

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

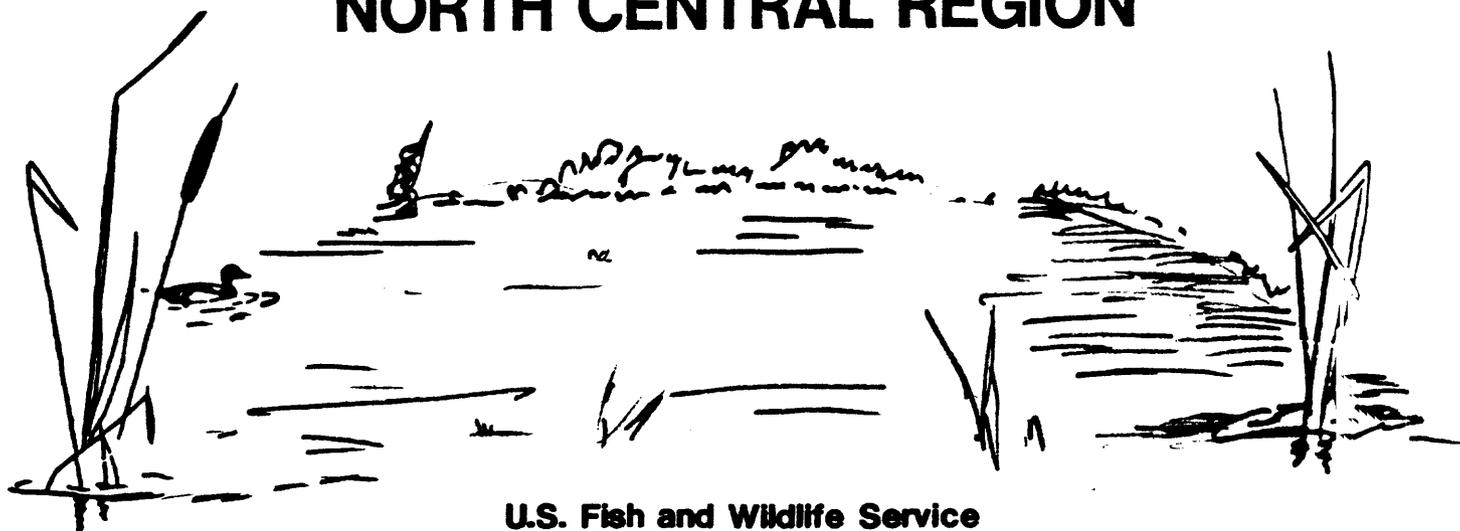
MAP AREA: MARQUETTE SW

1:100,000 NAME: GWINN

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.

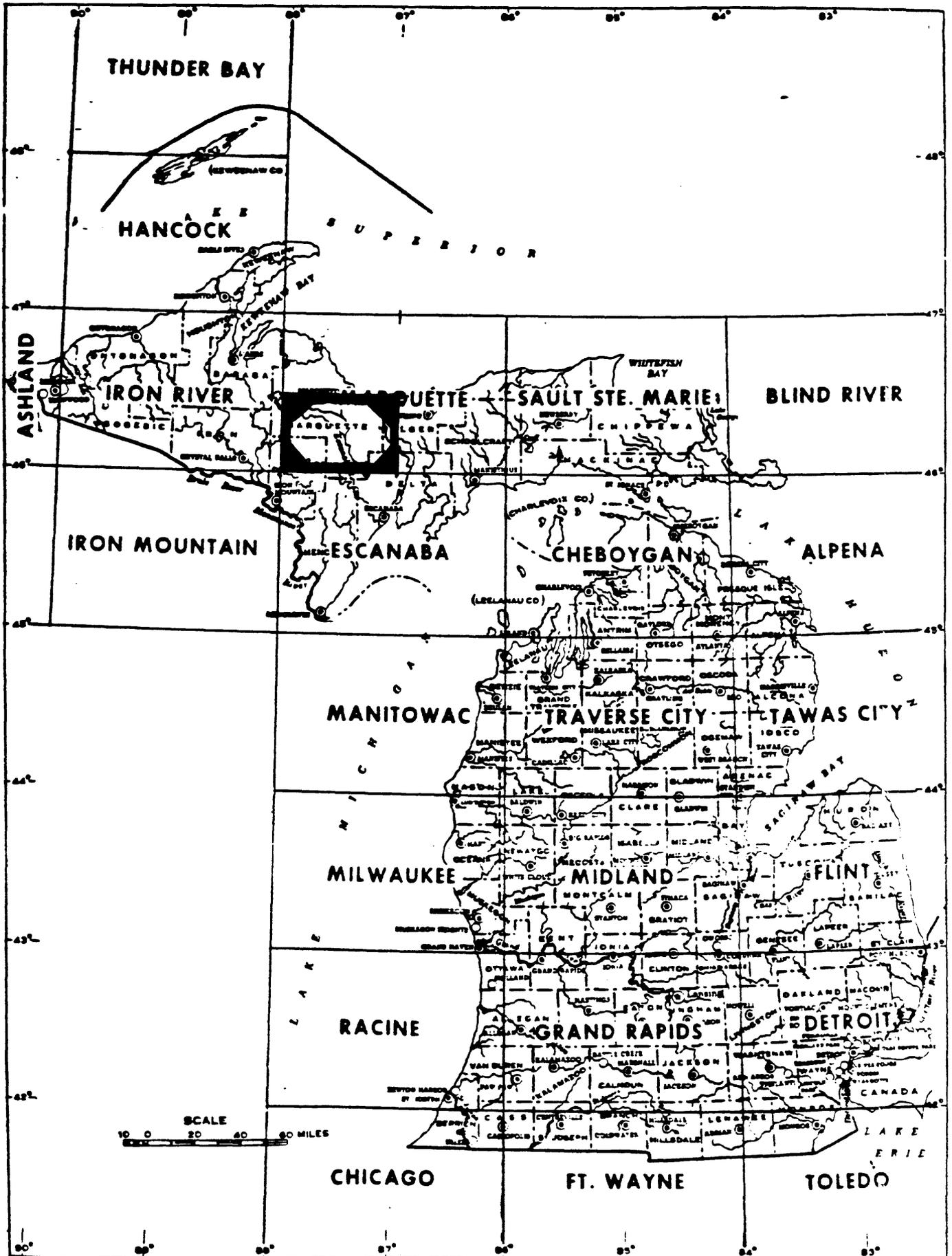
Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either design or products of this inventory, to define limits of proprietary jurisdiction of any local, State, 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	April 1966	3%
2. Black and white	1:80,000	April 1975	3%
3. Black and white	1:80,000	October 1975	84%
4. Black and white	1:80,000	May 1979	10%

Field Check Dates:

1. August 10 - 11, 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: 87° 0' to 88° 0' West

Degrees Latitude : 46° 0' to 46° 30' North

Largest City : Ishpeming, Michigan

Marquette SW is located in the west-central part of Michigan's upper peninsula and encompasses portions of Marquette, Dickinson, Delta and Alger Counties. Lake Superior is in the extreme northeastern part of the map. The map lies within Lake Superior and Lake Michigan watersheds, and Ford, Escanaba and Whitefish River drainage basins. Hiawatha National Forest covers a portion of the map area.

B. Ecoregion

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

Code: 2112L

Humid Temperate Domain (2000)

The entire Marquette SW 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.

Warm Continental Division (2100)

All of the Marquette SW map area lies within this Division.

This Division characteristically has warm summers and cold, snowy winters. The natural vegetation is needleleaf and mixed needleleaf-deciduous forest. The soils of this Division are Spodosols, which are strongly leached but have a top layer of humus. Spodosols are usually acidic and lack calcium, potassium and magnesium. Despite these deficiencies, Spodosols are very suitable for growing the conifers found in this Division.

Laurentian Mixed Forest Province (2110)

The entire Marquette SW map falls within this Province.

The vegetation of this Province is representative of the transitional zone in which it lies, between the boreal and deciduous forest zones. Forests consist either of mixed conifer-deciduous stands or mosaic-like arrangements with pure stands of deciduous forest growing on good soil sites and pure stands of conifers growing on poor soil sites.

Pines (Pinus spp.) are the most representative conifers of the mixed forest stands, with white pine (P. strobus) dominating in the Great Lakes region. Pines are often a pioneer woody species following forest fires. Eastern hemlock (Tsuga canadensis) and eastern redcedar (Juniperus virginiana) also grow in this Province.

Northern Hardwoods-Fir Forest Section (2112L)

This Section occurs in lowlands and includes all of the Marquette SW map area.

Hardwoods and firs (Abies spp.) are the predominant tree species of this Section.

C. Topography and Land Forms

Hammond's Land Surface Form and Physical Subdivision (Hammond 1965, 1969):

Codes: (III-3) A2b, (III-3) B2b, (III-3) B4b

Interior Physical Division (III) - This Physical Division covers the entire Marquette SW map area.

North-Central Lake-Swamp-Moraine Plains Subdivision (3) - All of Marquette SW map lies within this Subdivision.

Smooth Plains Class (A2b) - This Class covers 30% of the Marquette SW map, extending from the south-central and southeastern portions to the central and northeastern portions. Over 80% of the land is gently sloping, with 50 to 75% of the slopes occurring in lowlands. Local relief ranges from 100 to 300 feet.

Irregular Plains Class (B2b) - The Class covers 65% of Marquette SW, extending from the western-half to the north-central portion and northeast corner. Fifty to 80% of the land is in gentle slopes, of which 50 to 75% are found in lowlands. Local relief ranges from 100 to 300 feet.

Plains With High Hills Class (B4b) - This Class comprises 5% of Marquette SW in the extreme north-central part of the map. Fifty to 80% of the land is gently sloping, with 50 to 75% of the slopes occurring in lowlands. Local relief ranges from 500 to 1000 feet.

RESOURCES

A. Wetlands

No wetland acreage figure is available for the Marquette SW area at the present time.

A list of wetland plant communities, local names, typical water regimes and associate mapping symbols is included in Appendix C.

Natural Wetland Area: The Marquette SW map area contains a 231 acre Northern Hardwood Natural Area designated by the National Park Service. It is located in the northwestern corner of the Skandia quadrangle, Marquette County, Michigan. Species listed for the area include white cedar, balsam fir and black spruce (Goodwin and Niering, 1975).

B. Wildlife and Fish

Populations of some wildlife species in the Marquette SW map area have declined in recent years. Decline of forest game species, particularly the white-tailed deer (Odocoileus virginianus), has been attributed to decreased habitat diversity caused by improved fire control measures and forest management practices that encouraged conifers.

Some wildlife species in the Marquette SW map area are on the Endangered and Threatened list. Habitat loss and competition for nest usage by the brown-headed cowbird (Molothrus ater) have been the reasons for the decline of Kirtland's warblers (Dendroica kirtlandii). Bald eagles (Haliaeetus leucocephalus) and peregrine falcons (Falco peregrinus) have also decreased in numbers, primarily because of reproductive failure attributed to the use of pesticides. However, Madsen et al. 1982 report that bald eagle production in Michigan showed an overall increase during the period 1973 - 1981.

Furbearers, including beaver (Castor canadensis), muskrats (Ondatra zibethica), raccoons (Procyon lotor), weasles (Mustela spp.) and mink (M. vison), have maintained relatively stable populations. Pine martens (Martes americana) and fishers (Martes pennanti), which were once wiped out by overharvesting and logging, have been reintroduced into Michigan's upper peninsula. Canada lynx (Lynx canadensis) are also making a comeback.

Several species of waterfowl inhabit the area, particularly along the Michigamme and Whitefish Rivers, and in the vicinity of the Michigamme Reservoir. These species include scaups (Aythya spp.), canvasbacks (A. valisineria), redheads (A. americana), ring-necked ducks (A. collaris), mallards (Anas platyrhynchos), black ducks (Anas rubripes), wood ducks (Aix sponsa), goldeneyes (Bucephala clangula), buffleheads (B. albeola), old squaws (Clangula hyemalis), Canada geese (Branta canadensis) and whistling swans (Olor columbianus) (Great Lakes Basin Commission 1975b, Panzner 1955, Rounds 1956).

Other wildlife species of Marquette SW include black bears (Ursus americanus), snowshoe hares (Lepus americanus), eastern cottontails (Sylvilagus floridanus), squirrels (Sciurus sp.), ruffed grouse (Bonasa umbellus) and ring-necked pheasants (Phasianus colchicus).

Sport fishing opportunities are available in many inland lakes and streams and in Lake Superior and its immediate tributaries. Commercial fishing is limited to Lake Superior.

Common fish species of inland lakes and mainstream portions of rivers include smallmouth bass (Micropterus dolomieu), rock bass (Ambloplites rupestris), yellow perch (Perca flavescens), northern pike (Esox lucius), muskellunge (E. masquingy) and walleyés (Stizostedion vitreum vitreum). Largemouth bass (M. salmoides) and bluegills (Lepomis macrochirus) are found in impounded backwater areas of streams; brook trout (Salvelinus fontinalis) and brown trout (Salmo trutta) are prevalent in cold, headwater areas.

The primary sport fish of Lake Superior are lake trout (Salvelinus namaycush), rainbow trout (Salmo gairdneri), coho salmon (Oncorhynchus kisutch) and chinook salmon (O. tshawytscha). Rainbow trout (steelhead), coho and chinook salmon are also fished in Lake Superior tributaries as are brook and brown trout, suckers (Catostomus), rainbow smelt (Osmerus mordax), northern, panfish (Lepomis spp., Pomoxis spp.) and bass.

Lake herring (Coregonus artedii), chubs (Semotilus) and lake whitefish (C. clupeaformis) dominate the commercial fish catch out of Lake Superior. Lake trout are of minor importance commercially. Sea lamprey (Petromyzon marinus) have prevented this species from establishing a self-sustaining population (Great Lakes Basin Commission 1975a).

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.
- Goodwin, R.H. and W.A. Niering. 1975. Inland Wetlands of the United States, Evaluated as Potential Registered Natural Landmarks. National Park Service, Washington, D.C.
- 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.
- Madsen, C.R., T.J. Sheldrake, and J.T. Leach, eds. 1982. Bald Eagle Production in the Great Lakes States 1973 - 1981. U.S. Fish and Wildlife Service, Reg. 3. Twin Cities, Minn. p.
- Panzer, 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 six: Lake Superior. U.S. Fish and Wildlife Service, Washington, D.C. FWS/OBS-81/02-v6. 846 p.

Appendix B

SPECIAL MAPPING PROBLEMS

- Problem 1: The classification of mine settling ponds was originally coded PFLUr. These were changed to L2UBKh or L2FLKh. Surrounding areas which appeared flooded from impounding activities were also given a "K" water regime and an "h" impounded modifier.

Resolution: N/A

Problem 2: PFO4 wetlands may contain some broad-leaved and/or needle-leaved (tamarack) deciduous trees.

Resolution: Field checking revealed this to be true. Users should be aware that small tree stands are not always delineated within larger subclasses.

Problem 3: Large, single class polygons frequently included other wetland types (e.g. beaver ponds and scrub-shrub wetlands included within a larger polygon labeled only PFO). Upland/wetland breaks were sometimes difficult and contiguous wetland areas were at times omitted.

Resolution: Close attention was paid to drainage patterns and beaver activity. Distinct classes were identified separately whenever possible. When this was not possible, mixed classes were used.

Problem 4: 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) were used where necessary.

Appendix C

WETLAND COMMUNITIES

<u>MAP SYMBOLS</u>	<u>LOCAL NAME</u>	<u>DOMINANT VEGETATION</u>	<u>WATER REGIME</u>
PFO4B PFO4Y	Cedar swamp	<u>Thuja occidentalis</u> <u>Picea mariana</u>	Saturated
PFOB PFOY	Swamp	<u>Tsuga canadensis</u> <u>Betula papyrifera</u> <u>Abies balsamea</u>	Saturated Seasonal
PFO4/1B PFO4/1Y	Swamp	<u>Thuja occidentalis</u> <u>Picea mariana</u> <u>Fraxinus spp.</u> <u>Populus tremuloides</u>	Saturated Seasonal
PFO/SSY	Swamp	<u>Fraxinus spp.</u> <u>Populus tremuloides</u> <u>Cornus spp.</u> <u>Salix spp.</u> <u>Alnus spp.</u>	Saturated Seasonal
PSSB PSS3B	Bog	<u>Chamaedaphne calyculata</u>	Saturated
PSSB PSS1B PSSY PSS1Y	Swamp	<u>Alnus spp.</u> <u>Cornus stolonifera</u> <u>Salix spp.</u>	Saturated Seasonal
PSS/EMY	Swamp	<u>Salix spp.</u> <u>Alnus spp.</u> <u>Carex spp.</u> <u>Juncus spp.</u>	Saturated Seasonal
PEMY	Wet meadow	<u>Carex spp.</u> <u>Phalaris arundinacea</u>	Saturated
PEMY	Marsh	<u>Typha latifolia</u> <u>Phragmites spp.</u>	Seasonal Semi-permanent

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.

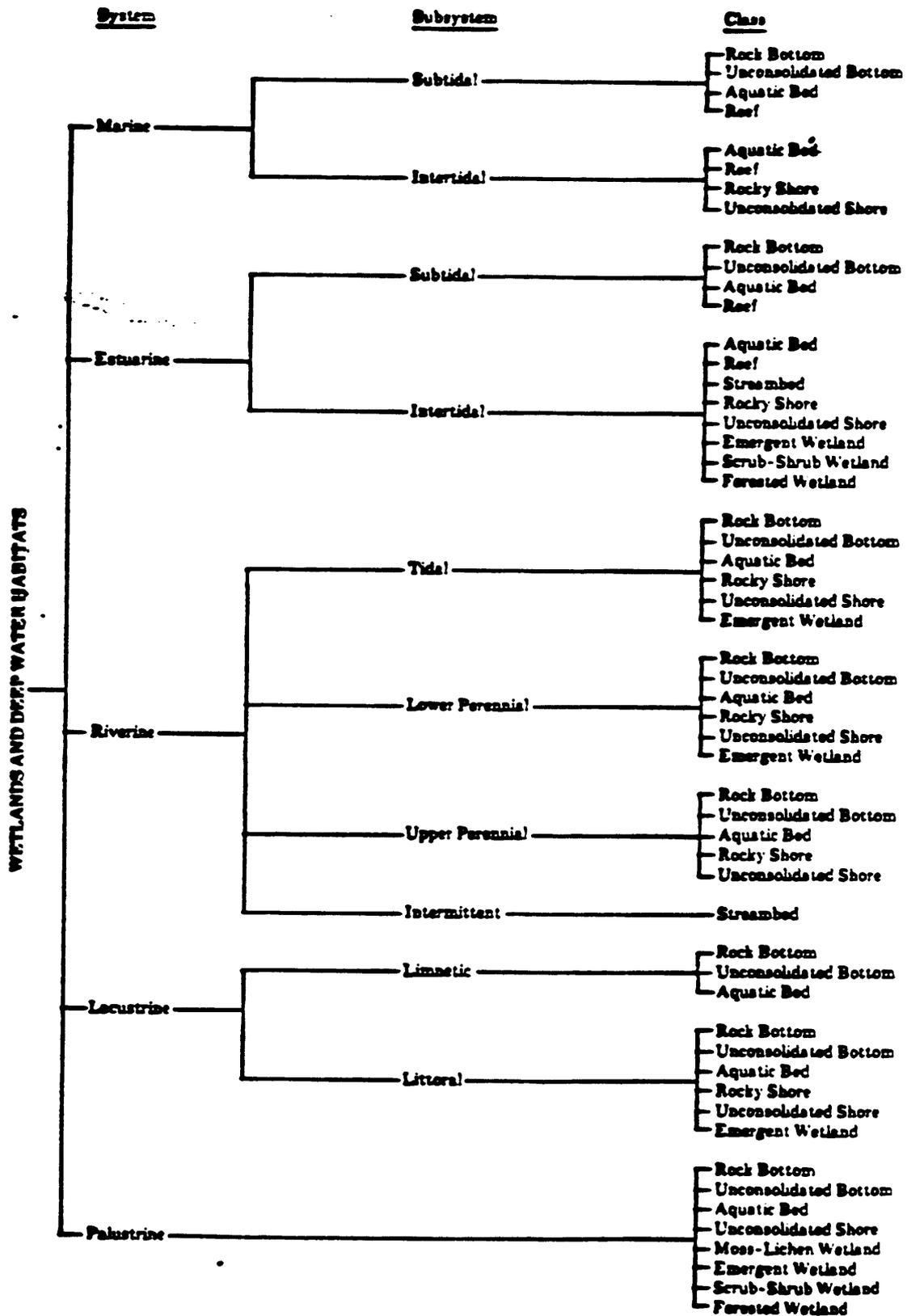


Fig 1. Classification hierarchy of wetlands and deepwater habitats, showing systems, subsystems, and classes. The Palustrine System does not include deepwater habitats.

MODIFIERS TO WETLAND CLASSIFICATION

WATER REGIME MODIFIERS

Nontidal

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

Nontidal Combined

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

Nontidal and Tidal

U	Unknown**
K	Artificial

Tidal

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

WATER CHEMISTRY MODIFIERS

Coastal Halinity

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

Inland Salinity

7	Hypersaline
8	Eusaline
9	Mixosaline
0	Fresh

pH Freshwater

a	Acid
t	Circumneutral
l	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	Beaver
d	Partially Drained/ Ditched
f	Farmed
h	Diked/Impounded
r	Artificial
s	Spoil
x	Excavated

Soils

o	Organic
n	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.

