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USER REPORT: BIG SPRING NW and SW, 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 for the Big Spring NW and SW 1:100,000 scale maps is located in west central Texas and covers approximately 4200 square miles. The area ranges in elevation from 1900 to 3000 ft. above sea level and is globally demarcated by 101° and 102° west longitude and 32° and 33° north latitude. The town of Big Spring, located to the south, is the largest population center in the region. (Figure 1)

Ecologically, Bailey (1980) separates the area into two major categories with a boundary running basically north and south. To the west is the Semiarid Steppe Division of the Dry Domain which is further classified as the Grama-Buffalo Grass Section of the Great Plains-Short Grass Steppe Province. To the east is the Subhumid Prairie Division of the Humid Temperate Domain which too is further classified as the Mesquite-Buffalo Grass Section of the Prairie Brushland Province.

Physiographically, Hammond (1965) uses the same boundary line for subdividing the physical land category known as the Interior Division. To the west are Smooth Plains of the High Plains Subdivision, and to the east are various land forms of the Mid-Continent Plains and Escarpments Subdivision. Plains with Hills covers approximately 50% of this latter Subdivision, with Irregular Plains and Tablelands (of moderate relief) covering approximately 40% and 10% respectively.

Climate:

The climate for the mapping area is characterized by long, hot summers and relatively short, mild, and dry winters. Annual rainfall averages between 14" and 16" with a slight increase from west to east. Seventy five to eighty percent of this rainfall occurs between April and October, and the average growing season, based on freezing temperatures, is approximately 210 days. The area is noted for highly variable thunderstorm activity in the summer, accounting for significant differences in rainfall amounts between years and within relatively small geographic areas.

Vegetation:

There is a distinctive vegetational break in the Big Spring NW and SW area which correlates with the aforementioned ecologic and physiographic divisions. In the high plains region to the west, shortgrass prairie is dominant with buffalograss and blue grama being the most abundant native grasses. Though more sparsely distributed, other important grasses include sideoats and black gramma, little bluestem, western wheatgrass, and switchgrass. There are very few shrubs in the area and even fewer trees. Of the woody species, scattered mesquite is dominant, though yucca, sage, and juniper are also prevalent.

In the east, shrubs and trees combine in much greater numbers to form brushland intermixed with the more predominant prairie. Mesquite remains the dominant shrub type, but exists more frequently in larger, open stands. Juniper and oak are also more widespread and usually found mixed with the mesquite and various prairie grasses.

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.

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D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

TABLE 1: NWI CLASSIFICATION FOR BIG SPRING NW AND SW, 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/intermittent lake shoreline	Mud, sand, gravel
L2US (A,C)	Lacustrine, littoral, unconsolidated bottom	Shallow/intermittent 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	Distichlis spicata (saltgrass) Polygonum spp. (smartweeds) Sporobolus airoides (alkali sacaton) Sorghum halepense (Johnson grass) Typha lattifolia (cattail) Scirpus spp. (bulrushes)

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	Salix spp. (willows) Allenrolfea occidentalis (iodinebush)
PSS2 (J,A,C)	Palustrine, scrub/shrub needle-leaved deciduous	Salt cedar playa, vegetated stream	Tamarix spp. (salt cedar)
PFO1 (A,C)	Palustrine, forested, broad-leaved deciduous	Forested floodplain or stream, wetland depression	Salix spp. (willows) Ulmus spp. (elm) Populus spp. (cottonwoods)

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 charge 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 NW and SW 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 and November of 1984 (80%); and February, March, and June of 1985 (20%).

Field checks of areas found within Big Spring NW and SW 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 inormation.

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 ir 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

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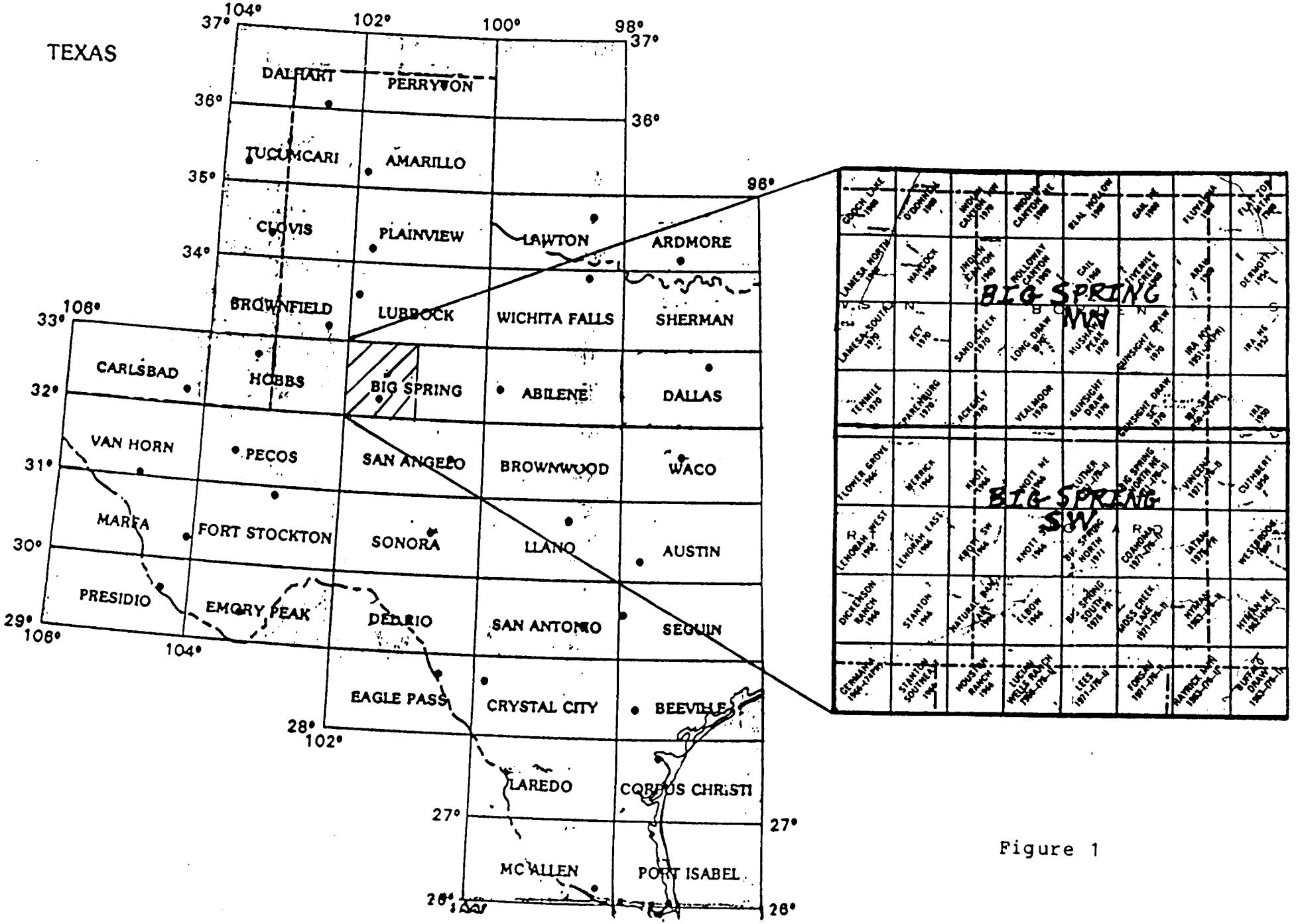
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PLAINVIEW
LAWTON
ARDMORE
BROWNFIELD
LUBBOCK
WICHITA FALLS
SHERMAN
CARLSBAD
HOBBS
BIG SPRING
ABILENE
DALLAS
VAN HORN
PECOS
SAN ANGELO
BROWNWOOD
WACO
MARFA
FORT STOCKTON
SONORA
LLANO
AUSTIN
PRESIDIO
EMORY PEAK
DEL RIO
SAN ANTONIO
SEGUIN
EAGLE PASS
CRYSTAL CITY
BEEVILLE
LAREDO
CORPUS CHRISTI
MC ALLEN
PORT ISABEL
BIG SPRING NW
BIG SPRING SW

Figure 1