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NATIONAL WETLANDS INVENTORY  
1:100,000 MAP NARRATIVE

SHERMAN SE  
DALLAS NE  
DALLAS SE  
WACO NE  
WACO SE

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 complete description of all wetlands found in the area nor provide complete plant species information.

AREA COVERED

The study area is defined by the eastern half of both the Dallas and Waco as well as the southeastern section of the Sherman 1:100,000 scale map. Included in this area are the floodplains associated with the East Fork Trinity, Elm Fork Trinity, Trinity, Navasota, Brazos Rivers as well as Chambers, Little Rush, and Richland Creeks. Major Lacustrine impoundments include Lake Ray Hubbard, Lake Tawakoni, Mountain Creek Lake, North Lake, White Rock Lake, New Terrell Lake, Cedar Creek Reservoir, Bardwell Lake, Lake Waxahachie, Lavon Reservoir, Lewisville Lake, Navarro Mills Reservoir, Trading House Creek Reservoir, Springfield Lake, Fairchild Lake, Mexia Lake, Camp Creek Lake and Lake Limestone.

BAILEY'S ECOREGIONS

The area of Texas considered in this report is contained completely within the Oak Bluestem Parkland section of the Prairie Parkland Province and is represented by an intermingling of prairie grove and strips of deciduous trees. Grasses are the dominant type of prairie vegetation. The most prominent type is bluestem prairie. Upland forest types are dominated by oak species.

The terrain of the study area is flat to moderately rolling. Elevations, for the most part, range from 100 to 300 feet. A very small portion of the study area reaches elevations of 500 feet.

The climate of the study area can be described as being humid subtropical influenced by tropical maritime air masses from the Gulf of Mexico modified by the polar air masses. The study area is hot in summer, but cool in winter when an occasional surge of cold air causes a sharp drop in otherwise mild temperatures. In winter the average temperature is approximately 44°F. In summer the average temperature is approximately 81°F. Precipitation is usually 32 - 40 inches per year. Snowfall is infrequent. Rainfall usually falls heaviest April through September which includes the growing season for most crops. Cotton and grain sorghum are major cash crops. Major land utilization in the area is the production of beef cattle.

Soil is an important element of hydric conditions and is one of the criteria used to define wetlands. The majority of inventoried soil types found in the area of study are indicative of upland situations and classified as moderately well-drained, loamy soils and silty clay loamy soils (Bailey, 1978). The wetland soil associations present in the study area include the following types:

- Aufco
- Frio
- Kaufman
- Lufkin
- Mabank
- Norwood
- Ovan
- Ships
- Tinn
- Trinity
- Vaughan
- Wilson

These poorly drained (hydric) soils which support wetland vegetation are usually limited to the river valley areas of the East Fork Trinity, Elm Fork Trinity, Trinity, Navasota, Brazos Rivers as well as Chambers, Little Rush, and Richland Creeks.

## MAP PREPARATION

Wetland classification for the NWI maps is in accordance with "Classification of Wetlands and Deep-Water Habitats of the United States," Cowardin, et al, 1979.

Wetland classification and delineations were produced by air photo interpretation of high level aerial photography. The photography used was color infrared at a scale of 1:65,000.

The aerial photography used for mapping is primarily excellent in quality and was taken during the month of November 1982 with the exception of the photography used for Waco SE which was taken in March 1982 and exhibited some problems with bleaching. In an attempt to minimize inaccuracies in correlating ground conditions to photography, soil surveys were followed closely in problem areas. A field trip was conducted in April 1984 in order to relate various photographic signatures to actual wetland classification.

Collateral data included U.S.G.S. topographic maps (7.5 minutes), soil, climate, and vegetation information from available U.S.D.A. Soil Surveys (Brooks 1978, Brooks et. al. 1964, Cochran 1980, Coffee et. al. 1980, Ford and Pauls 1980, Hanson and Wheeler 1969, Meade et. al. 1974, Pringle, 1977 Templin et. al., Wyrick 1978, Lane and Janak 1981). Large-scale NWI wetland maps (1:24,000 scale) are available for the U.S.G.S. 7.5 minute topographic sheets which are included within the study area indicated on Index Map A.

## 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 2. The Project Officer for those wetland maps is Warren Hagenbuck, Regional Wetlands Coordinator, U.S. Fish and Wildlife Service, Region 2, P.O. Box 1306, Albuquerque, N.M. 87103. Aerial photo interpretation was completed by Martel Laboratories, Inc., St. Petersburg, Florida. Maps were prepared by NWI National Team in St. Petersburg, Florida.

#### WETLANDS AND DEEPWATER HABITATS

Wetlands and deepwater habitats within the subject area fall within the Palustrine, Lacustrine, and Riverine systems. Deepwater habitats are areas which are permanently flooded (except during periods of extreme drought) and are characterized by open water on the aerial photography. These habitats are present in all systems (see Table 1).

#### CHARACTERISTICS OF NWI WETLAND SYSTEMS IN SHERMAN SE, DALLAS NE, DALLAS SE, WACO NE, WACO SE

##### PALUSTRINE SYSTEM

In the study area, one of the more common Palustrine wetlands is open water. These are usually small impounded or excavated farm ponds (POWHh, POWHx) used for watering livestock. These 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 (Lemna spp.), waterlily (Nymphaea spp.), lotus (Nelumbo spp.), 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). Many are too small to map. Common emergents include rush (Juncus), smartweed (Polygonum), bulrush (Scirpus), spikerush (Eleocharis), and sedge (Cyperus spp.). Emergents such as cattails (Typha spp.) and sedge (Cyperus spp. and Carex spp.) are found in semipermanently flooded areas (PEM1F).

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 typically include willow (Salix spp.), green ash (Fraxinus pennsylvanica), American elm (Ulmus americana), cottonwood (Populus deltoides), pecan (Carya illinoensis), sugar hackberry (Celtis laevigata), and honey locust (Giladitsia triacanthos). Less commonly found are water oak (Quercus nigra), box elder (Acer negundo), and hawthorn (Crataegus spp.). 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.

### LACUSTRINE SYSTEM

Natural or artificial unvegetated basins greater than 20 acres are classified as Lacustrine. All 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. Collateral data was available concerning flood pool elevations on the exact date of the photography as well as conservation pool elevation data for some lakes within the study area (U.S. Army Corps of Engineers - Fort Worth District). This data was used to modify the photo interpretation process when necessary to insure a more accurate representation of normal level of reservoir flooding. The most common Lacustrine classification is open water (L10WHh, L20WHh). 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 (PFO5Hh). Lake Ray Hubbard, Lake Tawakoni, Mountain Creek Lake, North Lake, White Rock Lake, New Terrell Lake, Cedar Creek Reservoir, Bardwell Lake, Lake Waxahachie, Lavon Reservoir, Lewisville Lake, Navarro Mills Reservoir, Trading House Creek Reservoir, Springfield Lake, Fairchild Lake, Mexia, Lake Camp Creek Lake and Lake Limestone.

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.).

## RIVERINE SYSTEM

The Riverine system includes the classes open water (OW), unconsolidated shore (US), and streambed (SB). In this study area open water and unconsolidated shore are restricted to the Riverine lower perennial (R20W) 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 streambeds (R4SB). Some Riverine systems have their banks lined with trees or shrubs. In cases where streamside Palustrine wetland vegetation cannot be separately delineated from the Riverine system, the wetlands are mapped as linear Palustrine features.

## MODIFIERS

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

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

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 variable, being near the land surface to well below the land surface.

Semi-permanently Flooded (F) -- Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or near the land surface.

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

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

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. SUMMARY OF WETLANDS AND DEEPWATER HABITATS

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION SUBSTRATE
POW	Palustrine open water	Pond	Open water
PAB3	Palustrine aquatic bed	Pond weeds	<u>Nymphaea</u> (water lily) <u>Hydrocotyle</u> (pennywort) <u>Myriophyllum</u> (milfoil)
PAB4	Palustrine aquatic bed	Pond weed	<u>Lemna</u> (duckweed)
PUS	Palustrine unconsolidated shore	Pond shore	Exposed pond shore
PUB	Palustrine unconsolidated bottom	Pond bottom	Exposed pond bottom
PEM1	Palustrine emergent, persistent.	Marsh, wet meadow	<u>Scirpus</u> (bulrush) <u>Typha</u> (cattail) <u>Juncus</u> (rush) <u>Eleocharis</u> (spikesedge) <u>Carex</u> spp. (sedge) <u>Polygonum</u> (smartweed)
PSS1	Palustrine scrub/shrub broad-leaved deciduous	Shrub swamp	<u>Salix</u> spp. (willow) <u>Cephalanthus occidentalis</u> (buttonbush)
PFO1	Palustrine forested broad-leaved deciduous	Forested wetland	<u>Salix nigra</u> (black willow) <u>Fraxinus pennsylvanica</u> (green ash) <u>Celtis</u> spp. (hackberry) <u>Quercus</u> spp. (oaks) <u>Ulmus americana</u> (American elm) <u>Populus deltoides</u> (Cottonwood) <u>Carya illinoensis</u> (pecan)

TABLE 1. SUMMARY OF WETLANDS AND DEEPWATER HABITATS

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION SUBSTRATE
L1OW	Lacustrine open water	Lake	Open water
L2US	Lacustrine littoral unconsolidated shore	Lake flat	Unvegetated mud, sand, gravel
L2UB	Lacustrine littoral unconsolidated bottom	Lake bottom	Unvegetated mud, sand, gravel
L2AB	Lacustrine aquatic bed	Pond weeds, water weeds	<u>Nymphaea</u> (water lily) <u>Lemna</u> (duckweed) <u>Hydrocotyle</u> (pennywort) <u>Myriophyllum</u> (milfoil)
R2OW	Riverine lower perennial open water	River, stream	Open water, year round
R4SB	Riverine intermittent streambed	Intermittent stream	Unvegetated river bottom
R2US	Riverine unconsolidated shore	River bar, river flat	Unvegetated mud, sand, gravel
R2UB	Riverine unconsolidated bottom	River bottom	Unvegetated mud, sand, gravel

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