

DRAFT

NATIONAL WETLANDS INVENTORY

NOTES TO USERS

SOUTHWESTERN KANSAS

1:100,000 SCALE MAPS

PRATT NW

NATIONAL WETLANDS INVENTORY
1:100,000 MAP NARRATIVE
PRATT NW

INTRODUCTION

The U.S. Fish and Wildlife Service, Division of Habitat Resources is conducting an inventory of the wetlands of the United States. The National Wetlands Inventory (NWI) is establishing a wetland data base in both map and computer forms for the entire country. The NWI information will serve to identify the current status of U.S. wetlands and can be used as a reference point from which future changes in wetlands can be evaluated.

PURPOSE

The purpose of Notes to Users is to provide general information regarding the production of NWI maps and wetlands found within the same physiographic area. Notes to Users are not intended to include a complete description of all wetlands found in the area nor provide complete plant species information.

MAP PRODUCTION

The wetland classifications that appear on these National Wetland Inventory Base Maps are in accordance with Cowardin, et. al. (1977). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photographs taken on various dates from June to September of 1985.

Limited initial field checking and ground truthing was conducted in June, 1986 to determine the general biologic and hydrologic systems of the area, and the degree of accuracy that could be portrayed by the condition and date of photography relative to those observed at that time.

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. Changes in landscape could have occurred since the time of photography; therefore, some discrepancies between map and current field conditions may exist. Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either design or products of this inventory, to define limits of proprietary jurisdiction of any Federal, State, or local government or to establish the geographical scope of regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specific

agency regulatory programs and proprietary jurisdictions that may affect such activities. Any discrepancies encountered in the use of the maps should be brought to the attention of Regional Wetlands Coordinator; U.S. Fish and Wildlife Service, Region 6, P.O. Box 24586, Denver, Colorado, 80225. Aerial photointerpretation was completed by Martel Laboratories, Inc., St. Petersburg, Florida.

GEOGRAPHY

The area covered by this study is between 99° and 100°W longitude and 38° and 37°30'N latitude, roughly southwestern Kansas. Bailey's Ecoregion Classification (1980) identifies this area as Humid Temperate Domain, Prairie Division, Tall-Grass Prairie Province, Bluestem-Gramma Prairie Section (2533).

The eastern tall-grass prairie is characterized by flat and rolling plains with relief of less than 300 ft. The dominant natural vegetation includes many species of tall and mid grasses such as western wheatgrass, blue gramma, buffalograss, western ragweed, foxtail barley, switchgrass, and sandgrass. Prickly pear and sand sage are also common in drier areas. Woody vegetation is rare except on the cottonwood floodplains. Very little of the natural vegetation remains as over 90% of the area is farmed, primarily for winter wheat, soybeans, and corn.

CLIMATE

The average annual rainfall is 20-24 inches, occurring predominantly from April to September. Evaporation and precipitation almost balance on a yearly basis and is therefore considered a subhumid climate. However, this area approaches a situation where evaporation rates exceed precipitation. Annual temperatures can range from highs over 110°F to lows of -20°F.

WETLAND COMMUNITIES

Marine: Not present

Estuarine: Not present

Riverine:

The major drainage in Pratt NW is the Arkansas River. Historically, this river provided permanent year-round flow recharged by rainfall and snowmelt from the Rocky Mountains. But in recent years, expanded use of pivot irrigation has caused the Ogallala aquifer to be depleted 10 to 14 times faster than it can be recharged (Wolfe, 1986). Upstream impoundments and water diversions in Colorado withdraw flow otherwise sent downstream. Consequently, the reduction in surface flow and a drastic drop in the groundwater table has reduced this river to an intermittent stream (R4SBC, R4SBF).

Localized conditions such as irrigation usage, rainfall amounts, impoundments, and beaver activity have a direct and very pronounced impact on the amount of water present in the river in any one place. For instance, because of high water usage and diversion, the Arkansas River in Dodge City is usually a dry excavated ditch (R4SBAX). A few miles downstream, however, the flow increases and is pooled into semipermanent ponds and emergent marshes by beaver activity. Therefore, the classification of the riverine wetlands can be very segmented on not only the Arkansas River, but all streams throughout the region.

For similar reasons Rattlesnake Creek, Mulberry Creek, Saw Log Creek and other smaller streams and creeks of this area have also been characterized by marked reduction in stream flow. Except for rare instances where a section of a stream is still fed by an active spring or purposely fed, all have been reduced to intermittent status (R4SBC, R4SBA). The flow is again dependent on local activity, water usage, and manipulations. Commonly, smaller streams will be impounded or diverted into irrigation ditches (R4SBCx, R4SBAX) to be used for crop or livestock. When possible, the streambed will be filled and plowed to increase agricultural efficiency and productivity. As a result, drainageways are interrupted, segmented, or lost entirely.

In conclusion, the overall effect of the present agricultural practices in this part of Kansas has resulted in a dramatic reduction in the groundwater and surface recharge of the riverine systems. Few permanent perennial rivers still exist and are confined to small segments. Small intermittent creeks have been disrupted or lost.

Palustrine:

Woody riparian communities have become established, where historically they did not exist. Forested and shrub stands of eastern cottonwood (Populus deltoides), willows (Salix spp.) and salt cedar (Tamarix gallica) are common along the floodplains and upper terraces of the Arkansas and Cimmaron rivers. However, in the last fifteen years the water table has dropped so much, other drier woody riparian species such as locust (Gleditsia sp), hackberry (Celtis occidentalis), mulberry (Morus rubra), American elm (Ulmus americana), and green ash (Fraxinus pennsylvanica) are becoming established. Dead and dying cottonwood are also a common sight as the water levels continue to drop below their root zones.

As a result of the reduced streamflow, only those woody plants directly in the river beds or on the immediate adjacent flats or terraces are flooded on a yearly basis and considered wetland (PSSA, PFOA). These wetlands are predominantly the shrub communities of the dominant cottonwood, willow, and salt cedar, jointed by the less common species of Russian olive (Elaeagnus angustifolia), indigo bush (Amorpha fruticosa), seep willow (Baccharis sp), and rough leaf dogwood (Cornus drummondii), as water conditions permit (PSSA, PSSC).

Emergent and aquatic species have also established themselves in and along the rivers and creeks. Cattail (Typha latifolia), hardstem bullrush (Scirpus acutus), and arrowhead (Sagittaria sp) along with the aquatic bed species of duckweed (Lemna sp) and watermeal (Wolffia sp) are especially common in the more semi-permanently flooded sections of the rivers (PEM/ABF, PEMF), or in the areas of beaver activity (PABGb, PEM/ABFb).

Emergent communities associated with a stream depend upon the availability of water and the general size of the tributary (PEMC-PEMA). Seasonally flooded communities contain such species as three square (Scirpus americanus), fox sedge (Carex vulpinoidea) water parsnips (Sium sp), and dock (Rumex sp). Creeks containing water for only brief periods ususally contain spikerush (Eleocharis spp), marsh elder (Iva sp), smartweed (Polygonum spp), along with a variety of other species. These small creeks and un-named water courses are often reduced to pockets or disconnected linear segments of emergents because of agricultural practices. In these situations, emergent species are primarily foxtail barley, (Hordeum jubatum), smartweed (Polygonum spp) and western wheatgrass (Agropyron smithii) that can adapt to the drier and more disturbed conditions.

Playa wetlands comprise a major source of wildlife habitat in Southwestern Kansas. State officials estimate, however, that over 90% of the basins present at the turn of the century have been actively altered or completely drained. In addition, the severe depletion of groundwater sources has cut off the natural recharge. Less than 30% of the original basins are still hydrologically active.

As a result, much of the natural diversity and variability of the habitat has been lost. The vast majority of the basins observed during field reconnaissance had surface water lasting only brief periods, generally after heavy rains or early in the spring; only enough to delay tillage a few weeks (PEMA). Common species for these wetland basins include foxtail barley, little barley (Hordeum pusillum), frogbite (Phyla cuneifolia), burr ragweed (Ambrosia grayii), smartweed, and spikerushes.

Seasonally flooded basins in this area support a more diverse community of emergents. In addition to the temporary species found along the periphery, these basins will also support a central zone of smartweed, spikerush, three square, sedges, dock, and occassionally cattail or hardstems bullrush in the wettest zone.

The "sandhill" area in Pratt NW contain small pockets that can hold water or support wetland vegetation. However, because this occurs only once in twenty years, these depressions were not considered wetland.

Thousands of small (less than 20 acres) palustrine wetlands have been created by impoundments and excavations. The degree of flooding of these wetlands is a function of size and depth and the amount of surface drainage. Because of the nature of the water levels, drawdown and pioneering plants are the most effective invaders of these exposed flats. Fireweed (Kochia sp.), cocklebur (Xanthium strumarium), white clover (Melilotus albus), and common sunflower (Helianthus sp.) are the most prevalent species. Because these species are considered pioneering, these waterbodies will be classified entirely as unconsolidated shore when seasonally or temporarily flooded (PUSCh, PUSAh). Semipermanently flooded impoundments, on the other hand, are considered to be stable enough to support aquatic species by the end of the growing season. Species such as duckweed and algae (Endomorpha sp.) are expected in this situation (PABFh).

Palustrine wetlands associated with the shores and flats of larger impounded reservoirs (greater than 20 acres) were found to be associated with more persistent hydrophytic wetland vegetation. The stable water supply lends itself to the establishment of species such as smartweed, dock, cattail, hardstem bullrush, three-square, and small cottonwood and willow saplings. The flat or shoreline were classified according to vegetated signature and water levels on the photography (PEMFh, PEMCh, PEMAh, PSSCh, PSSAh, PFOAh).

Pits and dugouts are considered to be unvegetated regardless of their size and permanence. The steep sides, rocky walls, and sterile bottoms offer little support to wetland plant growth. In addition, they are often poor in organic nutrients needed to support aquatic plant and animal life (PUBFx, PUSCx, PUSAx).

Lacustrine:

Lacustrine water bodies (greater than 20 acres) have been formed by adding impounding structures to the larger streams and creeks, or by large excavation operations along the rivers. Ford County State Lake is considered a permanent deep-water habitat (L1UBHh). The lake supports a large community of emergents along the water's edge and on the flats. The species of smartweed, dock, and yellow clover (Melilotus officinalis) are found on the temporary flooded flats (PEMAh). Shrub and forested communities of willow and cottonwoods grow in the backwater areas of the reservoir (PSSAh, PFOAh).

SOILS

Soil is an important indicator of hydric conditions and is one of the basic criteria used in the definition of wetland as defined by Cowardin et al. (1979). The Soil Conservation Service (SCS) has published soil surveys for the map area with the exception of Kiowa county. These soil surveys provide important collateral information which is important in the understanding of the area, including the general types of land use.

Soils listed by the SCS as having hydric characteristics included Ness and Randall which were found to support basin-related hydric vegetation.

Soil surveys used for this study area are the following counties:

Edwards
Ford

Hodgeman

PLANT LIST

(species listed as most commonly observed)

WOODY

PSSC

indigo bush (Amorpha fruticosa) (OBL)
rough leaf dogwood (Corus drummondii) (FAC)
seep willow (Baccharis salicina) (FAC)

PSSA

willow (Salix spp.) (FAC-OBL)
salt cedar (Tamarix gallica) (FACW)
russian olive (Elaeagnus angustifolia) (FAC)

PFOA

eastern cottonwood (Populus deltoides) (FAC-DRA)
green ash (Fraxinus pennsylvanica) (FACW)

U

American elm (Ulmus americana) (FAC)
locust (Gleditsia sp) (FAC)
catalpa (Catalpa speciosa) (FACU)
hackberry (Celtis occidentalis) (FACU)
mulberry (Morus rubra) (FACU)
walnut (Juglans sp) (FACU)

HERBACEOUS

PABF

duckweed (Lemna minor) (OBL)
watermeal (Wolffia sp.) (OBL) (Wolffia)
algae (Endomorpha sp.) (OBL)

PEMF

cattail (Typha latifolia) (OBL)
arrowhead (Sagittaria sp) (OBL)
hardstem bullrush (Scirpus acutus) (OBL)

PEMB

three square (Scirpus americanus) (OBL)

PEMC

three square (Scirpus americanus) (OBL)
fox sedge (Carex vulpinoidea) (OBL)
water parsnip (Sium sp.) (OBL)
sedge (Carex sp) (Cyperus sp.) (FACW-OBL)
dock (Rumex sp) (FAC-OBL)
horsetail (Equisetum, sp.) (FACW)

PEMA

needle spikerush (Eleocharis acicularis) (OBL)
smartweed (Polygonum spp.) (FACU-OBL)
foxtail barley (Hordeum jubatum) (FACW)
saltgrass (Distichlis spicata) (FACW)
barnyard grass (Echinochola crusgalli) (FACW-DRA)
goldenrod (Solidago sp.) (FACU-FACW)
marsh elder (Iva sp.) (FAC)
frogbite (Phyla cuneifolia) (FAC) (AKA: Lippia cuniata)
little barley (Hordeum pusillum) (FAC)
burr ragweed (Ambrosia grayii) (FAC)
yellow clover (Melilotus officinalis) (FACU-DRA)
lambsquarter (Chenopodium album)

U

showy milkweed (Asclepias speciosa) (FAC)
fireweed (Kochia sp) (FACU)
cocklebur (Xanthium strumarium)
sand verbenia (Abronia fragrans)
japanese brome (Bromus japonicus) (FACU)
downy brome (Bromus tectorum)
buffalo grass (Buchloe dactyloides) (FACU)
western wheatgrass (Agrophron smithii) (FAC-FACU)
bull thistle (Cirsium sp) (FACU)
common ragweed (Ambrosia artemsiifolia) (FACU-DRA)
pigweed (Amaranthus retroflexus) (FACU)
sand sage (Artemisia filifolia)
poison ivy (Rhus radicans)
Schenardus paniculatus
Festuca oxtifloria
Haplopappus ciliatus
common sunflower (Helianthus sp.)
primrose (Oenothera grandous)
wild plum (Prunus americana)
bedstraw (Gallium sp.)
prickly poppy (Argemone sp.)
white clover (Melilotus albus)

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/SUBSTRATE
R4SB	Riverine - Intermittent Stream bed	Creek, Stream Canal	Unvegetated: Sand, mud, gravel organic Vegetated: Pioneering species (non-emergent)
PFO	Palustrine - Forested	River forest Riparian River/Creek beds	Vegetated: Eastern Cottonwood (<u>Populus deltoides</u>) Green Ash (<u>Fraxinus</u> <u>pennsylvanica</u>) Hackberry (<u>Celtis occidentalis</u>) American elm (<u>Ulmus americana</u>)
PSS	Palustrine - Scrub Shrub	River shrubs River banks	Willow (<u>Salix</u> spp.) Salt Cedar (<u>Tamarix gallica</u>) Russian Olive (<u>Elaeagnus</u> <u>angustifolia</u>)
PEM	Palustrine - Emergent	Marsh, Playa, Basin, Slowmoving or drying stream or rivers choked with emergents "wallows" "mudhole"	Three Square (<u>Scirpus americanus</u>) Smartweed (<u>Polygonum</u> spp.) Foxtail Barley (<u>Hordeum jubatum</u>) Western Wheatgrass (<u>Agropyron smithii</u>) Spikerush (<u>Eleocharis</u> spp.) Dock (<u>Rumex</u> sp.) Water Parsnip (<u>Sium</u> sp.) Cattail (<u>Typha latifolia</u>)
PAB	Palustrine Aquatic Bed	Ponds, Impoundment Slow moving or drying streams and rivers choked with aquatics, Beaver ponds	Duckweed (<u>Lemna</u> sp.) Watermeal (<u>Wolffia</u> sp.) Algae (<u>Endomorpha</u> sp.)

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/SUBSTRATE
PUB	Palustrine - Unconsolidated Bottom	Reuse pit Gravel pit	Unvegetated: Gravel, Sand, mud Vegetated: Pioneering species
PUS	Palustrine - Unconsolidated Shore	Impoundment Resuse pit	Unvegetated: Sand, mud, gravel Vegetated: Pioneering species
L1UB	Lacustrine - Limnetic Unconsolidated Bottom	Lake, Reservoir	Unvegetated sand, mud, gravel
L2US	Lacustrine Littoral Unconsolidated Shore	Lake flat Drawdown	Unvegetated: Sand, mud, gravel Vegetated: Pioneering species

COLLATERAL DATA

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SPECIAL INTERPRETATION CONSIDERATIONS

Many photo signatures expected to represent wetland communities, especially along streams and rivers, were determined to be upland through ground truthing. Only those found directly in or immediately adjacent to the stream bed were found to be temporarily flooded (PFOA, PSSA).

Wetland basin signatures not readily identifiable on the photography were discovered in the field. These range from slight changes in soil tones to very distinct colors and textures. The largest concentration of basins were found south of Kinsley.

The use of many different dates of photography, some portraying isolated thunder storms, necessitated careful soil analysis and comparison of the differing dates. June 28th photography in this area is very wet. Care was taken to pull basins and not sheetwater which is prevalent here. June 19th photography shows drier conditions than the June 28th and many temporary basins are not as evident. Many basins on September 5th photography have lost their definite boundaries and appear only as slight changes in soil tones.