



WINTER 2021

Honeoye Lake Watershed Task Force Newsletter

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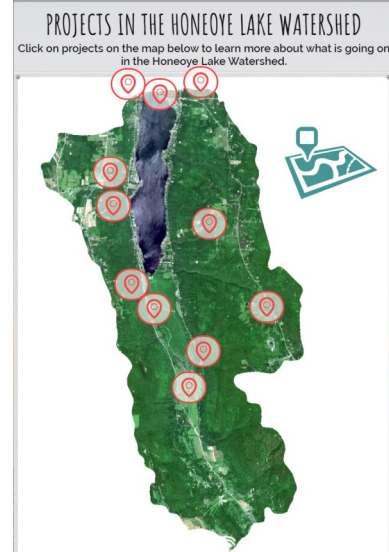
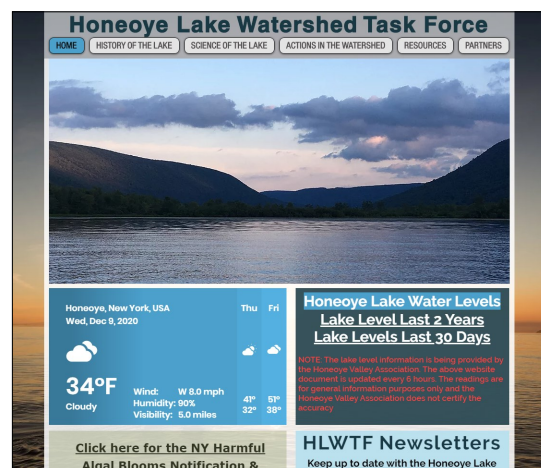
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New Honeoye Lake Watershed Website

The Honeoye Lake Watershed Task Force worked with the Ontario County Soil & Water Conservation District, Finger Lakes-Lake Ontario Watershed Protection Alliance (FOLLOWPA), and several partners to create a user-friendly website for the community:

www.honeoyelakewatershed.org

This website is designed to be a resource for anyone interested in learning more about the lake and staying up to date on Honeoye Lake's water quality. The home page includes current weather conditions, lake levels, a weekly summer water quality blog, recent HLWTF newsletters, and a link to NY's Harmful Algal Bloom tracking map. Throughout the website you will find information on the lake's history, projects completed throughout the watershed, scientific research conducted by the state and local partners, education and outreach resources, local partners working on the lake's water quality, and much more! Visit the page today to learn more about the Honeoye Lake Watershed Task Force.



Terry Gronwall

HLWTF Chairman's 2020 Project Update: Terry Gronwall

HLWTF projects to improve water quality in Honeoye Lake and its watershed

The common focus of these Honeoye Lake Watershed Management Plan, NYSDEC HABs Action Plan, and NYSDEC TMDL Plan based projects is to implement Best Management Practices (BMPs) to reduce external and internal sources of nutrients and sediments reaching Honeoye Lake.

New HLWTF Web Site: A new comprehensive HLWTF website was launched in May 2020. It has Honeoye Lake background data, summary of HLWTF implemented water quality projects, information on new projects being planned, Honeoye Lake water quality planning documents, past HLWTF newsletters, and guides for lake residents to use in reducing nutrient run-off into the lake. The new website also contains a weekly summer water quality blog:

www.honeoyelakewatershed.org

NYSDEC WQIP Round 16 Grant application for Honeoye Lake Aeration System Engineering Planning Project: Ontario County Planning Department and the HLWTF was awarded a \$30,000 NYSDEC WQIP grant to engage a lake management consultant to do detailed aeration system engineering design work required for a potential future permit application and implementation grant funding. Princeton Hydro Inc. was selected for this project in December 2020.

NYSDEC WQIP Round 15 custom conveyor for shoreline weed pick-up barge project: Ontario County Planning Department and the Towns of Richmond & Canadice received grant funding to have a custom conveyor built for our shoreline weed pick-up barge to increase productivity and efficiency. The conveyor currently is being fabricated and is expected to be ready for the 2021 summer season.



Terry Gronwall

2020 HLWTF Newsletter: Last year's HLWTF Winter newsletter was published in February 2020. This newsletter contained information on all recent HLWTF projects and lake related educational articles. A copy is available on the HLWTF website:

www.honeoyelakewatershed.org/resources

Blue-Green Algae Monitoring Project: At the request of NYSDEC, the lake was monitored visually for blue-green algae blooms at 10 locations twice a week from June through mid-October 2020. Results were posted on the DEC HABs alert web site. The DEC HABs alert web site link is available on HLWTF web site. Also, HABs monitoring results were posted weekly on the HLWTF web site water quality blog during the summer. www.honeoyelakewatershed.org

Collected lake water quality data June-Sept: HLWTF collected weekly water column temperature, dissolved oxygen profiles, and water clarity data. Water samples were collected twice a month (Jun-Sep) for lab testing for phosphorus and nitrogen. HVA citizen Secchi Disk volunteer program collected near shore water clarity and temperature data.

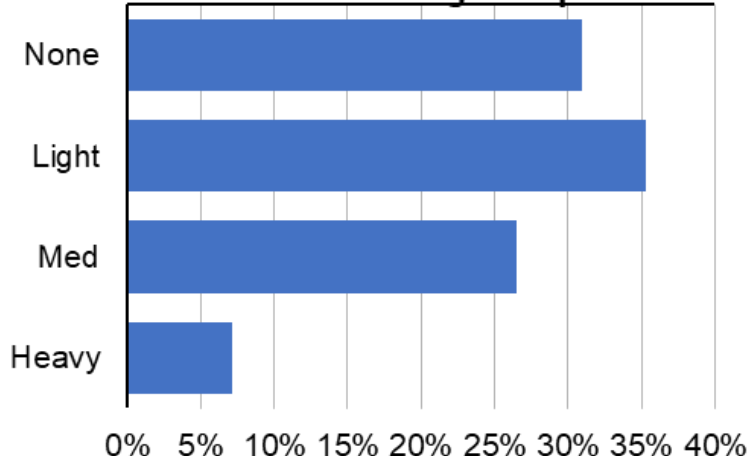
Electronic Macrophyte Mapping Service: HLWTF provided two (early July and late August) macrophyte maps for our mechanical harvesting team to help them focus on the areas of greatest macrophyte density. www.honeoyelakewatershed.org/aquatic-vegetation-management

These efforts to improve Honeoye Lake and watershed water quality are a true partnership between The Nature Conservancy, NYSDEC, Ontario County Planning Department, Ontario County Soil & Water Conservation District (SWCD), Finger Lakes Community College, Finger Lakes Institute, Cornell University, Honeoye Valley Association, the Towns of Richmond, Canadice, Bristol, South Bristol and Naples; and all lake residents and users. We appreciate everyone's support. For more information, please contact Terry Gronwall, HLWTF Chairman at watershedtaskforce@gmail.com

2020 Water Quality: What, Why, What's Next

By Terry Gronwall, HLWTF

2020 Volunteer Algae Reports



Water clarity from May through July in 2020 was extremely high, ranging between 20-27 feet versus a typical year's water clarity of 10-17 feet. Aquatic vegetation growth was extremely dense due to the increase in water clarity. We had relatively mild *Gloeotrichia* blooms, which is an early summer blue-green algae species.



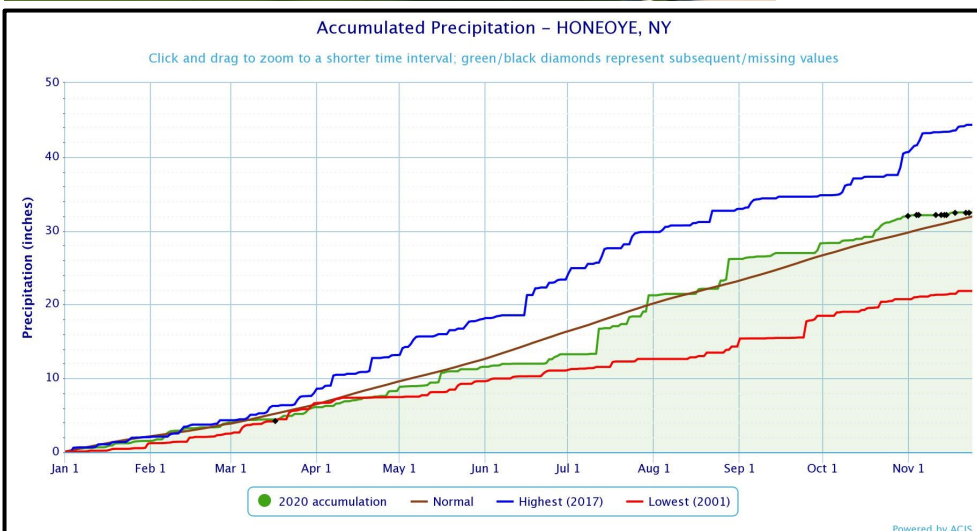
What Happened:

Honeoye Lake's water quality was exceptionally good from May to July of 2020! This is the second year in a row of improving water quality. The Honeoye Valley Association has been sponsoring a volunteer program to collect visual water clarity and temperature data once a week from June to September. In 2020 the volunteers reported seeing no algae or light algae for 66% of their weekly observations.



We had our first lake turnover (mixing) event in mid-August. This brought nutrients previously released from the deep sediments but trapped in the lower depths to the surface fueling *Anabaena* and *Microcystis* blooms. This typical late summer bloom lasted for about 4-5 weeks, reducing water clarity quickly to 4-6 feet. Then, starting mid-September, this blue-green algae bloom slowly started to diminish. For more information on *Gloeotrichia*, *Anabaena*, and *Microcystis* see

www.honeoyelakewatershed.org/habs

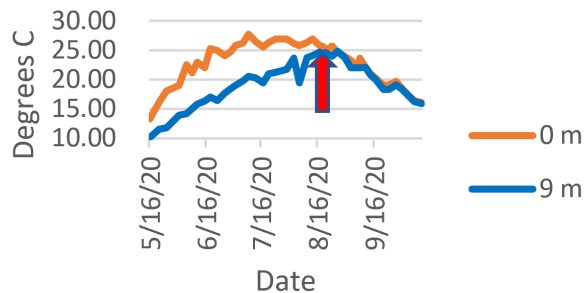


Why:

A lake's water quality is influenced by a complex interaction of biological, chemical, and physical factors. Therefore, last summer's exceptionally good water quality was likely caused by a favorable combination of several factors. Weather may have been a determining factor with below average rainfall in June and July. (See chart below). This kept watershed run-off to a minimum reducing the amount of nutrients reaching the lake during this time period compared to a typical year.

2020 Water Quality: What, Why, What's Next Continued...

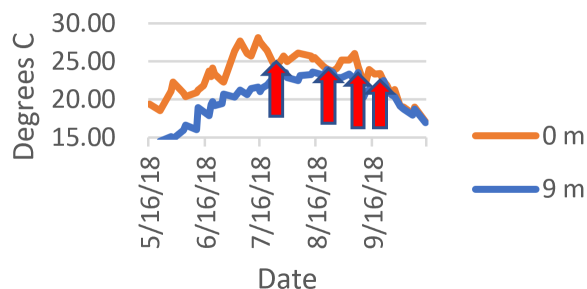
2020 Water Temperature



The wind from June through early August of 2020 was not strong enough to cause a lake turnover (mixing event). This kept the legacy phosphorus released from the lake's bottom sediments from reaching the surface water. When the lake is stratified, the dissolved oxygen levels near the lake bottom are near zero. The lake had one mixing event immediately after ice out and one summer mixing event on August 20th indicated by the red arrow, where surface water temperature (orange line) and bottom temperature (blue line) become equal. The lake was dimictic in 2020 in contrast to its typical polymictic behavior. See the water temperature charts on the left.

Honeoye Lake is usually polymictic during the summer, meaning it mixes due to energy provided by strong wind and/or cool storm water every few weeks. This will bring up nutrient rich bottom water to the lake surface. Mixing is what provides the majority of the nutrients that fuel our common mid-July through September blue-green algal blooms. You can see the lake's polymictic nature in the 2018 temperature graph on the left; the lake actually mixed at least four times shown by the red arrows where the convergence of the orange surface water temperature line with the blue bottom water temperature lines occur. This is known as internal nutrient loading. When nutrients enter the lake from its watershed, it is called external loading. Both internal and external loading describe the lake's nutrient budget, called its trophic state.

2018 Water Temperature



Thinking about external loading, all of the HLWTF watershed projects that have been implemented over the last 10 years, like the Inlet Restoration Project, Sandy Bottom Park Shoreline Stabilization, Vernal Pools, Roadside Ditch Stabilization, Streambank Stabilization, Sediment Traps, and HVA Lake Home Owner Educational Outreach initiatives, are reducing the amount of nutrients reaching the lake. See www.honeoyelakewatershed.org/projects

Finally, the NYSDEC has stocked ~90,000 walleye fingerlings in Honeoye Lake over the last 3 years to encourage a larger adult walleye population. Based on fisherman reports, the number of adult walleyes has significantly increased. We are currently investigating if this increase in adult walleye population is causing a top-down food web effect. The hypothesis we plan to investigate next summer is that an increase in the adult walleye population might reduce the prey fish population which in turn might increase the zooplankton population. Since zooplankton feed on algae, this could be a factor in our lower levels of algae in 2019-2020.

What's Next:

Weather patterns for the summer of 2021 are impossible to predict. If we get a lot of spring and early summer rain events, then nutrient run-off from the watershed into the lake will be higher than in 2020. If we get strong wind events in June and July after the lake stratifies then we will get significantly more phosphorus released from the bottom sediments mixed with surface water fueling early summer blue-green algae blooms.

The benefits from our multiple HLWTF watershed erosion control projects and the potential benefits from a larger adult walleye population will still be present.

We hope the 2019 and 2020 trend for improved water quality will continue in the summer of 2021!



2021 Honeoye Lake Aeration Engineering Planning Project

By Betsy Landre, Ontario County Planning & Terry Gronwall, HLWTF

Honeoye Lake is a source of local pride. It is also a source of concern when water quality shows signs of stress in summer months, e.g., reduced clarity, excessive weed growth, low dissolved oxygen, and algae blooms. Honeoye Lake water quality is indeed on the radar of local, state, and federal authorities. In recent years, under statutory requirement of the federal Clean Water Act (Section 303.d), New York State Department of Environmental Conservation (DEC) commissioned a study to model and quantify the role of the lake's primary pollutant of concern – phosphorus. The result is the Honeoye Lake TMDL (Total Maximum Daily Load) report which sets a numerical target for a maximum phosphorus concentration for Honeoye Lake. In addition, DEC completed the 2018 Harmful Algal Bloom Action Plan which identifies priority actions to combat algal blooms in Honeoye Lake. These two guiding documents have DEC backing and they complement locally-led research and water quality monitoring by HLWTF. It may seem like a lot of studies, but understanding the underlying, complex dynamics causing Honeoye Lake's "symptoms" is requisite to applying the most promising remedies. See these documents at www.honeoyelakewatershed.org/resources



The Honeoye Lake HABs Action Plan and TMDL report both estimate that ~93% of the phosphorus fueling summer blue-green algae blooms comes from bottom sediments when the lake is thermally stratified, and the deepest waters become oxygen deprived. Oxygen helps bind phosphorus to sediments; in its absence, weak chemical bonds break, and phosphorus is released. When the lake eventually mixes following a wind event or major storm, the phosphorus-laden deep water becomes available throughout the lake, fueling algae blooms. Based on modeling of this dynamic, DEC recommends evaluating an aeration destratification system to significantly reduce the release of phosphorus from deep lake sediments in the summer in Honeoye Lake. An aeration destratification system works by discouraging thermal stratification in the summer while providing supplementary oxygen through diffusers to deep lake bottom sediments, thereby maintaining adequate oxygen to prevent phosphorus release.

Last year, HLWTF worked with Ontario County Planning Department to submit a successful application for a \$30,000 DEC Water Quality Improvement Program grant to evaluate an aeration destratification system for Honeoye Lake. All grant funds will be used to engage a qualified professional engineer/Certified Lake Manager to produce a detailed engineering design for an aeration destratification system. The HLWTF has committed to providing the required 10% (\$3,000) local match. A Request for Proposal was released in 2020 and, following a review process by a team of scientists, lake managers and local stakeholders, Ontario County awarded a contract to Princeton Hydro of New Jersey for work to begin in January 2021.

Princeton Hydro will assess the potential for aeration destratification to achieve in-waterbody nutrient inactivation and move Honeoye Lake toward the TMDL target for phosphorus reduction. After engineering planning is complete, the community will work together to determine if aeration is the logical next step to reduce summer spikes of phosphorus in Honeoye Lake.

The consultant's report will provide equipment specifications, with recommended locations for compressors and diffusers to distribute oxygen in the lake's deepest waters. Attention will be given to evaluating potential sites for the on-shore compressor(s). The consultant will identify potential impacts that may need mitigation through system design alternatives. Impacts on the lake's fisheries, benthos, critical environmental areas (e.g., wetlands), recreational uses and access, noise, aesthetics, and others will be considered. These impacts will require review under the State Environmental Quality Review Act if the community pursues an implementation project.

A cost estimate, operating and safety plan, and monitoring plan to measure effectiveness will also be included in the report. Public outreach and comment on the draft report are required and will likely occur through virtual platforms due to ongoing COVID-19 restrictions on public gatherings. HLWTF and the Planning Department look forward to kicking off this important project with Princeton Hydro and partners early in 2021.



Explore Local Projects By Ontario County SWCD

The Honeoye Inlet Restoration Project has a huge impact on the nutrients and sediment that feed into the lake. Many organizations partnered together to reconstruct the inlet into its original structure which had a series of meanders and was much shallower. By adding several ditch plugs to the lateral channels of the inlet, this created small ponds, allowing water to slowly infiltrate and wildlife habitat to flourish. Water can now access the flood plain during storm events rather than rushing into the lake. This project helps to reduce approximately 30% of the total nutrients and sediment entering Honeoye Lake. The Honeoye Inlet Wildlife Management Area is state land open for you to explore. The recently completed Restoration Project helped to create more habitat for species such as beaver, salamanders and native birds. Check out the updated sign along County Road 36 to see all of the different things there are to see.



OCSWCD



Sandy Bottom Park is a great place to explore. When you start hiking from the parking lot off of East Lake Road, you will quickly come across the completed Mill Creek Habitat Restoration Project in the Town of Richmond. This project was completed utilizing nature based design practices. Enjoy a hike along the well maintained trails that follow the banks of Mill Creek. Be sure to walk along the recently stabilized banks and explore what can be found. Be on the lookout for what is above you as well; bald eagles often frequent the park and like to hang out along the creek.

At the other side of Sandy Bottom Park off of West Lake Road, you'll find a beautiful view of the lake. In 2019, the Town of Richmond and Ontario County SWCD helped to install a natural shoreline stabilization project using coir wrapped soil lifts that incorporate native plant materials. The rock placed in front of the project is necessary to reduce wave energy and ice scour at



the north end of Honeoye Lake. Existing trees and shrubs were kept in place to keep the shoreline protected and over three dozen additional plantings as well as live stakes were added to promote deep rooted vegetation to stabilize the shoreline. A naturally vegetated shoreline helps reduce erosion, filters excess nutrients from entering the lake and provides habitat for fish and wildlife. Check out the new plant markers installed this past spring as you walk along the shoreline as well as the new sign that explains the project! On page 8, you can read more about nature based shoreline design and how it can help Honeoye Lake.



Honeoye Outlet Gravel Removal *By Ontario County SWCD*

Before



OCSWCD

For those watching the condition of the Honeoye Outlet and Mill Creek near the 20A bridge, you will know there has been ongoing concern over the amount of gravel accumulating in this area. A variety of partners have been working on this issue for years, limiting gravel transport from streambank erosion along Mill Creek through a major stream stabilization project, opening up floodplain access below the Honeoye Wastewater Treatment Plant and a variety of other projects in the area. The ability for large scale removal of gravel that has been done in decades past is no longer allowed, and work done in the stream has to be targeted and limited in scope, with all the accompanying permits and studies performed, which makes for a lengthy and expensive process. The Town of Richmond, with assistance from Ontario County SWCD,

has been undergoing such permitting with the NYSDEC, the US Army Corps of Engineers and FEMA. On August 27, 2020, a heavy rain event led to flooding with unfortunate impacts on local residents and businesses, allowing for an emergency permit to be obtained to remove excess gravel in the Honeoye Lake Outlet channel. The Town Highway Department was able to remove approximately 16,000 cubic feet of material from the channel. Work continues in the area to manage the material that naturally moves through our streams. The coordination with agencies and permits required makes this a slow process but we are working towards solutions with much success along the way.

After



OCSWCD

Did you know? *By Ontario County SWCD*

When summer draws to a close and autumn approaches, we always look forward to the beautiful leaves turning orange, red, and yellow. People travel to the Finger Lakes Region from all over to see the trees turn vivid fall colors. While most people enjoy the beauty of this time of year, they also dread the raking and clean-up that comes along with the leaves falling. Think again!

→ By mowing several times in the fall, this will break the leaves down into smaller pieces, creating a perfect mulch for your yard, adding nutrients to make your lawn even better next year.

→ If you still want to rake your leaves, move them to your back yard, woods or hedgerow for them to decompose naturally.

→ Avoid piling leaves in nearby streams, creeks, ditches or ravines. This adds unnecessary nutrients to the waterways.

→ Many towns have Yard Waste Recycling Programs.

Instead of despising your fall clean-up, think of those leaves as a natural (and free) nutrient source for your yard.



Terry Gronwall

Know Your Lake: Shoreline Stabilization *By Linda Vanderbeck, HVA*

Picture this - it's spring in Ontario County, Honeoye Lake thawed out weeks ago, the days are longer, the trees are beginning to flush, and Joe is anxious to get his dock and boat into the lake. He walks out to his shore, looks around, and can't quite figure out where the dock was last year. "Hmm", he thinks to himself, "this doesn't look how I remember." And then it hits him - he has shoreline erosion! This affects water quality, ecosystems, and property loss. Shoreline erosion is a natural process caused by storms, wave action, rain, ice, winds, runoff, and the loss of vegetation. Unfortunately, by clearing natural vegetation, installing impervious surfaces/structures, engaging in construction and development, and erecting shoreline projects, humans often contribute to or even accelerate the natural shoreline erosion process. All these activities exacerbate and sometimes cause the negative effects of shoreline erosion.

For decades, "traditional" shoreline stabilization methods have centered on "hard" construction approaches such as vertical concrete, metal, or wood break-walls, gabions, and rip rap. These common shoreline modifications and erosion control methods, aside from being unsightly, can actually increase the rate of erosion resulting in costly structural damage, property loss, and destruction of the shoreline's natural environment. From an environmental standpoint, retaining walls are by far the most destructive method of stabilization. Biologists and engineers now realize that in addition to creating a physical barrier between the lake and bordering land, these hardened vertical or near-vertical structures reflect wave energy rather than absorb it, thereby worsening turbulence and increasing erosion in front of, under and adjacent to the "fix". It's likely that these types of structures are deflecting wave energy and only causing more erosion on neighboring property. The New York State Department of Environmental Conservation (NYSDEC) recommends the use of "soft" or nature-based shoreline protection methods over "hard" or structural methods. Soft methods are much easier on the environment, imitate natural systems, can interact naturally within the ecosystem, are aesthetically superior, and save property owner's a significant amount of money. Some basic principles of soft shoreline protection are: imitate nature, keep slopes gentle, employ soft armoring, mix it up, and keep it small and simple.

A stretch of shoreline at Sandy Bottom Park that runs between the sandy beach and the inlet to Honeoye Creek was significantly damaged by shoreline erosion. However, with funding from the NYSDEC Water Quality Improvement Project Grant Program, Ontario County Soil & Water Conservation District and the Town of Richmond implemented a nature-based shoreline stabilization project. Coir wrapped soil lifts that incorporate native plant materials were utilized to reconstruct the eroded bank. Existing tree and shrubs were kept in place to keep the shoreline protected and over three dozen additional native plantings as well as live stakes were added to promote deep rooted vegetation to stabilize the shoreline. Boulders were placed in the lake in front of the project to reduce wave energy and ice scour that is especially strong at the north end of Honeoye Lake due to predominately southerly winds. By employing nature-based shoreline stabilization at Sandy Bottom Park, a transitional habitat was created which serves as a connection between the aquatic and terrestrial ecosystems and is ideal habitat for many species of plants and wildlife. Just inland from the shoreline, pollinator pathways were developed by choosing plants that provide food and habitat for not only important pollinators but many other native species. The newly planted vegetation slows down and absorbs runoff that can carry nutrients and sediment. Nutrients such as phosphorus and nitrogen can contribute to harmful algal blooms (HABs). By increasing the vegetation and reducing erosion, this project limits the amount of pollutants entering Honeoye Lake.



Homeowners are encouraged to consider these nature-based shoreline stabilization design practices on their own properties. Visit this project site at Sandy Bottom Park to see first-hand the results of using these techniques. Additionally, plan to attend a Honeoye Valley Association (HVA) sponsored nature-based shoreline stabilization workshop next spring (pending state social distancing recommendations). When it comes to protecting the lake, your actions matter and every little bit helps. We welcome your feedback at the email address below and encourage you to exchange viewpoints with your neighbors, family and friends. HVA has been, and will continue to be, an active partner in the future of the Honeoye Lake watershed and is committed to communicating accurate information that leads to informed opinions regarding lake management recommendations.

[Click here](#) if you are interested in the Shoreline Stabilization Project at Sandy Bottom Park. If you want to learn more about shoreline erosion and stabilization techniques, go to the [NYSDEC website](#). Not familiar with HVA, or would like to learn more about us and our history, [click here](#). Please email us at honeyecontact@gmail.com.

BORN OF GLACIAL ICE: The Origin Story of the Ancient Honeoye Valley and Honeoye Lake

By Dr. Bruce Gilman, Professor Emeritus, Finger Lakes Community College

Cyclical periods of global warming and cooling during the Pleistocene Epoch (nearly all of the last 2.5 million years of Earth history) led to multiple episodes of massive advancing continental ice sheets in eastern North America. In the Finger Lakes region, the most recent advance, a nearly two-mile thick ice sheet, formally known as the Wisconsin Stage, began 75,000 years ago and ended just 12,000 years ago. Its movement fit the pattern created by earlier ice advances but it left behind a newly modified landscape of fresh glacial features. Prominent and familiar features include streamlined hills called drumlins thought to be formed by subglacial till deposition beneath advancing ice, clusters of kettle-hole lakes where ice blocks broke free at the glacial margin only to be buried by deposits before eventually melting to form small lakes, and ice transported boulders known as glacial erratics commonly seen perched along hillsides.

But there is more to the story of our landscape, especially when viewed at a larger scale. Where south-flowing streams once stood, narrow drainages were deepened and broadened by glacial scour, creating over 30 long, linear and scenic Finger Lake valleys. Near the end of the Wisconsin Stage most valleys, including the Honeoye Valley, were subsequently blocked to the north by the retreating ice margin and to the south by multiple recessional moraine deposits. These recessional moraines formed when ice margin retreat stalled but sediment and rock within the ice sheet still moved to the margin carried by internal glacial flow lines. Today, some recessional deposits are known to be hundreds of feet thick, a testimony to the transformative power of flowing ice.

The first precursors of the modern Finger Lakes stood wherever glacial meltwater was trapped between the lobate ice sheet margin and recessional moraines farther south in the ice scoured valley. These water bodies are called periglacial lakes due to their direct contact with the glacial ice margin, and these lakes lengthened as the ice margin melted away. Their surface elevation was high as evidenced by abandoned shorelines located well up on Finger Lake hillsides. Watershed erosion into the lakes must have been great as little vegetation was present to hold newly forming soils in place. Ice bergs moved by wind action across these lakes during the short summer season. Wind generated turbulence kept fine clay particles suspended in the periglacial lake water during the summer, only allowing them to settle to the lake bottom in the calmer waters protected by the ice cover during the winter. Larger silt particles, however, could settle out during the summer. Therefore, the sediment collecting at the bottom of these periglacial lakes was characterized by annual couplets of silt (settled out in the summer) and clay (deposited in the winter). These unique sediments are known as varves. Varves may also contain stones that have occasionally been released from melting icebergs. During exploratory excavation for the Honeoye Inlet Restoration Project, varves associated with Glacial Lake Honeoye were unearthed five miles up the southern Honeoye Valley.

Thus, we arrive at the story of our Glacial Lake Honeoye. By reading the modern topography, especially the elevations of recessional moraine deposits, and looking for the telltale signs of long abandoned shorelines, we can reasonably reconstruct the landscape appearance of this local periglacial lake. The illustration here shows the glacial lake superimposed on the modern lake. Watershed elevation zones are highlighted in non-blue color patterns.

Notice that the thick retreating ice margin prevents any possible northward drainage for the lake. A recessional moraine deposit in the southern Honeoye Valley near French Hill Road creates a lower elevation “dam” so the Glacial Lake Honeoye outlet flows over the top of it. From there, the lake drained southeast, skirted around a resistant bedrock knob at Maxfield Road, and then drained into Glacial Lake Naples, another periglacial lake found in the ice scoured Canandaigua Valley. A significant delta formed where the Glacial Lake Honeoye outlet entered Glacial Lake Naples. Today this delta is a working



Born of Glacial Ice Continued...

gravel pit. Glacial Lake Naples drained south into the ancestral Cohocton River and eventually to Chesapeake Bay.

At its maximum extent, Glacial Lake Honeoye is estimated to have been over 10 miles long and over 80 feet deep. A remarkable contrast to our modern lake which is 4 miles long and only 30 feet deep! Of course it was only a matter of time before the glacial ice margin retreated farther north, eliminating the ice blockage at the foot of the Honeoye Valley. This allowed a new, lower elevation outlet to form, one that drained to the north, and the modern lake came into existence.

For more information on the glacial history of Honeoye Lake, please view the illustrated program on the Honeoye Lake Watershed Task Force website:

www.honeoyelakewatershed.org/geology



Terry Gronwall

Honeoye Lake Walleye Fingerling Stocking Update

By the NYS DEC Region 8 Fisheries Department

The New York State Department of Environmental Conservation (DEC) has a robust stocking program that helps support world-class recreational fisheries, including here in the Finger Lakes. As part of our ongoing, science-based review of stocking and the many factors that influence it's success, DEC makes changes as needed to ensure long-term sustainability.

The Honeoye Lake walleye fishery was sustained for many years through annual stocking of 8.6 million walleye fry. Data has indicated that this stocking strategy has become relatively unsuccessful. This prompted DEC to begin a fingerling walleye stocking program for Honeoye Lake in 2018 and through 2020. Fingerling walleye are larger than fry and generally survive better. One trade-off is that we cannot raise as many fingerlings as fry. DEC Region 8 Fisheries monitored the survival of stocked fingerling walleye through electrofishing in late October and early November during each year that they were stocked. The 2018 stocking was very successful, while the 2019 and 2020 stocking showed little success (despite about double the number stocked in each 2019 and 2020 compared to 2018). Walleye from the 2018 year class showed great growth rates from the time they were stocked in May until the DEC sampled in October. Walleye from the 2018 year class averaged over 9 inches in length by early November.



Terry Gronwall

Honeoye Lake Walleye Fingerling Stocking Update Continued...

Data from our latest electrofishing in late October, 2020 gave us an estimate of over 4,000 walleye remaining from the 2018 stocking (Figure 1). These age-2 walleye now average just under 15 inches and will likely be growing to legal size during the 2021 fishing season. It appears that survival of stocked walleye is stable once they reach about 12 inches in length during their second year in the lake and before they are legal size and become vulnerable to angling harvest. We plan to continue stocking fingerling walleye in Honeoye Lake and assessing the progress. A few more successful year classes, such as the 2018 year class, would provide an abundant population and improve the walleye fishery.

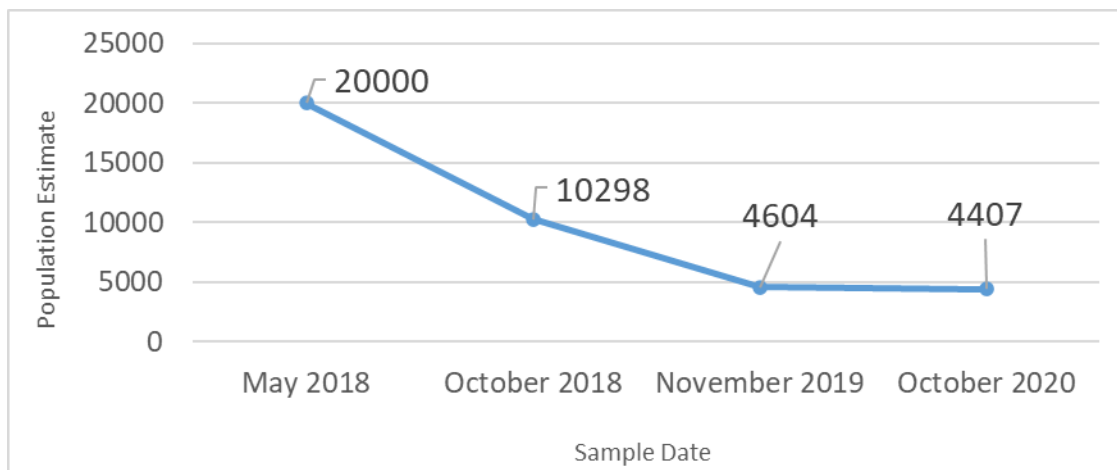


Figure 1. Survival of the 2018 year class of walleye stocked in Honeoye Lake in May, 2018. The initial population size is the number of fingerlings stocked while subsequent estimates were derived from fall electrofishing.

Honeoye Lake Fish Community Survey

Honeoye Lake is currently the focus of a DEC Region 8 Fisheries Management Unit's fish community assessment to comprehensively inventory the current warmwater fish community and document changes in the fish community through time. No single gear is effective for sampling all the potential species that may be found in a lake, but when used in combination, gill nets, fyke nets, seining, and boat and backpack electrofishing, will effectively sample the majority of fish species found in New York's inland lakes. In October 2020, Honeoye Lake's fish community was sampled at 18 shoreline sites with boat electrofishing and eight sites with gill nets. Fyke netting, seining, and backpack electrofishing will be completed during the 2021 field season.

Boat electrofishing and gill netting detected 22 species out of the 35 species historically known from Honeoye Lake. This represents 88% of the species detected within the last 30 years and 63% of all species historically known from Honeoye Lake. Eighteen species were present both in early records (1940s and 1950s) and current surveys, indicating that these species have a long and consistent history in Honeoye Lake. Two species, bridle shiner *Notropis bifrenatus*, 1946; and banded killifish *Fundulus diaphanus*, 1963, were detected in Honeoye Lake for the first time in over 40 years. Honeoye Lake was once habitat to nine minnow species that have not been detected in this water in over 50 years. These historic species will be the focus of targeted sampling effort in 2021.

The October 2020 sampling effort collected a total of 7,994 individual fish. Bluegill *Lepomis macrochirus* were the most numerous species captured with 3,491 caught (44% of catch), followed by yellow perch *Perca flavescens* (n=2,819, 35% of catch), brook silverside *Labidesthes sicculus* (n=372, 5% of catch), largemouth bass *Micropterus salmoides* (n=271, 3% of catch), log perch *Percina caprodes* (n=212, 3% of catch), and black crappie *Pomoxis nigromaculatus* (n=168, 2% of catch). These six species comprised 92% of the total catch. At the other end of the spectrum, the 12 least commonly collected species combined represented less than 2% of the total catch.

A single specimen of bridle shiner *Notropis bifrenatus* and three blackchin shiner *Notropis heterodon*, both New York Species of Greatest Conservation Need, were also detected.

Final data analysis will be completed after the 2021 field season. DEC looks forward to continuing to work with the Honeoye Lake community to continue to effectively monitor and manage the area's fisheries.



Terry Gronwall

Muller Field Station

Information provided by Bruce Gilman & Alli Esposito

Bruce Gilman retired in 2020 after many dedicated years to Finger Lakes Community College, but he continues to be a huge part of the efforts in improving water quality in the Honeoye Lake Watershed. Bruce taught at the college for 42 years while also conducting research in the Finger Lakes region and in the north country of New York. Dr. Gilman was the Muller Field Station Director for 13 years (2007-2020). He had many major accomplishments during his time at the station and has made an extremely positive impact on the Honeoye Lake Watershed through projects, research, and publications.

While Director, Bruce oversaw several construction projects at the station including the renovation of the interior and exterior of the house as well as the construction of an educational pavilion. Bruce is very proud of the publication "Biodiversity of the southern Honeoye Valley" from 2004. He helped the station receive a National Science Foundation strategic planning grant. He helped coordinate many workshops at Muller Field Station and expanded the "Speaking of Nature" public lecture series that the station holds. Bruce worked with Nelson Hairston of Cornell University



Bruce Gilman

to complete a 3-year study on the impact of climate change on Honeoye Lake water quality and the

occurrence of harmful algal blooms. Bruce produced and edited many scientific publications while working at FLCC and we are very grateful for all of the research he has completed in the Honeoye Lake Watershed.

Some of Bruce's most fond memories while at Muller included working with South Sudan refugees from the Rochester International School, hosting Nature Conservancy visitors and interns, reminiscing during alumni gatherings, discovering rare and unusual wildflowers in the silver-maple ash swamp adjacent to the field station, and listening to John Foust talking about fish during the Spring Open House events.



Bruce Gilman

**Thank you Bruce for your dedication to
Finger Lakes Community College and
the Muller Field Station!**



Bruce Gilman



Bruce Gilman

Muller Field Station

Information provided by John VanNeil & Alli Esposito

John VanNeil began as the director of Muller Field Station (MFS) on September 1, 2020. John started teaching at Finger Lakes Community College (FLCC) in the fall of 1995. His favorite classes to teach are Black Bear Management and Field Study of Birds. He received a SUNY Chancellors award for Excellence in Teaching in 2015. He was the Co-Principal Investigator on a series of National Science Foundation grants to increase undergraduate research at community colleges.

John is most excited to bring Muller Field Station's new strategic plan to life. This includes upgrades to the current facilities such as an updated canoe/kayak launch and additional overnight accommodations. He is also excited to increase the opportunities for field work for their current students through the new paid internship program. John is looking forward to working with the K-12 education team. He started his career as a high school teacher and still enjoys working with that age group.



Alli Esposito



John VanNeil

Alli Esposito is the Conservation Education Outreach Coordinator for Muller Field Station. She started this position in the fall of 2018. She has a Bachelor's degree in Anthropology from SUNY New Paltz, and an Associates Degree in Natural Resources Conservation: Law Enforcement from Finger Lakes Community College. Alli coordinates the K-12 conservation

education programs at Muller Field Station as well as community outreach events. Educational programs are now being offered in the form of virtual field trips, with both recorded and "live" options. MFS's popular Speaking of Nature series has also switched to an online format, which has been immensely successful. She runs their social media accounts and develops a lot of their creative content, including MFS seasonal videos, "Spring Awakening", "Summer Vibrations" & "Autumnal Abundance". Stay tuned for a winter video! Muller Field Station recently received a grant that will fully support a permaculture garden project that Alli will be taking the lead on. Alli hopes to develop programming on permaculture and sustainability for K-12 students, community members, and college classes. One of her main goals moving forward is to establish partnerships and collaborations with organizations that support and provide equitable outdoor experiences for BIPOC youth/communities. Increasing diversity and inclusivity at Muller Field Station is a priority.

A Tribute to Randy DePew

By Betsy Landre, Ontario County Planning Department

Aquatic weeds are present every summer on Honeoye Lake. They are lighter in some years, and more abundant in others (like in 2020). There has been just one true constant in the Honeoye Lake Aquatic Vegetation Management Program (AVMP) over its 34 year history – Randy DePew. Randy joined the AVMP in 1988 and has worked on Honeoye Lake every summer since. As he retires at the end of 2020, Ontario County and our partners – the Towns of Richmond and Canadice, Honeoye Lake Watershed Task Force, Honeoye Valley Association and lake residents – wish to thank Randy for his 33 years of service to the lake community.

Randy has been the backbone of the program in many ways. First is his practical know-how. Having grown up on a farm, he is both a resourceful problem solver and comfortable working with heavy equipment such as the mechanical weed harvester and conveyor, work barge, and six-wheel dump truck. Randy knows how to maneuver around docks, in coves, and along bluffs, bulkheads, and reinforced shoreline. Working on a lake, the unexpected can happen at any moment. The job requires making decisions every day of every season. Each year Randy comes up with ideas to make things work better.

As a team-player, Randy helped train many new crew members over the years. He enjoyed positive relationships with all of them, being their mentor, co-worker, and friend. The youngest addition to the crew in 2020 exclaimed, “I love working with the guy.”

Randy’s detailed knowledge of the lake is another key strength. He understands the problem areas where residents are most impacted. He is dedicated to helping residents, especially those who, for various reasons (like location of the property or age and physical limitations), are particularly challenged by excessive weeds each summer.

Many lakeshore residents know Randy as a kind-hearted person with great stamina and a desire to help. Over the years, he has had opportunities to help in unexpected ways. Who can forget the time when he and co-worker John Miller rescued a husband and wife and their nephew from rough Honeoye Lake waters? The crew had noticed a small boat capsized during a sudden storm. Struggling to stay afloat, Randy and John pulled the family onto the harvester, brought them to shore, and then went back to recover their boat!

There are many less dramatic ways Randy has helped the community over the years beyond traditional harvesting and shoreline management efforts:

- Helping clear the Town of Richmond’s Sandy Bottom Beach and the north shore of weeds after major southerly wind events
- Marking waterlines for residents
- Clearing the outlet weir of overgrown vegetation with co-worker Scott Strong
- Helping highway departments to remove debris after flooding events
- Helping to kick off a renewed yard-waste composting initiative to reduce nutrients to the lake
- Assisting in water quality sampling efforts

His quiet persistence, experience, and good will toward others will be missed. Thankfully, Randy has offered to help with training of a new AVMP team. Ontario County and the Honeoye Lake community owe Randy DePew a debt of gratitude for his years of service. He has left his mark on lake history and all who had the good fortune of meeting Randy on Honeoye Lake.

We wish him all the best in retirement!



Ontario County Planning



Ontario County Planning

2020 Honeoye Lake Secchi Disk Program

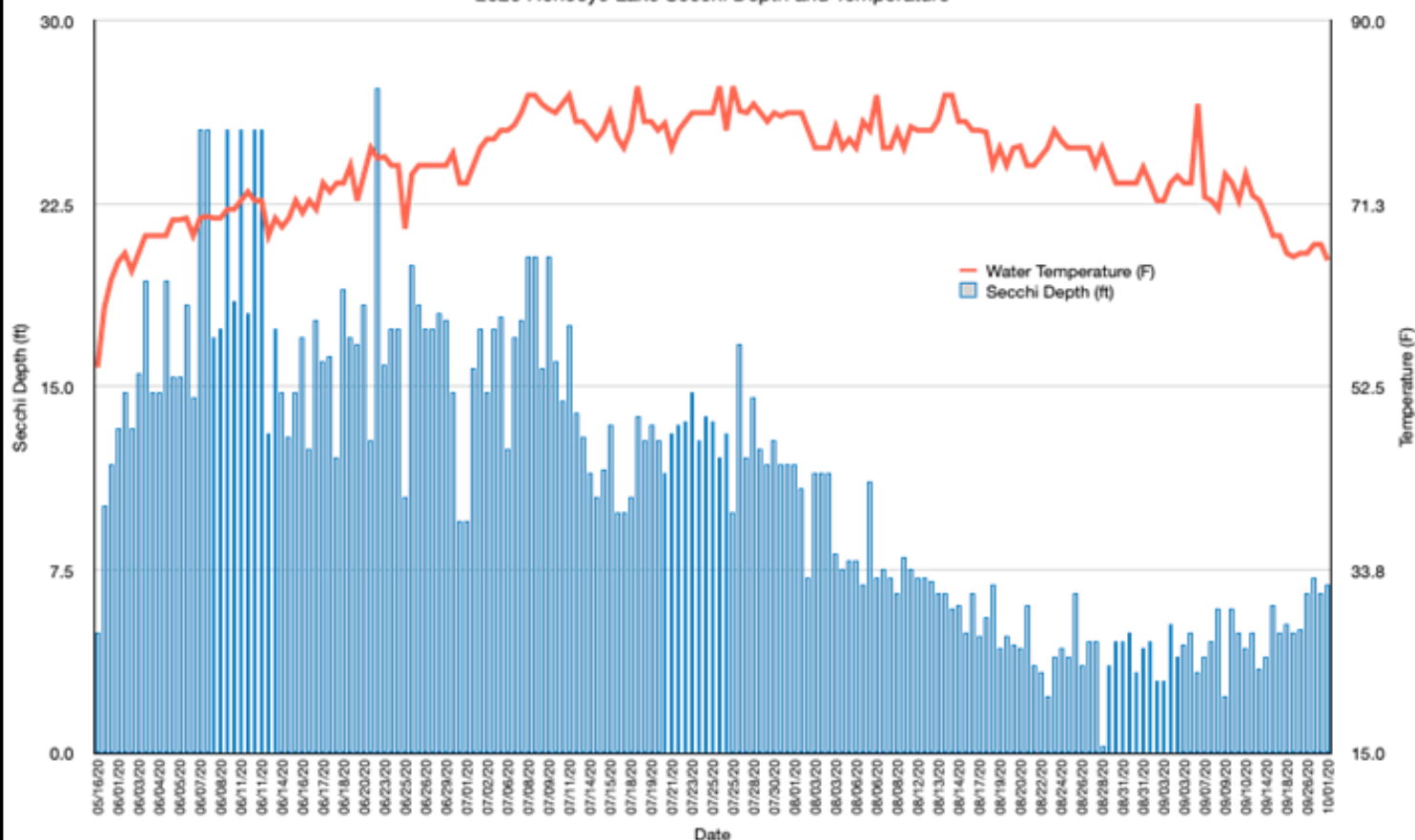
By Linda Vanderbeck, HVA Secchi Disk Volunteer Coordinator

2020 concluded the third consecutive season of the Honeoye Lake Secchi Disk Program. This program is part of the lake's ongoing water monitoring efforts and supplements data and information collected by the Honeoye Lake Watershed Task Force (HLWTF). Volunteers take weekly measurements of water clarity using an instrument called a Secchi Disk, an 8-inch disk with alternating black and white quadrants that is lowered into the water until it can no longer be seen. This depth of disappearance, called the Secchi depth, is a measure of water clarity. Clarity can be affected by the color of the water, algae, and suspended sediments. In Honeoye Lake, the clarity is primarily a measure of the amount of algae in the water column. Volunteers also measure surface water temperature, note wind and clouds, and record their observations regarding algae conditions. They report their measurements online using Google forms where it is consolidated and analyzed by the program administrator and program sponsor. These measurements help identify trends in the lake's water quality and are used to confirm the affects that weather and lake mixing have on the lake.

2020 Results

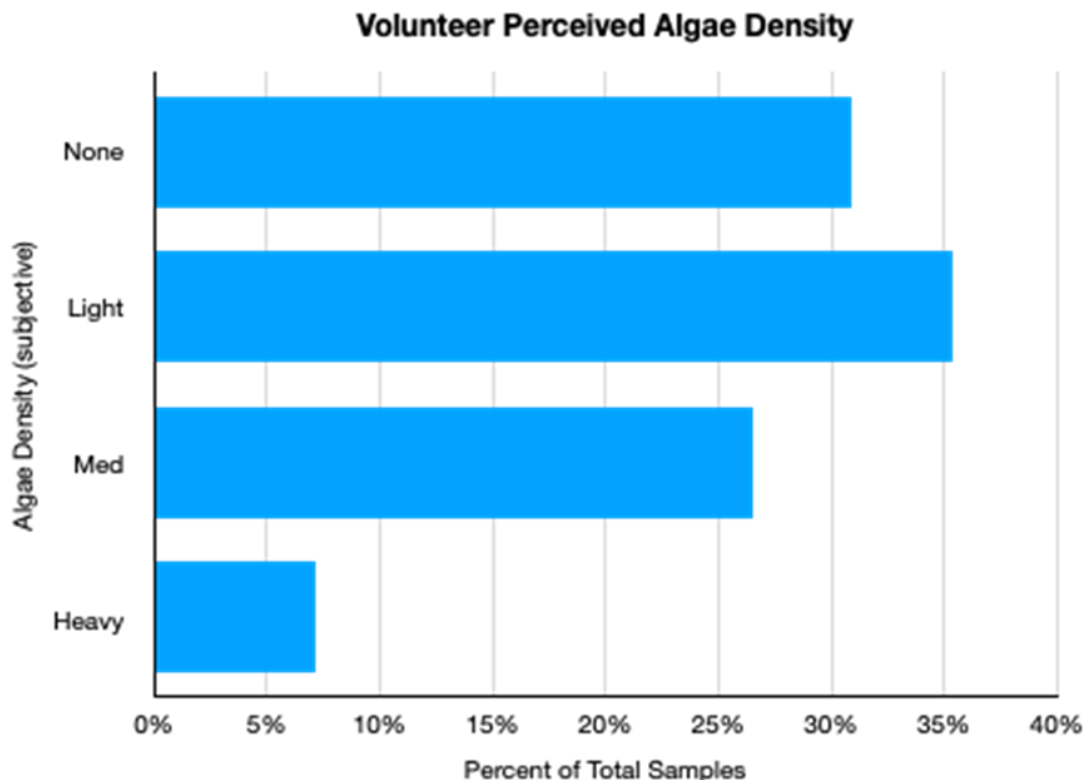
From May through September, 6 volunteers took a total of 181 readings. During May and June, the average Secchi depth was 16.5 feet and declined slightly in July to 13.0 feet. Coincident with observations of warming bottom lake temperatures and lake mixing (both events known to promote algae growth) was a decrease in average Secchi depth for August and September to 5.6 feet.

2020 Honeoye Lake Secchi Depth and Temperature



Water surface temperatures saw a typical annual pattern of gradual warming during May and June with an average temperature of 70°F. The warmest average temperature of 79°F occurred during July and August, and then gradually declined in September to 71°F along with cooling weather temperatures. Volunteer observations indicate there were many days of high water clarity in 2020 with 66% of observations identifying “none” or “light” algae, and only 7% identifying “heavy” algae.

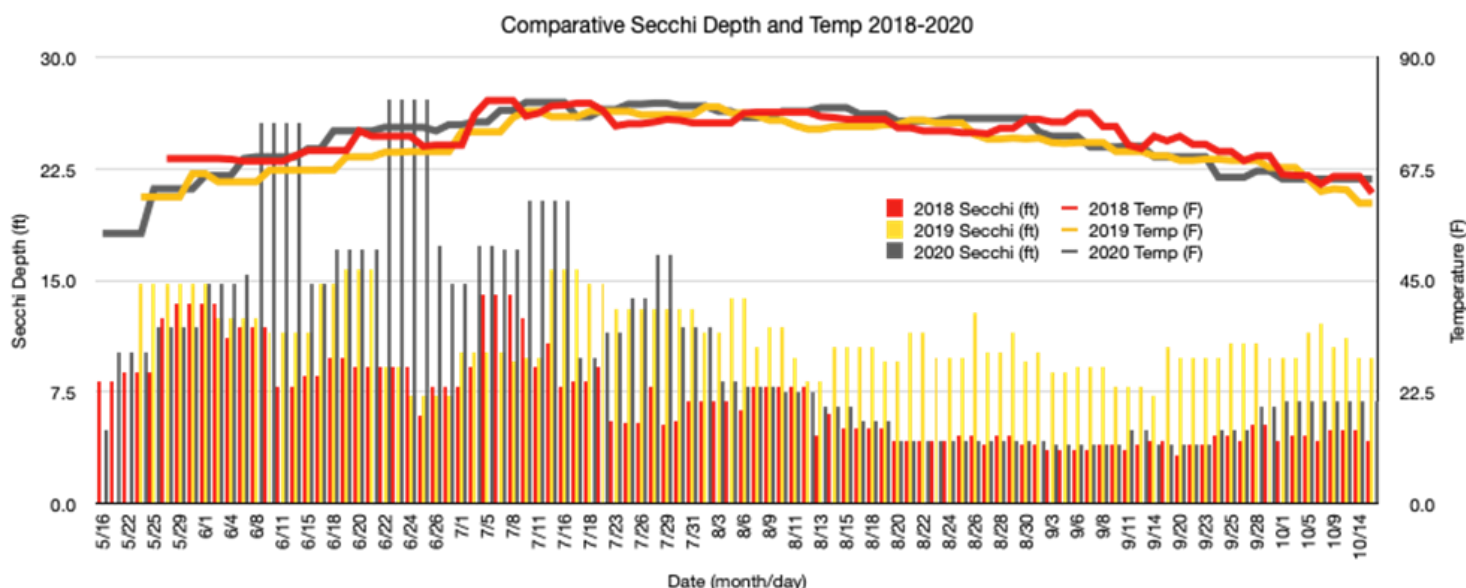
2020 Honeoye Lake Secchi Disk Program continued...



Trends

One of the main benefits of the Secchi Disk Program is the collection of information over time for use in recognizing and evaluating trends in the lake's behavior. By mapping the Secchi Disk data against weather, storm events, dissolved oxygen levels, and other factors affecting the lake, a better understanding of lake dynamics is gained. Additionally, quantitative data collected over years can confirm what were merely accepted, and sometimes challenged, theoretical concepts.

The graph below shows data from 2018, 2019 and 2020. Evidently, surface water temperatures vary little from year to year. However, there are marked differences in water clarity as indicated by the Secchi depth. All years show clearer water in the first half of the summer. 2020 was an exceptional year during May-July. During August-September, 2020 is most similar to 2018, with 2019 showing more water clarity - in other words less algae - than either 2018 or 2020. Weather data for those years show strong mixing events in 2018 and 2020 that coincide with the shallow Secchi depths, whereas 2019 did not experience the same types of storms and consequently did not have as intense algae blooms.



Watercraft Stewards on Honeoye Lake, 2020

By Megan Harris, Watercraft Steward, Finger Lakes Institute at Hobart and William Smith Colleges

Honeoye Lake State Boat Launch Park (HLSBLP) had watercraft steward coverage through the Finger Lakes Institute (FLI), and SUNY ESF/NY Office of Parks, Recreation and Historic Preservation (OPRHP) programs during the 2020 season. Stewards were trained by their respective employers to prevent the spread of aquatic invasive species (AIS) and to deliver education and public outreach on reducing the spread of AIS. Both programs used the state database, Watercraft Inspection Steward Program Application (WISPA), to collect data on tablets. This application made for easy comparison and analysis between programs. The majority of FLI coverage occurred Mondays through Wednesdays, while OPRHP coverage occurred on Thursdays through Sundays.

This year due to COVID-19 forcing indoor closures, people opted for outdoor activities in unprecedented numbers. Boating in New York appears to be no exception. Watercraft stewards saw a 78% increase in the number of people reached compared to the 2019 season. Total watercraft inspection also rose 68% translating to a 90% increase in the number of inspections per day.

Table 1. Watercraft steward coverage at Honeoye Lake State Marine Park in 2020.

Organization	Days Covered	Inspections	Inspections/Day	People Reached
FLI	27 (M-W)	1065	39	2253
OPRHP	44 (Th-Su)	4311	98	9353
Total	71	5,376	137	11,606
Change from 2019	-16%	+68%	+90%	+78%

To ensure steward safety in this unique time, the stewards were provided face masks, hand sanitizer, and disinfectant spray. Proper and consistent use of PPE was mandatory for all stewards. When performing inspections, stewards were instructed to maintain social distancing and not to touch watercrafts themselves when possible. Instead, with the help of stewards pointing out locations to check, boaters were encouraged to do watercraft assessments themselves. Stewards did however physically remove plants when boaters wouldn't participate in the inspection process. Inspections at HLSBLP went smoothly, even in the times of COVID-19; no one refused a watercraft inspection out of concern for transmission of the virus.

With the significant increase in boater traffic to HLSBLP, it is important to consider boater's last waterbody visited (figures 1.1, 1.2, 1.3). The largest threat to Honeoye Lake comes from boats that have been in a waterbody in the last two weeks. Specifically, a greater threat is posed if the previously frequented waterbody contains AIS not present in Honeoye Lake. 25% of FLI inspected watercrafts fell into this category (Figure 1.1). The most common previous waterbody was Canandaigua Lake (Figure 1.2), which is home to two of our highest species of concern: water chestnut and starry stonewort. Organisms (either native or invasive) were found on less than 10% of launching watercrafts (Figure 1.3). This reinforces the importance of spreading the message to 'Clean, Drain, and Dry' watercrafts recreating on Honeoye Lake.

A main goal of our Watercraft Stewards Program (WSP) is imparting some level of knowledge of AIS to launch visitors. At the very least, a person who has never heard of AIS before will be exposed to the term. Ideally, each subsequent visit will allow an interested boater to build on this knowledge. The proportion of those who have previously met a steward may be used as one factor in evaluating a WSP's effectiveness. The OPRHP program (Thursday-Sunday) has a previous contact rate of over 80%. The FLI program (Monday-Wednesday) has a lower rate of about 73%. These numbers are promising. Nearly three quarters or more of people have previously been engaged by a watercraft steward to model Clean, Drain, and Dry. The FLI continuously assesses program coverage to prevent the further spread of AIS into Honeoye Lake and others in the region as effectively as possible.



Watercraft Stewards on Honeoye Lake Continued...

Overall, the 2020 season saw highs and lows. Despite the challenges presented by COVID-19, watercraft stewards were able to inform over 11,600 boaters of the dangers of AIS and how small actions can limit their spread. Boaters were out and enjoying all that Honeoye Lake has to offer- beautiful shorelines, wonderful vistas, and some of the best fishing there is in the Finger Lakes. With continued efforts and collaboration with WSPs, people will be able to enjoy the bounties of Honeoye Lake for years to come.

Previous Use by FLI Inspected Watercrafts

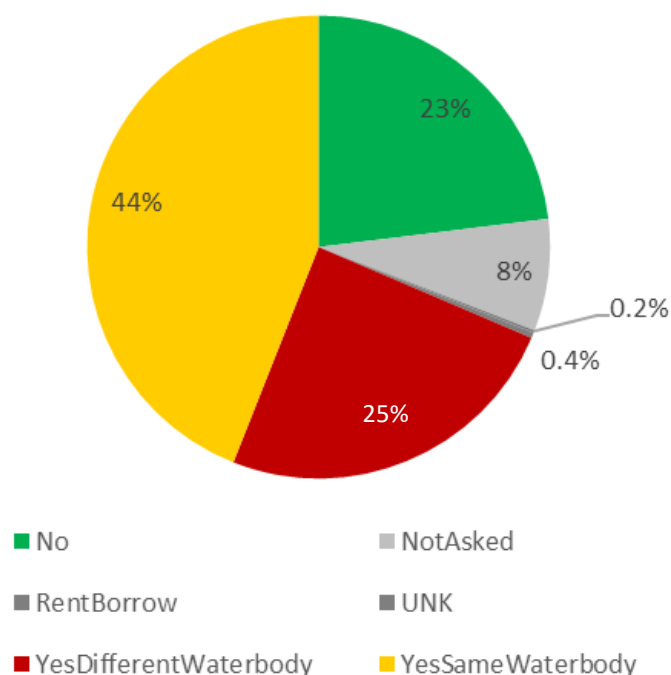


Figure 1.1 Previous Use by FLI Inspected Watercrafts.

Launching Watercrafts with an Organism Found Upon Inspection

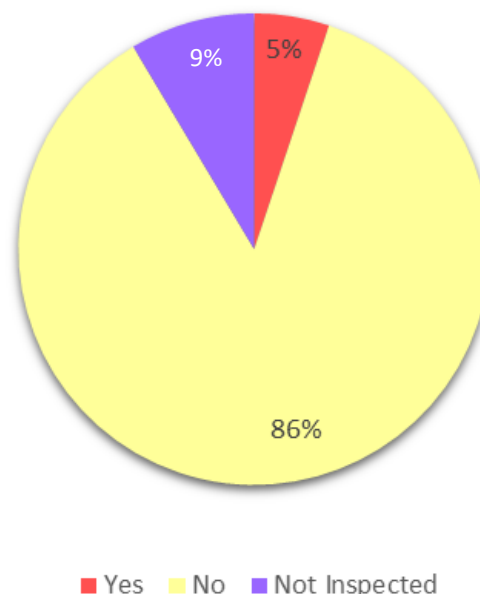


Figure 1.3. Launching Watercrafts with an Organism Found Upon Inspection.

Previous Waterbody

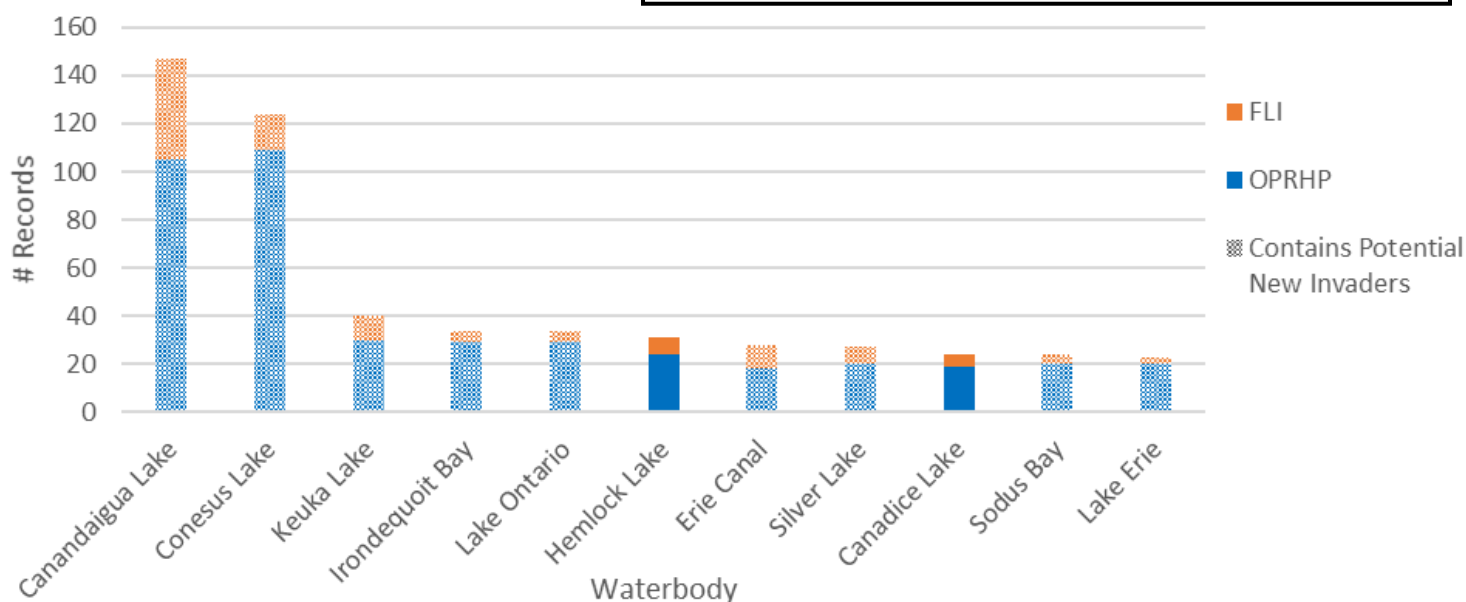


Figure 1.2. Previous Waterbody used by Honeoye Lake Boaters.

HELP PROTECT HONEOYE LAKE FROM AQUATIC INVASIVE SPECIES

Be a good lake steward. Follow a few simple steps to help prevent the transport of invasive species.

STOP!

You can help stop the spread of invasive species!

CLEAN, DRAIN and DRY your watercrafts

- Invasive species have invaded many waterbodies in the Finger Lakes
- Launching contaminated watercrafts can cause new invasions
- Help protect the Finger Lakes

Clean.

Remove all visible plants, animals, fish and mud from your boat trailer or other equipment and place in a disposal station, trash container or on dry land. Don't forget to check your anchor!

Drain.

Drain all lake water holding compartments including bilge areas, live wells, and ballast tanks before leaving the launch.

Dry.

Dry all boats, trailers and equipment before use in another waterbody. Five days dry time is recommended.

Protect the lake you love.

The Finger Lakes region offers a natural beauty unlike anywhere else in the world. Help protect Honeoye Lake and the rest of the Finger Lakes by educating yourself on the resources available to help prevent the spread of aquatic invasive species (AIS). Did you know:

- Watercraft Stewards are on-site 7 days a week throughout the summer months at the Honeoye Lake Boat Launch State Park to help inspect boats, trailers and personal watercrafts.
- Disposal stations are available at the following access points around the lake to place plant and animal material removed from your watercraft:
- Sandy Bottom Beach
- Honeoye Lake Boat Launch State Park
- Trident Marina
- Local watershed protection groups like the Honeoye Valley Association and the Honeoye Lake Watershed Task Force offer workshops, trainings, and volunteer opportunities to help manage the spread of AIS. Check out their websites for more information:

Honeoye Valley Association: hvaweb.org

Honeoye Lake Watershed Task Force: www.honeoyelakewatershed.org



Terry Gronwall

WATERCRAFT CHECK POINTS



Before leaving and before launching ...
inspect everything!

FL-PRISM



PROTECT HONEOYE LAKE FROM AQUATIC INVASIVE SPECIES CONTINUED...



HYDRILLA:

Hydrilla spreads quickly, and once established, forms dense stands that crowd out native species and disrupt aquatic habitats. Hydrilla is a submerged herbaceous perennial plant with visibly serrated leaves that grow in whorls of three to eight, often five.

Found nearby in:

- Cayuga Lake Inlet
- Cayuga Lake, near Ithaca
- Erie Canal / North Tonawanda Creek

ROUND GOBY:

Round Gobies are aggressive fish that can outcompete native species for food, shelter, and nesting sites. They also prey on eggs of many native fish species. Round Gobies bioaccumulate many contaminants, which are then passed on to larger game fish and then potentially to humans.

Found nearby in:

- Cayuga Lake
- Onondaga Lake
- Lake Ontario



STARRY STONEWORT:

Starry stonewort forms dense 'pillows' of vegetation, which outcompete aquatic plants and interfere with human and fish movement. Once established, the algae spreads readily through its easily dislodged bulbils and plant fragments.

Found nearby in:

- Canandaigua Lake (well established in many areas)
- Keuka Lake Outlet

WATER CHESTNUT:

On the water surface, Water Chestnut forms a rosette of green, glossy, triangular floating leaves with toothed edges. Populations of this species can form very dense mats of interlocking and stacking rosettes. These thick mats completely shade the water column and suppress most other aquatic plant growth in the area. Dense mats also inhibit boating, swimming, and fishing. The seeds are painful when stepped upon.

Found nearby in:

- Canandaigua Lake (West River)
- Keuka Lake

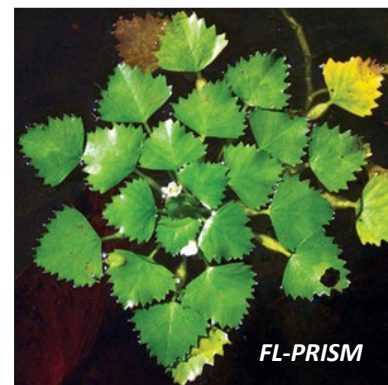
KNOW - OBSERVE - REPORT

Help us detect the region's most dangerous invasives before it's too late!

KNOW. Educate yourself on the area's high-priority invaders.

OBSERVE. If you observe these in a waterbody, mark the location and take a photo.

REPORT. Report the observation via email to: FLXplantID@gmail.com



The Honeoye Lake Watershed Task Force was formed in 1998 by:

Town of Richmond

Town of Canadice

Town of Bristol

Town of Naples

Town of South Bristol

Honeoye Valley Association

To Protect and Improve the Water Quality of Honeoye Lake.

Voting Members Include:

Terry Gronwall, Councilmember, Town of Canadice (Chairman)

Dave Baker, Councilmember, Town of Richmond

Al Favro, Representative, Town of Bristol

Ann Jacobs, Representative, Town of South Bristol

Mark Adams, Representative, Town of Naples

Lindsay McMillan, Honeoye Valley Association

Permanent Professional Support is Provided by:

Megan Webster, Katie Lafler, Alaina Robarge, Ontario County Soil & Water Conservation District

Dr. Bruce Gilman, Professor Emeritus, Finger Lakes Community College

Tom Harvey and Betsy Landre, Ontario County Planning Department

Project Specific Professional Support is Provided by:

NYS Department of Environmental Conservation

Finger Lakes Community College

Cornell Cooperative Extension of Ontario County

Ontario County Water Resources Council

Princeton Hydro Consulting

Finger Lakes Institute

Cornell University

The Nature Conservancy

Finger Lakes Land Trust

Further Information may be obtained by contacting:

Chairman Terry Gronwall at

watershedtaskforce@gmail.com

