



WISCONSIN WETLAND INVENTORY CLASSIFICATION GUIDE

WISCONSIN DEPARTMENT OF NATURAL RESOURCES ◇ PUBL-WZ-WZ023 ◇ FEBRUARY 1992

OPERATIONAL DEFINITION OF A WETLAND

A wetland is "an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation, and which has soils indicative of wet conditions: [s. 23.32(1), Wis. Stats.]."

AREAS INCLUDED

These areas are *included* in the Wisconsin Wetlands Inventory:

1. All areas which support the aquatic plant communities described in *A Manual of Aquatic Plants* (N.C. Fassett, 1940, University of Wisconsin Press). All areas which support the following wetland plant communities described in *The Vegetation of Wisconsin* (J.T. Curtis, University of Wisconsin Press): wet forests, shrub-carrs, alder thickets sedge meadows, aquatic communities, wet prairies, fens and open bogs. All areas which support the wetland plant communities listed in Wisconsin DNR's State Hydrophyte List.
2. Wetlands cultivated only during drought years and periods of low water table. These areas must have soils classified by the U.S.D.A. Soil Conservation Service as very poorly or poorly drained *and* support wetland vegetation during years of normal or high precipitation or periods of normal or high water table.
3. Wetlands where grazing, logging or harvesting of marsh hay has removed most of the wetland vegetation. These areas must have shallow standing water or saturated soil conditions for significant portions of years having normal precipitation and would be expected to revert to a wetland plant community if left undisturbed.
4. Wetlands which were drained or farmed in the past but have since been abandoned and have reverted to standing water or saturated soil conditions and the wetland plant communities listed in No. 1.

5. All natural or artificial water bodies which have a maximum depth of six feet or less except those excluded in Nos. 5 and 6 of the next section.
6. All natural or artificial water bodies for which there is no depth information except those excluded in Nos. 5 and 6 of the next section.
7. Areas of open water or wetland vegetation in sloughs, oxbows and the abandoned and secondary channels of rivers and streams.
8. Beaver ponds or man-made impoundments (six feet deep or less) on rivers and streams where the main channel is no longer discernable.
9. All cranberry bogs.

AREAS EXCLUDED

These areas are specifically *excluded* from the Wisconsin Wetlands Inventory:

1. Areas of open water or submerged aquatic vegetation in lakes greater than six feet deep.
2. Areas of flowing open water or submerged aquatic vegetation in the primary channels of rivers and streams.
3. Areas which were wetlands in their natural state but have since been drained or filled as of the date of the interpreted aerial photography.
4. Areas in the floodplain of lakes, rivers and streams that do not meet the definition of a wetland in section 23.32(1).
5. All sewage lagoons, manure storage pits, mine waste settling ponds and other man-made waste disposal pits including dredge spoil disposal areas which do not support wetland vegetation.
6. All ponds actively used for mining of gravel or other mineral resources that are unvegetated or support only surface algae.



CLASSIFICATION SYSTEM FOR THE WISCONSIN WETLANDS INVENTORY

This wetland classification system is based on the U.S. Fish and Wildlife Service "Classification of Wetlands and Deep-Water Habitats of the United States," but with a few simplifications to make it easier to use and understand.

Mapping Units

All wetlands which can be identified on the stereoscopic black and white infrared aerial photographs are mapped as follows:

- Wetlands larger than 2 or 5 acres, depending on the county, will be mapped and classified. A delineated wetland having only one classification is considered one mapping unit. Larger wetlands may be

divided into small mapping units. Minor inclusions of other cover types (less than 30%) may exist within a mapping unit. Wetland classifications and boundaries reflect ground conditions existing as of the date of the interpreted aerial photography.

- Wetlands smaller than 2 or 5 acres, depending on the county, will be indicated by a

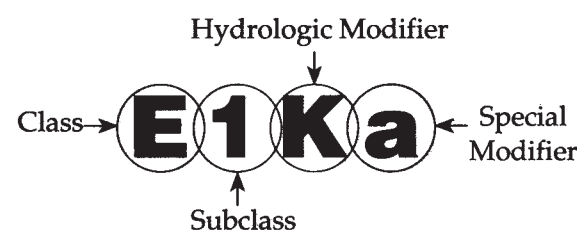
point symbol (↓).

Man-made ponds smaller than the minimum map unit are indicated by the point symbol (◻) for an excavated pond and (△) for a dammed artificial pond.

COMPONENTS OF THE CLASSIFICATION SYSTEM

The classification codes describe the class, subclass, and general hydrologic characteristics of a wetland mapping unit. Some classification codes will also have a "special modifier." The classification code will usually contain 3 or 4 letters and digits, as shown to the right.

When small patches of different cover types (at least 30% of the cover) are intermingled within the wetland mapping unit, a mixed classification code will be used. Mixed classes are separated by a slash (e.g., T3/S3K), with the taller form of vegetation listed first.



COVERTYPE CLASSES FOR THE WISCONSIN WETLANDS INVENTORY

Vegetated mapping units are classified by the uppermost layer of vegetation which covers 30% or more of the area. Vegetated classes take precedence over unvegetated classes if a choice has to be made. Subclasses in parentheses are only used where the information can be easily obtained from existing soil surveys, lake survey maps, or other data sources.

CLASS AND SUBCLASS	DESCRIPTION	SUBCLASS EXAMPLES
A Aquatic bed (1) (Submergent) 2 Floating 3 Rooted floating 4 Free floating	Plants growing entirely on or in a water body (Aquatic bed plants growing entirely under water) Aquatic bed plants having structures which float at the water surface Rooted aquatic bed plants which have floating leaves Aquatic bed plants which float freely on the water surface	— (Milfoil, coontail, pondweeds) Rooted or free floating Pond lilies, water shield Duckweed, water meal, surface algae
M Moss	Wetlands where the uppermost layer of vegetation is moss	Sphagnum moss
E Emergent/wet meadow 1 Persistent 2 Narrow-leaved persistent 3 Broad-leaved persistent 4 Nonpersistent 5 Narrow-leaved nonpersistent 6 Broad-leaved nonpersistent	Herbaceous plants which stand above the surface of the water or soil Plant remains persist into next year's growing season Persistent emergents having grass-like leaves without petioles Persistent emergents with wide leaf blades Emergent which fall beneath the water and decompose over winter Nonpersistent emergents with grass-like leaves without petioles Nonpersistent emergents with wide leaf blades	— Narrow- or broad-leaved Cattail, most sedges and grasses Stinging nettle, some asters Narrow- or broad-leaved Wild rice, some bulrush stands Arrowhead, pickerel weed
S Scrub/shrub 1 Deciduous 2 Needle-leaved deciduous 3 Broad-leaved deciduous 4 Evergreen 5 Needle-leaved evergreen 6 Broad-leaved evergreen 7 Dead 8 Needle-leaved 9 Broad-leaved	Woody plants less than 20 feet tall Shrubs which drop their leaves in the fall Stunted tamaracks Deciduous shrubs other than tamarack Shrubs which keep their leaves over winter Evergreen shrubs with needle-like or scale-like leaves Evergreen shrubs with wide leaf blades Dead shrubs Any coniferous shrubs Any broad-leaved shrubs	— Needle- or broad-leaved Stunted tamaracks Willows, alder, young green ash Needle- or broad-leaved Stunted black spruce Labrador tea, leatherleaf Shrubs killed by flooding Deciduous or evergreen Deciduous or evergreen
T Forested 1 Deciduous 2 Needle-leaved deciduous 3 Broad-leaved deciduous 5 Needle-leaved evergreen 7 Dead 8 Needle-leaved	Woody plants taller than 20 feet Trees which drop their leaves in the fall Tamaracks Deciduous trees other than tamarack Evergreen trees with needle-like or scale-like leaves Dead trees Any coniferous tree	— Needle- or broad-leaved Tamaracks Black ash, elm, silver maple White cedar, black spruce, balsam Trees killed by flooding Deciduous or evergreen
F Flats/unvegetated wet soil 0 Subclass unknown (1) (Cobble/gravel) (2) (Sand) (3) (Mud) (4) (Organic) (5) (Vegetated pioneer)	Exposed wet soils which do not support vegetation Soil characteristics undetermined (Flats composed of gravel and larger stones) (Flats composed of sand) (Flats composed of silt and clay-sized mineral particles) (Exposed muck) (Flats supporting herbaceous pioneer vegetation which is killed by rising water levels before the next growing season)	— — (Gravel bar in a fast flowing river) (Sand flats in the Wisconsin R.) (Mud flats in the Mississippi R.) (Organic flats exposed by drawdown) (Cocklebur growing on a sand flat)
W Open water 0 Subclass unknown (1) (Cobble/gravel) (2) (Sand) (3) (Mud) (4) (Organic)	Lakes and ponds with a depth of 6 feet or less, and unvegetated river sloughs Bottom characteristics undetermined (Cobble or gravel bottom) (Sand bottom) (Mud bottom) (Muck bottom)	— — — — —
U Upland	Upland areas surrounded by wetland	Also used as a subclass to indicate small inclusions of upland (TU/E1Kj)

Hydrologic Modifiers for the Wisconsin Wetlands Inventory

HYDROLOGIC MODIFIER	SITUATION APPLIED TO:	USED WITH SUBCLASSES
L Standing water, Lake	Lakes of 20 acres or more having a maximum depth of 6 feet or less (smaller lakes and ponds receive the "H" hydrologic modifier)	A1-A4, E4-E6, S7, T7, F0-F5, W0-W4
R Flowing water, River	The abandoned and secondary channels of rivers and streams	A1-A4, E4-E6, T7, F0-F5, W0-W4
H Standing water, Palustrine	Wetlands which have surface water present for much of the growing season	All subclasses
K Wet soil, Palustrine	Areas which are wetlands, but do not appear to have surface water for prolonged periods of time	M0, E1-E3, S1-S9, T1-T8, F0-F5

SPECIAL MODIFIERS FOR THE WISCONSIN WETLANDS INVENTORY

- a Abandoned** — Areas which appear to have been cultivated in the past, but which have since been abandoned from cultivation and have reverted to wetland vegetation.
- c Cranberry bog** — Used to indicate all artificially constructed cranberry bogs.
- e Exposed flats complex** — Wetland mapping units bearing this modifier are a combination of exposed flats (e.g., sand flats in the Wisconsin River) and secondary river channels which are too small to delineate individually.
- f Farmed** — Land cultivated only during drought years and periods of low water table. These areas must have soils classified by the U.S.D.A. Soil Conservation Services as poorly drained or very poorly drained *and* support wetland vegetation during years of normal or high precipitation or periods of normal or high water table.
- g Grazed** — Wetlands which are used for pasturing livestock.
- j Central Sands complex** — Wetland mapping units bearing this modifier occur mainly in Central Wisconsin where small areas of peat, wet sand, and dry sand ridges are so intermingled that they cannot be delineated individually.
- m Mats** — Used to indicate areas where wetland vegetation is floating on water as a mat, rather than being rooted in soil.
- r Red clay complex** — Wetland mapping units bearing this modifier occur mainly on old lake plains ad-

joining Lake Superior, where small areas of wet and dry clay soils are so intermingled that they cannot be delineated individually.

- s Ridge and swale complex** — This landform occurs mainly along the Lake Michigan coast, where narrow beach ridges (strand lines) were formed parallel to the shore as the water in Lake Michigan receded during post-glacial times. Depressions (swales) between the beach ridges contain wetland vegetation, but the ridge themselves are dry. The complex is used to indicate areas where the swales are too small to delineate individually.
- v Vegetation recently removed** — Used to indicate areas where the vegetation has recently been totally or partially removed by clearing, shearing, logging, or other means.

- w Floodplain complex** — This modifier describes the floodplains of rivers and streams which are composed of small areas of seasonally flooded wetlands, wet meander scars, oxbow lakes, and/or small inclusions of upland, all of which are too small to delineate individually.

- x Excavated** — Used to indicate wetlands which have been artificially excavated, usually for the purpose of creating ponds. Gravel pit ponds and other ponds created by mining are not considered to be wetlands unless they support wetland vegetation.

- z Evidence of muskrat activity** — When muskrat lodges can be detected on the aerial photographs, this modifier is used.



This project was funded in part with a grant under the Coastal Zone Management Act of 1972, as amended, from the U.S. Department of Commerce, Office of Ocean and Coastal Resource Management through the Wisconsin Coastal Management Program, Department of Administration; and by the United States Environmental Protection Agency under assistance agreement #995138-01-0 to the Wisconsin Department of Natural Resources. The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Illustrations of wetland plants by Amy Nast, 1991

