

NATIONAL WETLANDS INVENTORY

MAP REPORT FOR

CUT BANK SE, MONTANA

**U.S. Fish and Wildlife Service
Denver, Colorado
March, 1994**

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I. INTRODUCTION

The United States Fish and Wildlife Service's National Wetlands Inventory (NWI) is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. (1979) is the document used by the NWI to define and classify wetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also used to implement the Cowardin classification system.

The purpose of this map report is to: (1) provide information on the production of NWI maps, including narrative on imagery and interpretation; (2) provide a descriptive crosswalk from NWI wetland codes on the map to common terminology and to representative plant species found on specific wetland sites; and (3) describe local geography, climate, and wetland communities.

II. FIELD RECONNAISSANCE

Field reconnaissance is a necessary procedure in order to accurately interpret aerial photography. Photographic signatures are correlated to the wetland habitat in the field. Collateral information including vegetative communities, soil types and topographic setting are further evaluated to aid in the photointerpretation process. This information is evaluated for seasonality and conditions existing at the time of photography and at ground truthing.

Project Area

The Cut Bank SE study area is located in the Steppe Division in North Western Montana. Field reconnaissance covered the area of the following 1:100,000: Cut Bank SE (Appendix A Locator Map).

Field Personnel

Bill Pearson - U.S. Fish and Wildlife Service
Lynn Wilson - Geonex, Inc.

Field Date

June 29, 1993

Aerial Photography

Primary Source Data (100%)

Type: NHAP Color Infra-Red High Altitude

Scale: 1:58,000

Cut Bank SE; 08/09/84, 08/17/84, 08/21/84, 07/15/87, 09/01/87

Percentage Coverage: All 32 USGS quadrangles were covered with the NHAP photography.

Collateral Data

United States Geological Survey (USGS) Quadrangles

Soil Conservation Service Soil Survey

Bailey's Description of the Ecoregions of the United States

United States Fish and Wildlife Service Wetland Plant Keys

Water Resources Data Montana

National List of Plant Species That Occur In Wetlands: Northwest (Region IX)

Wetland Plants of the State of Montana

Hydric Soils of the State Of Montana

III. PHYSICAL DESCRIPTION OF PROJECT AREA

Geography

According to Bailey, Description of the Ecoregions of the United States (1980), The Steppe Division area is described as areas that have a semiarid continental climatic regime which despite maximum rainfall, evaporation usually exceeds precipitation. This region is characterized by rolling plains and tablelands of moderate relief. They are in a broad belt that slopes gradually eastward down from an altitude of 5,500 feet (1,520 m.) near the foot of the Rocky Mountains to 2,500 feet (760 m.) in the Central States. The plains are notably flat, but there are occasional valleys, canyons, and buttes. Badlands and isolated mountains break the continuity of the plains.

Climate

The climate is a semiarid continental regime in which maximum rainfall comes in summer, but the total supply of moisture is low. Ninety-five percent (95%) of basin collected run-off comes from the spring snowmelt. Evaporation usually exceeds precipitation. The average annual temperature is 45°F (8°C) throughout most of the region. Winters are cold and dry; the summers warm to hot. The frost-free season is usually fewer than one-hundred (100) days and precipitation is approximately ten (10) inches (250 m.).

Vegetation

Steppe, sometimes called shortgrass prairie, is a formation class of short grasses usually bunched and sparsely distributed, and is characteristic of this province. Scattered shrubs and trees occasionally appear in the steppe, and exist as all gradations of cover into semidesert and woodland formations. Since ground cover is scarce, much soil is exposed. Many species of grasses and herbs grow in this province.

Soils

In this climate regime, the dominant pedogenic process is calcification; salinization is dominant in poorly drained sites. Soils contain a large excess of precipitated calcium carbonate and are rich in bases. Molisols are typical. Humus content is small because vegetation is sparse.

IV. DESCRIPTION OF WETLAND HABITATS IN PROJECT AREA

Riverine

The major drainage basins within the study area are Birch Creek, Badger Creek and Two Medicine River, these perennials are classified R3UBH. Smaller streams are classified as R3UBF. An example of this is Blacktail Creek. Riverine bars are classified as R3USA and R3USC. Intermittent streams are classified as R4SBA and R4SBC.

Irrigated canals will be classified as R2UBFx and R4SBCx depending on size.

Lacustrine

Impounded and natural basin lakes are present in this study area. They are characterized as L1UBHh, L2ABG and L2ABF. Lake Frances and Swift Reservoir are examples of the L1UBHh classification.

Dry alkaline lake beds are classified as L2USA and L2USC.

Palustrine

The majority of wetlands in the study area are palustrine. They are located in prairie pothole basins, river floodplains, and some drainages.

Emergents as PEMA, PEMC, PEMF and aquatic beds as PABF were the dominant covertypes seen with smaller areas of scrub-shrub as PSSA and forested as PFOA. Field check sites were documented where problems existed; i.e., wetland areas that were not readily recognizable on the photography. Vegetation observed in these wetland habitats were grouped according to class and water regime. The following plant species were identified on check sites and represent only a fraction of all wetland plant species occurring in the project area.

Palustrine Emergents Temporary: PEMA

Juncus sp. rush

Palustrine Emergents Seasonal: PEMC

Carex sp. sedge
Eleocharis sp. spikerush
Polygonum smartweed

Palustrine Emergents Semipermanent: PEMF

Scirpus sp. bulrush
Typha sp. cattail

Palustrine Emergents Saturated: PEMB

Juncus sp. rush

Palustrine Scrub-shrub Temporary: PSSA

Potentilla fruticosa shrubby cinquefoil
Salix sp. willow

OBSERVED WETLAND VEGETATION TABLE

A. EMERGENT

<u>Carex</u> sp.	sedge
<u>Eleocharis</u> sp.	spikerush
<u>Juncus</u> sp.	rush
<u>Polygonum</u> sp.	smartweed
<u>Scirpus</u> sp.	bulrush
<u>Typha</u> sp.	cattail

B. SCRUB-SHRUB

<u>Potentilla fruticosa</u>	shrubby cinquefoil
<u>Salix</u> sp.	willow

C. FORESTED

<u>Populus deltoides</u>	eastern cottonwood
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Table 1. NWI WETLAND CLASSIFICATION CODES, COWARDIN DESCRIPTION AND COMMON TERMINOLOGY

NWI CODE WATER REGIME	COWARDIN DESCRIPTION	COMMON DESCRIPTION	VEGETATION
R3UB (F,H)	Riverine, upper perennial, unconsolidated bottom	Rivers, mountain streams	Unconsolidated bottom
R4SB (A,C)	Riverine, intermittent, streambed	Small streams, creeks, or irrigation ditches	Streambed
L2AB (G,F)	Lacustrine, littoral, aquatic bed	Shallow lake marshes	Aquatic bed
L2US (A,C)	Lacustrine, littoral, unconsolidated shore	Dry alkaline lake beds	Unconsolidated shore
PUB (F)	Palustrine, unconsolidated bottom	Excavated pits	Unconsolidated bottom
PAB (F,G)	Palustrine, aquatic bed	Deep basins, impoundments, beaver ponds, or sewage treatment settling ponds	Aquatic bed

Table 1. NWI WETLAND CLASSIFICATION CODES, COWARDIN DESCRIPTION AND COMMON TERMINOLOGY

NWI CODE WATER REGIME	COWARDIN DESCRIPTION	COMMON DESCRIPTION	VEGETATION
PEM (A,B,C,F)	Palustrine, emergent	Basins, depressions, marshes, meadows, springs, seeps, or drainage areas	<u>Eleocharis</u> sp. (spikerush) <u>Juncus</u> sp. (rush) <u>Polygonum</u> sp. (smartweed) <u>Scirpus</u> sp. (bulrush) <u>Typha</u> sp. (cattail)
PSS (A,C)	Palustrine, scrub-shrub	Willow thicket, river banks, or drainage areas	<u>Salix</u> sp. (willow) <u>Potentilla fruticosa</u> (shrubby cinquefoil)
PFO (A)	Palustrine, forested	River banks, floodplains, or drainage areas	<u>Populus deltoides</u> (eastern cottonwood)
PUS (A,C)	Palustrine, unconsolidated shore	Basins	Unconsolidated shore

V. 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 the 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 extremely variable, extending from saturated to a water table well below 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 the land surface throughout the year in all years.

VI. IMAGERY

The NHAP Color Infra-Red Emulsion is high quality. The majority of the imagery was flown in August 1984. The 1984 photography appears to be flown during dry conditions while the 1987 photography displays wetter conditions.

Ground truthing revealed that wetland conditions were normal for mid-June with a majority of the basins vegetated. This is consistent with prairie pothole dynamics; open water in spring, with vegetation dominating in the latter part of the growing season. Even though some dry field conditions were encountered, temporary and seasonal indicators were located and identification was successful.

Field reconnaissance provided the following mapping conventions for all the imagery based on seasonal and climatic conditions. These conventions will cover prairie pothole basins, alkali flats, riverine and vegetated linears, oxbows, impoundments, and miscellaneous signatures.

VII. MAP PREPARATION

Wetland delineation and classification is in accordance with Cowardin et al (1979). Further wetland mapping guidance is provided by NWI photographic and cartographic conventions in concert with National consistency. Delineations are produced through stereoscopic interpretation of 1:58,000 scale color infrared photography. NHAP photography was taken during August of 1984 and July and September of 1987.

Field checks of areas found within Cut Bank SE 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 topographic maps, SCS soil surveys, USGS water resources data, vegetation, climate, 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 be unidentified. Since the photography was taken during a particular time and season, there may be discrepancies between the maps 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 Geonex, Inc., St. Petersburg, Florida with quality control conducted by the FWS.

VIII. MAP ACQUISITION

To discuss any questions concerning these maps, please contact:

Regional Wetland Coordinator
U.S. Fish and Wildlife Service - Region 6
Denver Federal Center
P. O. Box 25486
Denver, CO 80225

To order maps call 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 USGS.

IX. LITERATURE CITED

Bailey, R.G., 1980. Description of The Ecoregions of The United States.
United States Department of Agriculture, Forest Service.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRue, 1979. Classification of Wetlands and Deepwater Habitats of The United States. United States Department of Interior, Fish and Wildlife Service, FWS/PBS - 79/81.

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Hydric Soils of the State Montana, 1985. United States Department of Agriculture, Soil Conservation Service.

Soil Survey of Glacier County Area and Part of Pondera County, Montana, 1972. United States Department of Agriculture, Soil Conservation Service.

Water Resources Data Montana, 1987. United States Department of the Interior, Geological Survey. Prepared in cooperation with the State of Montana and with other agencies.

7.5 Minute and 1:250,000 Scale USGS Topographic Maps.

APPENDIX A LOCATOR MAP

CUT BANK SE, MONTANA PROJECT AREA

