

# NATIONAL WETLAND INVENTORY USER REPORT 1:100,000 MAP AREA

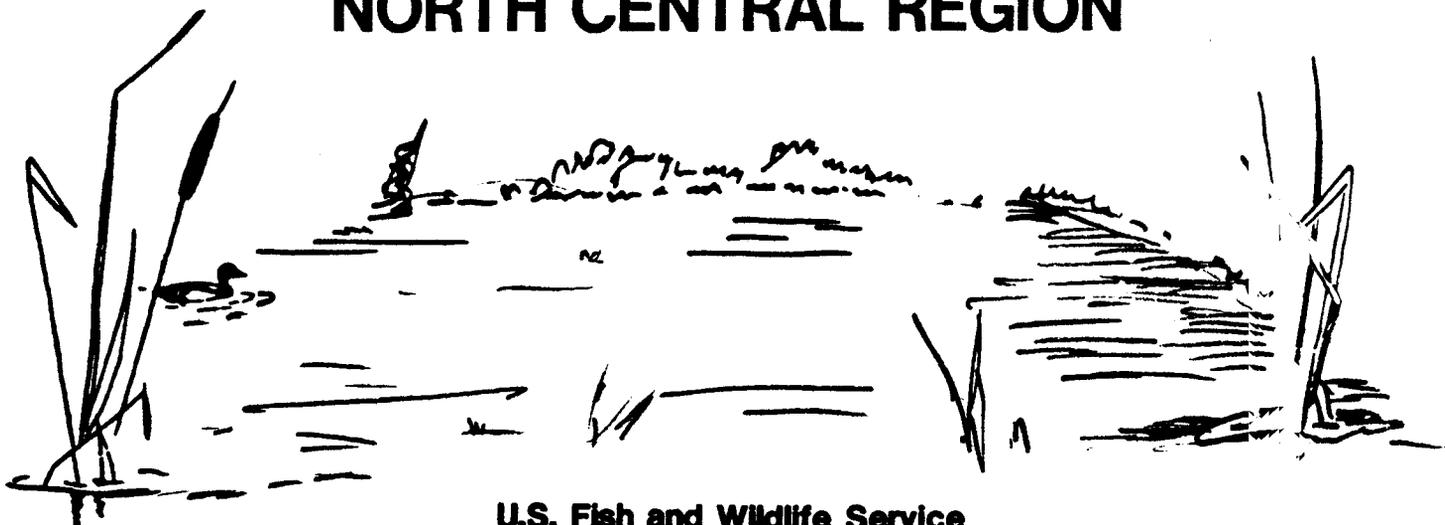
**MAP AREA:** DETROIT NW

**1:100,000 NAME:** PONTIAC

**STATE:** MICHIGAN



## NORTH CENTRAL REGION



**U.S. Fish and Wildlife Service**

**Federal Building, Fort Snelling Twin Cities, Minnesota 55111**

**USER REPORT  
NATIONAL WETLAND INVENTORY  
U.S. FISH AND WILDLIFE SERVICE  
REGION 3**



PREPARED BY

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USER CAUTION

Maps for this 1:100,000 scale map were 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, Cowardin, et al., 1979. The aerial photographs reflect conditions during the specific year and season when they were taken. Some small wetlands and those obscured by dense forest cover may not be included on the map document. In addition, there is a margin of error inherent in the use and interpretation of aerial photographs. Thus a detailed on-the-ground and historical analysis of a single site may result in revision of the wetland boundaries established through photographic interpretation.

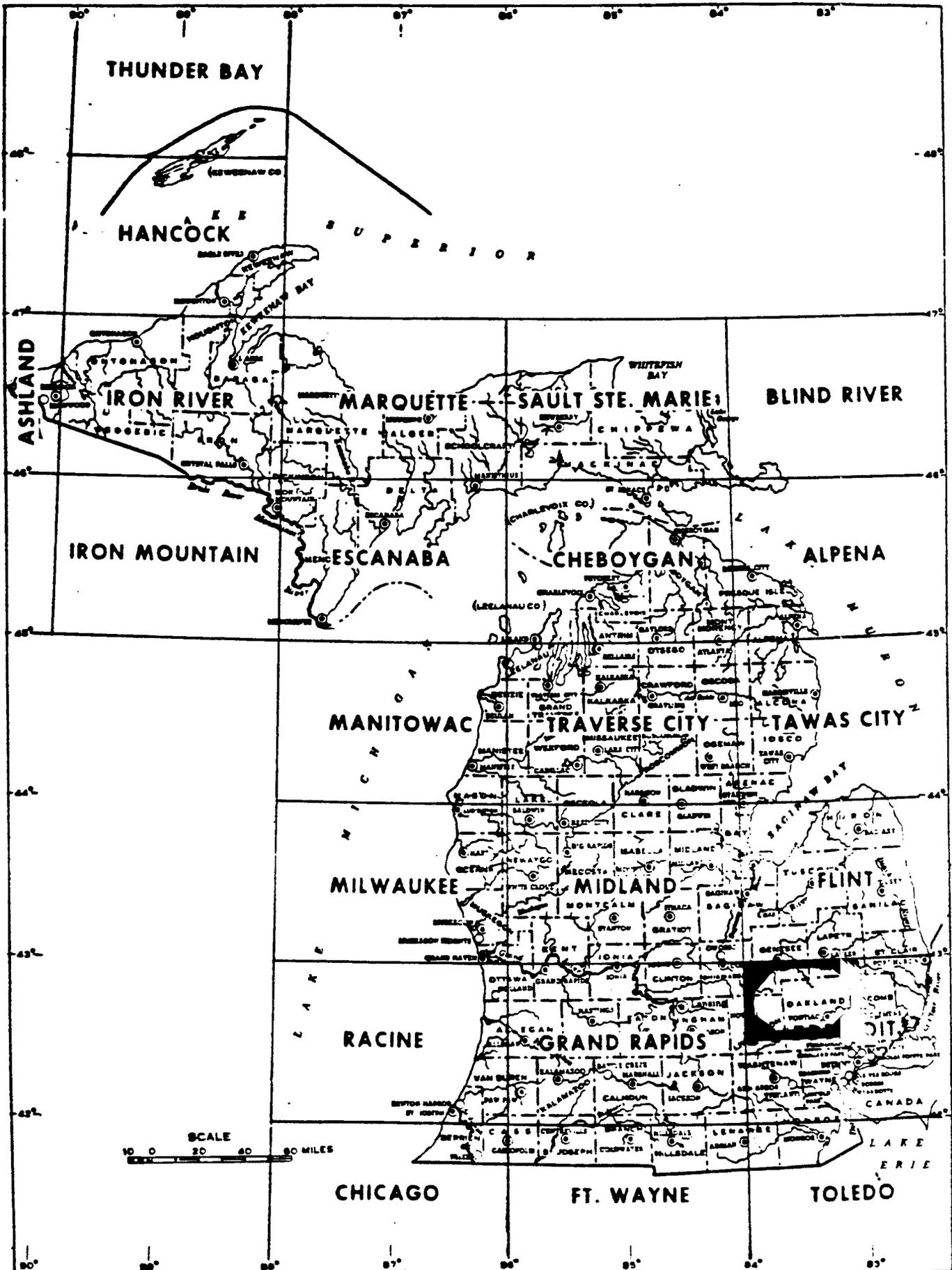
Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either design or products of this inventory, to define limits of proprietary jurisdiction of any local, State, or Federal 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 propriety jurisdictions that may affect such activities.

Additional information regarding this map or other National Wetland Inventory activities may be obtained by contacting:

Regional Director, Region 3 (AH/TS)  
Attn: Regional Wetlands Coordinator  
United States Fish and Wildlife Service  
Federal Building, Fort Snelling  
Twin Cities, Minnesota 55111

Michigan Dept. of Natural Resources  
Land Resources Program  
Box 30028  
Lansing, Michigan 48909

LOCATION OF REPORT  
STATE OF MICHIGAN



DATE: December 1983

MAP PREPARATION

Basic Data

Photography Used:

<u>Emulsion</u>	<u>Scale</u>	<u>Date</u>	<u>Percent Coverage</u>
1. Black and white	1:80,000	October 1978	86%
1. Black and white	1:80,000	November 1978	14%

Field Check Dates:

1. October 1, 1980
2. July 15, 1981

Contractor(s) for Photo Interpretation:

1. Michigan Dept. of Natural Resources

Collateral Data Used:

1. USGS topographic quad sheets
2. USDA Soil Surveys
3. Inland Wetlands of the United States

Mapping Legend: (See Appendix D)

Farmed Wetlands

It is the policy of the Fish and Wildlife Service to not map farmed wetlands in the National Wetlands Inventory unless the wetland is a pothole-like depression, such as those found in the Prairie Pothole Region, intermittently flooded lake bottoms, cranberry bogs, or diked former tidelands in California. Therefore this map area may contain various amounts of non-depression type wetlands which were farmed on the date of the photography and intentionally not included in the inventory. Many of these omitted wetlands commonly occur in floodplains.

GEOGRAPHY

A. General Location

Degrees Longitude: 83° 0' to 84° 0' West

Degrees Latitude : 42° 30' to 43° 0' North

Largest City : Warren, Michigan

Detroit NW is located in the southeastern part of Michigan, just northwest of Detroit. The map area encompasses portions of Oakland, Livingston, Shiawassee, Genesee, Lapeer and Macomb Counties. This map lies within Clinton, Shiawassee and Huron drainage basins.

B. Ecoregion

Bailey's Ecoregion Classification and Description (Bailey 1978):

Code: 2212L

Humid Temperate Domain (2000)

The entire Detroit NW map is in this Domain.

The climate of this Domain has strong seasonal temperatures and precipitation cycles, and a distinctive winter season. The Humid Temperate Domain comprises the humid midlatitude forests of broadleaf deciduous and needleleaf evergreen trees.

Hot Continental Division (2200)

All of the Detroit NW map area lies in this Division.

This Division characteristically has hot summers and cool winters. The natural vegetation is winter deciduous forest, where tall broadleaf trees dominate. These trees form a dense canopy in the summer, but lose their leaves in the winter. The shrub layer is weakly developed. A lush herbaceous layer develops in early spring, but diminishes as the dense tree canopy forms and shades the ground. Soils are primarily Alfisols, Inceptisols and Ultisols which are rich in humus and moderately leached.

Eastern Deciduous Forest Province (2210)

The entire Detroit NW map falls within this Province.

The vegetation of this Province represents a response to a climate that receives adequate precipitation all year long. Common tree species of the deciduous forests include beech (Fagus grandifolia), oak (Quercus spp.), birch (Betula spp.), basswood (Tilia americana), elm (Ulmus spp.), maple (Acer spp.) and ash (Fraxinus spp.). Pines (Pinus spp.) develop quickly in forests cleared for logging.

Tree species of poorly drained forests consist of alder (Alnus spp.), willow (Salix spp.), ash and elm.

Beech-Maple Forest Section (2212L)

This Section occurs in lowland areas, and covers all of the Detroit NW map.

Beech and maple trees form the principal plant association of this Section.

C. Topography and Land Forms

Hammond's Land Surface Form and Physical Subdivision (Hammond 1955, 1969):

Codes: (III-2) A1, (III-2) A2b, (III-2) A2c, (III-3) B2b

Interior Physical Division (III) - The entire Detroit NW map area lies within this Physical Division.

East-Central Drift and Lake-bed Flats Subdivision (2) - This Subdivision covers the northwest 20% and southeast 15% of the map and also less than 5% of the map area in the extreme northeast.

North-Central Lake-Swamp-Moraine Plains (3) - This Subdivision includes the middle 75% of Detroit NW, extending from the southwestern and south-central portions to the northeast portion of the map.

Flat Plains Class (A1) - This Class comprises 5% of the map area in the extreme southeast. Over 80% of the land is in gentle slopes of less than 100 feet.

Smooth Plains Class (Ab2) - The northwestern 20% of the map area is included in this Class, where over 80% of the land is in gentle slopes. Fifty to 75% of these slopes are in lowland areas. Local relief ranges from 100 to 300 feet.

Smooth Plains Class (A2c) - This Class covers 10% of Detroit NW near the southeast corner and also less than 5% of the map area in the extreme northeast. Over 80% of the land is in gentle slopes of less than 100 feet. Fifty to 75% of these slopes occur in uplands.

Irregular Plains Class (B2b) - This Class covers the middle 75% of Detroit NW, extending from the southwestern and south-central portions to the northeastern portion of the map. Fifty to 80% of the land is in gentle slopes. Fifty to 75% of these slopes are found in lowlands. Local relief ranges from 100 to 300 feet.

## RESOURCES

### A. Wetlands

No wetland acreage figure is available for the Detroit NW area at the present time.

Wetland losses in the Detroit NW area have been attributed mainly to agricultural drainage and industrial development (Panzner 1955). Losses have been heaviest in the northwest and in the southeast portion of the map area, near the cities of Flint and Pontiac. Wetland density is still fairly high in much of the map, with highest concentrations occurring in the west-central and northeastern portions of the map.

Detroit NW has a high diversity of wetland types. Some of the most common types are forested shrub and emergent wetlands that are saturated to semi-permanently flooded. Predominant trees and shrubs of the forested shrub wetlands include red maple (Acer rubrum), dogwood (Cornus sp.) alder (Alnus sp.) and willow (Salix sp.). Cattail (Typha latifolia), bulrush (Scirpus spp.), rush (Juncus spp.) and sedge (Carex spp.) are important plant species of the emergent marshes. A list of plant species for other wetland types can be found in Appendix C.

## Appendix A

### REFERENCES

- Bailey, R. G. 1978. Descriptions of the Ecoregions of the United States. USDA For. Serv. Intermtn. Reg. Ogden, Utah. 77 p.
- 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. Fish and Wildlife Service, Washington, D. C. FWS/OBS-79/31. 103 p.
- Great Lakes Basin Commission. 1975a. Fish: Great Lakes Basin Comm. Great Lakes Basin Framework Study, App. 8. Ann Arbor, Mich. 290 p.
- 1975b. Wildlife: Great Lakes Basin Comm. Great Lakes Basin Framework Study, App. 17. Ann Arbor, Mich. 140 p.
- Hammond, E.H. 1965. 1:17,000,000 scale Physical Subdivisions. 1 map. p. 61. In Gerlach, A.C., ed. 1970. National Atlas of the United States of America. USDI Geol. Surv. Washington, D.C. 417 p.
- 1969. 1:7,500,000 scale Classes of Land Surface Form. USDI Geol. Surv. 1 map. p. 62-63. In Gerlach, A.C., ed. 1970. National Atlas of the United States of America. USDI Geol. Surv. Washington, D.C. 417 p.
- Panzner, E.R. 1955. Wetlands Inventory of Michigan. U.S. Fish and Wildlife Service, Office of River Basin Studies. Minneapolis, Minn. 19 p.
- Rounds, B.W. 1956. Inventory of Permanent Water Habitat Significant to Waterfowl in Michigan. U.S. Fish and Wildlife Service, Office of River Basin Studies. Minneapolis, Minn. 10 p.

### ADDITIONAL INFORMATION

The purpose of this report is to provide general information regarding the production of the map and the wetlands found within the area of this map. It does not include descriptions of all wetlands found in the area nor complete species information. For additional information, the following references are recommended:

- Hammond, E. H. 1964. Analysis of Properties in Land Form Geography: An Application to Broad-scale Land Form Mapping. Annals, Assoc. Amer. Geog. v. 54. pp. 11-23.
- Herdendorf, C.E., S.M. Hartley, and M.D. Barnes, eds. 1981. Fish and Wildlife Resources of the Great Lakes Coastal Wetlands Within the United States. Volume four: Lake Huron. U.S. Fish and Wildlife Service, Washington, D.C. FWS/OBS-81/02-v4. 792 p.

Appendix B

SPECIAL MAPPING PROBLEMS

Problem 1: It was sometimes hard to distinguish PFO wetlands from PFO/SS areas.

Resolution: Close attention was paid to canopy closure, percent coverage and height of vegetation.

Problem 2: Extensive draining for agriculture made it difficult to distinguish wetland forests from upland forested areas.

Resolution: USDA Soil Surveys were used as collateral data. Field checking was done when possible.

Problem 3: Much of the area is undergoing rapid development. Many wetlands are being filled for housing and industry.

Resolution: Because of extensive drainage and the dynamic nature of the area, some areas shown as wetland on USGS topos are not visible on the photos. User should be aware of changing wetland conditions.

Problem 4: Many small wetland symbols shown on USGS topos (i.e. Hartland quad), but wetlands are not visible on the photo.

Resolution: See Resolution 3 above.

Problem 5: Poor photography on some quads.

Resolution: N/A

Problem 6: It was difficult to accurately identify specific water regimes from the 1:80,000 black and white photography.

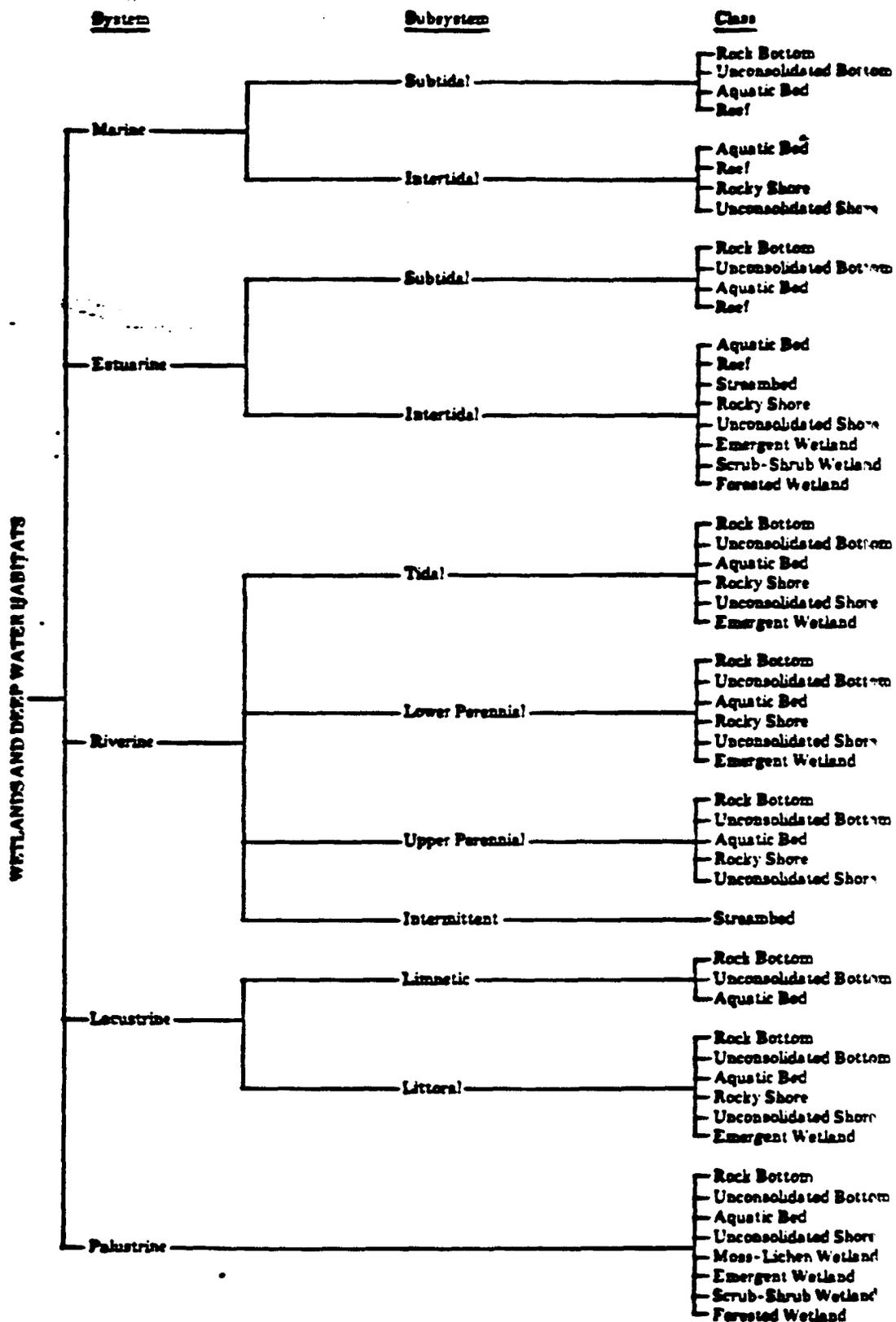
Resolution: Combined water regimes (Z, W, Y) where necessary.

Appendix D

NATIONAL WETLAND INVENTORY  
Information and Legend  
For Map Products

Classification System: The U.S. Fish and Wildlife Service uses the "Classification of Wetlands and Deepwater Habitats of the United States", December, 1979, by L. M. Cowardin, et al., to delineate and identify wetlands. This system is hierarchical and structured around a combination of ecological, biological, hydrological and substrate characteristics which permits universal use across the United States, its territories and possessions. It consists of five systems: Marine, Estuarine, Riverine, Lacustrine (lake) and Palustrine (swamps, bogs, marshes) and proceeds in a hierarchical manner through subsystem, class, and subclass. It also contains provisions to use water regime, water chemistry, soil, and special modifiers to provide additional levels of detail.

Figure 1 is an illustration of the classification system to the class level.



**Fig 1. Classification hierarchy of wetlands and deepwater habitats, showing systems, subsystems, and classes. The Palustrine System does not include deepwater habitats.**

**Use of Wetland Legend:** Wetland data are displayed on overlays or maps by a series of letters and numbers (alpha numerics) with the first letter representing the system and subsequent alpha numerics representing, in a sequential manner, the subordinate levels of detail down to the modifiers. Where classes and subclasses have been mixed, they are separated by a diagonal line.

**Examples**

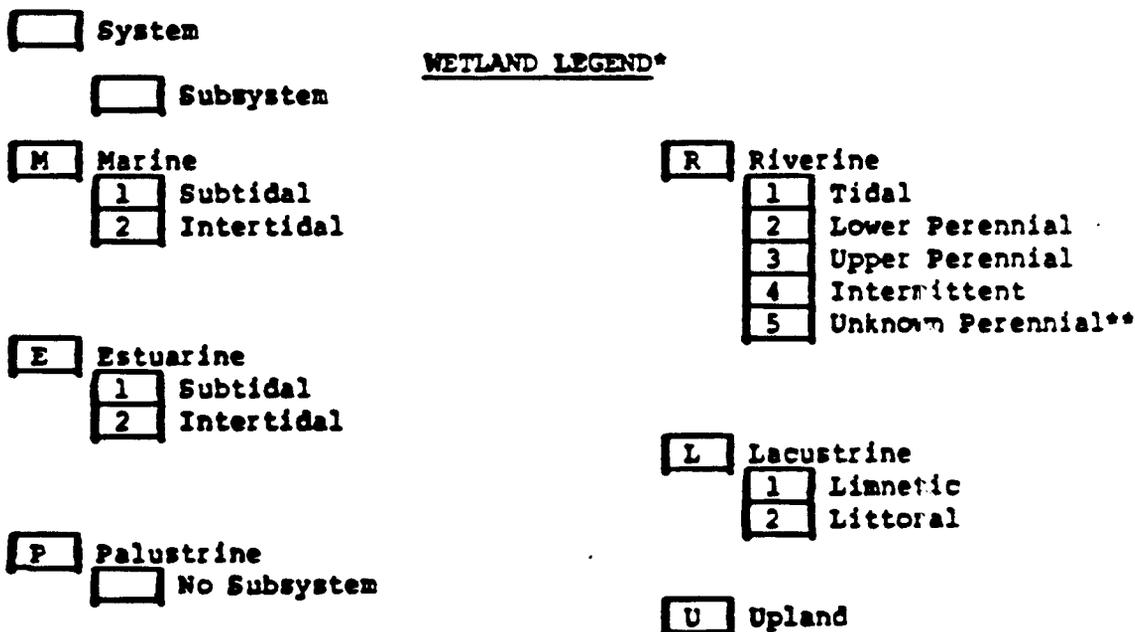
**a. Classification of wetlands to water regime and special modifier:**

System:	Lacustrine
Subsystem:	Limnetic
Class:	Unconsolidated Bottom
Subclass:	Mud
Water Regime:	Intermittently Exposed
Special Modifier:	Diked/Impounded

**L 1 UB 3 G h**

**b. Mixing of wetland classes and subclasses:**

PFO2/EM1F = Palustrine, Forested, Needle-leaved deciduous (PFO2) mixed with Palustrine, Emergent, Persistent (PEM1) with semipermanent water regime (F).



\*Should be used in conjunction with "Classification of Wetlands and Deepwater Habitats of the United States," by L. M. Cowardin et al.

\*\*Not included in "Classification of Wetlands and Deepwater Habitats of the United States." Created specifically for National Wetland Inventory mapping effort.

Wetland Legend (continued)

Class

Subclass

CLASSES AND SUBCLASSES

- AB** Aquatic Bed
- 1 Algal
  - 2 Aquatic Moss
  - 3 Rooted Vascular
  - 4 Floating Vascular
  - 5 Unknown Submergent\*\*
  - 6 Unknown Surface\*\*

- EM** Emergent
- 1 Persistent
  - 2 Nonpersistent

- FO** Forested
- 1 Broad-Leaved Deciduous
  - 2 Needle-Leaved Deciduous
  - 3 Broad-Leaved Evergreen
  - 4 Needle-Leaved Evergreen
  - 5 Dead
  - 6 Deciduous\*\*
  - 7 Evergreen\*\*

- ML** Moss/Lichen
- 1 Moss
  - 2 Lichen

- OW** Open Water/  
Unknown Bottom\*\*

- RB** Rock Bottom
- 1 Bedrock
  - 2 Rubble

- RF** Reef
- 1 Coral
  - 2 Mollusk
  - 3 Worm

- RS** Rocky Shore
- 1 Bedrock
  - 2 Rubble

- SB** Streambed
- 1 Bedrock
  - 2 Rubble
  - 3 Cobble/Gravel
  - 4 Sand
  - 5 Mud
  - 6 Organic
  - 7 Vegetated

- SS** Scrub/Shrub
- 1 Broad-Leaved Deciduous
  - 2 Needle-Leaved Deciduous
  - 3 Broad-Leaved Evergreen
  - 4 Needle-Leaved Evergreen
  - 5 Dead
  - 6 Deciduous\*\*
  - 7 Evergreen\*\*

- UB** Unconsolidated Bottom
- 1 Cobble/Gravel
  - 2 Sand
  - 3 Mud
  - 4 Organic

- US** Unconsolidated Shore
- 1 Cobble/Gravel
  - 2 Sand
  - 3 Mud
  - 4 Organic
  - 5 Vegetated

\*\*Not included in "Classification of Wetlands and Deepwater Habitats of the United States." Created specifically for National Wetland Inventory mapping efforts.

## MODIFIERS TO WETLAND CLASSIFICATION

### WATER REGIME MODIFIERS

#### Nontidal

<b>A</b>	Temporary
<b>B</b>	Saturated
<b>C</b>	Seasonal
<b>D</b>	Seasonally Flooded-Well Drained
<b>E</b>	Seasonally Flooded-Saturated
<b>F</b>	Semipermanent
<b>G</b>	Intermittently Exposed
<b>H</b>	Permanent
<b>J</b>	Intermittently Flooded

#### Nontidal Combined

<b>Z</b>	Intermittently Exposed/ Permanent (G,H above)**
<b>W</b>	Intermittently Flooded/ Temporary (A,J above)**
<b>Y</b>	Saturated Semipermanent/ All Seasonals (B,C,D,E F above)**

#### Nontidal and Tidal

<b>D</b>	Unknown**
<b>K</b>	Artificial

#### Tidal

<b>L</b>	Subtidal
<b>M</b>	Irregularly Exposed
<b>N</b>	Regularly Flooded
<b>P</b>	Irregularly Flooded
<b>R</b>	Seasonal - Tidal
<b>S</b>	Temporary - Tidal
<b>T</b>	Semipermanent - Tidal
<b>V</b>	Permanent - Tidal

### WATER CHEMISTRY MODIFIERS

#### Coastal Salinity

<b>1</b>	Hyperhaline
<b>2</b>	Euhaline
<b>3</b>	Mixohaline (Brackish)
<b>4</b>	Polyhaline
<b>5</b>	Mesohaline
<b>6</b>	Oligohaline
<b>0</b>	Fresh

#### Inland Salinity

<b>7</b>	Hypersaline
<b>8</b>	Eusaline
<b>9</b>	Mixosaline
<b>0</b>	Fresh

#### pH Freshwater

<b>a</b>	Acid
<b>t</b>	Circumneutral
<b>l</b>	Alkaline

\*\*Not included in "Classification of Wetlands and Deepwater Habitats of the United States." Created specifically for National Wetland Inventory mapping effort.

## OTHER MODIFIERS

### Special

<b>b</b>	Beaver
<b>d</b>	Partially Drained/ Ditched
<b>f</b>	Farmed
<b>h</b>	Diked/Impounded
<b>i</b>	Artificial
<b>s</b>	Spoil
<b>x</b>	Excavated

### Soils

<b>g</b>	Organic
<b>n</b>	Mineral

Statement to Users: The overlays/maps were 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." 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 and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on this map. Federal, State, and local regulatory agencies with jurisdictions 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 the limits of proprietary jurisdiction of any Federal, State, or local government or to establish the geographical scope of the regulatory programs and proprietary jurisdictions that may affect such activities.

To Order NWI Topical Wetland Overlays/Maps: A National Wetland Inventory Order Form is required and can be obtained by writing to the address on the letterhead.

