Class moderately well drained

Field observations confirm mapped type? Yes (No)

Taxonomy (subgroup) Entic Durochrepts

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	A	10YR 2/1	-	-	sandy loam w/ organics/wood	

Hydric Soil Indicators: (check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- X Gleyed or Low-Chroma (=1) matrix
- ____ Matrix chroma ≤ 2 with mottles
- ____ Mg or Fe Concretions
- ____ High Organic Content in Surface Layer of Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on National/Local Hydric Soils List
- ____ Other (explain in remarks)

Hydric soils present? (yes) no

Rationale for decision/Remarks:
Deep A horizon that is dark, but dry + friable. High organic content

Wetland Determination (circle)

Hydrophytic vegetation present?	yes	(no)			
Hydric soils present?	(yes)	no	Is the sampling point within a wetland?	yes	(no)
Wetland hydrology present?	yes	(no)			

Rationale/Remarks:
Although soils are dark in chroma they are dry + friable in this early date of the growing season. All three criteria not met.

NOTES: DP-A is located near PMK ID-72 (SP-1).

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

Project/Site: I-405 Kirkland Nickel	Date: 3-4-04
Applicant/owner: WSDOT	County: King State: WA
Investigator(s): Ilon Logan, Sara Noland	S/T/R: 17/26N/5E
Do Normal Circumstances exist on the site? (yes) no Is the site significantly disturbed (atypical situation)? yes (no) Is the area a potential Problem Area? yes (no) Explanation of atypical or problem area:	Community ID: PFO Transect ID: Plot ID: DP 225 L-B

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

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Rubus discolor	S	40	FACU				
Salix sp.	T	30	FAC FACW				
Populus balsamifera	T	15	FAC				
Alnus rubra	T	25	FAC				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 67%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation	X	Physiological/reproductive adaptations	
Morphological adaptations		Wetland plant database	✓
Technical Literature		Personal knowledge of regional plant communities	
		Other (explain)	

Hydrophytic vegetation present? (yes) no
Rationale for decision/Remarks:
Two of three dom. species are FAC or wetter.

HYDROLOGY

Is it the growing season? (yes) no Based on: _____ soil temp (record temp _____) date other (explain) after March 1	Water Marks: yes (no) on _____ Drift Lines: (yes) no	Sediment Deposits: (yes) no Drainage Patterns: (yes) no
Dept. of inundation: — inches Depth to free water in pit: 4 inches Depth to saturated soil: 0 inches	Oxidized Root (live roots) Channels <12 in. yes (no) FAC Neutral: yes (no)	Local Soil Survey: yes (no) Water-stained Leaves (yes) no
Check all that apply & explain below: Stream, Lake or gage data: ____ Aerial photographs: ____ Other: ____	Other (explain):	

Wetland hydrology present? (yes) no
Rationale for decision/Remarks:
Inundation on surface, freewater in pit at 4", evidence of water outflow from culvert toward drainage channel.

SOILS

Map Unit Name (Series & Phase) Alderwood gravelly sandy loam 6 to 15% slopes

Drainage Class moderately well drained

Taxonomy (subgroup) Entic Durochrepts

Field observations confirm mapped type? Yes (No)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12	A	10YR 2/1	NONE	NONE	loamy sand w/ organic	
12-18	fill	" "	" "	" "	riprap w/ sediment	

Hydric Soil Indicators: (check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- ✓ Gleyed or Low-Chroma (=1) matrix
- ____ Matrix chroma ≤ 2 with mottles
- ____ Mg or Fe Concretions
- ____ High Organic Content in Surface Layer of Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on National/Local Hydric Soils List
- ____ Other (explain in remarks)

Hydric soils present? (yes) no

Rationale for decision/Remarks:

Chroma of 1 to surface, Sufficient hydric indicators.

Wetland Determination (circle)

Hydrophytic vegetation present? (yes) no

Hydric soils present? (yes) no

Wetland hydrology present? (yes) no

Is the sampling point within a wetland? (yes) no

Rationale/Remarks:

All three criteria met.

NOTES:

Area flagged is part of forested wetland that lies along a drainage feature. Portion of wetland beyond fence (outside ROW) was previously flagged by PMX - WETLAND D (74 FLAGS) Portion we are flagging is small extension of wetland inside ROW. Veg. in our flagged area is mostly R. armeniacus/discolor, some alder; beyond fence is A. rubra, Salix, Populus, outflow from culvert above soil pit flows downslope beyond fence, into drainage channel.

Revised 4/97

Wetland name or number 22.5L

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): 22.5L Date of site visit: 3/6/07

Rated by: C. Douglas, J. Purvis Trained by Ecology? Yes____ No ✓ Date of training: —

SEC: 17 TWNSHP: 26N RNGE: 5E Is S/T/R in Appendix D? Yes____ No ____

Map of wetland unit: Figure_____ Estimated size 4.08 ac

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I____ II____ III____ IV ✓

Category I =	Score > 70	Score for Water Quality Functions	6
Category II =	Score 51 - 69	Score for Hydrologic Functions	6
Category III =	Score 30 – 50	Score for Habitat Functions	13
Category IV =	Score < 30	TOTAL Score for Functions	25

Category based on SPECIAL CHARACTERISTCS of Wetland I____ II____ Does not apply ✓

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

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		**Depressional**	
Natural Heritage Wetland		**Riverine**	
Bog		**Lake-fringe**	
Mature Forest		**Slope**	
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above		Check if unit has multiple HGM classes present	

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	**YES**	**NO**
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✓
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		✓
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*		✓
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		✓

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number 2251

Classification of Vegetated Wetlands for Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
   NO – go to 2 **YES** – the wetland class is **Tidal Fringe**
   If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
   YES – Freshwater Tidal Fringe **NO – Saltwater Tidal Fringe (Estuarine)**
   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is a Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. _____).

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland meet both of the following criteria?
   _____ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
   _____ At least 30% of the open water area is deeper than 6.6 (2 m)?
   NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland meet all of the following criteria?
   ✓ The wetland is on a slope *(slope can be very gradual)*.
   ✓ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   _____ The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these types 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).*
   NO – go to 5 **YES** – The wetland class is **Slope**

5. Does the entire wetland 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 two years.
   NOTE: *The riverine unit can contain depressions that are filled with water when the river is not flooding..*
   NO – go to 6 **YES** – The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
   No – go to 8 YES – The wetland class is Depressional

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

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 along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

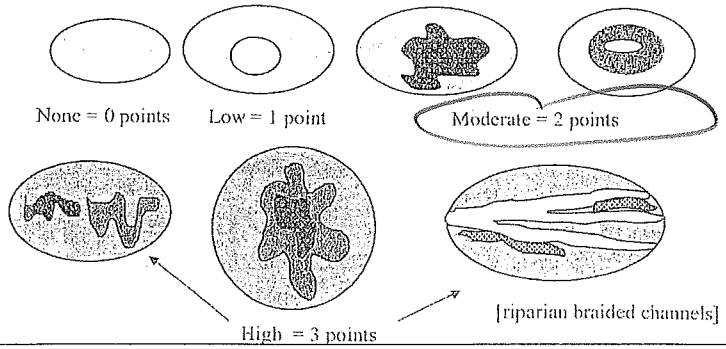
If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number 22.52

S	Slope Wetlands	Points (only 1 score per box)
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	
S 1	**Does the wetland have the potential to improve water quality?**	*(see p.64)*
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less *(a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)*..... points = 3 • Slope is 1% - 2% ..... points = 2 • Slope is 2% - 5%. ..... points = 1 • Slope is greater than 5% ..... points = 0	1
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic *(Use NRCS definitions).* **YES** = 3 points **NO** = 0 points	Ø
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.* • Dense, uncut, herbaceous vegetation > 90% of the wetland area ..... points = 6 • Dense, uncut, herbaceous vegetation > 1/2 of area ..... points = 3 • Dense, woody, vegetation > 1/2 of area. ..... points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area ..... points = 1 • Does not meet any of the criteria above for vegetation ..... points = 0 **Aerial photo or map with vegetation polygons**	**Figure ___** 2
	Total for S 1 *Add the points in the boxes above*	3
S 2	**Does the wetland have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ___ Grazing in the wetland or within 150 ft ✓ Untreated stormwater discharges to wetland ✓ Tilled fields, logging, or orchards within 150 ft. of wetland ___ Residential, urban areas, or golf courses are within 150 ft. upslope of wetland ___ Other ___ **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 67)* Multiplier 2
◆	**TOTAL – Water Quality Functions** Multiply the score from S1 by S2; then ***add score to table on p. 1***	6
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	**Does the wetland have the potential to reduce flooding and stream erosion?**	*(see p.68)*
	S 3.1 Characteristics of vegetation 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 > 1/8in), or dense enough to remain erect during surface flows).* • Dense, uncut, **rigid** vegetation covers > 90% of the area of the wetland ..... points = 6 • Dense, uncut, **rigid** vegetation> 1/2 area of wetland ..... points = 3 • Dense, uncut, **rigid** vegetation > 1/4 area..... points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid..... points = 0	3
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. **YES** = 2 points **NO** = 0 points	Ø
	Add the points in the boxes above	3
S 4	**Does the wetland have the opportunity to reduce flooding and erosion?** Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? *Note which of the following conditions apply.* ✓ Wetland has surface runoff that drains to a river or stream that has flooding problems ___ Other ___ *(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)* **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 70)* Multiplier 2
◆	**TOTAL – Hydrologic Functions** Multiply the score from S3 by S4; then ***add score to table on p. 1***	6

Comments:

Wetland name or number 22.5L

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	Points (only 1 score per box)
H 1 Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see P. 72)*: *Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.* ✓ Aquatic Bed ✓ Emergent plants ✓ Scrub/shrub (areas where shrubs have > 30% cover) ✓ Forested (areas where trees have > 30% cover) *If the unit has a forested class check if:* ____ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. *Add the number of vegetation types that qualify. If you have:* **Map of Cowardin vegetation classes** 4 structures or more.....points = 4 3 structures..... points = 2 2 structures.....points = 1 1 structure ..... points = 0	**Figure ___** 2
H 1.2 Hydroperiods *(see p.73)*: *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).* ✓ Permanently flooded or inundated 4 or more types present points = 3 ✓ Seasonally flooded or inundated 3 or more types present.... points = 2 ✓ Occasionally flooded or inundated 2 types present..... points = 1 ✓ Saturated only 1 type present ..... points = 0 ____ Permanently flowing stream or river in, or adjacent to, the wetland ____ Seasonally flowing stream in, or adjacent to, the wetland ____ **Lake-fringe wetland.....= 2 points** ____ **Freshwater tidal wetland.....= 2 points** **Map of hydroperiods**	**Figure ___** 2
H 1.3 Richness of Plant Species *(see p. 75)*: 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, Canadian Thistle.* If you counted: > 19 species ..... points = 2 5 – 19 species ..... points = 1 List species below if you want to: < 5 species ..... points = 0 _____ _____ _____ _____	1
H 1.4 Interspersion of Habitats *(see p. 76)*: Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". **Use map of Cowardin classes.**	**Figure ___** 2
H 1.5 Special Habitat Features *(see p. 77)*: *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* ✓ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) ____ Standing snags (diameter at the bottom > 4 inches) in the wetland ____ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) ____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* ____ At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ____ Invasive plants cover less than 25% of the wetland area in each stratum of plants *NOTE: The 20% stated in early printings of the manual on page 78 is an error.*	2
H 1 TOTAL Score – potential for providing habitat *Add the points in the column above*	4

Wetland name or number 22.52

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers *(see P. 80)*: *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".* ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use).. .....**points = 5** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference.....**points = 4** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference.....**points = 4** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference.....**points = 3** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference .....**points = 3** **If buffer does not meet any of the criteria above:** ____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ Heavy grazing in buffer.....**points = 1** ____ Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).....**points = 0** ____ Buffer does not meet any of the criteria above .....**points = 1** **Arial photo showing buffers**	**Figure ___** 1
	H 2.2 Corridors and Connections *(see p. 81)* H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? *(Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).* **YES = 4 points** (go to H 2.3) **NO** = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR a Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? **YES = 2 points** (go to H 2.3) **NO** = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR **YES** = 1 point • Within 1 mile of a lake greater than 20 acres? **NO** = 0 points	Ø

Comments:

Wetland name or number 22,52

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): Which of the following priority habitats are within 330 ft. (100m) of the wetland? *NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.* ____ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____ **Aspen Stands**: Pure or mixed stands of aspen greater than 0.8 ha (2 acres) ____ **Cliffs**: Greater than 7.6m (25 ft) high and occurring below 5000 ft. ____ **Old-growth forests**: (Old growth west of Cascade Crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings, with at least 20 trees/ha (8 trees/acre) > 81cm (32 in) dbh or > 200 years of age. ____ **Mature forests**: Stands with average diameters exceeding 53cm (21 in) 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 of the Cascade Crest. ____ **Prairies**: Relatively undisturbed areas (as indicated by dominance of native plants) where greases and/or forbs form the natural climax plant community. ____ **Talus**: Homogenous areas of rock rubble ranging in average size 0.15 – 2.0m (0.5 – 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages. ____ **Oregon white Oak**: Woodlands stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. ____ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. ____ **Estuary/Estuary-like**: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5 ppt. during the period of average annual low flow. Includes both estuaries and lagoons. ____ **Marine/Estuarine Shorelines**: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control). If wetland has 3 or more priority habitats .= 4 points If wetland has 1 priority habit ...= 1 point If wetland has 2 priority habitats .....= 3 points No habitats.....= 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. (Nearby wetlands are addressed in question H 2.4).	Ø
	H 2.4 Wetland Landscape: *Choose the **one** description of the landscape around the wetland that best fits (see p. 84)* • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.....points = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. .....points = 3 • The wetland fringe on a lake **with** disturbance and there are 3 other lake-fringe wetlands within 1/2 mile.....points = 3 • There is at least 1 wetland within 1/2 mile.....points = 2 • There are no wetlands within 1/2 mile .....points = 0	3
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4*	9
	TOTAL for H 1 from page 8	4
◆	**Total Score for Habitat Functions** Add the points for H 1 and H 2; then ***record the result on p. 1***	13

Comments:

Wetland name or number 22.5L

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

	Wetland Type – *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	
SC1	**Estuarine wetlands?** *(see p.86)* Does the wetland unit meet the following criteria for Estuarine wetlands? ____ The dominant water regime is tidal, ____ Vegetated, and ____ With a salinity greater than 0.5 ppt. **YES** = Go to SC 1.1 **NO** _____	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? **YES** = Category I **NO** = go to SC 1.2	**Cat. 1**
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? **YES** = Category I **NO** = Category II ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland ____ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual Rating I/II**
SC2	**Natural Heritage Wetlands** *(see p. 87)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? *(This question is used to screen out most sites before you need to contact WNHP/DNR.)* S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site _____ **YES** _____ Contact WNHP/DNR (see p. 79) and go to SC 2.2 **NO** _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? **YES** = Category 1 **NO** _____ not a Heritage Wetland	**Cat I**
SC3	**Bogs** *(see p. 87)* Does the wetland **(or any part of the unit)** meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. ***If you answer yes you will still need to rate the wetland based on its function.*** 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? **YES** = go to question 3 **NO** = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? **YES** = go to question 3 **NO** = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? **YES** = Is a bog for purpose of rating **NO** = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)*? **YES** = Category I **NO** = Is not a bog for purpose of rating	**Cat. I**

Wetland name or number 22.5L

SC4	**Forested Wetlands** *(see p. 90)* Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its function.* ____ **Old-growth forests**: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. ____ **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. **YES** = Category I **NO** = ____ not a forested wetland with special characteristics	**Cat. I**
SC5	**Wetlands in Coastal Lagoons** *(see p. 91)* Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks. ____ The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom.)* **YES** = Go to SC 5.1 **NO** ____ not a wetland in a coastal lagoon SC 5.1 Does the wetland meet all of the following three conditions? ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. ____ The wetland is larger than 1/10 acre (4350 square ft.) **YES** = Category I **NO** = Category II	**Cat. I** **Cat. II**
SC6	**Interdunal Wetlands** *(see p. 93)* Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? **YES** = Go to SC 6.1 **NO** ____ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? **YES** = Category II **NO** = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? **YES** = Category III	**Cat. II** **Cat. III**
◆	**Category of wetland based on Special Characteristics** *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered **NO** for all types enter "Not Applicable" on p. 1	NA

Comments:

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

Project/Site: WSDOT 405 Project Kirkland Nickel Applicant/owner: Investigator(s): Linda Krippner, Adam Merrill, Jeff Collins	Date: 3/2/04 County: King State: WA S/T/R: 17/26N/5E
Do Normal Circumstances exist on the site? (yes) no Is the site significantly disturbed (atypical situation)? yes (no) Is the area a potential Problem Area? yes (no) Explanation of atypical or problem area:	Community ID: Transect ID: Plot ID: 208LZA

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

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Rubus discolor	S	50	FACU	Oemleria cerasiformis	S	10	FACU
Polystichum munitum	H	60	FACU	Rubus spectabilis	S	15	FACU
Salix lucida	T	30	FACW				
Populus balsamifera	T	20	FAC				
Pseudotsuga menziesii	T	30	FACU				
Alnus rubra	T	5	FAC				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 40%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation	____	Physiological/reproductive adaptations	____
Morphological adaptations	____	Wetland plant database	____
Technical Literature	____	Personal knowledge of regional plant communities	____
		Other (explain)	____

Hydrophytic vegetation present? (yes) no

Rationale for decision/Remarks:

FAC or wetter plants not dominant. Salix rooted in wetland

HYDROLOGY

Is it the growing season? (yes) no	Water Marks: yes (no) on ____	Sediment Deposits: yes (no)
Based on: ____ soil temp (record temp ____) new growth on plants other (explain)	Drift Lines: yes (no)	Drainage Patterns: yes (no)
Dept. of inundation: ~ inches	Oxidized Root (live roots) Channels <12 in. yes (no)	Local Soil Survey: yes (no)
Depth to free water in pit: ~ inches Depth to saturated soil: ~ inches	FAC Neutral: yes (no)	Water-stained Leaves yes (no)
Check all that apply & explain below: Stream, Lake or gage data: ____ Aerial photographs: ____ Other: ____	Other (explain):	

Wetland hydrology present? yes (no)

Rationale for decision/Remarks:

Moist soils, but no saturation

SOILS

Map Unit Name (Series & Phase) Alderwood gravelly sandy loam 6 to 15% slopes

Drainage Class moderately well drained

Field observations confirm mapped type? (Yes) No

Taxonomy (subgroup) Entic Durochrepts

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-18	A	10YR3/2	—	—	gravelly sandy loam	

Hydric Soil Indicators: (check all that apply)

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

Hydric soils present? yes (no)

Rationale for decision/Remarks:

No hydric indicators present in soil pit

Wetland Determination (circle)

Hydrophytic vegetation present? yes (no)
Hydric soils present? yes (no)
Wetland hydrology present? yes (no)

Is the sampling point within a wetland? yes (no)

Rationale/Remarks:

No wetland criteria met.

NOTES:

DP A is upslope of wetland 22.8L, in forested area. Road shoulder is ~20 feet to east.

Revised 4/97

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

Project/Site: WSDOT 405 Project Kirkland Nickel
Applicant/owner:
Investigator(s): Linda Krippner, Adam Merrill

Date: 2/26/04
County: King
State: WA
S/T/R: 17/26N/5E

Do Normal Circumstances exist on the site? (yes) no
Is the site significantly disturbed (atypical situation)? yes (no)
Is the area a potential Problem Area? yes (no)
Explanation of atypical or problem area:

Community ID:
Transect ID: wetland
Plot ID: 22.8L-B

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

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Phalaris arundinacea *	H	95	FACW				
Salix lucida *	S	25	FACW				
Rubus discolor *	S	20	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 67%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation X
Morphological adaptations ___
Technical Literature ___
Physiological/reproductive adaptations ___
Wetland plant database ___
Personal knowledge of regional plant communities ___
Other (explain) ___

Hydrophytic vegetation present? (yes) no
Rationale for decision/Remarks:
> 50% of dominants are FAC or wetter

HYDROLOGY

Is it the growing season? (yes) no

Based on: ___ soil temp (record temp ___)
new shoots on plants other (explain)

Dept. of inundation: — inches
Depth to free water in pit: 2 inches
Depth to saturated soil: 0 inches

Water Marks: (yes) no on ___
Drift Lines: yes (no)
Oxidized Root (live roots) Channels <12 in. yes (no)
FAC Neutral: yes no

Sediment Deposits: yes (no)
Drainage Patterns: (yes) no
Local Soil Survey: yes (no)
Water-stained Leaves (yes) no

Check all that apply & explain below:
Stream, Lake or gage data: ___
Aerial photographs: ___ Other: ___

Other (explain):

Wetland hydrology present? (yes) no
Rationale for decision/Remarks:
Soil saturated to surface at data plot. Areas of surface ponding nearby.

SOILS

Map Unit Name (Series & Phase) Alderwood gravelly sandy loam 6 to 15% slopes

Drainage Class moderately well drained

Taxonomy (subgroup) Entic Durochrepts

Field observations confirm mapped type? Yes (No)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	A	10YR 3/1	—	—	Sandy loam	

Hydric Soil Indicators: (check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- ____ Reducing Conditions
- X Gleyed or Low-Chroma (=1) matrix
- ____ Matrix chroma ≤ 2 with mottles
- ____ Mg or Fe Concretions
- ____ High Organic Content in Surface Layer of Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on National/Local Hydric Soils List
- ____ Other (explain in remarks)

Hydric soils present? (yes) no

Rationale for decision/Remarks:

Low chroma soil observed in soil pit

Wetland Determination (circle)

Hydrophytic vegetation present?	(yes)	no			
Hydric soils present?	(yes)	no	Is the sampling point within a wetland?	(yes)	no
Wetland hydrology present?	(yes)	no			

Rationale/Remarks:

Meets all 3 wetland criteria

NOTES:

Wetland 22.8L is a PFO wetland associated with a small stream. Water flows into wetland from culverts under 405. Stream channel becomes more defined as wetland slopes down. Wetland continues west out of ROW

Revised 4/97

Wetland name or number 22.8L

[redacted]

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): 22.8L Date of site visit: 3/6/07

Rated by: C. Douglas, J. Purdy Trained by Ecology? Yes____ No ✓ Date of training: —

SEC: 17 TWNSHP: 26N RNGE: 5E Is S/T/R in Appendix D? Yes____ No ✓

Map of wetland unit: Figure____ Estimated size 1.02

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I____ II____ III ✓ **IV____**

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

Score for Water Quality Functions	10
Score for Hydrologic Functions	16
Score for Habitat Functions	13
TOTAL Score for Functions	39

Category based on SPECIAL CHARACTERISTCS of Wetland I____ II____ Does not apply____

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

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics	
Estuarine	
Natural Heritage Wetland	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	

Wetland HGM Class used for Rating	
Depressional	
Riverine	✓
Lake-fringe	
Slope	
Flats	
Freshwater Tidal	
Check if unit has multiple HGM classes present	✓

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✓
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		✓
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*		✓
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		✓

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number 22.32

Classification of Vegetated Wetlands for Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
   NO – go to 2 **YES** – the wetland class is **Tidal Fringe**
   If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
   YES – Freshwater Tidal Fringe **NO – Saltwater Tidal Fringe (Estuarine)**
   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is a Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. _____).

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland meet both of the following criteria?
   _____ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
   _____ At least 30% of the open water area is deeper than 6.6 (2 m)?
   NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland meet all of the following criteria?
   ✓ The wetland is on a slope *(slope can be very gradual)*.
   ✓ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   _____ The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these types 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).*
   NO – go to 5 **YES** – The wetland class is **Slope**

5. Does the entire wetland 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 two years.
   NOTE: *The riverine unit can contain depressions that are filled with water when the river is not flooding..*
   NO – go to 6 **YES** – The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
   No – go to 8 YES – The wetland class is Depressional

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

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 along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

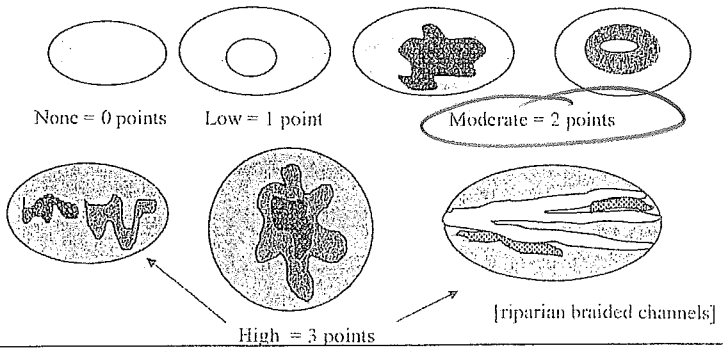
If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number 22.8L

R	Riverine and Freshwater Tidal Fringe Wetlands	Points (only 1 score per box)
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	
R 1	**Does the wetland have the potential to improve water quality?** *(see p.52)*	
	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: • Depressions cover > 3/4 area of wetland ..... points = 8 • Depressions cover > 1/2 area of wetland ..... points = 4 **(If depressions > 1/2 of area of unit draw polygons on aerial photo or map)** • Depressions present but cover < 1/2 area of wetland. ..... points = 2 • No depressions present ..... points = 0	**Figure** ___ 2
	R 1.2 Characteristics of the vegetation in the unit (areas with >90% cover at person height): • Trees or shrubs > 2/3 area of the unit ..... points = 8 • Trees or shrubs > 1/3 area of the wetland ..... points = 6 • Ungrazed, herbaceous plants > 2/3 area of unit ..... points = 6 • Ungrazed herbaceous plants > 1/3 area of unit ..... points = 3 • Trees, shrubs, and ungrazed herbaceous < 1/3 area of unit ..... points = 0 **Aerial photo or map showing polygons of different vegetation types**	**Figure** ___ 3
	Add the points in the boxes above	5
R 2	**Does the wetland have the opportunity to improve water quality?**	*(see p. 53)*
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ___ Grazing in the wetland or within 150 ft ✓ Untreated stormwater discharges to wetland ___ Tilled fields or orchards within 150 ft. of wetland ✓ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging ___ Residential, urban areas, golf courses are within 150 ft. of wetland ___ The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality. ___ Other _____ **YES** multiplier is 2 **NO** multiplier is 1	Multiplier 2
◆	**TOTAL – Water Quality Functions** Multiply the score from R1 by R2; then ***add score to table on p. 1***	10
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
R 3	**Does the wetland have the potential to reduce flooding and erosion?**	*(see p.54)*
	R 3.1 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 unit) / (average width of stream between banks).* • If the ratio is more than 20 ..... points = 9 • If the ratio is between 10 – 20 ..... points = 6 • If the ratio is 5- <10 ..... points = 4 • If the ratio is 1- <5 ..... points = 2 • If the ratio is < 1 ..... points = 1 **Aerial photo or map showing average widths**	**Figure** ___ 4
	R 3.2 Characteristics of vegetation that slow down water velocities during floods: *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 NOT Cowardin classes):* • Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area ..... points = 7 • Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area ..... points = 4 • Vegetation does not meet above criteria ..... points = 0 **Aerial photo or map showing polygons of different vegetation types**	**Figure** ___ 4
	Add the points in the boxes above	8
R 4	**Does the wetland have the opportunity to reduce flooding and erosion?**	*(see p.57)*
	Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. *Note which of the following conditions apply.* ✓ There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. ___ There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding ___ Other _____ *(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)* **YES** multiplier is 2 **NO** multiplier is 1	Multiplier 2
◆	**TOTAL – Hydrologic Functions** Multiply the score from R3 by R4; then ***add score to table on p. 1***	16

Comments:

Wetland name or number 22.8L

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	**Points** (only 1 score per box)
H 1 Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see P. 72)*: *Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.* ✓ Aquatic Bed ✓ Emergent plants ✓ Scrub/shrub (areas where shrubs have > 30% cover) ✓ Forested (areas where trees have > 30% cover) *If the unit has a forested class check if:* ____ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. *Add the number of vegetation types that qualify. If you have:* 4 structures or more.....points = 4; 2 structures.....points = 1; **Map of Cowardin vegetation classes** 3 structures.....points = 2; 1 structure.....points = 0	**Figure ___** 2
H 1.2 Hydroperiods *(see p.73)*: *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).* ✓ Permanently flooded or inundated ✓ Seasonally flooded or inundated ✓ Occasionally flooded or inundated ✓ Saturated only ____ Permanently flowing stream or river in, or adjacent to, the wetland ____ Seasonally flowing stream in, or adjacent to, the wetland ____ **Lake-fringe wetland.....= 2 points** ____ **Freshwater tidal wetland.....= 2 points** 4 or more types present points = 3; 3 or more types present.....points = 2; 2 types present.....points = 1; 1 type present.....points = 0; **Map of hydroperiods**	**Figure ___** 2
H 1.3 Richness of Plant Species *(see p. 75)*: 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, Canadian Thistle.* If you counted: > 19 species.....points = 2; 5 – 19 species.....points = 1; < 5 species.....points = 0. List species below if you want to: ____	1
H 1.4 Interspersion of Habitats *(see p. 76)*: Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". **Use map of Cowardin classes.**	**Figure ___** 2
H 1.5 Special Habitat Features *(see p. 77)*: *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* ✓ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) ____ Standing snags (diameter at the bottom > 4 inches) in the wetland ____ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) ____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* ____ At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ____ Invasive plants cover less than 25% of the wetland area in each stratum of plants *NOTE: The 20% stated in early printings of the manual on page 78 is an error.*	2
H 1 TOTAL Score – potential for providing habitat *Add the points in the column above*	9

Wetland name or number 22.8L

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers *(see P. 80)*: *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".* ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use).. .....**points = 5** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference.....**points = 4** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference.....**points = 4** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference.....**points = 3** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference .....**points = 3** **If buffer does not meet any of the criteria above:** ____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ Heavy grazing in buffer.....**points = 1** ____ Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).....**points = 0** ____ Buffer does not meet any of the criteria above .....**points = 1** **Arial photo showing buffers**	**Figure ___** 1
	H 2.2 Corridors and Connections *(see p. 81)* H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? *(Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).* **YES = 4 points** (go to H 2.3) **NO** = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR a Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? **YES = 2 points** (go to H 2.3) **NO** = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR **YES** = 1 point • Within 1 mile of a lake greater than 20 acres? **NO** = 0 points	Ø

Comments:

Wetland name or number 22.3L

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82):
Which of the following priority habitats are within 330 ft. (100m) of the wetland? *NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.*

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

____ **Aspen Stands**: Pure or mixed stands of aspen greater than 0.8 ha (2 acres)

____ **Cliffs**: Greater than 7.6m (25 ft) high and occurring below 5000 ft.

____ **Old-growth forests**: (Old growth west of Cascade Crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings, with at least 20 trees/ha (8 trees/acre) > 81cm (32 in) dbh or > 200 years of age.

____ **Mature forests**: Stands with average diameters exceeding 53cm (21 in) 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 of the Cascade Crest.

____ **Prairies**: Relatively undisturbed areas (as indicated by dominance of native plants) where greases and/or forbs form the natural climax plant community.

____ **Talus**: Homogenous areas of rock rubble ranging in average size 0.15 – 2.0m (0.5 – 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

____ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages.

____ **Oregon white Oak**: Woodlands stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.

____ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.

____ **Estuary/Estuary-like**: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5 ppt. during the period of average annual low flow. Includes both estuaries and lagoons.

____ **Marine/Estuarine Shorelines**: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).

If wetland has 3 or more priority habitats .= 4 points — If wetland has 1 priority habit ...= 1 point
If wetland has 2 priority habitats .....= 3 points — No habitats.....= 0 points
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. (Nearby wetlands are addressed in question H 2.4).

Ø

H 2.4 Wetland Landscape: *Choose the **one** description of the landscape around the wetland that best fits (see p. 84)*

- There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.....points = 5
- The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 5
- There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. .....points = 3 — 3
- The wetland fringe on a lake **with** disturbance and there are 3 other lake-fringe wetlands within 1/2 mile.....points = 3
- There is at least 1 wetland within 1/2 mile .....points = 2
- There are no wetlands within 1/2 mile .....points = 0

H 2 TOTAL Score – opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4* — 9

TOTAL for H 1 from page 8 — 4

◆ **Total Score for Habitat Functions** Add the points for H 1 and H 2; then ***record the result on p. 1*** — 13

Comments:

Wetland name or number 22.8L

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

	Wetland Type – *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	
SC1	**Estuarine wetlands?** *(see p.86)* Does the wetland unit meet the following criteria for Estuarine wetlands? ____ The dominant water regime is tidal, ____ Vegetated, and ____ With a salinity greater than 0.5 ppt. **YES** = Go to SC 1.1 **NO** _____	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? **YES** = Category I **NO** = go to SC 1.2	**Cat. 1**
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? **YES** = Category I **NO** = Category II ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland ____ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual Rating I/II**
SC2	**Natural Heritage Wetlands** *(see p. 87)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? *(This question is used to screen out most sites before you need to contact WNHP/DNR.)* S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site _____ **YES** _____ Contact WNHP/DNR (see p. 79) and go to SC 2.2 **NO** _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? **YES** = Category 1 **NO** _____ not a Heritage Wetland	**Cat I**
SC3	**Bogs** *(see p. 87)* Does the wetland **(or any part of the unit)** meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. ***If you answer yes you will still need to rate the wetland based on its function.*** 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? **YES** = go to question 3 **NO** = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? **YES** = go to question 3 **NO** = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? **YES** = Is a bog for purpose of rating **NO** = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)*? **YES** = Category I **NO** = Is not a bog for purpose of rating	**Cat. I**

Wetland name or number 22.8L

SC4	**Forested Wetlands** *(see p. 90)* Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its function.* ____ **Old-growth forests**: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. ____ **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. **YES** = Category I **NO** = ____ not a forested wetland with special characteristics	**Cat. I**
SC5	**Wetlands in Coastal Lagoons** *(see p. 91)* Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks. ____ The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom.)* **YES** = Go to SC 5.1 **NO** ____ not a wetland in a coastal lagoon SC 5.1 Does the wetland meet all of the following ~~three conditions?~~ ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. ____ The wetland is larger than 1/10 acre (4350 square ft.) **YES** = Category I **NO** = Category II	**Cat. I** **Cat. II**
SC6	**Interdunal Wetlands** *(see p. 93)* Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? **YES** = Go to SC 6.1 **NO** ____ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? **YES** = Category II **NO** = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? **YES** = Category III	**Cat. II** **Cat. III**
◆	**Category of wetland based on Special Characteristics** *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered **NO** for all types enter "Not Applicable" on p. 1	No

Comments:

Routine Wetland Determination

DATA FORM 1 *(Revised)*

WET 22.8R

WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project/Site: 405 520 to I-5 Applicant/owner: WSDOT Investigator(s): Douglas, Burdig	Date: 2/1/07 County: King State: WA S/T/R: 20/26N/5E
Do normal circumstances exist on the site? ☑ Yes ☐ No Is the site significantly disturbed (atypical situation)? ☐ Yes ☑ No Is the area a potential problem area? ☐ Yes ☑ No Explanation of atypical or problem area:	Community ID: — Transect ID: — Plot ID: Sp# 1 (W)

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

Dominant Plant Species	*Stratum	% cover	Indicator	Dominant Plant Species	*Stratum	% cover	Indicator
PHAARU	H	80	FACW				
ATHFEL	H	20	FACW				

HYDROPHYTIC VEGETATION INDICATORS: 100/100 = 100

% of dominants OBL, FACW, & FAC:

Check all indicators that apply and explain below:

- ☐ Visual observation of plant species growing in areas of prolonged inundation/saturation
- ☐ Morphological adaptations
- ☐ Technical Literature
- ☐ Physiological/reproductive adaptations
- ☑ Wetland plant database
- ☐ Personal knowledge of regional plant communities
- ☐ Other (explain)

Hydrophytic vegetation present? ☑ Yes ☐ No

Rationale for decision/Remarks: 100% Dom, FAC, VEG

HYDROLOGY

Is it the growing season? ☐ Yes ☑ No	Water Marks: ☐ Yes ☑ No on	Sediment Deposits: ☐ Yes ☑ No
Based on: ☐ Soil temp (record temp) ☑ Other (explain) February	Drift Lines: ☐ Yes ☑ No	Drainage Patterns: ☑ Yes ☐ No
Depth of inundation: Ø inches	Oxidized Root (live roots) Channels <12 in.: ☐ Yes ☑ No	Local Soil Survey: ☐ Yes ☑ No
Depth to free water in pit: lateral flow downslope Depth to saturated soil: @ surface	FAC Neutral: ☑ Yes ☐ No	Water-stained Leaves: ☐ Yes ☑ No

Check all that apply & explain below: ☐ Stream, lake or gage data ☐ Aerial photographs ☐ Other	Other (explain):

Wetland hydrology present? ☑ **Yes** ☐ **No**

Rationale for decision/remarks: Saturation, seep

SOILS

Map Unit Name (Series and Phase) : Kitsap Silt loam, 15 to 30% slopes

Drainage Class

Field observations confirm mapped type? ☐ Yes ☑ No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-4"		10YR 3/1	-	-	Loam	
4-12"		10YR 2/2	—	—	Loamy sand	w/gravel
12-13"+		10YR 4/2	10YR 5/6	f, c, p	Loamy sand	w/gravel

Hydric Soil Indicators: (check all that apply)

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☑ Gleyed or Low-Chroma (=1) matrix
- ☑ Matrix chroma ≤ 2 with mottles
- ☐ Mg or Fe Concretions
- ☐ High Organic Content in Surface Layer of Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on National/Local Hydric Soils List
- ☐ Other (explain in remarks)

Hydric soils present? ☑ Yes ☐ No

Rationale for decision/Remarks: Low chroma mottles

Wetland Determination

Hydrophytic vegetation present?	☑ Yes	☐ No
Hydric soils present?	☑ Yes	☐ No
Wetland hydrology present?	☑ Yes	☐ No
Is the sampling point within a wetland?	☑ Yes	☐ No

Rationale/Remarks: 3 of 3 parameters

NOTES: Seep system on slope down to roadside ditch (TO 22, 8R).

Revised 4/97

Routine Wetland Determination

DATA FORM 1 *(Revised)* WET 22.8K

WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project/Site: 405 520 to I-5 Applicant/owner: WSDOT Investigator(s): Douglas, Pursley	Date: 2/1/07 County: King State: WA S/T/R: 20/26N/5E
Do normal circumstances exist on the site? ☑ Yes ☐ No Is the site significantly disturbed (atypical situation)? ☐ Yes ☑ No Is the area a potential problem area? ☐ Yes ☑ No Explanation of atypical or problem area:	Community ID: — Transect ID: — Plot ID: SP#2 (up)

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

Dominant Plant Species	*Stratum	% cover	Indicator	Dominant Plant Species	*Stratum	% cover	Indicator
ACERMAC	T	30	FACU				
PSEUMEN	T	30	FACU				
ACERCIR	S	20	FACU				
RUBARM	S	80	FACU				
POLMUN	H	10	FACU				

HYDROPHYTIC VEGETATION INDICATORS: 0/160 = 0%

% of dominants OBL, FACW, & FAC:

Check all indicators that apply and explain below:

- ☐ Visual observation of plant species growing in areas of prolonged inundation/saturation
- ☐ Morphological adaptations
- ☐ Technical Literature
- ☐ Physiological/reproductive adaptations
- ☑ Wetland plant database
- ☑ Personal knowledge of regional plant communities
- ☐ Other (explain)

Hydrophytic vegetation present? ☐ Yes ☑ No

Rationale for decision/Remarks: 0% Dom. FAC. VEG

HYDROLOGY

Is it the growing season? ☐ Yes ☑ No	Water Marks: ☐ Yes ☑ No on	Sediment Deposits: ☐ Yes ☑ No
Based on: ☐ Soil temp (record temp) ☑ Other (explain) February	Drift Lines: ☐ Yes ☑ No	Drainage Patterns: ☐ Yes ☑ No
Depth of inundation: — inches	Oxidized Root (live roots) Channels <12 in.: ☐ Yes ☑ No	Local Soil Survey: ☐ Yes ☑ No
Depth to free water in pit: —	FAC Neutral: ☐ Yes ☑ No	Water-stained Leaves: ☐ Yes ☑ No
Depth to saturated soil: lateral flow over compacted clay downslope to wetland		
Check all that apply & explain below: ☐ Stream, lake or gage data ☐ Aerial photographs ☐ Other	Other (explain):	

Wetland hydrology present? ☐ **Yes** ☑ **No**

Rationale for decision/remarks:

Saturation lateral flow over compacted clay.

SOILS

Map Unit Name (Series and Phase): Kitsap silt loam, 15 to 30% slope

Drainage Class

Field observations confirm mapped type? ☐ Yes ☒ No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-8"		10YR 3/2	—	—	Loam	
		10YR 3/2	—	—	Loam	
8-18"+		2.5Y 4/1	—	—	Compacted clay.	

Hydric Soil Indicators: (check all that apply)

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☒ Gleyed or Low-Chroma (=1) matrix
- ☐ Matrix chroma ≤ 2 with mottles
- ☐ Mg or Fe Concretions
- ☐ High Organic Content in Surface Layer of Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on National/Local Hydric Soils List
- ☐ Other (explain in remarks)

Hydric soils present? ☒ Yes ☐ No

Rationale for decision/Remarks: Compacted clay below 8"

Wetland Determination

Hydrophytic vegetation present?	☐ Yes	☒ No
Hydric soils present?	☒ Yes	☐ No
Wetland hydrology present?	☐ Yes	☒ No
Is the sampling point within a wetland?	☐ Yes	☒ No

Rationale/Remarks: 1 of 3 parameters

NOTES: Upslope of wetland, compacted clay below 8", seep flows over clay toward toe of slope.

Revised 4/97

Wetland name or number 22.9R

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): 22.9R Date of site visit: 2/1/07

Rated by: C. Douglas, J. Burtley Trained by Ecology? Yes____ No ✓ Date of training: —

SEC: 20 TWNSHP: 26N RNGE: 5E Is S/T/R in Appendix D? Yes____ No ✓

Map of wetland unit: Figure_____ **Estimated size** 0.013 ac

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I_____ **II**_____ **III**_____ **IV** ✓

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

Score for Water Quality Functions	4
Score for Hydrologic Functions	2
Score for Habitat Functions	8
TOTAL Score for Functions	14

Category based on SPECIAL CHARACTERISTCS of Wetland I_____ **II**_____ **Does not apply** ✓

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

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics	
Estuarine	
Natural Heritage Wetland	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	

Wetland HGM Class used for Rating	
Depressional	
Riverine	
Lake-fringe	
Slope	✓
Flats	
Freshwater Tidal	
Check if unit has multiple HGM classes present	☐

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered **animal or plant** species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✓
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered **animal** species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		✓
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*		✓
SP4. *Does the wetland unit have a local significance in addition to its functions?* For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		✓

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

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number 22.38

Classification of Vegetated Wetlands for Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
   NO – go to 2 **YES** – the wetland class is **Tidal Fringe**
   If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
   YES – Freshwater Tidal Fringe **NO – Saltwater Tidal Fringe (Estuarine)**
   *If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is a Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. _____).

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland meet both of the following criteria?
   _____ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
   _____ At least 30% of the open water area is deeper than 6.6 (2 m)?
   NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland meet all of the following criteria?
   ✓ The wetland is on a slope *(slope can be very gradual)*.
   ✓ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
   ✓ The water leaves the wetland **without being impounded**?
   NOTE: *Surface water does not pond in these types 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).*
   NO – go to 5 **YES** – The wetland class is **Slope**

5. Does the entire wetland 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 two years.
   NOTE: *The riverine unit can contain depressions that are filled with water when the river is not flooding..*
   NO – go to 6 **YES** – The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
   NO – go to 7 **YES** – The wetland class is **Depressional**

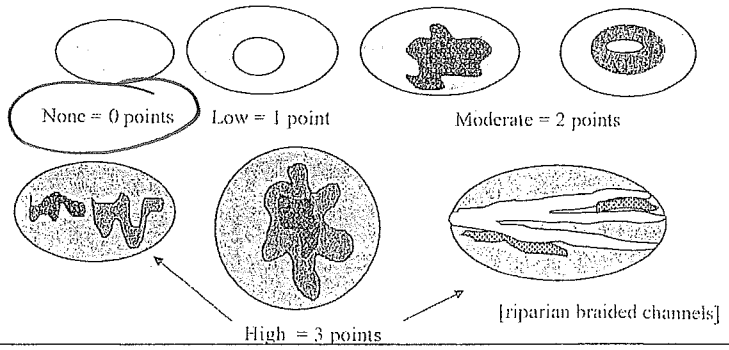
7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
   No – go to 8 YES – The wetland class is Depressional

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

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 along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

Wetland name or number 22.3R

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	**Points** (only 1 score per box)
H 1 Does the wetland have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see P. 72)*: *Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres.* ___ Aquatic Bed ✓ Emergent plants ✓ Scrub/shrub (areas where shrubs have > 30% cover) ___ Forested (areas where trees have > 30% cover) *If the unit has a forested class check if:* ___ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. *Add the number of vegetation types that qualify. If you have:* 4 structures or more.....points = 4 2 structures.....points = 1 **Map of Cowardin vegetation classes** 3 structures..... points = 2 1 structure ..... points = 0	**Figure ___** 1
H 1.2 Hydroperiods *(see p.73)*: *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods).* ___ Permanently flooded or inundated ✓ Seasonally flooded or inundated ✓ Occasionally flooded or inundated ✓ Saturated only ___ Permanently flowing stream or river in, or adjacent to, the wetland ___ Seasonally flowing stream in, or adjacent to, the wetland ___ **Lake-fringe wetland.....= 2 points** ___ **Freshwater tidal wetland.....= 2 points** 4 or more types present ..... points = 3 3 or more types present..... points = 2 2 types present..... points = 1 1 type present..... points = 0 **Map of hydroperiods**	**Figure ___** 2
H 1.3 Richness of Plant Species *(see p. 75)*: 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, Canadian Thistle.* If you counted: > 19 species ..... points = 2 5 – 19 species ..... points = 1 < 5 species ..... points = 0 List species below if you want to: _____ _____ _____	1
H 1.4 Interspersion of Habitats *(see p. 76)*: Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". **Use map of Cowardin classes.**	**Figure ___** Ø
H 1.5 Special Habitat Features *(see p. 77)*: *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* ___ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) ___ Standing snags (diameter at the bottom > 4 inches) in the wetland ___ Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* ___ At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ___ Invasive plants cover less than 25% of the wetland area in each stratum of plants *NOTE: The 20% stated in early printings of the manual on page 78 is an error.*	Ø
H 1 TOTAL Score – potential for providing habitat *Add the points in the column above*	

Wetland name or number 22.3 R

S	Slope Wetlands	Points (only 1 score per box)
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	
S 1	**Does the wetland have the potential to improve water quality?**	*(see p.64)*
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less *(a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)*..... points = 3 • Slope is 1% - 2%..... points = 2 • Slope is 2% - 5%..... points = 1 • Slope is greater than 5%..... points = 0	1
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic *(Use NRCS definitions).* **YES** = 3 points **NO** = 0 points	Ø
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.* • Dense, uncut, herbaceous vegetation > 90% of the wetland area..... points = 6 • Dense, uncut, herbaceous vegetation > 1/2 of area..... points = 3 • Dense, woody, vegetation > 1/2 of area..... points = 2 • Dense, uncut, herbaceous vegetation > 1/4 of area..... points = 1 • Does not meet any of the criteria above for vegetation..... points = 0 **Aerial photo or map with vegetation polygons**	**Figure ___** 1
	Total for S 1 *Add the points in the boxes above*	2
S 2	**Does the wetland have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* ___ Grazing in the wetland or within 150 ft ✓ Untreated stormwater discharges to wetland ___ Tilled fields, logging, or orchards within 150 ft. of wetland ✓ Residential, urban areas, or golf courses are within 150 ft. upslope of wetland ___ Other _____ **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 67)* Multiplier 2
◆	**TOTAL – Water Quality Functions** Multiply the score from S1 by S2; then ***add score to table on p. 1***	4
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	
S 3	**Does the wetland have the potential to reduce flooding and stream erosion?**	*(see p.68)*
	S 3.1 Characteristics of vegetation 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 > 1/8in), or dense enough to remain erect during surface flows).* • Dense, uncut, **rigid** vegetation covers > 90% of the area of the wetland..... points = 6 • Dense, uncut, **rigid** vegetation> 1/2 area of wetland..... points = 3 • Dense, uncut, **rigid** vegetation > 1/4 area..... points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid..... points = 0	1
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. **YES** = 2 points **NO** = 0 points	Ø
	Add the points in the boxes above	1
S 4	**Does the wetland have the opportunity to reduce flooding and erosion?** Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? *Note which of the following conditions apply.* ✓ Wetland has surface runoff that drains to a river or stream that has flooding problems ___ Other _____ *(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)* **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 70)* Multiplier 2
◆	**TOTAL – Hydrologic Functions** Multiply the score from S3 by S4; then ***add score to table on p. 1***	2

Comments:

Wetland name or number 22.8R

H 2	Does the wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1 Buffers *(see P. 80)*: *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed".* ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use).. .....**points = 5** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference.....**points = 4** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference.....**points = 4** ____ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference.....**points = 3** ____ 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference .....**points = 3** **If buffer does not meet any of the criteria above:** ____ No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK.....**points = 2** ____ Heavy grazing in buffer.....**points = 1** ____ Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland).....**points = 0** ____ Buffer does not meet any of the criteria above .....**points = 1** **Arial photo showing buffers**	**Figure ___** 1
	H 2.2 Corridors and Connections *(see p. 81)* H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? *(Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor).* **YES = 4 points** (go to H 2.3) **NO** = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR a Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? **YES = 2 points** (go to H 2.3) **NO** = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR **YES** = 1 point • Within 1 mile of a lake greater than 20 acres? **NO** = 0 points	Ø

Comments:

Wetland name or number 22.86

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): Which of the following priority habitats are within 330 ft. (100m) of the wetland? *NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.* ____ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____ **Aspen Stands**: Pure or mixed stands of aspen greater than 0.8 ha (2 acres) ____ **Cliffs**: Greater than 7.6m (25 ft) high and occurring below 5000 ft. ____ **Old-growth forests**: (Old growth west of Cascade Crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings, with at least 20 trees/ha (8 trees/acre) > 81cm (32 in) dbh or > 200 years of age. ____ **Mature forests**: Stands with average diameters exceeding 53cm (21 in) 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 of the Cascade Crest. ____ **Prairies**: Relatively undisturbed areas (as indicated by dominance of native plants) where greases and/or forbs form the natural climax plant community. ____ **Talus**: Homogenous areas of rock rubble ranging in average size 0.15 – 2.0m (0.5 – 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages. ____ **Oregon white Oak**: Woodlands stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%. ____ **Urban Natural Open Space**: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. ____ **Estuary/Estuary-like**: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5 ppt. during the period of average annual low flow. Includes both estuaries and lagoons. ____ **Marine/Estuarine Shorelines**: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control). If wetland has 3 or more priority habitats .= 4 points If wetland has 1 priority habit ...= 1 point If wetland has 2 priority habitats .....= 3 points No habitats.....= 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. (Nearby wetlands are addressed in question H 2.4).	Ø
	H 2.4 Wetland Landscape: *Choose the **one** description of the landscape around the wetland that best fits (see p. 84)* • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.....points = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile .....points = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. .....points = 3 • The wetland fringe on a lake **with** disturbance and there are 3 other lake-fringe wetlands within 1/2 mile.....points = 3 • There is at least 1 wetland within 1/2 mile .....points = 2 • There are no wetlands within 1/2 mile .....points = 0	3
	H 2 TOTAL Score – opportunity for providing habitat *Add the scores from H2.1, H2.2, H2.3, H2.4*	4
	TOTAL for H 1 from page 8	4
◆	**Total Score for Habitat Functions** Add the points for H 1 and H 2; then ***record the result on p. 1***	8

Comments:

Wetland name or number 22.862

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

	Wetland Type – *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	
SC1	**Estuarine wetlands?** *(see p.86)* Does the wetland unit meet the following criteria for Estuarine wetlands? ____ The dominant water regime is tidal, ____ Vegetated, and ____ With a salinity greater than 0.5 ppt. **YES** = Go to SC 1.1 **NO** _____	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? **YES** = Category I **NO** = go to SC 1.2	**Cat. 1**
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? **YES** = Category I **NO** = Category II ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland ____ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual Rating I/II**
SC2	**Natural Heritage Wetlands** *(see p. 87)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? *(This question is used to screen out most sites before you need to contact WNHP/DNR.)* S/T/R information from Appendix D _____ or accessed from WNHP/DNR web site _____ **YES** _____ Contact WNHP/DNR (see p. 79) and go to SC 2.2 **NO** _____ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? **YES** = Category 1 **NO** _____ not a Heritage Wetland	**Cat I**
SC3	**Bogs** *(see p. 87)* Does the wetland **(or any part of the unit)** meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. ***If you answer yes you will still need to rate the wetland based on its function.*** 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? **YES** = go to question 3 **NO** = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? **YES** = go to question 3 **NO** = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? **YES** = Is a bog for purpose of rating **NO** = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> *30% coverage of the total shrub/herbaceous cover*)? **YES** = Category I **NO** = Is not a bog for purpose of rating	**Cat. I**

Wetland name or number 22,862

SC4	**Forested Wetlands** *(see p. 90)* Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its function.* ____ **Old-growth forests**: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. ____ **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. **YES** = Category I **NO** = ____ not a forested wetland with special characteristics	**Cat. I**
SC5	**Wetlands in Coastal Lagoons** *(see p. 91)* Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ____ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks. ____ The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom.)* **YES** = Go to SC 5.1 **NO** ____ not a wetland in a coastal lagoon SC 5.1 Does the wetland meet all of the following three conditions? ____ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). ____ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. ____ The wetland is larger than 1/10 acre (4350 square ft.) **YES** = Category I **NO** = Category II	**Cat. I** **Cat. II**
SC6	**Interdunal Wetlands** *(see p. 93)* Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? **YES** = Go to SC 6.1 **NO** ____ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? **YES** = Category II **NO** = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? **YES** = Category III	**Cat. II** **Cat. III**
◆	**Category of wetland based on Special Characteristics** *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered **NO** for all types enter "Not Applicable" on p. 1	NA

Comments: