

# Value of submerged plants

## Nuisance to some, vegetation critical to lake's life cycles

With the approaching summer and our desire to take advantage of the aesthetic opportunities in our area, many of us gravitate to Cayuga Lake. Along the shoreline and locally at Ithaca's Stewart Park, we notice plants, broken by waves or boats and driven by the prevailing winds, swashing up on the shore.

In late spring and early summer, rapidly growing submerged plants will break the lake's sur-



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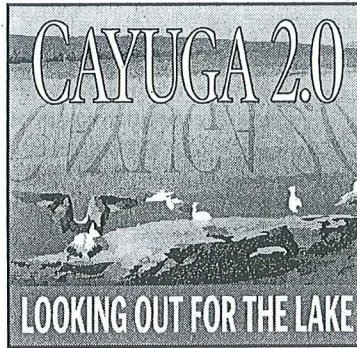
Guest Viewpoint

face from Cayuga Lake State Park at the north end to Stewart Park in the south. They will flower and weeks later, having completed their life cycle, decay and float to shore. Succeeding plant species will replace these early maturing plants and will provide what seems to be an endless supply of plant leaves and stems destined to decay at shore, foul a boat propeller or stall a sailboat. While this natural life cycle of aquatic plants repeats annually, so does the public outcry about "Cayuga's weeds."

Our community is not different from lake communities across New York, New England or the entire United States, which print front-page news articles each summer decrying the "weeds" in their lakes. Many have a relentless desire to challenge Mother Nature and attempt to beat back the annual plant growth that occurs in every healthy freshwater ecosystem.

At Chautauqua Lake in western New York, they spend about \$500,000 each year removing plants by mechanical harvesting. At Lamoka and Waneta lakes west of Seneca Lake, along with Cazenovia Lake in central New York, they will spend, or have spent, hundreds of thousands of dollars over several years to eliminate plants with chemical herbicides. Skaneateles and Saranac lakes spend greater amounts to have divers remove plants from their lakes.

At Cayuga Lake's north end, Seneca and Cayuga counties re-



### ABOUT THIS SERIES

Cayuga 2.0 is a series of monthly guest viewpoints about the health of the Cayuga Lake watershed and the challenges and opportunities related to it. The viewpoints are provided by the Tompkins County Water Resources Council.

#### ► Next month's installment:

The impact of climate change on water resources.

spond to distressed lakeshore property owners by mechanically harvesting plants. Tompkins County years ago wisely chose not to enter this endless in-lake battle with nature, in spite of the fact that sometimes lakes can have excessive "weed" growth.

Each summer in New York, we hear "the weeds have never been this bad" with the implication that somebody needs to do something about them. Fortunately, something is happening, though not always to the full satisfaction of all.

The aesthetic and economic sustainability of our freshwater resources demand that the increased focus be on watershed management. Educational programs need to address erosion, loss of nutrients from agriculture, storm water discharge and fertilization of residential lawns. Implementation must follow to limit these inputs that accelerate the aging of our lakes.

Are the rooted aquatic plants growing on the shallow shelf at the ends of Cayuga Lake "worse than they have ever been" or a greater nuisance than in the past? For the newcomer or the inexperienced about the lake, the answer might seem to be "yes."

However, resident "old timers" experienced the expansive meadows and dense canopy of the

non-native, invader Eurasian watermilfoil from the mid-1970s to 1990. They remember the resulting business closings at the northern part of Cayuga and the impeded recreation on Cayuga's south shelf at Ithaca. For them, the conditions today would not seem worse. They also would appreciate the fact that in the 1990s, Mother Nature intervened as a caterpillar (*Acentria*), limiting watermilfoil's wrath.

Available light, water temperature and the previous season's plants strongly influence abundance. With these basic requirements occurring in a healthy lake ecosystem, the nutrient-rich lake sediment can produce abundant submerged growth. Year-to-year variability can be great and predictability of growth in any one year difficult because the order of germination of an individual plant species can determine plant community succession and influence abundance. Certainly, bottom coverage by plants will increase as shallows expand from sedimentation, but this does not translate to "worse than ever."

Microscopic plants and animals, insects and small fish all live on and within the plants. This community food web is essential to Cayuga's ecosystem, especially the fishery.

Earlier this spring, a friend told of his catch of 800 yellow perch in the plant growth at the north end of the lake suggesting underwater plant structure provides the ideal fishing hole. The food value of aquatic plants to ducks is evident each fall near Stewart Park. Additional important contributions of rooted plants include their ability to intercept pollutants from groundwater, filter sediments from tributary inflow, break wave action and hold the sediments in place, leading to improved water clarity and decreased shoreline erosion. The submerged aquatic plant community is essential to the lake's ecosystem because it provides habitat and protection for countless freshwater species vital to the lake's food web.

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Provided

This photo from the 1980s shows the dense growth of Eurasian watermilfoil on Cayuga Lake. Eurasian watermilfoil was a problem from the mid-1970s to 1990.

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