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NATIONAL WETLANDS INVENTORY

NOTES TO USERS

1:100,000 SCALE MAP

DYERSBURG NW

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1:100,000 MAP NARRATIVE

DYERSBURG NW

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 the "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 May of 1981 and April of 1980. To correctly classify the wetlands, ground truthing, soil surveys, and input from regional U.S.F.W.S. personnel were used to relate the various photographic signatures to actual wetland identification and classification. Initial ground truthing with the photography occurred in October of 1986. Collateral data included U.S.G.S. topographic maps (7.5 and 15 minute series), and vegetation information.

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 or habitat 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 Ron Erickson, Regional Wetlands Coordinator; U.S. Fish and Wildlife Service, Region 3, Federal Building, Ft. Snelling, Twin Cities, MN 55111.

GEOGRAPHICAL OVERVIEW

Location

The mapping area is located in the southeastern corner of Missouri, excluding the "boot-heel". The eastern boundary follows the Missouri state line in the Mississippi River. The boundary extends westward to 90°00 W longitude, northward to 37°00 N latitude, and outhward to 36° N latitude.

Ecoregion and Vegetation

The entire study area is defined ecologically by Bailey (1981) as Southern Forest Flood Plain Section, Outer Coastal Plain Forest Province, Subtropical Division, Humid Temperature Domain. This mapping area represents the extreme northward extent of the ecoregion which extends from the Gulf of Mexico up the Mississippi River floodplain. Consequently, the vegetation in this area represents more of an ecocline situation. There is a diffusion of the more temperate evergreen species commonly found in the Southern Forest Flood Plain Ecoregion, such as evergreen oaks, bald cypress, and members of the laurel and magnolia families with the temperate deciduous northern forest species of the neighboring Oak-Hickory Ecoregion. In addition, it has been estimated that 90% of the natural forest vegetation in Southeast Missouri, in which these maps are contained, has been cleared and converted to cropland, mostly cotton and soybeans. (Dieffenbach)

Physiography and Landforms

Ecoregion areas can also be defined in terms of landforms and physical structure. Physiographically, the Southern Forest Flood Plain Ecoregion is also known in our study area as the Lower Mississippi Alluvial Plain. This plain is characterized as a flat depositional plain as it occurs directly adjacent to the Mississippi River. The flood plain becomes irregular and gently sloping as it moves directly adjacent to the Mississippi River. The flood plain becomes irregular and gently sloping as it moves westward towards Crowley's Ridge, an ancient river escarpment. Here on the historic outwash plain, wind-blown alluvial material forms small ridges, dunes, and pothole-like depressions. Old river terraces and channel cuts are also prevalent. This entire area, with the exception of small tracks, has been cleared and altered for agricultural use.

Hydrology

The major hydrologic feature of the Mississippi Alluvial Plain is surface water drainage. The Mississippi River is the major drainage system. The Little River is a direct tributary to the Mississippi. Historically, this and other tributaries were slow moving, widely meandering channels with extensive floodplains and backswamps. However, a series of state and federal flood control and drainage programs beginning as early as 1850 have transformed

them into a series of straight-lined, leveed ditches. Overland flooding and consequent ground water and soil recharge has been greatly reduced by this action. Virtually no first or second order streams remain except as small drainage or field ditches.

Climate

The climate of the area is classified by Koppin's Scheme as humid subtropical. The winters are absent of extreme cold and the summers are humid. However, the study area is just south of a transition zone into a moist continental climate where winters are more severe. Consequently, this area of southeastern Missouri can experience frequent freezing temperatures in the winter.

More specific climatological data collected at the NOAA station in Sikeston, Missouri reveals that the average daily temperature range is from 35°F to 78°F. The average low is 26°F in the winter and average high is 89°F in the summer. Annual precipitation averages around 47 inches. Over half of this rain falls during the growing season of April through September. (Festerland)

Soils

Soils within the study area fall into the broad taxonomic groups of Mollisols and Inceptisols. The Mollisols which are characterized by thick, black surface horizons are formed under moist conditions generally found on the flat floodplain directly adjacent to the Mississippi River. These are among the most fertile soils in the world. The Inceptisols are found on the irregular plain of the old floodplain. This alluvial or loess material is very fine and forms where sedimentation is no longer active. Soil water is available for more than three consecutive months through the growing season.

More specific soil information was made available only for the counties of Mississippi and Scott. This area contains numerous soils that are considered hydric by the SCS. The Sharkey association, Commerce-Carutnersville association, Tifton-Reelfoot association, and Sikeston association are all poorly drained. Together, they account for approximately 75% of the survey coverage of the mapping area.

WETLAND COMMUNITIES

Wetlands and deepwater habitats within the region fall within the riverine, lacustrine, and palustrine systems. Deepwater habitats are areas which are permanently flooded and are characterized by open water on the aerial photography. These habitats are present in the riverine and lacustrine systems, while wetland habitats are present in all systems. (See table 1)

The riverine system includes lower perennial permanent rivers (R2UB) such as the Mississippi River and intermittent drainages (R4SB). USGS topographic information is used to distinguish the classification, unless other collateral data such as field siting contradicts. Within the lower perennial (R2) subsystem, unconsolidated bottom (UB), unconsolidated shore (US), and aquatic bed (AB) classes are found. Unconsolidated bottom denotes permanent or semipermanent water occurring within the channels. The unconsolidated shore classification denotes the unvegetated flats and sandbars that are flooded and subsequently exposed for varying periods each year. Aquatic bed species often occurring as a result of beaver activity (b) or in the slower moving canals and streams. Canals and rivers are also excavated (x) to improve drainage.

Intermittent drainages are classified as semipermanently flooded streams (R4SBF). These streams are predominantly ditches and canals. They are entrenched and straightened, restricting flooding and overland flow on surrounding terrain. In instances of streamside vegetation which occurs in or along channels and sustains flooding, the stream is delineated as a palustrine wetland.

Lacustrine systems are natural or artificial water bodies greater than 20 acres. These large bodies have been created through excavation (x) or by impounding (h) rivers and streams. Lacustrine systems deeper than six feet are classified as permanent unconsolidated bottom (LIUBH) and occur naturally as large oxbow lakes or excavated as levee pits in the Mississippi floodplain.

Permanent shallow littoral lacustrine systems less than six feet deep are classified only on the basis of collateral data, such as in Big Oak Tree Lake, and generally will support aquatic bed species such as pondweeds (Potamogeton sp.) (L2AB) and scattered forested species such as cypress (Taxodium distichum) (L2UB/F02). Littoral lacustrine systems exposed on a yearly basis are classified as unconsolidated shore (L2US) and occur primarily in conjunction with permanent lacustrine water bodies.

Palustrine wetland communities which describe vegetated wetlands and small shallow water bodies provide abundant and diverse habitat in the mapping area. Both vegetated and unvegetated classes were observed with a wide range of flooding conditions.

Palustrine forested communities (PF0) are characterized by a dominance of woody species over 20 feet tall. These occur in river floodplains and backwater swamps or as remnant stands of the bottomland hardwoods that once dominated the area. The floodplain communities found to be indicative of an intermittently exposed (G) or semipermanent (F) condition are dominated by bald cypress and to a lesser degree water tupelo (Nyssa aquatica) and willow (Salix sp.). Where cypress, a needle leaf deciduous species (PF02), is mixed with the broadleaf deciduous species (PF01), the subclass "deciduous" is used (PF06).

Bottomland hardwood communities are mainly seasonally (C) or temporarily (A) flooded. The dominant species associated with the wetter bottomlands and floodplains are silver maple (Acer saccharinum), green ash (Fraxinus pennsylvanica), willow, river birch (Betula nigra), overcup oak (Quercus lyrata), sweet gum (Liquidambar styraciflua), and sugarberry (Celtis laevigata) (PF01C). Diversity is also common in the drier temporarily flooded forests (PF01A). Species more indicative of this condition are red maple (Acer rubrum), eastern cottonwood (Populus deltoides), hackberry (Celtis occidentalis), and sometimes a mixture of more upland species of walnut (Juglans sp.), hickory (Carya sp.), and several species of oaks (Quercus spp.)

Palustrine scrub-shrub communities (PSS), woody species less than 20 feet in height, occur in all flooding conditions and throughout the mapping area. These are found invading in cleared forests and small canals, and naturally along rivers and streams. Semipermanently flooded shrub communities are dominated by buttonbush (Cephalanthus occidentalis) and willow (PSS1F). Seasonal communities were predominantly willow and small sapplings of the species indicative of the seasonal forest (PSS1C). The drier, temporary shrub complexes were comprised of willows and cottonwood, especially in disturbed areas. In more natural stands, other forested sapplings indicative of temporarily flooded forests are intermixed (PSS1A).

Palustrine emergent wetlands (PEM) were common throughout the region occurring on the recently cleared lowlands, invading smaller canals, on river flats and floodplains, and in the depressions formed in the loess plains. Cattail (Typha latifolia) is the predominant species indicative of semipermanently flooded communities (PEMF), and are often found mixed with aquatic species such as duckweed (Lemna minor) (PEM/ABF). Seasonally flooded emergent communities contain species such as lizard's tail (Saururus cernuus), nut sedge (Cyperus sp.) giant cane (Arundinaria gigantea), and rushes (Juncus spp.) (PEMC). These forbes were also indicative understory species for the seasonal forest communities. Emergents portraying temporarily flooded conditions were species such as smartweed (Polygonum sp.), dock (Rumex sp.), sedge (Carex sp.), goldenrod (Solidago sp.) morning glory (Ipomoea hederacea), and stinging nettle (Urtica dioica) (PEMA). These species were often found mixed with scattered seasonal species and showed a great range of tolerance. Many emergent wetland are actively drained (d).

Palustrine open water bodies are less than 20 acres and classified as unconsolidated bottom (PUB) when water persists throughout the growing season. These can occur naturally along the Mississippi River in small oxbows and depressions. The majority of these wetlands are excavated pits or ponds (x) and impoundments (h), and classified as intermittently exposed (G), except when less than one or two acres in size. In this case, the feature is considered to be semipermanently flooded (F). Sewage treatment ponds are artificially controlled and carry an impounded modifier (PUBKn).

Palustrine water bodies often become vegetated with aquatic bed (PAB). However, these species may not be discernable on photography not taken late enough in the growing season. Therefore, aquatic bed vegetation is delineated only if distinguishable on the photography or ground truthed.

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NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION AND PHYSIOGRAPHIC FEATURES
R2UB	Riverine Lower perennial Unconsolidated bottom	River	Unvegetated: Sand, mud
R2AB	Riverine Lower perennial Aquatic bed	River Canal	Duckweed (<u>Lemna minor</u>) Dock (<u>Rumex sp.</u>)
R4SB	Riverine Intermittent Stream bed	Canal Ditch Creek Streambed	Unvegetated: Sand, mud
L1UB	Lacustrine Limnetic Unconsolidated bottom	Oxbow Lake Large pit Reservoir	Unvegetated: Sand, mud
L2UB	Lacustrine Littoral Unconsolidated bottom	Lake flat Shallow lake	Unvegetated: Sand, mud
L2AB	Lacustrine Littoral Aquatic bed	Shallow lake	Dockweed (<u>Lemna minor</u>) Pondweed (<u>Potamogeton sp.</u>)
L2US	Lacustrine Littoral Unconsolidated shore	Lake flat Lake shore	Unvegetated Sand, mud

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION AND PHYSIOGRAPHIC FEATURES
PFO	Palustrine Forested	Swamp Bottomland forest Tree-lined canal	Cypress (<u>Taxodium distichum</u>) Tupelo (<u>Nyssa aquatica</u>) River birch (<u>Betula nigra</u>) Willows (<u>Salix</u> spp.) Sweet gum (<u>Liquidambar styraciflua</u>) Silver maple (<u>Acer saccharinum</u>) Red maple (<u>Acer rubra</u>) Cottonwood (<u>Populus deltoides</u>) Green ash (<u>Fraxinus pennsylvanica</u>) Overcup oak (<u>Quercus lyrata</u>)
PSS	Palustrine Scrub-shrub	Thicket Swamp Shrub River flat Vegetated canal	Buttonbush (<u>Cephalanthus occidentalis</u>) Willows (<u>Salix</u> spp.)
PEM	Palustrine Emergent	Marsh Meadow Pothole Depression or basin Vegetated canal or ditch	Cattail (<u>Typha latifolia</u>) Bullrushes (<u>Scirpus</u> spp.) Sedges (<u>Carex</u> spp.) Dock (<u>Rumex</u> sp.) Smartweed (<u>Polygonum</u> sp.) Rush (<u>Juncus</u> sp.) Goldenrod (<u>Solidago</u> sp.)