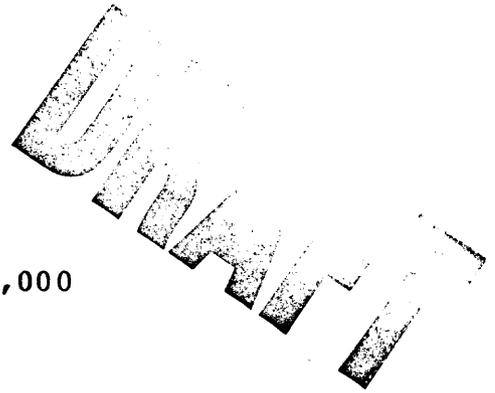


MAP NARRATIVE
WATFORD CITY NE, 1:100,000
NORTH DAKOTA



Map Preparation:

The wetland classifications that appear on these National Wetland Inventory (NWI) maps are in accordance with Cowardin, et al. Classification of Wetlands and Deepwater Habitats of the United States (1980). The delineations were produced by stereoscopic interpretation of 1:65,000 scale, color infrared photographs taken 4-26-82 and 4-7-81. Initial ground truthing of the photography occurred during the period of June 18, to June 28, 1984.

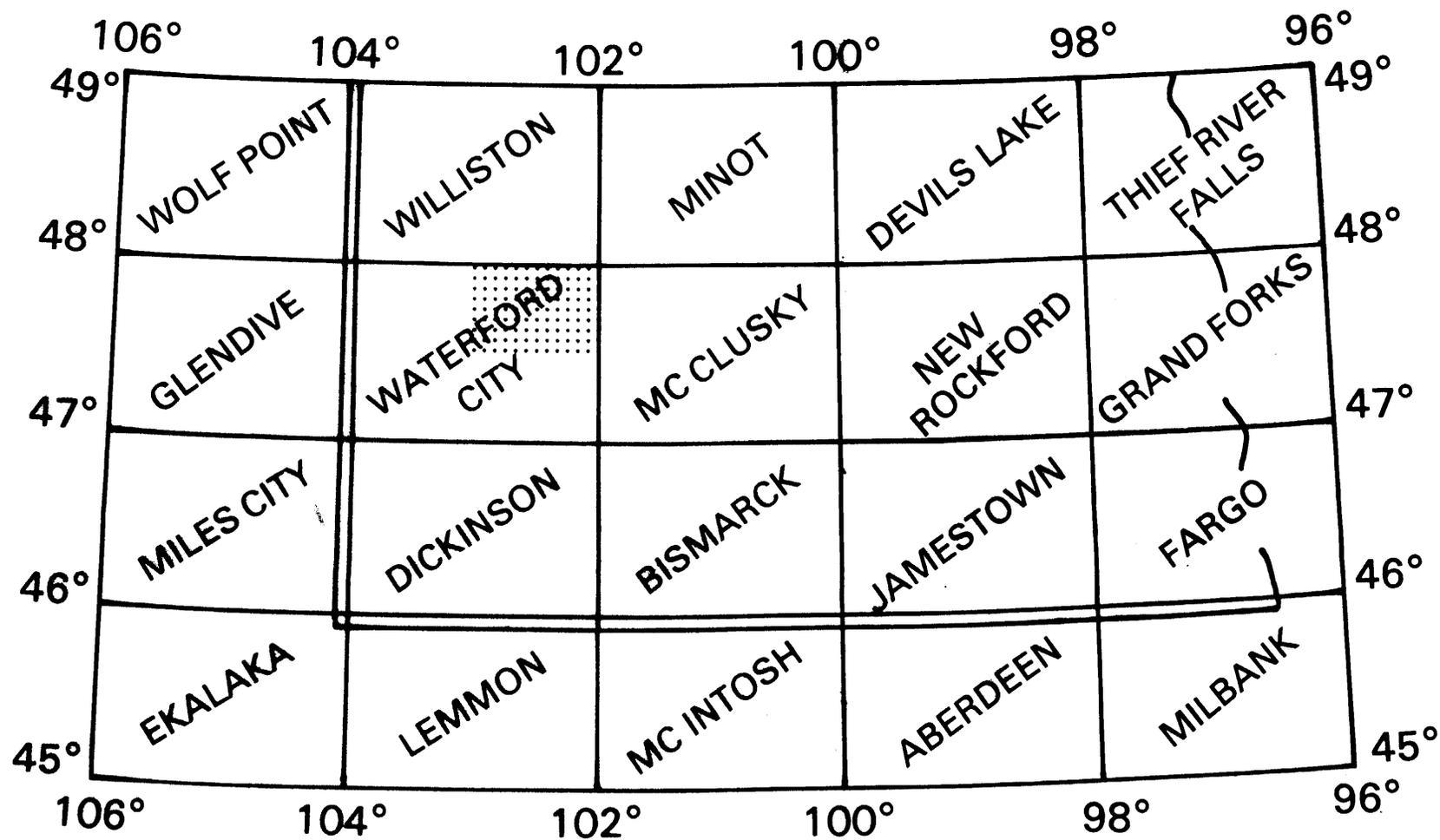
The user of these maps is cautioned that, due to the limitations of mapping primarily through aerial photointerpretation, a small percentage of wetlands may be unidentified. Changes in landscape, or habitat, could have occurred since the time of photography, therefore, some discrepancies between the maps and current field conditions may exist. Any questions regarding omissions, inclusions, or errors should be brought to the attention of the Regional Wetlands Coordinator, U.S. Fish & Wildlife Service, Region 6, Habitat Resources, Lake Plaza North Building, 134 Union Boulevard, Lakewood, Colorado, 80228.

Geography:

The map, Watford City NE, is located in central North Dakota. The map is bounded on the west by the 103° meridian, and on the east by the 102° meridian. On the north it is bounded by the 48° parallel and on the south by the 47° 30' parallel (see illustration).

According to Bailey, Description of the Ecoregions of the United States (1980), the study area lies in the Great Plains - Shortgrass Prairie Province. This region is characterized by rolling plains and tablelands of moderate relief. They are in a broad belt that slopes gradually eastward down from an altitude of 5,500 ft. (1,520 m.) near the foot of the Rocky Mountains to 2,500 ft. (760 m.) in the Central States. The plains are notably flat, but there are occasional valleys, canyons, and buttes. In the northern section, badlands and isolated mountains break the continuity of the plains.

Lake Sakakawea divides the map into two subdivisions. The western portion, which comprises three fourths of the map, is mostly open high hills. East of the lake is tablelands of moderate relief. Both are considered part of the Upper Missouri Basin Broken Lands.



Lake Sakakawea itself is a mainstem reservoir formed by earth-fill dam. Storage began in November 1953. Maximum capacity, 24,200,000 acre-ft. (29.8 km³) below elevation 1,854.0 ft. (565.1 m.), top of 29-ft. (8.84 m) gates. Normal maximum, 22,700,000 acre-ft. (28.0 km³) below elevation 1,850 ft. (563.88 m.), of which about 4,300,000 acre-ft. (5.30 km³) is designated for flood control. Elevation at crest of spillway, 1,825.0 ft. (556.26 m.), surrounded by radial gates. Inactive storage, 5,000,000 acre-ft. (6.16 km³) below elevation 1,775.0 ft. (541.02 m.). Dead storage, zero at elevation 1,672.0 ft. (509.63 m.).

Audubon Lake, located at the east end of Lake Sakakawea, is fed by water from Sakakawea pumped in from a station in the dam separating the two lakes. This lake serves as headwater and flood control for a large irrigation canal. This canal heads east from the lake for several miles into the adjacent map and then turns southward.

Climate:

The climate is a semiarid continental regime in which maximum rainfall comes in summer, but the total supply of moisture is low. Evaporation usually exceeds precipitation. The average annual temperature is 45°F (8°C) throughout most of the region but can reach 60°F (15°C) in the south. Winters are cold and dry; the summers warm to hot. The frost free season is generally fewer than 100 days with precipitation being about 10 in. (250 mm.) at this latitude of the Short-Grass Prairie Province.

WETLAND COMMUNITIES

Palustrine:

A majority of the acreage of palustrine vegetated wetlands is made up of basin oriented potholes. The remainder of vegetated palustrine wetlands are covered with forest or scrub-shrub. Gravel pits and unconsolidated shore areas are the only unvegetated palustrine wetlands.

Temporary emergent vegetation in basins includes rush (Juncus spp.) and foxtail barley (Hordeum jubatum). Non-basin temporary emergents occur in wet meadow or floodplain situations and include reed canary grass (Phalaris arundinacea), fowl bluegrass (Poa Palustris), and prairie cordgrass (Spartina Pectinata). Seasonal emergents for basins are dominated by white top (Scolochloa festucacea). The white top also occurs in meadows along with common spikerush (Eleocharis spp.), three square (Scirpus americanus), prairie cordgrass (Spartina pectinata) and slough sedge (Carex Trichocarpa). Smartweed (Polygonum spp.), three square and slough sedge occur regularly in roadside ditches. Semipermanent emergents include hardstem bulrush (Scirpus acutus) and cattails (Typha Latifolia). Both occur mostly in pothole basins, but may occasionally occur in non-basin situations such as meadows, river scars or overflow areas near rivers.

Aquatic bed vegetation is widespread later in the growing season. Both rooted and floating vascular types exist in basin situations and in "dug outs" which are used to retain water for cattle and the larger sewage settling tanks. Types of aquatics include pond weed (Potamogeton spp.), yellow crowfoot (Ranunculus purshii), duckweed (Lemna minor), coontail (Hornwort) (Ceratophyllum demersum), water milfoil (Myriophyllum heterophyllum) and bladderwort (Utricularia spp.).

Forested wetlands are scarce and occur only in narrow bands or small pockets. They are temporary in nature and can be associated with wet basins or river floodplains. Species include black willow (Salix nigra), cottonwood (Populus deltoides), American elm (Ulmus americanus) and box elder (Acer negundo).

Scrub-shrub wetland assemblages occur in similar situations as forested wetlands, the dominant species being shrub willows (Salix nigra).

Unvegetated palustrine wetlands are fairly common in the form of gravel pits and unconsolidated shore. Dug out gravel pits are always typed as intermittently exposed due to their ability to hold water for long periods of time. The great majority of unconsolidated shore is seasonal. Most impounded unconsolidated shore areas have the ability to support wetland vegetation, but frequent trampling by live stock prevents establishment of wetland plants.

Lacustrine

Wetlands in this category are in excess of 20 acres. Only the largest and most permanent are considered limnetic; e.g. Lake Sakakawea. The lacustrine littoral zone occurs as unconsolidated shore; this being usually a fringe of sand or mud at lake's edge, or as aquatic beds. Aquatics found in this zone are: coontail (Ceratophyllum demersum) and water milfoil (Myriophyllum heterophyllum). These lakes can be intermittently exposed or semipermanent. Semipermanent lacustrine bodies are shallower and occasionally alkaline in nature.

Riverine

The only permanent river is the Missouri, which is typed as lower perennial. The Little Missouri and the Cheyenne are considered intermittent streams, semipermanent, with streambed bottom (no vegetation). Some similar but smaller rivers are seasonal. Both seasonal and semipermanent rivers may have storage pools in the stream which contain emergents and/or aquatic bed, either floating or rooted.

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
L1UB	Lacustrine limnetic unconsolidated bottom	Open water, Lake	Unvegetated mud, sand or gravel
L2US	Lacustrine littoral unconsolidated shore	Lake shore	Unvegetated mud, sand or gravel
L2AB	Lacustrine littoral aquatic bed	Floating or rooted water plants	Coontail (<u>Ceratophyllum demersum</u>) Water milfoil (<u>Myriophyllum heterophyllum</u>)
R2UB	Riverine lower Perennial unconsolidated bottom	Open water, river	Unvegetated mud, sand or gravel
R2US	Riverine lower perennial unconsolidated shore	River flat or bar	Unvegetated mud, sand or gravel
R4SB	Riverine Intermittent streambed	Intermittent stream or creek	Unvegetated mud, sand or gravel
PUB	Palustrine unconsolidated bottom	Open water pond unvegetated bottom	Unvegetated mud, sand or gravel
PUS	Palustrine unconsolidated shore	Pond shore	Unvegetated mud, sand or gravel
PAB	Palustrine aquatic bed	Floating or rooted water plants	Pond weed (<u>Potamogeton</u> spp.) Yellow crowfoot (<u>Ranunculus purshii</u>) Duckweed (<u>Lemna minor</u>) Coontail (Hornwort) (<u>Ceratophyllum demersum</u>) Water milfoil (<u>Myriophyllum heterophyllum</u>) Bladderwort (<u>Utricularia</u> spp.)

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PEM	Palustrine emergent	Marsh or wet meadow	Hardstem bullrush (<u>Scirpus acutis</u>) Cattail (<u>Typha latifolia</u>) White top (<u>Scolochloa festucacea</u>) Spikerush (<u>Eleocharis spp.</u>) Prairie cordgrass (<u>Spartina pectinata</u>) Smartweed (<u>Polygonum spp.</u>) Slough sedge (<u>Carex trichocarpa</u>) Rush (<u>Juncus spp.</u>) Fowl bluegrass (<u>Poa palustris</u>) Foxtail barley (<u>Hordeum jubatum</u>) Reed canary grass (<u>Phalaris arundinacea</u>)
PSS	Palustrine scrub-shrub	Shrub wetland	Black willow (<u>Salix nigra</u>)
PFO1	Palustrine Forest	Forest wetland	Black willow (<u>Salix nigra</u>) Cottonwood (<u>Populus deltoides</u>) American elm (<u>Ulmus americanus</u>) Box elder (<u>Acer negundo</u>)