

DRAFT

NATIONAL WETLANDS INVENTORY

NOTES TO USERS

SOUTHWESTERN KANSAS

1:100,000 SCALE MAP

SCOTT CITY SW

NATIONAL WETLANDS INVENTORY
1:100,000 MAP NARRATIVE

SCOTT CITY SW

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 101° and 102°W longitude and 38° and 38°30'N latitude, roughly Southwestern Kansas. Bailey's Ecoregion Classification (1980) identifies this area as Dry Domain, Steppe Division, Great Plains Shortgrass Prairie Province, Gramma-Buffergrass Section (3113).

The area is characterized by rolling plains and tablelands. The plains are flat with occasional valleys formed by dissecting streams. Here the evaporation exceeds precipitation and the area is considered to be a dry climate. The vegetation of the area was naturally short grasses, typically buffalograss and many species of brome. Currently however, the majority of the land is planted in winter wheat. Woody vegetation is restricted to the floodplains.

CLIMATE

The area has the dry air and marked changes in temperature typical of a well-defined continental climate. Average annual rainfall is between 16-20 inches decreasing westward and over 75% falls from April to September. Rainfall is described as scant and haphazard with heavy isolated thunderstorms. The best chance of receiving rainfall is in the first two weeks of June followed by the first week of August. Extremes in temperature are in a range from 110°F to - 20°F.

WETLAND COMMUNITIES

Marine: Not present

Estuarine: Not present

Riverine:

The Arkansas River flows through the far Southwestern corner of this study area. 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 have 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 rivers. Some of the other smaller streams such as Sand Creek and White Woman Creek have also been characterized by marked reduction in streamflow. Except for rare instances where a stream is still fed by an active spring or purposely fed, all have been reduced to intermittent status (R4SBC, R4SBA). Commonly, smaller streams will be impounded or diverted into irrigation ditches (R4SBCx-R4SBax) to be used for crop or livestock watering. When possible, the streambed will be filled and plowed to increase agricultural efficiency and productivity. As a result, drainage-ways have been 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 or are confined to small segments. Small intermittent creeks have been disrupted or lost to crop land. Additionally, the reduced flow has allowed for the establishment of plant communities, both woody and herbaceous, completely changing the characteristic of the riverine environment.

Palustrine:

Woody riparian communities have become established along the Arkansas River 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 present floodplains and upper terraces of the Arkansas river. Due to the drastic drop in water levels over the last 15 years, other riparian forest species such as locust (Gleditsia sp), hackberry (Celtis occidentalis), mulberry (Morus rubra), American elm (Ulmus americana), and green ash (Fraxinus pennsylvanica) located on the upper terraces are no longer flooded on a yearly basis. Dead or dying cottonwood is common sight on the upper terraces as the water table continues to drop below their root zone.

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

Wetland emergent species have also established themselves in and along this river. In the wetter sections in the rivers, hardstem bullrush (Scirpus acutus) may be found or other species such as three square (Scirpus sp.), water parsnip (Sium sp.), horsetail (Equisetum sp.), spikerushes (Eleocharis spp.), and sedges (Carex spp, Cyperus sp.) (PEMC). Foxtail barley (Hordeum jubatum), goldenrod (Solidago sp.), dock (Rumex sp.), lambsquarter (Chenopodium album), and smartweed (Polygonum sp.) are the dominant species found on the river flats and as the understory in the willow-saltcedar- cottonwood wetland associations (PUSA, PSS/EMA).

Other rivers and streams in the map area are also vegetated by similar wetland riparian communities both woody and herbaceous. The smaller creeks and un-named water courses are often reduced to pockets or disconnected linear segments of emergents because of the agricultural practices. These emergent species are primarily foxtail barley, smartweed, and western wheatgrass (Agropyron smithii) that can adapt to the drier and more disturbed conditions (PEMA).

Playa wetlands comprise a major source of wetland wildlife habitat in Southwestern Kansas. State officials estimate 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 occurring in this region contain 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. Saltgrass (Distichlis spicata) was the predominant indicator for saline environments as found in some of the western basins.

Seasonally flooded basins, although very rare 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 often times cattail (Typha latifolia) or hardstems bullrush.

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 the exposed flats of these small impoundments. Fireweed (Kochia sp.), cocklebur (Xanthium strumarium), white clover (Melilotus albus), and common sunflower (Helianthus sp.) are the most prevalent species. Therefore, because these species are considered pioneering, the waterbodies will be classified 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 bed species by the end of the growing season. Species such as duckweed and algae (Endomorpha sp) are expected in this situation (PABFh).

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: Not present.

SOILS

Soil is an important indicator of hydric conditions and is one of the basic criteria in the definition of wetland as defined by Cowardin et al. (1979). The Soil Conservation Service has published soil surveys that cover the study area. These soil surveys provide important collateral information which is important in understanding the general area including the specifics of land use.

Soils listed on the SCS as having hydric characteristics include Randall soil which was found to support hydric vegetation. This soil is basin related.

Lofton Series, although not on the 1985 SCS Hydric Soils List, was found to have wetland characteristics. This soil is found in upland depressions with surface runoff ponded long enough to delay planting and harvesting and sometimes even drowning crops.

Soil Survey used for this study area are from the following counties:

Finney
Greeley

Hamilton
Kearny

Scott
Wichita

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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 artemisiifolia) (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 Vegetated: Pioneering species (non-emergent)
PFO	Palustrine - Forested	River forest Riparian River/Creek bed	Vegetated: Eastern Cottonwood (<u>Populus deltoides</u>) Green Ash (<u>Fraxinus</u> <u>pennsylvanica</u>) Hackberry (<u>Celtis</u> <u>occidentalis</u>) American Elm (<u>Ulmus americana</u>) Willow (<u>Salix</u> spp.) Salt Cedar (<u>Tamarix gallica</u>) Russian Olive (<u>Elaeagnus</u> <u>angustifolia</u>)
PSS	Palustrine - Scrub shrub	River shrub, River bank	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, slow moving or drying stream or river choked with emergents "wallow" "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	Pond, Impoundment, slow moving or drying stream or river choked with aquatics, beaver dam	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, mud, sand Vegetated: Pioneering species
PUS	Palustrine - Unconsolidated Shore	Impoundment Reuse pit	Unvegetated: Sand, mud, gravel Vegetated: Pioneering species
L1UB	Lacustrine - Limnetic Unconsolidated Bottom	Lake, Reservoir, Excavated pit sand or gravel pit	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 in or adjacent to the stream bed were found to be wetland and generally flooded for only brief periods (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. Signatures on September photography were irrigation enhanced, and were the most easily identifiable. June and July photography had weaker signatures. Soil surveys, topographic information, and photo overlap comparison were used to determine the best classification.

NWI#56