

NATIONAL WETLANDS INVENTORY

NOTES TO USERS

EASTERN ARKANSAS

1:100,000 Scale Maps Covered

DE WITT (HELENA SW)

BRINKLEY (HELENA NW)

SEARCY (MEMPHIS SW)

BATESVILLE (MEMPHIS NW)

CHEROKEE VILLAGE (POPLAR BLUFF SW)

USER NOTES: HELENA SW, NW, MEMPHIS SW, NW, POPLAR BLUFF SW,  
NATIONAL WETLANDS INVENTORY MAPS

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 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. (1979) 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:

The wetland classifications that appear within the Helena SW, NW, Memphis SW, NW and Poplar Bluff SW maps are in accordance with Cowardin et al. (1979) Classification of Wetlands and Deepwater Habitats of the United States. Wetlands delineated on color infrared photographs at a scale of 1:58,000 were enlarged using a zoom transfer scope producing maps of 1:24,000 scale. Dates of photography are varied and are given for an individual map in the lower right hand corner.

All wetland maps in this study area were produced using 1:58,000 color infrared photographic transparencies. The photography dates for individual 1:100,000 maps are as follows:

Memphis SW & NW 3/83, 2/84, 4/84, 3/85 and 3/86,  
Poplar Bluff SW 4/83, 2/84, 4/84 and 3/85,  
Helena SW and NW 3/83, 1/84 and 2/84

Collateral information used in this mapping effort included U.S. Geological Survey topographic sheets, Soil Conservation Service soil surveys and 7.5 minute topographic maps.

Limited field checks of wetlands included in the study area were conducted in August 1985. Field checks are designed to relate various photographic characteristics to actual wetland classifications.

The user of the map is cautioned that, due to the limitation of mapping primarily through aerial photointerpretation, a small percentage of wetlands may have gone unidentified. Changes in the landscape could have occurred since the time of photography; therefore, some discrepancies between the map and current field conditions may exist. Any discrepancies

that are encountered in the use of this map should be brought to the attention of John Hefner, Regional Wetlands Coordinator; U.S. Fish and Wildlife Service, Region 4, R.B. Russell Federal Building, 75 Spring Street SW, Atlanta, GA 30303.

### Geography:

The project area is located entirely in eastern Arkansas. The 37°00'N latitude is the northern border, with 34°00'N latitude as its southern border. The east-west borders are 91°00' and 92°00', West longitude, respectively. The area is divided into provinces according to Bailey's Description of the Ecoregions of the United States (1980). The northern and western most area of the project is in the Oak-Hickory Forest section of the Deciduous Forest Province. The area in the southern and eastern most part of the project is in the Southern Floodplain Forest section of the Outer Coastal Plain Forest Province.

The Eastern Deciduous Forest Province is dominated by tall broadleaf trees which provide a dense canopy in summer but shed completely in winter. In floodplains the deciduous forests consist of alder, willow, ash, elm, and numerous hydrophytic shrubs. The portion of this province which is found in the study area is designated as the Oak-Hickory Section.

The Oak-Hickory Section is divided even further in that the northern two-thirds of the section is found within the Eastern Highland Ozark-Ouachita Highlands with the remainder in the Gulf Atlantic Lower Mississippi Alluvial Plain. From South to North this section ranges from flat plains to open hills with elevations up to 1100 feet.

The Outer Coastal Plain Forest Province consists of relatively flat plains with sluggish streams. The province has a climax vegetation of evergreen oaks and magnolia forest in mesophytic habitats. Numerous swamps and marshes occur throughout the province, including some bald-cypress swamps.

Southern Floodplain Forest Section of the above province is a wide band which follows the White, Black, and the Arkansas Rivers. This work area includes the northern part of this section.

Agriculture is a prime-importance in Eastern Arkansas. The main crops are soybeans, rice, wheat and grain sorghum. The rich alluvial soils of the White, Black and Arkansas Rivers floodplains favor crop production. Beef production, fish farming and poultry production are of importance. Ground water is often used for irrigation. Care was given, during the photo interpretation process, to exclude those areas which were flooded for the purpose of rice production from wetland designated areas.

## Climate:

The climate is uniform throughout the region. Mild winters and hot humid summers are the norm. Average temperature is approximately 65°F. Precipitation averages 40-60 inches per year with more than 50 percent falling April through September. The prevailing wind is from the southwest.

## Wetland Communities:

In the study area one of the more common Palustrine wetland classes is unconsolidated bottom. These are usually small impounded or excavated farm ponds (PUBHh, PUBHx) used for watering livestock and are generally permanently flooded. Farm ponds which dry up sometime during the year are generally classified as PUSCh or PUBFh depending on periodicity of water present.

Palustrine aquatic beds (PAB) commonly consist of duckweed (lenna spp.), water-fern (Azolla), waterlily (Nymphaea odorata), lotus (Nelumbo lutea), pennywort (Hydrocotyle spp.), and arrowhead (Sagittaria spp.).

Palustrine emergent wetlands characteristically are temporarily or seasonally flooded depressions with persistent hydrophytes often located in floodplain areas (PEM1A, PEM1C, PEM1F). Common emergents include rush (Juncus spp.), smartweed (Polygonum), bulrush (Scirpus spp.), spikerush (Elecharis spp.), and sedge (Cyperus spp., and Carex spp.).

The classification of scrub/shrub or forested wetlands is determined by the height of woody vegetation; forested being greater than 6 meters and scrub/shrub being less than 6 meters.

Common woody wetland species include willow (Salix spp.), American elm (Ulmus americana), hackberry (Celtis laevigata), southern red oak (Quercus falcata), tupelo-gum (Nyssa aquatica), hickory (Carya spp.), willow oak (Quercus phellos), water oak (Quercus nigra), sweetgum (Liquidambar styraciflua), Cherrybark oak (Quercus rubra), overcup oak (Quercus lyrata), and Nuttall oak (Quercus nuttallii).

Sites found with cypress (Taxodium distichum) were noted. Cypress swamps are usually semi-permanently flooded (PFO2F). Where a break between broad-leaved deciduous and needle-leaved deciduous subclasses could not be reliably made, a general deciduous sub-class was used (PF06F). An important wetland shrub found in the study area is buttonbush (Cephalanthus occidentalis). This shrub is characteristic of seasonal and more often, semi-permanently flooded wetlands.

Natural or artificial unvegetated basins greater than 20 acres are classified as Lacustrine. Many Lacustrine wetlands are impounded within the study area. Significant fluctuation in water level occurs in many of these lakes due to artificial inundation and drainage. The water is drawn down in anticipation of high water and is allowed to flood back temporarily, to prevent flooding downstream. The most common Lacustrine classification is unconsolidated bottom (L1UBHh or L2UBHh). The lake margins, exposed due to the extreme fluctuations in water level, are classified as seasonally flooded unconsolidated shore (L2USCh) or

occasionally as semi-permanently flooded unconsolidated bottom (L2UBFh). More recent impoundments may have standing dead trees (PF05Hh). Lacustrine aquatic beds (L1AB, L2AB) commonly consist of duckweed (Lemna spp.), water lily (Nymphaea spp.), lotus (Nelumbo spp.), pennywort (Hydrocotyle spp.), and arrowhead (Sagittaria spp.).

The Riverine system includes the classes unconsolidated bottom (UB), unconsolidated shore (US), and streambed (SB). In this study area unconsolidated bottom and unconsolidated shore are restricted to the Riverine lower perennial (R2UB) subsystem. While Riverine unconsolidated shore is not covered by perennial flow, it is associated with the reach of the river that contains permanent water and is included in that perennial subsystem. Streams which do not flow year round are classified as Riverine intermittent stream beds (R4SB). In cases where streamside Palustrine wetland vegetation cannot be separately delineated from the Riverine system, the wetlands are mapped as linear Palustrine vegetated features.

Important Note to Users:

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:

National Wetlands Inventory maps are available from:

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

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

TABLE 1. SUMMARY OF WETLANDS AND DEEPWATER HABITATS

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION SUBSTRATE
PUB	Palustrine unconsolidated bottom	Pond	Unvegetated
PAB3/4	Palustrine aquatic bed	Pond aquatics	Water lily ( <u>Nymphaea</u> , pennywort ( <u>Hydrocotyle</u> ), Duckweed ( <u>Lemna</u> )
PUS	Palustrine unconsolidated shore	Pond Flat	Unvegetated mud, sand, gravel
PEM1	Palustrine emergent, persistent	Marsh, wet meadow	Sedge ( <u>Cyperus</u> spp. and <u>Carex</u> spp.), rush ( <u>Juncus</u> spp.), cattails ( <u>Typha</u> spp.)
PSS1	Palustrine scrub/shrub broad-leaved deciduous	Shrub swamp	Willow ( <u>Salix nigra</u> ), buttonbush ( <u>Cephalanthus</u> <u>occidentalis</u> )
PF01	Palustrine forested broad-leaved deciduous	Forested Wetland	Willow ( <u>Salix nigra</u> ), southern red oak ( <u>Quercus falcata</u> ), tupelo-gum ( <u>Nyssa</u> <u>aquatica</u> )
PF06	Palustrine forest deciduous	Forested Wetland	Cypress ( <u>Taxodium</u> <u>distichum</u> ) tupelo- gum ( <u>Nyssa aquatica</u> )
L1UB	Lacustrine limnetic unconsolidated bottom	Lake	Unvegetated mud, sand, gravel
L2US	Lacustrine littoral unconsolidated shore	Lake flat	Unvegetated mud, sand, gravel
L2UB	Lacustrine littoral unconsolidated bottom	Lake bottom	Unvegetated mud, sand, gravel

TABLE 1. SUMMARY OF WETLANDS AND DEEPWATER HABITATS

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION SUBSTRATE
L2AB	Lacustrine aquatic bed	Pond weeds, water weeds	<u>Nymphaea</u> , (water lily) <u>Lemna</u> (duckweed) <u>Hydrocotyle</u> (pennywort)
R2UB	Riverine unconsolidated bottom	River bottom	Unvegetated mud, sand, gravel
R4SB	Riverine intermittent streambed	Intermittent stream	Unvegetated sand, gravel
R2US	Riverine unconsolidated shore	River bar, river flat	Unvegetated mud sand, gravel

Index Map 1



Literature Cited:

Bailey, R.G. 1978. Description of the Ecoregions of the United States. U.S. Dept. of Agriculture, Forest Service, 77 pp.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRue, 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Dept. of Interior, Fish and Wildlife Service, FWS/PBS-79/81, 103 pp.

Soil Survey of Lonoke and Prairie Counties Arkansas. (1981) U.S. Department of Agriculture, Soil Conservation Service, 122 pp.

Soil Survey of Jefferson and Lincoln Counties, Arkansas. (1980) U.S. Department of Agriculture, Soil Conservation Service, 107 pp.