

NATIONAL WETLANDS INVENTORY  
NOTES TO USERS  
TENNESSEE WETLAND MAPPING, AREA I  
1:100,000 SCALE MAPS COVERED

NASHVILLE NE (TENNESSEE PORTION ONLY)

NASHVILLE SE

COLUMBIA NE, SE

CHATTANOOGA NW

CORBIN SW

CORBIN NW (TENNESSEE PORTION ONLY)

CORBIN NE (TENNESSEE PORTION ONLY)

## NATIONAL WETLANDS INVENTORY

### 1:100,000 MAP NARRATIVE

#### INTRODUCTION

The U.S. Fish and Wildlife Service, Office of Habitat Resources, is conducting an inventory of the wetlands of the United States. The National Wetlands Inventory (NWI) is establishing a wetland data base in both map and computer forms for the entire country. The NWI information will serve to identify the current status of U.S. wetlands and can be used as a reference point from which future changes in wetlands can be evaluated.

#### PURPOSE

The purpose of Notes to Users is to provide general information regarding the production of NWI maps and wetlands found within a relatively similar geographic area. Notes to Users are not intended to include a complete description of all wetlands found in the area nor provide complete plant species information.

#### MAP PREPARATION

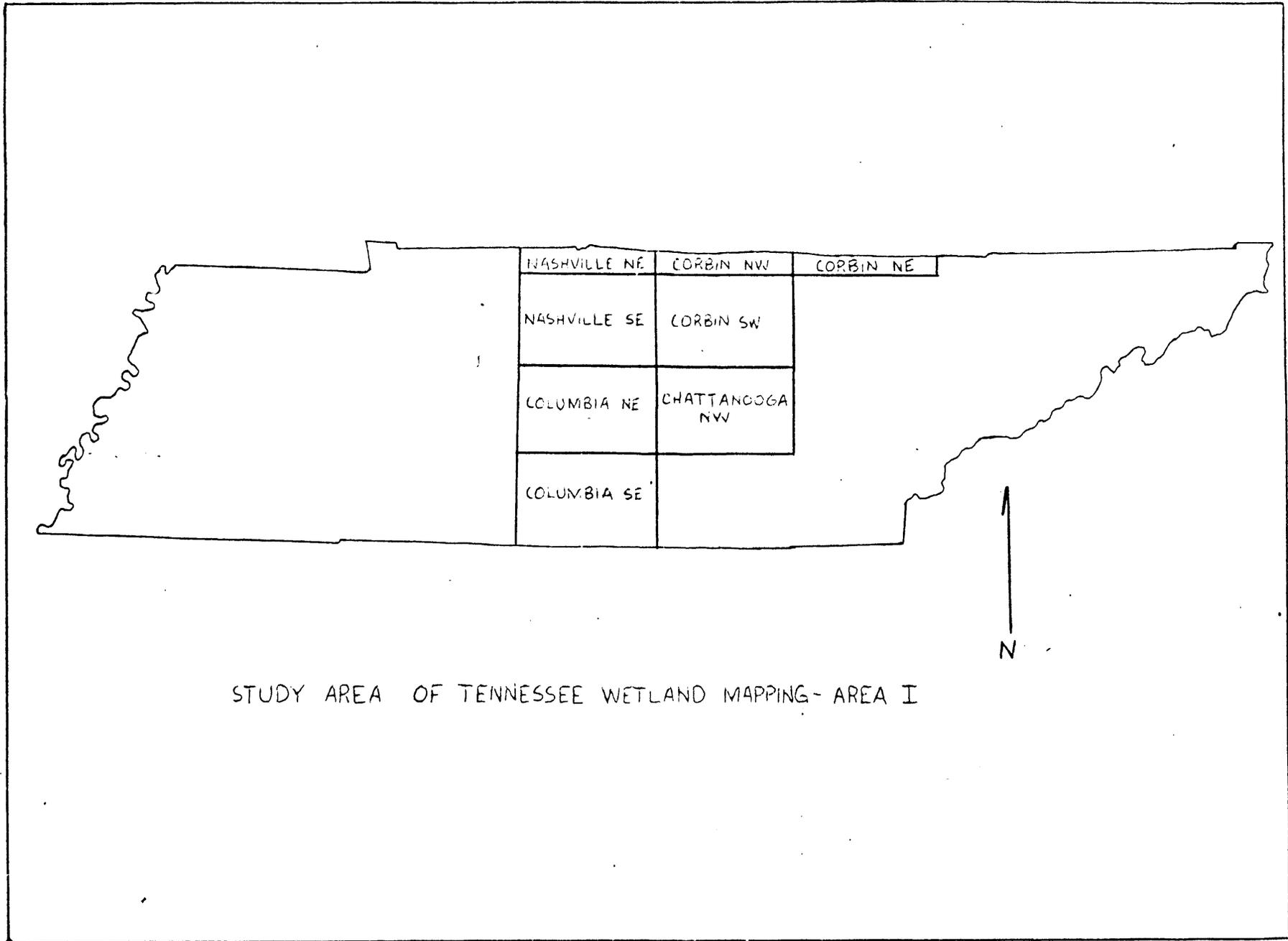
Wetland classification for the NWI maps is in accordance with "Classification of Wetlands and Deepwater Habitats of the United States" by L.M. Cowardin, et. al., 1979.

Wetland classification and delineations were produced by photo interpretation of high level aerial photography. The photography used was NHAP color infrared at a scale of 1:58,000. The photography was taken during March and April of the years 1980 - 1982. The field checking took place in October of 1983. To correctly classify the wetlands, field checks, soil surveys, and input from regional USFWS personnel were used to relate various photographic signatures to actual wetland identification and classification.

Collateral data included U.S.G.S. topographic maps (7.5 and 15 minute series) SCS soil surveys, climate, and vegetation information.

#### STUDY AREA

The study area for the Tennessee Wetland Mapping, Area I, project is geographically situated between 35° north - 36°45' north latitude, and 84° west - 87° west longitude. Within this area approximately 11,457 square miles were mapped (see index map). One hundred seventy-six (176) 1:24,000 (large scale) maps along with 16 partial 1:24,000 (large scale) maps cover this central region of Tennessee.



STUDY AREA OF TENNESSEE WETLAND MAPPING- AREA I

## Bailey's Ecoregion

The ecoregion classification for this project area is the Humid Temperate Domain, Hot Continental Division, Eastern Deciduous Province. The landscape consists of rolling land and plateaus with elevations up to 3,000 feet (900m). Flowing in a general east to west direction, the Cumberland River dissects the work area. Both the Tennessee Valley Authority and the Army Corps of Engineers have done extensive damming of rivers creating numerous reservoirs in the study area. The physiography of the region is diverse with its Western Highland Rim, Nashville Basin, Eastern Highland Rim and Plateau. As one moves from east to west the elevation from the Plateau to the Eastern Highland Rim drops dramatically by 800 to 1000 feet. From this Rim area of undulating hills, the elevation drops again approximately 150 feet into the Nashville Basin. Further west, the elevation ascends to the Western Highland Rim. Another type of terrain, was that associated with Karst topography. This area is dominated by depressions and sinkholes. Within these areas it is not unusual for streams to disappear into large sinkholes and to reappear elsewhere. In several circumstances, perennial streams made sudden appearances. The climate of the region has average annual temperatures of 40° - 60° F (4°-15°C), with annual precipitation averages of 35"-60" (900-1500mm) that comes mostly in the summer.

Climax vegetation in the Eastern Deciduous Province consists of such species as oak, alder, willow, ash, maple, elm, birch, hickory and walnut. Even though pines readily grow in cleared areas, they rarely exist in a wetland situation. While temporary wetlands are the most common in all areas, seasonal and semipermanent areas were found in depressions, nearly level terrain, and bottomland.

Soils are an important element of hydric conditions and are used to define wetlands. Soils within the study area do vary but tend to be acidic, low in nutrients, and poorly drained. Soils of this type are found in bottomlands, depressions, and nearly level terrain. Some examples of these soils are the Melvin, Lawrence, and Guthrie series.

### WETLANDS AND DEEPWATER HABITATS

Wetlands and deepwater habitats within the project area fall within the Palustrine, Lacustrine, and Riverine systems. The following paragraphs define both habitats and their characteristics.

Wetland habitats: "In general terms, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. The single feature that most wetlands share is soil or substrate that is at least periodically saturated or covered by water. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil.

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year."

Deepwater Habitats: "Deepwater habitats are permanently flooded lands lying below the deepwater boundary of wetlands. Deepwater habitats include environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live, whether or not they are attached to the substrate. As in wetlands, the dominant plants are hydrophytes; however, the substrates are considered nonsoil because the water is too deep to support emergent vegetation (U.S. Soil Conservation Service, Soil Survey Staff 1975).

Wetlands and Deepwater Habitats are defined separately because traditionally the term wetland has not included deep permanent water; however, both must be considered in an ecological approach to classification. We define five major systems: Marine, Estuarine, Riverine, Lacustrine, and Palustrine. The first of these include both wetland and deepwater habitats but the Palustrine includes only wetland habitats." (Cowardin, et. al. 1979.)

#### USER CAUTION

The map documents were prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography. The aerial photographs typically reflected conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of aerial photographs. Thus a detailed, on-the-ground and historical analysis of a single site may result in revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on the map document.

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specific agency regulatory programs and proprietary jurisdictions that may affect such activities.

Changes in the landscape and/or land use could have occurred since the time of photography. Therefore, some discrepancies between the wetland map and current field conditions may exist. Any questions regarding wetland omissions, inclusions, or errors should be brought to the attention of the Regional Wetlands Coordinator, Region 4. The Project Officer for this wetland map is John Hefner, Regional Wetlands Coordinator, U.S. Fish and Wildlife Service, Region 4, R.B. Russell Federal Building, 75 Spring Street, S.W., Atlanta, Georgia 30303. Aerial photo interpretation was completed by Martel Laboratories, Inc., St. Petersburg, Florida. Maps were prepared by NWI National Team in St. Petersburg, Florida.

Bibliography:

Bailey, R.G. 1980. Description of the Ecoregions of the United States. USDA Forest Service. Intermtn. Reg. Odgen, Utah 77p.; map.

Cowardin, L. M., et. al., 1979. Classification of Wetlands and Deepwater Habitats of The United States. U.S. Dept. of Interior. U.S. Fish and Wildlife Service. Biological Services Program. Washington D.C. 103p.

Love, T. R. , et. al., 1959. Soil Survey of Coffee County, Tennessee. U.S. Dept. of Agriculture, Soil Conservation Service.

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CHARACTERISTICS OF NWI WETLAND  
SYSTEMS IN THE STUDY AREA

Palustrine

This is the most prevalent system throughout the entire mapping area. The wetlands of Palustrine forested, scrub shrub, and emergents consist primarily of bottom land habitat associated with major rivers and streams. Also included are areas surrounding reservoirs and nearly level land.

A very high percentage of the forested and scrub shrub wetlands are broad leaved deciduous plants. Temporarily flooded wetlands may consist of such species as elms (Ulmus spp.), cottonwood (Populus deltoides), ash (Fraxinus spp.), sycamore (Platanus occidentalis), sweetgum (Liquidambar styraciflua), willow oak (Quercus phellos), and red maple (Acer rubrum). Scrub shrub areas may be populated by younger species from the preceding list and include willow (Salix spp.) as well. Pines (Pinus spp.), needle-leaved evergreens are found in temporary situations and are a rare occurrence.

Seasonally flooded areas may have swamp chestnut oak (Quercus michauxii), willow oak (Quercus phellos), water oak (Quercus nigra), river birch (Betula nigra), red maple (Acer rubrum). Scrub shrub plants may include black willow (Salix nigra), paw paw (Asimina triloba), and buttonbush (Cephalanthus occidentalis).

Palustrine emergents may range from various grasses, sedges (Carex spp.) and rushes (Juncus spp.) for temporarily flooded conditions, to cattail (Typha latifolia), smartweed (Polygonum spp.), sedges (Carex spp.), and rushes (Juncus spp.) for seasonal and semipermanently flooded situations.

All aquatic beds (PAB, L1AB/L2AB) were classified as unknown. Although water lily (Nymphaea odorata) was seen during the field checks, it is certain that other species are present in the project area but they were unidentifiable on photography. Numerous impounded and excavated ponds are present throughout the study area representing the open water and unconsolidated shore subclass. Other open water areas may be natural ponds and/or springs. Unconsolidated shores represent unvegetated area exposed from pond evaporation and/or draw down.

## Lacustrine

Natural or artificial open water bodies greater than 20 acres are classified as Lacustrine. The Lacustrine system on the NWI maps include the classes of open water (L10W), unconsolidated bottom (L2UB), and unconsolidated shore (L2US), and aquatic bed (L1AB and L2AB)). Nonvegetated Lacustrine substrates which are exposed at some time during the growing season are classified as unconsolidated shore. This system is present in the study area either as an impounded (h) or excavated (x) area. Lacustrine aquatic bed areas are classified similar to those in the Palustrine system.

## Riverine

The Riverine system includes the classes: open water (OW), unconsolidated shore (US), and streambed (SB). Open water and unconsolidated shore are restricted to the Riverine lower (R2) and upper perennial (R3) subsystem. Streams which do not flow year round are classified as Riverine intermittent streambeds (R4SB). Some streams are excavated (x) to improve drainage. In cases of streamside vegetation, these are mapped as Palustrine features.

## Water Regimes

Hydrologic characteristics are an important aspect of wetlands. The following water regimes describe in general terms the duration and timing of surface inundation, as well as ground-water fluctuations.

Temporarily Flooded (A) - Surface water present for brief periods during the growing season, but water table usually lies well below the surface.

Saturated Flooded (B) - Surface water is seldom present, but substrate is saturated to the surface for extended periods during the growing season.

Seasonally Flooded (C) - 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 very variable, ranging from a saturated condition to one in which the water table is well below the ground's surface.

Semipermanently Flooded (F) - Surface water persists throughout the growing season in most years. Land surface is normally saturated when water level drops below soil surface.

Intermittently Exposed (G) - Surface water is present throughout the year except in years of extreme drought.

Permanently Flooded (H) - Water covers land surface throughout the year in all years.

Special modifiers included on these NWI maps, where applicable, are:

Partly Drained (d): The water level has been artificially lowered, but the area is still classified as wetland because soil moisture is sufficient to support hydrophytes. Drained areas are not considered wetland if they can no longer support hydrophytes.

Diked/Impounded (h): Created or modified by a barrier, dike, or dam which obstructs the inflow or outflow of water.

Excavated (x): Lies within a basin or channel excavated by man.

TABLE 1

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION SUBSTRATE
L10W	Lacustrine limnetic open water	Lake	Open water
L2US	Lacustrine littoral unconsolidated shore	Lake bed	Unvegetated mud, sand, gravel
L2UB	Lacustrine littoral unconsolidated bottom	Lake bottom	Unvegetated mud, sand, gravel
L1AB6	Lacustrine limnetic unknown aquatic bed	Pond weeds, waterweeds	unknown aquatics
L2AB6	Lacustrine littoral unknown aquatic bed	Pond weeds, waterweeds	unknown aquatics
R20W	Riverine lower perennial open water	River, stream	Open water, year-round flow
R30W	Riverine upper perennial open water	River, stream	Unvegetated river bottom
R4SB	Riverine intermittent streambed	Intermittent stream	Unvegetated river bottom
R2US	Riverine lower perennial open water	River bar, river flat	Unvegetated mud, sand, gravel
R3US	Riverine upper perennial unconsolidated shore	River bar, river flat	Unvegetated mud, sand, gravel
POW	Palustrine open water	Pond	Open water
PUS	Palustrine aquatic bed	Pondweeds, waterweeds	Unknown aquatics
PAB6	Palustrine unconsolidated shore	Pond shore	Unvegetated mud, sand, gravel
PEM1	Palustrine Persistent Emergents	Marsh, wet meadow	<u>Scirpus sp.</u> (bulrush) <u>Carex spp.</u> (sedge) <u>Juncus spp.</u> (rush) <u>Polygonum spp.</u> (smartweed) <u>Typha latifolia</u> (cattail)

TABLE 1

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION SUBSTRATE
PSS1	Palustrine scrub-shrub, broad-leaved deciduous	Shrub swamp	<u>Salix spp.</u> (willow) <u>Cephanthus occidentalis</u> (buttonbush) <u>Asimina triloba</u> (paw paw)
PF01	Palustrine forested, broad-leaved deciduous	Forested wetlands	<u>Populus deltoides</u> (cottonwood) <u>Platanus occidentalis</u> (sycamore) <u>Acer spp.</u> (maples) <u>Acer negundo</u> (box elder) <u>Rhus spp.</u> (sumac) <u>Ulmus spp.</u> (elm) <u>Celtis spp.</u> (hackberry) <u>Quercus michauxii</u> (swamp chestnut oak) <u>Gleditsia trianthos</u> (honey locust) <u>Acer rubrum</u> (red maple) <u>Liriodendron tulipifera</u> (tulip tree) <u>Nyssa sylvatica</u> (black gum) <u>Liquidambar styraciflua</u> (sweetgum) <u>Quercus phellos</u> (willow oak) <u>Quercus alba</u> (white oak) <u>Quercus nigra</u> (water oak) <u>Nyssa aquatica</u> (water tupelo) <u>Diospyro spp.</u> (persimmon) <u>Betula nigra</u> (river birch)

TABLE 1

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION SUBSTRATE
PF01/4	Palustrine forested, broad-leaved deciduous and needle-leaved evergreen	Forested wetlands	Broad-leaved deciduous as per PF01 needle-leaved evergreen as per PF04
PF04	Palustrine forested, needle-leaved evergreen	Forested wetlands	<u>Pinus</u> (pine)