

**NATIONAL WETLANDS INVENTORY**

**MAP REPORT FOR**

**EL DORADO**

**The 1:100,000 Map Units of**

**El Dorado SE and El Dorado SW**

## TABLE OF CONTENTS

I.	Introduction . . . . .	1
II.	Field Reconnaissance . . . . .	1
III.	Physical Description of Project Area . . . . .	3
IV.	Description of Wetland Habitats . . . . .	4
V.	Water Regime Description . . . . .	9
VI.	Imagery . . . . .	10
VII.	Map Preparation . . . . .	10
VIII.	Special Mapping Problems . . . . .	11
IX.	Map Acquisition . . . . .	11
X.	Literature Cited . . . . .	12
	Appendix A Locator Map	



**Field Trip Dates**

April 17 - April 21, 1995

**Aerial Photography**

Type: Color Infrared Transparencies  
Scale: 1:58,000 NHAP  
(National High Altitude Aerial Photography)  
Dates: February 7- March 11, 1983; February 8 and April  
2, 1985

Percent Coverage: 98 photo's cover all 64 USGS quadrangles  
were covered with the NHAP photography.

**Collateral Data**

United States Geological Survey Topographic Quadrangles:  
64 @ 1:24,000  
2 @ 1:250,000

Soil Surveys for the following counties:

Miller	Lafayette	Ouachita
Nevada	Columbia	Calhoun
Bradley		

Bailey's Description of the Ecoregions of the United States.

Water Resources Data - Arkansas.

Hydric Soils of the State of Arkansas.

National List of Plant Species That Occur in Wetlands -  
Arkansas.

Classifications of Wetlands and Deepwater Habitats of the  
United States.

Field Guide to the Grasses, Sedges, and Rushes of the  
United States.

Common Marsh, underwater, and Floating-leaved Plants of the  
United States.

The Audubon Society Nature Guides - Wetlands.

The Audubon Society Nature Guides - Eastern Forests.

Field Guide to North American Trees.

Field Guide: Trees and Shrubs.

### **III. PHYSICAL DESCRIPTION OF PROJECT AREA**

The area covered is between 92 W to 94 W longitude and 33 N to 33 30' N latitude. It extends through the Southeastern Mixed Forest Province from the Red River floodplain in the west to the Ouachita River and Felsenthal National Wildlife Refuge in the east.

#### **Geography**

Southeastern Mixed Forest Province - The region contained within this province extends eastward from the Red River Valley to the Ouachita River floodplain.

#### **Climate**

Southeastern Mixed Forest Province - The climate throughout the region is predominantly uniform. The region experiences relatively short, mild winters and long, hot and humid summers. Temperatures average 46° F during the winter with 2 inches of annual snowfall and 80° F during the summer. Annual precipitation averages approximately 50 inches with a slightly higher peak during the heavy rainstorms of the early spring and midsummer periods. The rate of evaporation is less than annual precipitation but summer droughts are possible. The growing season averages 250 days out of the year.

#### **Vegetation**

Southeastern Mixed Forest Province - This region's vegetation consists of loblolly and slash pine intermixed with various oaks, hickory, sweetgum, and red maple. In oxbow areas cypress trees are abundant. Lizard tail and smartweed were common wetland herbaceous species in this area.

#### **Soils**

Southeastern Mixed Forest Province - The dominant soils of this region are Ultisols. Inceptisols are found along the floodplains where agriculture is predominant.

Unconsolidated sediments were laid down by water and wind with formations of chalk and marl.

**IV. DESCRIPTION OF WETLAND HABITATS IN STUDY AREA**

**A. RIVERINE**

Major rivers flowing through the project area such as the Red River and the Ouachita River will be classified as R2UBH. Some smaller perennial creeks were also classified as R2UBH. Riverine bar and flats associated with R2UBH will be classified as R2USA or R2USC.

Intermittent streams and creeks will be classified as R4SBA and R4SBC. Unconsolidated shore associated with intermittent streams and creeks will be classified as R4SBA.

**B. LACUSTRINE**

Reservoirs will be classified as L1UBHh. Shoreline flats associated with the reservoirs will be classified as L2USAh or L2USCh.

Many portions of the Ouachita River located in the project area will be classified as a series of L1UBHh's. Each L1UBHh along the river can hold different pool levels due to a lock and dam system.

**C. PALUSTRINE**

Palustrine wetlands are the dominant wetland classification type observed in the project area. Impounded ponds (PUBHh) with unconsolidated bottom are the most common. Impounded ponds with unconsolidated shore (PUSAh or PUSCh) were also found. Gravel pits, sewage treatment ponds, and unvegetated oxbows will be classified PUB.

Vegetated, -herbaceous palustrine systems will be classified either Palustrine Aquatic Bed (PAB) or Palustrine Emérgent (PEM). These will be classified according to their photographic signatures. Vegetated, woody palustrine systems will be classified either Palustrine Scrub-Shrub (PSS) or Palustrine Forested (PFO). PFO2\PSS2 will be restricted to cypress stands only. The dominant classification is Palustrine Broad-Leaved Deciduous (PFO1\PSS1). Palustrine classifications were used as linears, substituting for a riverine system which had a 30% or greater canopy cover. Palustrine Needle-Leaved Evergreen (PF04) were observed in isolated areas of El Dorado SW. Palustrine Forested Dead (PF05) were used when cypress or tupelo stands had died, sometimes in conjunction with beaver activity.

Field check sites were performed and conventions, special concerns, and/or potential problems were documented. Vegetation observed in wetland habitats were grouped according to class and water regime. The following plant species were identified at check sites and represent only a fraction of all wetland plant species occurring in the project area.

**OBSERVED WETLAND VEGETATION**

**Palustrine Emergents:**

**PEM**

<u>Alternanthera philoxeroides</u>	alligator weed
<u>Arisaema triphyllum</u>	Jack in the Pulpit
<u>Arundinaria gigantea</u>	giant cane
<u>Carix</u> sp.	sedge
<u>Eleocharis</u> sp.	spike rush
<u>Juncus</u> sp.	rush
<u>Leersia oryzoides</u>	rice cutgrass
<u>Polygonum</u> sp.	smartweed
<u>Rumex</u> sp.	dock
<u>Saururus cernuus</u>	lizard's tail
<u>Scirpus</u>	bulrush, wool grass
<u>Typha</u> sp.	cattail

**Palustrine Aquatic Bed:**

**PAB**

<u>Lemna minor</u>	duckweed
<u>Nymphaea odorata</u>	white water lily
<u>Wolffia</u> sp.	water milfoil

**Palustrine Scrub-Shrub:**

**PSS**

<u>Alnus serrulata</u>	alder
<u>Baccharis</u> sp.	false-willow
<u>Cephalanthus occidentalis</u>	buttonbush
<u>Salix</u> sp.	willow
<u>Salix nigra</u>	black willow

OBSERVED WETLAND VEGETATION

Palustrine Forested:

PFO

<u>Acer rubrum</u>	red maple
<u>Carya sp.</u>	hickory
<u>Celtis occidentalis</u>	hackberry
<u>Fraxinus pennsylvanica</u>	green ash
<u>Liquidambar styraciflua</u>	sweetgum
<u>Magnolia virginica</u>	sweet bay
<u>Nyssa aquatica</u>	tupelo
<u>Nyssa sylvatica</u>	black gum
<u>Pinus sp.</u>	pine
<u>Plantanus occidentalis</u>	sycamore
<u>Quercus phellos</u>	willow oak
<u>Quercus lyrata</u>	overcup oak
<u>Quercus nigra</u>	water oak
<u>Quercus falcata</u>	red oak
<u>Quercus palustris</u>	pin oak
<u>Quercus bicolor</u>	bicolor oak
<u>Salix sp.</u>	willow
<u>Taxodium distichum</u>	cypress
<u>Ulmus sp.</u>	elm

Table I. NWI WETLAND CLASSIFICATION CODES, COWARDIN DESCRIPTION AND COMMON TERMINOLOGY

NWI CODE WATER REGIME	COWARDIN DESCRIPTION	COMMON DESCRIPTION	VEGETATION
R2UB (H)	Riverine, lower perennial, unconsolidated bottom	Perennial streams and rivers	Unvegetated mud, sand or gravel bottom
R2US (A,C)	Riverine, unconsolidated shore	River flats	Unvegetated sand, or gravel bottom
R4SB (A,C)	Riverine, intermittent, streambed	Intermittent streams	Unvegetated mud, sand, gravel, or rubble streambed
L1UB (H)	Lacustrine, limnetic, unconsolidated bottom	Lakes or reservoirs	Unvegetated mud, sand, gravel, or bedrock bottom
L2US (A,C)	Lacustrine, littoral, unconsolidated shore	Shorelines of lakes and reservoirs	Unvegetated mud, sand, or gravel shore
PUB (F,H,K)	Palustrine, unconsolidated bottom	Ponds, impoundments and sewage treatment ponds	Unvegetated mud, sand, gravel or artificial bottom
PUS (A,C,K)	Palustrine, unconsolidated shore	Ponds and impoundments,	Unvegetated mud, sand or gravel shores
PEM (A,C,F)	Palustrine, emergent	Marshes, depressions, or drainage areas	<u>Polygonum</u> sp. (smartweed) <u>Typha</u> sp. (cattail) <u>Saururus cernuus</u> (Lizard's tail) <u>Alternanthera</u> <u>philoxerades</u> (alligator weed) <u>Juncus</u> sp. (rush) <u>Scirpus</u> (bulrush)

Table I. NWI WETLAND CLASSIFICATION CODES, COWARDIN DESCRIPTION AND COMMON TERMINOLOGY

NWI CODE WATER REGIME	COWARDIN DESCRIPTION	COMMON DESCRIPTION	VEGETATION
PSS (A,C,F)	Palustrine, scrub-shrub	Thickets, river banks, drainage areas or springs	<u>Salix</u> sp. (willow) <u>Cephalanthus</u> <u>occidentalis</u> (buttonbush)
PFO1 (A,C,F)	Palustrine, forested or impoundments,	Forested depression plains or drainages	<u>Nyssa aquatica</u> (tupelo) <u>Liquidambar</u> <u>styraciflua</u> (sweetgum) <u>Salix</u> sp. (willow) <u>Ulmus</u> sp. (elm) <u>Acer rubrum</u> (red maple) <u>Carya</u> sp. (hickory) <u>Quercus phellos</u> (willow oak) <u>Quercus nigra</u> (water oak)
PFO2 (C,F)	Palustrine, forested or impoundments, floodplains or drainage areas	Forested depressions or drainages	<u>Taxodium distichum</u> (cypress)
PAB (F,H)	Palustrine, aquatic bed	Ponds or deep marshes	<u>Nymphaea odorata</u> (white water lily) <u>Lemna minor</u> (duckweed)

V. WATER REGIME DESCRIPTION

Non-Tidal

- (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.
- (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 extremely variable, extending from saturated to a water table well below the ground surface.
- (F) Semi-permanently 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.
- (H) Permanently Flooded - Water covers land surface throughout the year in all years.
- (K) Artificially Flooded - Amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.

**VI. IMAGERY**

Imagery for this mapping area overall was of good quality and resolution. The photography was flown in late winter of 1983 and 1985. The photography was color infrared and flown by NHAP.

The wetland signatures generally were very apparent on the aerial photography. Hydric soil lists and county soil surveys were used to verify photo signatures. The predominant water regime of the project area is temporarily flooded. Large amounts of rainfall flood the area during the winter months. Much of the photography was taken at the high winter flood stage.

**VII. MAP PREPARATION**

Wetland delineation and classification is in accordance with Cowardin et al (1979). Further wetland mapping guidance is provided by National Wetlands Inventory photographic and cartographic conventions in concert with National consistency. Delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photography. The NHAP photography was taken during 1983 and 1985.

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

Collateral data included USGS topographic maps, SCS soil surveys, climate, vegetation, and ecoregional information.

The user of the map is cautioned that, due to the limitation of mapping primarily through aerial photo interpretation, 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 maps and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photo interpretation and drafting were completed by Geonex, Inc., St. Petersburg, Florida with quality control conducted by the United States Fish and Wildlife Service.

**VIII. SPECIAL MAPPING PROBLEMS**

Of the hydric soils, Bibb, Guyton and Amy were associations of soils. Soil scientists have verified that mapping units in the soil surveys were too general in the floodplains to use for wetland mapping. Not all of the hydric mapped unit will be mapped as a wetland. The hydric soils will be used only to verify wetlands based on the photo signature.

Local micro-topography was often hummocky with small pocketed uplands within the floodplain. Concentration of sloughs and mini-channels were sometimes dense enough to be "averaged" unto a large wetland polygon with small uplands pockets.

**IX. MAP ACQUISITION**

To discuss any questions concerning these maps, please contact:

Regional Wetland Coordinator  
U.S. Fish and Wildlife Service - Region IV

To order maps call 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 United States Geological Survey.

eldor.rpt  
MS.nwi

X. LITERATURE CITED

Classification of Wetlands and Deepwater Habitats of The United States. L.M Cowardin et al., V. Carter, F.C. Golet, and E.T. LaRoe. United States Department of the Interior, Fish and Wildlife Service, 1977.

Description of The Ecoregions of The United States. R.G. Bailey, United States Department of Agriculture, Forest Service, 1978.

Hydric Soils of the State Arkansas. United States Department of Agriculture, Soil Conservation Service.

National List of Plant Species That Occur In Wetlands - Arkansas. P.B. Reed. United States Fish and Wildlife Service, Inland Freshwater Ecology Section, 1988.

Water Resources Data - Arkansas, Water Year 1984. T.E. Lamb, J.E. Porter, B.F. Lambert, and J.Edds. USGS Water Data Report AR-84-1.

Trees and Shrubs. Peterson Field Guides. G.A. Petrides, 1986.

Wetlands. The Audubon Society Nature Guides. William A. Niering, 1985.

Eastern Forests. The Audubon Society Nature Guides. Ann Sutton, and Myron Sutton, 1985.

Common Marsh, Underwater and Floating-leaved Plants of the United States and Canada. Neil Hotchkiss, 1972.

Field Guide to the Grasses, Sedges, and Rushes of the United States. Edward Knobel, 1980.

Field Guide to North American Trees - Eastern Region. The Audubon Society, E.L. Little, 1992.

DRAFT COPY 11/14/95

APPENDIX A  
LOCATOR MAP

EL DORADO- PROJECT AREA

