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NATIONAL WETLANDS INVENTORY

1:100:000 MAP NARRATIVE user notes

RITZVILLE NE, SE, SW, NW

INTRODUCTION

In 1974, the U.S. Fish and Wildlife Service directed its Office of Biological Services to complete an inventory of the nations' wetlands. As part of this overall objective, an effort began in October, 1982, to delineate and classify wetlands through photo interpretation combined with field inspection in the Columbia River Basin region of Washington.

Wetland maps at 1:100 scale and wetland overlay maps at 1:24,000 scale are produced at National Wetlands Inventory headquarters in St. Petersburg, Florida. Information regarding final Washington maps is available from the U.S. Fish and Wildlife Service's regional office located in Portland, Oregon. An integral part of all final wetland maps is the completion of narrative reports for each U.S. Geological Survey 1:100,000 quadrangle inventoried.

PURPOSE

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

AREA COVERED

The area is defined by the Ritzville 1:250,000 region (see attached index map A). The area is bounded on the west by 120° W longitude, on the east by 118° W longitude, on the north by 48° N latitude, and on the south by 47° N latitude. Included in this area are Grand Coulee Dam, Franklin D. Roosevelt Lake, Banks Lake, Moses Lake, and Potholes Reservoir. The entire Columbia Basin Irrigation Project, administered by the Bureau of Reclamation is located within the area.

BAILEY'S ECOREGIONS

The Ritzville areas lie completely within Bailey's Steepe-Intermountain Sagebrush Province (Bailey, 1978). The climax vegetation consists of various sagebrush and wheatgrass. There is relatively little forested vegetation except for quaking aspen, black cottonwood and willow in most areas and blackhawthorn in hillside ravines. The main grasses beside wheatgrass are bluegrass, brome, bitterbrush, and fescue. Irrigation runoff water plays a large role in the situating of wetland communities.

According to Washington State University's Institute of Agricultural Sciences, Ritzville lies within the Cascade Mountain rain shadow and is subject to arid conditions with low precipitation. The average annual rainfall ranges from 8.5 inches at Moses Lake to 22.5 inches around Chief Joseph Dam with most of it falling during the winter months. Every month, including the winter months, is moisture deficient and it is not unusual for the summer months to be completely without a recordable amount of rainfall. Due to these extreme drying conditions, the annual moisture supply is exhausted early in the growing season (Gilkeson, 1962).

The terrain of the study area varies from very gently undulating to moderately hilly. Elevation ranges from 4,287 feet on the Colville Indian Reservation to 540 feet along the Columbia River. Generally elevations are between 1,100 and 1,500 for the central basin area. The relief is characterized by a gently sloping steppe except for steep basaltic slopes near the Columbia River and the Grand Coulee. The underlying material for most of the study area is the Columbia River basalt formation (Gilkeson, 1962). The major water sources for the area come from the Columbia Basin Irrigation Project which draws water mainly from the Columbia River and diverts it throughout the area via canals.

Soil is an important element of wetlands and is one of the criteria used to define wetlands. For the Ritzville areas, nearly all of the inventoried soil types are moderate to excessively well drained. Riverwash soil types provide some poorly drained areas near the Columbia River and east of Soap Lake. Some silt loam associations are present within the channeled scabland areas of Adams and Lincoln County having poorly drained characteristics (Benge-Anders-Kuhl series)(Lenfesty, 1967). The main soil types found are Quincy-Winchester seris (windblown sands) and Ephrata-Moses Lake seris (glacial outwash and windblown terraces) (Gilkeson, 1962). Consequently, the majority of the wetlands are dependent upon irrigation runoff water.

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[1].

Wetland classification and delineations were produced by air photointerpretation of high level aerial photography.

The following aerial photography was used:

Map	Scale	Film	Date
Ritzville NE	1:58,000	Color Infrared	8/82
Ritzville SE	1:58,000	Color Infrared	7/82
	1:60,000	Color Infrared	6/76
Ritzville SW	1:58,000	Color Infrared	8/82
	1:60,000	Color Infrared	6/76
Ritzville NW	1:58,000	Color Infrared	8/82
	1:60,000	Color Infrared	6/76

The delineations were transferred to 1:24,000 scale U.S. Geological Survey topographic maps or orthophoto quads with a zoom transfer scope.

The photography ranges from good to poor in quality. The 1982 photography is generally good if somewhat dark. The 1976 photography ranges from somewhat dark to very bleached in quality. This bleached condition is most severe at the center of the photograph and lessens toward the edges. Problems encountered because of these defects stem from color tone differences of areas which actually have similar covertypes. Furthermore, variations in photo characteristics increas the time necessary to reach a consistent level of reliable delineations. The clarity of the imagery is generally good. The photography was taken during June and August when ground conditions were considerably influenced by peak irrigation season.

Two field trips were completed. The first trip, November 8-20, 1982 was conducted in conjunction with field investigations of coastal Washington and the Columbia River Gorge regions along with portions of the Columbia River Basin area of east central Washington. This trip was designed to relate various photographic characteristics to actual wetland classification. A second trip, May 2-6, 1983, was undertaken to visit sites missed on the first field trip and to check areas which had been delineated based on information from the first trip. This proved very useful to correct erroneous interpretations. Most of the field time was concentrated on differentiating between temporary and seasonal water regimes.

Collateral data included U.S.G.S. topographic maps (7.5 min. and 15 min.), soil information (Beieler, 1981; Lencasty, 1967; Gilkeson, 1962) and vegetation characterizations (Franklin and Dyrness, 1973).

Large-scale NWI wetland maps (1:24,000 scale) are available for the USGS 7 1/2 topographics sheets indicated on index map B.

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 etablished through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on 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.

Changes in the landscape and/or land use could have occurred since the time of photography. Therefore, some discrepancies between the wetland map and current field conditions may exist. Any questions regarding wetland omissions, inclusions, or errors should be brought to the attention of the Regional Wetlands Coordinator, Region 1. The Project Officer for this wetland map is Dennis Peters, Regional Wetlands Coordinator, U.S. Fish and Wildlife Service, Region 1, Lloyd 500 Bldg., Suite 1692, 500 N.W. Multnomah St., Portland, Oregon 97232, telephone (503) 231-6154. Aerial photo interpretation was completed by Martel Laboratories, Inc., St. Petersburg, Florida. Maps were prepared by NWI National Team in St. Petersburg, Florida.

CHARACTERISTICS OF NWI WETLAND SYSTEMS IN RITZVILLE

MARINE AND ESTUARINE SYSTEMS

No marine or estuarine wetlands are found in Ritzville.

LACUSTRINE SYSTEM

Many of the bodies of water classified as lacustrine open water are due to an impoundment of irrigation runoff water (L1OWHh) although natural lakes such as Soap Lake and Moses Lake (L1OWH) are present. The Columbia River has been classified as lacustrine impounded (L1OWh) due to the influence of the many dams along its course. Some bodies of water may be less than six feet in depth but possess characteristics which classify it as lacustrine (L2OW). Some shallow areas around lakeshores may be of an unconsolidated nature (L2UB). Some shallow areas are only innundated by water on a season basis (L2US) due to evaporation or lake fluctuation.

Lacustrine aquatic beds (L1AB4,L2AB4) commonly consists of duckweed (*Lemna* spp.) and less often of millfoil (*Myriophyllum* spp.)

RIVERINE

The majority of the natural riverine systems found in the Ritzville study area are of the upper perennial type due to little floodplain development and at times, steep gradients in elevation. Some natural lower perennial rivers are classified especially in the wasteway areas west of Moses Lake. Usually natural intermittent streams were found in areas of sloping hills where water flows in small draws and coulees on a seasonal basis. By far the largest components of the riverine system in the study area are the excavated irrigation canals and ditches. Since these are under the direct influence of man; they are classified as being of an artificial type with regard to water regime (R2OWKHx and R4SBKCx). The U.S.G.S. topographic maps are the basis for determining the seasonality of the riverine system.

PALUSTRINE

The most common palustrine wetlands are persistent emergents. They are usually of a temporary (PEMIA), seasonal (PEMIC), or semipermanent (PEMIF) type although some saturated and permanently flooded areas are present. Some areas are associated with impounded water systems and are classified as such (PEM1Ch). Common genera include (*Carex*, *Eleocharis*, *Juncus*, *Phalaris*, *Phragmites*, *Typha*, and *Scirpus* which can be found in seasonal areas. *Phragmites*, *Typha*, and *Scirpus* are found in the semipermanent situation and *Eleocharis*, *Juncus*, and *Phalaris* are present at temporarily flooded sites.

Palustrine forested and scrub/shrub are found to be usually in temporary (PFOIA, PSSIA) or seasonally flooded (PFOIC, PSSIC) areas. However, some semipermanent sites are associated with open water near Potholes Reservoir. These areas are typified by black cottonwood (Populus trichocarpa) and various types of willows (Salix spp.). Quaking aspen (Populus tremuloides) is usually present in marginal wetland areas but is also found in definite upland situations. The term "upland" is used in the context of a non-wetland area.

Small areas of palustrine aquatic beds are usually associated with open water areas which are undergoing transition. The most common genus found is Lemna spp. (duckweed).

Areas surrounding open water or in farmed/sagebrush fields which undergo rapid evaporation being under seasonally flooded conditions are classified as palustrine unconsolidated shore (PUSC). Numerous palustrine open water areas are present with the majority of them being impounded for livestock or irrigation uses. Due to the extreme drying conditions which exist throughout the study area, most of these open water wetlands are classified as semipermanently flooded (POWF).

LITERATURE CITED

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

Gilkeson, R.A., 1962. Washington Soils and Related Physiography - Columbia Basin Irrigatin Project. Washington State Univ., Institute of Agricultural Sciences, Stations Circular 327, 6pp.

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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.	Lemna (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 collatoral 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	*Lemna* (duckweed)	Subtle signature sometimes associated with open water or emergents.
PFO1	Palustrine, forested broad leaved deciduous	*Salix* spp. (willow), *Populus Trichocarpa* (Black Cottonwood).	Signature sometimes subtle, ecological situation must be considered.
PSS1	Palustrine, scrub-shrub broad leaved deciduous	*Salix* spp. (willow)	Occasionally difficult to separate from PFO1.
PEM1	Palustrine, emergent, persistent.	*Carex* spp. (sedge); *Eleocharis* (spikesedge); *Juncus* (rush); *Phalaris* (canary grass); *Phragmites* (reed); *Typha* (cattail); *Scirpus* (bulrush)	Various signatures.