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

MAP AREA: CLEVELAND NE

1:100,000 NAME: ASHTABULA

STATE: OHIO



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**



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USER CAUTION

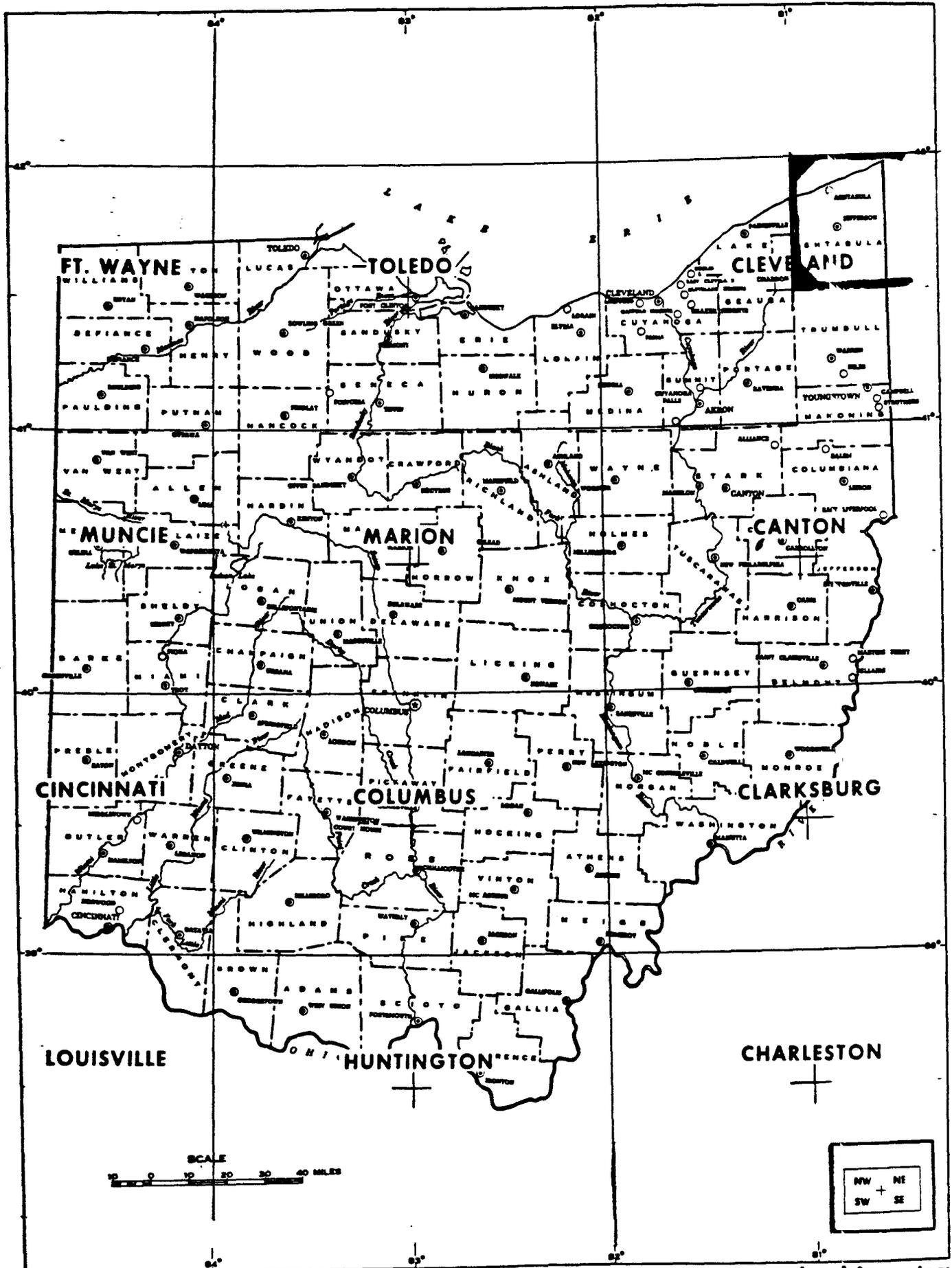
Maps for this 1:100,000 scale map were prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with Classification of Wetlands and Deepwater Habitats of the United 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

LOCATION OF REPORT
STATE OF OHIO



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 1977	48%

Field Check Dates

1. April 30-May 4, 1979
2. November 27-28, 1979
3. April 21-30, 1980
4. January 26-30, 1981

Contractor(s) for Photo Interpretation

1. Earth Satellite Corporation
2. Revised in-house (FWS)

Collateral Data Used

1. USGS topographic quad sheets
2. Ohio Wetlands Inventory, 1972-74
3. Wetlands Inventory of Ohio, 1955
4. Critical Wetland Areas
5. USDA Soil Surveys

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: 80° 0' to 81° 0' West

Degrees Latitude : 41° 30' to 42° 0' North

Largest City : Conneaut, Ohio

The Ohio portion of Cleveland NE is located in the extreme northeastern corner of the state and is bordered on the east by the Pennsylvania State Line and on the north by Lake Erie. This map includes all of Ashtabula County and lies within the Lake Erie Watershed.

B. Ecoregion

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

Code: 2113L, 2212L

Humid Temperate Domain (2000)

The entire Cleveland NE 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)

This Division covers 80% of the map area, all but the northwest portion adjacent to Lake Erie.

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.

Hot Continental Division (2200)

The northwest 20% of the map area along the Lake Erie shoreline falls within 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 Udisols which are rich in humus and moderately leached.

Laurentian Mixed Forest Province (2110)

Most of the Cleveland NE map lies in this Province, except for 20% of the map area in the northwest along the Lake Erie shoreline.

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 soils 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.

Eastern Deciduous Forest Province (2210)

This Province covers the northwest 20% of the map along the Lake Erie shoreline.

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 develop quickly in forests cleared for logging.

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

Northern Hardwood Forest Section (2113L)

This Section occurs in lowland areas and covers all but the northwest 20% of the map adjacent to Lake Erie.

The dominant tree species of this Section are northern hardwoods.

Beech - Maple Forest Section (2212L)

This Section occurs in lowland areas and includes 20% of the map area in the northwest along the Lake Erie shoreline.

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-1) B2b, (III-1) C3c

Interior Physical Division (III) - The entire Cleveland NE map area lies within this Physical Division.

Middle Western Upland Plain Subdivision (1) - All of the Cleveland NE map area falls in this Subdivision.

Irregular Plains Class (B2b) - This Class covers all but the northwest 5% of the map area. Fifty to 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.

Tablelands, Moderate Relief Class (B3c) - This Class is found in the northwestern portion of Cleveland NE and comprises 5% of the map. Fifty to 80% of the land is in gentle slopes. Fifty to 75% of these slopes are in upland areas. Local relief ranges from 300 to 500 feet.

GEOLOGY

During the Precambrian age, foldbelts were created in the Cleveland NE area by several disturbances within the earth's crust. These disturbances caused the flowage, recrystallization and metamorphism of rock layers far below the surface of the earth, with granite and other plutonic rocks forced into the deepest layers. Much folding and faulting occurred in the subsurface strata, resulting in mountainous terrain.

Foldbelts were eventually eroded to lowlands and were subsequently buried during the Upper and Middle Paleozoic ages by several strata of sedimentary rocks; these rocks were referred to as platform areas (Gerlach 1970).

Platform areas were then covered by glacial deposits during a more recent age. Several terminal moraines formed near the southern edge of Cleveland NE, where a once stagnant glacier deposited a mixture of sand, clay, rubble and boulders. During glacial recession, clay-rich till was deposited by ice sheets and gravelly outwash was left behind by meltwater streams. In the northern-most and east-central portions of Cleveland NE, glacial lakes melted to form flat lake plains. These former lake bottoms are commonly lined with heavy clay and have sandy edges (Borchert and Gustafson 1980, Collins 1975).

HYDROLOGY

Several river systems flow through the Cleveland NE map area. The Ashtabula River and Conneaut Creek systems drain the northeastern part of the map. These systems drain into Lake Erie, which borders the map on the north. The southwestern and central portions of Cleveland NE are drained by the Grand River system. The southwestern and northwestern parts of the map are drained by the Pymatuning River system and several Lake Erie tributaries, respectively.

Pymatuning Reservoir in the southeastern part of Cleveland NE is the major lake or reservoir in the map area. Wetland density is high, and wetlands are well distributed throughout the map area.

LAND USE

The presettlement vegetation of Cleveland NE consisted largely of beech forests in the southern and central portions of the map area, and mixed mesophytic and bottomland hardwoods in the north. A small area of mixed oak and oak-savannas existed in the extreme northwest (Collins 1975).

Presently, the primary land use of Cleveland NE consists of cropland interspersed with beech and mixed mesophytic forests and wetlands. Woodlots and small urban areas can be found throughout the area.

RESOURCES

A. Wetlands

No wetland acreage figure is available for the Cleveland NE area at the present time.

Cleveland NE has a high diversity and density of wetland types. Floodplain wetlands are primarily temporary to intermittently flooded forested and scrub-shrub emergent wetlands. The area also has many wetlands which are scattered throughout the upland. These include several saturated to semi-permanently flooded forested and emergent marshes.

Predominant trees and shrubs of the floodplain woodlands include red maple (Acer rubrum), oak (Quercus spp.), willow (Salix spp.), ash (Fraxinus spp.), dogwood (Cornus spp.) and locust (Robinia sp.). Species commonly found in the shrub-emergent floodplain wetlands include willow, black cherry (Prunus serotina), dogwood, locust, sumac (Rhus sp.), rush (Juncus spp.), sedge (Carex spp.) and panicum (Panicum spp.). A list of plant species for wetland types can be found in Appendix C.

B. Wildlife and Fish

Urbanization, which has led to a direct loss of wildlife habitat and degradation of water quality (Great Lakes Basin Commission 1975¹). However, a diversity of wildlife species can still be found in the region.

The high diversity of wetland types in the area attracts both nesting and migrating waterfowl. Pymatuning Reservoir is of particular importance to the waterfowl of the area. Species which commonly nest in the area include mallards (Anas platyrhynchos), black ducks (A. rubripes), blue-winged teal (A. discors) and wood ducks (Aix sponsa). Common migrants include scaup (Aythya sp.), American wigeon (Anas americana), pintails (A. acuta), common goldeneyes (Bucephala clangula), mergansers (Mergus sp.), and Canada geese (Branta canadensis) (Rounds 1955, U.S. Fish and Wildlife Service 1957).

Other wildlife species of Cleveland NE include the bald eagle (Haliaeetus leucocephalus) and peregrine falcon (Falco peregrinus), both of which are on the Threatened and Endangered list. Habitat for some upland species has improved in recent years, due to a general decrease in the age of forest stands and farms reverting to early successional stages (Great Lakes Basin Commission 1975d).

Sport fishing is common in the area, particularly in the Grand River and Conneaut Creek. Common fish species include smallmouth bass (Micropterus dolomieu), walleye (Stizostedion vitreum vitreum), muskellunge (Esox masquinongy), and suckers (Catostomus). Commercial fishing is limited, primarily because the available species are not in high demand (Great Lakes Basin Commission 1975b).

C. Soils

Soils which occur in all but the extreme southeastern part of Cleveland NE are classified under the soil order Alfisol; those in the extreme southeast belong to the order Inceptisol. Soils throughout the map area are usually moist but may become dry during the warm season of the warm season of the year. The average annual temperature of these soils often exceeds 47°F.

Alfisols are soils with medium to high bases, a gray to brown surface horizon, and subsurface horizons which have accumulated clay. The Alfisols of Cleveland NE belong to the Suborder Udalf, and more specifically to the great Fraguidalf and Hapludalf. Fraguidalfs have a dense brittle horizon that is usually below a horizon in which clay has accumulated. Soils of this great group cover the southern portion of Cleveland NE, excluding the extreme southeastern corner. Hapludalfs which cover the northern portion of the map, have a clayey subsurface horizon that is either thin or brownish.

Inceptisols have weakly differentiated horizons showing an alteration of parent materials. Unlike Alfisols, clay and other materials have not accumulated the subsurface horizons of Inceptisols. Inceptisols occurring in the Cleveland NE map area are of the suborder Ochrept, and more specifically of the great group Fragiochrept. Ochrepts are soils which formed in materials containing crystalline clay minerals. The surface horizon of Ochrepts is low in organic matter and exhibits a pale color; subsurface horizons are altered and have lost mineral materials. Fragiochrepts have a dense, brittle subsurface horizon (U.S. Soil Conservation Service 1967, Gerlach 1970).

D. Agriculture

Agriculture in the Cleveland NE map area is of moderate importance. The most important agricultural commodity is dairy cattle. Other important commodities include beef cattle and greenhouses and nurseries (Collins 1975).

F. Minerals

Active mining operations take place in several locations throughout the Cleveland NE region. Sand and gravel are the most commonly mined resources. Natural gas is also extracted. Some peat resources are present (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.
- Borchert, J.R. and N.C. Gustafson. 1980. Atlas of Minnesota Resources and Settlement. Center for Urban and Regional Affairs. Minneapolis, Minn. pp. 4-6.
- Collins, C.W. 1975. Atlas of Ohio Amer. Printing and Publishing, Inc., Madison, Wisc. 310 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.
- Gerlach, A.C., ed. 1970. National Atlas of the United States of America. USDI Geol. Surv. Washington, D.C. 417 p.
- Great Lakes Basin Commission. 1975a. Mineral Resources: Great Lakes Basin Comm. Great Lakes Basin Framework Study, App. 5. Ann Arbor, Mich. 136 p.
- 1975b. Fish: Great Lakes Basin Comm. Great Lakes Basin Framework Study, App. 8. Ann Arbor, Mich. 290 p.
- _____ 1975c. Floodplains: Great Lakes Basin Comm. Great Lakes Basin Framework Study, App. 14. Ann Arbor, Mich. 327 p.
- _____ 1975d. 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.
- Rounds, B.W. 1955. Wetlands Inventory of Ohio. U.S. Fish and Wildlife Service, Office of River Basin Studies, Minneapolis, Minn. 23 p.
- U.S. Fish and Wildlife Service. 1957. Inventory of Permanent Water Habitat Significant to Waterfowl in Ohio. U. S. Fish and Wildlife Service, Office of River Basin Studies, Minneapolis, Minn. 10 p.

U. S. Soil Conservation Service. 1967. 1:7,500,000 scale. Distribution of Principal Kinds of Soils: Orders, Suborders and Great Groups. Nat. Coop. Soil Surv. Classif. of 1967. 1 map. p. 86-87. In Gerlach, A.C., ed. 1970. National Atlas of the United States of America. USDI Geol. Surv., Washington, D. C. 417 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:

Snell Environmental Group. 1977. Critical Wetland Areas. Ohio Department of Natural Resources. Columbus. 83 p.

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 three: Lake Erie. U. S. Fish and Wildlife Service, Washington, D. C. FWS/OBS-81/02-v3. 505 p.

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.

Appendix B

SPECIAL MAPPING PROBLEMS

Problem 1: Black and white emulsion and generally poor imagery made water regime determination and species identification difficult, thus causing inconsistencies in photo interpretation.

Resolution: Awareness of signature variations from photo to photo and use of combined (Z, W, Y) water regimes. Density and texture of emergent cover in these wetlands was the basis for separating PEMY from PEMW. Differentiation was not always possible due to limits of photography. Also, some misclassification may have occurred at the subclass level. For example, some bogs (PSS3) may have been classified as PSS1.

Problem 2: Recognition of drained or ditched wetlands, and excavated ponds.

Resolution: The "d" modifier applies to partially drained wetland areas in which ditching is evident on the photography. Use of this modifier is not inclusive, however, as some draining is not detectable. In addition, many small ponds are actually excavations, but could not be determined as such due to small scale imagery and topography of the area.

Problem 3: Difficult to distinguish PF01W(Y) forested wetlands from upland forests.

Resolution: Re-check of photos to determine if these forested areas have been interpreted consistently.

Appendix C

WETLAND COMMUNITIES

<u>MAP SYMBOLS</u>	<u>LOCAL NAME</u>	<u>DOMINANT VEGETATION</u>	<u>WATER REGIME</u>
PF01W PF01/SS1W	Woodlot Bottomlands Streambank	<u>Acer rubrum</u> <u>Quercus</u> spp. <u>Salix</u> spp. <u>Robinia</u> sp. <u>Aralia</u> sp. <u>Fraxinus</u> spp. <u>Cornus</u> spp.	Intermittently flooded Temporary
PF01Y PF01/SS1Y	Swamp	<u>Ulmus</u> spp. <u>Fraxinus</u> spp. <u>Fagus grandifolia</u> <u>Acer rubrum</u> <u>Acer saccharinum</u> <u>Quercus bicolor</u> <u>Quercus palustris</u> <u>Alnus</u> spp. <u>Cornus</u> spp. <u>Salix</u> spp.	Saturated Seasonal Semi-permanent
PSS1W PSS1/EMW	Streambanks Bottomlands	<u>Salix</u> spp. <u>Prunus serotina</u> <u>Cornus</u> spp. <u>Rhus</u> spp. <u>Robinia</u> sp. <u>Aralia</u> sp. <u>Juncus</u> spp. <u>Carex</u> spp. <u>Panicum</u> spp.	Intermittently flooded Temporary
PSS1Y	Swamp	<u>Alnus</u> spp. <u>Salix</u> spp. <u>Cornus</u> spp. <u>Spiraea</u> spp. <u>Cephalanthus occidentalis</u> <u>Rhododendron viscosum</u>	Saturated Seasonal Semi-permanent
PSS1/EMY	Swamp	<u>Salix nigra</u> <u>Juncus effusus</u>	Saturated Seasonal Semi-permanent
PEMW	Meadow Bottomland	<u>Juncus effusus</u> <u>Carex</u> spp. <u>Solidago</u> spp. <u>Aster</u> spp. Misc. grasses	Intermittently flooded Temporary

<u>MAP SYMBOLS</u>	<u>LOCAL NAME</u>	<u>DOMINANT VEGETATION</u>	<u>WATER REGIME</u>
PEMY	Wet meadow	<u>Carex</u> spp. <u>Solidago</u> spp <u>Juncus effusus</u> <u>Juncus</u> spp. Misc. grasses	Saturated Seasonal
PEMY	Seasonal basin	<u>Carex</u> spp. <u>Solidago</u> spp. <u>Polygonum</u> spp. <u>Scirpus</u> spp. Misc. grasses	Seasonal
PEMY	Shallow marsh	<u>Juncus</u> spp. <u>Carex</u> spp. <u>Scirpus</u> spp. <u>Sagittaria</u> sp. <u>Sparganium</u> sp. <u>Typha</u> spp. <u>Polygonum</u> spp.	Seasonal
PEMY PEM/OWF	Deep marsh	<u>Typha latifolia</u> <u>Typha angustifolia</u> <u>Juncus militaris</u> <u>Sagittaria</u> sp. <u>Nymphaea</u> sp. Open water	Semi-permanent
POWZx	Excavated pond	Open water	Intermittently exposed Permanent
L10WZh	Impoundment	Limnetic open water	Artificial control - impounded

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.

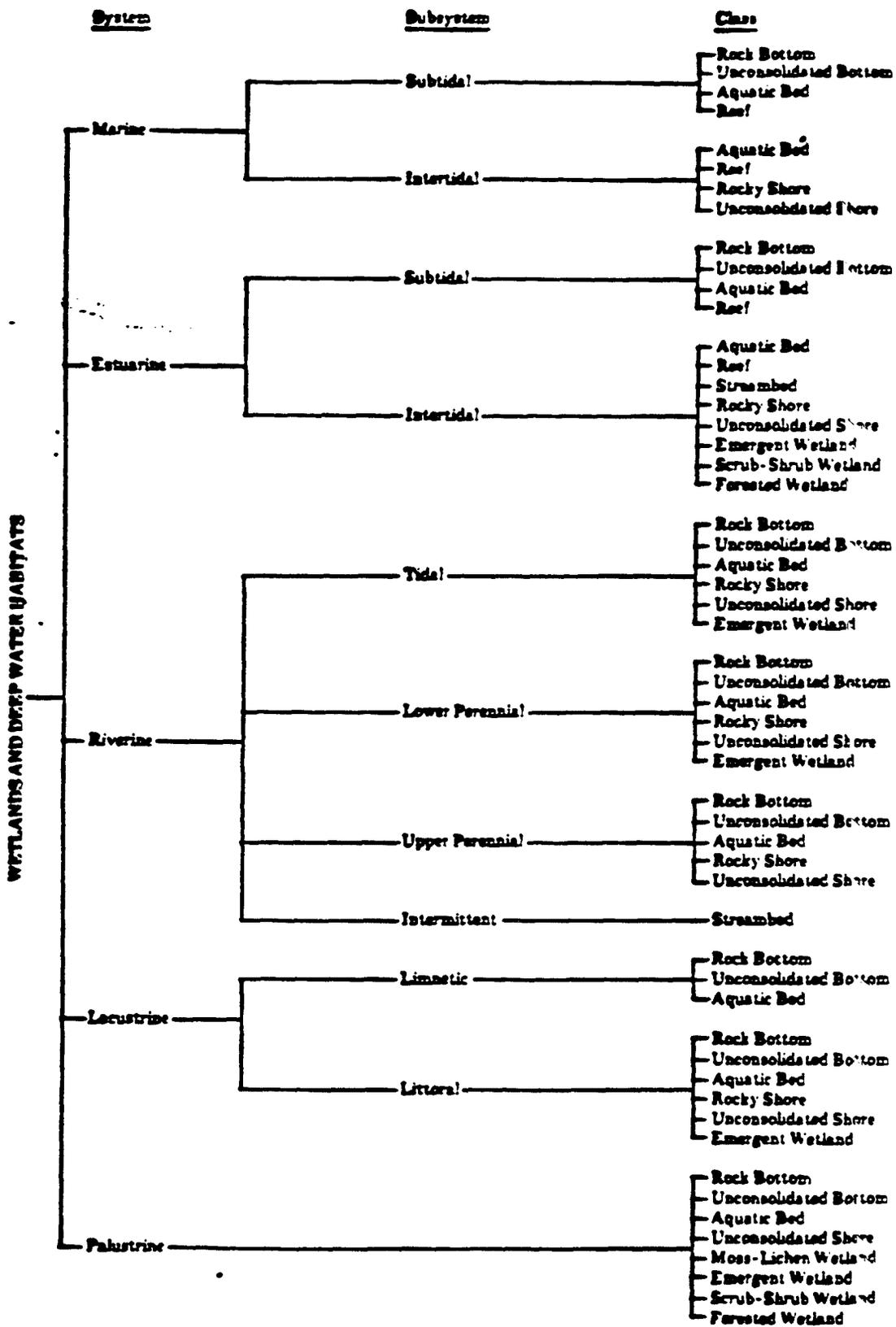


Fig. 1. Classification hierarchy of wetlands and deepwater habitats, showing systems, subsystems, and classes. The Palustrine System does not include deepwater habitats.

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

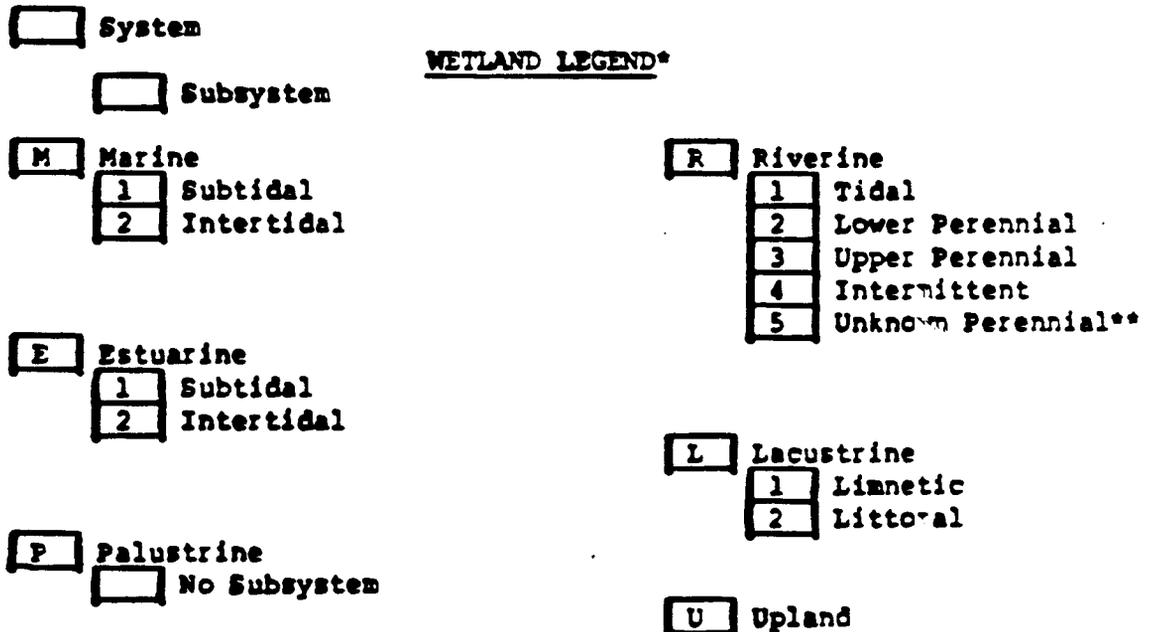
a. Classification of wetlands to water regime and special modifier:

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/EM1P = Palustrine, Forested, Needle-leaved deciduous (PFO2) mixed with Palustrine, Emergent, Persistent (PEM1) with semipermanent water regime (P).



*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.

