

USER NOTES - LAREDO & MCALLEN, TEXAS
NATIONAL WETLANDS INVENTORY MAPS

Map Preparation

These maps provide wetland delineation and classification for the area covered by the Laredo and McAllen 1:100,000 scale topographic maps published by the U.S. Geological Survey (USGS). Delineations were produced through stereo photointerpretation of high altitude color infrared photography at a scale of 1:58,000. These delineations were then enlarged and drafted by Zoom Transfer Scope to 1:24,000 scale overlays corresponding to the 7.5 minute topographic quads published by USGS. To assist in identifying and classifying wetlands, collateral information sources included USGS 7.5 and 15 minute topographic maps, Soil Conservation Service soil surveys, ground-truthing, climate/weather records and vegetation studies.

The maps were prepared primarily from aerial photography taken between November 1982 and December 1983, with a few areas covered by January 1981 photography. The user should note that the wetland delineations typically reflect conditions at the time of photography, and that changes in landscape or land-use may have occurred since this time, introducing a certain margin or error. In addition, extremely small wetlands, those covered by dense forest canopies, and other wetlands not recognizable to the photo interpreter may not have been included on the maps. Therefore, a detailed, site specific analysis may indicate revision of the wetland boundary established by the interpreter, or the addition or deletion of any not correctly identified. Any discrepancies noted by the user should be brought to the attention of the Regional Coordinator, U.S. Fish & Wildlife Service, P.O. Box 1306, Albuquerque, N.M. 87103.

Geography

The Laredo/McAllen work-area is located in southeastern Texas from the Mexican border to around 30 miles west of the Texas Gulf Coast. Bailey's Ecoregion Classification (1980) indicates two major Provinces, approximately bisecting the work area from north to south. The western half is included in the Chihuahuan Desert Province, while the eastern half is considered Prairie Brushland.

The two Provinces exhibit a similar topography, ranging in elevation from about 100 ft. to 1,000 ft., with undulating plains cut by numerous dry washes (arroyos) and streams flowing west to the Rio Grande River or east to the Gulf of Mexico. Shallow playa-type lakes occur in basins which have no outlet.

The climate is arid, with an average annual precipitation of 16 inches (toward the west) to 30 inches (toward the east). Rains occur primarily during late summer through fall, from about July to November, with January and February normally being the driest months. Steady rain is rare, and most precipitation comes in the form of severe localized thundershowers. A major factor controlling climatic conditions is the extremely high evaporation rate throughout the work-area, approximately 70 to 80 inches per year, particularly high in the Laredo area. The average annual temperature ranges from 50°F to 70°F.

Soils range from clays to sandy loams, and vary from very basic to slightly acidic. Typical range sites include deep sands, hardlands, shallow ridges, bottomlands, alkali flats, and mixed sands, all exhibiting great differences in drainage and moisture holding capacities.

Upland Vegetation

Upland vegetation varies considerably between the two Provinces. Characteristic of the Chihuahuan Desert to the west are large areas of low, mostly thorny shrubs, including mesquite (Prosopis sp.), granjeno (Celtis pallida), cacti, coyotillo (Karwinskia sp.), creosote (Larrea tridentata), sage (Artemesia sp.), white brush (Aloysia gratissima), catclaw (Acacia Greggii), blackbrush (A. rigidula), guajillo (A. Berlandieri), and cenizo (Leucophyllum sp.). In deeper soiled, flatter areas these occur as an open, scattered brush or savannah mixed with desert grasses such as buffalo grass (Buchloe dactyloides), bluestem (Bothriochloa sp.) and foxtail (Setaria sp.). In other areas the shrubs form low, dense thickets.

To the east the upland vegetation of the Prairie Brushland Province is dominated by desert grasses such as buffalo grass, bluestem, and three-awn (Aristida sp.), with taller mesquite occurring frequently in open stands among the grasses. To the southeast large stands of live-oak may occur, while in the extreme southern Rio Grande Valley (near McAllen/Brownsville) small groves of native palm (Sabal texana) may be found.

Wetland Ecosystems

Palustrine

The most predominant wetland types across the work area are small ponds and stocktanks, either impounded or excavated. The majority of these are less than 20 acres in size, thus considered Palustrine. Shallow and flooded only infrequently, most are classified as unconsolidated shore. Only larger well or spring-fed ponds are classified as open water. Shrub and tree sized Huisache (Acacia Farnesiana) and Black Willow (Salix nigra) are the dominant vegetation on the edges of these ponds. Most are

too temporary to support a perennial emergent population, but occasional stands of Cattail (Typha sp.), aster (Aster sp.), and Smartweed (Polygonum sp.) may be observed. A small number of ponds support aquatic bed vegetation, primarily Duckweed (Lemna sp.).

Numerous excavated quarries are present throughout the area, primarily gravel pits and caliche mines. The deeper holes in these excavations may hold water periodically and are classified as temporarily or intermittently flooded unconsolidated shore. Vegetation is usually absent around these water bodies.

Several areas of small playa-types lakes occur, notably near Hebronville and Falfurrias. These small, periodically flooded basins range in size from around 15 ft. to 200 ft. in diameter, and may be concentrated in groups of two to ten per square mile. Their origin is uncertain, but they have developed a characteristic hydric soil association in the Tiocano-Rio complex, with a soil capability classification of V-w by the Soil Conservation Service. They may occur in various stages of succession, with the youngest playa-types exhibiting a ring-like structure, a central ponded area containing short emergent grasses, shrub-sized Rattlebox (Sesbania sp.), and Retama (Parkinsonia sp.), surrounded by a band of short upland grasses. Older playa-type lakes support a more homogeneous community, with mixed stands of shrub Huisache, Black willow, and Retama. Eventually, a climax community is reached with a full forest of Huisache, willow, Hackberry (Celtis occidentalis), and Mexican ash (Fraxinus berlandieri), with scattered mesquite around the dryer edges. In some areas a number of playa-type lakes have been drained for agricultural use, although most occur on range land and are so-far undisturbed.

A series of oxbows broken from the Rio Grande are present in the southern part of the work area, near McAllen. Many of these are farmed, while others exhibit open water, unconsolidated shore, or wetland vegetation. The associated vegetation includes most of the emergent, shrub, and forest species described above.

A final, unique Palustrine system is found in several areas of saline flats. These low areas are characterized by emergent Gulf cordgrass (Spartina spartinae), saltgrass (Distichlis spicata), and sacaton (Sporobolus Wrightii). One large area occurs around Laguna Salada (Salt Lake) just southeast of Falfurrias. (The lake itself is considered Lacustrine). In addition to the three emergents mentioned, also in evidence are Sea oxeye daisy (Borrchia frutescens), Sea lavender (Limonium nashii), Baccharis sp., Salt-flat grass (Monanthochloe littoralis), Seaside heliotrope (Heliotropium curassavicum), Glasswort (Salicornia sp.) Saltwort (Batis maritima), as well as evidence of a large population of fiddler crabs.

Lacustrine

Relatively few lacustrine systems (greater than 20 acres) occur in the work area. Falcon Reservoir, an impoundment of the Rio Grande near Zapata is by far the largest, covering between 50,000 and 70,000 acres depending on its current pool elevation. A small number of the remaining impoundments and natural lakes range in size to several hundred acres, but the majority are smaller, averaging between 20 and 50 acres. Most of the man-made impoundments retain some water throughout the year. However, the natural lakes are more sensitive to drought conditions, and if shallow, may dry up periodically. Laguna Salada, showing over 500 acres of open water on the aerial photography (dated March 1983) was a completely dry lake bed when field checked in December 1984.

The more permanent lakes may exhibit a greater variety of emergent vegetation, including cattails, asters, bulrush (Scirpus sp.), rush (Juncus sp.), and horsetail (Equisetum sp.). Huisache Black willow, hackberry, Mexican ash, Cedar Elm (Ulmus crassifolia), Anaqua (Ehretia anacua), and cottonwood (Populus sp.) comprise the dominant shoreline shrub and forest community.

Riverine

Creeks and arroyos are common throughout the work area, and are predominately classified as intermittent streambeds. Only the major drainage ways of each stream are delineated, while secondary, rarely inundated tributaries are omitted. The few perennial streams occurring in the area are classified as open water, but with a semi-permanently flooded or less water regime. The only natural, permanent perennial river in the work-area is the Rio Grande. A few excavated irrigation canals are given permanent status, as outlined below.

Dominant vegetation along the streams and arroyos consists of tree and shrub sized Huisache, willow, hackberry, Cedar elm, Anaqua, and cottonwood. Salt cedar (Tamarix sp.) occurs to the west near the Rio Grande, but is not abundant. The banks of the Rio Grande are dominated by bands of tall, dense emergent reed (Phragmites australis) backed by shrub and tree sized Black willow.

Farms and citrus groves are widespread in the extreme southeastern work area, near McAllen, and irrigation canals are used extensively. In accordance with the USGS topographic quads, major canals are given perennial open water, excavated status, while smaller perennial canals are classified as excavated intermittent streambed. No USGS intermittent canals are delineated, although small areas of emergents, shrubs, or forest are shown in all canals if applicable.

Conclusion

All of the wetland communities mentioned are fragile ecosystems, and provide important wildlife habitat. The most vulnerable are the playa-type lakes which, while providing excellent food and shelter resources for wildlife and waterfowl, are increasingly drained and cleared for agricultural use. An effort should be made to analyze each playa-type lake and other wetland system and their impact on wildlife before modifications are undertaken.

Bibliography

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NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/SUBSTRATE
PEM1	Palustrine Persistent Emergent	Marsh, shoreline, riverbank veg- etation	<u>Typha</u> sp. (Cattail) <u>Polygonum</u> sp. (Smartweed) <u>Phragmites</u> <u>australis</u> (Common reed) <u>Scirpus</u> sp. (Bulrush) <u>Juncus</u> sp. (Rush) <u>Aster</u> sp. (Aster) <u>Spartina spartinae</u> (Gulf cordgrass) <u>Sporobolus Wrightii</u> (Sacaton) <u>Borrichia</u> <u>frutescens</u> (Sea ox-eye daisy) <u>Distichlis spicata</u> (Salt grass)
PSS1	Palustrine Scrub-Shrub, Broad-leaf deciduous	Shrub vegetation	<u>Salix nigra</u> (Black willow) <u>Sesbania</u> sp. (Rattlebox) <u>Parkinsonia</u> sp. (Retama) <u>Tamarix</u> sp. (Salt cedar)
PSS3	Palustrine Scrub-Shrub Broad-leaf evergreen	Shrub vegetation	<u>Acacia farnesiana</u> (Huisache)
PF01	Palustrine Forested, Broad-leaf deciduous	Forest vegetation	<u>Salix nigra</u> (Black willow) <u>Celtis occidentalis</u> (Hackerry) <u>Ulmus crassifolia</u> (Cedar elm) <u>Fraxinus berlandieri</u> (Mexican Ash) <u>Populus</u> sp. (Cottonwood) <u>Ehretia anacua</u> (Anagua)

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/SUBSTRATE
PF03	Palustrine Forested, Broad-leaf evergreen	Forest vegetation	<u>Acacia farnesiana</u> (Huisache)
POW	Palustrine open water	Pond	Open water
PUS	Palustrine unconsolidated shore	Pond shoreline	Unvegetated sand, gravel, mud.
PAB4	Palustrine Aquatic-Bed, floating	Aquatic bed	<u>Lemna sp.</u> (Duckweed)
L10W	Lacustrine open water, limnetic	Lake deep water	Open water
L20W	Lacustrine open water, littoral	Lake shallow water	Unvegetated sand, gravel, mud.
L2US	Lacustrine littoral unconsolidated shore	Lake bed	Unvegetated sand, gravel, mud.
L2UB	Lacustrine littoral unconsolidated bottom	Lake bottom	Unvegetated sand, gravel, mud.
R20W	Riverine perennial open water	River, stream	Open water
R4SB	Riverine intermittent streambed	Intermittent stream, arroyo	Unvegetated river bottom
R2US	Riverine unconsolidated shore	River bar, River flat	Unvegetated sand, gravel, mud.