

# MAP REPORT: ST.CLAIR RIVER-COASTAL LAKE ERIE UPDATES

## Draft

### INTRODUCTION

The U.S. Fish and Wildlife Service's National Wetland Inventory is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. The Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al is the classification system used to define and classify wetlands. Photointerpretation conventions, hydric soils lists, and wetland plant lists are also available to enhance the use and application of the classifications system.

The purpose of the notes to users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive cross-reference from wetland codes on the map to common terminology and representative plant species; and (3) to explain local geography, climate, and wetland communities.

### FIELD RECONNAISSANCE

#### PROJECT AREA

1:100,000	Quad Name
Detroit NE	New Haven
	New Baltimore
	Marine City
	Mt. Clemens East
	St. Clair Flats
	Algonac
Toledo NW	Monroe
	Stoney Point
	Estral Beach
	Lambertville East
	Erie
	Toledo
	Oregon

### PERSONNEL

Brian Huberty - U.S. Fish and Wildlife Service, Region III  
Richard Eastlake - Greenhorne & O'Mara, Inc.

## **DATE OF FIELD TRIP**

May 13-17, 2002

## **AERIAL PHOTOGRAPHY**

Type: Color Infrared Transparencies NAPP  
Scale: 1:40,000

### Dates

03/17/99

## **COLLATERAL DATA**

U.S.G.S. 1:24,000 Topographic Quads

Soil Surveys of the following counties:

Macomb  
Lucas  
St. Clair  
Monroe

U.S. Fish and Wildlife Service. National List of Plant Species That Occur in Wetlands:  
Michigan

Bailey, Robert G. Descriptions of the Ecoregions of the United States. U.S. Department  
of Agriculture, Forest Service, 1980.

## **DESCRIPTION OF PROJECT AREA**

### **GEOGRAPHY**

The project area is in the Hot Continental Division in Bailey's Eastern Deciduous Forest Province, Beech-Maple Forest Section (1980). 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. 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.

## CLIMATE

This area represents a response to a continental climatic regime that receives adequate precipitation in all months. Average annual precipitation is from 35 to 60 in. (900-1,500mm.). Precipitation is markedly greater in the summer months when evapotranspiration is great and moisture demands are high. Only a small water deficit is incurred 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 degrees-60 degrees F. (4 degrees-15 degrees C.).

## SOILS

Soils are primarily Alfisols, Inceptisols and Ultisols which are rich in humus and moderately leached.

## DESCRIPTION OF WETLAND HABITATS IN PROJECT AREA

### PALUSTRINE SYSTEM

Wetlands in the map area are fairly diverse and are located both in uplands and in river floodplains. Some of the most common wetland classes include temporary to semi-permanently flooded forested, scrub-shrub and emergents. Predominant trees and shrubs of the forested and forested/shrub wetlands include american elm (*Ulmus americana*), red maple (*Acer rubrum*), ash (*Fraxinus* spp.) birch (*Betula papyrifera*), willow (*Salix* sp.), dogwood (*Cornus* sp.) and alder (*Alnus* sp.). Rush (*Juncus* spp.), sedge (*Carex* spp.), bulrush (*Scirpus* spp.) and cattail (*Typha latifolia*) are important plant species of the emergent marshes. Palustrine open water areas were usually impounded or excavated farm ponds. Most of these small ponds are classified as permanently flooded.

### RIVERINE SYSTEM

Permanently flowing rivers and streams are labeled R2UBH. Channelized rivers and ditches are indicated with an 'x' modifier.

### LACUSTRINE SYSTEM

Naturally occurring lakes in the project area are labeled L1UBH. Impounded lakes that cover more than 20 acres are labeled L1UBHh.

TABLE 1

## WETLAND CLASSIFICATION CODES

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/ SUBSTRATE
R2UB (H)	Riverine, lower perennial, unconsolidated bottom	River, canal	Sand, mud
R2AB4 (H)	Riverine, lower perennial, floating aquatic bed	River, canal	<u>Lemna</u> sp. (duckweed)
R2US (A,C)	Riverine, lower perennial, unconsolidated shore	Sand bar	Sand, gravel
R4SB (C,F)	Riverine, intermittent stream bed	Stream, canal	Sand, mud, gravel
L1UB (H)	Lacustrine, limnetic, unconsolidated bottom	Lake	Sand, mud
L2AB4 (H)	Lacustrine, littoral, aquatic bed, floating vascular	Lake	<u>Lemna</u> sp. (duckweed)
PUB (F,H)	Palustrine, unconsolidated bottom	Pond	Sand, mud
PAB3 (F,H)	Palustrine, aquatic bed, rooted vascular	Pond	<u>Nymphaea</u> sp. (water lily)
PAB4 (F,H)	Palustrine, aquatic bed, floating vascular	Pond	<u>Lemna</u> sp. (duckweed)
PEM1 (A)	Palustrine, emergent, persistent, temporarily flooded	Wet prairies	<u>Scirpus</u> sp. (rush) <u>Carex</u> sp. (sedges) <u>Sparganium</u> sp. (burreed)

WETLAND CLASSIFICATION CODES

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/ SUBSTRATE
PEM1 (C,F,H)	Palustrine, emergent seasonally to permanently flooded	Wet prairies, marshes	<u>Typha sp.</u> (cattail) <u>Carex sp.</u> (sedges) <u>Scirpus sp.</u> (bulrush) <u>Sparganium sp.</u> (burreed) <u>Glyceria sp.</u> (mannagrass) <u>Polygonum sp.</u> (smartweed) <u>Eleocharis sp.</u> (rush)
PSS1/4A	Palustrine, scrub shrub, mixed broad-leaved deciduous and pine, temporarily flooded	Scrub, shrubby forest	<u>Salix sp.</u> (willow) <u>Acer rubrum</u> (red maple) <u>Alnus sp.</u> (alder) <u>Cornus stolonifera</u> (red osier dogwood) <u>Populus sp.</u> (aspen) <u>Picea mariana</u> (black spruce) <u>Larix laricina</u> (tamarack) <u>Pinus strobus</u> (northern white pine)
PSS1 (C,F)	Palustrine, scrub shrub, broad-leaved deciduous, seasonally or semi-permanently flooded	Thicket, swamp	<u>Salix sp.</u> (willow) <u>Acer rubrum</u> (red maple) <u>Cornus stolonifera</u> (red osier dogwood) <u>Populus sp.</u> (aspen) <u>Cephalanthus occidentalis</u> (buttonbush)

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/ SUBSTRATE
PFO1 (A,C,F)	Palustrine, deciduous forested, temporarily to semi-permanently flooded	Bottom-land	<u>Populus sp.</u> (aspen) <u>Plantanus occidentalis</u> (sycamore) <u>Fraxinus pennsylvanicus</u> (green ash) <u>Salix sp.</u> (willow) <u>Acer rubrum</u> (red maple) Ulnus americana (American elm) <u>Betula papyrifera</u> (birch) <u>Alnus sp.</u> (alder) <u>Acer negundo</u> (boxelder) <u>Cornus stolonifera</u> (red osier dogwood)
PFO4A PFO1/4A PFO4/1A	Palustrine, forested, broad-leaved deciduous/broad- leaved deciduous-pine mixed, temporarily flooded	Pine forests, pine plantation	<u>Ulnus americana</u> (American elm) <u>Acer rubrum</u> (red maple) <u>Thuja occidentalis</u> (white cedar) <u>Picea mariana</u> (black spruce) <u>Pinus strobus</u> (white pine)

## WATER REGIME DESCRIPTION

- (A) Temporarily Flooded – Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.
- (B) Saturated – The substrate is saturated to surface for extended periods during the growing season, but surface water is seldom present.
- (C) Seasonally Flooded – Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is extremely variable, extending from saturated to a water table well below the ground surface.
- (F) Semi-permanently Flooded – Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.
- (G) Intermittently Exposed – Surface water is present throughout the year except in years of extreme drought.
- (H) Permanently Flooded – Water covers land surface throughout the year in all years.
- (K) Artificially Flooded – The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.

## SPECIAL MODIFIERS

- (x) Excavated – Water lies in or flows through a basin or channel dug by man.
- (h) Impounded – The normal flow of water is impeded by a manmade dike or barrier.
- (s) Spoil – Formed from sediments deposited by dredging operations.

# St. Clair River- Coastal Lake Erie Update

## Photographic Interpretation Conventions

### Draft

#### *I. Riverine System*

The Riverine system categorizes all wetlands that fall within a channel, either naturally or artificially created, except those dominated by vegetative cover or habitats containing more than .05% ocean derived salts. This environment nearly always entails flowing water. This classification encompasses most all of the rivers, streams, and ditches in the work area.

##### A) R2UBH:

#### **Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded.**

The R2UBH classification is used for permanent rivers in the work area. These areas show an open water photo signature. Most of the rivers in this area have a low gradient, slow water velocity, and well-developed floodplains. However, a few rivers in the work area have a slightly steeper gradient with less developed floodplains, but still fall into the R2 subsystem. Portions of perennial and intermittent streams obscured by tree canopy will be classified under the Palustrine System.

##### B) R2USC/R2USA:

#### **Riverine, Lower Perennial, Unconsolidated Shore, Seasonally/Temporarily Flooded.**

Sand and mud flats along the R2UBH rivers will be classified R2USC and R2USA. Their signatures will vary from bluish-gray to white.

##### C) R4SBC:

#### **Riverine, Intermittent, Streambed, Seasonally Flooded.**

Intermittent streams with little or no water visible, will be classified R4SBC. These wetlands must have a clearly discernable streambed, of at least pen-width in size on the aerial photo in order to be delineated. The signature may be blue, blue-gray, or white. R4SBC will not be utilized often within the work area, and mainly it will be used as a connector from wetland polygon to wetland polygon.

## ***II. Lacustrine System***

Lakes and reservoirs larger than 20 acres within the work area will be classified under the lacustrine system. When a beaver dam impedes water flow and creates a pond, it will carry the b modifier. If a road, natural feature, or manmade object impounds a lake or otherwise impedes water flow, it will carry the h modifier. Excavated pits, such as mining pits, containing water will have the x modifier attached.

### **A) L1UBH**

**Lacustrine, Limnetic, Unconsolidated Bottom, Permanently Flooded.**

Limnetic areas include all deep-water habitats within the lacustrine system. The signature of L1UBH is that of open water which has a smooth appearance and a color range from shades of blue to black. Excavated lakes are often surrounded by a white signature, which represents the materials removed from the ground.

### **B) L2USC/L2USA**

**Lacustrine, Littoral, Unconsolidated Shore, Seasonally/Temporarily Flooded.**

Littoral environments include all wetland habitats in the lacustrine system less than 2 meters in depth or to the extent of aquatic vegetation. This classification refers to flat non-vegetated areas along the edges of L1UBH water bodies that are able to be flooded. The signature can range from white to light blue (L2USA) to medium blue-gray (L2USC).

### **C) L2AB3H**

**Lacustrine, Littoral, Aquatic Bed, Rooted Vascular, Semipermanently/Permanently Flooded.** The main species within this classification include water lilies (*Nymphaea* spp.)

This community is usually found in oxbow lakes and impounded lakes. The vegetation returns a smooth textured whitish-pink to pinkish-red signature.

### **D) L2AB4F/L2AB4H:**

**Lacustrine, Littoral, Aquatic Bed, Floating Vascular, Semipermanently/Permanently Flooded.** Duckweed (*Lemna* spp.) is the vegetation that is dominant.

This community is usually found in oxbow lakes, impounded lakes or in beaver ponds. The vegetation signature is a shiny pink.

### ***III. Palustrine System***

Palustrine wetlands comprise the majority of wetland acreage in the study area. The palustrine system includes all wetlands dominated by trees, shrubs, and persistent emergents. Open water and aquatic bed areas smaller than 20 acres and less than 2 meters in depth are also included in this system. When a beaver dam impedes water flow and creates a pond, it will carry the "b" modifier. If a road, natural feature, or manmade object impounds a pond or otherwise impedes water flow, it will carry the "h" modifier. Excavated pits, such as mining pits, containing water will have the "x" modifier attached. Many palustrine wetlands in the work area have been drained for agricultural, logging or urban purposes; these areas will be labeled with a "d" modifier.

#### **A) PFOIA:**

**Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded.** These areas consist mainly of: red maple (*Acer rubrum*), box elder (*Acer negundo*), green ash (*Fraxinus pennsylvanica*), sycamore (*Platanus occidentalis*), alder (*Alnus sp.*) and american elm (*Ulmus americana*).

This classification found along along natural drainages and occasionally in small shallow depressions on upland flats. In leaf-off photography, the deciduous trees have a gray-green overstory signature, which is typically mottled with a light understory.

#### **B) PFOIC:**

**Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded.** These areas are dominated by: american elm (*Ulmus americana*), red maple (*Acer rubrum*), river birch (*Betula nigra*), green ash (*Fraxinus pennsylvanica*), and tamarack (*Larix laricina*).

This community is found along natural drainages, depressions and river floodplains. The winter photography usually captures these areas with standing water, which gives them a darker gray-green return than the PFOIA with a darker understory present.

#### **C) PFOIF:**

**Palustrine, Forested, Broad-Leaved Deciduous, Semipermanently Flooded.** The trees in these areas mainly consist of: red maple (*Acer rubrum*), alder (*Alnus serrulata*), american elm (*Ulmus Americana*), birch (*Betula papyrifera*) and red osier dogwood

(*Cornus stolonifolia*).

This wetland type usually occurs in river floodplains, oxbows, sloughs, and ponds impounded by beaver dams. Standing water is usually present underneath the tree canopy. This deciduous vegetation returns a dark gray-blue to dark black signature. At these sites, little to no understory is visible due to the presence of standing water.

D) PSS1A:

**Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Temporarily Flooded.** This classification consists mainly of juvenile species less than 20 feet in height such as red maple (*Acer rubrum*), and willows (*Salix* spp.).

This wetland type is often found in river floodplains or along riverbanks. In leaf-off photography, the deciduous vegetation usually generates a rough textured gray-green or brownish-green signature. Often small amounts of evergreen or semi-evergreen vegetation are found in the area, which return a few mottled patches of rough textured, pinkish-red crowns.

E) PSS1C:

**Palustrine, Scrub-Shrub, Broad-Leaved, Deciduous, Seasonally Flooded.** Some of the juvenile species encountered here include: red maple (*Acer rubrum*), willows (*Salix* spp.), river birch (*Betula nigra*) and american elm (*Ulmus americana*).

This community type is found within river flood plains and drainages. In leaf-off photography, the deciduous vegetation usually generates a slightly rough textured, gray-green or brownish-green signature, darker than PSS1A.

F) PSS1F:

**Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Semipermanently Flooded.** Juvenile species in this classification mainly include: red maple (*Acer rubrum*), alder (*Alnus serrulata*) and willow (*Salix* spp.).

This community type usually occurs on vegetated riverbanks within oxbows and sloughs, and is also found near vegetated lakes impounded by small beaver dams. This deciduous vegetation appears rough textured, with a dark gray-blue to dark black signature in leaf-off photography. Usually small standing water pockets generate dark gray to black signatures visible through the vegetation canopy.

G) PEMIA:

**Palustrine, Emergent, Persistent, Temporarily Flooded.** The vegetation consists mainly of: soft rushes (Juncus effuses), burreed (Sparganium sp), rushes (Scirpus spp.) and sedges (Carex spp.).

This vegetation is found in river floodplains and around lakes with fluctuating seasonal water elevation. This plant community generates a smooth textured, brownish-green to grayish-green signature.

H) PEMIB:

**Palustrine, Emergent, Persistent, Saturated.** The emergent vegetation that occurs most frequently here is: soft rushes (Juncus effuses), burreed (Sparganium sp), rushes (Scirpus spp.) and broad leaf cattail (Typha latifolia)

This wetland community is associated with lakes, ponds, depressional areas, and slopes. The signature will be smooth textured, and have a dark bluish-green to grayish-green color. Some signatures also have a white appearance, which is indicative of dead vegetation or deteriorating terminal ends.

I) PEMIC:

**Palustrine, Emergent, Persistent, Seasonally Flooded.** The dominant vegetation mainly consists of: rushes (Scirpus spp.) broad leaf cattail (Typha latifolia) and various rushes (Juncus spp.).

This vegetation is found around or in lakes with seasonal water elevation fluctuations, as well as within river floodplains. The signature will be smooth textured, and have a dark bluish-green to grayish-green color. Some signatures also have a white appearance, which is indicative of dead vegetation or deteriorating terminal ends.

J) PEMIF:

**Palustrine, Emergent, Persistent, Semipermanently Flooded.** This community consists mainly of: cattail (Typha latifolia), sedges (Carex spp.), bulrushes (Scirpus spp.), and various rushes (Juncus spp.).

This wetland type is associated with oxbow lakes, stagnant sloughs and ponds. The vegetative cover is found near the edges, and within bodies of water. This vegetation usually produces a smooth, dark gray-green signature with patches of open water. Some signatures also have a white appearance, which is indicative of dead vegetation or deteriorating terminal ends.

K) PAB3F/PAB3H:

**Palustrine, Aquatic Bed, Rooted Vascular, Semipermanently/Perm-anently Flooded.** The main species within this classification include water lilies (Nymphaea spp.).

This community is usually found in oxbow lakes, impounded lakes or in beaver ponds. The vegetation generates a smooth textured, blackish-green or whitish-pink signature.

L) PAB4F/PAB4H:

**Palustrine Aquatic Bed, Floating Vascular, Semipermanently/Perm- anently Flooded.** Duckweed (Lemna spp.) is the vegetation that dominates these areas.

This community is usually found in oxbow lakes, impounded lakes or in beaver ponds. The vegetation signature is a shiny pink.

M) PUSC/PUSA

**Palustrine, Unconsolidated Shore, Seasonally/Temporarily Flooded.**

This classification refers to flat non-vegetated areas smaller than 20 acres, or non-vegetated areas along the edges of ponds and rivers. The signature can range from white to light blue (PUSA) to medium blue-gray (PUSC).

N) PUBH:

**Palustrine, Unconsolidated Bottom, Permanently Flooded.**

This classification refers to open bodies of water smaller than 20 acres and less than two meters in depth. These areas are often diked or impounded through man-made structures and carry the "h" modifier. Many isolated small ponds in the agricultural areas are also man-made and will carry the "x" modifier. Excavated pits, such as mining pits, containing water will also have the "x" modifier attached. Typically the "d" modifier is associated with agricultural fields that have been drained in an attempt to create better farming practices. The open water signature is a smooth light blue to black.