



ONTARIO COUNTY Planning Department

Thomas P. Harvey, Director

HONEOYE LAKE AQUATIC VEGETATION MANAGEMENT PROGRAM 2016 ACTIVITY REPORT (1/30/17)

Background

Honeoye Lake is a shallow (16 feet mean depth), nutrient-enriched lake with abundant rooted aquatic plants (macrophytes) that impair recreational uses like swimming and boating during the summer months. This plant community includes both native (e.g., eelgrass) and non-native invasive species (e.g., Eurasian milfoil and curly leaf pondweed). For over 25 years, Ontario County has operated a mechanical harvesting program during the summer months in cooperation with the Towns of Richmond and Canadice with cost-sharing from New York State through the Finger Lakes – Lake Ontario Watershed Protection Alliance (FOLLOWPA). This program has two primary goals:

- To enhance recreational access for lake users during the peak season.
- To remove plant biomass and associated nutrients from the lake ecosystem.

In addition, the Honeoye Lake warm water sport fishery may be enhanced by creating more edge habitat in the dense plant community, allowing predator fish to more successfully forage for smaller prey species. Mechanical harvesting is a management practice consistent with the Honeoye Lake Macrophyte Management Plan (Final, April 30, 2008) available at: <http://www.co.ontario.ny.us/DocumentCenter/View/1308>.

2016 Operations Summary

Operations Team

Harvesting began on July 6 and concluded on September 13, 2016. Long time operator Randy DePew was joined by Honeoye Lake resident Scott Strong, a retired Eastman Kodak employee and bus driver for Canandaigua City School District. They executed all field operations, including waterline marking, harvesting, shoreline off-loading and delivery of harvested plant material for use as compost to area farms and gardens. They also worked with park staff at Sandy Bottom Beach (Town of Richmond) to keep the beach clear of debris. Situated at the north end of Honeoye Lake, Sandy Bottom Beach is the frequent recipient of aquatic plants and debris washing up with southerly winds. Near the end of the season, staff also launched a new shoreline weed pickup service using a steel work barge (see details below). Staff did an excellent job trouble-shooting mechanical issues and resetting waterline markers as needed. Operations were staged at the southeastern end of the lake at the State Boat Launch. New York State Office of Parks, Recreation and Historic Preservation dedicated space at no cost to the program.

New in 2016: Shoreline Weed Pickup

In shallow, weedy lakes, plant fragments washing up on shore in great quantities can create a nuisance for property owners. Some south and west facing locations receive proportionately more fragments, due to prevailing wind direction. Harvesters are not 100 percent efficient in capturing cut vegetation, and leave a small percentage of cut vegetation behind. Other contributors to floating plant fragments in the lake are boat propellers and activities like water skiing, wake boarding, angling and pulling anchors. There are natural causes too, such as breakage from wave action or death and breakdown of aging plants (senescence). Regardless of the source of shoreline fragments, better management of this nuisance is part of the current AVMP strategy, consistent with biomass and nutrient reduction.

A small (8'*24') steel work barge fabricated by Alpha Boats Unlimited (Weedsport, NY) was delivered to the Honeoye Lake AVMP on September 6, 2016. Grant funding from Finger Lakes – Lake Ontario Watershed Protection Alliance (FOLLOWPA) supported this purchase. Staff had a limited window of time this season to use the barge in tandem with harvesting, i.e., to follow cutting with shoreline collection. However, AVMP staff used the barge on Honeoye Lake until October 13, responding to requests from residents for assistance with removal of shoreline debris. Residents expressed great appreciation for this service.

In future seasons, the work barge will be scheduled to follow the work of the harvester to provide more thorough removal of harvested vegetation and associated nutrients, and to better serve to lake residents. In addition, Planning Department staff discussed sharing the work barge with the Ontario County Sheriff's office and dive team for search and rescue operations. The dive team expressed interest in using the barge during training next spring.



Randy DePew and Scott Strong (driver) depart the boat launch to collect shoreline plant debris. Photo: T. Gronwall

Adaptive Management Approach

AVMP operations are increasingly adapted to seasonal field conditions, meaning that the hours and locations worked are adjusted based on abundance of plants as opposed to a predetermined schedule, an approach called **adaptive management**. Though Honeoye Lake has excessive aquatic plant growth every summer, the plant community fluctuates, responding to changes in growing substrate (lake bottom), availability of nutrients for plant growth, and water clarity (depth of sun penetration needed for plant photosynthesis), etc. As noted in the report *Thirty Years Monitoring the Fall Standing Crop Biomass of Macrophyte Communities in Honeoye Lake* (Gilman, *et al* 2015), the relative dominance of plant species (e.g., eelgrass, coontail, and Eurasian milfoil) has fluctuated in the lake over the past 30 years (see Figure 1).

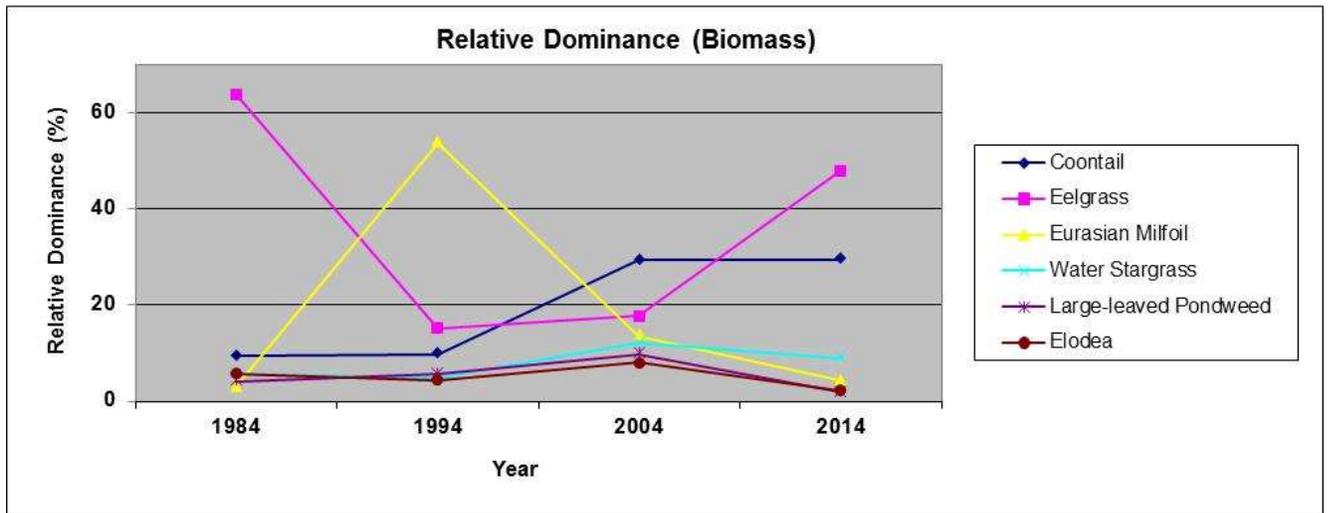


Figure 1. The relative dominance of plant species commonly found in Honeoye Lake, as measured in the fall during macrophyte inventories in ten year increments (1984-2014). Eelgrass, Coontail and Eurasian Milfoil show considerable fluctuations over this time.

Density and extent of weed beds can also change year to year. This year, overall weed density was observed to be lower compared to recent years. The harvesting schedule was adjusted accordingly, with effort targeted to areas where relief was most needed, and with other areas not being harvested for longer stretches of time. This approach can save program resources, like fuel and staff time. It also means that shoreline areas are not harvested on an equal or regular basis (e.g., once per month).

Information and feedback are needed to successfully implement an adaptive management approach. AVMP operator field observations and lake knowledge are a major source of input into daily or weekly harvesting management decisions. In addition, field reports are provided by Honeoye Lake Watershed Task Force made during bi-weekly lake monitoring activities. Several residents also communicate with the AVMP manager by phone or email to report conditions and request service. Positive communication with residents in recent years has been very helpful toward more finely tuning AVMP services to neighbors' satisfaction. Direct and positive communication with lake residents will continue to be encouraged to help hone AVMP practices.

Vegetation Mapping: Adaptive Management Tool

Another tool used to help guide the AVMP management approach is an aquatic vegetation mapping technology, used in 2016 for the third consecutive year. Ontario County Water Resources Council provided financial support for the annual subscription to the mapping service. Significant volunteer effort to collect data for mapping was provided by Terry and Dorothy Gronwall of Canadice.

Vegetation was mapped three times during the season. Maps created June 28, 2016 (early season) and August 24 (late season) for the northern basin of Honeoye Lake are shown below for illustration. Areas in red indicate 90-100% of the water column is occupied by vegetation, and plants are typically growing at or near the surface of the water. Red zones are harvesting priorities, except in the regulated wetland at the south end of the lake, or where residents have requested no harvesting, or where shallow depth and/or infrastructure or other factors (such as Sandy Bottom swimming beach) limit access. Figures 2 and 3 show differences in plant density over the season.

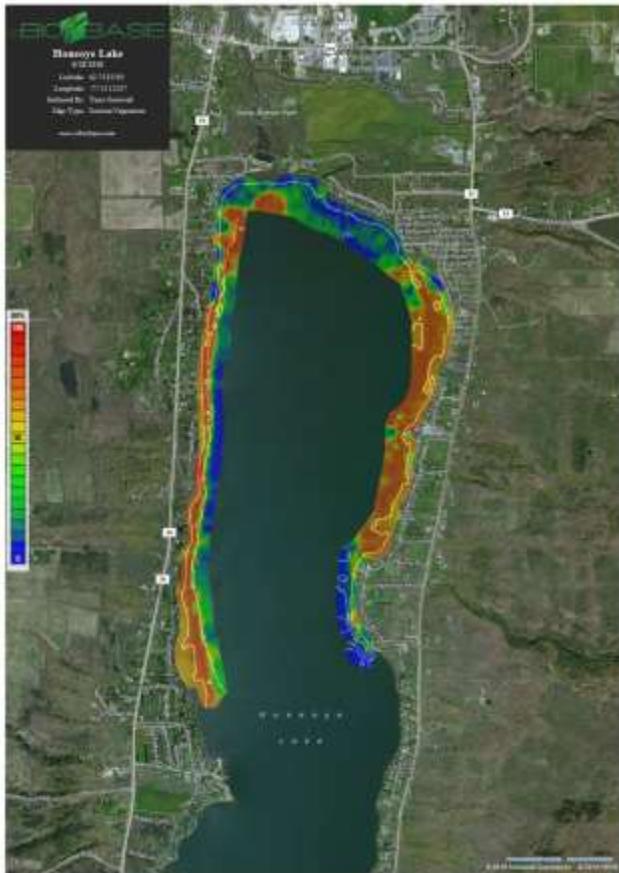


Figure 2. North Basin, early season (6/28/16)

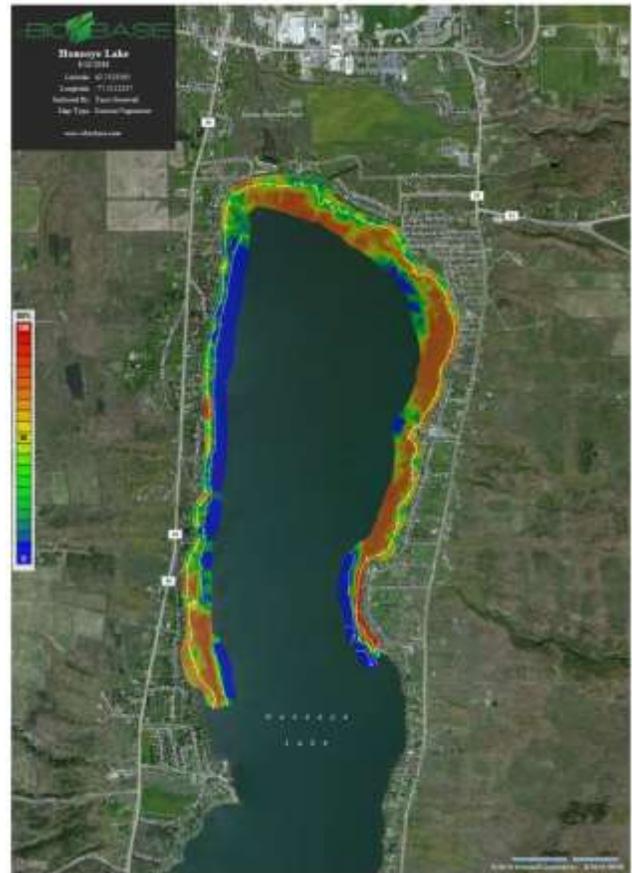


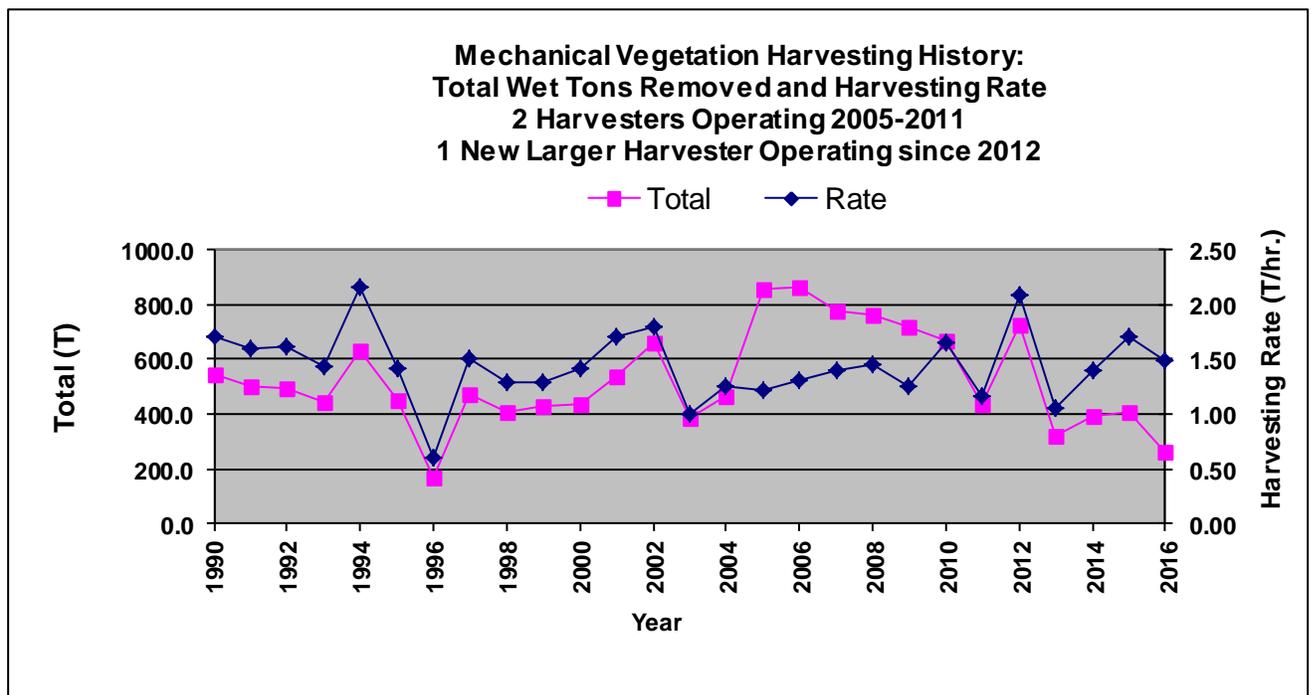
Figure 3. North Basin, late season (8/24/16)

Harvesting Results

Fifty-two loads of vegetation were removed from Honeoye Lake during the 2016 season, or an estimated **260 wet tons** of plant material. Aquatic vegetation growth was lighter in the lake compared to previous years.

Efficiency is measured by the **harvesting rate**, calculated as the estimated wet tons of vegetation harvested per hour of operations. The 2016 harvesting rate was 1.49 wet tons per hour. This rate is lower than 2015 (1.7 tons/hour) but higher than 2014 or 2013. The chart below shows year-to-year comparisons for harvesting results, including both total wet tons removed (pink line) and rate (blue line).

One factor negatively affecting efficiency was the use of a single off-loading site at the south end of the lake, resulting in more transport time up and down the lake. Also affecting the efficiency rate was the low density of macrophytes this season. When weeds are less dense, more effort is required to achieve a full load of plant material on the harvester.



Mechanical and Weather Related Down Time

A severe drought was experienced during the 2016 field season. Lake level was over a foot low throughout the season, making access to shallow areas more difficult. Storms interrupted operations on two days. Seven hours were allocated to waterline repair or remarking.

Public Information and Communication

Information sharing is also important for addressing Honeoye Lake resident's concerns and influencing realistic public expectations. The AVMP was featured at Honeoye Valley Association's 2016 annual lake symposium, with a poster display and presentation. Updates on harvesting activities are posted regularly during the season to AVMP's web page on Ontario County's web site (<http://www.co.ontario.ny.us/452/Aquatic-Vegetation-Management-Program>). This web page is also linked to Richmond and Canadice town web sites. The Honeoye Valley Association receives AVMP updates and forwards the information by e-blast and Facebook to its membership. Perhaps the most important vehicle for public communication comes in the form of AVMP operators talking with residents at the lake. The shoreline cleanup program provided a new opportunity for staff to meet face-to-face with residents, discuss the harvesting program, and answer questions. Several residents remarked positively to the program manager about their interactions with Randy DePew and Scott Strong.

Yard Waste Collection

A watershed yard waste collection program during November 2016 was supported by the AVMP in cooperation with the Towns of Canadice and Richmond, Honeoye Lake Watershed Task Force, and Honeoye Valley Association. Yard waste collection and proper management is a strategy to reduce this potential source of nutrients to the lake from residential properties around the lake perimeter and in the watershed. A survey of participants of the 2015 pilot project showed residents appreciated a convenient place to dispose of yard waste while also believing they were helping the lake and environment.

The AVMP helped to promote the 2016 program through posters and a direct mailing to Honeoye Lake property owners. Residents were encouraged to bring yard waste to the Richmond Brush Pit. The former Canadice transfer station was used for overflow. Yard waste will be processed into mulch (woody products) and/or composted (leaves).



A portion of the yard waste collected at Richmond Brush Pit, November 2016. Photo: T. Gronwall

Coordination with Honeoye Lake Watershed Management Planning Efforts

Coordination among various Honeoye Lake initiatives, including the Aquatic Vegetation Management Program, occurs under the umbrella of the Honeoye Lake Watershed Task Force. The Task Force brings together stakeholders and staff from local municipalities, agencies, non-profit organizations, academic institutions and property owner associations. Through the Task Force, partners clarify data and project needs and identify common goals. Synergy is built as partners work together to secure funding to pursue research and implement projects. Volunteers are essential to many projects. AVMP program manager Betsy Landre attends meetings and is in regular communication with the Task Force to ensure the AVMP program is integrated into a larger, more comprehensive lake and watershed management effort.

For more information, see the follow web links below.

Honeoye Lake Watershed Task Force's Fall 2016 newsletter:

http://www.canadice.org/uploads/1/2/8/2/12825839/hlwtf_newsletter_fall_2016_autosaved_101916_rev_a.pdf

Ontario County Honeoye Lake Aquatic Vegetation Management Program:

<http://www.co.ontario.ny.us/index.aspx?nid=452>

NYS Department of Environmental Conservation blue green algae bloom notices:

<http://www.dec.ny.gov/chemical/83310.html>

NYS Department of Environmental Conservation Clean Water Blueprints, TMDLs, a Nine Key Element Watershed Plans:

<http://www.dec.ny.gov/chemical/23835.html>

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