

NATIONAL WETLANDS INVENTORY

NOTES TO USERS

NEW MEXICO

1:100,000 SCALE MAPS COVERED

SHIPROCK NE

SHIPROCK SE

GALLUP NE

GALLUP SE

ALBUQUERQUE NW

ALBUQUERQUE SW

AZTEC SW

ST. JOHNS NE

SOCORRO NW

NATIONAL WETLAND INVENTORY

1:100,000 Scale Map Narrative

SHIPROCK NE	ALBUQUERQUE NW
SHIPROCK SE	ALBUQUERQUE SW
GALLUP NE	AZTEC SW
GALLUP SE	ST. JOHNS NE
	SOCORRO NW

Introduction

The U.S. Fish and Wildlife Service, Office 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 a relatively similar geographic area. Notes to Users are not intended to include complete discription of all wetlands found in the area nor provide complete plant species information.

Area Covered

The area is defined by the above mentioned 1:100,000 scale maps, which are part of the following 1:250,000 scale maps: Shiprock, Gallup, Albuquerque, Aztec, St. Johns and Socorro. Included in this area is the floodplain of the San Juan River. The principle tributaries that enter the floodplain from the north are the Animas and Navajo Rivers and Montezuma, Hallett, Butler, and Corne Creeks. Of these streams, the Animas River is the most important. The tributaries that enter from the south are intermittent streams that are subject to sudden flooding-during intense rainstorms. Of these, the Chaco River is the most important. The San Juan River runs west to east through the Shiprock NE 1:100,000 scale map. Another major floodplain within this area is the Rio San Jose. It runs in a northwest to southeast direction through the southern portion of the Albuquerque SW 1:100,000 scale map and into the northern portion of the Socorro NW 1:100,000 scale map.

Bailey's Ecoregions

The mapping area is in the Colorado Plateau Province, specifically the Grama-Galleta Steppe and Juniper-Pinyon Woodland Mosaic. The area consists of tablelands where the elevations of the plateau tops range from 5,000 to 7,000 feet. Where deep canyons dissect the area and/or volcanic mountains rise above the plateau, elevations range from 4,500 to 10,000 feet.

In the lowlands where precipitation is much lower, the vegetation consists of grasses, sagebrush, many annuals and perennials, cacti and yucca. Higher in elevation, in the foothills of the mountains, is the pinyon pine-juniper woodland zone. Then, in the Rocky Mountain Forest Province, the Ponderosa Pine-Douglas Fir Forest is found at higher elevations. Stands of Aspen are found mixed in the more sheltered areas in this province.

The climate in this area varies from north to south as well as with altitude. Precipitation falls mostly in winter, averaging 10-20 inches at the base of the mountains and increasing to 40 inches at higher altitudes. Summer thunderstorms also bring substantial precipitation. As one goes north to south through the mapping area, precipitation decreases slightly. Annual average temperatures are 40°-50°F and decreases as altitude increases.

There are two major types of soil, Entisols and Aridisols. Entisols occur along floodplains of major streams, while Aridisols occupy the plateau tops, older terraces, and alluvial fans. Badlands of rough, broken land are extensive in the mountains and on plateaus.

Map Preparation

Wetland classification for the NWI maps is in accordance with "Classification of Wetlands and Deepwater Habitats of the United States," Cowardin, et al, 1979.

Wetland classification and delineations were produced by air photo interpretation of high level aerial photography. The photography used was flown on 6/81, 7/81 and 5/82 for Shiprock NE; 6/81, 7/81, 8/81, 5/82, 6/82 and 10/82 for Shiprock SE; 6/80 and 6/81 for Gallup NE and Gallup SE; 6/81 for Albuquerque NW and Albuquerque SW; 6/81, 7/81 and 8/81 for Aztec SW; 5/82, 6/82 and 10/82 for St. Johns NE and 5/82 for Socorro NW. All the photography was color infrared at a scale of 1:58,000. It ranged from good to excellent in quality, enabling a close correlation of field conditions to the photo interpretation process. A field trip was conducted in June 1984 in an effort to relate various photographic characteristics to actual wetland classification.

Collateral data included U.S.G.S. topographic maps (7.5 minutes and 15 minutes) soil, climate, and vegetation information from U.S.D.A. Soil Surveys. Small-scale NWI wetland maps (1:100,000 scale) are available for portions of the U.S.G.S. 1:250,000 scale topographic maps which are included within the study area.

User Caution

The map documents were prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography. The aerial photographs typically reflected conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of aerial photographs. Thus a detailed on-the-ground and historical analysis of a single site may result in revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on the map document.

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 the 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.

Changes in the landscape and/or land use could have occurred since the time of photography. Therefore, some discrepancies between the wetland map and current field conditions may exist. Any questions regarding wetland omissions, inclusions, or errors should be brought to the attention of the Regional Wetlands Coordinator, Region 2. The Project Officer for those wetland maps is Warren Hagenbuck, Regional Wetlands Coordinator, U.S. Fish and Wildlife Service, Region 2, P.O. Box 1306, Albuquerque, N.M. 87103. Aerial photo interpretation was completed by Martel Laboratories, Inc., St. Petersburg, Florida. Maps were prepared by a NWI National Team in St. Petersburg, Florida.

Wetlands and Deepwater Habitats

Wetlands and deepwater habitats within the subject area fall within the Palustrine, Lacustrine, and Riverine systems. Deepwater habitats are areas which are permanently flooded (except during periods of extreme drought) and are characterized by open water on the aerial photography. These habitats are present in all systems.

Characteristics of NWI Wetland Systems (As they relate to this particular study area.

Palustrine System.

In the nine maps encompassed in this report, one of the most common Palustrine wetlands is farm ponds. These are usually small impoundments or excavated ponds used for livestock watering. These intermittent ponds called "tanks" were found to be seasonally flooded in the higher elevations and temporarily flooded in lower areas. However, special consideration was taken for tanks shown as permanent on the topographic quads and containing water at the time of photography. These were generally seasonally or semipermanently flooded. Temporarily and seasonally flooded tanks were classified as (PUSA) and (PUSC) respectively, while semipermanently flooded tanks were classified as (POWF) or (PABF). All the above are given special modifiers, "h" for impounded, or "x" for excavated. Palustrine unconsolidated shore commonly consists of gravel, mud, and sand either exclusively or in combination while Palustrine aquatic bed commonly consists of duckweed (Lemna spp.), milfoil (Myriophyllum spp.) and waterlily (Nymphaea spp.).

In the mountainous areas, there are springs which support some seasonally flooded emergents (PEM1C) dominated by Eleocharis spp., Scirpus spp., Juncus spp., Rocky Mountain iris (Iris missouriensis), narrow leaved vetch (Vicia angustifolia), and buttercup (Ranunculus sp.). Where there were trees associated with these spring areas, they were quaking aspen (Populus tremuloides), and lower in elevation, cottonwood (Populus fremontii). Emergent areas that were temporarily flooded (PEM1A) contain species such as: cocklebur (Xanthium spinosum), sedges (Carex spp.), dandelion (Taraxacum officinale), clover (Trifolium spp.), and western wheatgrass (Agropyron smithii). There are many natural depressions in this area which are intermittent lake or pond beds. These were normally covered with pioneering herbaceous vegetation and were called unconsolidated short (PUS) except when there were wetland plant species found, for example: spurge (Euphorbia spp.), plantain (Plantago spp.), Russian thistle (Salsola kali), and foxtail (Setaria spp.). These intermittent emergent areas also occur along streambeds.

Semipermanently flooded emergent marshes (PEM1F) are present in the area in natural lake depressions up high on the Chuska Mountains plateau area, as well as in wider valleys which had seepage areas and/or impoundments (either natural or man-made). The dominant vegetation in these areas consisted of cattail (Typha latifolia), bulrush (Scirpus spp.), smartweed (Polygonum spp.), sedges (Cyperus spp.), spikerush (Eleocharis spp.), water-cress (Nasturtium officinale) and arrowhead (Sagittaria spp.). Often associated with these areas were areas of semipermanently or permanently flooded

aquatic beds. When these areas were found in lower elevations and in stiller waters, the dominant vegetation was green algae. In higher elevations and in flowing water, the aquatics were water milfoil (Myriophyllum spp.), stonewort (Chara spp.), and some duckweed (Lemna spp.).

Forested areas adjacent to streams were often temporarily flooded (PFO1A) and the vegetation consisted of cottonwood (Populus fremontii), narrow leaved cottonwood (Populus angustifolia), and some willow (Salix spp.). The shrubs (PSS) dominating these same areas were Russian olive (Elaeagnus angustifolia), New Mexico forestiera (Forestiera neomexicana), alder (Alnus tenuifolia), and some willow (Salix spp.). In the seasonally flooded areas of forest and scrub-shrub, the dominant was Salix spp.

Associated with many intermittent streambeds in the dryer areas was salt cedar (Tamarix gallica). This scrub-shrub was found growing alongside streambeds where surrounding vegetation was sparse. In most cases it was classified (PSS2J).

Lacustrine System

Natural or artificial unvegetated basins greater than 20 acres are classified as Lacustrine. Common Lacustrine classifications are (L10WF) and (L10WH). The lake margins exposed due to extreme fluctuation in water level are classified as temporarily or seasonally flooded unconsolidated shore (L2USA) and (L2USC) respectively. Aquatic bed, the same types as mentioned earlier will also be present in the Lacustrine system. Also within the mapping area there are a few intermittent lake beds containing pioneering plant species not considered wetland plants. These lakebeds are classified (L2USJ). Both natural and artificial lacustrine systems are present in the mapping area.

Riverine System

The Riverine system includes the classes open water (OW), unconsolidated shore (US), and streambed (SB). In this study area open water and unconsolidated shore are restricted to the Riverine - upper perennial (R3) and lower perennial (R2) subsystems. While Riverine unconsolidated shore is not covered by perennial flow, it is associated with the reach of the river that contains permanent water and is included in that perennial subsystem. Streams which do not flow year round are classified as Riverine intermittent streambeds (R4SB). Some Riverine systems have their banks lined with trees or shrubs. In some cases where streamside Palustrine wetland vegetation cannot be separately delineated from the Riverine system, the wetlands are mapped as linear Palustrine features.

The major rivers in the mapping area are the San Juan and the Rio San Jose. The San Juan is a large perennial river, both upper and lower perennial with a well-developed floodplain. Most of the Palustrine wetlands mentioned earlier are present along this flood plain. Russian olive (Elaeagnus angustifolia) and willow (Salix spp.) are the common tree species which line this river. The Rio San Jose is a small, lower perennial river flowing from Bluewater Lake, through the lava beds from Mount Taylor, into the Rio Puerio and finally into the Rio Grande.

Modifiers

Hydrologic characteristics are an important aspect of wetlands. The following water regime modifiers describe in general terms the duration and timing of surface inundation, as well as groundwater fluctuations.

Intermittently Flooded (J) -- The substrate is usually exposed, but surface water is present for variable periods without detectable seasonal periodicity. Weeks, months, or even years may intervene between periods of inundation.

Temporarily Flooded (A) -- Surface water present for brief periods during growing season, but water table usually lies well below surface.

Seasonally Flooded (C) -- 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 variable, being near the land surface to well below the land surface.

Semi-permanently Flooded (F) -- Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or near the land surface.

Permanently Flooded (H) -- Water covers land surface throughout the year in all years.

Special modifiers included on these NWI maps, where applicable, are:

Dikes Impounded (h): Created or modified by a barrier, dike, or dam which obstructs the inflow or outflow of water.

Excavated (x): Lies within a basin or channel excavated by man.

TABLE 1 SUMMARY OF WETLANDS AND DEEPWATER HABITATS

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/SUBSTRATE
POW	Palustrine open water	Pond	Open water
PAB3	Palustrine aquatic bed rooted	Pond weeds	Waterlily (<u>Nymphaea</u>) Milfoil (<u>Myriophyllum</u>)
PAB4	Palustrine aquatic bed floating	Pond weed	Duckweed (<u>Lemna</u>)
PUS	Palustrine unconsolidated shore	Pond shore	Exposed pond shore
PEM1	Palustrine emergent persistent	Marsh, wet meadow	Spikerush (<u>Eleocharis</u>) Bulrush (<u>Scirpus</u>) Rush (<u>Juncus</u>) Sedge (<u>Carex spp.</u>) Cattail (<u>Typha spp.</u>) Smartweed (<u>Polygonum</u>)
PSS1	Palustrine scrub/shrub broad-leaf deciduous	Shrub swamp	Russian Olive (<u>Ealeagnus angustifolia</u>) Alder (<u>Alnustenuifolia</u>) Willow (<u>Salix spp.</u>)
PSS2	Palustrine scrub/shrub needle-leaf deciduous	Shrub wetland	Saltcedar (<u>Tamarix gallica</u>)
PF01	Palustrine forested broad-leaf deciduous	Forested wetland	Cottonwood (<u>Populus fremontii</u>) Narrow-leaf Cottonwood (<u>Populus angustifolia</u>) Willow (<u>Salix spp.</u>)
L10W	Lacustrine open water	Lake	Open water
L2US	Lacustrine littoral unconsolidated shore	Lake flat	Mud, sand, gravel
L2AB	Lacustrine littoral aquatic bed	Pond weeds	Waterlily (<u>Nymphae</u>) Milfoil (<u>Myriophyllum</u>) Duckweed (<u>Lemna</u>)

TABLE 1 SUMMARY OF WETLANDS AND DEEPWATER HABITATS
(Continued)

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	VEGETATION/SUBSTRATE
R20W	Riverine lower perennial open water	River	Open water
R30W	Riverine upper perennial open water	River	Open water
R4SB	Riverine intermittent streambed	Stream	Mud, sand, or gravel streambed/open water
R2US	Riverine lower perennial unconsolidated shore	River flat	Mud, sand, gravel
R3US	Riverine upper perennial unconsolidated shore	River flat	Mud, sand, gravel

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