SOUTH DAKOTA WETLAND INVENTORY

U.S. Fish and Wildlife Service

1:100,000 Map Narrative Report
Aberdeen NE

MAP PREPARATION

Contractor for this wetland inventory was the South Dakota Cooperative Fish and Wildlife Research Unit, P.O. Box 2206, South Dakota State University, Brookings, South Dakota 57007. Photointerpreters were Michael Broschart, Howard Browers, David Nomsen, Kris Sletten, and Peggy Year. Preparation of this narrative report was completed by Howard Browers, Kris Sletten, and Peggy Year. Regional Wetland Coordinator was Charles Elliott, U.S. Fish and Wildlife Service, Denver Federal Center, P.O. Box 25486, Denver, Colorado 80225.

Wetland delineation and classification for Aberdeen NE 1:100,000 quadrangle was done on 1:65,000 color infrared aerial photographs taken 15 May 1979 and 20 April 1982. Photography covered about 95% of the quadrangle. Classification of wetlands was done according to Cowardin et al. (1979). National wetland inventory mapping conventions were also used to assist in photointerpretation. Field checking for the quadrangle was done on 15 September 1983 and 17 July 1984.

SPECIAL MAPPING PROBLEMS

One problem encountered in the mapping of this quadrangle was the difference in photography dates. Strips 1, 2, and 3 were photographed in May 1979 while strips 4 and 5 were photographed in April 1982. The problem stemmed from the fact that 1980 and 1981 were relatively dry years while the spring of 1982 was relatively wet. This probably resulted in some palustrine emergent semipermanent (PEMF) basins being grazed or cut for hay during the dry years of 1980 and 81. Thus, in 1982 when the basins were reflooded, some semipermanent

vegetation was probably covered and did not show up on the photography. This condition was noticed in the area of overlap between 1979 and 1982 photography. Some basins which exhibited strong, clumped vegetative photosignatures on 1979 photography exhibited open water signatures with little or no vegetation on 1982 photography. As a result, some semipermanent basins exhibiting open water signatures on 1982 photography were probably classified as PEMC unless collateral data was sufficient to warrant a semipermanent classification. However, this condition seemed to be reversed in the area of overlap along the Crow Creek Drainage near the western edge of the quadrangle. More open water was on the 1979 photography than 1982.

The second problem occurred only on the 1979 portion of the quadrangle. Though vegetative signatures were much better, water conditions were not quite as good as the 1982 photography. Many basins had no standing water. This condition seemed to increase from north to south. Topographic maps were used extensively to identify wetland basins. Due to the absence of water in many basins, strength of water could not always be used as a characteristic to differentiate between palustrine emergent seasonal (PEMC) and temporary (PEMA) wetlands. Thus, many dry basins were classified as PEMC. The absence of farming activities in drier basins was often used as a criterion for a seasonal classification. Also, some palustrine emergent temporary basins were probably not delineated because the photosignatures were nonexistent due to the drier conditions.

The delineation of wetlands along the James River posed a different problem. There is extensive flooding along the river on both the 1979 and 1982 photography. In some cases it is hard to differentiate the river channel from the surrounding flood waters. With the aid of topographic maps the James River channel was approximated in some of these areas. The surrounding flood waters were quite often classified as seasonal (PEMC) because most

exhibited open water signatures.

The flooded conditions of the James River posed a problem in delineation and classification of wetlands at Sand Lake NWR. Again, the river channel was obscured and had to be approximated using topographic maps. Most of the refuge area from the Columbia Dam north to Hecla was classified PEM/ABFh, with an L2ABGh central area near refuge headquarters. Based on fieldwork, it is evident that some peninsular areas of upland or temporary may be included in the PEM/ABFh; however, due to the flooded conditions there was no clear cut difference. In some cases these areas were solid marsh symbols on the topographic maps. Sam Waldstein, Refuge Manager at Sand Lake NWR, was consulted during delineation of the refuge area.

WETLANDS

Lacustrine System

The most common lacustrine classification on the Aberdeen NE was L2ABG. Quite often these were impounded and were classified L2ABGh. This type of lake was characterized by open water in a large, deep basin. Semipermanent vegetation often bordered these lakes. These basins were usually indicated by permanent water on the topographic maps. An L1UBGh classification was used on Richmond and Elm Lakes based on depth data in Koth (1981). Occasionally, the classification L2ABF was used.

Riverine System

The classification R4SBF was used quite often on the Aberdeen NE. These stream or river basins were characterized by strong open water signatures with semipermanent vegetation often occuring along the edges or in pools and oxbows. The James River was classified as R2UBG. An $R4SBF_x$ was used on the Crow Creek drainage canal.

Palustrine System

Palustrine basins on the Aberdeen NE were characterized by a variety of photosignatures. Emergent seasonal basins (PEMC) were often characterized by a dark blue, open water signature. Some seasonal basins exhibited a somewhat even-toned vegetative signature. Other seasonal basins exhibited a whitish or grayish-white vegetative signature with little or no water in the basins (especially on 1979 photography). The absence of cultivation was often used as a basis for classifying these as PEMC. Still others were characterized by a grayish-white and blue mottled photosignature. Topographic maps and soil surveys were used to aid the identification of drier wetland basins.

Emergent semipermanent basins (PEMF) were clumped and rough-textured with a white to gray color. The vegetation was either within a blue open water signature or tightly packed in a basin with little or no discernable water. Semipermanent basins with blue open water signatures with clumps of vegetation scattered throughout were mixed emergent and aquatic bed (PEM/ABF or PAB/EMF). Some oxbows along rivers were classified as PABF.

Emergent temporary basins (PEMA) had several variable signatures. The most common was that of a light-gray signature. Temporaries in ~~planned~~ plowed fields varied from a white mottled signature on the wetter photography to a very weak gray to white signature on the drier photography. Some temporaries had dark bluish gray signatures. These were contained in basins with no standing water. Others appeared with mottled dark gray to light gray signatures with no well defined basins. Blue open-water signatures were classified as temporary if there appeared to be a great deal of upland contained in the basin. Dot temporaries had either a weak blue open-water signature or a dark to light gray signature.

Temporary forested wetlands (PFOA) were identified by a weak gray or blue open water signature from beneath the trees. These wet forests were found on the edges of both temporary and seasonal basins or in a temporarily flooded basin. Seasonal forested wetlands (PFOC) were located within a seasonal basin surrounded by standing water. A few scrub shrub (PSSA) temporaries were identified by a rough-textured gray signature.

Road ditches with a weak blue water signature were classified as $PEMA_x$ while ditches with stronger water were $PEMC_x$. A few were classified as PEM/ABF_x if they exhibited strong clumping. Sewage lagoons were classified as $PABG_x$. Impoundments were either PEMCh, PABFh, PEMFh, PEM/ABFh or PABGh, depending on the strength of the water signature, its depth and the size of the impoundment.

Gravel pits were usually classified as $PUBf_x$. Some that had begun to fill in and had become overgrown were classified as PFO/EMC_x. Dugouts were classified as $PABF_x$.

Vegetation commonly found in emergent seasonal basins (PEMC) included smartweed (Polygonum spp.), reed canarygrass (Phalaris arundinacea) and whitetop (Scolochloa festucacea). The typical vegetation of emergent semipermanent (PEM/ABF, PAB/EMF) basins was cattail (Typha spp.), hardstem bulrush (Scirpus acutus) and river bulrush (Scirpus fluviatilis). Pondweed (Potamogeton spp.) and duckweed (Lemna spp) are common species found in aquatic bed semipermanents (PABF). Bluegrass (Poa palustris), dock (Rumex spp.) and various sedges (Carex spp.) were found in emergent temporaries (PEMA). More detailed descriptions of wetland vegetation are provided in Steward and Kantrud (1971, 1972), Fulton (1979), and Larson (1979).

REFERENCES

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