

NATIONAL WETLANDS INVENTORY

NOTES TO USERS

1:100,000 SCALE MAP

ROSEAU NW

MINNESOTA

NATIONAL WETLANDS INVENTORY MAP

A. INTRODUCTION

The U.S. Fish & Wildlife Service's National <sup>wetlands</sup> 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. (1979) 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, and (3) to explain local geography, climate, and wetland communities.

C. STUDY AREA

Geography: The study area covered by the Roseau NW base map is located in the northwest part of Minnesota (Figure 1.) Bailey (1980) classifies the study area as being in the Laurentian Mixed Forest Province of the Warm Continental Division of the Humid Temperate Domain. The Spruce-Fir Forest section comprises the entire study area (Bailey 1980).

The topography is nearly level plain, which is crossed by a series of low ridges, ranging from 6 to 20 feet in height representing Glacial Lake Agassiz' successive beaches. Elevations run from approximately 1,037 feet to almost 1,300 feet. Major drainage ways are the Roseau River, Warroad River, and the South Fork Roseau River. Large tracks of peatlands comprise much of the eastern half of the map and portions of the western half.

Climate: Climate is characterized by short <sup>m</sup> warm summers and long cold winters. Annual temperatures generally range from -40°F to 90°F. The mean annual precipitation is 20.34" recorded in Roseau. ✓

Vegetation: The principle crops grown in this study area are small grains (wheat, rye, oats, and flax) and some corn. Some peat areas have been cleared, drained, and burned in order to provide tillable soils. Native vegetation is in transition between the boreal forest to the north and deciduous forest to the south (Bailey 1980). A

mixture of aspen, birch, poplar, balsam fir, and jack pine are common on sandier soils whereas spruce and tamarack are common on the more poorly drained peatlands. Many of the treeless peat bogs are covered with grasses and sedges and shrubs.

Soils: Soils vary greatly from place to place and include peat, muck, marl, clay, silt, sand, gravel, and boulders (Bailey 1980). Two extensive geographic soil belts lie in this study area consisting of the Chernozem and the Podzol ~~zones~~ <sup>Z</sup> with a transitional zone between them. ✓

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS for the Roseau NW

TABLE - Cowardin Classification Codes and Descriptions

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
L1UB (H)	Lacustrine, limnetic, unconsolidated bottom	Lake	Unconsolidated bottom
L2UB (G,H)	Lacustrine, littoral unconsolidated bottom	Lake, open water, marsh	Unconsolidated bottom
L2AB (G)	Lacustrine, littoral Aquatic bed	Lake, marsh	<u>Lemna</u> sp. (duckweed) green algae <u>Potamogeton</u> spp. ✓ (Pondweed) <u>Ceratophyllum</u> <u>demersum</u> (coontail)
L2EM2 (G,H)	Lacustrine, littoral emergent, nonpersistent	Lake, marsh	<u>Scirpus</u> spp. (bulrushes) <u>Zizania aquatica</u> (wild rice)
L2US (A,C)	Lacustrine, littoral unconsolidated shore	Beach, sandbar	Unconsolidated shore
R2UB (G,H)	Riverine, lower perennial, unconsolidated bottom	River	Unconsolidated bottom
R2US (A,C)	Riverine, lower perennial, unconsolidated shore	Beach, sandbar, mudflat	Unconsolidated shore

R4SB (A,C,F)	Riverine, intermittent streambed	Stream	Streambed
PUB (F,G,H)	Palustrine unconsolidated bottom	Pond, reservoir, barrow pit, marsh	Unconsolidated bottom
PAB (F,G)	Palustrine, aquatic bed	Pond, reservoir, marsh	<u>Lemna</u> spp. (duckweed) green algae <u>Potamogeton</u> spp. ✓ (Pondweed) <u>Ceratophyllum</u> <u>demersum</u> (coontail)
PEM (A)	Palustrine, emergent	Depression, drainage	<u>Eleocharis</u> spp. (spike rushes) <u>Ambrosia</u> spp. (ragwood) <u>Carex</u> spp. (sedges) <u>Rumex</u> spp. (dock) <u>Juncus</u> spp. (rushes) <u>Equisetum</u> spp. (horsetail) <u>Urtica dioica</u> (stinging center ✓ nettle)
PEM (B)	Palustrine, emergent saturated	Seep, fen, bog, peatland	<u>Phragmites</u> spp. (reeds) <u>Carex</u> spp. (sedges) <u>Typha</u> spp. (cattail) <u>Scirpus</u> spp. (bulrushes) <u>Sphagnum</u> <u>magellanicum</u> (sphagnum moss)
PEM (C)	Palustrine, emergent seasonal	Depression, drainage	<u>Polygonum</u> spp. (smartweed) <u>Carex</u> spp. (sedges) <u>Phalaris</u> ✓ <u>arundinacea</u> (reed canary grass)

			<u>Juncus</u> spp. (rushes) <u>Typa</u> spp. ✓ ↑ (cattail) <u>Scirpus</u> spp. (bulrushes)
PEM (F,G)	Palustrine, emergent	Marsh, farm pond, backwater, oxbow	<u>Typa</u> spp. ✓ ↑ (cattail) <u>Scirpus</u> spp. (bulrushes)
PSS1 (A,C)	Palustrine, scrub-shrub, broad-leaved deciduous	Marsh, floodplain, depression	<u>Salix</u> spp. (willow) <u>Populus deltoides</u> (cottonwood)
(B)	Palustrine, scrub-shrub, broad-leaved deciduous	Bog, peatland	<u>Populus</u> <u>tremuloides</u> ↑ (quaking aspen) ✓ <u>Alnus</u> spp. (alder)
PSS2 (B)	Palustrine, scrub-shrub needle-leaved deciduous	Bog, peatland	<u>Larix laricina</u> (tamarack)
PSS3 (B)	Palustrine, scrub-shrub broad-leaved evergreen	Bog, peatland	<u>Ardromeda</u> <u>glaucophylla</u> (bog rosemary) <u>Ledum</u> <u>groenlandicum</u> (labrador tea) <u>Chamaedaphne</u> <u>calycultra</u> (leatherleaf)
✓ PSS4 (B)	Palustrine, scrub-shrub, needle-leaved evergreen	Bog, peatland	<u>Thuja</u> <u>occidentalis</u> (northern white cedar) <u>Picea mariana</u> (black spruce)
PSS5 (G,H)	Palustrine, scrub-shrub dead	Impounded, beaver dam	Dead shrubs
PSS6 (B)	Palustrine, scrub-shrub broad-leaved and needle-leaved deciduous mix	Bog, peatland	

x	Excavated	Dugout, farm pond, borrow pit, ditched, or channelized
d	Partially drained	Tiled, ditched
✓ b h	Diked, impounded	Beaver dam
g	Peatlands > 20 acres	Bogs, peatlands

#### Water Regime Description

- (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.

#### E. MAP PREPARATION

The wetland classifications that appear on the Roseau NW National Wetlands Inventory (NWI Base Map) are in accordance with Cowardin et al. (1979). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photography. The photography was taken on 16 May 1983, 23 May 1983 and 20 November 1983.

Field checks of areas found within the Roseau NW photography 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 7.5' topographic maps, SCS soil surveys of Roseau County, USGS Water Resources Data for Missouri Water Year

1984, U.S. Army Corps of Engineers topographic maps, 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 was completed by the South Dakota Cooperative Fish and Wildlife Research Unit, SDSU, Brookings, SD.

F. SPECIAL MAPPING PROBLEMS AND SITUATIONS

Upland vs. wetland boundaries were very difficult to distinguish both in the field and during photointerpretation. Boundaries were particularly difficult along beach ridges. Photointerpreters looked mostly for defined photosignature breaks to delineate between upland and wetland boundaries

Because of the complexity of dominant vegetation species, particularly in the larger bogs and peatlands, mixing of classes (i.e., forested, scrub-shrub and emergents) became prevalent in some areas. Mixing of classes was used to limit the complexity of delineations and labels.

Because of the extension ditching attempts made several years ago on the larger bogs and peatlands, several ditches network throughout the wetlands. Only the longer ditches showing a strong water signature on the photography were classified. Also, because most of these ditches are now inoperable, the partially drained modifier (d) was left off the classification label of these wetlands. The partially drained modifier was used to classify areas which appeared to be affected by the ditching.

A g modifier was added to the alpha numeric label of saturated wetlands greater than 20 acres.

G. MAP ACQUISITION

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

Ron Erickson  
Regional Wetland Coordinator  
U.S. Fish and Wildlife Service - Region 3  
Federal Building, Ft. Snelling  
Twin Cities, MN 55111

To order maps only, contact:

National Cartographic Information Center  
U.S. Geological Survey  
507 National Center  
Reston, VA 22092  
1-800-USA-MAPS

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.

H. LITERATURE CITED

Bailey, Robert G., 1980. Description of the Ecoregions of the United States. U.S. Department of Agriculture Forest Service. Miscellaneous Publication 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.

Soil Surveys of Roseau County In Minnesota. U.S. Department of Agriculture, Soil Conservation Service.

Location of Roseau NW Map

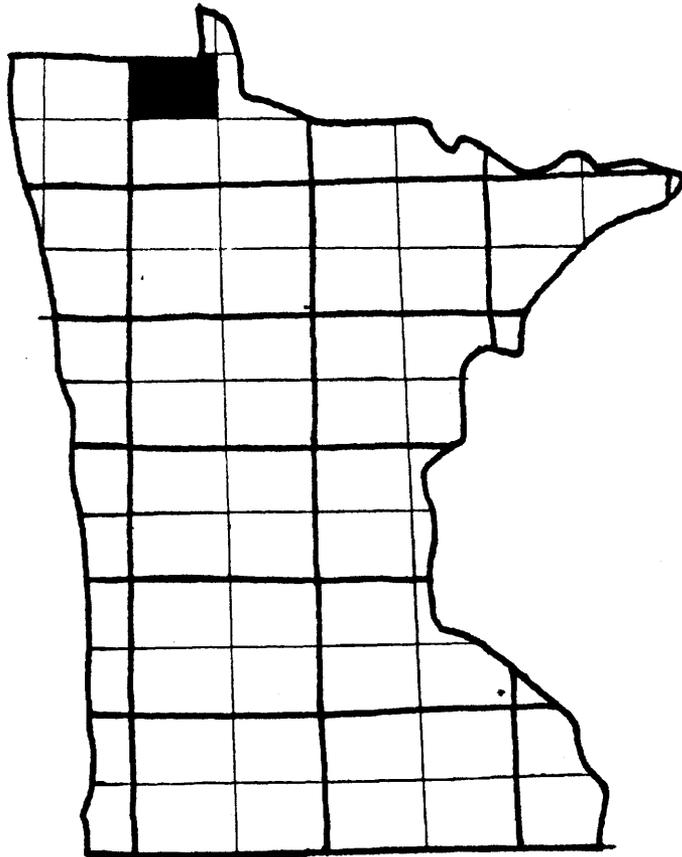


Figure 1.