NWI MAPS MADE EASY

A User's Guide to National Wetlands Inventory Maps of the Northeast Region
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A User's Guide to
National Wetlands Inventory Maps
of the Northeast Region

by

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U.S. Fish & Wildlife Service
Ecological Services - NWI
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Hadley, MA 01035-9589
Introduction

The purpose of this document is to explain how to read and interpret information from a National Wetlands Inventory map. By following the "decoding" procedure examples, the user will learn to quickly decipher the wetland classification code. The user will be given definitions of specific terms, and examples of wetland types are presented in the accompanying tables. This User's Guide also clarifies some of the seemingly complex wetland terminology and provides a quick reference table to general wetland types.

National Wetlands Inventory

The U.S. Fish & Wildlife Service's National Wetlands Inventory Project (NWI) was established in 1974 to produce information on the characteristics, locations and extent of wetlands and deepwater habitats on a nationwide basis. The two main types of information produced are wetland maps and status and trends reports. The maps are used for local and regional site-specific planning and management purposes, while the status and trends reports provide information on the type, amount, location and causes of wetland changes on a regional and national scale.

Classification System

In order to provide national consistency of wetland concepts, terminology and classification for its National Wetlands Inventory Project, the U.S. Fish and Wildlife Service developed a new classification system, Classification of Wetlands and Deepwater Habitats of the United States. The classification system was developed in 1979, and takes a hierarchical approach to classifying different wetland types. It first describes wetlands broadly by five systems: Marine, Estuarine, Riverine, Lacustrine, and Palustrine. The term system is defined as "...a complex of wetlands and deepwater habitats that share the influence of similar hydrologic, geomorphologic, chemical, or biological factors" (Table 1). Each system (with the exception of the Palustrine System) is divided into subsystems based on major hydrologic characteristics (Table 2). Subsystems are subdivided into classes, describing the general vegetative types or substrate types (Table 3). The classes are then divided into subclasses which describe specific vegetative and substrate types. Additional "modifiers" describing hydrologic and soil properties, water chemistry, or physical modifications of the wetland, are commonly used following the class or subclass level designation (Tables 4, 5, 6 and 7).
The National Wetlands Inventory (NWI) Map

The main product of the National Wetlands Inventory is the large-scale NWI map. These maps show approximate boundaries and wetland classifications on a 1:24,000 scale* U.S. Geological Survey topographic base map (Figure 1). Actual wetland classifications are abbreviated on the map as alpha-numeric codes. These map codes can be translated using the map legend located in this guide and at the bottom of each NWI map.

The classification system, its terminology, and alpha-numeric map codes may seem overwhelming at first, but the user does not need a thorough understanding of the classification system to use the maps. The following section shows how quick and easy it is to translate any map code into a meaningful description of a particular wetland type.

*Most maps are produced at the 1:24,000 scale, however, some maps are only available at the 1:25,000 or 1:62,500 scale.

Figure 1. Section of NWI map - Presque Isle Peninsula - Erie North Quadrangle, Pennsylvania
How To Interpret the Map Codes

Each map code consists of an ordered series of letters and numbers (alpha-numeric) that reflect certain characteristics of wetlands and deepwater habitats. While the number of characters in each map code may vary from three to ten symbols depending on the date of the map production, most codes will have from five to seven characters. All maps will have at least three characters for the system, subsystem and class. All map codes are identified under the appropriate system in the map legend at the bottom of each map. The most commonly used codes will be described in the tables of this guide.

Since Palustrine (inland freshwater) and Estuarine (coastal salt and brackish) wetlands are the most common types of wetlands on the maps, they will be used as examples.

Example #1: E2EM1P6

**Step 1.** The first character is an upper case letter representing which SYSTEM the wetland belongs to.

\[
\begin{array}{c}
E \\
\end{array}
\]

= the ESTUARINE SYSTEM (salt and brackish tidal wetland)

(Refer to Table 1 for descriptions of SYSTEMS.)

**Step 2.** The second character is a number, (except in the Palustrine System - no Subsystems) which represents the SUBSYSTEM.

\[
\begin{array}{c}
2 \\
\end{array}
\]

= the INTERTIDAL SUBSYSTEM (periodically flooded by tides).

(Refer to Table 2 for descriptions of SUBSYSTEMS.)

**Step 3.** The third character is a set of two upper case letters representing the CLASS.

\[
\begin{array}{c}
EM \\
\end{array}
\]

= the EMERGENT CLASS (non-woody vegetation)

(Refer to Table 3 for descriptions of CLASSES.)
Step 4. The next character is a number representing the SUBCLASS.

1 = the PERSISTENT EMERGENT SUBCLASS
   (vegetation remains throughout the year)

(Note: To determine SUBCLASS, you must refer to the legend under the appropriate CLASS to find the proper subclass, i.e., SUBCLASS codes are not interchangeable between CLASSES.)

(The SUBCLASSES are generally self explanatory; refer to map legend.)

Step 5. The next character is an upper case letter representing the WATER REGIME MODIFIER.

P = the IRREGULARLY FLOODED, TIDAL WATER REGIME (flooded less than once daily)

(Refer to Tables 4, 5 and 6 for descriptions of WATER REGIMES.)

Step 6. Following the WATER REGIME MODIFIER, there may be additional numbers or lower case letters identifying WATER CHEMISTRY or SPECIAL MODIFIERS.

6 = the OLIGOHALINE WATER CHEMISTRY MODIFIER
   (salinity between 0.5 and 5.0 ppt)

(Refer to Table 7 for descriptions of commonly used additional MODIFIERS.)

There is no limit to how many additional modifiers may be used to describe a wetland. Generally, however, there will be only one modifier following the WATER REGIME MODIFIER.

Solution: E2EM1P6 means ESTUARINE, INTERTIDAL, PERSISTENT EMERGENT WETLAND, IRREGULARLY FLOODED, OLIGOHALINE
(common name = slightly brackish marsh).
Example #2: PFO1Cb

Step 1. The first character is an upper case letter representing which SYSTEM the wetland belongs to.

\[ P \] = the PALUSTRINE SYSTEM (freshwater wetland)

(Refer to Table 1 for descriptions of SYSTEMS.)

*Remember, there are no SUBSYSTEMS in the Palustrine System. Proceed to Step 2 to determine the CLASS.*

Step 2. The second character in a Palustrine wetland classification, is a set of two upper case letters representing the CLASS.

\[ FO \] = the FORESTED CLASS (tree-dominated)

(Refer to Table 3 for description of CLASS.)

Step 3. The next character is a number representing the SUBCLASS.

\[ 1 \] = the BROADLEAF DECIDUOUS SUBCLASS
(hardwoods that drop their leaves annually)

(Note: To determine subclass, you must refer to the legend under the appropriate CLASS to find the proper subclass, i.e., subclass codes are not interchangeable between classes.)

(The SUBCLASSES are generally self explanatory; refer to map legend.)

Step 4. The next character is an upper case letter which represents the WATER REGIME MODIFIER.

\[ C \] = the NONTIDAL SEASONALLY FLOODED WATER REGIME (flooded for two weeks or more during the growing season)

(Refer to Tables 4, 5 and 6 for descriptions of WATER REGIMES.)
Step 5. Following the WATER REGIME MODIFIER, there may be additional numbers or lower case letters identifying WATER CHEMISTRY or SPECIAL MODIFIERS.

\[ \text{b} = \text{the BEAVER SPECIAL MODIFIER (created by or modified by beaver activity)} \]

(Refer to Table 7 for descriptions of commonly used additional modifiers.)

Solution: PF01Cb means: PALUSTRINE, FORESTED WETLAND, BROADLEAF DECIDUOUS, SEASONALLY FLOODED, BEAVER MODIFIED (common name - wooded swamp).

<table>
<thead>
<tr>
<th>Review of Examples #1 and # 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAP CODE</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>E2EM1P6</td>
</tr>
<tr>
<td>PF01Cb</td>
</tr>
</tbody>
</table>
NWI Map Uses and Limitations

The brief statement below, found in the map legend, outlines how the map was produced and some limitations of map use.

**SPECIAL NOTE**

This document 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, (FWS/OBS-79/31 December 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 the 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 document.

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 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 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 specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

The information on the NWI map is an excellent source of general wetland locations, boundaries and characteristics, however, as stated in the SPECIAL NOTE it is not a substitute for intensive on-ground, site-specific investigations when detailed information is required. Due to the limitations of the photointerpretation process, all wetlands are not shown on the NWI map. Certain wetland types such as evergreen forests can be difficult to identify on aerial photographs and are sometimes missed. Aquatic bed wetlands are often not visible on early spring photography, making identification nearly impossible without the use of collateral information. Also, the drier wetland types are difficult to detect, especially on aerial photography taken during drier seasons, dry years or during drought conditions. NWI maps are utilized by a wide variety of users such as engineers, environmental consultants, local conservation commissions, foresters, hunters and fisherman, planning commissions as well as local, county, state and federal conservation and regulatory agencies. Some of the common uses of the maps include project review, analysis of wildlife habitat, comprehensive management plans, land acquisition, oil spill contingency plans, baseline data, environmental impact assessment, identification and education, permit review, wetland evaluation, and utility corridor and facility siting.
### TABLE 1. GENERAL CHARACTERISTICS OF SYSTEMS

<table>
<thead>
<tr>
<th>SYSTEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine (M)</td>
<td>Open ocean and its high energy shoreline; salinity &gt; 30 ppt*</td>
</tr>
<tr>
<td>Estuarine (E)</td>
<td>Tidal ecosystems, usually semi-enclosed by land, with varying salinities</td>
</tr>
<tr>
<td>Riverine (R)</td>
<td>Freshwater flowing water contained within a channel; salinity &lt; 0.5 ppt</td>
</tr>
<tr>
<td>Lacustrine (L)</td>
<td>Fresh waterbodies, generally &gt; 20 acres, &gt; 2 meters deep at low water</td>
</tr>
<tr>
<td>Palustrine (P)**</td>
<td>Mostly freshwater wetlands; and waterbodies &lt; 20 acres and &lt; 2 meters deep at low water</td>
</tr>
</tbody>
</table>

*ppt = parts per thousand
**Examples of this system are ponds, freshwater swamps, marshes and bogs.

### TABLE 2. GENERAL CHARACTERISTICS OF SUBSYSTEMS*

<table>
<thead>
<tr>
<th>SUBSYSTEM</th>
<th>DESCRIPTION</th>
<th>RELEVANT SYSTEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtidal (1)</td>
<td>Permanently flooded (below mean low tide level)</td>
<td>Marine, Estuarine</td>
</tr>
<tr>
<td>Intertidal (2)</td>
<td>Periodically flooded and exposed by tides</td>
<td>Marine, Estuarine</td>
</tr>
<tr>
<td>Tidal (1)</td>
<td>Fresh water, tidally influenced river</td>
<td>Riverine</td>
</tr>
<tr>
<td>Lower Perennial (2)</td>
<td>Slow-moving river, with low gradient, and well developed floodplain</td>
<td>Riverine</td>
</tr>
<tr>
<td>Upper Perennial (3)</td>
<td>Fast moving river with high gradient and little floodplain development</td>
<td>Riverine</td>
</tr>
<tr>
<td>Intermittent (4)</td>
<td>Seasonally flowing river</td>
<td>Riverine</td>
</tr>
<tr>
<td>Unknown (5)</td>
<td>River sharing characteristics of other subsystems</td>
<td>Riverine</td>
</tr>
<tr>
<td>Limnetic (1)</td>
<td>Lake water greater than 2 meters deep</td>
<td>Lacustrine</td>
</tr>
<tr>
<td>Littoral (2)</td>
<td>Shallow lake water and adjacent shoreline, less than 2 meters deep</td>
<td>Lacustrine</td>
</tr>
</tbody>
</table>

*NOTE: There are no Subsystems in Palustrine system.
**TABLE 3. GENERAL CHARACTERISTICS OF THE CLASSES**

<table>
<thead>
<tr>
<th>CLASS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock Bottom (RB)</td>
<td>Permanently flooded bedrock or large chunks of bedrock</td>
</tr>
<tr>
<td>Unconsolidated Bottom (UB)*</td>
<td>Permanently flooded sand, gravel, mud or cobble substrate</td>
</tr>
<tr>
<td>Unconsolidated Shore (US)</td>
<td>Periodically exposed sand, mud or gravel substrate</td>
</tr>
<tr>
<td>Aquatic Bed (AB)</td>
<td>Floating or floating-leaved submerged aquatic vegetation (e.g., duckweed, pondweed, algae)</td>
</tr>
<tr>
<td>Reef (RF)</td>
<td>Substrate composed of living organisms (e.g., mussels, oysters)</td>
</tr>
<tr>
<td>Rocky Shore (RS)</td>
<td>Periodically exposed bedrock or large chunks of bedrock</td>
</tr>
<tr>
<td>Open Water (OW)*</td>
<td>Open water, no visible vegetation</td>
</tr>
<tr>
<td>Streambed (SB)</td>
<td>Periodically flooded channel composed of gravel, sand or bedrock</td>
</tr>
<tr>
<td>Emergent Wetland (EM)</td>
<td>Herbaceous (non-woody) vegetation (e.g., grasses, sedges, rushes and flowering herbs)</td>
</tr>
<tr>
<td>Scrub/Shrub Wetland (SS)</td>
<td>Woody vegetation &lt; 20 feet tall (includes dwarf trees in bogs, shrubs and saplings)</td>
</tr>
<tr>
<td>Forested Wetland (FO)</td>
<td>Woody vegetation 20 feet or taller (trees)</td>
</tr>
<tr>
<td>Moss/Lichen Wetland (ML)</td>
<td>Dominant vegetative cover of mosses, lichens or both</td>
</tr>
</tbody>
</table>

*Earlier NVI maps used the Open Water (OW) class, while present mapping conventions use the Unconsolidated Bottom (UB) class.*

**TABLE 4. TIDAL WATER REGIMES (used for Marine and Estuarine systems where salinities > 0.5 ppt)**

<table>
<thead>
<tr>
<th>WATER REGIME</th>
<th>DESCRIPTION OF WATER REGIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtidal (L)</td>
<td>Permanently flooded by tides all year long</td>
</tr>
<tr>
<td>Irregularly Exposed (M)</td>
<td>Flooded most times except extreme low tides</td>
</tr>
<tr>
<td>Regularly Flooded (N)</td>
<td>Flooded and exposed by tides at least once daily</td>
</tr>
<tr>
<td>Irregularly Flooded (P)</td>
<td>Flooded less often than once daily by tides</td>
</tr>
<tr>
<td>WATER REGIME (MAP CODE)</td>
<td>DESCRIPTION OF WATER REGIME</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Temporarily Flooded (A)</td>
<td>Floods most years for less than two weeks during growing season; usually dry by mid-growing season</td>
</tr>
<tr>
<td>Saturated (B)</td>
<td>Substrate is saturated for most of growing season (commonly year round) and rarely floods</td>
</tr>
<tr>
<td>Seasonally Flooded (C)</td>
<td>Floods most years for two weeks or more during growing season, usually dry by end of growing season</td>
</tr>
<tr>
<td>Seasonally Flooded/Saturated (E)*</td>
<td>Floods most years for two weeks or more during growing season and remains saturated near the surface for most of the growing season</td>
</tr>
<tr>
<td>Semipermanently Flooded (F)</td>
<td>Remains flooded throughout the growing season in most years</td>
</tr>
<tr>
<td>Intermittently Exposed (G)</td>
<td>Nearly permanently flooded, exposed only during drought conditions</td>
</tr>
<tr>
<td>Permanently Flooded (H)</td>
<td>Remains flooded throughout the year in all years</td>
</tr>
<tr>
<td>Intermittently Flooded (J)</td>
<td>Exposed most years, but flooded (usually briefly) during growing season on an irregular basis</td>
</tr>
<tr>
<td>Artificial (K)</td>
<td>Flooding controlled by pumps, siphons, etc.</td>
</tr>
</tbody>
</table>

*Not used on all maps
TABLE 6. FRESHWATER - TIDAL. These areas have freshwater (having salinities of < 0.5 ppt) that fluctuates with tidal movements.

<table>
<thead>
<tr>
<th>WATER REGIME (MAP CODE)</th>
<th>DESCRIPTION OF WATER REGIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporarily Flooded-Tidal (S)</td>
<td>Floods most years less than two weeks during growing season, but also periodically inundated by freshwater tides*</td>
</tr>
<tr>
<td>Seasonally Flooded-Tidal (R)</td>
<td>Floods for two weeks or more during growing season, but also periodically inundated by freshwater tides*</td>
</tr>
<tr>
<td>Semipermanently Flooded-Tidal (T)</td>
<td>Remains flooded through most of growing season in most years and is affected by freshwater tides</td>
</tr>
<tr>
<td>Permanently Flooded-Tidal (V)</td>
<td>Remains flooded throughout the year in all years and is influenced by freshwater tides</td>
</tr>
<tr>
<td>Regularly Flooded-Tidal (N)**</td>
<td>Flooded and exposed at least once daily by freshwater tides</td>
</tr>
</tbody>
</table>

*Periodically inundated means flooded less than once daily by freshwater tides

** This tidal (salt water) modifier is also used in the Lacustrine, Paestrian, and Riverine systems to describe the water regime of freshwater areas that are flooded (regularly) at least once daily by freshwater tides.
<table>
<thead>
<tr>
<th>MODIFIER (MAP CODE)</th>
<th>GENERAL DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oligohaline (B)</td>
<td>Used to distinguish transitional zone (slightly brackish) between freshwater tidal systems and brackish tidal systems; salinity = 0.5-6.0 ppt</td>
</tr>
<tr>
<td>Acid (a)</td>
<td>Used to distinguish floating mat, kettlehole type acidic bogs from other non-acidic wetland types</td>
</tr>
<tr>
<td>Beaver (b)</td>
<td>Used to indicate an area that has been either created by, or hydrologically affected by beaver dams</td>
</tr>
<tr>
<td>Partially ditched/drained (d)</td>
<td>Used to show an area that has been visibly ditched or partially drained, but maintains wetland hydrology and functions</td>
</tr>
<tr>
<td>Farmed (f)</td>
<td>Used in this region (Northeast) to identify commercial cranberry bogs</td>
</tr>
<tr>
<td>Artificial (r)</td>
<td>Used to identify manmade impoundments with artificial bottoms (i.e., concrete fish ponds, sewage treatment ponds); also used to identify wetlands created by bench mining of coal</td>
</tr>
<tr>
<td>Diked/Impounded (h)</td>
<td>Used to identify areas that have been hydrologically altered or created by construction of a dike or dam which obstructs or stops water flow</td>
</tr>
<tr>
<td>Excavated (x)</td>
<td>Created or modified by excavation and removal of existing substrate (i.e., quarries, gravel pits, farm ponds, channelized rivers, drainage ditches)</td>
</tr>
<tr>
<td>MAP CODE</td>
<td>COMMON NAME or WETLAND TYPE</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>PFO</td>
<td>FORESTED OR WOODED SWAMP OR BOG</td>
</tr>
<tr>
<td>PSS</td>
<td>SHRUB SWAMP OR BOG</td>
</tr>
<tr>
<td>PEM</td>
<td>EMERGENT MARSH, FEN, OR WET MEADOW</td>
</tr>
<tr>
<td>PUB</td>
<td>POND</td>
</tr>
<tr>
<td>PUS</td>
<td>POND SHORELINE</td>
</tr>
<tr>
<td>PAB</td>
<td>POND WITH FLOATING OR SUBMERGED AQUATIC VEGETATION (DUCKWEEDS, POND LILIES)</td>
</tr>
<tr>
<td>R1UB</td>
<td>FRESHWATER TIDAL RIVER</td>
</tr>
<tr>
<td>R2UB</td>
<td>SLOW MOVING RIVER WITH FLOODPLAIN</td>
</tr>
<tr>
<td>R2AB</td>
<td>RIVER WITH AQUATIC VEGETATION (PICKERELWEED)</td>
</tr>
<tr>
<td>R3US</td>
<td>BANK OR SHORELINE OF FAST FLOWING RIVER</td>
</tr>
<tr>
<td>R4SB</td>
<td>INTERMITTENT STREAM CHANNEL</td>
</tr>
<tr>
<td>R5UB</td>
<td>RIVER SHOWING CHARACTERISTICS OF BOTH UPPER AND LOWER PERENNIAL RIVERS</td>
</tr>
<tr>
<td>M1UB</td>
<td>OPEN OCEAN WITH UNCONSOLIDATED BOTTOM</td>
</tr>
<tr>
<td>M2AB</td>
<td>INTERTIDAL SEAWEED BED IN OCEAN</td>
</tr>
<tr>
<td>M2RF</td>
<td>INTERTIDAL OYSTER AND MUSSEL REEFS IN OCEAN</td>
</tr>
<tr>
<td>E2EM</td>
<td>SALT OR BRACKISH TIDAL MARSH</td>
</tr>
<tr>
<td>E2SS</td>
<td>ESTUARINE SHRUB SWAMP</td>
</tr>
<tr>
<td>E2US</td>
<td>ESTUARINE FLATS, BEACH, OR SAND BARS</td>
</tr>
<tr>
<td>E1UB</td>
<td>OPEN WATER ESTUARY</td>
</tr>
<tr>
<td>L1UB</td>
<td>DEEPWATER ZONE OF LAKE</td>
</tr>
<tr>
<td>L2US</td>
<td>LAKE SHORE OR SHALLOW WATER ZONE OF LAKE</td>
</tr>
<tr>
<td>L2AB</td>
<td>AQUATIC VEGETATION IN LAKE</td>
</tr>
<tr>
<td>L2UB</td>
<td>SHALLOW WATER ZONE OF LAKE</td>
</tr>
</tbody>
</table>
ADDITIONAL TIPS FOR INTERPRETING THE NWI MAP

* The inverted omega symbol $\Omega$ represents non-wetlands or uplands.

* All wetland polygons are labelled with a map code; the label is located either inside the polygon or a leader line runs from the map code into the appropriate polygon.

* Wetlands that are too narrow to be delineated with polygons are identified by linear symbols consisting of a dashed line, or a series of dots and dashes.

* Each linear wetland is labelled with a leader line running from the map code.

* A linear wetland may form the boundary of a wetland polygon, or run through a wetland polygon.

* The ends of a linear segment which form the boundary of a wetland polygon, or a classification change along a linear segment, are shown by a short dash, perpendicular to the linear feature.

* Some map codes indicate a mixture of either classes or subclasses within a single polygon. The class or subclass listed first in the mixed map code is dominant in terms of the amount of surface area covered by that classification type.

mixed class $\text{PFO1/SS1E}$ or $\frac{\text{PFO1}}{\text{SS1E}}$

mixed subclass $\text{PSS1/3Ba}$ or $\frac{\text{PSS1}}{3\text{Ba}}$
WETLANDS AND DEEPWATER HABITATS CLASSIFICATION

SYSTEM
- MARINE
  SUBSYSTEM
   1 - SUBTIDAL
     CLASSESS
     SUBCLASSES
     MODIFIERS
   2 - INTERTIDAL
     CLASSESS
     SUBCLASSES
     MODIFIERS

SYSTEM
- ESTUARINE
  SUBSYSTEM
   1 - SUBTIDAL
     CLASSESS
     SUBCLASSES
     MODIFIERS
   2 - INTERTIDAL

SYSTEM
- RIVERINE
  SUBSYSTEM
   1 - TIDAL
     CLASSESS
     SUBCLASSES
     MODIFIERS
   2 - LOWER PERENNIAL
   3 - UPPER PERENNIAL
   4 - INTERMITTENT
   5 - UNKNOWN PERENNIAL

SYSTEM
- LACUSTRINE
  SUBSYSTEM
   1 - LIMNETIC
     CLASSESS
     SUBCLASSES
     MODIFIERS
   2 - LITTORAL

SYSTEM
- PAUSSTRINE
  CLASSESS
  MODIFIERS

MODIFIERS
In order to more adequately describe wetland and deepwater habitats one or more of the following modifiers may be applied in the above table of the habitat. The listed modifiers may be added to the ecological system.
LIST OF NATIONAL WETLANDS INVENTORY
MAP DISTRIBUTION OUTLETS FOR THE NORTHEASTERN U.S.

U.S. Fish and Wildlife Service - Region 5

State Outlets (verified 4/97)

CT  Al Levere
     CT Dept. Env'l. Protection
     Natural Resources Center
     Maps and Publication Sales
     79 Elm Street
     Hartford, CT 06106
     860-424-3643

DE  For Quantities of 1-5 Only:
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     Resources
     Wetlands Section
     89 Kings Highway
     P.O. Box 1401
     Dover, DE 19903
     302-739-4591

     For Any Size Order:
     Gerald A. Donovan
     Associates, Inc.
     429 South Governors Avenue
     Dover, DE 19904
     302-674-2903

ME  Bob Tucker
     Maine Geological Survey
     22 State House Station
     Augusta, ME 04333-0022
     207-287-2901

MD  Maryland Geological Survey
     Dale Shelton, Publications
     2300 St. Paul Street
     Baltimore, MD 21218
     410-554-5505

MA  Dennis Swartzwout
     Earth Science Information Office

PA  Blaisdell House
     Univ. of Massachusetts
     Amherst, MA 01003
     413-545-0359
     413-545-2304 FAX

NH  Bea Jilette
     Office of State Planning
     State of New Hampshire
     2 1/2 Beacon Street
     Concord, NH 03301
     603-271-2155

NJ  NJ Dept. Env'l. Protection
     Office of Support Services
     Maps and Publications - CN-420
     Trenton, NJ 08625-0420
     609-777-1038

NY  Institute for Resource
     Information Systems (IRIS)
     Resource Information Lab
     Cornell University
     462 Hollister Hall
     Ithaca, NY 14853
     607-255-4864

RI  Dept. of Environmental Mgmt.
     Div. of Freshwater Wetlands
     235 Promenade Street
     Providence, RI 02908
     401-277-6820

VT  Patty Usle
     Dept. of Env'l. Conservation
     Water Quality Division
     103 South Main St., Bldg. 10-N
     Waterbury, VT 05671-0408
     802-241-3770

WV  Barbara Sargent
     Natural Heritage Program
     WV Div. of Natural Resources
     P.O. Box 67 - Ward Road
     Elkins, WV 26241
     304-637-0245

National Outlet
     Eastern Mapping Center - NCIC
     Earth Science Info. Center
     U.S. Geological Survey
     Reston, VA 22092
     703-648-6045

OR  1-800-USA-MAPS (outside of
     Area Code 703)