



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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User's Guide
to
Wetland Maps for
Western Alabama and Eastern Mississippi

U.S.F.W.S - N.W.I.
ST. PETERSBURG, FL

Introduction

With funding assistance from the U.S. Army Corps of Engineers, Mobile District and the Bureau of Land Management, the Fish and Wildlife Service's National Wetland Inventory (NWI) mapped the wetland resources along a corridor which consisted of western Alabama and eastern Mississippi. Large scale (1:24,000) maps were prepared for the following 1:100,000 scale work areas:

Corinth (Tupelo NE)	Tuscumbia (Birmingham NW)
Tupelo (Tupelo SE)	Haleyville (Gadsden SW)
West Point (West Point NE)	Jasper (Birmingham NW)
Starkville (West Point SE)	Tuscaloosa (Birmingham SW)
Dekalb (<u>Meridian NE</u>)	Montgomery NW
Meridian (<u>Meridian SE</u>)	Montgomery SW
Waynesboro (Hattiesburg NE)	Monroeville (Andalusia NW)
Citronelle (Hattiesburg NE)	Atmore (Andalusia SW)

Map Production

Mapping was initiated in the spring of 1981 and completed in the spring of 1983. The maps were prepared through photo interpretation of color infrared photography at a scale of 1:58,000 acquired by the National High Altitude Photography Program. Photographs were taken in the spring of 1980 and 1981. The date of photography used for an individual map is given in the lower right hand corner of that map. Field checking took place in March, April, July, and November of 1981 and March of 1982. [Photo interpretation and cartographic production were performed by Martel Laboratories, Inc., service support contractor to the NWI in St. Petersburg, Florida.] Materials used to assist in the photo interpretation included United States Geological Survey topographic maps and USDA, Soil Conservation Service, County Soil Surveys where available.

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Study Area

The study area consisted of a 120 mile wide strip of land along the Alabama-Mississippi border, extending from the Tennessee border in the north to the Coastal Zone in the south (Fig. 1). A total of 512 large scale (1:24,000) maps were required to cover the 28,800 square-mile area study area.

According to Bailey's ecoregion classification of the United States, the northern two-thirds of the project area is in the Humid Temperate Domain, Subtropical Division, Southeastern Mixed Forest Province. The southern third of the area is in the Humid Temperate Domain, Subtropical Division, Outer Coastal Plain Forest Province, Beech-Sweetgum-Magnolia-Pine-Oak Section. General information regarding land-surface form, climate, vegetation, soils and fauna is described in Bailey, Robert G. 1978, Description of the ecoregions of the United States. USDA Forest Service Intermtn. Reg. Ogden, Utah, 77p.

Further ecological subdivisions can be identified within the northern three-fourths of the project area. These are, from north to south, the Tennessee-Tombigbee Divide Hills, the Eutaw Hills, the Tombigbee Sand Hills, and the Prairie. Wetland densities increase from north to south. In the Tennessee-Tombigbee Divide Hills dendritic drainages are narrow and gradients steep. Broader flood plains begin to occur in the Eutaw Hills. Oxbow lakes and meander scars are also observed. The tendency for increased flood plain size continues in the Tombigbee Sands section. In the Prairie subdivision the Tombigbee River is quite wide. Broad meanders and large oxbow lakes are characteristic of the area with large bottomland hardwood forests and cypress-tupelo swamps being common.

Wetlands become most extensive in the Outer Coastal Plain Forest Province area of the project. In addition to alluvial wetlands, isolated depressional wetlands are common. Wetland types in the coastal plain vary slightly in species composition, water regimes and physiography from those in the rest of the project area.

Wetland Classification

The following are brief habitat descriptions for the commonly used wetland classifications found on the NWI maps of the area. This list does not represent all the wetland classifications which are possible. Wetlands have been classified in general accordance with Cowardin et al. 1979 Classification of Wetlands and Deepwater Habitats of the United States. Where, for pragmatic reasons, strict adherence to the classification system was not possible, mapping conventions developed by the NWI were used. It is strongly suggested that map users become familiar with the wetland classification system in order to gain full utilization of the map products.

* This should be standard



Figure 1. Mapped area shown in gray.

Commonly Used Designations

PF05G Palustrine, forested, dead, intermittently exposed.

The classification describes wetland consisting primarily of dead timber. A minimum 30% areal coverage by dead timber is necessary according to Cowardin et al. system in order for this classification to apply. Emergents and aquatic beds may also occur mixed with the dead timber. These mixes are identified as "PF05/EM1G" and "PF05/AB4G", respectively. Flooded conditions are present throughout the entire year except during years of extreme drought. The death of trees often results from the physiological stresses caused by prolonged flooding. Reasons for extended periods of flooding include beaver impoundments, flowage restrictions due to road construction, and blockage of natural drainages by debris or siltation.

PF06F Palustrine, forested, deciduous, semipermanently flooded.

These areas are characterized by standing water throughout the growing season in most years. Dominant vegetation is usually cypress, swamp tupelo gum, or a mixture of both species.

Because the photography utilized in preparation of these maps was taken during leaves off condition it was not possible to consistently differentiate cypress from swamp tupelo, therefore, the "deciduous" classification was used. However, if species were confirmed by field checking or by other sources of information, "PF01F" was used to designate the tupelo dominated type, "PF02F" to designate dominance by cypress, and "PF01/2F" for areas where cypress and tupelo occur in mixed stands.

PF01C Palustrine, forested, broad-leaved deciduous, seasonally flooded.

This habitat type is characterized by poorly drained soils and a high water table. Flooding occurs for extended periods especially early in the growing season. Willow oak, and overcup oak, along with varying amounts of cypress, are predominant. This is the most common wetland type throughout the study area.

Because of the complexity of alluvial topography, inclusions of wetland habitats with slightly wetter or drier characteristics may also occur within the designation. Although these inclusions were often visible on the photography, scale limitations made them impossible to delineate.

PF03C Palustrine, forested, broad-leaved evergreen, seasonally flooded.

This designation describes a similar community to PF03A except that water may stand for extended periods in these areas. In addition to the water oak and willow oak, laurel oak may also occur.

PF01/3B Palustrine, forested, broad-leaved deciduous and broad-leaved evergreen, saturated.

This category is a relatively minor component of the wetlands in the project area. The substrate is saturated to the surface for extended periods during the growing season, but surface water is seldom present. Predominant vegetation includes red bay, sweet bay, and sweetgum.

PF01A Palustrine, forested, broad-leaved deciduous, temporarily flooded.

This classification is primarily used to describe bottomland hardwood habitat associated with major rivers and streams. The water table is near the surface during the spring rainy season but is well below the surface for most of the year. Overbank flooding may occur briefly or surface water may pond during heavy or extended rainfall. Mature forests of this type are vegetated by water oak, swamp chestnut oak, cherrybark oak, various hickories, and sweetgum. Early successional stages of forests in this category may be vegetated by green ash, elm, sycamore, yellow poplar, red maple, river birch and sugarberry.

PF04A Palustrine, forested, needle-leaved evergreen, temporarily flooded.

This designation indicates stands of loblolly pine, slash pine, or long-leaf pine which have been planted in areas subject to brief flooding or ponding. Unless additional definitive data was available regarding hydrology or soils, pine stands are designated as upland since naturally regenerated pines are generally indicative of better drained soil conditions.

PF01/4A Palustrine, forested, broad-leaved deciduous and needle-leaved evergreen, temporarily flooded.

This classification is used to identify pine and hardwood mixes occurring in bottomlands. Overbank flooding may occur briefly in the spring or water may pond in these areas during period of heavy rainfall. This type of habitat is considered to be indicative to previous land

disturbance. Dominant species are usually loblolly pine, sweetgum, red maple, and elm along with mixed oaks and hickories depending on the stand age.

The map user is cautioned that this type of wetland is difficult to separate from uplands of similar species composition. Therefore, some uplands may be incorrectly identified as wetland in this category.

PF03A Palustrine, forested, broad-leaved evergreen, temporarily flooded.

This classification also designates bottomland hardwood habitat. Species dominants are water oak and willow oak. In some locations and under certain conditions these species tend to semi-evergreen or tardily deciduous. Therefore, the signatures on the photography appeared as evergreen and were classified as such.

PSS1G Palustrine, scrub/shrub, broad-leaved deciduous, intermittently exposed.

This habitat type is described as shrub swamp. Common shrubs are buttonbush, alder, swamp privet, and water willow. These areas often result from beaver impoundments or from blocked road culverts. In many instances these areas will include a variable percentage of dead timber.

PSS1C Palustrine, scrub/shrub, broad-leaved deciduous, seasonally flooded.

This habitat is similar to that identified as "PSS1A" except that wetter conditions prevail. These areas remain flooded for extended periods especially early in the growing season. Willow, often predominates. In areas where sedges, rushes and other emergents become interspersed the designation is "PSS1/EM1C."

PSS7/EM1B Palustrine, scrub/shrub, evergreen, and emergent, persistent, saturated.

This is a bog or seep type habitat. It may occur on relatively flat terrain or on a considerable slope. Most of this type is found in southernmost sections of the study area. Evergreen shrubs may include pines less than 20 feet in height; wax myrtle, bitter gallberry, large gallberry, yaupon, sweet bay, red bay, titi, and buckwheat tree. Emergents include pitcher-plants, sundews, clubmosses, moss, red root, wiregrass, yellow-eyed grasses, meadow beauties, white-top sedges, broom sedge, cane, and beak rushes.

Identification of the appropriate water regime was often very difficult for this cover type because of hydrologic modification due most often to silvicultural activities.

PSS1A Palustrine, scrub/shrub, broad-leaved deciduous, temporarily flooded.

The designation usually describes recently cleared bottomland or formerly farmed bottomland in an early stage of succession. Trees are young and are less than 20 feet tall. Typical species are sweetgum, elm, red maple, and green ash. If openings vegetated by sedges and grasses are interspersed with shrubby vegetation, the designation "PSS1/EMLA" is used.

PSS4A Palustrine, scrub/shrub, needle-leaved evergreen, temporarily flooded.

Newly planted pine seedlings which have not reached a height of 20 feet are identified in this manner. Most areas with this designation were previously forested bottomlands vegetated by hardwoods prior to clearing and replanting.

PAB7Hh Palustrine, aquatic bed, unknown surface, permanently flooded, impounded.

These areas are usually highly eutrophic ponds. Vegetation includes white waterlily, yellow waterlily, American lotus, bladderworts, duckweeds, and watermeal.

PEM1F Palustrine, emergent, persistent, semipermanently flooded.

Water usually stands in these areas throughout the growing season. All emergents in these areas are obligate hydrophytes. Species include spike rushes, marshmallow, cattail, cut grass, arrowheads, arrow arum, soft rush, smartweeds, and water-primrose. Scattered dead timber is often found mixed with this wetland type. Occasionally the intermittently exposed, "G", water regime was applied to this habitat type when indications were that water was being retained on the area for a near permanent basis.

PEM1C Palustrine, emergent, persistent, seasonally flooded.

These areas are similar to "PEM1A" but flooding is more prolonged and more water tolerant plant species predominate. Commonly occurring are smartweed, cattail, sedges, and rushes, of which wool-grass is particularly prevalent.

- PEM1A Palustrine, emergent, persistent, temporarily flooded.
 Pasture lands, depressions often located in field corners, or newly cleared bottomland which experience brief flooding early in the growing season or during periods of extended rainfall are included in this category.
 Species found here include sedges, panic grass, rushes, goldenrod, blackberry, catbrier, and violets.
- POWHx Palustrine, open water, permanently flooded, excavated.
 This classification usually identifies farm ponds but may also include other open bodies of water less than 20 acres in size.
- R2OWH Riverine, lower perennial, open water, permanently flooded.
 Perennial rivers and their tributaries normally having well defined flood plains.
- R2FL2C Riverine, lower perennial, flat, sand, seasonally flooded.
 River bars which are normally exposed during the dry season each year.
- R2OWHx Riverine, lower perennial, open water, permanently flooded, excavated.
 Identifies channelized rivers and streams and new river "cutoffs" forming navigational improvements.
- L1OWHh Lacustrine, limnetic, open water, permanently flooded, impounded.
 Impoundments greater than 20 acres in size or smaller impoundments known to be deeper than 2 meters.
- L2AB7H Lacustrine, littoral, aquatic bed, unknown surface, permanently flooded.
 Most often describes areas within lakes vegetated by white waterlily, yellow waterlily, American lotus, bladderworts, duckweeds, and watermeal.

Wildlife Habitat Values

Users of the maps who wish to learn more about the wildlife values for the wetland types shown on the maps should consult A Resource Inventory of the Tennessee-Tombigbee Corridor, December 1981, prepared by U.S. Fish and Wildlife Service for U.S. Army Corps of Engineers. Wetland habitats are described in the report according to the Cowardin et al. classification system and are readily relatable to the categories displayed on the maps.

Special Mapping Problems

1. Severe flooding occurring at the time of the 1980 photographs made photo interpretation difficult using this imagery. Interpreters relied heavily on Soil Surveys, if available, and topographic indicators to overcome this problem.
2. In many instances stands of dead timber could not be identified from the photography. This is due to the relatively small aerial coverage of the dead trees and the low reflectivity of dead vegetation on color infrared imagery. Dead timber may occur in areas identified as PSS1G, PEM1F, PEM1G.
3. Because the photography was taken during the leaves-off condition, it was difficult to differentiate broad-leaved from needle-leaved deciduous trees. It was, therefore, necessary to use "deciduous" as the subclass for both habitat types.

Important Note to Users

Since the basic data source for the mapping is 1980 and 1981 photography, conditions depicted on the maps appear as they existed at that time. Extensive alterations to the landscape have occurred as a result of the Tennessee-Tombigbee Waterway construction. Recent changes are not shown on the maps but should be taken into consideration as the maps are reviewed and utilized.

* This should be standard

Keep in mind that the maps were prepared through photo interpretation with limited field checking. Although we have attempted to minimize interpretation errors, some will occur simply because of photographic variability. Therefore, the maps should be regarded as a tool and should not take the place of detailed on-the-ground surveys if complete site specific data is required.

How to Acquire Maps

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National Wetlands Inventory maps are available from:

Regional Wetlands Coordinator
U.S. Fish and Wildlife Service
75 Spring Street, S. W.
Atlanta, Georgia 30303

or

National Cartographic Information Center
U.S. Geological Survey
National Space Technology Laboratories
Building 1100
NSTL Station, Mississippi 39529.

Maps are identified by the name of the corresponding U.S. Geological Survey 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the Geological Survey.

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APPENDIX

Common and Scientific Plant Names

Alder	<u>Alnus serrulata</u>
American lotus	<u>Nelumbo lutea</u>
Arrow arum	<u>Peltandra virginica</u>
Arrowheads	<u>Sagittaria</u> spp.
Beak rushes	<u>Rhynchospora</u> spp.
Bitter gallberry	<u>Ilex glabra</u>
Blackberry	<u>Rubus</u> spp.
Bladderworts	<u>Utricularia</u> spp.
Broom sedge	<u>Andropogon virginicus</u>
Buckwheat tree	<u>Cliftonia monophylla</u>
Buttonbush	<u>Cephalanthus occidentalis</u>
Cane	<u>Arundinaria gigantea</u>
Catbrier	<u>Smilax</u> spp.
Cattail	<u>Typha latifolia</u>
Cherrybark oak	<u>Quercus falcata</u> var. <u>pagodaefolia</u>
Clubmosses	<u>Lycopodium</u> spp.
Cut grass	<u>Leersia oryzoides</u>
Cypress	<u>Taxodium distichum</u>
Duckweeds	<u>Lemna</u> spp.
Elm	<u>Ulmus americana</u>
Goldenrod	<u>Solidago</u> spp.
Green ash	<u>Fraxinus pennsylvanica</u> var. <u>lanceolata</u>
Hickory	<u>Carya</u> spp.
Large gallberry	<u>Ilex coriacea</u>
Laurel oak	<u>Quercus laurifolia</u>
Loblolly pine	<u>Pinus taeda</u>
Longleaf pine	<u>Pinus palustris</u>
Marshmallow	<u>Hibiscus</u> spp.
Meadow beauties	<u>Rhexia</u> spp.
Moss	<u>Sphagnum</u> spp.
Overcup oak	<u>Quercus lyrata</u>
Panic grasses	<u>Panicum</u> spp.
Pitcher-plants	<u>Sarracenia</u> spp.
Red bay	<u>Persea borbonia</u>
Red Maple	<u>Acer rubrum</u>
Red root	<u>Lachnanthes caroliniana</u>
River birch	<u>Betula nigra</u>
Rushes	<u>Juncus</u> spp.
Sedges	<u>Carex</u> spp.
Slash pine	<u>Pinus elliotii</u>
Smartweeds	<u>Polygonum</u> spp.
Soft rush	<u>Juncus effusus</u>

Spike rushes
Sugarberry
Sundews
Swamp chestnut oak
Swamp privet
Swamp tupelo gum
Sweet bay
Sweetgum
Sycamore
Titi
Violets
Water oak
Water-meal
Water-primrose
Water willow
Wax myrtle
White waterlily
White-top sedges
Willow
Willow oak
Wiregrass
Wool-grass
Yellow-eyed grass
Yellow poplar
Yellow waterlily
Yaupon

Eleocharis spp.
Celtis laevigata
Drosera spp.
Quercus michauxii
Foresteria acuminata
Nyssa aquatica
Magnolia virginiana
Liquidambar styraciflua
Platanus occidentalis
Cyrilla racemiflora
Viola spp.
Quercus nigra
Wolffia sp.
Ludwigia spp.
Decodon verticillatus
Myrica cerifera
Nymphaea adorata
Dichromena spp.
Salix nigra
Quercus phellos
Aristida stricta
Scirpus cyperinus
Xyris spp.
Liriodendron tulipifera
Nuphar luteum
Ilex vomitoria