

NATIONAL WETLANDS INVENTORY

NOTES TO USERS

for the
Inverness (Tarpon Springs NE) Sarasota (Tampa II)
Saint Petersburg (Tampa I) Tarpon Springs (Tarpon Springs SE)
1:100,000 Scale Map Areas

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

These four wetlands maps were produced using color infrared photography taken primarily in 1972. Limited amounts of photography taken during 1973 and 1975 also were used. Due to the proximity to the headquarters of the National Wetlands Inventory, numerous investigative and training field trips were taken from 1977 to 1979 and no attempt will be made to list these. Collateral information used includes county soil surveys, topographic maps, NOAA charts, Vegetation and Land Use Maps produced by the Center for Wetlands located at the University of Florida, and some local studies from phosphate mining companies, parks, etc.

SPECIAL MAPPING PROBLEMS

1. Photography. The photography taken in 1975 and used in mapping the Ozello and Red Level 7.5' quadrangles was of poor quality and seasonality. Therefore, the mapping in these areas may be of lower quality than the rest of the mapped areas.
2. Distinguishing broad leaved from needle-leaved deciduous trees. Attempts were made to distinguish these, but some errors were undoubtedly made.
3. Distinguishing needle-leaved evergreen (slash pine and southern red cedar) from broad-leaved evergreen trees (cabbage palm and live oak) on coastal islands in the northwest part of the study area. Some distinctions were made, but often these islands were collectively classified as evergreen.

4. Water regimes on mangroves. Identifiable mangroves were classified with the unknown water regime (E2SS3U) unless they were mixed with emergents (usually black needle-rush). The latter communities were assigned the irregularly flooded water regime (E2SS3/EM5P or U).
5. Identifying intertidal areas. NOAA charts indicated extensive areas as regularly and irregularly exposed; however, our mapping effort identifies much less intertidal area than the charts.
6. Determining Estuarine/Marine break north of Anclote Key. This demarcation generally followed the waterward extent of vegetation.
7. Determining water regimes in phosphate mining tailings ponds. Since this varied with daily operations, the artificial water regime (K) was used on many of these areas.

STUDY AREA

The study area is located in west-central Florida and is bordered on the west by the Gulf of Mexico. The area extends from 27°N to 29°N latitude and from 82°W to 83°W longitude. Major cities are Sarasota, Saint Petersburg and Tampa. Tourism, agriculture (winter vegetables, citrus, other fruits, cattle), phosphate mining, lumber, fishing, shipping, and manufacturing are principal industries in this area. Much of this activity centers around Tampa Bay.

The terrain generally is level with most elevations ranging from sea level to about 150 feet; the highest elevations occur along the Brooksville Ridge.

Drainage varies around the study area with major rivers including the Myakka, Manatee, Alafia, Withlacoochie, Anclote, Crystal, Pithlachascotee, and Weekiewatchie. Many of these are spring fed. Additional drainage is accomplished through sinks, closed depressions, grassy prairies and lakes. The larger lakes include Maggiori, Tarpon, Thonotosassa, Crews, King, Panasoffkee, Bradley, Hunters, Tooke, and Bystre. Larger estuaries include Sarasota Bay, Safety Harbor, Crystal Bay, Tampa Bay, Hillsboro Bay, and Boca Ciega Bay.

The climate here is subtropical and humid with long, warm, humid summers and short, mild, winters. Annual precipitation averages 50-55 inches with the rainy season lasting from June to September. Most of this summer rain falls as late afternoon or early evening thundershowers. Winters are considerably drier. The average temperature is 72⁰F (63⁰F winter average; 83⁰F summer average). There are few cold spells although occasional snow flurries do occur. The growing season ranges from approximately 300 to 350 days with the longer occurring near the coast and towards the south. Tropical storms can strike this area from June through November.

Baily classifies the ecoregion of this area as:

Humid Temperate Domain

Subtropical Division

Outer Coastal Plain Province

Beech-Sweetgum-Magnolia-Pine-Oak Forest Section

Hammond describes the land surface form as flat plains where more than 80% of the area is gently sloping and relief is 0-100 feet.

Three general soil types make up this area with the majority being classified in the Spodosol Order, Aquods Suborder, and Haplaquods Great Group. This soil is further described as containing Quartzipsamments with the terrain gently sloping. Along the northwest coast of the study area the soils are of the Alfisol Order, Aqualfs Suborder, and Ochraqualfs Great Group. This soil also includes Psammaquents in gently sloping terrain. The soils found in the interior of the northern part of this study area are in the Entisol Order, Psamments Suborder, and Quartzipsamments Great Group. These soils include Palendults in gently to moderately sloping terrain.

WETLAND COMMUNITIES

The following are regularly used alphanumeric codes found on the wetland maps. A general description and/or community type including dominant vegetation, is provided. Scientific names are listed in the Appendix.

Marine System

M10WL -Marine, Subtidal, Open Water

This represents the open water of the Gulf of Mexico.

M2BB2__ -Marine, Intertidal, Beach/Bar, Sand

High energy unvegetated beaches along the Gulf Coast. Water regimes are variable.

M1AB2L -Marine, Subtidal, Aquatic Bed, Submergent Vascular

Seagrass meadows. Dominant vegetation includes turtlegrass, manateegrass, and shoalgrass. Other associated species include widgeongrass, Halophila spp., and macroscopic algae.

Some alphanumeric variations include:

M1AB6L -Marine, Subtidal, Aquatic Bed, Unknown Submergent

M2AB2M -Marine, Intertidal, Aquatic Bed, Submergent Vascular,
Irregularly Exposed

M2AB6M -Marine, Intertidal, Aquatic Bed, Unknown Submergent, Irregularly
Exposed

Estuarine System.

E10WL -Estuarine, Subtidal, Open Water
Unvegetated open water of protected bays and sounds usually with
reduced salinities with respect to the Gulf of Mexico.

E2BB2___ -Estuarine, Intertidal, Beach/Bar, Sand
Unvegetated beaches and bars occurring within protected bays and
sounds. Water regimes are variable.

E2FL___ -Estuarine, Intertidal, Flat
Low energy, unvegetated, flats occurring in protected bay and
sounds. No attempt was made to identify subclasses. Water
regimes are variable.

E2RF2___ -Estuarine, Intertidal, Reef, Oysters
Intertidal oyster beds. It should be noted that subtidal oyster

beds were not photographically identifiable. Water regimes are variable.

E1AB2L -Estuarine, Subtidal, Aquatic Bed, Submerged Vascular
Seagrass meadows occurring in protected bays and sounds.
Vegetation is similar to that described under M1AB2L.

Some alphanumeric variations include:

E1AB6L -Estuarine, Subtidal, Aquatic Bed, Unknown Submergent

E2AB2M -Estuarine, Intertidal, Aquatic Bed, Submerged Vascular,
Irregularly Exposed

E2AB6M -Estuarine, Intertidal, Aquatic Bed, Unknown Submergent,
Irregularly Exposed

E2EM5P -Estuarine, Intertidal, Emergent, Narrow-leaved Persistent,
Irregularly Flooded
Salt and brackish marshes occurring along the Gulf Coast.
Dominant species include black needle rush, a variety of
cordgrasses, saltgrass, siltgrass, coastal dropseed and
sawgrass. In "salt flat" areas, glasswort, saltwort, and
seablite dominate.

E2SS3U -Estuarine, Intertidal, Scrub/Shrub, Broad-leaved Evergreen,
Unknown water regime

Red, black, and white mangroves and buttonwood swamps that exist under a variety of water regimes that could not be photographically distinguished.

One important alphanumeric mix is E2SS3/EM5U where mangroves and estuarine emergents are codominates and could not be separately mapped.

E2SS3P -Estuarine, Intertidal, Scrub/Shrub, Broad-leaved Evergreen,
Irregularly Flooded
This may include communities dominated by mangroves (E2SS3U) as described above, but more typically represents areas dominated by groundsel tree, wax myrtle, and Brazilian pepper-bush.

E2F03P -Estuarine, Intertidal, Forest, Broad-leaved Evergreen,
Irregularly Flooded
Cabbage palm hammocks that occur in the estuarine marshes in the northwest part of the study area.

E2F04P -Estuarine, Intertidal, Forest, Needle-leaved Evergreen,
Irregularly Flooded
This represents several communities:
(1) Brackish areas invaded by Australian pine; however, this represents a very small amount of area.

(2) Slash pine hammocks occurring in brackish areas. Usually these pines exist as a codominant with emergents (E2F04/EM5P) or shrubs (E2F04/SS3P).

(3) Southern red cedar hammocks occurring in brackish marshes. This community occurs in the northwest portion of the study area.

E2F07P -Estuarine, Intertidal, Forest, Evergreen, Irregularly Flooded
This alphanumeric was used in areas where the distinction could not be made between cabbage palm (E2F03P) and pine and cedar (E2F04P) hammocks in the northwest portion of the study area. This was primarily due to poor photo quality.

Riverine System

R10WV -Riverine, Tidal, Open Water, Permanent-Tidal
Unvegetated freshwater streams that are near the coast and tidally influenced.

R20WH -Riverine, Lower Perennial, Open Water, Permanent
Unvegetated freshwater streams that are not tidally influenced.

R2AB4H -Riverine, Lower Perennial, Aquatic Bed, Floating-leaved, Permanent
Stream communities dominated by American lotus, white waterlily, water shield, spatterdock, and floating heart.

R2AB5H -Riverine, Lower Perennial, Aquatic Bed, Floating, Permanent
Stream communities dominated by free floating vegetation such
as water hyacinth, water lettuce, duckweeds, waterfern,
watermeal, and bladderworts.

R2AB6H -Riverine, Lower Perennial, Aquatic Bed, Unknown Submergent,
Permanent
Submerged vegetation where subclasses could not be identified.
Dominant vegetation may include Brazilian elodea, hydrilla,
watermilfoils, tapegrass, pondweeds, widgeongrass, coontail,
naiads, and fanworts.

R2AB7H -Riverine, Lower Perennial, Aquatic Bed, Unknown Surface,
Permanent
This represents communities that could not be determined to
be floating-leaved (R2AB4H) or floating (R2AB5H).

Lacustrine System

L10WH -Lacustrine, Limnetic, Open Water, Permanent
Deep unvegetated lakes.

L2BB2__ -Lacustrine, Littoral, Beach/Bar, Sand
Lake beaches. Water regimes are temporary (L2BB2A) or seasonal
(L2BB2C).

L2FL__ -Lacustrine, Littoral, Flat

Lake flats existing under either temporarily (L2FL__A) or seasonally (L2FL__C) flooded conditions. These flats usually are a result of typical seasonal drawdowns, long-term hydrological changes in sinkholes or are a result of phosphate mining operations. No attempt was made to identify subclasses.

L2AB4H -Lacustrine, Littoral, Aquatic Bed, Floating-Leaved, Permanent
Shallow lake areas dominated by floating-leaved vegetation as described under R2AB4H.

L2AB5H -Lacustrine, Littoral, Aquatic Bed, Floating, Permanent
Shallow lake areas dominated by floating vegetation as described under R2AB5H.

L2AB6H -Lacustrine, Littoral, Aquatic Bed, Unknown Submergent,
Permanent
Submerged vegetation in shallow lake areas. Vegetation is similar to that described under R2AB6H.

L2AB7H -Lacustrine, Littoral, Aquatic Bed, Unknown Surface, Permanent
Surface vegetation growing in shallow lake areas where it could not be photographically identified as floating-leaved (L2AB4H) or floating (L2AB5H).

Palustrine System

- POWH -Palustrine, Open Water, Permanent
Small ponds often as a result of excavation or impoundment.
One variation of this is the alphanumeric POWh/ that represents fish hatcheries.
- PFLC -Palustrine, Flat, Seasonal
Small unvegetated flats. Often these are small sinks.
- PAB4H -Palustrine, Aquatic Bed, Floating-Leaved, Permanent
Small ponds dominated by aquatic vegetation similar to that described under R2AB4H.
- PAB5H -Palustrine, Aquatic Bed, Floating, Permanent
Small ponds dominated by aquatic vegetation similar to that described under R2AB5H.
- PAB6H -Palustrine, Aquatic Bed, Unknown Submergent, Permanent
Small ponds dominated by submerged aquatic vegetation similar to that described under R2AB6H.
- PAB7H -Palustrine, Aquatic Bed, Unknown Surface, Permanent
Small ponds dominated by surface vegetation that could not be determined to be floating-leaved (PAB4H) or floating (PAB5H).
- PEM5A -Palustrine, Emergent, Narrow-leaved Persistent, Temporary
Deeper marsh borders and internmarsh sloughs dominated by

pickeralweed, arrowheads, fireflag, arrow-arum, alligatorweed, smartweeds, and lizard's tail. Occasionally very deep marshes were assigned the intermittently exposed (G) water regime.

PSS1A -Palustrine, Shrub/Scrub, Broad-leaved Deciduous, Temporary

PSS1C -Palustrine, Shrub/Scrub, Broad-leaved Deciduous, Seasonal

Generally these alphanumeric represent former forested wetland that had been cleared. At the time of photography, these areas were regenerating woody vegetation and species composition is similar to that described under PF01A and PF01C.

PSS1F -Palustrine, Shrub/Scrub, Broad-leaved Deciduous, Semi-permanent

Typical shrub swamp where dominant vegetation includes buttonbush, willows, elderberry, swamp dogwood, and seedboxes.

PSS3A -Palustrine, Shrub/Scrub, Broad-leaved Evergreen, Temporary

This community is usually dominated by native vegetation such as waxmyrtle, groundsel tree, and saw palmetto. However, this alphanumeric also represents those areas dominated by exotic species such as Brazilian pepperbush.

PSS3B -Palustrine, Shrub/Scrub, Broad-leaved Evergreen, Saturated

Vegetatively this community resembles that described under PSS3C, however, occurs only in localized, steeply sloping portions of the study area. In the gently sloping cutthroat seeps described under PEM5B and classified as PSS3/EM5B, dominant evergreen shrubs are groundsel tree, wax myrtle, and saw palmetto.

- PSS3C -Palustrine, Shrub/Scrub, Broad-leaved Evergreen, Seasonal
- PSS3F -Palustrine, Shrub/Scrub, Broad-leaved Evergreen, Semi-permanently
 This alphanumeric can refer to bayheads or deep shrub swamps.
 Dominant vegetation includes sweetbay, redbay, loblolly bay, punktree, fetterbush, and waxmyrtle.
- PSS6C -Palustrine, Shrub/Scrub, Deciduous, Seasonal
- PSS6F -Palustrine; Shrub/Scrub, Deciduous, Semi-permanent
 Shrub swamps where it could not be photographically determined whether the area was dominated by needle-leaved deciduous (PSS2__) or broad-leaved deciduous (PSS1__) shrubs.
- PF01A -Palustrine, Forest, Broad-leaved Deciduous, Temporary
- PF01C -Palustrine, Forest, Broad-leaved Deciduous, Seasonal
 Bottomland hardwood communities generally occurring along water courses. Vegetation includes red maple, sweetgum, black gum, laurel oak, water oak, American elm, persimmon, sugarberry, pignut hickory, red mulberry, and black cherry. It should be noted that several of these species are semi-evergreen and, therefore, may have been classified as PF03__. As wetness increases, many of the above-mentioned species disappear and an increase of more water tolerant species occurs. These include Carolina ash, water hickory, and swamp black gum.
- PF01B -Palustrine, Forest, Broad-leaved Deciduous, Saturated
 This community occurs locally along seepage areas. Dominant vegetation includes red maple, swamp black gum, and sweet gum.

PF01F -Palustrine, Forest, Broad-leaved Deciduous, Semi-permanent
Generally under semi-permanently flooded conditions, swamp black gum and willows will be the dominant trees.

PF02F -Palustrine, Forest, Needle-leaved Deciduous, Semi-permanent
Cypress strands and domes.

PF03A -Palustrine, Forest, Broad-leaved Evergreen, Temporary

PF03C -Palustrine, Forest, Broad-leaved Evergreen, Seasonal
This community is usually located along water courses or coastal swamps and is dominated by cabbage palmetto, live oak, and bays. Some semi-evergreen oaks also probably were classified with this alphanumeric. Along the coast, some of these areas were assigned the temporary-tidal(S) or seasonal-tidal(R) water regime.

PF03B -Palustrine, Forest, Broad-leaved Evergreen, Saturated
This community occurs along steeply sloped seepage areas and is dominated by bay trees.

PF03F -Palustrine, Forest, Broad-leaved Evergreen, Semi-permanent
This is a bayhead or bay swamp dominated by redbay, sweetbay, and cabbage palmetto. In some areas, these deep swamps are being invaded by the introduced punktree.

PF04A -Palustrine, Forest, Needle-leaved Evergreen, Temporary

PF04C -Palustrine, Forest, Needle-leaved Evergreen, Seasonal
This is usually pine flatwoods dominated by slash and longleaf pines.

In the northern part of the study area, loblolly pine becomes a dominant. Along the coast, some of these areas were assigned the temporary-tidal(S) or seasonal-tidal (R) water regime.

PF06C -Palustrine, Forest, Deciduous, Seasonal

PF06F -Palustrine, Forest, Deciduous, Semi-permanent

This alphanumeric was used when it could not be photographically determined whether the trees were needle-leaved deciduous (PF02___) or broad-leaved deciduous (PF01___).

SPECIAL MODIFIERS USED

"d" -Partially Drained/Ditched. Although ditching is quite extensive in this area, this modifier had limited applicability due to overhanging canopies.

"h" -Diked/Impounded. This was used to denote reservoirs, tailings ponds, and stream damming and is usually used in the Lacustrine and Palustrine Systems.

"s" -Spoil. This was applied to identifiable spoil islands and flats in the Estuarine System.

"x" -Excavated. This indicates farm dugouts and quarries.

Appendix

<u>Common Name</u>	<u>Scientific Name</u>
Alligatorweed	<u>Alternanthera philoxeroides</u>
American Elm	<u>Ulmus americana</u>
American Lotus	<u>Nelumbo lutea</u>
Arrow-arum	<u>Peltandra virginica</u>
Arrowheads	<u>Sagittaria</u> spp.
Australian Pine	<u>Casuarina equisetifolia</u>
Barnyard Grass	<u>Echinochloa crusgalli</u>
Black Cherry	<u>Prunus serotina</u>
Black Gum	<u>Nyssa sylvatica</u>
Black Mangrove	<u>Avicennia germinans</u>
Black Needle Rush	<u>Juncus roemerianus</u>
Bladderworts	<u>Utricularia</u> spp.
Blue Maidencane	<u>Amphicarpum muhlenbergianum</u>
Brazilian Elodea	<u>Egeria densa</u>
Brazilian Pepperbush	<u>Schinus terebinthifolius</u>
Bulrushes	<u>Scirpus</u> spp.
Buttonbush	<u>Cephalanthus occidentalis</u>
Buttonwood	<u>Conocarpus erecta</u>
Cabbage Palmetto	<u>Sabal palmetto</u>
Carolina Ash	<u>Fraxinus caroliniana</u>
Cattails	<u>Typha</u> spp.
Chalky Bluestem	<u>Andropogon virginicus</u>

Coastal Dropseed	<u>Sporobolus virginicus</u>
Coontail	<u>Ceratophyllum demersum</u>
Cordgrasses	<u>Spartina</u> spp.
Creeping Bluestem	<u>Schizachyrium stoloniferum</u>
Cutthroat Grass	<u>Panicum abscissum</u>
Cypress	<u>Taxodium distichum</u>
Duckweeds	<u>Lemna</u> spp., <u>Spirodela</u> spp.
Elderberry	<u>Sambucus canadensis</u>
Fanworts	<u>Cabomba</u> spp.
Fetterbush	<u>Lyonia lucida</u>
Fireflag	<u>Thalia geniculata</u>
Floating Heart	<u>Nymphoides aquatica</u>
Florida Threeawn	<u>Aristida rhizomophora</u>
Giant Cutgrass	<u>Zizanopsis miliacea</u>
Glasswort	<u>Salicornia virginica</u>
Groundsel Trees	<u>Baccharis</u> spp.
Hairy Panicum	<u>Panicum ancepts</u> var. <u>rhizomatum</u>
Hydrilla	<u>Hydrilla verticillata</u>
Laurel Oak	<u>Quercus laurifolia</u>
Live Oak	<u>Quercus virginiana</u>
Lizard's Tail	<u>Saururus cernuus</u>
Loblolly Bay	<u>Gordonia lasianthus</u>
Loblolly Pine	<u>Pinus taeda</u>
Longleaf Pine	<u>Pinus palustris</u>
Naiads	<u>Najas</u> spp.
Panicums	<u>Panicum</u> spp.
Persimmon	<u>Diospyros virginiana</u>

Pickeralweed	<u>Pontederia lanceolata</u>
Pignut Hickory	<u>Carya glabra</u>
Pineland Threeawn	<u>Aristida stricta</u>
Pondweeds	<u>Potamogeton</u> spp.
Punktrees	<u>Melaleuca quinquenvia</u>
Red Bay	<u>Persea borbonia</u>
Red Mangrove	<u>Rhizophora mangle</u>
Red Maple	<u>Acer rubrum</u>
Red Mulberry	<u>Morus rubra</u>
Rushes	<u>Juncus</u> spp.
Saltgrass	<u>Distichlis spicata</u>
Saltwort	<u>Batis maritima</u>
Sand Cordgrass	<u>Spartina bakeri</u>
Sawgrass	<u>Cladium jamaicense</u>
Saw Palmetto	<u>Serenoa repens</u>
Seablite	<u>Suaeda maritima</u>
Sedges	Cyperaceae
Seedboxes	<u>Ludwigia</u> spp.
Siltgrass	<u>Paspalum vaginatum</u>
Slash Pine	<u>Pinus elliotti</u>
Smartweeds	<u>Polygonum</u> spp.
Southern Red Cedar	<u>Juniperus silicicola</u>
Spatterdock	<u>Nuphar luteum</u>
Spikerushes	<u>Eleocharis</u> spp.
Sugarberry	<u>Celtis laevigata</u>
Swamp Black Gum	<u>Nyssa sylvatica</u> var. <u>biflora</u>
Swamp Dogwood	<u>Cornus stricta</u>
Sweetbay	<u>Magnolia virginiana</u>

Sweetgum	<u>Liquidamber styraciflua</u>
Tapegrass	<u>Vallisneria americana</u>
Toothache Grass	<u>Ctenium aromaticum</u>
Waterfern	<u>Azolla caroliniana</u>
Watermilfoil	<u>Myriophyllum</u> spp.
Water Hickory	<u>Carya aquatica</u>
Water Hyacinth	<u>Eichhornia crassipes</u>
Watermeal	<u>Wolffia</u> spp.
Water Oak	<u>Quercus nigra</u>
Watershield	<u>Brasenia schreberi</u>
Waxmyrtle	<u>Myrica cerifera</u>
White Mangrove	<u>Laguncularia racemosa</u>
White Waterlily	<u>Nymphaea odorata</u>
Widgeongrass	<u>Ruppia maritima</u>
Willows	<u>Salix</u> spp.