

## USER REPORT: LLANO NW, NE, SW & SE 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. is the classification system used to define and classify wetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also available to enhance the use and application of the classifications 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

Llano NW, NE, SW and SE are located in central Texas. The coordinates are Latitude 30° 00' N to 31° 00' N, Longitude 99° 00' W to 100° 00' W.

The western third of the Llano 1:250,000 falls within the Juniper-Oak-Mesquite Section of the Prairie Brushland Province. The northern and southern regions of the study area are dominated by tablelands while the central region consists of plains with high hills. Grasslands dominate the vegetation with shrubs and low trees intermixing. Also, oak and juniper, which rarely grow higher than 20 feet, are often mixed with the grass and mesquite on the slopes of the hills. The elevation in the study area ranges from 1300 feet to 2400 feet above sea level.

The general drainage pattern in Llano NW and SW is from west to east. The largest river in the area is the Llano River, flowing through Llano SW and NW. From Llano SW, the West Fork of the James River and the East Fork of the James river flow northward, joining to form the James River which drains into the Llano River. Also, Johnson Creek flows northward from Llano SW to join the Llano River. In the southern part of the Llano SW, the North Fork of the Guadalupe River joins with the Guadalupe River, before flowing south out of the study area. The Pedernales River flows west to east through Llano SW. Finally, the San Saba River in northern Llano NW flows towards the east northeast and the Brazos River. There are no major reservoirs within the study area.

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## Climate

The climate in Llano NW and SW is subhumid in nature. Summers are hot, winters are relatively mild. The average annual precipitation is approximately 25 inches, with the average dropping to nearly 20 inches on the western edge of the study area. The average annual temperature ranges between 48<sup>o</sup> and 81<sup>o</sup> F. The average annual number of frost-free days is 230 a year.

## Vegetation

The wetland vegetation in the study area is primarily associated with riparian habitats, sloughs, floodplains, and impoundments.

Common wetland trees associated with forested habitats include elm (Ulmus sp.), cottonwood (Populus deltoides), American sycamore (Platanus occidentalis), bald cypress (Taxodium distichum), walnut (Juglans nigra), oak (Quercus sp.) and willow (Salix sp.). Willows were only seen in Llano NW.

Willows, buttonbush (Cephalanthus occidentalis) and salt cedar (Tamarix sp.) dominated the shrubs in Llano NW, while Baccharis glutinosa dominated in Llano SW. Dominant emergents include cocklebur (Xanthium strumarium), spike rush (Eleocharis sp.), dock (Rumex sp.), Carex sp., smartweed (Polygonum sp.), three square (Scirpus sp.), water willow (Justicia americana), and cattail (Typha latifolia).

Aquatic beds included American lotus (Nelumbo lutea), spatterdock (Nuphar luteum) and duckweed (Lemna sp.).

## Soils

Mollisols dominate throughout the study area. A few common alluvial soils include Frio, Spur, Miles, Colorado and Yohola soils. These are found in stream channels and on terraces near rivers.

D. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

Table - Cowardin Classification Codes and Descriptions (1 of 2)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
L1UB (F,H)	Lacustrine, limnetic, unconsolidated bottom	Open water, lake	Unvegetated mud, sand, gravel
L2UB (F,H)	Lacustrine, littoral, unconsolidated bottom	Shallow open water, lake, lake bottom	Unvegetated mud, sand, gravel
L2US (A,C)	Lacustrine, littoral, unconsolidated shore	Lake bed, lake shore	Unvegetated mud, sand, gravel
L1AB1 (F,H)	Lacustrine, limnetic, aquatic bed	Algal mat	Algae
L1AB3 (F,H)	Lacustrine, limnetic, aquatic bed	Rooted vascular	American lotus ( <u>Nelumbo lutea</u> )
L2AB3 (F, H)	Lacustrine limnetic	Pond weeds, water weeds	American lotus ( <u>Nelumbo lutea</u> )
L1AB4 (F,H)	Lacustrine, limnetic, aquatic bed	Floating pond weeds, water weeds	Duckweed ( <u>Lemna</u> sp.)
L2AB4 (F,H)	Lacustrine, limnetic, aquatic bed	Floating pond weeds, water weeds	Duckweed ( <u>Lemna</u> sp.)
R2UB (H)	Riverine lower perennial, unconsolidated bottom	Open water river, stream	Unvegetated mud, sand, gravel
R2US (A,J,C)	Riverine lower perennial unconsolidated bottom	River flat, bar	Unvegetated mud, sand, gravel
R4SB (J,A,C,F)	Riverine intermittent streambed	Intermittent stream	Unvegetated mud, sand, gravel
PUB (F,H)	Palustrine unconsolidated bottom	Open water, pond bottom	Unvegetated mud, sand gravel
PUS (J,A,C)	Palustrine unconsolidated shore	Pond shore, pond bed	Unvegetated mud, sand, gravel

Table - Cowardin Classification Codes and Descriptions (2 of 2)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PAB (F,H)	Palustrine aquatic bed	Algal mat	Algae American lotus ( <u>Nelumbo lutea</u> )
PEM1	Palustrine persistent emergent	Marsh, wet meadow	Bulrush ( <u>Scirpus</u> sp.) Cattail ( <u>Typha latifolia</u> ) Cocklebur ( <u>Xanthium</u> sp.) Rush ( <u>Juncus</u> sp.) Sedge ( <u>Carex</u> sp.) Smartweed ( <u>Polygonum</u> sp.) Spikerush ( <u>Eleocharis</u> sp.)
PSS1 (J,A,B,C,F)	Palustrine, scrub shrub, broad leaved deciduous	Shrub wetland	Buttonbush ( <u>Cephalanthus occidentalis</u> ) Willow ( <u>Salix</u> sp.) Seepwillow Baccharis ( <u>Baccharis glutinosa</u> )
PSS2 (J,A,C)	Palustrine scrub-shrub, leaved deciduous	Shrub wetland	Salt Cedar ( <u>Tamarix</u> sp.)
PFO1 (J,A,B,C,F)	Palustrine forested, broad-leaved deciduous	Forested wetland	Cottonwood ( <u>Populus deltoides</u> ) Elm ( <u>Ulmus</u> sp.) Green ash ( <u>Fraxinus pennsylvanica</u> ) Hackberry ( <u>Celtis occidentalis</u> ) Willow ( <u>Salix</u> sp.) Pecan ( <u>Carya illinoensis</u> ) Oak ( <u>Quercus</u> sp.) <u>smallii</u> ) American Sycamore ( <u>Platanus occidentalis</u> )
PFO2 (F)	Palustrine, forested Needle-leaved deciduous	Forested wetland	Bald Cypress ( <u>Taxodium distichum</u> )

F. MAP PREPARATION

The wetland classifications used on Llano NW, NE, SW & SE National Wetlands Inventory (NWI) basemap is in accordance with Cowardin et al (1977). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photography.

Field checks in all 1:100,000's were made prior to the actual delineation of wetlands. Field check sites were selected to clarify varying signatures found on the imagery. The photographic signatures were then identified using vegetation types and soil types as well as input from local field personnel.

Collateral data included USGS Topographic Quadrangles, SCS county soil surveys, climate, vegetation, field personnel input, ecoregional information.

The user of the map is cautioned that, due to the limitations of mapping primarily through aerial photointerpretation, a small percentage of wetlands may have gone unidentified. Since the photography was taken at 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 and drafting were completed by Martel Laboratories, Inc., St. Petersburg, Florida.

G. SPECIAL MAPPING PROBLEMS

None

H. MAP ACQUISITION

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

Regional Wetland Coordinator (ARD-E)  
U.S. Fish & Wildlife Service- Region II  
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.

## Water Regime Modifiers

- (J) Intermittently Flooded -- Substrate is usually exposed, but surface water present for variable periods without detectable seasonal periodicity. Weeks or 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 extremely 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.
- (U) Unknown -- The water regime is not known.

TEXAS

