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USER REPORT: BIG SPRING NE and SE, TEXAS  
NATIONAL WETLANDS INVENTORY MAPS

A. INTRODUCTION

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) 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 is located between 100° and 101° W longitude and 32° to 33° N latitude (See Figure 1). Big Spring NE and SE are located in west central Texas, just east of the High Plains. Situated in the Semiarid Prairie Division, this ecoregion is subdivided into the Prairie-Brushland Province. The province encompasses the entire mapping area and is further subdivided into the Mesquite-Buffalo Grass Section.

The Prairie-Brushland Province and Mesquite-Buffalo Grass Section is an area of rolling plains and plateaus. The local relief may range from 300-500 feet in the northeast corner of the map (10%). The central portion of the map (60%) west to east has local relief of 100-300 feet. Below this area of moderate relief is an area that ranges from 300-500 feet in local elevation (35%). The remaining 5% of the map again reduces its elevation range to 100-300 feet in local relief.

The two major drainages for Big Spring NE and SE are the Clear Fork Brazos River and the Colorado River. The Clear Fork Brazos, located in Big Springs NE, flows in an easterly direction. The Colorado River flows to the southeast and is located in Big Springs SE.

### Climate:

The semiarid climate of long, hot summers and short, mild winters allows for an average annual temperature of 64°F. The annual average precipitation ranges from 20 inches in Big Springs NE to 23.5 inches in Big Springs SE. Seventy percent of the rainfall comes between April and October. The average growing season, based on freezing temperatures, is approximately 220 days.

### Vegetation:

Shrubs and trees combine to form brushland intermixed with the more predominant prairie. Mesquite remains the dominant shrub type, but exist more frequently in larger, open stands. Juniper and oak are also more widespread and found mixed with mesquite and various prairie grasses such as buffalograss, bluestem, three awn, and grama).

### Soils:

In this region of low rainfall, sparse ground cover, and exposed soil, the major pedogenic process is calcification and the predominant soil order is Mollisols. Mollisols in general are characterized by a low humus layer with black, friable surface horizons and a high base content. Because there is little leaching of the soil, calcium carbonate accumulates to excess in lower layers and often forms a crust called caliche on the soil surface.

While Mollisols are almost exclusively the soil found for the mesquite/buffalo grass community, some Aridisols, which may have a clay horizon, occur in many semidesert shrub areas. Though hydric soils are very rare in the study area, Randall Clay and Lipan Clay of the Vertisol order are common soils associated with wetlands, particularly playas. Roscoe Clay, also a Vertisol, occurs less frequently among playas.

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

TABLE 1: NWI CLASSIFICATION FOR BIG SPRING NE AND SE, TEXAS

NWI CODE (WATER REGIME)	NWI DESCRIPTION	COMMON DESCRIPTION	SUBSTRATE OR CHARACTERISTIC VEGETATION
R2UB (H)	Riverine, lower perennial, unconsolidated bottom	River, stream, creek	Mud, sand, gravel
R4SB (A,C)	Riverine, intermittent streambed	River, stream, creek	Mud, sand, gravel
L1UB (H)	Lacustrine, limnetic, unconsolidated bottom	Lake, reservoir	Mud, sand, gravel
L2UB (F)	Lacustrine, littoral, unconsolidated bottom	Shallow/inter- mittent lake, shoreline	Mud, sand, gravel
L2US (A,C)	Lacustrine, littoral, unconsolidated bottom	Shallow/inter- mittent lake, shoreline	Mud, sand, gravel
L2EM2 (A,C)	Lacustrine, littoral, emergent, non-persistent	Vegetated drawdown zone of lake or reservoir	(Unidentifiable due to flooded field conditions)
PUB (F,H)	Palustrine, unconsolidated bottom	Pond	Mud, sand, gravel
PEM1 (J,A,C,F)	Palustrine, emergent, persistent	Playa, marsh, vegetated stream	<u>Distichlis spicata</u> (saltgrass) <u>Polygonum</u> spp. (smartweed) <u>Sporobolus airoides</u> (alkali sacaton) <u>Sorghum halepense</u> (Johnson grass) <u>Typha laticifolia</u> (cattail) <u>Scirpus</u> spp. (bulrush)

NWI CODE (WATER REGIME)	NWI DESCRIPTION	COMMON DESCRIPTION	SUBSTRATE OR CHARACTERISTIC VEGETATION
PUS (J,A,C)	Palustrine, unconsolidated shore	Intermittent pond or playa	Mud, sand, gravel
PSS1 (A,C,F)	Palustrine, scrub/shrub, broad-leaved deciduous	Willow thicket, vegetated stream	<u>Salix</u> spp. (willow) <u>Allenrolfea</u> <u>occidentalis</u> (iodinebush)
PSS2 (J,A,C)	Palustrine, scrub/shrub needle-leaved deciduous	Salt cedar playa, vegetated stream	<u>Tamarix</u> spp. (salt cedar)
PF01 (A,C)	Palustrine, forested, broad-leaved deciduous	Forested floodplain, stream, or wetland depression	<u>Salix</u> spp. (willow) <u>Ulmus</u> spp. (elm) <u>Populus</u> spp. (cottonwood)

## Water Regime Description

- (J) Intermittently Flooded - Substrate is usually exposed, but surface water present for variable periods without detectable seasonal periodicity. Weeks, months, or even years may intervene between periods of inundation. The dominant plant communities under this regime may change as soil moisture conditions change. Some areas exhibiting this regime do not fall within our definition of wetland because they do not have hydric soils or support hydrophytes.
- (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.
- (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 classification that appears on the Big Spring NE and SE NWI maps is in accordance with Cowardin et. al. (1977). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photography. The photography was taken during October of 1984; and February, March, and June of 1985.

Field checks of areas found within Big Spring NE and SE photography 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 and soil types, as well as additional input from field personnel.

Collateral data included USGS topographic maps (1:24,000 and 1:250,000); SCS soil surveys; and climate, vegetation, and ecoregion 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 photo interpretation and drafting were completed by Martel Laboratories, Inc., St. Petersburg, Florida.

F. SPECIAL MAPPING PROBLEMS

None.

G. MAP ACQUISITION

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

Regional Wetland Coordinator  
U.S. Fish and Wildlife Service - Region 2  
5000 Gold Ave. SW  
Room 4012, P.O. Box 1306  
Albuquerque, NM 87103

To order maps only, contact:

National Cartographic Information Center  
U.S. Geological Survey  
National Center  
Reston, VA 22092

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 Publications No. 1391.
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