



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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NATIONAL WETLAND INVENTORY

NOTES TO USERS

THE DALLES NW

1:100,000 SCALE MAPS COVERED

The Dalles NW (Hood River)

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INTRODUCTION

The U.S. Fish and Wildlife Service, Office of Habitat Resources, is conducting an inventory of the wetlands of the United States. The National Wetlands Inventory (NWI) is establishing a wetland data base in both map and computer forms for the entire country. The NWI information will serve to identify the current status of U.S. wetlands and can be used as a reference point from which future changes in wetlands can be evaluated.

I. PURPOSE

The purpose of Notes to Users is to provide general information regarding the production of NWI maps and wetlands found within a relatively similar geographic area. Notes to Users are not intended to include complete description of all wetlands found in the area nor provide complete plant species information.

2. AREA COVERED

The area covered is defined by the Hood River U.S.G.S. 1:100,000 intermediate scale map (see attached index maps). According to Bailey's ecoregions, the area is in the Humid Temperate Domain, Marine Division, Pacific Forest Province.

The area is a section of the Cascade mountain range dissected by the Columbia River. The mountains north of the Columbia River are mainly drained by the Wind, Salmon, and Klickitat river systems. South of the Columbia are the Lower Hood River and Upper Hood River Valleys.

This mostly montaine area is characterized by generally accordant ridge crests separated by deeply dissected river valleys. Glacial deposits have been widely distributed throughout the area, the majority concentrated in the valleys of major rivers.

These mountain masses have a profound effect on the climatic regime. The Cascade Mountains are an important barrier to the movement of maritime and continental air masses. Elevation has a primary effect upon local climate. Precipitation and snowfall increase and temperatures decrease rapidly with increasing elevation on both western and eastern slopes of the range.

The principal trees of this densely forested region are western cedar, western hemlock, and Douglas-fir on the western slopes and Ponderosa pine and Douglas-fir on the eastern slopes. The high snowcapped mountains have a well marked subalpine belt. Important trees here are the mountain hemlock, subalpine fir and whitebark pine. The alpine zone has a rich flora of shrubs and herbs.

Soils of the mountains are generally at least moderately deep, well drained sandy loams to clay loams on moderate slopes. Steeper slopes more commonly have shallow stony soils formed from volcanic ash and colluvium. Valley soils were formed from glacial outwash, alluvium and lacustrine deposits. Wyeast and Parkdale-Dee associations commonly contain somewhat poorly drained and poorly drained soils.

3. MAP PREPARATION

Wetland classification for the NWI maps is in accordance with "Classification of Wetlands and Deep-Water Habitats of the United States " Cowardin, et al, 1979.

Wetland classification and delineations were produced by air photointerpretation of high level aerial photography. The aerial photography used was color infrared at a scale of 1:58,000 taken in July and August of 1981.

Limited field reconnaissance was conducted during the fall and winter of 1982.

Stereoscopically reviewed aerial photographs had wetland boundaries and labels delineated on the photographs. Delineations were enlarged to a scale of 1:24,000 using a zoom-transfer scope and fitted to USGS 7 1/2 minute topographic maps. The 1:100,000 scale wetland maps were prepared from the 7 1/2 minute series. Large scale NWI wetland maps (1:24,000 scale) are available for the USGS 7 1/2 minute topographic sheets indicated on the attached index map.

The Project Officer for production of the wetland maps was Dennis Peters, Regional Wetlands Coordinator, U. S. Fish and Wildlife Service, Region 1, Lloyd 500 Building, 500 NE Multnomah Street, Portland, Oregon 97232, telephone (503) 231-6154. Aerial photo interpretation was completed by Martel Laboratories in St. Petersburg, Florida. Maps were prepared by Martel Laboratories, Inc., and the NWI National Team in St. Petersburg, Florida.

4. USER CAUTION

The map documents were prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography. The aerial photographs typically reflected conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of aerial photographs. Thus a detailed on-the-ground and historical analysis of a single site may result in revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included in the map document.

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define limits of proprietary jurisdiction of any federal, state, or local government or to establish the geographical scope of regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specific agency regulatory programs and proprietary jurisdictions that may affect such activities.

5. WETLAND COMMUNITIES AND DEEPWATER HABITATS

This discussion is a general overview of wetlands and deepwater habitats in the study area as mapped by the NWI. It is not a complete list of NWI mapping codes nor does it contain a complete vegetation list, but rather reflects general wetland plant communities observed during field reconnaissance.

The wetland systems, Lacustrine, Riverine, and Palustrine are represented in the subject area. Deepwater habitats are areas that are permanently flooded (except during periods of extreme drought) and are characterized by open water on the aerial photography. These habitats are present in the Riverine system (R1OW, R2OW, R3OW) Lacustrine system (L1OW) and Palustrine system (POW).

Aquatic beds (AB) are present in all three systems and are considered deepwater habitats. Aquatic beds in the Lacustrine, Riverine, and Palustrine system commonly include species such as pond lily (Nuphar spp.), pond weeds (Potamogeton spp.), duckweeds (Lemna spp.), or millfoil (Myriophyllum).

The Riverine system includes the classes open water (OW), streambed (SB) and unconsolidated shore (US). Open water and unconsolidated shore are restricted to the Riverine tidal (R1), lower (R2) and upper (R3) perennial subsystems. While the flats are not covered by a perennial flow, they are associated with the reach of the river that contains permanent water and are included in the perennial subsystems. In cases where streamside palustrine wetland vegetation cannot be separately delineated from the riverine system, the wetlands are mapped as linear palustrine wetland features. Streams which do not flow year round are classified as intermittent streambeds (R4SB). Irrigation canals, whose flow is regulated by man are classified as either artificial lower perennial or artificial intermittent streams (R2OWK, R4SBK).

Natural or artificial basins or catchments larger than 20 acres are in the Lacustrine system. The Lacustrine system on the NWI maps includes the classes Lacustrine open water (L1OW, L2OW) and Lacustrine unconsolidated shore (L2US). The open water areas are covered by water whereas the unconsolidated shore is exposed at some time during the year. Basins or catchments smaller than 20 acres are in the palustrine system and classified as Palustrine open water (POW) or Palustrine unconsolidated shore (PUS) if exposed at some time during the year.

Due to extensive damming above Booneville Dam, the Columbia River has been classified as a series of impounded lakes (L1OWHh).

The most common wetlands in the study area are in the Palustrine system and most commonly characterized by the classes emergent (EM), scrub/shrub (SS) and forested (FO).

Palustrine emergent wetlands (PEM) are characterized by numerous and varied species; some of the most common being bullrush and threesquare (Scirpus spp.), sedges (Carex spp.), horsetails (Equisetum spp.), rushes (Juncus spp.), spike rushes (Eleocharis spp.), cattail (Typha spp.), dock (Rumex spp.), smartweeds (Polygonum spp.), reed canary grass (Phalaris arundinacea), and skunk cabbage (Lysitichium americanum).

Palustrine forested (PFO) and scrub shrub (PSS) wetlands are characterized by woody species. Common shrub species include willow (Salix spp.), red alder (Alnus rubra), hardhack (Spirea douglassi), and salmon berry (Rubus spectabilis). Typical forest species are red alder, Oregon ash (Fraxinus latifolia), big leaf maple (Acer macrophyllum), western red cedar (Thuja plicata), lodgepole pine (Pinus contorta) and black cottonwood (Populus trichocarpa). The classification of forested or scrub/shrub wetlands is determined by height of woody vegetation - forested greater than 6 m. and scrub/shrub less than 6m.

Modifiers

Hydrologic characteristics are an important aspect of wetlands. The water regime modifiers describe in general terms the duration and timing of surface inundation, as well as groundwater fluctuations.

The small-scale (1:100,000) NWI maps' legends do not include water regime nor special modifiers. Mapping codes for these modifiers are indicated in parentheses in the discussion that follows. These modifiers are grouped under two major headings: Tidal and Nontidal.

Tidal

In the Tidal Riverine, Lacustrine, and Palustrine areas, a nontidal modifier is used with a tidal suffix to describe a water regime more appropriately: Temporarily Flooded-Tidal (S), Seasonally Flooded-Tidal (R), Semi-Permanently Flooded-Tidal (T), or Permanently Flooded-Tidal (V).

Nontidal

Intermittently Flooded (J)--substrate is usually exposed, but surface water present for variable periods without detectable seasonal periodicity. Weeks or months or even years may intervene between periods of inundation.

Temporarily Flooded (A)--Surface water present for brief periods during growing season, but water table usually lies well below surface.

Saturated (B)--Surface water is seldom present, but substrate is saturated to surface for extended periods during growing season.

Seasonally Flooded (C)--Surface water is present for extended periods, especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is very variable, extending from saturated to a water table well below the ground surface.

Seasonally Flooded-Saturated--Surface water is present for extended periods during the growing season but is absent by the end of the growing season in most years. when the surface water is absent, the water table remains at the soil surface. The water regime modifier was created specifically for NWI mapping purposes.

Semipermanently Flooded--Surface water persists throughout the growing season in most years. Land surface is normally saturated when water level drops below soil surface.

Permanently Flooded--water covers land surface throughout the year in all years.

An artificially flooded (K) water regime modifier can be applied with all water regime modifiers. In this case, flooding is under the direct and purposeful control of man.

Special modifiers included on these 1:100,000 scale NWI maps, where applicable, are:

Diked/impounded (h). Created or modified by a barrier, dike, or dam which obstructs the inflow or outflow of water.

Excavated (x). Lies within a basin or channel excavated by man.

6. SOURCES OF ADDITIONAL INFORMATION

Since the purpose of the Notes to Users is to provide a general overview of a relatively large geographic area, it is important to be aware of sources of additional information. The following is a list of reports providing information about the area of concern.

Bailey, Robert G. 1978. Description of the ecoregions of the United States. U. S. Forest Service, USDA, Ogden, Utah.

Booz Allen Energy and Environment Division. The Natural Resource Benefits of Freshwater Riverine Wetlands: A Literature Review, prepared for Davis G. Davis Office of Analysis and Evaluation, 1978.

Cowardin, Lewis M., Virginia Carter, Francis C. Golet, and Edward T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States, U. S. Fish and Wildlife Service, October 1979.

Franklin, J.F. and C.T. Dryness, 1973. Natural Vegetation of Oregon and Washington. U.S. Dept. of Agriculture, Forest Service, General Technical Report PNW-8, 417pp.

Kozloff, Eugene N. Plants and Animals of the Pacific Northwest. University of Washington Press, Seattle, Washington. 1976.

Steward, Albert N., LaRea J. Dennis and Helen M. Gilkey. Aquatic Plants of the Pacific Northwest. Oregon State University Press, Corvallis, Oregon. 1963.

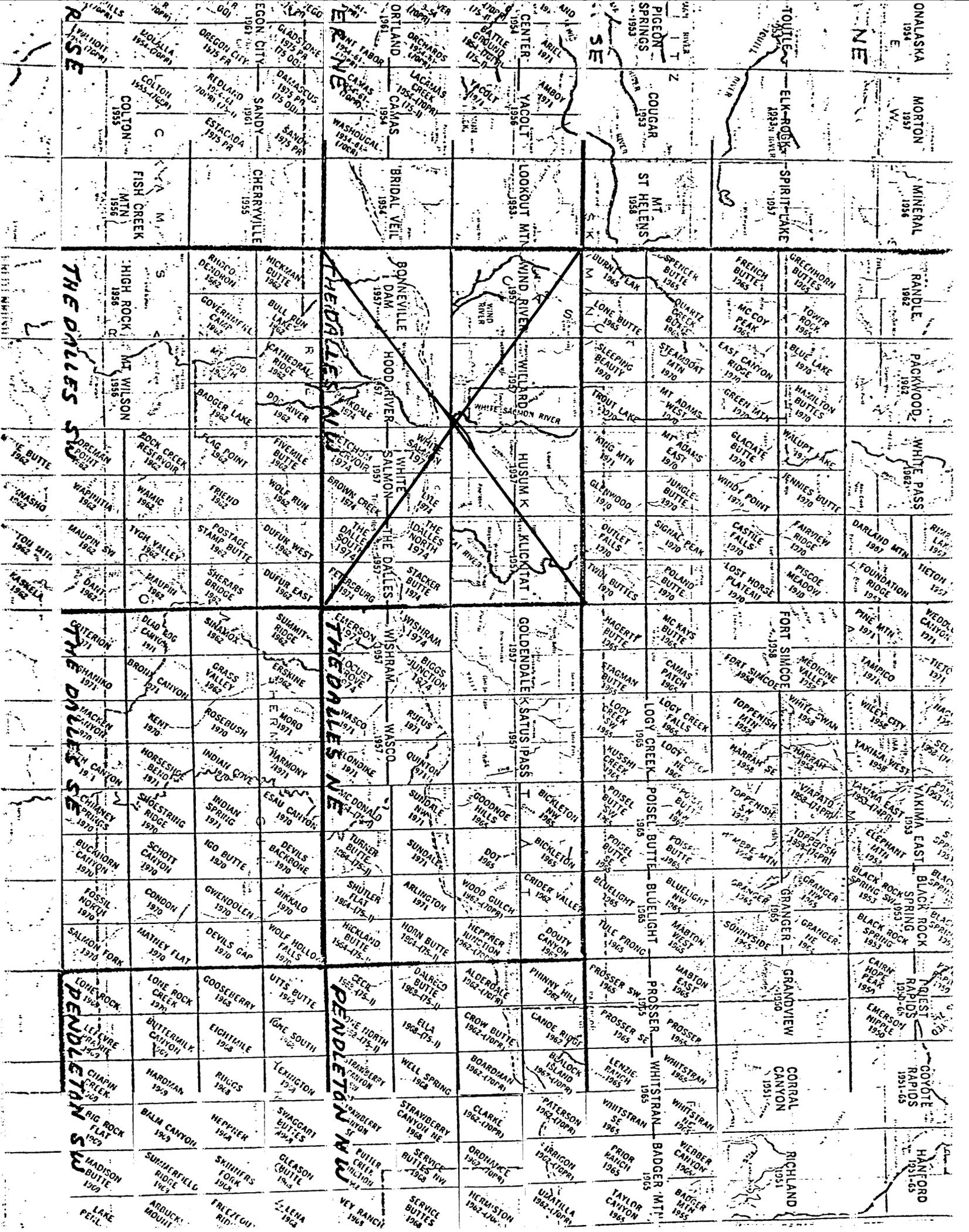
U.S. Department of Agriculture. Soil Conservation Service. 1981. Soil Survey of Hood River County Area, Oregon. 94pp.

TABLE 1. SUMMARY OF NWI WETLAND TYPES

NWI CODE	DESCRIPTION	VEGETATION COMMONLY FOUND	COMMENTS
L1OWH	Lacustrine, open water, permanently flooded.	Unvegetated	Distinct Signature
L1OWHh	Lacustrine, open water, permanently flooded, impounded.	Unvegetated	Carefully regulated for multiple usage. Distinct signature.
L2UB	Lacustrine, unconsolidated bottom.	Unvegetated	Mud margin areas around lake or shallow mud lake.
L1AB	Lacustrine, aquatic bed.	<u>Lemna</u> (duckweed)	Unknown surface subclass
L2USC	Lacustrine, Unconsolidated.	Unvegetated	Lake margins
L2USCh	Lacustrine, unconsolidated shore, seasonally flooded impounded.	Unvegetated	Lake margins where water is regulated
R3OW R2OW	Riverine, perennial, open water.	Unvegetated	Perennial type, upper or lower, determined by elevation change and floodplain development
R4SB	Riverine, intermittent, streambed.	Unvegetated	U.S.G.S. topos used to determine intermittent/perennial breaks
R3US R2US	Riverine, Perennial unconsolidated shore.	Unvegetated	River flats
R2OWKHx	Riverine, perennial open water, artificially permanently flooded, excavated.	Unvegetated	Irrigation canals which flow throughout year according to U.S.G.S. topo.

TABLE 1. SUMMARY OF NWI WETLAND TYPES (CONTINUED)

NWI CODE	DESCRIPTION	VEGETATION COMMONLY FOUND	COMMENTS
R4SBKCx	Riverine, intermittent, streambed, artificially flooded.	Unvegetated	Irrigation canals used only during season. Based on U.S.G.S. topos.
POW	Palustrine, open water.	Unvegetated	Water regime type based on collatorial data.
POWh POWx	Palustrine, open water. impounded or excavated	Unvegetated	Stock tanks used for livestock or irrigation.
PUSC	Palustrine, unconsolidated	Unvegetated	Ponds which dry up during summer.
PAB	Palustrine, aquatic bed	<u>Lemna</u> (duckweed)	Subtle signature sometimes associated with open water or emergents.
PFO1	Palustrine, forested broad leaved deciduous	<u>Salix</u> spp. (willow), <u>Populus trichocarpa</u> (black cottonwood).	Signature sometimes subtle, ecological situation must be considered.
PSS1	Palustrine, scrub-shrub broad leaved deciduous	<u>Salix</u> spp. (willow) <u>Rosa</u> spp (rose)	Occasionally difficult to separate from PFO1.
PEM1	Palustrine, emergent, persistent.	<u>Carex</u> spp. (sedge); <u>Eleocharis</u> (spikesedge); <u>Juncus</u> (rush); <u>Phalaris</u> (canary grass); <u>Phragmites</u> (reed); <u>Typha</u> (cattail); <u>Scirpus</u> (bulrush)	Various signatures.



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LOOKOUT MTN
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BRIDAL VEIL
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ORLAND
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WASHOUGAL
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RANDLE
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PACKWOOD
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WHITE PASS
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TOWER ROCK
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