

National Wetlands Inventory
User Notes for the Newark NW (Allentown)
and Newark SW (Reading) 1:100,000
Map Areas - Pennsylvania

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U.S. Fish and Wildlife Service
Region 5
Fish and Wildlife Enhancement
1 Gateway Center, Suite 700
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INTRODUCTION

The U.S. Fish and Wildlife Service is conducting an inventory of the wetlands of the United States. All wetlands are classified according to the Service's new system - Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al., 1979). The National Wetlands Inventory (NWI) is establishing a wetland data base, in both map and computer forms for the entire country. The present emphasis is on map production and in the future, wetland data will be digitalized to create an automated wetland data base, as funding becomes available. The NWI information will serve to identify the current status of U.S. wetlands and can be used as a reference point from which future changes in wetlands can be evaluated. Final wetland maps and other information, including a topical brief about the NWI program can be obtained by contacting the Regional Wetland Coordinator, U.S. Fish and Wildlife Service, One Gateway Center, Newton Corner, MA 02158.

SUBJECT AREA

The Newark NW and SW 1:100,000 map areas encompass major portions of the following counties: Northampton, Lehigh, Bucks, Montgomery, Berks, Chester, Carbon and Monroe. Also included are smaller portions of Luzerne, Schuylkill, Lancaster, Delaware, and Philadelphia.

MAP PREPARATION

Outlined below are the relevant data about the wetlands inventory, including photography used, extent of field checking, photointerpretation contractor and collateral data used.

Photography used:

Emulsion/Scale - Color Infra-red/1:58,000
Date - April 1981
Percent Coverage - 35%, Newark NW (eastern portion)
35%, Newark SW (eastern portion)

Emulsion/Scale - Color Infra-red/1:58,000
Date - May 1981
Percent Coverage - 65%, Newark NW (western portion)
50%, Newark SW (western portion)

Emulsion/Scale - Color Infra-red/1:58,000
Date - April 1982
Percent Coverage - 15%, Newark SW (western portion)

Field Checking:

Dates - August 22-26, 1983

Contractor for Photo Interpretation:

University of Massachusetts
Department of Forestry and Wildlife Management
Amherst, MA

Collateral Data Used:

U.S. Geological Survey Topographical Maps
U.S.D.A. Soil Conservation Service Soil Surveys

Minimum Mapping Unit:

1-3 acres in general, although smaller wetlands may be delineated.

Special Mapping Problems:

1. Identification of freshwater aquatic beds. Due to use of spring photography in many areas, aquatic beds in freshwater ponds and lakes were not identifiable. These wetlands were, therefore, included as part of the open water class. Maps, however, do show some aquatic beds usually where observed during field investigations.
2. Inclusions of small upland areas within wetland boundaries. Small islands of higher elevations and better drained upland areas naturally exist in many wetlands. Due to minimum mapping units, small upland areas may be included within designated wetlands. Field inspections and/or use of larger scale photography can be used to refine wetland boundaries when necessary.
3. Some stretches of river were found to exhibit characteristic of both the Lower Perennial (R2) and Upper Perennial (R3) subsystems. These sections can be described as having a low gradient and fairly slow flow, but with very little floodplain development and cool water temperatures. The "R5" classification has been used to designate these stretches of river that can be thought of as "intermediate" between the R2 and R3 situations.
4. The May 4 and 8, 1981 photography was flown during "leaf-out" in deciduous forested areas, which complicated wetland boundary delineation along stream floodplains. This problem was overcome by carefully reviewing U.S.G.S. contour information and S.C.S soils surveys during mapping.

Special Mapping Conventions:

The EM1 subclass was used to identify solid stands of Common Reed (Phragmites australis).

AREA DESCRIPTION

The Newark NW and SW 1:100,000 work areas are located in southeastern Pennsylvania along the eastern border, and include a small area of western New Jersey which extends into the NW work area. Major drainages include the Delaware, Schuylkill and Lehigh rivers.

The subject area is described below in terms of Bailey's Ecoregions and Hammond's Land-Surface Forms. The 1978 report of Dr. Robert G. Bailey entitled Description of the Ecoregions of the United States divides the country into "ecoregions" based on regional variations in climate, vegetation and land form. As such, these ecoregions serve as natural subdivisions of the United States. For describing the topography of the subject area, Hammond's land-surface form classification was used. Descriptions are based on data from the Fish and Wildlife Service's 1:250,000 Ecoregion Maps and the Bailey publication.

Both work areas are located within the Appalachian Oak Forest association of the Eastern Deciduous Forest Province (2214), according to Bailey's Ecoregion classification (1978).

Most of the Eastern Deciduous Forest Province is rolling, but some parts are nearly flat and in the Appalachian Mountains the relief is high (up to 3,000 ft. or 900m.). The northern parts of the province have been glaciated.

The vegetation represents a response to a continental climatic regime that receives adequate precipitation in all months. Average annual precipitation is from 35 to 60 in. (900-1,500 mm.). Precipitation is markedly greater in the summer, whereas a large surplus normally develops in spring. A strong annual temperature cycle brings cold winters and warm summers. The average annual temperature is 40°-60°F (4°-15°C.).

Winter deciduous forest, sometimes called temperate deciduous forest, is characteristic of this province. It is dominated by tall, broadleaf trees that provide a continuous and dense canopy in summer but shed their leaves completely in winter. Lower layers of small trees and shrubs develop weakly. In spring, a luxuriant low layer of herbs quickly develops, but this is greatly reduced after the trees reach full foliage and shade the ground.

Common trees of the deciduous forests of eastern North America are oak, beech, birch, hickory, walnut, maple, basswood, elm, ash, tulip tree, sweet chestnut, and hornbeam. In poorly drained habitats, the deciduous forest consists of alder, willow, ash, elm and many hydrophytic shrubs. Where forests have been cleared by logging, pines develop readily as second-growth vegetation.

SOILS

Soil is an important element of wetlands. It is a major criterion used to define wetlands: "The substrate [of wetlands] is predominantly undrained hydric soil" (Cowardin, et al., 1979). The National Wetlands Inventory, in cooperation with the U.S. Soil Conservation Service, has prepared a list of hydric soils of the United States to accompany the Fish and Wildlife Service's wetland classification system. For specific information regarding wetland soils in your area, contact your State Soil Scientist, U.S.D.A. Soil Conservation Service.

WETLAND COMMUNITIES

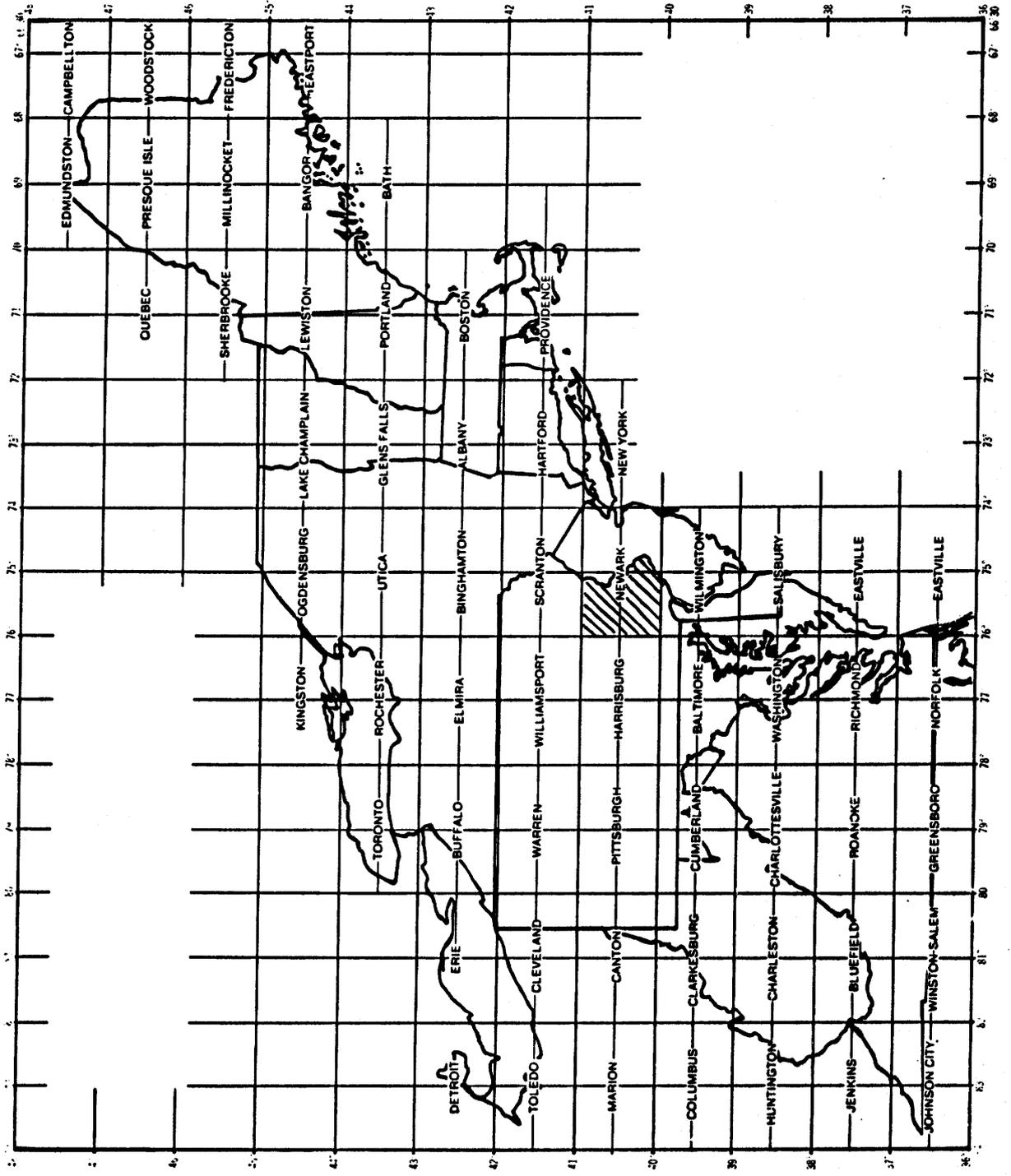
The Fish and Wildlife Service has prepared a list of wetland plants to accompany the wetland classification system. In addition to this list, the Service plans to prepare a list of wetland communities for the country, however, such a list is not currently available. The following table lists the wetland communities that were observed in the field during the course of this inventory. This community list correlates map symbols, which appear on the NWI maps, with the dominant wetland vegetation observed in the field and also specifically identifies the water regime or amount of flooding/degree of wetness of these communities.

WETLAND COMMUNITIES*

<u>MAP SYMBOLS</u>	<u>LOCAL NAME</u>	<u>DOMINANT VEGETATION</u>	<u>WATER REGIME</u>
PABH and PABF	Deep Marsh	Pondweeds - <u>Potamogeton</u> spp. Yellow Pond Lily - <u>Nuphar</u> sp. White Water Lily - <u>Nymphaea ordata</u> Duckweed - <u>Lemna</u> spp., <u>Wolffia</u> sp.	Permanently and Semipermanently flooded
PEM2F	Deep Marsh	Bur-reed - <u>Sparganium americanum</u> Pickerelweed - <u>Potteredaria cordata</u> Arrowhead - <u>Sagittaria latifolia</u>	Semipermanently flooded
PEM5F	Marsh	Broad-leaved Cattail - <u>Typha latifolia</u> Sedges - <u>Carex</u> spp. Bur-reeds - <u>Sparganium</u> spp. Spike-rushes - <u>Eleocharis</u> spp. Rice Cut Grass - <u>Leersia oryzoides</u> Broad-leaved Cattail Bulrushes - <u>Scirpus</u> spp.	Semipermanently flooded
PEM5E and PEM5C	Wet Meadow	Blue joint grass - <u>Calamagrostis canadensis</u> Soft Rush - <u>Juncus effusus</u> Sweetflag - <u>Acorus calamus</u> Reed canary grass - <u>Phalaris arundinacea</u> Sedges	Seasonally flooded
PEM5B	Hillside Seep	Soft Rush Sedges Blue joint grass	Saturated
P551/EM5E and P551/EM5C	Marsh/Swamp	Red-osier Dogwood - <u>Cornus stolonifera</u> Southern Arrowwood - <u>Viburnum dentatum</u> Broad-leaved Cattail Willow (shrubs) - <u>Salix</u> spp. Alders - <u>Alnus</u> spp. Sedges	Seasonally flooded
P551E and P551C	Shrub Swamp	Alder Steeplebush - <u>Spiraea tomentosa</u> Willow (shrubs) Southern Arrowwood Red Maple (shrubs) - <u>Acer rubrum</u>	Seasonally flooded
P553B	Shrub Bog	Leatherleaf - <u>Chamaedaphne calyculata</u> Sweetgale - <u>Myrica gale</u> Peat mosses - <u>Sphagnum</u> spp. Sedges	Saturated

<u>MAP SYMBOLS</u>	<u>LOCAL NAME</u>	<u>DOMINANT VEGETATION</u>	<u>WATER REGIME</u>
PF01E and PF01C	Wooded Swamp	Red Maple Yellow Birch - <u>Betula alleghaniensis</u> Black Gum - <u>Nyssa sylvatica</u> Highbrush Blueberry - <u>Vaccinium corymbosum</u> Great Rhododendron - <u>Rhododendron maximum</u>	Seasonally flooded
PF01A	Forested Floodplain	Silver Maple - <u>Acer saccharinum</u> Tuliptree - <u>Liriodendron tulipifera</u> Sycamore - <u>Plantanus occidentalis</u> Butternut - <u>Juglans cinerea</u> Poison Ivy - <u>Toxicodendron radicans</u>	Temporarily flooded
PF04E and PF04C	Wooded Swamp	Eastern Hemlock - <u>Tsuga canadensis</u> Fir - <u>Abies</u> sp.	Seasonally flooded
PF04/02B	Forested Bog	Black Spruce - <u>Picea mariana</u> Larch - <u>Larix laricina</u> Leatherleaf Peat mosses Sedges	Saturated
P55/ABF	Marsh/Swamp	Elderberry - <u>Sambucus canadensis</u> Yellow Pond Lily Pondweeds Red-osier Dogwood	Semipermanently flooded
PF05/ABF and PF05/ABH	Dead Swamp	Dead Trees Yellow Pond Lily Pondweeds	Semipermanently & Permanently flooded

* Examples of common plant communities, based on field observations.



USER CAUTION

The wetland map was prepared primarily by stereoscopic analysis of high-altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with Classification of Wetlands and Deepwater Habitats of the United States by L. M. Cowardin and others (1979). The aerial photographs typically reflect 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 survey and historical analysis of a single site may result in revision of wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be shown on this wetland map.

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 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 contact the appropriate Federal, State and local agencies concerning specific agency regulatory programs and proprietary jurisdiction that may affect such activities.

Additional information regarding this map or other National Wetlands Inventory activities may be obtained by contacting Regional Wetland Coordinator, U.S. Fish and Wildlife Service, Region Five, One Gateway Center, Newton Corner, MA 02158 (617-965-5100 ext. 379 or FTS 829-9379).

PRIMARY REFERENCES

Bailey, R.G., 1978. Ecoregions of the United States. Forest Service.
U.S. Department of Agriculture. 77 pp.

Cowardin, L.W., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification
of Wetlands and Deepwater Habitats of the United States. Fish and
Wildlife Service, Office of Biological Services, U.S. Department of the
Interior. FWS/OBS Publication 79/31. 103 pp.