

Draft

NATIONAL WETLANDS INVENTORY

MAP REPORT

For

Fairbanks redo field and PI

Yukon Forest Province

*The 1:25,000 Map Units of:
Fairbanks D1,D2,D3 and C1
Big Delta C6*

Field Work Conducted Week of July 29, 2002

U.S. Fish and Wildlife Services
Anchorage, Alaska

August 18th, 2002

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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 used in concert with the Cowardin classification system.

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

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

Field reconnaissance, for the Fairbanks PI project, covered twenty maps: Fairbanks D1 (NW,NE,SW,SE), Fairbanks D2 (NW,NE,SW,SE), Fairbanks D3 (NW,NE,SW,SE), Fairbanks C1 (NW,NE,SW,SE) and Big Delta (NW,NE,SW,SE)

Field Personnel

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Field Dates

July 29th-August 2nd, 2002

Aerial Photography

Primary Source Data (100%)
Type: Nasa, Color Infra-red, High Altitude
Scale: 1:60,000, 1:65,000
Type: AEROMAP, True Color
Scale: 1:30,000

Mission Dates of Photography NASA 8/79,7/79 AEROMAP 5/97
Percentage Coverage: All 20 USGS quadrangles of the project area are covered by the NASA and Aeromap photography.

Collateral Data

- United States Geological Survey (U.S.G.S.) Quadrangles
- Cowardin's Classification of Wetlands and Deepwater Habitats of the United States
- Bailey's Description of the Ecoregions of the United States
- Soil Conservation Service preliminary Soil Surveys
- Hydric Soils of the United States
- National List of Plant Species That Occur in Wetlands: Alaska (Region A)

Physical Description of Project Area

Geography

The Fairbanks PI study area lies predominately in the Yukon Forest Province as defined by Bailey's Description of the Ecoregions of the United States (1980). A broad, level flood plain borders the Tanana River and its main tributary in this area, the Chena River. A narrower flood plain borders Goldstream Creek in the northwestern part of the area. Adjoining the floodplains of these streams are the hills and ridges of the Yukon-Tanana upland. At Fairbanks, the floodplain is less than 450 feet above sea level, whereas the summits of some hills in the area are more than 1800 feet above sea level.

Climate

66 This part of Alaska has extreme seasonal variations in temperature. The temperatures have varied from a record high of 99 degrees to a record low of degrees below zero. Daily minimum readings drop to zero or colder more than 75% of the days from November 1 to March 31. Daily maximum readings reach 70 degrees or higher about 56% of the days in July and August.

Soils

Soils on south-facing slopes have developed under forests of white spruce, paper birch and quaking aspen, and are generally well drained and free of permafrost.

Soils on north-facing slopes have formed under a forest of black spruce and a thick carpet of moss. They are underlain by permafrost and are poorly drained. As a rule, the boundary between soils on north and south facing slopes is abrupt at the ridgetops.

Soils on alluvial plains have developed in sandy or silty, water deposited material.

Most of this soil material is of glacial origin, but some originated from the loess and underlying bedrock of adjacent uplands.

Description of Wetland Habitats

Riverine System

- Permanent rivers in the study area will be classified R3UBH. An example of the R3UBH classification is the Tanana River.
- Riverine bars and flats will be classified (R3US/UB).
- Intermittent streams will be classified R4SBC.

Lacustrine System

- Lakes and reservoirs larger than 20 acres in size (Big Lake) will be classified L1UBH.
- Lakes and reservoirs larger than 20 acres in size with visible stagnant water or evidence of 30% or more aquatic bed will be classified as L2AB3H.

Palustrine System

- The majority of wetlands in the study area are palustrine. Emergents are classified PEM1F, PEM1C, PEM1B and PEM1A. Open water ponds will be classified as PUBH. There are also ponds with aquatic bed throughout the work area. They will be classified PAB3H.
- Areas of scrub-shrub are classified PSS1C, PSS4B, PSS4/1B, PSS1/4B, PSS4/EM1B, PSS4/EM1C and PSS1A. Wet forested areas will be classified PFO1A, PFO4B, PFO4/SS1B and PFO4/EM1B.
- In the higher elevations, emergent and scrub-shrub wetlands may be influenced by beaver ponds. These ponds will be classified PUBHb. Where emergents and scrub-shrub areas are influenced by the beaver ponds, they will be classified as PEM1C/Fb and PSS1C/Fb respectively.

V. Commonly Observed Wetland Vegetation

(grouped according to class)

Emergent

<u>Carex aquatilis</u>	water sedge
<u>Carex lyngbyei</u>	lyngbye's sedge
<u>Equisetum spp.</u>	horsetail
<u>Juncus spp.</u>	rush
<u>Scirpus spp.</u>	bulrush
<u>Typha spp.</u>	cattail
<u>Sphagnum spp.</u>	moss
<u>Petasites sp.</u>	coltsfoot
<u>Calamagrostis canadensis</u>	blue-joint reedgrass

Aquatic Bed

<u>Lemna sp.</u>	duckweed
<u>Nuphar sp.</u>	lily

Scrub-Shrub

<u>Betula nana</u>	swamp birch
<u>Betula papyrifera</u>	paper birch
<u>Alnus rubra</u>	red alder
<u>Picea mariana</u>	black spruce
<u>Picea glauca</u>	white spruce
<u>Salix alexensis</u>	felt-leaf willow
<u>Vaccinium uliginosum</u>	bog blueberry
<u>Vaccinium cespitosum</u>	dwarf blueberry
<u>Vaccinium vitis-Idaea</u>	mountain cranberry
<u>Rosa acicularis</u>	prickly rose
<u>Cornus canadensis</u>	canada bunchberry
<u>Ledum decumbens</u>	narrow-leaved labrador tea
<u>Rubus chamaemorus</u>	cloudberry
<u>Empetrum nigrum</u>	black crowberry

Forested

<u>Alnus rubra</u>	red alder
<u>Picea mariana</u>	black spruce
<u>Picea glauca</u>	white spruce
<u>Betula nana</u>	swamp birch
<u>Betula papyrifera</u>	paper birch
<u>Populus sp.</u>	cottonwood

VI. 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.

(H) Permanently Flooded - Water covers the 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.

Imagery

Overall the emulsion of the NASA 1:60,000 and 1:65,000 color infrared and the Aeromap 1:30,000 true color photography is of high quality. Most of the true color photos have a dark greenish hue. This results in only slight difficulties in determining forested wetland (PFO4B)/upland breaks. Soil surveys and side overlap will be used whenever possible to assist with delineation.

Photographic Conventions

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 Regional and National Quality Assurance guidelines and consistency. Delineations are produced through stereoscopic interpretation of the photography.

Field reconnaissance and Field Data Sheets within the Palmer-Wasilla project area were completed prior to the aerial photographic delineation of wetlands. Field sites were selected to clarify varying signatures found on the photography. These photographic signatures were then identified in the field using vegetation and soil types, as well as additional input from field personnel.

Collateral data included USGS topographic maps, SCS preliminary 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. One example is scrub-shrub photosignatures, which have since grown into forested areas.

Aerial photointerpretation and drafting were completed by Greenhorne & O'Mara, Inc., in Pinellas Park, Florida, with quality control conducted by the United States Fish and Wildlife Service.

Literature Cited

Bailey, R.G., 1978. Description of The Ecoregions of the United States. Dept. of Agriculture, US Forest Service.

Cartographic Conventions for the National Wetlands Inventory, 1994. United States Department of the Interior, Fish and Wildlife Service.

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

Hydric Soils of the United States, 1991. United States Department of the Interior, Soil Conservation Service.

National List of Plant Species That Occur in Wetlands: Alaska(Region A), 1988. United States Department of the Interior, Fish and Wildlife Service.

Photointerpretation Conventions for the National Wetlands Inventory, 1995. United States Department of the Interior, Fish and Wildlife Service.