



Memorandum

DATE: April 12, 2006

TO: Planning Commission

FROM: Matt Torpey, Planner II

RE: Department of Ecology wetland presentation

At the April 20, 2006 Planning Commission meeting, Erik Stockdale, Senior Wetlands Specialist with the Washington State Department of Ecology will be providing the Commission with a brief overview of the Washington State Wetland Rating System for Western Washington. This is the current wetland rating or typing system recommended by the Department of Ecology.

Planning Commission members may recall during the review of the Critical Areas Amendments in early to mid 2005 that the Commission had several discussions regarding the adoption of an updated wetland rating system. (Currently the City uses a simple typing system based on old King County code). It was determined by the Commission that updating the City's rating system was an important legislative item, but did not want to slow down the Critical Areas Ordinance process by investigating the potential of adopting a radically new system. The Commission unanimously decided to put the issue in "the parking lot" for future consideration.

Attached to this memo is a set of frequently asked questions regarding the wetland rating system published by the Department of Ecology. The full wetland typing manual has not been provided in this Planning Commission Packet because of the substantial length (141 pages) however you can access the manual online on the Planning Commission page at www.cityofshoreline.com. If any Commissioner would like to receive a printed version of the manual, please contact Matt Torpey (206.546.3826) or Jessica Simulcik Smith (206.546.1508).

Attachment 1



Frequently Asked Questions about Wetland Rating System for Western Washington

From Ecology's Shorelands and Environmental Assistance Program

January 2005

Changes in the Rating System

Q: Does the 2004 Rating System account for Threatened and Endangered Species?

A. The original criteria for categorization, the presence of federally or state listed Threatened or Endangered (T/E) Species has been dropped. The requirements for managing and protecting T/E species in a wetland are very species specific. Recommendations on buffers and mitigation ratios that result from this categorization are too generic to adequately protect a single species. For example, an increase in mitigation ratios and buffers that is usually assigned to wetlands of a "higher" category does not necessarily protect a specific T/E species from impacts.

The department of Ecology does not have the expertise to specify standards for protecting each individual T/E species that might be found in a wetland. Local jurisdictions should consult with the appropriate state and federal agencies (U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, State Department of Fish and Wildlife) to develop standards for protecting T/E species using wetlands in their jurisdiction.

Threatened and endangered species need special protection, but this protection cannot be accomplished using the recommendations associated with the category rating of the wetland. If a T/E species is found living in or using a wetland, the appropriate state or federal agency will need to be consulted to determine what is needed to protect that species in the wetland. This information can be considered as an "overlay" on the category rating. A wetland containing T/E species will have to be protected to meet the requirements of the T/E species as well as those associated with its Category. For example, a category II riverine wetland that provides overwintering habitat for endangered Coho may need more than the standard buffers recommended for a Category II wetland to protect the fish.

General Questions About the Rating System

Q. If your data set of 122 wetlands in western Washington was non-randomly selected, how much bias is there in the data?

A. The reference sites were specifically chosen to represent the full range of characteristics and functions found in the region. This was important in calibrating the scoring to minimize the potential for finding "outliers" when the rating system came into use. The only bias this introduces into the data is that the distribution of wetland categories represented by the reference set may not match the actual distribution in the region. No claims can be made that the percentage of wetlands in each category of the reference set matches the percentage actually found in the region. This was not considered to be a problem because it was never the intent of the calibration to map the distribution of categories across the region.

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Q. I am working on a project in Snoqualmie and applying the rating system to some very small wetlands (<0.1 acre). While reviewing my notes last night from the training, I found a statement that the system does not work well for wetlands less than 0.1 acre. Please confirm that this is accurate. If so, any suggestions for those municipalities that are adopting/applying the rating system as part of their critical areas regulations?

A. Yes, my expectation is that the rating system will not work well for wetlands smaller than 4000 square feet. I suggest you still rate them, but the scores and category you get are not as robust as for the larger wetlands. We did not have any wetlands smaller than 1/10 acre in our reference set, so we are unable to make a firm conclusion. My experience, however, is that the indicators of function used to identify whether a wetland functions or not become difficult to interpret in very small wetlands. For example, one large tree may cover 400 square feet of a 4000 square foot wetland and this would give it a "forested" class. It is not expected however that that tree will provide functions to the same level as a forested class in a larger wetland. On the other hand, wetlands that are larger than 1/10 acre are adequately characterized. This is based on the consensus of the different teams (function assessment and rating) that went out into the field.

We do not have any methods to adequately characterize functions in very small wetlands because no research has been done on their functions (with the exception of some studies about amphibians showing that wetlands as small as 200 square feet are good habitat).

Q. For the question evaluating opportunity to provide water quality improvement: What is the definition of 'untreated'? Is it considered untreated if there is SW release from a site developed legally at a time when SW requirements weren't as stringent as they are now?

A. Stormwater ponds do not remove all pollutants leaving them, even those constructed today, and there are ample data confirming this. Thus, a wetland receiving water from a stormwater pond will have the opportunity to further improve water quality. In fact, constructed wetlands are often used to "polish" such discharges. Furthermore, wetlands that receive stormwater are probably located in developed areas where other forms of polluted surface runoff can reach them.

Q. I have another question for you regarding the rating system. Does the rating system assume overland flow in all sites (slope, depressional, etc) in Western Washington (e.g. forest, crop, and pasture)?

A. Not all wetlands in western Washington have some overland flow (by some I mean more than 10% of the water budget) coming into the wetland. There are many examples where this is not the case. Depressional wetlands fed primarily by groundwater with small watershed (e.g. surrounded by dikes) do not have much overland flow coming in. The only overland flow coming in is from the runoff off the dikes. Slope wetlands in forests that are fed by seeps probably also don't have much overland flow since most of the upgradient rainfall is infiltrated.

Q. Assessment Area Boundary: Suppose you have a Depressional site of 19 acres, mostly comprised of permanent water, 25% of the permanent water is deeper than 6.6 ft, and the remaining 75% is half vegetated with emergents and half open water, aside from scattered floating aquatics. Would you draw the assessment boundary to include the entire depression, including the 25% that is deep open water?

A. Yes, the entire depression would be considered as the unit. The cut-off for lake-fringe is 20 acres of open water with at least 30% of the open water deeper than 2m. Your system does not meet the requirement for 20 acres of open (unvegetated on the surface) water.

Q. (SP3) "Does the wetland contain individuals of Priority species listed by WDFW?" Do I assume correctly that unlike the preceding questions, where the observations have to be documented via the

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WDFW database, our direct observations of WDFW Priority species while onsite, even if unlisted in the official database, would count for this item? Any threshold for frequency of site use by the species?

A. Yes, any observation of a priority species should be noted. This, however, has no impact on the rating. It is only to make the user/reviewer aware of the fact that the wetland may need additional protection based on what the laws or regulations say is needed to protect that species.

Questions About Wetlands With Special Characteristics

Q. (SC 4.0) I rated a 3 acre slope wetland dominated by large (>21" dbh) alder trees... really big trees. The rating system rates it as a Category IV because of its low water quality and hydrologic scores. The habitat scores are low too. This doesn't seem right to me. Do I treat it as a mature forested wetland?

A. The criterion for mature forested wetlands is taken directly from the WDFW PHS program. If in doubt you might consider checking with your local WDFW habitat biologist to make sure it meets the PHS criteria. As described, the wetland appears to meet the criteria for a 1 acre, mature forested wetland and would thus be a Category I wetland. The buffers Ecology would recommend for this wetland, however, would still be based on its score for habitat.

Q:(SC 3.0) Dual rating for bogs: True Sphagnum bog; small inlet area that isn't bog. Can I rate it Cat I/II?

A: Yes, wetlands where only part of the unit is a bog can have a dual rating. See page 20 of the manual.

Q: (SC 3.0) Why isn't *Spiraea* included as a bog species on Table 3 on page 91 (in the bog key)?

A: *Spiraea* is often found in peat systems that no longer have the low pH and other special characteristics. It is not considered to be an indicator species for the bogs dominated by mosses at the ground level.

Q. (SC 2.0) I have a question regarding WDNR natural heritage wetlands. This is the situation: DNR has mapped a "wetland system" polygon with a couple of different Natural Heritage wetland types (i.e., bog, riparian, etc.) contained within the system. However, our field investigation revealed that not all of the wetlands contained within the mapped polygon match the wetland descriptions provided in the WDNR database, and some of the wetlands are not hydrologically connected to the wetlands that match the database descriptions. One of the wetlands is in a different drainage sub-basin than the wetlands that match the database descriptions. The wetlands in the mapped polygon are not close enough to each other to be considered a mosaic, per the manual's definition. How does one deal with this situation when trying to rate each wetland separately?

A. My first suggestion would be to contact DNR and determine from them the exact location of the wetland that they describe from their paper files. If they cannot help you I would suggest you include the DNR wetland description on your field form and then describe your wetland in similar terms to show that they are different. This will then be your justification for not categorizing the wetland as Cat. I. This will work, however, only if the descriptions are sufficiently different to be clear to most lay people.

Questions About Depressional Wetlands

Q. (D1.1) Is a depressional flow-through wetland with occasional flow resulting from stormwater runoff from an adjacent developed area considered to have intermittent flow?

A. Yes.

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Q. (D 1.4) Is the duration of ponding (at least 2 months) consecutive or cumulative? During the growing season when denitrifying bacteria are active?

A. Duration of ponding has to be consecutive to allow for anoxic conditions to develop.

Q. (D 2) I have a question that relates to the western Washington rating form question D2. Regarding untreated runoff from paved road surfaces, how does Ecology interpret the relationship of the distance from the edge of pavement down a fill slope to a wetland and the wetland's opportunity to improve water quality? In other words if the distance from edge of pavement to wetland is 50-60 feet rather than say 5-20 feet, at what distance is the water quality function minimal or not likely because of the buffering effect of infiltration into the longer slope. The particular situation I have in mind in the Vancouver Lowlands is a 20-25% slope vegetated with herbaceous weeds leading down slope to a mainly groundwater supported wetland system located at the edge of a corn field.

A. The literature says that it takes at least 150 ft of a vegetated buffer to remove 60-80% of some pollutants from surface runoff into a wetland. That is why I have used 150 ft as the guideline in question D2. Therefore I would conclude that untreated runoff from a road that is only 50-60 ft away does provide the "opportunity for the wetland."

Q. (D 2) A second question is also related to question D2 and the wetland in the corn field example. The field receives fertilizer (nitrogen and phosphorus) at the time of planting in mid-May to mid-June. Can it be assumed that pollutants likely enter the wetland and provide opportunity to improve water quality even though there is limited evidence of overland flow (channels, rilling) between the corn field and the wetland. The wetland is seasonally ponded in the winter and early spring in some areas even into the corn field. I am assuming that rainfall even into June some years flushes soil and some nutrients into the wetland. Does this seem reasonable?

A. When considering whether the agricultural practices introduce pollutants to the wetland (and thereby provide it with the opportunity) you need to consider several factors.

First, is the field upslope of the wetland and within 150 ft? If so, you can assume that some contaminated surface water will runoff. If the buffer between the field and the wetland has a good vegetative cover (and/or sod) then rills may not form.

Secondly, I expect that the cornfield has pesticides applied to it through aerial spraying. In that case you might also expect some overspray when it is windy. Spray can travel between 50-150ft and this would also be a source of pollutants to the wetland.

Third, nutrients added to fields have been shown to infiltrate and contaminate groundwater. This groundwater may then daylight in the wetland and bring in pollutants.

Q. (D 3.2) How is a headwater wetland defined in the rating system? How much inflow can the wetland receive before it no longer is considered a headwater wetland?

A. To identify if the wetland being rated is a "headwater" wetland, use the information collected in question D 1.1. If the wetland has a permanent or seasonal outflow but NO inflow from a permanent or seasonal stream (having defined banks and stream bed), it can be considered a "headwater" wetland for the purposes of this categorization. A closed depression without an outlet however would not be considered a headwater wetland. NOTE: One exception to this criterion is wetlands whose water regime is dominated by groundwater coming from irrigation practices. Depressional wetlands at the base of dams or edge of irrigation canals are not headwater wetlands, even if they have surface water that flows out of them without an inflow.

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Q. (D 3.3) How do you calculate the area of upstream basin? Do you use topos? We have access to GIS and the basin boundaries are a layer, but I wasn't sure where to draw my polygon to determine the area.

A. You can use whatever means available to calculate the upstream basin contributing surface water to a wetland. A topo map works fine if the landscape is not too confusing. If you have GIS with basin boundaries you will have to be careful to include only the areas upgradient of the wetland. Please note that the estimates do not have to be too accurate. We only have two critical thresholds - contributing basin is 10x the area of the wetland and 100 x the area of the wetland. A topo map is usually OK to make these types of estimates. Thus, the polygons can be very roughly drawn unless you are near either of the thresholds.

Q. (D 4.0) Is a list of streams that have flooding problems and is there a general rule about determining groundwater influence into a wetland?.

A. We do not keep a list of streams that have flooding problems, but you might contact King County. They have a surface water management group that does a lot with flooding. Generally, most urban and urbanizing areas can be considered to have flooding problems because of the changes in surface flows due to impervious surfaces. With regard to groundwater influence - A wetland can be considered to have more than a 90% GW influence if there is no seasonal or permanent surface water inflow you can determine (no storm drains, no seasonal streams etc) and a very small contributing basin (e.g. a kettle hole left by the glaciers).

Q. (D 4.0) I had trouble rectifying the second bulleted guideline with the first one on page 50 of the manual, they seemed to be in conflict with one another. It seems like if we are considering a wetland with no outlet to have the opportunity to perform hydrology functions if it was "filled" and if the water would then flow into a swale, channel, or stream with potential flooding or erosion problems, then any wetland situated upslope of a road would also provide this function if it was also "filled" and if the same other criteria applied. I understand the first bullet, but I do not understand how the second bullet can apply given the rationale of the first bullet. Can you provide more explanation and rationale for the second bullet?

A. The intention of the second bullet was to address the situation where the depressional wetland is part of a system that has some man-made control (even if not planned) of flooding downstream. We do not assign opportunity to wetlands that are on reservoirs because flooding downstream is controlled by dams or other such structures. The situation we were trying to describe here is a wetland that lies along a road where the water is constrained by an undersized culvert or no culvert at all. In this case the wetland can be considered as part of a "temporary" lake or pond, and we decided that the storage provided by this wetland was not a significant amount and not worth scoring (just like we do not score the storage capacity of lake-fringe wetlands).

As I stated in class there are no "absolutes" in natural systems, and anytime we identify "boundaries" that separate specific "states" we end up with problems. This is one of those. At what point does the storage become insignificant? This bullet was included to address some very strongly felt views of DOT wetland staff based on their experience with roads.

Questions About Riverine Wetlands

Q. (R 1.2 and R 3.2) We are dealing with a riverine wetland that has been a part of a grazing rotation for several years. As of yesterday, the wetland had not been grazed yet this year; however, in a week or two the land-owner is likely to rotate some of his animals into the wetland as a part of his annual grazing rotation. Because of this, I am having trouble understanding the answer to questions R 1.2 and R 3.2 that deal with characterizing the vegetation in the wetland. What is the definition of ungrazed in these two questions? How long does a wetland need to be abandoned to be considered ungrazed?

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1 year? 3 years? Are we supposed to be looking at a snapshot in time? If so, when should that snapshot in time be? We could go with the ungrazed vegetation as of yesterday or we could go out in a month and the wetland would be totally grazed and would rate much lower and would subsequently receive a much smaller buffer.

A. This is a difficult question and reflects the bigger issue of temporal changes in natural systems that we cannot capture in a “snap-shot” approach. My approach in this case would be to go back to the original function and start from there.

The way I would phrase the question is: Is the vegetation in the wetland 6” or less at the time when the river floods and is actually transporting sediment that can be trapped? If the grazing occurs in summer (because the area is too wet for cows in the winter???) but the vegetation has time to grow again before the flood season, then the system is ungrazed because it will have the higher vegetation at the time of flooding. If however, the grazing pressure is intense enough that the grass does not have time to recover during the flood season then it should be considered “grazed.”

Questions About Lake-Fringe Wetlands

Q. (L 1.1 and L 3) The form specifically requires the user to place the shrub and/or tree vegetation into categories of “3/4 of fringe vegetation is shrubs or trees at least 33 ft wide”; “3/4 of fringe vegetation is shrubs or trees at least 6 ft wide”; or, “1/4 of fringe vegetation is shrubs or trees at least 33 ft wide”. The form itself does not explain these units of measurement. The guidance contains explanation and a sketch. According to the guide, the 3/4 and 1/4 thresholds are measures of area, and the width measurements refer to average width. This is completely different than the method we were shown in the field. In the field (and class) we were told that the 1/4 and 1/4 thresholds are measures of length along the shoreline (not area).

A: The question is worded in both L 1.1 and L 3.1 as: “Average width ...of vegetation along the lakeshore.” In using these words we were implying linear distance along the lakeshore. Both captions for Figures 29 and 31 also state “along the shores of the lake,” and are directly linked only to questions L 1.1 and L 3.1. There is no linkage to question L 1.2 which does deal with area. Whenever the area of vegetation is needed, the word “area” is used in the description of the question (e.g. D 1.3, D1.4, L 1.2). I agree there might be some confusion because I use the generic term “area” in the figures to denote the location of the vegetation type but the caption specifically avoids using the word area as do the questions on the field form. The written guidance should be given precedence over the figures if there are any discrepancies in interpretation.

Questions About Slope Wetlands

Q. (S 1.3) My question is: the “cover at least 75% of the ground” is not an evaluation of basal cover - or stems at ground surface, correct? The consultant seems to feel they were given some direction during the training course on this rating system that stem cover - basal cover of the ground -should be used rather than “cover” - aerial cover - for the estimate of 75% or greater. I have interpreted the directions to mean that the estimated cover from point of an average person's height when greater than 75% (and hence the ground barely visible) is considered “dense”, which is an implied proxy for plant density, and not a measure of basal cover.

A. I agree this question is unclear. Technically the best information is provided by basal cross-section. This however, is not an easily determined measure. The best indicator we were able to find is an estimate of the cover from a person’s height. Generally, if less than 25% of the ground is visible at 5-6ft., then there will be a fairly high stem density and basal cross section to trap sediments and reduce flows. As you note in S1.3 we differentiate between herbaceous and non-herbaceous vegetation while in S3.1 it is between rigid, dense, vegetation and other types.

Q. (S 3.1) How do the definitions of dense, uncut, and rigid on page 69 related to the evaluation of PSS communities?

A. There is no relation of the description of vegetation for this question with the Cowardin definitions of plant groups. The second sentence of the question specifically states this.

Questions About Habitat

Q. (H 1.1) Cowardin et al. implies Nuphar is Aquatic Bed if the plants remain mostly underwater during most of the growing season, i.e., at least 10% or 1/4 of the wetland must have surface water for most of the growing season. Otherwise, Nuphar is classified as Emergent (provided it also meets the area threshold). Is this how you've been treating it?

A. I have been treating Nuphar as aquatic bed, not emergent, where ever I find it. Water level fluctuations in western Washington are so great that it is difficult to base the classification on water levels. The intent of the question was to highlight habitat functions, and Nuphar generally has the habitat characteristics of aquatic bed rather than emergent regardless of whether it sticks out above the water or is below it. Furthermore, it makes the rating system more reproducible if aquatic bed is defined by species rather than whether it is above or below the surface. So Lotus, Sagittaria, many Potamogeton, are all considered aquatic bed even if they may rise above the surface of the water at times.

Q. (H 1.1) How much area does each stratum have to cover in order to be counted as a stratum in the forested class?

A. Each stratum (canopy, sub-canopy, shrub, herbaceous, or ground-cover) has to cover at least 20% of the ground within the forest when looking at it from above. If the field visit is during the winter you will have estimate cover based on your expectation of what the plants would cover when in full leaf.

Q. (H 1.2) If a wetland has only one hydrologic regime, does it get zero points? Seems likely but it is unclear.

A. yes. One hydrologic regime is zero points.

Q. (H2.1, H2.2, and H2.4) How to determine if connections are disturbed. Are areas that contain or are dominated by invasive species considered disturbed?

A. The description of what is considered relatively undisturbed for 2.1 and 2.2 is found in the next to the last paragraph in the text describing how to answer the buffer question. Further explanations are given in the text describing question 2.4. Areas dominated by invasive species are not considered disturbed unless you also have other evidence of disturbance still present. The invasive species could be a result of some past disturbance that is no longer present.

Q. (H 2) I have a wetland surrounded by an area that was logged some time ago. Does this count as "relatively undisturbed" when trying to determine the opportunity for habitat in Question H 2?

A. Generally, logged areas that have been undisturbed for at least 5years can qualify as "relatively undisturbed."

Q. (H 2.3) What defines a "tree stand" How small in area can it be? Two trees, ten? a hundred? What canopy closure? I could not find any definition in WDFW documents I have.

A. The word usage and definitions in question H 2.3 were developed by the Department of Fish and Wildlife for their priority habitats. We were unable to find WDFW definitions for many of the terms used in the description of the priority habitats, and I am not in a position to interpret what WDFW meant. We

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recommend that you contact your local WDFW biologist if there is any question about the description of the priority habitats.

Q. (H2.3) Despite reading the listed page reference, can a property be listed on this page as more than one habitat, i.e. riparian, but also an “Urban Open Space?” Or, is just one and if so, which has a priority for listing?

A. Generally an urban open space can be counted as a priority habitat only once for question H2.3 even if it meets the criteria for more than one. An area that is riparian as well as urban open space would still count only as one priority habitat within 100m. This, however, applies only of urban open spaces because the boundaries of this habitat are determined by property lines, not by habitat features. In most cases if a parcel of land has several priority habitats in different areas, all within 100 m of the wetland, they are all counted. For example a specific parcel might have cliffs in one area and a mature forest in another. In this case you would count two priority habitats next to the wetland.

Q. (H2.3) How does one determine if an area is an Urban Open Space, is it from experience and knowledge or from an open space map, e.g. Pierce Counties Open Space Map? If the source is a map, what accuracy can one expect without field truthing the map?

A. The definition of urban open space is from WDFW, and we have found its interpretation may differ among jurisdictions. We were not in a position to alter the definitions or try to clarify them because of the time that would have required in coordinating with WDFW. If there is any question I suggest you contact your local WDFW biologist. Also, the WDFW maps of priority habitats are not all inclusive, so one should not rely on them in cases where priority habitats are not mapped. If the areas are identified on the WDFW database then you can assume it is correct. Its absence from the database, however, is not proof that it is NOT a priority habitat.

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