NATIONAL WETLANDS INVENTORY

1:100,000 Map Narrative

McAlester SW

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 McAlester SW quadrangle but also representative details of its wetland habitat. The wetlands of the Boggy Creek watershed, in the western extent of the McAlester SW area, were previously mapped and classified under the old Circular 39 system by the U.S. Fish and Wildlife Service (1976).

Map Preparation

The wetland classifications that appear on the McAlester SW 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

McAlester SW lies mostly within Bailey's (1978) Southeastern Mixed Forest Province. The climax vegetation is medium to tall forest of deciduous and coniferous trees. In this area, oak, hickory, and shortleaf pine are the major upland forest types. Wetland forest types include ash, willow, cottonwood, bur oak, water oak, sweetgum and pecan. The main grasses are bluestem, panicum, and longleaf uniola.

The southwestern extent of the mapped area is contained in the Oak-Bluestem Parkland Section of the Prairie Parkland Province. Vegetation in the Prairie Parkland Province is forest-steppe, characterized by the intermingling of prairie, groves, and strips of deciduous trees. Grasses, especially bluestem prairie, are the main occurring plants in prairie vegetation. Deciduous forest encroaches on the prairies where fire and grazing are controlled. The upland forest is dominated by oak and hickory. Elm, sycamore, cottonwood, and willow are common on flood plains and bottomlands.

Climate

According to SCS Soil Surveys, McAlester SW has humid, warm, temperate, continental climate. An average of 47 inches of precipitation is evenly distributed throughout the year with a slightly higher percentage falling in spring. May and June are the wettest months; October through February and August are the dryest. There are about 215 frost-free days. Winters are generally mild. Snow falls in most years averaging three inches annually. Summers are hot. Reduced rain fall and high temperatures in July speed evaporation, drying the soil. Droughts of several weeks are not uncommon.

Geography

Diverse in nature, this area includes the Kiamichi mountains of the Ouachita uplift with gradient slowly decreasing to the flat, level plains of the Red River. Elevations range from 300 to 1500 feet mean sea level. The relief is characterized by narrow to broad valleys separated by ridges and escarpments. The slope is gently to the southeast. 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 rivers and creeks include the Kiamichi River, Little River, Muddy Boggy Creek, and McGee Creek., The soil color varies from red to brown to gray and is slightly to moderately acid.

The major land use is farming with beef and dairy cattle production and crop production being the most important land utilization types. Major cash crops are cotton, soybeans and alfalfa. A large acreage is cut for hay. Commercial timber harvest on private lands is also a major land use. After the first clear cut areas are re-established as pine plantations for saw timber and pulpwood.

Surface mining was evident on the photography. Coal, natural gas and sandstone are important resources found in this area.

Soils

Soil is an important element of wetlands and is one of the criteria used to define wetlands. The most extensive wetland soils are located in long flood plains along rivers and streams. There are a wide variety of soils on floodplains within the McAlester SW area. According to S.C.S. soil surveys, soils frequently flooded in the study area include: Guyton, Boggy, Ceda, Dela, Pushmatama, Nahatche, Kaufman, Trinity, Hopco, and Tuscumbia. These soils are typically nearly level loams and clays located in bottomlands. They are flooded at least annually. Unless artificially protected, they have low potential for cultivation or urban uses.

CHARACTERISTICS OF NWI WETLAND SYSTEMS IN McALESTER SW

MARINE AND ESTUARINE SYSTEMS

No marine or estuarine wetlands are found in McAlester SW.

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). Major impoundments within McAlester SW are Hugo Lake and Pine Creek Lake.

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.), water lily (Nymphaea spp.), lotus (Nelumbo spp.), pondweeds (Potamogeton spp.), and water milfoil (Myriophyllum 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; however, some upper perennial rivers (R3OWH) do exist. Many of the lower perennial rivers overflow their banks two or three times a year. Usually, intermittent streams were found to have a seasonal water regime (R4SBC). These streams will dry up in late summer in most years.

Palustrine

In McAlester SW, 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, pondweed, spatterdock, giant duckweed, lotus, water milfoil and coontail.

Palustrine emergent wetlands characteristically are temporarily or seasonally flooded depressions with persistent hydrophytic vegetation located in pastures and along small drainages. Many are too small to map. Common genera include Juncus, Polygonum, Eleocharis, Potamogeton, and Carex. Genera such as Typha, Scirpus, Zizaniopsis and Sagittaria 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 water oak (Quercus nigra), willow oak (Quercus phellos), overcup oak (Quercus lyrata), green ash (Fraxinus pennsylvanica), river-birch (Betula nigra), sweetgum (Liquidambar styraciflua), hackberry (Celtis spp.), pecan (Carya illinoensis), willow (Salix spp.), cottonwood (Populus deltoides), elm (Ulmus spp.) and sycamore, (Platanus occidentalis). Buttonbush (Cephalanthus occidentalis) and hazel alder (Alnus serrulata) are common in the wetter sites (PSSIF). Some permanently and semi-permanently flooded scrub/shrub wetlands contian water elm (Planera aquatica), a rare species in Oklahoma, and cedar elm (Ulmus crassifolia).

A few sites with cypress (Taxodium distichum) were noted especially along Cypress Creek and the Little River in the extreme SE section of the mapped area. Cypress swamps are usually semipermanently or seasonally flooded (PFO2F), PFO2C). Where a break between broad-leaved deciduous and needle-leaved deciduous subclasses could not be reliably made, the general deciduous subclass (PFO6) was used.

LITERATURE CITED

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