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DRAFT

USER REPORT: PENDELTON SE and GRANGEVILLE 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 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. Photointerpretation conventions, hydric soil 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.
- 3) To explain local geography, climate and wetland communities.

C. Study Area

Geography:

The study area covered by Pendleton SE and Grangeville SW 1:100,000 scale base maps is located in north-eastern Oregon. Pendleton SE and Grangeville SW both fall within the semiarid Steppe Division of the Dry Domain as described by Bailey (1980). Greater than 90% of the study area is further categorized as the Grand Fir-Douglas Fir Forest section of the Rocky Mountain Forest Province. The remaining portion is restricted to the extreme north-west corner of Pendleton SE and is defined by Bailey as the Palouse Grassland Province. Two areas of high relief within the study area include the Blue Mountains in Pendleton SE and the Wallowa Mountains in Grangeville SW. A great number of perennial rivers exist, particularly on the eastern side of the Blue Mountains. Major rivers include the Wallowa River and The Grande Ronde River which eventually flow northward to feed the Snake River.

Vegetation:

Short grasses sparsely distributed in bunched patterns are characteristic of the Steppe Division. Low trees and scattered scrub can be found in this division, however, they typically occur as xenophytic cover such as sagebrush and juniper. Deciduous trees such as cottonwoods and willows are limited to streams and back water areas of reservoirs. Wet sloughs consist mainly of juncus and sedges.

In the highland provinces, vegetation cover is determined by a combination of altitude, direction of prevailing winds and slope exposure. This area is dominated by Ponderosa pine in the lower more exposed dry slopes and the Douglas-Fir on the moist, more sheltered slopes. Again, trees such as willow and alder are restricted to streams and reservoir backwater areas. Many wet highland meadows were observed with dominant plants consisting of juncus, sedges and western shooting star.

Climate:

The study area is influenced by a semi-arid continental climate in which evaporation usually exceeds precipitation. Winters are cold and dry with summers warm to hot. Maximum rainfall in the Steppe Division comes in the summer, however, total moisture supply is low. The highland provinces are also influenced by a semi-arid steppe regime however, latitude, elevation and the general north-south orientation of mountain ranges determine localized differences within this area. Influenced by prevailing west winds, eastern slopes are usually much drier than those with western exposures. In areas of east-west ridge formation, the northern slopes are found to be more wet than those facing south. Overall precipitation averages are 5 to 23 inches annually with average annual temperatures of 35° to 55° F. Wider fluctuations are experienced in mountainous areas where precipitation on some slopes may total 40 inches annually.

Soils:

In the semiarid steppe division, the principle soil formation process is calcification, with salinization occurring on poorly drained sites. Generally soils on the steppe are found to have a large excess of precipitated calcium carbonate and are very rich in bases. In the steppe division Mollisols are the dominant soil type. Humus

content is found to be very low because the vegetation is so sparse. Soils in forested mountain areas are more leached due to higher precipitation and tend to be more acidic. The great majority of soils found within the study area were formed in volcanic ash mixed with volcanic tuff, loess and basalt. These soils range from shallow to moderately deep and are usually well drained. Poorly drained soils of the Cathrine series dominate the flood plain of the Grande Ronde Valley, although mass drainage projects via ditching have diminished their value as wetland areas. In the highland regions, the Helter soils dominate the wettest areas. This soil has an exceptionally high water capacity and usually supports the most dense stands of timber. Wet mountain meadows consist mainly of poorly drained soils of the Wilkins series. Other poorly drained soils in the study area include the Conley, Hooly, Upamine, and Hot Lake Silt series.

WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS
 TABLE 1: NWI CLASSIFICATION FOR PENDLETON SE AND GRANGEVILLE SW

| NWI CODE (WATER REGIME) | NWI DESCRIPTION | COMMON DESCRIPTION | CHARACTERISTIC VEGETATION |
|-------------------------------|---|--|--|
| R2UB (H) | Riverine, lower perennial, unconsolidated bottom | 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 | Lakes | Unconsolidated bottoms |
| L2UB (K) | Lacustrine, littoral, unconsolidated bottom | Sewage treatment holding ponds | Unconsolidated bottoms |
| PEM (K,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>Elymus triticoides</u> (basin wild rye) <u>Veratrum caudatum</u> (false heliopsis) <u>Camassia</u> sp. (camus) <u>Carex nebrascensis</u> (Nebraska sedge) <u>Eleocharis mamillata</u> (spike rush) <u>Elymus</u> spp. (rye grass) <u>Dodecatheon</u> <u>pulchellum</u> (western shooting star) |

| | | | |
|---|------------------------------------|---|---|
| <p>PEM (K, F, C, B, A) (cont'd)</p> | | | <p><u>Alopecurus</u> sp. (foxtail) <u>Collinsia verna</u> (blue-eyed Mary) <u>Cinquefoil</u> sp. (five-finger cinquefoil)</p> |
| <p>PSS (K, C, B, A)</p> | <p>Palustrine scrub-shrub</p> | <p>Seeps, springs vegetated streams, thickets</p> | <p><u>Populus</u> spp. (cottonwood) <u>Fraxinus latifolia</u> (ash) <u>Elaeagnus angustifolia</u> (Russian olive) <u>Salix</u> spp. (willow) <u>Alnus</u> spp. (alder) <u>Rhus</u> spp. (Sumac) <u>Rosa</u> spp. (rose) <u>Symphoricarpos albus</u> (snowberry)</p> |
| <p>PFO (C, B, A)</p> | <p>Palustrine, forested</p> | <p>Forested streams, floodplains, depressions, seeps, and springs</p> | <p><u>Populus</u> spp. (cottonwood) <u>Flaxinus latifolia</u> (ash) <u>Elaeagnus angustifolia</u> (Russian olive) <u>Salix</u> spp. (willow) <u>Alnus</u> spp. (alder) <u>Cornus stolonifera</u> (dogwood) <u>Pinus ponderosa</u> (ponderosa pine) <u>Picea engelmannii</u> (Engleman's spruce)</p> |
| <p>PAB (H, F, C)</p> | <p>Palustrine, aquatic bed</p> | <p>Ponds, stock tanks, canals</p> | <p><u>Wolffia punctata</u> (watermeal) <u>Lemna minor</u> (duckweed)</p> |

| NWI CODE (WATER REGIME) | NWI DESCRIPTION | COMMON DESCRIPTION | CHARACTERISTIC VEGETATION |
|-------------------------------|---|---------------------------------------|------------------------------------|
| PUB (H,G,K,F) | Palustrine, unconsolidated bottom | Ponds, stock tanks, borrow pits | Unconsolidated bottoms |
| PUS (C,A) | Palustrine, unconsolidated shore | Pond bed, unvege- tated depression | Unvegetated mud, sand or gravel |

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 is very 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 Pendleton SE and Grangeville 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 June, July and August 1981.

Field checks of areas found within Pendleton SE and Grangeville SW photography were made prior to the actual delineation of wetlands. Field checksites were selected to clarify varying signatures found on the photography. These signatures were then identified in the field using vegetation types and soil types as well as additional input from local field personnel.

Collateral data included USGS topographic quadrangles, SCS soil surveys, vegetation, climate and ecoregional information.

The user of the map is cautioned that due to limitations 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.

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

G. SPECIAL MAPPING PROBLEMS

An emulsion anomaly termed "summer blush" on the June and July photography resulted in some difficulty in the determination of temporary emergents vs upland grasses. This condition also affected the delineation of "mowed" emergent signatures in heavily cultivated river floodplains. Close attention to topographic contours, soil surveys, and climate have aided in an accurate representation of these wetlands.

H. 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 & 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
507 National Survey
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.

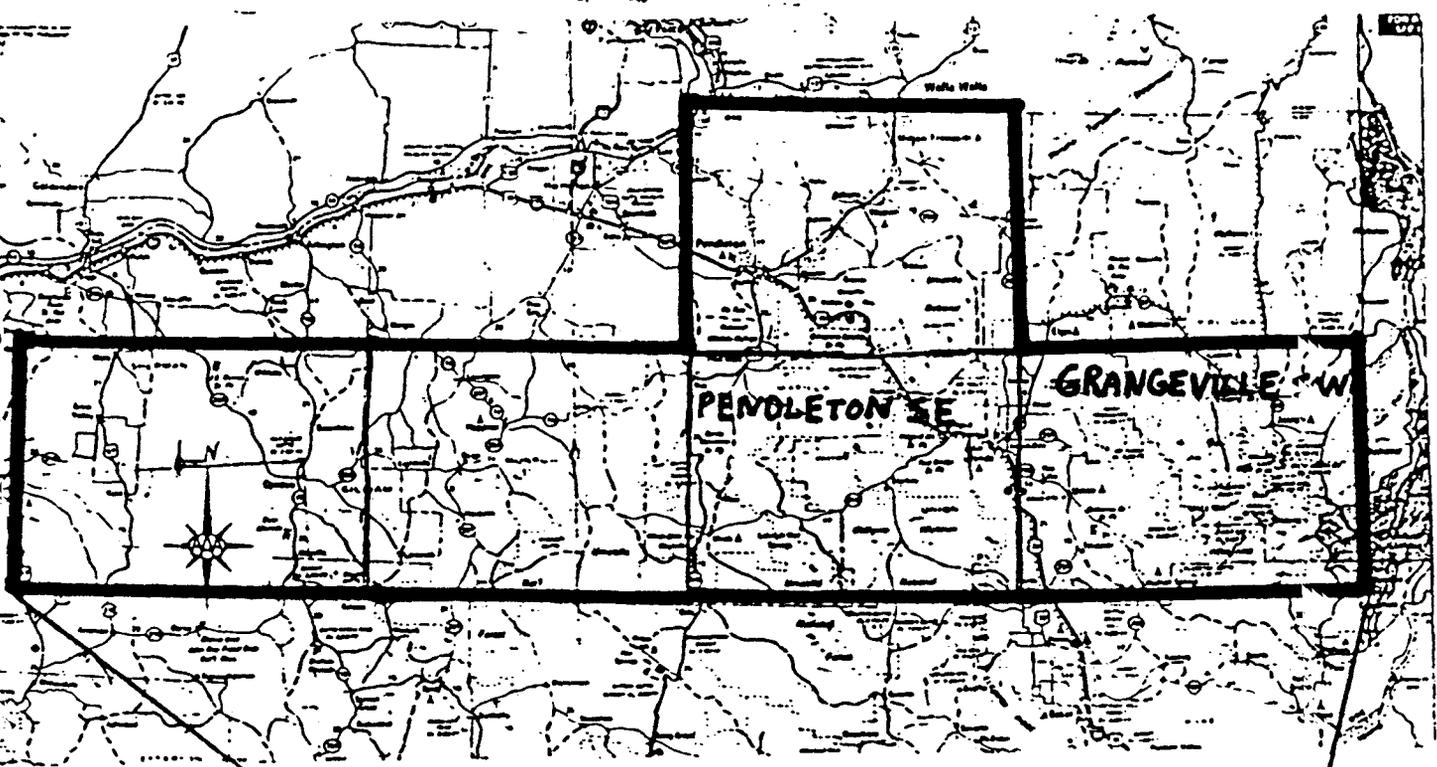
I. LITERATURE CITED

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

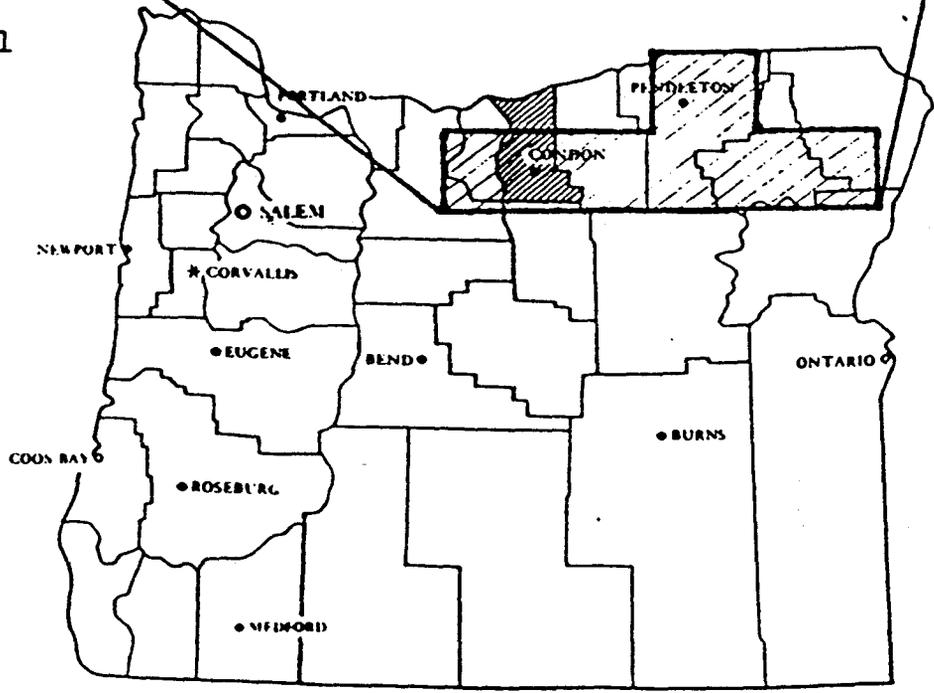
Cowardin, L.M.; V. Carter; F.C. Golet and E.T. LaRoe, 1979. Classification of Wetland and Deepwater Habitats of the United States; United States Department of the Interior, Fish and Wildlife Service, Biological Services Program, Washington, D.C., 103 p..

Soil Survey of Union County Area, Oregon; 1985 United States Department of Agriculture, Soil Conservation Service.

Figure 1:



Oregon Farm Bill
Study Area For
NWI Mapping



NWI #17