USER REPORT
VANCOUVER NW, SW and NE; SALEM NW and SW
NATIONAL WETLANDS INVENTORY MAPS

A. INTRODUCTION

The U.S. Fish and Wildlife Service's National Wetlands Inventory is producing maps showing the location and classification of wetlands and deep water habitats of the United States. The Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. is the classification system used to define and classify wetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also available to enhance the use and application of the classification system.

B. PURPOSE

The purpose of the notes to users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive crosswalk from wetland codes on the map to common names and representative plant species; and (3) to explain local geography, climate, and wetland communities.

C. STUDY AREA

Geography:

The study area covered by Vancouver NE, NW and SW, and Salem NW and SW, is in northwestern Oregon extending down the Willamette Valley from Portland to Eugene. Bailey (1980) identifies the study area as the Willamette-Puget Forest Province.

Forest communities in the Willamette-Puget Forest Province consist of western red cedar, western hemlock, and Douglas fir, in the foothills of the Coast Range. In the interior valley, the coniferous forest is less dense and contains deciduous trees such as red alder, Oregon ash, and black cottonwood. Poorly drained sites with swamp or bog communities are common. The relief is nearly level to gently sloping extending into the foothills of the Coast Range. Major perennial rivers include the Willamette, Long Tom, Muddy Creek, and the Yamhill.

Climate:

Because this province is close to the Pacific Ocean its climate is mild. The average annual temperature range is 48° to 55° F. The moderate rainfall reaches its maximum in winter with December as the wettest month. Average annual

rainfall is 15 to 60 inches. Coastal mountains are responsible for less rain in the summers with the drier air moving downslope from the mountains into the valley.

Vegetation:

Wetland forest communities in this region consist of conifers and deciduous trees, the most common being Western hemlock, Oregon ash, Red alder. Shrub wetlands consist of deciduous vegetation such as red alder and willow. Emergent wetlands commonly consist of juncus, sedge, and common cattail and are often found in the lowlands of the valley. The Eugene area wetlands near the Fern Ridge reservoir have been farmed at sometime in the past and then left fallow in certain areas. These wetlands are commonly mapped as EMA and EMC (temporary emergents and seasonal emergents).

Soils:

Hydric soils in this region consist of Waldo-McAlpin: Deep, poorly drained and moderately well drained, nearly level silty clay loam that formed in recent alluvial deposites. Natroy-Bashaw: Deep, poorly drained, nearly level silty clay, silty clay loam, and clay that formed in alluvial deposites.

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

Table - Cowardin Classification Codes and Descriptions (1 of 4)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
R1UB (V)	Riverine, tidal	Rivers	Unconsolidated bottoms
R2UB (H)	Riverine, lower perennial	Rivers	Unconsolidated bottoms
R3UB (H)	Riverine, upper perennial	Rivers	Unconsolidated bottoms
R4SB (F,C,A)	Riverine, intermittent, stream bed	Creek, stream, canal	Unvegetated: sand, mud, gravel
L1UB (H)	Lacustrine, limnetic, unconsolidated bottom	Reservoir, lake	Unconsolidated bottoms
L2UB (K)	Lacustrine, littoral, unconsolidated bottom	Sewage treatment ponds	Unconsolidated bottoms
PUB (H,G,K,F)	Palustrine, unconsolidated bottom	Ponds, stock tanks, borrow pits	Unconsolidated bottoms
PUS (C,A)	Palustrine, unconsolidated shore	Pond bed, unvegetated depression	Unvegetated mud, sand or gravel
PEM (F,C,B,A)	Palustrine, emergent	Seeps, springs, vegetated streams and canals, wet meadows, marshes, diked marshes	Juncus sp. (rushes) Carex sp. (sedges) Typha latifolia (common cattail) Rumex sp. (dock) Veratrum caudatum sp. (false hellebore) Fulchellum (western shooting star)

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

Table - Cowardin Classification Codes and Descriptions (2 of 4)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PEM (cont.)			Alopecurpus sp. (foxtail) Collinsia verna (blue-eyed mary)
PEM (S,R,T,V)	Palustrine, emergent (freshwater-tidal)	Estuarine grasses	Carex obnupta (slough sedge)
PSS (C,B,A)	Palustrine, scrub-shrub	Seeps, springs, streams, thickets	Populus sp. (cottonwood) Salix sp. (willow) Rhus sp. (sumac)
PSS (S,R,T,V)	Palustrine, scrub-shrub (freshwater-tidal)	Estuarine shrubs	Alnus rubra (red alder) Rubus spectabilis (salmonberry)
PFO (C,B,A)	Palustrine, forested	Forested streams, floodplains, depressions, seeps and springs	Populus sp. (cottonwood) Fraxinus latifolia (ash) Salix sp. (willow) Alnus rubra (red alder) Picea englemannii (Englemann's spruce) Pinus contorta (lodgepole pine)
PFO (S,R,T,V)	Palustrine, forested (freshwater-tidal)	Estuarine forests	Alnus rubra (red alder) Picea sitchensis (sitka spruce)

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

Table - Cowardin Classification Codes and Descriptions (3 of 4)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PAB (H,F)	Palustrine, aquatic bed	Ponds, stock tanks, canals	Wolfia punctata (water meal) Lemna minor (duckweed) Potamogetan sp. (pondweed) Nuphar luteum (spatterdock)
Pf	Palustrine, farmed	farmed wetlands	Vaccinium macrocarpon (cultivated cranberry)
E1UB (L)	Estuarine, subtidal	Estuaries	Unconsolidated bottoms
E2UB (M,N,P)	Estuarine, intertidal	Estuaries	Unconsolidated bottoms
E2EM (M,N,P)	Estuarine, intertidal	Estuaries, low marsh, high marsh	Carex lyngbyei (lyngby's sedge)
E2SS (N,P)	Estuarine, intertidal	Estuaries, high marsh, low marsh	Alnus rubra (red alder)
E2FO (P)	Estuarine, intertidal	Estuaries, high marsh	Picea sitchensis (sitka spruce)
E2US (N,P)	Estuarine, intertidal	Estuarine mudflats	Unconsolidated shores
M1UB (L)	Marine, subtidal	Continental shelf, subtidal beach	Unconsolidated bottoms
M1AB (L)	Marine, subtidal	Kelp beds	(Bull Kelp)

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

Table - Cowardin Classification Codes and Descriptions (4 of 4)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
M2US (N,P)	Marine, intertidal	Beach, shoreline	Unconsolidated shores
M2RS (N,P)	Marine, intertidal	Rocky headland, beach cliffs	Rocky shores
M2AB (N)	Marine, intertidal	Beach, shoreline	Pelvetia sp. (rockweed)

E. WATER REGIME DESCRIPTION

(J) Intermittently Flooded - 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. The dominant plant communities under this regime may change as soil moisture conditions change. Some areas exhibiting this regime do not fall within our definition of wetland because they do not have hydric soils or support hydrophytes.

(A) Temporarily Flooded - Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.

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

(C) Seasonally Flooded - 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 and is extremely variable, extending from saturated to a water table well below the ground surface.

(F) Semipermanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.

(G) Intermittently Exposed - Surface water is present throughout the year except in years of extreme drought.

(H) Permanently Flooded - Water covers land surface throughout the year in all years.

(K) Artifically Flooded - The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.

(U) Unknown - The water regime is not known.

F. MAP PREPARATION

The wetland classification that appears on the Vancouver NE, NW and SW, and Salem NW and SW, National Wetlands Inventory (NWI) Base Map (Table 1) is in accordance with Cowardin et al. (1977). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photography. The photography was taken during July, August, and September of 1982.

Field checks of areas found within Vancouver NE, NW and SW, and Salem NW and SW, were made prior to the actual delineation of wetlands. Field check sites were selected to clarify varying signatures found on the photography. These photographic signatures were then identified in the field using vegetation types and soil types, as well as additional input from field personnel.

Collateral data included USGS topographic maps, climate, vegetation, and ecoregional information.

The user of the map is cautioned that, due to the limitiation of mapping primarily through aerial photo interpretation, a small percentage of wetlands may have gone unidentified. Since the photography was taken during a particular time and season, there may be discrepancies between the map and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photo interpretation and drafting were completed by Martel Laboratories, Inc., St. Petersburg, Florida.

F. SPECIAL MAPPING PROBLEMS

None.

G. MAP ACQUISITION

To discuss any questions concerning these maps or to place a map order, please contact:

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To order maps only, please contact:

National Cartographic Information Center
U.S. Geological Survey
National Center
Reston, VA 22092

Maps are identified by the name of the corresponding U.S.G.S. 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the U.S. Geological Survey.

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