

# NATIONAL WETLANDS INVENTORY

## NOTES TO USERS

for the following 1:100,000 scale mapping quadrangles:

Atmore (Andalusia SW)	Fort Walton Beach (Pensacola SE)
Bay Minette (Pensacola NW)	Mobile (Mobile NE)
Biloxi (Mobile SE)	Monroeville (Andalusia NW)
Citronelle ( <u>Hattiesburg</u> SE)	Pensacola (Pensacola SW)
Crestview (Pensacola NE)	Waynesboro ( <u>Hattiesburg</u> NE)

### INTRODUCTION

In 1974, the U.S. Fish and Wildlife Service directed its Office of Biological Services to conduct an inventory of the nation's wetlands. This National Wetlands Inventory (NWI) became operational in 1977.

Wetland delineations depicted on these maps were produced by stereoscopically interpreting high altitude aerial photography and then transferring this information with a zoom transfer scope to an overlay using the U.S. Geological Survey 7.5' or 15' map series as base information.

Wetlands were identified on the photography by vegetation, visible hydrology, and geography, and subsequently classified in general accordance with Cowardin et al. Classification of Wetlands and Deep Water Habitats of the United States. Where, for pragmatic reasons, strict adherence to this classification system was not possible, mapping conventions developed by NWI were used.

## MAP PREPARATION

All wetland maps in this study area were produced using 1:60,000 color infrared photographic transparencies. Photographs taken during November of 1979 were used in the Bay Minette, Biloxi, Crestview, Fort Walton Beach, Mobile, and Pensacola quadrangles; photographs taken during March and April of 1980 were used for the Citronelle and Waynesboro quadrangles; and photographs taken during January, February, and March of 1981 were used for the Atmore and Monroeville quadrangles. Photography was taken by the National Aeronautic and Space Administration and the National High Altitude Photography Program.

Field checking was conducted on the following dates:

September 2-5, 1980

November 17-21, 1980

February 23-27, 1981

July 20-24, 1981

July 27-30, 1981

November 9-13, 1981

Field checking generally was conducted from south to north.

Collateral information used in this mapping effort included U.S. Geological Survey topographic maps, Soil Conservation Service soil surveys for Santa Rosa and Escambia Counties in Mississippi, and Baldwin, Mobile, and Escambia Counties in Alabama, and National Oceanographic and Atmospheric Administration coastal charts.

## SPECIAL MAPPING PROBLEMS

Several problems were encountered in this project and are discussed below.

- (1) Waterward extent of Estuarine System. The Estuarine System was extended to some offshore intertidal beaches/bars to incorporate any vegetated wetlands into the Estuarine System.
- (2) Landward extent of Estuarine System. This was extended upstream until contiguous vegetation became dominated by woody growth.
- (3) Extent of tidal influence upstream. This was a best guess based on available data and personal communications.
- (4) Determining unvegetated intertidal areas. This was complicated by the disturbances of Hurricane Frederick and, therefore, a very conservative identification of intertidal areas was made.
- (5) Distinguishing needle-leaved deciduous forest (cypress) from broad-leaved deciduous forest (tupelo). Attempts were made, particularly in the southern area of this study area, to make this distinction, however, misidentification may be somewhat high. The semi-permanent or a wetter water regime often will indicate habitats dominated by tupelo and/or cypress.
- (6) Delineation of extensive areas that had been burned by arsonists, for silvaculture, or by naturally occurring fires. These burns obscured

vegetation and wetland signatures and because of this, some delineations had to be interpolated in conjunction with photographic signatures, hydrology, and vegetation from surrounding unburned areas.

- (7) Proper classification of areas near the coast where Hurricane Frederick had damaged or killed the vegetation. This was particularly a problem in determining subclasses for the remnant woody growth. Often the Dead Subclass was employed.
- (8) Identifying farmed wetland. Initially, farmed depressions locally known as "Grady Ponds" were identified as wetland; however this classification was later changed to identify these areas as upland. Any Palustrine farmed wetland (Pf) remaining on the maps is an oversight.
- (9) Identifying beaver impoundments. Although many areas were observed to be impounded, it was unclear whether this was a result of activities by man<sup>(h)</sup> or beaver<sup>(b)</sup>. Therefore, considerable error probably is present in these identifications and these two special modifiers should be considered collectively.

#### STUDY AREA

The study area includes that portion of the Florida Panhandle west of 86° west longitude, all of Alabama south of 32° north latitude and west of 87° west longitude, and that portion of Mississippi from 31° to 32° north latitude and 88° to 89° west longitude. The southern boundary is the Gulf of Mexico and the northern boundary extends approximately 125 miles

inland. The study area encompasses approximately 84,300 square miles of land and water in these three states (7,200 miles<sup>2</sup> in Florida; 10,200 miles<sup>2</sup> in Alabama; and 2,100 miles<sup>2</sup> in Mississippi).

The majority of this area is rural with agriculture and forestry being important industries. Major agricultural crops are corn, soybeans, cotton, potatoes, peanuts, small grains, pasture grasses, and pecans, with some tung trees and nursery stock also grown. Livestock grown in this area includes dairy and beef cattle, hogs, and poultry. The southern portion of this area is more urban and the two major ports of Mobile and Pensacola are located here. Manufacturing, military operations, tourism, and seafood are important industries here. Local quarries are located throughout the area and produce sand and gravel, clay, and agricultural limestone. Oil and natural gas also are important resources of this area.

The climate in this area is humid and temperate with hot summers and mild winters. Prevailing winds generally are from the south and southwest during spring and summer and bring moist tropical air. During the fall and winter, these winds generally are from the north and northwest. Summer temperatures average about 80<sup>o</sup>F with it being colder inland where the Gulf of Mexico has less effect. The growing season is up to 300 days near the coast and decreases to about 260 days inland. This season approximately is from the end of February to the beginning of December. Rainfall averages range from 56-65 inches/year with more precipitation occurring along the coast. This precipitation generally is ample year round although droughts do occur. October is the driest month throughout the study area while other monthly patterns vary depending on the proximity to the Gulf. Most summer

and early fall precipitation falls as thundershowers. Occasional tropical depressions can result in prolonged summer rains.

Bailey categorizes the ecoregion of most of this area as:

Division: Humid Subtropical

Province: Outer Coastal Plain

Section: Beech-Sweetgum-Magnolia-Pine-Oak Forest

The extreme northern part of the study area is categorized in the same Division, but the Province is described as Southern Mixed Forest.

According to Hammond's physical subdivisions, all of this area is classified in the Gulf Atlantic Division. Two Land Surface Forms are recognized: Coastal Flats and Rolling Plain. The former is characterized by Flat Plains where more than 80% of the area is gently sloping and the relief is 0-100 feet. This class is located approximately 25 miles inland from the Gulf, encompasses Mobile Bay and extends about 50 miles north through the Mobile Delta. Most of the remainder of the area is classified in the Rolling Plain Subdivision. This subdivision is further broken down into the Irregular Plains Class where 50-80% of the area is gently sloping and relief is 100-300 feet, and a small area of Open Hills and Open Low Hill Classes where relief ranges from 100-500 feet.

A variety of drainage morphologies are present in this area. In the northern more undulating terrain, well developed dendritic drainages with wide floodplains along the major rivers are present; however, there are local areas where a clay layer underlies sand and this lateral drainage results in seepy areas and

springs where the clay layer outcrops. Near the coast, the level terrain results in low stream terraces and swamps along the rivers. The drainage system in this area is much less developed. Principle drainages in Florida include the Choctawhatchee River that originates from east of the study area and empties into Choctawhatchee Bay; the Shoal, Yellow, Blackwater, and Escambia Rivers that empty into Pensacola Bay; and the Perdido River which forms the Florida-Alabama border and empties into Perdido Bay. In Alabama east of Mobile Bay the Blackwater\* and Styx Rivers also empty into Perdido Bay while the Fish River empties into Bon Secour Bay. Most of the remainder of the study area in Alabama is drained by the Alabama and Tombigbee Rivers. These rivers eventually empty into Mobile Bay after passing through the Mobile Delta and breaking up into many distributaries. The principle drainage in the Mississippi portion of the area is the Chickasawhay River complex that combines with the Leaf River to form the Pascagoula River in the extreme southwest portion of the study area. The Pascagoula River eventually empties into Mississippi Sound.

## SOILS

Three orders of soils are found in this area: Spodosols, Inceptisols, and Ultisols. The Spodosols are located in the extreme southwest part of the study area, primarily south of the Choctawhatchee River. These soils are further classified in the Aquods Suborder, and the Haplaquods Great Group. The Inceptisols are found as a 20 mile band that borders the Gulf Coast from west of Pensacola Bay to the Alabama-Mississippi border. These soils

extend inland along the Tombigbee River approximately 20 miles wide to the northern edge of the study area and as a 30-mile by 20-mile area north of where the Leaf and Chickasawhay Rivers converge. These Inceptisols are of the Aquepts Suborder and the Haplaquepts Great Group. The remainder of the soils in this area are classified in the Udults Suborder of the Ultisols Order. Most of these are of the Paleudults Great Group with small areas of the Hapludults Great Group also being present.

### WETLAND COMMUNITIES

The following are regularly used alphanumeric codes found on the wetland maps. A general description and/or community type, including dominant vegetation, also is provided:

#### Marine System

- M10WL - Subtidal, high-energy, open ocean generally without vegetation
- M2BB\_\_ - Beaches exposed to high-energy wave action. The water regime for these areas varies from irregularly exposed (M), to regularly flooded (N), to irregularly flooded (P).

#### Estuarine System

- E10WL - Subtidal, low-energy, brackish water of sounds, bays and stream channels generally without vegetation.

- E2BB\_\_ - Intertidal beaches and bars located in the somewhat protected environment of bays and sounds. Water regimes are as those listed under M2BB\_\_.
- E2FL\_\_ - Intertidal flats located in low-energy environments of sounds and bays. Water regimes are as those listed under M2BB\_\_.
- E1AB6L - Subtidal aquatic beds or grass flats. Dominant vegetation includes turtle grass (Thalassia testudinum), widgeon grass (Ruppia maritima), and shoal grass (Halodule beaudettei). Associated species are manatee grass (Cymodocea filiformes), Halophila spp., and macroscopic algae. The alpha-numeric E2AB6M indicates those areas that are occasionally exposed by extreme low water.
- E2EM5P - Irregularly flooded brackish marsh. These areas are typically dominated by narrow-leaved emergents such as black needle rush (Juncus roemerianus), smooth cordgrass (Spartina alterniflora), big cordgrass (S. cynosuroides), saltmeadow cordgrass (S. patens), three-corner grass (Scirpus olneyi), leafy three-square (S. maritimus) giant bulrush (S. californicus), sawgrass (Cladium jamaicense), saltgrass (Distichlis spicata), reed (Phragmites australis), and cattail (Typha spp.).
- E2EM5/FLU - Estuarine emergent wetland interspersed with open flats where the water regime is unknown. These are areas where the emergent

canopy was opened up by Hurricane Frederick resulting in these highly interspersed cover types that could not be separately mapped.

- E2SS1P - Irregularly flooded, broad-leaved deciduous shrubs usually located landward of the brackish marshes. The most prevalent species are groundsel-tree (Baccharis halimifolia), marsh elders (Iva frutescens, I. imbricata) and sea ox-eye (Borrchia frutescens).
- E2SS3P - Irregularly flooded, broad-leaved evergreen shrubs. The dominant species is waxmyrtle (Myrica cerifera).
- E2SS4P - Irregularly flooded, needle-leaved evergreen shrubs dominated by slash pine (Pinus elliotii).
- E2SS5P - Irregularly flooded shrubs killed by the storm surges of Hurricane Frederick.
- E2SS7P - Irregularly flooded, evergreen shrubs where both broad-leaved and needle-leaved evergreen shrubs are present or the distinction could not be made from the photography.
- E2F04P - Irregularly flooded, needle-leaved evergreen forest dominated by slash pine (Pinus elliotii). Typically an open canopy is present with interspersions of black needle rush (Juncus roemerianus).

- E2F05P - Irregularly flooded dead timber, usually slash pine (Pinus elliotii) killed by the storm surges of Hurricane Frederick.

### Lacustrine System

- L10WH - Permanently flooded, limnetic, sink-hole lakes. The addition of the impounded ("h") special modifier indicates a reservoir.
- L2FLC - Seasonally flooded lake flats. These areas usually result from natural drawdowns during dry periods and typically are devoid of vegetation.
- L2BBC - Seasonally flooded lake beaches typically devoid of vegetation.
- L2AB4G,  
L2AB4H - Intermittently exposed to permanently flooded, floating-leaved aquatics growing in shallow water. The most prevalent species include fragrant water lily (Nymphaea odorata), water shield (Brasenia schreberi), American lotus (Nelumbo lutea), spatterdock (Nuphar luteum), and frog's-bit (Limnobium spongia).
- L2AB5G,  
L2AB5H - Intermittently exposed to permanently flooded floating aquatics growing in shallow water. Dominant species include water hyacinth (Eichhorria crassipes), duckweeds (Lemna spp., Spirodela spp.), water meals (Wolffia columbiana, Wolffiella floridana), and waterfern (Azolla spp.).

- L2AB6H - Permanently flooded, submerged aquatics growing in shallow water. The dominant vegetation can be rooted or free-floating below the water surface and includes macroscopic algae (Pithophora spp., Chara spp., Nitella spp.), bladderworts (Utricularia spp.), naiads (Najas spp.), watermilfoils (Myriophyllum spp.), hydrilla (Hydrilla verticillata), Eleodea spp., fanworts (Cabomba spp.) and pondweeds (Potamogeton spp.).
- L2AB7G, - Intermittently exposed to permanently flooded surface aquatics  
L2AB7H growing in shallow water. Vegetation is free-floating (L2AB85-) and/or floating-leaved (L2AB4-).

#### Riverine System

- R10WV - Permanently flooded, tidal, open water rivers and streams.
- R20WH - Permanently flooded, lower perennial rivers and streams.
- R2FLA, - Temporarily to seasonally flooded river flats typically  
R2FLC unvegetated.
- R2B8A, - Temporarily to seasonally flooded river bars. These areas  
R2B8C usually are unvegetated and occur on the convex side of river meanders.
- R2AB4H - As for L2AB4H but occurring within a channel.

R2AB5H - As for L2AB5H but occurring within a channel.

R2AB6H - As for L2AB6H but occurring within a channel.

R2AB7H - As for L2AB7H but occurring within a channel.

### Palustrine System

POWH - Permanently flooded, small open water ponds. The impounded modifier ("h") indicates open water areas behind dammed streams while the excavated modifier ("x") indicates small dugouts and borrow pits. Photographically identifiable beaver activity in these areas is indicated by the "b" modifier. A special mixed alphanumeric (POWH/σ) represents fish hatchery ponds.

PAB4G, - As for L2AB4G and L2AB4H, but with an aerial coverage of less  
PAB4H than 20 acres.

PAB5G, - As for L2AB5G and L2AB5H, but with the aerial coverage of less  
PAB5H than 20 acres.

PAB6H - As for L2AB6H, but with the aerial coverage of less than 20 acres.

PAB7G, - As for L2AB7G and L2AB7H, but with the aerial coverage of less  
PAB7H than 20 acres.

PEM1A - These temporarily flooded emergent communities present outside

of the lower coastal plain are usually recently logged bottomland or pastured bottomland. These former areas may reflect this disturbance and support many "weed" species as dogfennels (Eupatorium spp.), goldenrods (Solidago spp.), pokeweeds (Phytolacca spp.), sticktight (Bidens laevis) and Aster spp. while the latter areas are dominated by pasture grasses with smartweeds (Polygonum spp.) and sedges (Carex spp. and Cyperus spp.) often present. In areas of intensive grazing, soft rush (Juncus effusus) will be very prevalent.

PEM5A - Temporarily flooded, persistent emergents. The most extensive areas of this sort are located on the lower coastal plain and are often termed savannahs or wet meadows. Unless sustained by frequent fire, these areas are quickly invaded by evergreen shrub growth (see PSS7) eventually resulting in an open canopy of pine (see PF04A). Often wiregrass (Aristida stricta) will be the dominant emergent, particularly under natural conditions. In addition, other common species include orchids (Habenaria spp., Calopogon tuberosum, Spiranthes spp.), pipeworts (Eriocaulon spp.), hairy pipewort (Lachnocaulon anceps), yellow star-grass (Aletris aurea), yelloweyed grasses (Xyris spp.), meadow beauties (Rhexia spp.), milkworts (Polygala spp.), seedboxes (Ludwigia spp.), white-top sedges (Dichromena spp.), pinks (Sabatia spp.), goldenrod (Solidago spp.), rayless goldenrod (Bigelovia nudata), coastal broomsedge (Andropogon glomeratus), Aster spp., cane (Arundinaria gigantea), and beakrushes (Rynchospora spp.). Several species listed under

PEM1B also will occur in this habitat. Often there is greater than 30% evergreen shrub canopy and a mixed cover type is used (PSS7/EM1A).

PEM1B, - Saturated persistent emergents. Very often when supporting  
PEM5B greater than a 30% canopy of evergreen shrubs, this community is described with an alphanumeric mixture (PSS7/EM1B, PSS7/EM5B; See descriptions under PSS7) and are commonly referred to as pitcher-plant bogs. Photographically the distinction between this community and that described under PEM1A is difficult to discern; however, an attempt was made to identify this wetter community where pitcher-plants (Sarracenia spp.), sundews (Drosera spp.), clubmosses (Lycopodium spp.), Sphagnum spp., and red-root (Lachnanthes caroliniana) become important members of the community. Most of those species listed under PEM1A also will be found here. Fire is an important ecological influence in the maintenance of this community.

PEM1C, - Seasonally to semipermanently flooded, persistent, emergent  
PEM1F marshes. These are deep marshes that exhibit standing water for long periods during the growing season. Prevalent vegetation includes Sagittaria spp., bulrushes (Scirpus spp. with S. cyperinus very prevalent), pickerelweed (Pontederia cordata), soft rush (Juncus effusus), sawgrass (Cladium jamaicense), Hibiscus spp., smartweeds (Polygonum spp.), maidencane (Panicum hemitomon), Switchgrass (Panicum virgatum),

sugarcane plumegrass (Erianthus giganteus), golden club, (Orontium aquaticum), arrow-arum (Peltandra virginica), alligatorweed (Alternanthera philoxeroides), lizard's tail (Saururus cernuus), cattails (Typha spp.), elephant's ear (Colocasia antiquorum), sedges (Carex spp., Cyperus spp.), spikerushes (Eleocharis spp.), burreed (Sparganium americanum), spiderlily (Hymenocallis caroliniana), southern wild rice (Zizaniopsis miliaces), cutgrasses (Leersia spp.).

- PSS1A - Temporarily flooded, broad-leaved deciduous shrubs. Most often this represents cleared bottomland with the dominant species being regenerating trees (see PF01A).
- PSS1C,  
PSS1F - Seasonally to semipermanently flooded, broad-leaved deciduous shrub swamps. Dominant vegetation usually is willows (Salix spp.), smooth alder (Alnus serrulata), buttonbush (Cephalanthus occidentalis), deciduous holly (Ilex decidua), coastal pepper bush (Clethra alnifolia), dogwoods (Cornus spp.), and elderberry (Sambucus canadensis), in addition to saplings less than 20 feet tall (see PF01C, PF01F).
- PSS2C,  
PSS2F - Seasonally to semipermanently flooded, needle-leaved deciduous shrub swamp. This represents either stunted cypress (Taxodium distichum) or cypress regeneration. This cover type is used most often near the coast where the pond cypress variety is found.

PSS3A - Temporarily flooded, broad-leaved evergreen shrubs. This cover type is often used in combination with the emergent class to describe many savannahs (PSS3/EM5A) where fire maintains an open canopy. Dominant species include waxmyrtles (Myrica cerifera, M. heterophylla), greenbriars (Smilax spp.) hollies (Ilex glabra, I. coriacea, I. vomitoria), and saw palmetto (Serenoa repens). Sweet bay (Magnolia virginiana), fetterbush (Lyonia lucida) red bay (Persea borbonia), loblolly bay (Gordonia lasianthus), and titi (Cyrilla racemiflora) also are represented, however, these species often become shrub community dominants under wetter conditions.

PSS3B - Saturated, broad-leaved evergreen shrubs. This cover type is very prevalent on hillside seeps and drainage ways. Titi (Cyrilla racemiflora), buckwheat tree (Cliftonia monophylla), sweet bay (Magnolia virginiana), red bay (Persea borbonia), and waxmyrtles (Myrica spp.) are the dominant shrubs, but most others listed under PSS3A may also be present.

This alphanumeric is often mixed with the emergent class (PSS3/EM1B) to represent many of the pitcher-plant bog communities. Here, false cypress (Hypericum fasciculatum) and hollies (Ilex spp.) become very prevalent along with most of the other above-mentioned species.

- PSS3C, - Seasonally to semipermanently flooded, broad-leaved evergreen  
PSS3F shrubs. Many of these areas are locally termed "titi swamps"  
with titi (Cyrilla racemiflora) and buckwheat tree (Cliftonia  
monophylla) being the dominant species. Various bays also are  
well represented.
- PSS4A - Temporarily flooded, needle-leaved evergreen shrubs. This  
usually indicates planted slash pine (Pinus elliottii)  
saplings and sometimes is used in a cover type mix with  
broad-leaved evergreen shrubs (PSS4/3A).
- PSS4B - Saturated, needle-leaved evergreen shrubs. This usually is  
used in pitcher-plant bogs where pine planting has occurred.  
This habitat sometimes is described as a mix (PSS4/3B,  
PSS4/EM1B).
- PSS4C - Seasonally flooded, needle-leaved evergreen shrubs. These  
pine areas are wetter than that described under PSS4A and  
often are classified as a mix (PSS4/3C). Many of these  
areas also are planted.
- PSS5\_\_ - Dead shrub swamps usually found under very wet conditions  
due to impoundments by man or beaver, or near the coast  
as a result of storm surges from Hurricane Frederick.
- PSS7\_\_ - Evergreen shrubs existing in a variety of water regimes. This  
alphanumeric usually indicates a mixed cover type with both

broad-leaved evergreen (PSS3\_\_\_\_) and needle-leaved evergreen (PSS4\_\_\_\_) shrubs being present. The two alphanumeric combinations most often used are PSS7/EM1A representing savannahs or lower coastal plain meadows and PSS7/EM1B representing pitcher plant bogs.

PF01A, - Temporarily to seasonally flooded, broad-leaved deciduous  
PF01C forests. This alphanumeric indicates southern mixed hardwoods and flood plain forests. These bottomland hardwoods are composed of numerous species including red maple (Acer rubrum), tulip tree (Liriodendron tulipifera), water oak (Quercus nigra), white oak (Q. alba), swamp chestnut oak (Q. michauxii), cherrybark oak (Q. falcata var. pagodaefolia), Nuttall's oak (Q. nutallii), shumard oak (Q. shumardii), willow oak (Q. phellos), hackberry (Celtis occidentalis), sugarberry (C. laevigata), black gum (Nyssa sylvatica), river birch (Betula nigra), sweetgum (Liquidambar styraciflua), box elder (Acer negundo), silver maple (A. saccharinum), honey locust (Gleditsia triacanthos), pignut hickory (Carya glabra), mockernut hickory (C. tomentosa), basswood (Tilia americana), red mulberry (Morus rubra), ironwood (Carpinus caroliniana), and persimmon (Diospyros virginiana).

In the wetter habitats many other water tolerant tree species become prevalent. Although most of the above mentioned trees also will be observed, there is a marked increase in several species of oak such as laurel oak (Quercus laurifolia) and

overcup oak (Q. lyrata). Ashes such as water ash (Fraxinus caroliniana), green ash (F. pennsylvanica), and pumpkin ash (F. profunda) also become more dominant in the overstory. Additional water tolerant species include silver maple (Acer saccharinum), bald cypress (Taxodium distichum), water tupelo (Nyssa aquatica), swamp black gum (N. sylvatica var. biflora), ogeechee tupelo (N. ogeche), Drummond's red maple (Acer rubrum var. drummondii), water hickory (Carya aquatica), American elm (Ulmus americana), and water locust (Gleditsia aquatica).

Several bottomland species are consistently observed as the dominant vegetation of overgrown sandbars. Although not restricted to this habitat the dominant species are willow (Salix spp.), cottonwoods (Populus deltoides, P. heterophylla), and sycamore (Platanus occidentalis).

- PF01B - Saturated, broad-leaved deciduous forest. This community occurs along seepage areas on relatively steep slopes. Major deciduous trees are swamp black gum (nyssa sylvatica var. biflora); ogeechee tupelo (N. ogeche) and red maple (Acer rubrum); however, usually co-dominates exist in the form of broad-leaved evergreens (PF01/3B) and needle-leaved evergreens (PF01/4B).
- PF02C, - Seasonally to semipermanently flooded cypress (Taxodium  
PF02F distichum) swamps.

- PF06E - Seasonally flooded/saturated broad-leaved deciduous forest. This alphanumeric is used only near the mouth of the Choctawhatchee River and the Mobile Bay Delta to denote very wet seasonally flooded swamps where the surface water is gone before the end of the growing season, however, the soil remains saturated. These areas are dominated by swamp black tupelo (Nyssa sylvatica var. biflora), water tupelo (N. aquatica), ogeechee tupelo (N. ogeche) and cypress (Taxodium distichum). Associated species may include Drummond's red maple (Acer rubrum var. drummondii), water hickory (Carya aquatica), planer-tree (Planera aquatica) and overcup oak (Quercus lyrata).
- PF06F - Semipermanently flooded, deciduous forest. These areas usually occur as depressions in flatwoods or river flood plains such as old oxbows and are dominated by the various species of tupelo and cypress enumerated under PF01E. Flatwood depressions are characteristically dominated by the swamp black gum (Nyssa sylvatica var. biflora) and/or cypress (Taxodium distichum).
- PF03A - Temporarily flooded, broad-leaved evergreen forest. These areas support species such as live oak (Quercus virginiana) and southern magnolia (Magnolia grandiflora).
- PF03B - Saturated, broad-leaved evergreen forest. This community occurs on relatively steep slopes of watercourses and seepage

areas. Representative species include red bay (Persea borbonia), sweet bay (Magnolia virginiana), loblolly bay (Gordonia lasianthus), buckwheat tree (Cliftonia monophylla) and swamp cyrilla (Cyrilla racemiflora). Usually these species are co-dominant with broad-leaved deciduous trees (PF03/1B) or needle-leaved evergreens (PF03/4B).

PF03C, - Seasonally to semipermanently flooded, broad-leaved evergreen  
PF03F forest. These areas are typically referred to as "titi swamps" and "bayheads." Species composition is as that listed under PF03B.

PF04A - Temporarily flooded needle-leaved evergreens usually dominated by either loblolly (Pinus taeda) or slash pine (P. elliottii). Often these areas are planted.

This dominance type may be mixed with emergents (PF04/EM1A) to represent open savannahs. Species here include the above-mentioned pines in addition to longleaf pine (Pinus palustris). The understory is as that described under PEM1A. A PF04/SS3A mixture represents a suppressed fire habitat where broad-leaved evergreen shrubs (see PSS3A) have replaced the emergent canopy.

Higher "islands" in river floodplains often support mixed stands of pines and hardwoods (PF04/1A). Along major streams this usually consists of loblolly pine (Pinus taeda) in combination with hardwood species described under PF01A.

PF04B - Saturated, needle-leaved evergreen forest. This cover type describes hillside seeps and pitcher plant bogs. The former is usually indicated as a mix with broad-leaved evergreens, either trees or shrubs (PF04/3B; PF04/SS3B). The latter often involves planted pines in pitcher plant bogs when, usually, slash pine (Pinus elliottii) is the canopy dominant. Often this cover type is mixed with emergents (PF04/EM1B) to describe natural, open canopy, pine flatwoods.

Lower or mixed canopy vegetation is as that listed under PF01B, PF03B, PSS3B, PEM1B, and PEM5B.

PF04C - Seasonally flooded, needle-leaved evergreen forest. When described as the sole canopy the dominant vegetation usually is planted slash (Pinus elliottii) or loblolly pine (P. taeda). Most often this dominance type is described as a mixture with broad-leaved evergreen trees (PF04/3C) or shrubs (PF04/SS3C) with the dominant needle-leaved tree being slash pine (Pinus elliottii) and the co-dominants as those described under PF03C and PSS3C.

Many drainage ways and stream bottoms are described as a mixture of either loblolly or slash pines with bottomland hardwoods identified under PF01A, PF01C.

PF07\_\_ - Evergreen forest existing in a variety of water regions. The evergreen subclass indicates that both needle-leaved

(PF04\_\_\_) and broad-leaved (PF03\_\_\_) evergreens are present with neither exhibiting a clear dominance. This alphanumeric is usually used in combination with deciduous trees (PF07/6) indicating a large diversity of broad-leaved evergreen; needle-leaved evergreen, broad-leaved deciduous and needle-leaved deciduous trees.

SPECIAL MODIFIERS:

- "b" - Beaver: Beavers are very active in most parts of the Northeast Gulf Coast. These activities often result in dead timber (trees (PF05\_\_\_) or shrubs (PSS5\_\_\_)), opening of canopies, or mono-specific stands of tulepo (Nyssa spp.) and/or cypress (Taxodium sp.) because of the death of lesser water tolerant species.
- "d" - Partially Drained/Ditched: Since most of the study area was forested, this modifier was extremely difficult to use because of the closed canopies obscuring interpretation ability. Therefore, this modifier is primarily used on wetlands surrounded by cleared land that exhibits an existing ditch and within low growth wetlands such as bogs where the ditches are visible.

Field investigation revealed that most forested areas also are ditched. One particular form is "hipping" where the soil is turned over resulting in alternating crests and troughs. Pines are subsequently planted on the elevated "hips". Since these

"hips" were not photographically identifiable and closed canopies obscured all but the larger ditches, no attempt was made to indicate ditched forested wetland.

- "h" - Diked/Impounded: This is used to indicate reservoirs and small impoundments or ponds. Some impoundments may be unidentified beaver activity; therefore, some wetlands with the "h" modifier would, in fact, be better described with the "b" modifier.
- "s" - Spoil: This denotes wet spoil derived from channel dredging.
- "x" - Excavated: This usually is applied to ditches and small ponds or borrow pits. Many of these ponds and pits are vegetated.