NATIONAL WETLANDS INVENTORY

1:100,000 Map Narrative

Oklahoma City SE

INTRODUCTION

In 1974, the U.S. Fish and Wildlife Service directed its Office of Biological Services to complete an inventory of the nation's wetlands. As part of this overall objective, an effort began in August 1981 to delineate and classify wetlands through photo interpretation combined with field checking in the eastern section of Oklahoma including small portions of Arkansas and Missouri. A total of fourteen 1:100,000 scale maps are to be produced:

McAlester NW, NE, SW, SE

Oklahoma City NE, SE

Tulsa NW, NE, SW, SE,

Fort Smith NW, NE, SW, SE

Wetland maps at 1:100,000 scale and wetland overlay maps at 1:24,000 are produced at National Wetlands Inventory headquarters in St. Petersburg, Florida. Information regarding final Oklahoma maps is available from the U.S. Fish and Wildlife Service's regional office located in Albuquerque, New Mexico. An intergral part of all final wetland maps is the completion of narrative reports for each U.S. Geological Survey 1:100,000 quadrangle inventoried. The following narrative report provides both basic and specific data which aid the user in understanding not only the

general area of the Oklahoma City SE quadrangle but also representative details of its wetland habitat.

Map Preparation

The wetland classifications that appear on the Oklahoma City SE wetland maps are in accordance with Cowardin et al. (1979). The delineated mapping units resulted from stereoscopic interpretation of 1:58,000 scale color-infrared transparencies taken in April 1980 and March 1981. The delineations were transferred to 1:24,000 scale U.S. Geological Survey topographic maps or orthophoto quads with a zoom transfer scope.

The photography ranges from excellent to somewhat poor in quality. While many strips are of very good quality, others, due to either poor exposure or development, show characteristics of excessive bleaching. This condition is most severe at the center of the photograph and lessens toward the edges. Consequently the edges of many of the photographs are very dark. Problems encountered because of these defects stem from tonal differences of areas that actually have similar covertypes. This decreases consistency and reliability of delineations and makes tying of adjacent photographs very difficult. The clarity of the imagery is generally good.

Field work was conducted under drier conditions than represented by the photography. Considerations were made for this during the interpretation phase.

Collateral data included U.S.G.S. topographic maps (7.5 min. and 15 min.) and Soil Conservation Service soil surveys.

Map users are cautioned that mapping with high altitude aerial photography has limitations. Wetlands are identified and classified through stereoscopic examination of photography on the basis of photo characteristics (e.g. tone, texture, pattern, site, and size) in addition to local ecology, and cultural patterns. Aerial photographs reflect conditions during the year and season in which they were taken. In addition, the small scale of the photography limits the size of the mapping unit, thus precluding delineation of very small wetlands, (less than 1/4 acre approximately) and narrow linear wetlands, (less than 15 feet wide approximately).

Changes in the landscape and/or land use could have occurred since the time of photography, therefore some descrepancies between the map and current field conditions may exist.

Any discrepancies regarding wetland omissions, inclusions, or errors should be brought to the attention of the Regional Wetlands Coordinator, Region 2. The Project Officer for this wetland map is Warren Hagenbuck, Regional Wetlands Coordinator, U.S. Fish and Wildlife Service, Region 2, P.O. Box 1306, Albuquerque, New Mexico 87103.

Field Work Completed

Two preliminary field trips were conducted on August 10th to the 14th, 1981 and September 21st to the 25th, 1981 respectively, in order to relate various photographic characteristics to actual wetland classification. Additional ground truthing occurred following completion of draft wetland inventory maps to evaluate the accuracy of initial photo interpretation.

Bailey's Ecoregions

Oklahoma City SE lies within Bailey's (1978) Prairie Parkland Province. The vegetation is forest steppe, characterized by the intermingling of deciduous forest and tall grass prairie. Upland forest generally occurs along the ridges and is dominated by post oak and blackjack oak. Encroachment of upland forest into the valleys of prairie has resulted from overgrazing and the absence of fire. Bluestem and panic grasses typify well-managed prairie sites. Bottomland forests of such common trees as hackberry, elm, ash, cottonwood and willow form corridors along stream floodplains.

Climate

According to SCS Soil Surveys, Oklahoma City SE has warm, temperate, continental climate. Average annual precipitation is 37 inches over one-third of which occurs during the months of April, May and June. Less than 20 percent of the average yearly rainfall occurs during October through February. Precipitation is evenly distributed throughout the remaining months. There are about 212 frost-free days. Winters are generally mild with an average snow fall of six inches annually. High summer temperatures combined with reduced rainfall speed evaporation and soil drying. Extended periods of no precipitation are not uncommon.

Geography

The terrain of the study area is flat to moderately rolling with a gentle southeasterly slope. Elevations range from 650 to 1100 feet. The relief is characterized by narrow to broad valleys separated by ridges and escarpments. The underlying material in the lowlands is erodeable shale while the more resistant sandstone forms the ridges that usually act as watershed divides between the drainage systems of the creeks. The major streams that form these drainage systems are the North Canadian River and the Little River. Soil color varies from red to brown to gray and is slightly to moderately acid.

The major land use is farming with beef cattle production and crop production being the most important types of land utilization. Major cash crops are wheat and alfalfa. A large acreage of native prairie is cut for hay.

Large fields of oil and gas which underlie the area constitute an important factor to the local economy.

Soils

Soil is an important element of wetlands and is a defining characteristic for wetland classification purposes. The most extensive wetland soils are associated with floodplain lands adjacent to the area's rivers and streams. According to S.C.S. soil surveys, soils which are common to most counties in the study area and are frequently flooded include: Port, Pulaski, Roebuck, Verdigris, and Yahola. These soils are typically nearly level loams and clays located in bottomlands. Unless artificially protected, floodplain areas that are flooded at least annually, pose a high risk if being utilized for cultivation or urban uses.

CHARACTERISTICS OF NWI WETLAND SYSTEMS IN OKLAHOMA CITY SE

MARINE AND ESTUARINE SYSTEMS

No marine or estuarine wetlands are found in Oklahoma City SE.

LACUSTRINE SYSTEM

With few exceptions all lacustrine wetlands are impounded. Significant fluctuation in water level occurs in many of these lakes due to artificial inundation and drainage. The water is drawn down in anticipation of high water and is allowed to flood back temporarily, to prevent flooding downstream. The lake margins, exposed due to the extreme fluctuations in water level, are classified as seasonaly flooded unconsolidated shore (L2USCh) or occasionally as semi-permanently flooded unconsolidated bottom (L2UBFh).

Field trips revealed that some of the forested areas adjacent to impoundments that had been classified as dead (PFO5Hh) are, in fact, living trees (PFO6Hh). The PFO5Hh wetlands that were field checked, and were found to be living trees, were changed. However, we suspect that there are more living trees that are classified as dead.

Lacustrine aquatic beds (L1AB, L2AB) commonly consist of duckweed (Lemna spp.), members of the water lily family (Nymphaeceae) and pondweeds (Potamogeton spp.).

Riverine

The study area contains various types of riverine systems. The major type is lower perennial (R2OWH), exhibiting a dendritic drainage pattern with associated floodplain. Many of the lower perennial rivers overflow their banks two or three times a year. Intermittent streams typically were found to have a seasonal water regime (R4SBC). These streams will dry up in late summer in most years.

Palustrine

In Oklahoma City SE the most common palustrine wetland is open water. These are usually small impounded or excavated farm ponds (POWHh, POWHx) used for watering livestock. These are generally permanently flooded. Field checks revealed that many of the POW type wetlands converted to PAB because of the growth of aquatic vegetation during the summer months. The maps will depict these wetlands as POW based on our photointerpretation, but one should keep in mind that conversion to PAB does occur during the growing season on many of the POW wetlands. Common plants include duckweed, water primrose, water lily and pondweed.

Palustrine emergent wetlands characteristically are temporarily or seasonally flooded depressions or drainageways with persistent hydrophytic vegetation located in or adjacent to areas of cultivated or pastured land (PEMIA, PEMIC). Many are too small to map. Common genera include Juncus, Polygonum, and Carex. Genera such as Typha are found in semipermanently flooded areas (PEMIF).

Palustrine forested (PFOIA, PFOIC) and scrub/shrub (PSSIA, PSSIC) wetlands are typified by a bottomland hardwood association of green ash (Fraxinus pennsylvanica), pecan (Carya illinoensis), willow (Salix spp.), cottonwood (Populus deltoides), elm (Ulmus spp.) and sycamore (Platanus occidentalis). Buttonbush (Cephalanthus occidentalis) and swamp privet (Forestiera acuminata) common in the wetter sites (PSSIF).

LITERATURE CITED

Bailey, R.G. 1978. Description of the ecoregions of the United States. U.S. Dept. Agric., For. Serv., Misc. Pub. 1391. 77 pp.

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