

USER REPORT: SALEM NE AND SE  
NATIONAL WETLANDS INVENTORY MAPS

A. INTRODUCTION

The U.S. Fish & Wildlife Service's National Wetlands Inventory is producing maps showing the location and classification of wetlands and deepwater 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 classifications 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 Salem NE and SE is in north western Oregon extending from the Willamette Valley (west) into the Cascade Mountain Range to the east. Bailey (1980) identifies the study area as the Willamette-Puget Forest Province in the valley and heading east into the foothills of the Cascades it develops into the Cedar-Hemlock-Douglas Fir Section. Then finally into the Cascades is the Silver Fir-Douglas Fir Section.

Forest communities in the Willamette-Puget Forest Province consist of western red cedar, western hemlock, and Douglas-fir. In the interior valleys, the coniferous forest is less dense and often contains deciduous trees. Poorly drained sites with swamp or bog communities are abundant. The relief has nearly level to gently sloping floodplains bordered by hills, and extends into mountainous terrain to the east. Major perennial rivers include the North Santiam, South Santiam, and the Willamette.

Forest communities in the Silver-Fir Douglas-Fir Forest Section and Cedar-Hemlock-Douglas Fir Forest Section, consist of a variety of firs, spruces, and cedars. Numerous species of shrubs grow exceptionally well and in many places is impenetrable. The relief in this section covers a series of steep rugged mountains ranging from 1,000 to over 3,000 feet in altitude and dominated every 5 to 85 miles by a volcano of much higher elevation. Major perennial rivers include the McKenzie, North Santiam, and South Santiam.

### Climate:

Because this province is close to the Pacific Ocean, its climate is generally mild throughout the year (48 to 55 degrees Fahrenheit average annual temperature). Moderate rainfall reaches its maximum in winter and summer is dry. Average annual rainfall is from 15 to 60 inches, but in much of the area, the range is from 15 to 60 inches (Bailey 1980).

### Vegetation:

The major trees of the Willamette-Puget Forest Province are western red cedar, western hemlock, and Douglas fir. Before cultivation, dense coniferous forest dominated the vegetation. The interior valleys consist of many deciduous trees including big-leaf maple, Oregon ash, and black cottonwood. Some prairies support open stands of oaks or are broken by groves of Douglas-fir and other trees.

In the Silver-fir Douglas-fir Forest Section and Cedar-Hemlock-Douglas Fir Forest Section, Douglas-fir, western red cedar, western hemlock, grand-fir, silver fir, Sitka spruce, and Alaska cedar dominate. Although Douglas-fir is the most abundant tree in most of the forest, it is not a member of the climax. Western hemlock and several other species of fir are more tolerant of shade and in the mature forest, Douglas-fir cannot reproduce itself. The wetland trees include black cottonwood, red-alder, and lodgepole pine.

### Soils:

Well drained to somewhat poorly drained soils are widespread in this region. Silty clay loams that formed in colluvium derived from sedimentary rock, basic igneous rock or volcanic ash, are also present.

General soil types are Honey-Grove-Peavine-Apt., Nekia-Bellpine-Jory, and Blachly-Klickitat-Harrington. Inceptisols dominate in Puget Sound Valley and Alfisols, Inceptisols, and Ultisols are the principal soil orders.

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

TABLE 1 - NWI CLASSIFICATION FOR SALEM NE AND SE (1 OF 2)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
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, unconsoli- dated bottom	Reservoir, lake	Unconsolidated bottoms
L2UB (K)	Lacustrine, littoral, unconsoli- dated 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	<u>Juncus</u> spp. (rushes) <u>Carex</u> spp. (sedges) <u>Typha latifolia</u> (common cattail) <u>Rumex</u> spp. (dock) <u>Veratrum caudatum</u> (false hellebore) <u>Pulchellum</u> (western shooting star) <u>Alopercurpus</u> sp. (foxtail) <u>Collinsia verna</u> (blue-eyed Mary)
PSS (C,B,A)	Palustrine, scrub-shrub	Seeps, springs, streams, thickets	<u>Populus</u> spp. (cottonwood) <u>Salix</u> spp. (willow) <u>Rhus</u> spp. (sumac)
PFO (C,B,A)	Palustrine, forested	Forested streams, floodplains, depressions, seeps and springs	<u>Populus</u> spp. (cottonwood) <u>Fraxinus latifolia</u> (ash) <u>Salix</u> spp. (willow) <u>Alnus rubra</u> (red alder) <u>Picea englemannii</u> (Englemann's spruce) <u>Pinus contorta</u> (lodgepole pine)

TABLE 1 - NWI CLASSIFICATION FOR SALEM NE AND SE (2 of 2)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PAB (H,F)	Palustrine, aquatic bed	Ponds, stock tanks, canals	<u>Wolffia punctata</u> (water meal) <u>Lemna minor</u> (duckweed) <u>Potamogeton</u> spp. (pondweed) <u>Nuphar luteum</u> (spatterdock)

### 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) Seasonably 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 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) Artificially 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.

### E. MAP PREPARATION

The wetland classification that appears on the Salem NE and SE National Wetlands Inventory (NWI) Base Maps (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 Salem NE and SE 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 limitation of mapping primarily through aerial photointerpretation, 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 photointerpretation 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:

Dennis Peters  
Regional Wetland Coordinator  
U.S. Fish and Wildlife Service - Region I  
Lloyd 500 Building, Suite 1692  
Portland, OR 97232

To order maps only, contact:

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

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

## LITERATURE CITED

Bailey, Robert G.; 1980. Description of the Ecoregions of the United States; United States Department of Agriculture Forest Service. Miscellaneous Publications No. 1391.

Cowardin, L.M.; V. Carter; F.C. Golet and E.T. LaRoe; 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, U.S. Fish and Wildlife Service. Biological Services Program, Washington D.C., 103 p.

Hotchkiss, Neil; 1972. Common Marsh, Underwater and Floating-leaved Plants of the U.S. and Canada. Dover Publishing Co.

Little, Elbert; 1980. Audubon Society Field Guide to North American Trees: Western Region. Alfred A. Knopf, Inc.

Soil Survey of Lane County, Oregon, 1980. United States Department of Agriculture, Soil Conservation Service.

Soil Survey of Linn County, Oregon, 1980. United States Department of Agriculture, Soil Conservation Service.

gc:wp\D:\NWI

APPENDIX A

1:100,000 - SCALE INDEX MAP

