

Aquatic Plants

Aquatic plants are an important part of a lake's ecosystem. They play a major role in determining water quality and supporting the fish community. Think of them as the forest equivalent in the lake ecosystem.

In the Winnebago Pool, aquatic plants are mostly confined to shoreline areas and bays. Most of the open water, middle portions of the lakes are without plant growth. The most prevalent in-lake plant species are water milfoil—both native (*Myriophyllum spp.*) and the invasive Eurasian (*Myriophyllum spicatum*), sago pondweed (*Potamogeton pectinatus*), common waterweed (*Elodea elodea*), water celery or eelgrass (*Vallisneria americana*), and the emergent canes or common reed (*Phragmites australis*). The wet fringe areas of the lakes are dominated by cattails (*Typha spp.*).

Because diverse, dense stands of aquatic plants are relatively uncommon in the Pool as a whole, those areas that do support plants need to be preserved and protected from detrimental forces. One effort at protection, undertaken jointly by the DNR and the University of Wisconsin—Oshkosh, identified almost 40 areas in the Upriver Lakes that are ecologically important yet sensitive to disturbance. The multimedia report seeks to increase public knowledge of the benefits of aquatic plants. More information on this project can be found in an appendix at the end of this report.



Aquatic plants are a fragile component of a lake's ecosystem. Besides changes that can occur due to human disturbances, water quality can dramatically impact plant populations. Many plant species have evolved to live in specific water conditions. Changes in water depth, clarity, pH, salinity, or temperature can cause a species to die out of a specific area.

When an area loses its native plants the delicate natural balance is upset which can result in changes to the entire ecosystem. Loss of native plants opens the door for other, perhaps invasive species to move in. Eurasian watermilfoil, purple loosestrife, and curly leaf pondweed (*potamogeton crispus*) are all exotic species that have gained strong footholds in the Pool. Additionally, the loss of native plants means that the nutrients in the water normally used by those plants are available to algae. This can lead to an increase in algae populations perhaps more severe algae blooms. More algae also means decreased water clarity which can then lead to further loss of aquatic plants due to this lack of light penetration.

Historically, the Pool had much more emergent vegetation than it does now. Many areas of the Upriver lakes that are now open water were once covered with dense stands of sedges (*Carex spp.*), cattails, reed grass, and a host of other emergents. A water level increase in the mid-1850's raised the water about 2.5 feet and since then the emergent vegetation has slowly been receding. This recession has been caused by the inability of the emergents to adapt to deeper water levels and the increased erosional energy of the water caused by wind and boat activity. Many areas of the Upriver lakes remain ringed by large areas of cattails, however recession is still occurring. Riparian property owners often line their shorelines with rock riprap in order to stop the erosion. While this does protect the natural vegetation of the area, it creates an artificial barrier that may inhibit fish movement into spawning areas or restrict movement of amphibians such as frogs and turtles. Newer construction methods or different materials are being used to try and reduce the negative impacts of riprap.



Photo by Nile Behncke

Left: Blue-winged teal on marsh near Winneconne, circa 1900. Photo Credit: Winneconne Historical Society
Right: A family outing on Lake Butte des Morts, circa 1910. Photo Credit: *Only Oshkosh* photo pamphlet

<i>Aquatic Plant Classification</i>	<i>Examples</i>	<i>Benefits</i>
Emergent Plants—plants with leaves that extend above water surface	Giant reed grass, reed canary grass, cattail, bulrush, sedges	<ul style="list-style-type: none"> ❖ Improve water quality by absorbing nutrients that could otherwise fuel algal growth. ❖ Filter and breakdown some pollutants. ❖ Blunt wave action and reduce shoreline erosion. ❖ Roots trap sediment and keep it from re-suspending due to wave turbulence. ❖ Important food source for waterfowl and other animals. ❖ Nesting cover for many animals. Protects nests from predators. ❖ Spawning cover for fish. ❖ Provide a refuge from predators for small fish and zooplankton. ❖ Contribute to an aesthetically pleasing shoreline.
Free-Floating Plants—plants that float freely on the water surface	Duckweed	
Floating-Leaf Plants—plants with leaves that float on the water surface	American lotus, pond lily, water lily	
Submersed Plants—plants with most of their leaves growing below the water surface	Eurasian watermilfoil, sago pondweed, wild celery, common waterweed	
Source: Through the Looking Glass...A Field Guide to Aquatic Plants. © 1997 Wisconsin Lakes Partnership		

For more information on aquatic plants, you can visit one of the following web pages.

The Wisconsin DNR Aquatic Plant Management Program at
<http://www.dnr.state.wi.us/org/water/fhp/lakes/aquaplan.htm>

The North American Lake Management Society at
<http://www.nalms.org/glossary/wordlink/aqplants.htm>

The Center for Aquatic and Invasive Plants at
<http://aquat1.ifas.ufl.edu/>

The United States Geologic Survey Midwestern Wetland Plants page at
<http://www.npwrc.usgs.gov/resource/othrdata/plntguid/plntguid.htm>