

**NATIONAL WETLANDS INVENTORY**

**NOTES TO USERS**

**1:100,000 SCALE MAP**

**MOBERLY SE**

**MISSOURI**

NATIONAL WETLANDS INVENTORY MAP

A. INTRODUCTION

The U.S. Fish & Wildlife Service's National Wetlands Inventory is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. The Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. (1979) is the classification system used to define and classify wetlands. Photointerpretation conventions, hydric soils lists and wetland plant lists are also available to enhance the use and application of the classification system.

B. PURPOSE

The purpose of the notes to users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive crosswalk from wetland codes on the map to common names and representative plant species, and (3) to explain local geography, climate, and wetland communities.

C. STUDY AREA

Geography: The study area covered by the Moberly SE base map is located in the northcentral portion of Missouri (Figure 1). This report pertains to the entire 1:100,000 quadrangle which involves 32 7.5' topographic quadrangles. Bailey (1980) classifies the majority of the study area in the Oak-Hickory-Bluestem Parkland of the Prairie Parkland Province of the Prairie Division of the Humid Temperate Domain. A small portion in the southern part of the study area is classified as the Oak-Hickory Forest of the Eastern Deciduous Forest Province of the Hot Continental Division of the Humid Temperate Domain.

The topography ranges from the flat Missouri River Valley to the steep bluffs along the valley to gently rolling farmland further from the Missouri River. The Missouri River bisects the quad on the western edge of the map. This is the major drainage system of this quad. Other drainage systems consist of the Chariton River, Little Chariton River, Burlett Creek, Bonne Femme Creek, Salt Creek, Moniteau Creek, Callahan Creek, Perche Creek, Rocky Fork Creek and Hinkson Creek. Numerous other smaller tributaries flow into these rivers.

Elevations range from about 960 feet located at the SE corner of the quad to about 595 feet located at the southwest corner of the quad in the Missouri River floodplain.

Climate: Annual temperature is about 58° F ranging from a record high of 116° F to a record low of -21° F. Annual precipitation varies from about 23 inches in a very dry year to about 48 inches in a very wet one.

Vegetation: The grasses in the area consist of bluegrass, lovegrass, switchgrass, bromegrass, timothy, orchard grass, clover, alfalfa, trefoil and crown vetch. Usually the grasses grow moderately tall and in bunches (Bailey 1980). Native herbaceous plants include bluestem, indiagrass, foxtail, partridgepea and fescue. A list of wetland plants is given in Section D of this report.

Soils: The soils of the Oak-Hickory-Bluestem part consist of Mollisols and Alfisols (Bailey 1980). In the Oak-Hickory Forest part, Alfisols dominate but Ultisols are also encountered. The major wetland soils within the Moberly SE which provide wetland habitat are the Bremer, Moniteau, Chariton and Carlow soils.

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS for the Missouri River Valley and Adjacent Regions from Council Bluffs, Iowa to Washington, Missouri

TABLE - Cowardin Classification Codes and Descriptions

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
L1UB (H)	Lacustrine, limnetic, unconsolidated bottom	Lake	Unconsolidated bottom
L2UB (G,H)	Lacustrine, littoral unconsolidated bottom	Lake, open water marsh	Unconsolidated bottom
L2AB  (G)	Lacustrine, littoral  Aquatic bed	Lake, marsh	<u>Lemna</u> sp. (duckweed) green algae
L2US (A,C)	Lacustrine, littoral unconsolidated shore	Beach, sandbar,	Unconsolidated shore
R2UB (G,H)	Riverine, lower perennial, unconsolidated bottom	River	Unconsolidated bottom
R2US (A,C)	Riverine, lower perennial unconsolidated shore	Beach, sandbar mudflat	Unconsolidated shore
R3RB (G)	Riverine, upper perennial rockbottom	River, stream	Rock bottom
R3UB (G)	Riverine, upper perennial unconsolidated bottom	River, stream	Unconsolidated bottom
R4SB (A,C,F)	Riverine, intermittent streambed	Stream	Streambed
PUB (F,G,H)	Palustrine unconsolidated bottom	Pond, reservoir barrow pit, marsh	Unconsolidated bottom
PAB (F,G)	Palustrine, aquatic bed	Pond, reservoir marsh	<u>Lemna</u> spp. (duckweed) green algae

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NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PEM (A)	Palustrine, emergent temporary	Depression, drainage	<u>Eleocharis</u> spp. (spike rushes) <u>Ambrosia</u> spp. (ragweed) <u>Carex</u> spp. (sedges) <u>Rumex</u> spp. (dock) <u>Juncus</u> spp. (rushes) <u>Equisetum</u> spp. (horsetail)
PEM (B)	Palustrine, emergent saturated	Seep, fen	<u>Phragmites</u> spp. (reeds) <u>Carex</u> spp. (sedges) <u>Typha</u> spp. (cattail) <u>Scirpus</u> spp. (bulrushes)
PEM (C)	Palustrine, emergent seasonal	Depression, drainage	<u>Polygonum</u> spp. (smartweed) <u>Carex</u> spp. (sedges) <u>Phalaris</u> <u>arundinacea</u> (reed canary grass) <u>Juncus</u> spp. (rushes) <u>Typha</u> spp. (cattail) <u>Scirpus</u> spp. (bulrushes)

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NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PEM (F)	Palustrine, emergent, semipermanent	Marsh, farm pond backwaters, oxbow	<u>Typha</u> spp. (cattail) <u>Scirpus</u> spp. (bulrush)
PSS1 (A,C,F)	Palustrine, scrub-shrub, broad-leaved deciduous	Marsh, floodplains, depressions	<u>Salix</u> spp. (willow) <u>Populus deltoides</u> (cottonwood)
PF01 (A,C,F)	Palustrine, forested, broad-leaved deciduous	Floodplains, depressions	<u>Salix</u> spp. (willow) <u>Ulmus americana</u> (American elm) <u>Acer saccharinum</u> (silver maple) <u>Morus</u> spp. (mulberry) <u>Acer negundo</u> (box elder) <u>Platanus</u> <u>occidentalis</u> (sycamore) <u>Carya ovata</u> (shag bark hickory) <u>Fraxinus</u> <u>pennsylvanica</u> (green ash)
PF05 (G,H)	Palustrine, forested, dead	Impoundments	Dead trees
PUS (A,C)	Palustrine, unconsolidated shore	Depression, shallow gravel pit	Unconsolidated shore
h	Diked, impounded	Dam or levee, reservoir	
x	Excavated	Strip mine, barrow pit, ditched or channelized	
d	Drained	Tiled, ditched	

## Water Regime Description

- (A) Temporarily Flooded - Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.
- (B) Saturated - The substrate is saturated to surface for extended periods during the growing season, but surface water is seldom present.
- (C) Seasonally Flooded - 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, extending from saturated to a water table well below the ground surface.
- (F) Semipermanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.
- (G) Intermittently Exposed - Surface water is present throughout the year except in years of extreme drought.
- (H) Permanently Flooded - Water covers land surface throughout the year in all years.
- (K) Artificially Flooded The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.

#### E. MAP PREPARATION

The wetland classifications that appear on the Moberly SE National Wetlands Inventory (NWI) Base Map are in accordance with Cowardin et al. (1979). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photography. The photography was taken on 15 April 1983, 6 April 1984 and 29 March 1986.

Field checks of areas found within the Moberly SE were made prior to the actual delineation of wetlands. Field check sites were selected to clarify varying signatures found on the photography. These photographic signatures were then identified in the field using vegetation types and soil types, as well as additional input from field personnel.

Collateral data included USGS 7.5' topographic maps, SCS soil surveys of Howard, Boone, and Saline Counties, USGS Water Resources Data for Missouri Water Year 1984 and 1986, vegetation and ecoregional 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. Since the photography was taken during a particular time and season, there may be discrepancies between the map and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photointerpretation was completed by the South Dakota Cooperative Fish and Wildlife Research Unit, SDSU, Brookings, SD.

#### F. SPECIAL MAPPING PROBLEMS AND SITUATIONS

The Pfa or Pfc label was used in classifying those farmed, palustrine floodplain wetlands considered non-basin in nature. In many areas on the western edge of the map a natural PEMA basin may be present but due to the fact that these areas are farmed and flooding is present, the interpreter was forced to pull these as Pfa.

The rivers which had the most flooding problems were the Little Chariton River, the Middle Fork Chariton River and the Mussel Fork Chariton River.

With regard to the flooded tress on the western edge of this quad, only the areas where a basin could be distinguished or a very dark signature with a water signature present were pulled as PF01C. All other wet trees were pulled as PF01A.

Distinguishing totally drained or historic areas, especially oxbows of the Missouri River, was difficult. Intense drainage and excavation has taken place since the topographic maps were made.

The Boone County soil survey gives the impression of a wider, flatter area in some of the draws. After discussion with a soil scientist from Boone County, most of these areas were pulled as a linear only.

Some of the March (3-29-86) photography was out of focus even when under stereo and made delineation of marginal areas difficult to distinguish.

G. MAP ACQUISITION

To discuss any questions concerning these maps or to place a map order, please contact:

Ron Erickson  
Regional Wetland Coordinator  
U.S. Fish and Wildlife Service - Region 3  
Federal Building, Ft. Snelling  
Twin Cities, MN 55111

To order maps only, contact:

National Cartographic Information Center  
U.S. Geological Survey  
507 National Center  
Reston, VA 22092  
1-800-USA-MAPS

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

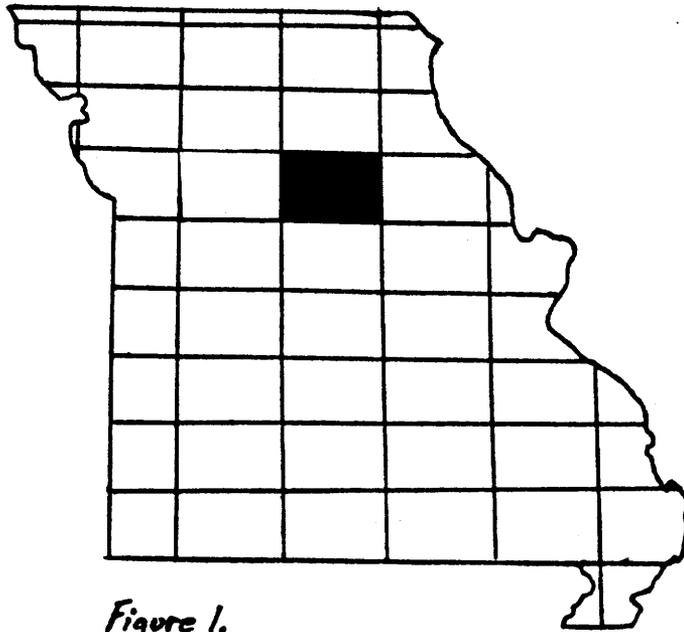
H. LITERATURE CITED

Bailey, Robert G., 1980. Description of the Ecoregions of the United States. U.S. Department of Agriculture Forest Service. miscellaneous Publication No. 1391.

Cowardin, L.M., V. Carter, F.C. Golet and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, U.S. Fish and Wildlife Service. Biological Services Program, Washington, D.C. 103 p.

Soil Surveys of Howard, Boone, and Saline Counties in Missouri. U.S. Department of Agriculture, Soil Conservation Service.

*Location of Moberly SE Map*



*Figure 1.*