

Wetland Types and Definitions in Minnesota

Type & Definition

Adapted from: *Wetlands of the United States*
FWS Circular 39

Photo's © Steve D. Eggers

Type 1 – Seasonally Flooded (Vernal Pools)

Soil is covered with water or is waterlogged during variable seasonal periods, but usually is well-drained during much of the growing season. This wetland type is found both in upland depressions and in overflow bottomlands. In uplands, basins or flats may be filled with water during periods of heavy rain or melting snow. Vernal pools consist of flats on basins such as those which occur in woodland settings. Colder vernal pools are important habitat for frogs and other species.



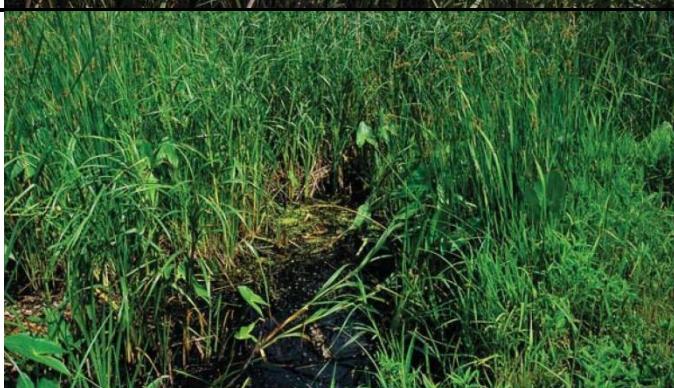
Type 2 – Wet Meadow, Fresh Wet Meadow, Wet To Wet-Mesic Prairie, Sedge Meadow, And Calcareous Fen

Soil is usually without standing water during most of the growing season, but is waterlogged within at least a few inches of the surface. Meadows may fill shallow basins, sloughs, or farmland sags, or these meadows may border shallow marshes on the landward side. Vegetation includes grasses, sedges, rushes and various broad-leaved plants. Common representative plants are *Carex* sp. (sedges), *Juncus* sp. (rushes), redtop, reed grasses, manna grasses, prairie cordgrass, and mints. Other wetland plant community types include low prairies, sedge meadows, and calcareous fens.



Type 3 – Shallow Marsh

Soil is usually waterlogged early during the growing season and may often be covered with as much as 6 - 18 inches of water. These marshes may nearly fill shallow lake basins or sloughs, or may border deep marshes on the landward side. These are common as seep areas on irrigated lands. Vegetation includes grasses, bulrushes, spikerushes, and various other marsh plants such as cattails, arrowhead, pickerelweed, and smartweeds. Common representatives are reed, whitetop, rice cutgrass, *Carex*, and giant burreed.



Type 4 – Deep Marsh

Soil is usually covered with 6 inches to 3 feet or more of water during the growing season. These deep marshes may completely fill shallow lake basins, potholes, limestone sinks and sloughs, or they may border open water in such depressions. Vegetation includes cattails, reeds, bulrushes, spikerushes and wild rice. In open areas, pondweeds, naiads, coontail, watermilfoils, waterweeds, duckweed, water lilies, or spatterdocks may occur.



Type 5 – Shallow Open Water

Shallow ponds and reservoirs are included in this type. Water is usually less than 10 feet deep and is fringed by a border of emergent vegetation similar to open areas of Type 4. Vegetation (mainly at water depths less than 6 feet), includes pondweeds, naiads, wild celery, coontail, watermilfoils, muskgrass, waterlilies, and spatterdocks.



Type 6 – Shrub Swamp; Shrub Carr, Alder Thicket

The soil is usually waterlogged during the growing season and is often covered with as much as 6 inches of water. Shrub swamps occur mostly along sluggish streams and occasionally on flood plains. Vegetation includes alders, willows, buttonbush, and dogwoods.



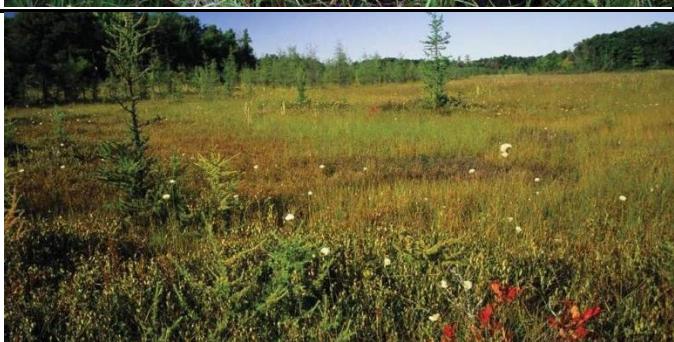
Type 7 – Wooded Swamps; Hardwood, Coniferous Swamp

The soil is waterlogged at least to within a few inches of the surface during the growing season and is often covered with as much as 1 foot of water. Wooded swamps occur mostly along sluggish streams, on old riverine oxbows, on floodplains, on flat uplands, and in very shallow lake basins. Forest vegetation includes tamarack, white cedar, black spruce, balsam fir, red maple, and black ash. Northern evergreen swamps usually have a thick ground covering of mosses. Deciduous swamps frequently support beds of duckweeds, smartweeds, and other herbs.



Type 8 – Bogs; Coniferous Bogs, Open Bogs

The soil is usually waterlogged and supports a spongy covering of mosses. Bogs occur mostly in shallow lake basins, on flat uplands and along sluggish streams. Vegetation is woody or herbaceous or both. Typical plants are heath shrubs, sphagnum moss, and sedges. In the North, leatherleaf, Labrador-tea, cranberries, *Carex*, and cottongrass are often present. Scattered, often stunted, black spruce, and tamarack may occur in northern bogs.



What is a Wetland?

Bog, slough, swamp, marsh, wetland – for most of us, those words mean a peaceful pond with cattails, water lilies, waterfowl and frogs.

That's accurate for some wetlands, but not all. Some may have visible surface water only a few weeks each year. Some are farmed or mowed for hay, or maintained as lawn.

All wetland, however, share these characteristics:

- They have mostly hydric soils, soils that developed in wet conditions;
- They are wet either above the ground or wet within 12 inches of the ground surface during all or part of the growing season;
- They have vegetation adapted to wet soil conditions.



Wetland Classifications

Two different systems are commonly used in Minnesota to classify wetlands.

The Circular 39 system, developed by the U.S. Fish and Wildlife Service in 1956, divides wetlands in Minnesota into eight types. The main differences between them are depth and duration of water and variety of vegetation.

The Cowardin classification, developed by the U.S. Fish and Wildlife Service in 1979, is far more precise. It uses a tier system, with each tier describing the components of a wetland more specifically and narrowly than the last.

The components of the wetland pictured to the right are described by the Cowardin method. For example, the center of the wetland is classified as PEMF: P means its system is Palustrine (shallow ponds, marshes, swamps, sloughs); EM means its class is Emergent Vegetation (erect, rooted and herbaceous vegetation adapted to wet soil conditions); and its hydrology modifier is F (Semi-permanently Flooded).



By contrast, the entire wetland is classified under the Circular 39 system as a Type 4 Wetland.

Wetland Benefits

Water Quality

Wetlands surround some of Minnesota's most valuable resources: our lakes and rivers. Wetlands filter and absorb polluted surface water runoff before it enters lakes and rivers downstream.



Flood Control and Low Flow Augmentation

Wetlands serve as holding areas for water. When rainfall is heavy, wetlands slow the waters, reducing flood damage and soil erosion downstream. During drought, slow release of water from wetlands maintains stream flows, and may help recharge underground water supplies (called groundwater) often used for drinking.



Fish and Wildlife Habitat

Wetlands provide a permanent or seasonal home to fish and wildlife, including some threatened or endangered species. Wetlands also indirectly support many species by breaking down large amounts of leaves and stems for food for insects, amphibians and fish.

Education and Recreation

Wetlands offer great opportunities for education and recreation. Many schools visit wetlands to learn about aquatic plants and animals; some have even restored or created wetlands on school grounds. Recreational benefits include fishing, hunting, bird-watching and hiking.

