

Thank you for providing another opportunity to comment on the Port of Orcas Master Plan (Master Plan). I wish to have the following comments entered into the Master Plan record. I realize that the Master Plan includes multiple planning timelines and that some of the proposed improvements will not begin for several years. Wetland categories and applicable buffers as well as areas in shoreline jurisdiction should be included on project drawings to help inform the alternative selections. Also, the wetland categories need to be updated to be consistent with regulatory standards. My primary concerns with the Master Plan environmental characterization are the following:

1. The wetland mitigation plan for the Orcas Airport (*Wetland and Buffer Mitigation Plan for Orcas Island Airport*, Wetland Resources, Inc.; February 8, 2018; hereafter, Mitigation Plan) classifies the large wetland to the west of the north end of the runway as two separate, adjoining wetlands (Wetland A and Wetland B). The Mitigation Plan classifies Wetland A as a Category I riverine wetland and Wetland B as a Category III slope wetland. Because the primary source of hydrology to Wetland A is tidal influence and the salinity within in Wetland A is too high for shrubs and trees, as stated in the Mitigation Plan (pp. 2 and 7, respectively), Wetland A should be rated as an estuarine wetland.

There are two aspects to tidal influence: the hydraulic aspect of landward flow at high tide (inundation) and the chemical aspect of increasing salinity. The Department of Ecology (Ecology) wetland rating system (*Washington State Wetland Rating System for Western Washington, 2014 Update*; Ecology Publication No. 14-06-029) uses both of these criteria to distinguish between freshwater tidal fringe (salinities less than 0.5 parts per thousand [ppt]) and estuarine wetlands (salinities greater than 0.5 ppt). Freshwater is classified as salinities less than 0.5 ppt; higher salinities are considered estuarine or marine. The state wetland rating system was developed to assess freshwater wetlands and the typical rating forms should not be used to classify estuarine wetlands (see Attachment A, below). Estuarine wetlands are classified as "Special Characteristic" wetlands and are classified using questions SC 1.0 – SC 1.2 at the end of the rating form. During my July 2012 site visit I measured salinities ranging from 1 to 23 ppt within Wetland A/B and adjoining ditches, clearly indicating that this is an estuarine wetland.

2. I do not understand the rationale for identifying Wetland A as a separate wetland from Wetland B; that would only be appropriate if there were upland separating these wetlands and there was only one-way flow (downhill) between the wetlands. There are only limited circumstances where wetlands receive dual ratings under the state wetland rating system. Attachment B, an excerpt from the rating system manual, discusses when it is appropriate to give wetlands multiple ratings.
3. The ditch system and Wetland A/B are within shoreline jurisdiction since tidal inundation (ordinary high water mark; OHWM) extends landward into the ditch system and wetlands. Wetland A/B and likely the wetland immediately south of Wetland A/B (not labelled in the Mitigation Plan) meet the definition of an associated wetland (see WAC 173-22-040). Shoreline jurisdiction (shorelands) extends 200 feet landward of the OHWM and also includes all associated wetlands. I would recommend that the Port request that Ecology staff verify the OHWM and wetland ratings for all waters on the Airport. Ecology is the state agency that oversees state wetland and shoreline regulation. Verifying the wetland rating and the extent and type of shoreline jurisdiction (OHWM vs. associated wetland) is within Ecology's regulatory purview. Having these regulatory boundaries verified will give the Port clear guidance on which Master Plan areas are within shoreline jurisdiction and the applicable wetland ratings and buffers. This will help guide Master Plan design elements and alternative selection.

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# Attachment A

## Question 1: Tidal Fringe Wetlands

Tidal Fringe wetlands are found along the coasts and in river mouths to the extent of tidal influence. The dominant source of water is from the ocean or river. The unifying characteristic of this class is how water moves in the unit. All Tidal Fringe wetlands have water flows dominated by tidal influences, and water depths are usually controlled by tidal cycles in the adjacent ocean.

This method does not rate the functions and values of estuarine wetlands, but it can be used to rate the functions of freshwater Tidal Fringe wetlands.

Tidal Fringe wetlands, in which the water has a salinity higher than 0.5 parts per thousand, are classified as "Estuarine" and not scored. Tidal Fringe wetlands in which the waters are tidal but freshwater (salinities below 0.5 parts per thousand), are scored using the form for Riverine freshwater wetlands.

There are numerous Tidal Fringe wetlands in the estuaries and tidal sloughs in the Puget Sound region as well as in Willapa Bay and Grays Harbor. The difficulty is in identifying the boundary between fresh and brackish waters. In the absence of local information (e.g., the salt wedge in the Snohomish River extends upstream to the Route 2 bridge), users will have to rely on plants to identify the boundaries between fresh and salt water. Appendix B lists common wetland plants that are tolerant of salt (from Hutchinson, 1991). If the dominant plants in the community are those listed as "Tolerant" or "Very Tolerant," it can be assumed that the waters in the slough or river at that point are saline.

Figure 12 shows Edison Slough, which has a fringe of *Triglochin* sp. and *Carex lyngbyei* along the edge of the mudflat. On this basis the wetland was classified as "estuarine". If you have a situation such as the one presented in Figure 12, a fringe of freshwater plants that is above an area of salt-tolerant plants, you should consider the entire unit as estuarine. See question 8 on the classification key in the rating form.

## Attachment B

Furthermore, you do not subdivide a wetland into different hydrogeomorphic (HGM) classes if more than one is present. A wetland with more than one HGM class within its boundary is treated as one HGM class for rating (Figure 2). The second page of the classification key in Appendix A provides guidance on how to classify wetlands having more than one HGM class within its boundary.



Figure 2. A wetland with two HGM classes within the delineated boundary. This wetland is rated as a Lake Fringe wetland.

There are, however, ecological criteria that can be used to separate very large wetlands into smaller units for scoring. These criteria are described below.

If you do not have access to the entire wetland because the wetland includes different properties or because parts of the site are impenetrable or not accessible, you should do the best you can to answer the questions from aerial photos, using binoculars, or any other additional information. Note your lack of access on the rating form and record which questions are based on incomplete data.

independent of the land use in the wetland. For example, a Depressional wetland has approximately the same amount of live storage whether the surface is a shrub community or a pasture.

Furthermore, the rating system used in this method is not robust enough to capture slight differences in habitat functions within different portions of the same wetland unit. Attempts were made during the calibration of the 2004 Wetland Rating System (Hruby, 2004b) to score different portions of a wetland unit based on differences in land use, but the results did not provide an accurate representation of the system. This compromise is necessary in order to make the tool rapid and easy to use. For example, if half a wetland has been recently cleared for farming and the other half left intact, the entire area functions as, and should be categorized as, one unit. Figure 10 shows a wetland that is a lawn along one side and a wetland plant community on the other side. In this case, the entire wetland should be rated as one unit.



Figure 10. A wetland with two land uses and separated by a fence. The entire wetland should be treated as one unit.

## 4.7 Freshwater wetlands where only part of the wetland is a forest or a bog

Freshwater wetlands may be rated as Category I because they contain a smaller area of bogs or mature or old-growth forest. If the entire wetland (including the bog and forested areas) scores between 16 and 22 points for its functions (Table 1), it may be possible to assign a dual rating to the wetland (Category I/II, Category I/III).

Table 1. Situations where dual ratings may be possible.

Rating Based on Special Characteristics	Score for Functions 23-27	Score for Functions 20-22	Score for Functions 16-19
Cat. I bog	Not possible – Cat. I	I/II	I/III
Cat. I forest	Not possible – Cat. I	I/II	I/III

To develop a dual rating you will need to establish a boundary within the wetland that clearly establishes the area that is the Category I bog or forest. If you are unable to clearly map the boundaries between the forest or bog and the rest of the wetland, it may be impossible to assign a dual rating.

Dual ratings are acceptable only when a wetland contains a small area of bog or forest, or in certain estuarine cases (see below). Wetlands that are Category I, Wetland of High Conservation Value, Category I Coastal Lagoons, or Category I and II Interdunal Wetlands cannot be assigned a dual rating.

The criteria to be used in establishing the boundary between the Category I part of a wetland and those that are either Category II or III are as follows:

- For wetland areas that are Category I as a result of the presence of a forest, the boundary between categories should be set at the edge of the forest.
- For wetland areas that are Category I because they are Bogs, the boundary between categories should be set where the characteristic vegetation of acidic peatlands changes (i.e. most of the plants that are specifically adapted to acidic peatlands are replaced with more common wetland species) and/or where the organic soils become shallow (less than 16 in).

## 4.8 Category I estuarine wetlands with a fringe of *Spartina* species

A dual rating is also possible when an estuarine wetland that meets the criteria for a Category I estuarine wetland has a fringe along the seaward edge of the invasive *Spartina* species. The area that has more than 10% cover of *Spartina*, but no other invasive species, meets the criteria for a Category II estuarine wetland. The entire vegetated system can be categorized as an estuarine I/II. The boundary between the two categories is the zone where the cover of *Spartina* species becomes 10%. The area of *Spartina* would be rated a Category II, while the relatively undisturbed upper marsh with native species would be a Category I.

## 4.9 Very small wetlands

Users often question the effectiveness of using rapid methods in wetlands that are ¼ ac or less. One tree or shrub may be all that is needed in a small wetland to score points on the rating form for certain questions. The data collected during the calibration of the rating systems, however, indicate that wetlands smaller than a ¼ ac can be rated accurately. The