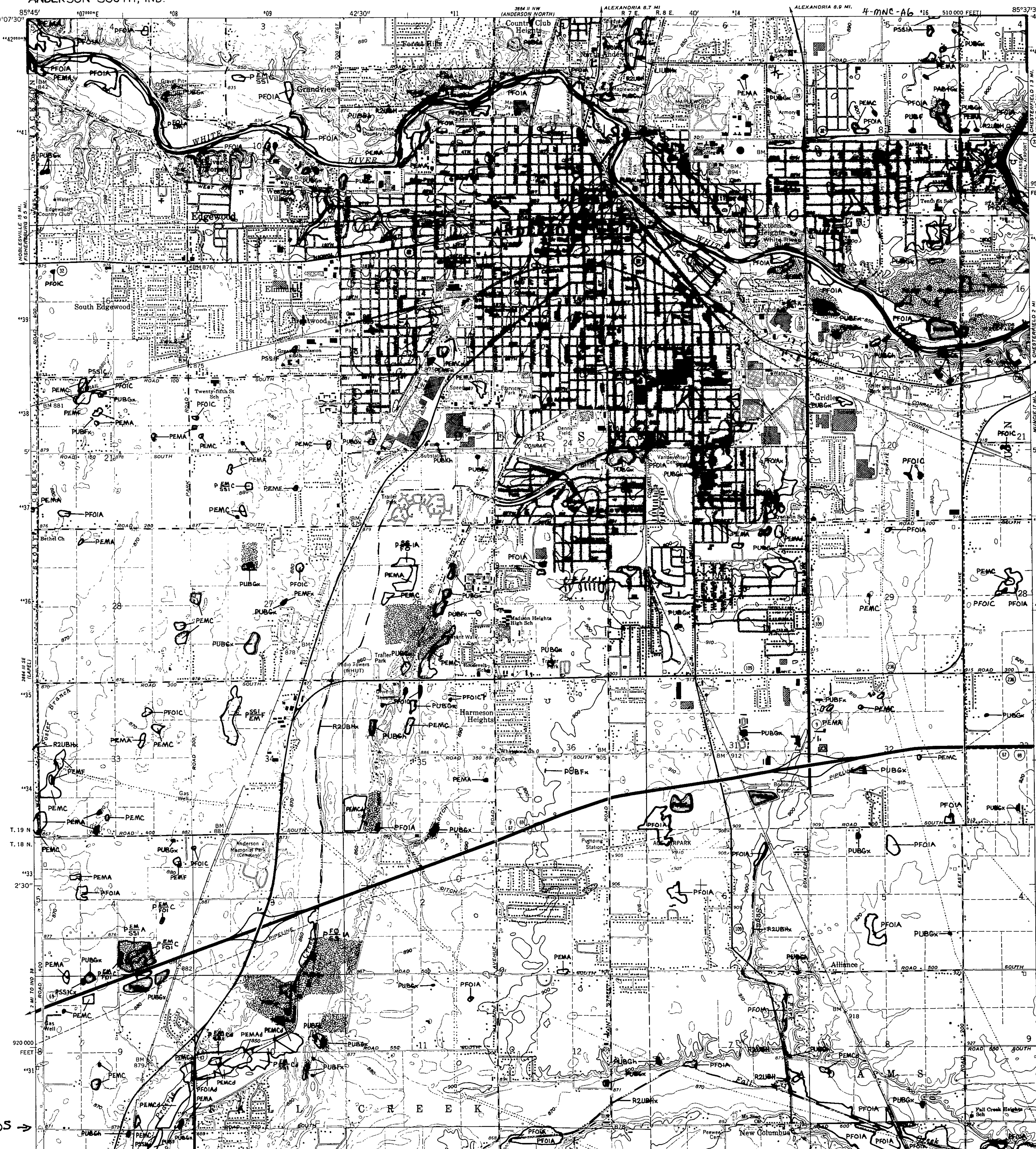
NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR



SCALE 1:24 000

1 MILE — 1000 0 1000 2000 3000 4000 5000 6000 7000 FEET — 1 KILOMETER

1 acre — 10 acres — 20 acres

ACREAGE GUIDE

Other information including a narrative report concerning the wetland resources depicted on this document may be available. For information, contact:

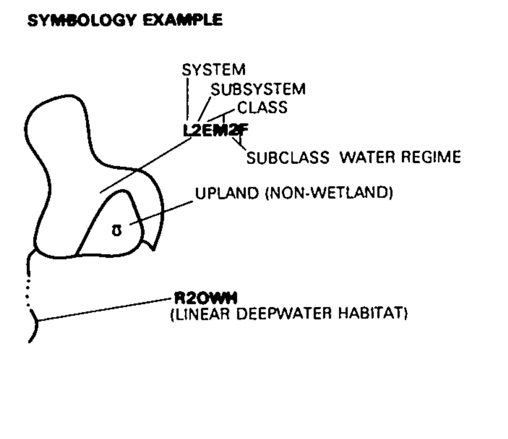
Regional Director (ARDE) Region III
U.S. Fish and Wildlife Service
Federal Bldg., Ft. Snelling (AD/BSP)
Twin Cities, Minnesota 55111

SPECIAL NOTE

This document was prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with **Classification of Wetlands and Deepwater Habitats of the United States** (FWS/OBS - 79/31 December 1979). The aerial photographs typically reflect conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of the aerial photographs. Thus, a detailed on the ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on this document.

Federal, State and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, State or local government or to establish the geographical scope of the regulatory programs of government agencies. **Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.**

SYMBOLOGY EXAMPLE



ʊ — Primarily represents upland areas, but may include unclassified wetlands such as man-modified areas, non photo-identifiable areas and/or unintentional omissions

NOTES TO THE USER

- Wetlands which have been field examined are indicated on the map by an asterisk (*).
- Additions or corrections to the wetlands information displayed on this map are solicited. Please forward such information to the address indicated.
- Subsystems, Classes, Subclasses, and Water Regimes in *italics* were developed specifically for NATIONAL WETLANDS INVENTORY mapping.
- Some areas designated as R4SB, R4SBW, OR R4SBJ (INTERMITTENT STREAMS) may not meet the definition of wetland.
- This map uses the class Unconsolidated Shore (US). On earlier NWI maps that class was designated Beach/Bar (BB), or Flat (FL). Subclasses remain the same in both versions

AERIAL PHOTOGRAPHY

DATE:	4 / 83	DATE:	/ /
SCALE:	1:58 000	SCALE:	
TYPE:	CIR	TYPE:	

U.S. DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

Prepared by National Wetlands Inventory

1988

M — MARINE

- **1 — SUBTIDAL**
  - RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
  - UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
  - AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 5 *Unknown Submergent*
  - RF — REEF: 1 Coral, 3 Worm
  - OW — *OPEN WATER/Unknown Bottom*
- **2 — INTERTIDAL**
  - AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 5 *Unknown Submergent*
  - RF — REEF: 1 Coral, 3 Worm
  - RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
  - US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic

E — ESTUARINE

- **1 — SUBTIDAL**
  - RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
  - UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
  - AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
  - RF — REEF: 2 Mollusc, 3 Worm
  - OW — *OPEN WATER/Unknown Bottom*
- **2 — INTERTIDAL**
  - AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
  - RF — REEF: 2 Mollusc, 3 Worm
  - SB — STREAMBED: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
  - RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
  - US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
  - EM — EMERGENT: 1 Persistent, 2 Nonpersistent
  - SS — SCRUB-SHRUB: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*
  - FO — FORESTED: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad-Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*

R — RIVERINE

Subsystems: 1 — TIDAL; 2 — LOWER PERENNIAL; 3 — UPPER PERENNIAL; 4 — INTERMITTENT; 5 — UNKNOWN PERENNIAL

- RB — ROCK: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- *SB — STREAMBED: 1 Bedrock, 2 Rubble, 3 Cobble Gravel, 4 Sand, 5 Mud, 6 Organic, 7 Vegetated
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic, 5 Vegetated
- **EM — EMERGENT: 2 Nonpersistent
- OW — *OPEN WATER/Unknown Bottom*

*STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM

**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS. The remaining CLASSES are found in all SUBSYSTEMS

L — LACUSTRINE

- **1 — LIMNETIC**
  - RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
  - UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
  - AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
  - OW — *OPEN WATER/Unknown Bottom*
- **2 — LITTORAL**
  - RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
  - UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
  - AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
  - RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
  - US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic, 5 Vegetated
  - EM — EMERGENT: 2 Nonpersistent
  - OW — *OPEN WATER/Unknown Bottom*

P — PALUSTRINE

- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic, 5 Vegetated
- ML — MOSS LICHEN: 1 Moss, 2 Lichen
- EM — EMERGENT: 1 Persistent, 2 Nonpersistent
- SS — SCRUB-SHRUB: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*
- FO — FORESTED: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad-Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*
- OW — *OPEN WATER/Unknown Bottom*

MODIFIERS

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME

Non-Tidal: A Temporarily Flooded; B Saturated; C Seasonally Flooded; D *Seasonally Flooded/Well Drained*; E *Seasonally Flooded/Saturated*; F Semipermanently Flooded; G Intermittently Exposed; H Permanently Flooded; J Intermittently Flooded; K Artificially Flooded; W Intermittently Flooded/Temporary; Y Saturated/Semipermanent/Seasonal; Z Intermittently Exposed/Permanent; U *Unknown*

Tidal: K *Artificially Flooded*; L Subtidal; M Irregularly Exposed; N Regularly Flooded; P Irregularly Flooded; *S Temporary-Tidal; *R Seasonal-Tidal; *T Semipermanent-Tidal; *V Permanent-Tidal; U *Unknown*

*These water regimes are only used in tidally influenced, freshwater systems.

WATER CHEMISTRY

Coastal Halinity: 1 Hyperhaline; 2 Euhaline; 3 Mixohaline (*Brackish*); 4 Polyhaline; 5 Mesohaline; 6 Oligohaline; 0 Fresh

Inland Salinity: 7 Hypersaline; 8 Eusaline; 9 Mixosaline; 0 Fresh

pH Modifiers for all Fresh Water: a Acid; t Circumneutral; i Alkaline

SOIL: g Organic; n Mineral

SPECIAL MODIFIERS: b *Beaver*; d *Partially Drained/Ditched*; f Farmed; h *Diked/Impounded*; r Artificial Substrate; s *Spoil*; x Excavated