

Chautauqua Watershed Notes  
For the Chautauqua Watershed Conservancy  
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Chautauqua Lake's Native Aquatic Plants  
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For the Chautauqua Watershed Conservancy



*Pickerelweed (Pontederia cordata), seen here growing along the shore of Chautauqua Lake, is an example of a native aquatic plant that provides many benefits to the lake's fish and other wildlife.*

The problems resulting from the rampant growth of non-native aquatic plants has been widely recognized and discussed previously in this column. Managing these plants, once established, is extremely difficult and expensive. One difficulty in removing invasive aquatic plants is that they are often interspersed with our valuable native aquatic species and removing them all is like “throwing the baby out with the bathwater.” It is important to protect native aquatic plants because they provide habitat for wildlife including the aquatic insects that support Chautauqua Lake fisheries and they also protect the shoreline and lakebed from erosion and other damage.

In waterbodies such as ponds or lakes, aquatic plants grow in the shallow transition zone between dry land and open water. This zone extends from the shore to a depth of about 15 feet depending on the specific attributes of the waterbody including water clarity, nutrient availability, and substrate composition. Shallow water, abundant light, and nutrient-rich sediment provide ideal conditions for plant growth. Having a healthy native plant community along the shoreline can effectively absorb excess nutrients entering the waterbody that would otherwise fuel an unnatural growth of aquatic plants.

Four major types of aquatic plants occur in Chautauqua Lake: emergent plants, floating plants, submerged plants, and algae. Emergent plants are rooted along the lakeshore or in the lake bottom with their stems and leaves extending above the normal water level. Floating plants are also rooted in the lake bottom but have leaves and flowers that float on the water surface. Submerged plants grow almost entirely underwater but may have shoots bearing flowers and seeds slightly above the water surface. Algae include both one-celled, free floating species and colonial species that range from filamentous strands and mats to large colonies that resemble other aquatic plants.

An example of a native emergent species that occurs in Chautauqua Lake is pickerelweed (*Pontederia cordata*). The tuberous root of this plant thoroughly covers the lakebed with a tough

vegetative mat and the leaves provide cover for fish and other aquatic animals and the seeds are eaten by wildlife. This plant produces beautiful spikes of purple flowers in summer and is available commercially and is easily established by seed or root corms.

Yellow pond-lily (*Nuphar lutea*) is a floating aquatic plant found in less disturbed portions of the Lake that has bright yellow, cup-like flowers up to 3 inches wide. Aside from the wonderful aesthetic value of these plants, they also dissipate wave energy, provide important cover for fish and amphibians, and provide foraging and resting spots for other wildlife species.

Pondweeds (*Potamogeton* spp.) account for numerous submerged aquatic plant species, many of which occur in Chautauqua Lake. These are mostly native species that have thin, translucent leaves that could cause them to be mistaken for algae. In very slow moving waters, however, the species that are present tend to have thicker and more leathery leaves. Removing narrow-leaf pondweeds may allow less desirable plants such as Eurasian watermilfoil to establish or dominate an area.

In a study of the changes in submersed macrophytes in Chautauqua Lake from 1937–1975, Stuart Nicholson found that the greatest change was that dominant native species were being replaced by non-native invasive species including curly pondweed (*Potamogeton crispus*) and Eurasian watermilfoil (*Myriophyllum spicatum*), and that two extensively practiced management techniques, herbicidal poisoning and mechanized cutting, were primarily responsible for these observed macrophyte changes. For this reason any effort to remove or manage non-desirable aquatic species in Chautauqua Lake must also consider the effect of the action on our native species and the many benefits they provide.

The Chautauqua Watershed Conservancy is a private, not-for-profit, 501(c)(3) organization with a mission to preserve and enhance the water quality, scenic beauty and ecological health of the lakes, streams and watersheds of the Chautauqua region. Its urgent focus is to conserve the endangered natural shore lands of Chautauqua Lake, which provide fish and wildlife habitat and pollution filtering functions essential to a healthy lake. Only four miles (10%) of the lake's shoreline remains in a natural, undeveloped condition. The Conservancy is funded primarily through membership donations. Its 2008 annual membership campaign is currently underway. It is presently raising funds to conserve the Chautauqua Lake's most important remaining natural shoreline habitats, undertake programs to address the root causes of the conditions that fuel lake plant growth, and manage its preserves. It is the only local organization conserving lands in perpetuity for these purposes. Please contact the Conservancy at 664-2166 to join for 2008!