

**DRAFT**

**USER REPORT: WILLISTON NE, NORTH DAKOTA  
NATIONAL WETLANDS INVENTORY MAPS**

**A. INTRODUCTION**

The U.S. Fish & Wildlife Service's National Wetlands Inventory is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. The Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. is the classification system used to define and classify wetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also available to enhance the use and application of the classifications system.

**B. PURPOSE**

The purpose of the notes to users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive crosswalk from wetland codes on the map to common names and representative plant species; and (3) to explain local geography, climate, and wetland communities.

**C. STUDY AREA**

**Geography:**

Williston NE is located in central North Dakota just below the Canadian border. 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 49° parallel, and on the south by the 48° 30' parallel (Figure 1).

According to Bailey, Description of the Ecoregions of the United States (1980), the southwestern corner of the study area lies in the Wheatgrass-Needlegrass section of the Great Plains-Shortgrass Prairie Province. This region is characterized by rolling plains and tablelands of moderate relief with occasional valleys, canyons and buttes.

The remainder of Williston NE lies in the Wheatgrass-Bluestem-Needlegrass section of the Tall-Grass Prairie Province. This area is characterized by flat and rolling plains with relief of less than 300 feet. The majority of land is young glacial drifts and dissected till plains. Water covers much of the surface.

**Climate:**

The climate is a semi-arid 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 inches (250 mm) to 15 inches (380 mm).

### Vegetation:

The Short-Grass Prairie Province is a formation class of short grasses that are bunched and sparsely distributed (Bailey, 1980). Some trees and shrubs are scattered throughout the Prairie Province, and can be found in all covertypes ranging from semi-desert to woodland. In many areas ground cover is scarce, exposing soil to erosion by wind and water. Buffalo grass is a typical short-grass prairie growth; sunflower and locoweed are typical plants.

The Tall-Grass Prairie includes the fall-grasses and mixed grasslands. Bunch grasses and the sod-forming species are the dominant cover types. Woody vegetation is rare, except on the cottonwood flood plains. Dominant plants are prairie dropseed, little bluestem, and side-oates grama. Only small amounts of native prairie remain, as much of the area is under cultivation.

### Soils:

Soils in the Short-Grass Prairie are generally chestnut brown and the dominant pedogenic process is calcification (Bailey, 1980). Salinization of the soil is dominant in poorly drained sites. Soils are rich in bases as they contain a large amount of precipitated calcium carbonate. Humus content is small because vegetation is sparse.

Tall-Grass Prairie soils are generally Mollisols, with smaller areas of Entisols and Vertisols. Most Tall-Grass Prairie soils have dark upper horizons, are level, and poorly drained. These soils are covered by water much of the year, and support many different hydrophytes.

# WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

Table 1 - Cowardin Classification Codes and Description

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
L1UB (H)	Lacustrine limnetic unconsolidated bottom	Open water, Lake	Unvegetated mud, sand or gravel
L2UB (F,G)	Lacustrine littoral unconsolidated bottom	Open water, Lake	Unvegetated mud, sand or gravel
L2US (A,C)	Lacustrine littoral unconsolidated shore	Lake Shore	Unvegetated mud, sand or gravel
L2AB (F,G)	Lacustrine littoral aquatic bed	Floating or rooted water plants	Coontail ( <u>Ceratophyllum demersum</u> ) Water milfoil ( <u>Myriophyllum heterophyllum</u> )
R2UB (G,H)	Riverine lower perennial unconsolidated bottom	Open water, River	Unvegetated mud, sand or gravel
R2US (A,C)	Riverine lower perennial unconsolidated shore	River flat or bar	Unvegetated mud, sand or gravel
R4SB (A,C,F)	Riverine Intermittent streambed	Intermittent stream or creek	Unvegetated mud, sand or gravel
PUB	Palustrine unconsolidated bottom	Open water pond unvegetated	Unvegetated mud, sand or gravel
PUS (A,C)	Palustrine unconsolidated shore	Pond shore	Unvegetated mud, sand or gravel
PAB (F,G)	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.)
PEM (A,C,F)	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</u> spp.) Prairie cordgrass ( <u>Spartina pectinata</u> ) Smartweed ( <u>Polygonum</u> spp.)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PEM (A,C,F)			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 (A,C)	Palustrine scrub-shrub	Shrub wetland	Black willow ( <u>Salix nigra</u> )
PFO (A,C)	Palustrine Forest	Forest wetland	Black willow > 6m ( <u>Salix nigra</u> ) Cottonwood ( <u>Populus deltoides</u> ) American elm ( <u>Ulmus americanus</u> ) Box elder ( <u>Acer negundo</u> )

### Water Regime Description

- (A) Temporarily Flooded - Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.
- (C) Seasonally Flooded - 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 extremely variable, extending from saturated to a water table well below the ground surface.
- (F) Semipermanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.
- (G) Intermittently Exposed - Surface water is present throughout the year except in years of extreme drought.

### 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 (1979). The delineations were produced by stereoscopic interpretation of 1:65,000 scale, color infrared photographs that were taken on 04-05-81, 05-27-83, and 05-26-83. Initial ground truthing of the photography occurred during the period of July 7 to July 18, 1987. Photointerpreters used collateral information from soil surveys, and USGS 1:24,000 scale topographic maps to assist in wetland recognition.

The user of the map 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 Regional Wetlands Coordinator, U.S. Fish & Wildlife Service, Region 6, Habitat Resources, Lake Plaza North Building, 134 Union Boulevard, Lakewood, Colorado, 80228.

### Special Mapping Problems:

None

Map Acquisition

To place an order for a National Wetland Inventory map product, please contact:

Regional Wetland Coordinator  
U.S. Fish and Wildlife Service  
Region 6 - Habitat Resources  
Lake Plaza North Boulevard  
134 Union Boulevard  
Lakewood, Colorado 80228

-or-

Rocky Mountain Mapping Center  
National Cartographic Information Center  
U.S. Geological Survey  
Box 25046, Stop 504, Federal Center  
Denver, Colorado 80225

Maps are identified by the name of the corresponding USGS 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the U.S. Geological Survey.

LITERATURE CITED

Bailey, R.G., 1980. Description of the Ecoregions of the United States. U.S. Department of Agriculture, Miscellaneous Publication No. 1391, 77 pp.

# NORTH DAKOTA

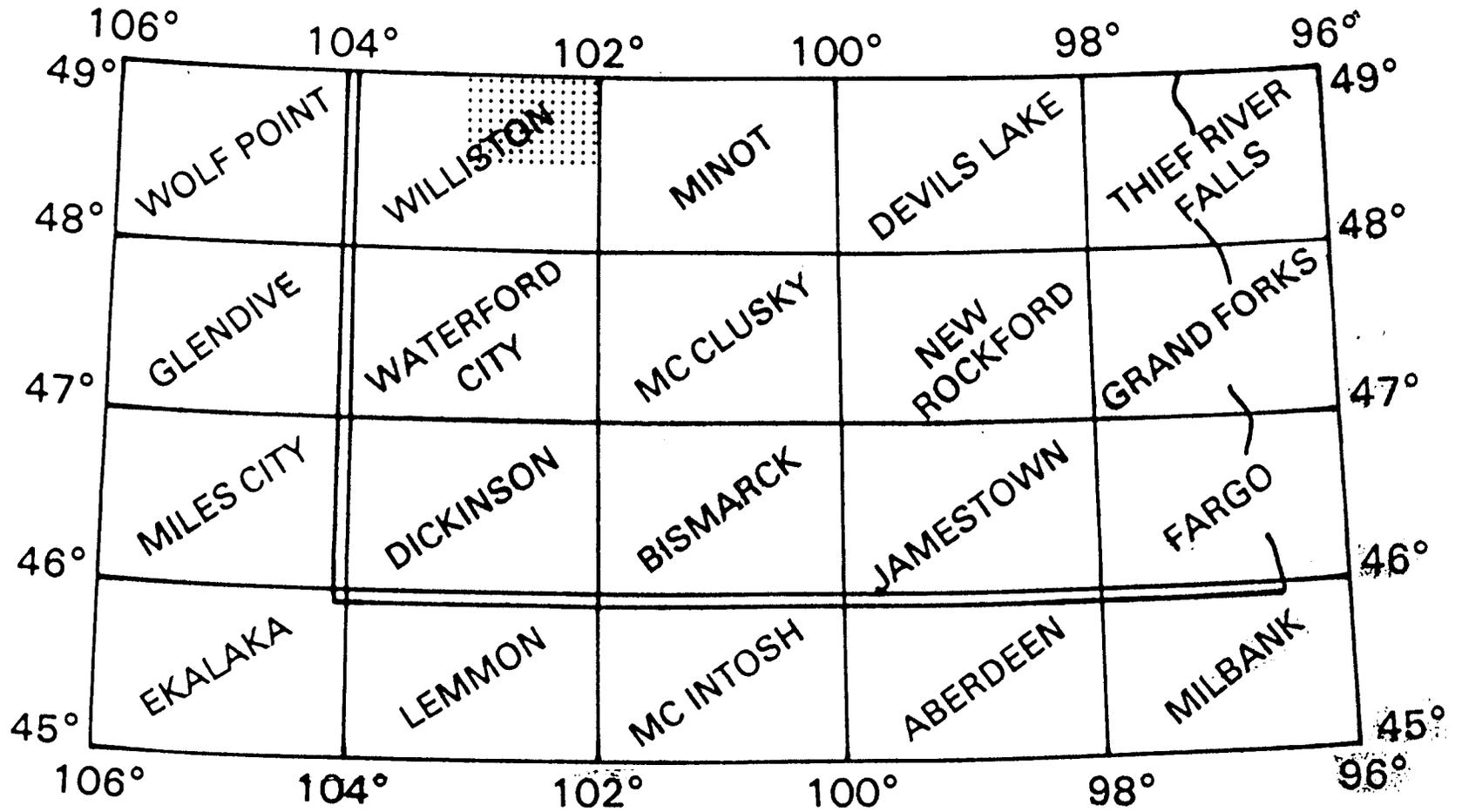


FIGURE 1