Seneca Lake
PURE WATERS
Association

ANNUAL REPORT

2021 - 2022 FISCAL YEAR

About Pure Waters

Seneca Lake Pure Waters Association was incorporated in 1990 as a Section 501(c)3 nonprofit corporation dedicated to understanding, preserving, and improving Seneca Lake through research, public education, and advocacy.
In its 30-year history, the association has adapted its focus and addressed a variety of threats to the lake. Over the years, studies and informational efforts have covered a wide range of topics such as:

- Identifying various contamination and pollution threats
- Supporting research studies such as the lake's limnology (aquatic ecosystem), invasive species, and cyanobacteria
- Developing watershed management plans
- Informing municipal practices such as land use ordinances and uniform onsite wastewater management

Today, Seneca Lake Pure Waters is a vibrant and growing organization that is adding new, or improving existing, water quality programs each year. Monitoring programs leverage research partners to provide essential data on stream and lake nutrients as well as harmful algal blooms and invasive species. Pure Waters is also an important partner in the latest watershed management plan development process and is starting to take an active role in funding physical projects that protect the lake.

Pure Waters is committed to improving and adapting to meet the Seneca Lake watershed's future needs.

2021-2022 Association Officers

Jacob Welch
President

John Cooley
Secretary

Jim McGinnis
Vice President

Frank Case
Treasurer

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President's Message

Hi folks! As has been our pattern of late, this last year has been a busy one for Pure Waters.

With due excitement, we launched our SNPR project. See more about this below including how we have already contributed some $45,000 in funds, matched by County Soil and Water Districts or other organizations, to tackle the problem of unwanted nitrates and phosphates entering our lake thereby causing HABs and unchecked weed growth.

Jacob Welch

The program has attracted the attention of others. In fact, I have been asked to make a presentation of it at conferences held by the Finger Lakes Regional Watershed Alliance. Other lakes want to know how we made it all happen.

While all that is such wonderful news there is a backdrop of sadness as well. Unfortunately, in 2022 we lost my co-chair on the SNPR team, Rich Adams, due to an untimely death. Rich was one of the most amazing people who ever helped our organization, having a wealth of engineering knowledge as far as how to best protect our lake waters. Saying he will be missed is a vast understatement. Yet, I know he would be proud to see that this, as well as the Fisheries program he also launched, are continuing to help preserve the lake that he so loved.

In other news, Dan Corbett and I have continued our presence on the Executive Committee for the Nine Element Plan which this year was submitted to the DEC after tons of stream sampling and computer modelling work. Our organization was central in getting 9E launched in combination with our friends on Keuka Lake who share our watershed.

Thanks also go out to our Lake Steward, Ian Smith, who worked tirelessly on this major undertaking critical to obtaining the type of large grants we need to keep our lake from downgrading due to climate change and heavier land usage.

President's Message, continued

Our CSLAP lake sampling program continues to run strong, having fended off a DEC planned rollback via our alliance with NYSFOLA and the FLRWA. Along some of those same lines, I met with our local State Senators this past year, letting them know of the vital importance of our lakes. Our representatives simply must provide greater help to our local Soil and Water Conservation Districts. They are way overworked and understaffed. The combined Finger Lakes generate billions of dollars in tourism-based tax revenue. If our State wants that to continue, then they must also help us in our mission to preserve and protect our invaluable water resources. Its that simple. This message seemed warmly received with a thanks for pointing out how best to help our area legislatively.

Finally, and as always, I want to deeply thank all those wonderful volunteers who have helped monitor our streams or gone out to check and report on harmful algal blooms. A good word as well goes out to those who have signed up and supported our Lake Friendly Living program taking us step by step closer to knowing that a healthy lake requires safeguarding in all ways possible.

My three-year tenure as President of Pure Waters is soon coming to a close. I humbly want to express the honor I have felt in being designated for such an important role. I have met some of the most generous forward-thinking people along the way andremain filled with gratitude for those experiences. Again, thanks to all the volunteers, board members, committee leaders and donors who make Pure Waters one of the best lake associations in the state.

Your President,
Jake Welch

Rich Adams

Rich Adams, a passionate volunteer for the Pure Waters family, passed away on April 26, 2022. Rich enjoyed many outdoor activities and was an especially avid fisherman. He worked for 35 years as a Water Resource Engineer for the Pennsylvania Department of Conservation and Natural Resources. Rich had retired with his wife, Sandy, to a home on Seneca lake.

Rich's love for the environment, combined with his professional background concerning water resources, made him the ideal volunteer for Pure Waters. He was quickly asked to take on multiple roles and higher levels of responsibility, all of which he graciously assumed.

Rich Adams, continued

Rich led the Water Quality area of our organization. As part of that, he initiated our much-awaited Sediment, Nutrient, and Pollution Reduction program. Never one to rest, and even in the brief weeks before his passing, Rich put together a new Pure Waters fisheries team to help better understand the state of the fishery in Seneca Lake.

Our board recently voted to place Rich's name on our annual President's Award, an accolade given yearly to acknowledge a person's outstanding contributions to the betterment of our lake.

Rich's superb environmental knowledge and professionalism garnered deep respect. Yet, it was Rich's easy way with people that can be credited for team building and what have, and will continue to be, great achievements for our lake. He absolutely loved the Finger Lakes for their beauty, various music events, wineries, breweries, and, of course, great fishing. To say the least, Rich's knowledge, enthusiasm, wonderful sense of humor, and spirited character will be sorely missed by our association.

Mary Rose

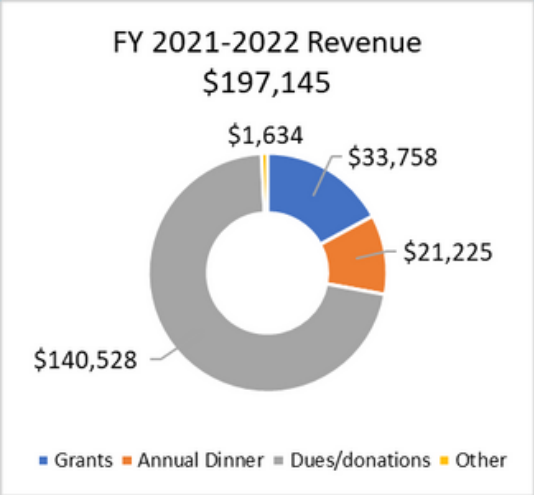
Mary Rose, active community member and Pure Waters volunteer, passed away on March 16, 2022. Mary has been a very active volunteer and leader in the Pure Waters family for many years. She was a true champion for the health of our lake and was unselfish in her efforts to make an impact.

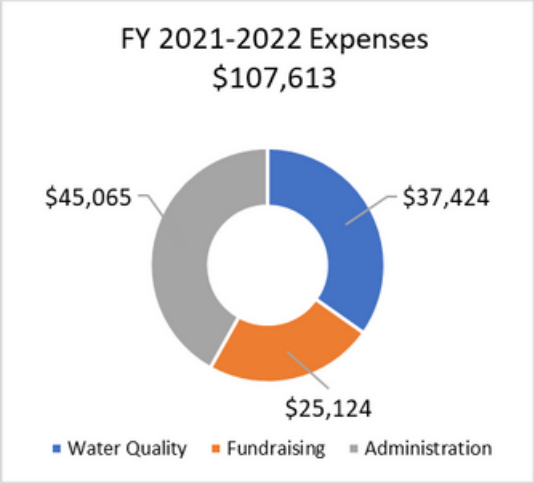
Mary was instrumental in helping get the Stream Monitoring program up and running in 2014. She had corralled friends and relatives to participate and become the core of the Big Stream team. Mary stepped right up to be the team leader for that area and has been one of the most active and vocal leaders for Pure Waters in the years since. Mary was also a very dedicated Harmful Algal Bloom (HAB) shoreline survey volunteer. She never missed a chance to scour the shoreline in search of HABs. She was also a great recruiter, as many other volunteers stepped up at her behest.

Additionally, Mary was a critical link for the strong relationship with the Tripp Foundation, which has been a key Pure Waters partner over the years.

Our condolences go out to her family and many friends—she will be missed by many.

Performance Overview





Following a surprisingly positive fiscal performance in the Fiscal Year 2020-2021, Fiscal Year 2021-2022 saw even better results. The board continued its disciplined budgeting process while starting new programs.

The pandemic has enhanced the popularity of Seneca Lake. The need for a healthy Seneca Lake is crystal clear to our stakeholders. As a result, giving continued to be robust.

Fundraising continued its growth trend, increasing by 42% over the year prior. Expenses were on target, although some programs were unable to spend their allotted budget. The healthy fiscal standing allows for measured expansion in personnel and programs in the next year or two.

The most important new initiative is the Sediment, Nutrient, and Pollution Reduction (SNPR) program. This emerging program grew out of an extensive evaluation of the association's water quality portfolio with an eye toward supporting active water quality improvement projects. The aim is to increase the number of water quality improvement projects that can be executed in the watershed each year. The first project was for an engineering study on the Keuka Outlet designated in early 2021. In Spring 2022, five new projects were identified for funding totaling just under $40,000. The association expects to identify additional projects by Fall 2022 and into Spring 2023.

The two graphs above show the revenue sources and expense categories for the fiscal year. Not shown is the value of our field volunteers' time—approximately $70,000. The combination of disciplined budgeting and execution, enthusiastic giving, and lower than expected expenses in some programs resulted in a surplus of $90,000 this fiscal year. The surplus provides a cushion for a robust SNPR program moving forward.

Performance Overview, continued

Seneca Pure Waters is growing and planning for the next fiscal year is ambitious. The expansion of the Sediment, Nutrient, and Pollution Reduction program among others requires more resources—fiscal and human. Fundraising is more important than ever as the organization tries to expand its paid workforce to manage the increasing workload. In addition, more volunteers (committee and board members) are needed to manage the association and its water quality programs.

Strategic Planning Update

The board conducted a Strategic Plan review during the Fall and Winter of 2021-2022. The association made considerable progress on previous plans, so the review turned into a major revision—removing objectives already achieved, updating others, and adding new aspirations. The new plan is nearing completion and expected to be done by the fall of 2022. Emphasis has shifted to water quality goals with organizational improvement goals in support. However, the board recognizes that as the organization takes on new programs, there is a need to expand paid staff. This will make increasing revenues a priority.

The strategic approach, however, remains the same: the mission is accomplished through education, volunteerism and citizen science, and partnerships all supported by an efficient, well-resourced organization. The new plan will guide the association for the next three to five years.

Water Quality Programs

Sediment, Nutrient, and Pollution Reduction Program

In early 2021, a team formed to build a program that would take action to reduce harmful substances from entering the lake. The resulting program was designated the Sediment, Nutrient, and Pollution Reduction (SNPR) program.

- **Sediment**: Carries harmful pollutants into the lake and changes the topography
- **Nutrients**: In particular, nitrates and phosphates
- **Pollution**: Can include wastewater treatment discharges and chemicals
- **Reduction**: Phosphorus, nitrates, and sediment are strongly implicated in harmful algae blooms and nuisance algae and weed growth in Seneca Lake.

The volunteer team of 11 includes Pure Waters Board members, scientists, engineers, community leaders, and interested residents. The team developed a strategy to work and interface with the Pure Waters board and the community. It developed a Program Plan of Work to serve as its steering document.

The main effort is to increase the number of water improvement projects in the watershed by providing funding to partner organizations, primarily the Seneca Watershed Intermunicipal Organization (SWIO) and the five county Soil and Water Conservation Districts (SWCD), who design and execute the projects.

SNPR Program, continued

In 2021, the board committed funds to its first SNPR project, a SWIO-led engineering assessment for potential flood control on the Keuka Outlet. The study looked at the feasibility of letting water flow under the Outlet Trail during high water events into the historical floodplain near the mouth. Project design is underway and construction is planned for 2023-24. Pure Waters, Friends of the Outlet, SWIO/Hobart and William Smith Colleges, and the Yates County Soil and Water Conservation District were resource partners for the study.

The SNPR team contacted all five county soil and water conservation districts requesting proposals for water quality improvement projects that needed additional funding. The team identified the following types of projects they would consider:

- Buffer strips between development and water courses
- Cover crops to stop erosion during winter months
- Ditch and stream remediation
- Retention/settling ponds to slow down the travel and erosion of sediment
- Cost effective nutrient treatment systems

In May 2022, the team selected four projects that were approved by the board:

- Cover Crop Implementation, Schuyler County SWCD
- Stream Erosion Control, Seneca County SWCD
- Castle Creek Erosion Control Improvements, Ontario County SWCD
- Construction of Retention Pond, Schuyler County SWCD

When implemented over the next 12 months, the projects are expected to reduce up to four hundred tons of sediments from entering Seneca Lake annually. Pure Waters' funds are being matched with other outside funds and contributions of labor and equipment to magnify their impact of improving the lake. The team expects to award a second round of projects in the fall.

SNPR Program, continued

The SNPR team also engages with the New York State Department of Environmental Conservation (NYSDEC) on issues that affect the lake water quality. It holds quarterly meetings with DEC Region 8 to share ideas and discuss concerns. In the past year, Pure Waters has expressed its support to prioritize grants to upgrade the Seneca County Sewer District #2 Wastewater Treatment Plant at Five Points, located near the Seneca Army Depot. Discharges from the old treatment plant degrade water in Reeder Creek which empties into Seneca Lake. Every summer, egregious growths of nuisance algae at the mouth of Reeder Creek, and die-off of that growth, present noxious conditions which are aesthetically intolerable to nearby residents, and which preclude contact recreational uses. The SNPR team is working with NYSDEC to evaluate potential discharge relocation or land disposal alternatives.

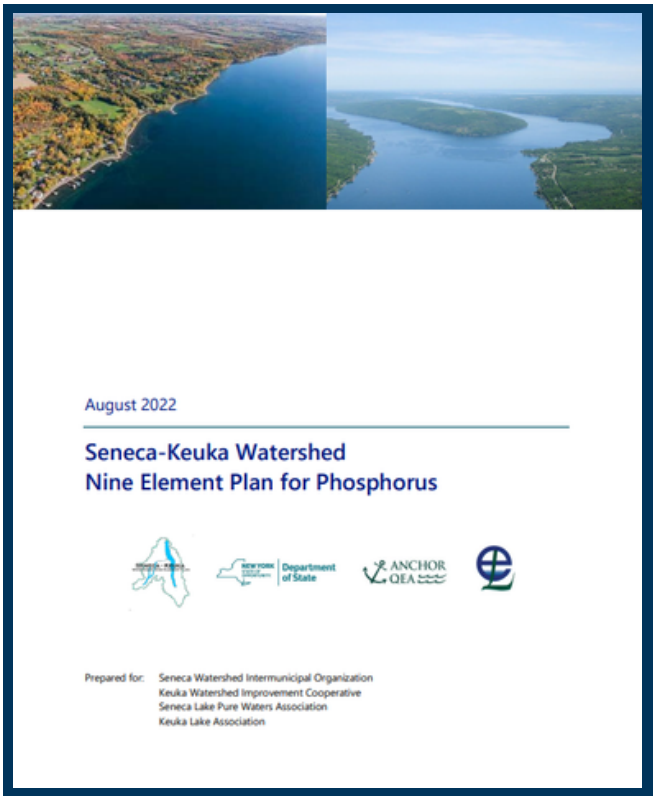
The team also provided public comments on the Lockwood Ash landfill permit renewal application (near Dresden). Pure Waters requested that NYSDEC require more stringent testing of the leachate (water discharge) [1] from the landfill, and also cited concern over how the permitting process was being administered, and the need for a public hearing.

The team is not limited to SWCD projects. If you know of a lake issue or have a project vision that you would like to see happen, contact Pure Waters! The SNPR team will work with any interested party to investigate if there is a way to solve an issue affecting Seneca Lake water quality.

The SNPR program is the new flagship program for Pure Waters. The program team still needs volunteers to help gather and evaluate potential project data and information. In addition, the association is striving to grow revenues in order to make even more of an impact.

Watch for stories in the local paper or visit the Pure Waters website regularly to see updates on SNPR activities! (http://www.senecalake.org/snpr)

Nine Element Watershed Management Plan Development



The project to update the Seneca Lake Watershed Management Plan (WMP), in the form of a Nine Element (9E) Plan, was initiated in 2018 and is now nearing completion. The 9E planning process differs from prior watershed planning efforts in its focus on adaptive management and use of quantitative tools to identify priority areas for action. Priority areas encompass both geographical regions (sub-watersheds) and potential sources of phosphorus affecting water quality.

In multiple New York State Department of Environmental Conservation (NYSDEC) documents, including priority waterbody lists and lake assessment program reports, phosphorus is considered the primary substance affecting water quality and the usability of the resource for both aquatic habitat and human uses. Due to this, phosphorus is the principal, though not sole, focus of this plan.

The objective of the Seneca-Keuka Watershed 9E Plan for Phosphorus is to identify specific actions to reduce phosphorus loading to the lakes and minimize the risk of cyanobacterial blooms and other threats to ecosystem services. The plans' format and content are consistent with the United States Environmental Protection Agency (USEPA) framework for watershed planning; they embrace a watershed approach and recommend specific actions in an adaptive management framework.

The 9E framework identifies sources and the magnitude of pollutants, determines water quality goals or targets, and defines pollution reductions needed to meet the goals. The Seneca-Keuka Watershed Nine Element Plan for Phosphorus describes the actions or best management practices (BMPs) needed to achieve the reductions that will improve water quality. Nine Element plans provide for preferred status in funding watershed remediation projects that are defined by these plans.

9E Program Development, continued

Strategies included in the plan are organized in six categories:

- Hydrologic Resilience: with the highest priorities identified as increasing storm flow resilience of streams; using green infrastructure to intercept stormwater; and conservation of high value natural resources such as steep slope forests, floodplains, and wetlands.
- Best Management Practices (BMPs) on Working Landscapes: with the highest priorities identified as acquisition, easements, and/or preservation of lands between agriculture or timberland and wetlands or waterbodies; increase participation in agricultural environmental management; and the use of BMPs such as planting cover crops on lands prone to erosion and nutrient runoff.
- Wastewater Management: with the highest priority of increasing the capacity and efficiency of wastewater treatment plants.
- Invasive Species Management: with the highest priorities identified as supporting/expanding the boat launch stewards program; installation of informational kiosks at boat launches; and invasive species outreach and educational initiatives.
- Local Laws: with the highest priorities identified as adopting open space conservation rules to preserve forests, wetlands, and other high value resources; and development of universal minimum sanitary standards.
- Education, Outreach, Economic Development: with the highest priorities identified as engaging watershed stakeholders in water quality protection activities; development of education and outreach programs; and distribution of educational material on water quality.

The Seneca-Keuka Watershed Partnership anticipates final approval of the plan by the NYS Department of State and the Department of Environmental Conservation in Summer 2022.

Stream Monitoring Program

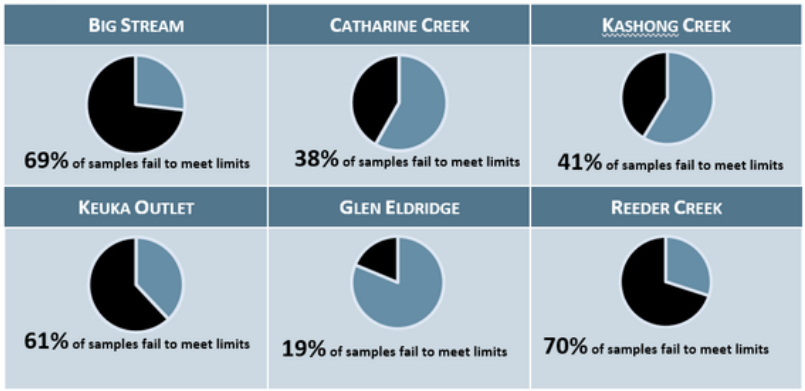
The Seneca Lake Pure Waters Association's stream monitoring effort is in its ninth consecutive year conducting water quality monitoring in streams listed in the tables below. In 2021, volunteers were able to collect water samples at multiple sampling sites in six streams located around Seneca Lake. Three streams, including Big Stream, Catherine Creek, and Keuka Outlet, had samples collected at the headwaters and the stream mouths entering Seneca Lake. Kashong Creek, Glen Eldridge, and Reeder Creek were sampled only at stream mouths. Each of the streams have unique conditions and characteristics that contribute valuable information to the monitoring program. In total, 45 samples in the six streams were collected from March through August 2021 for two baseline and two high-water sampling events. Pure Waters' partner in this monitoring, Community Science Institute of Ithaca, NY, performed the sample analyses.

All streams sampled show impaired water quality, in bacteria and nutrient levels in particular. Problems such as bank erosion and upstream runoff increase nutrient and bacteria loading to the streams and to the lake.

Stream Monitoring Program, continued

Streams often fail to comply with bacteria limits for swimming.

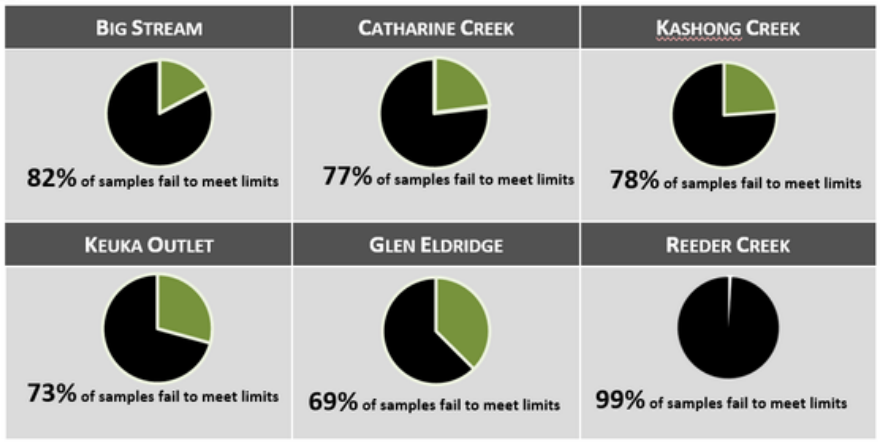
Shown are percentage of stream samples that fail to meet E. coli bacteria limit of 235 cfu/100 mL, results from 2014-2021.



All streams sampled show impaired water quality, in bacteria and nutrient levels in particular. Problems such as bank erosion and upstream runoff increase nutrient and bacteria loading to the streams and to the lake.

Streams routinely fail to meet phosphorus limits.

Shown are percentage of stream samples that fail to meet total phosphorus limit of 20 ug/L, results from 2014-2021.



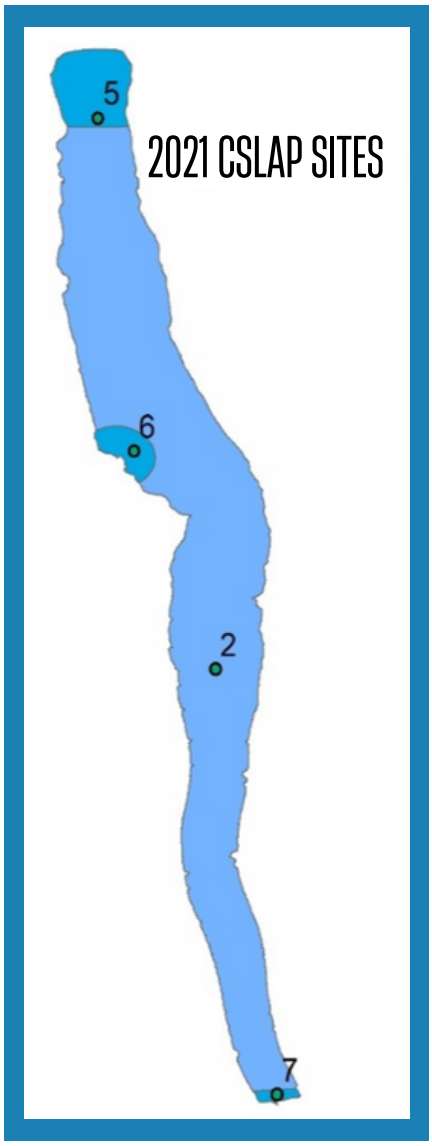
The major streams that enter Seneca Lake continue to show high levels of phosphorus, which can lead to algae overgrowth and contribute to harmful algal blooms. High levels of E. coli bacteria found in streams are a sign of contamination from agricultural runoff, sanitary sewer or septic system discharges, which remain an ongoing concern for quality of recreational and drinking water resources.

Pure Waters is continuing its sampling effort in Summer 2022 to better understand pollution in Seneca Lake, and to bring about further improvement actions. A big thank you to the Seneca Lake Pure Waters stream team volunteers who make this sampling effort possible.

Citizen Statewide Lake Assessment Program

Seneca Lake Pure Waters reinstated the Citizen Statewide Lake Assessment Program (CSLAP) on Seneca Lake in 2017 and continues to fund a portion of this program, with most current funding from the New York State Department of Environmental Conservation (DEC). Seneca Lake is one of 160 statewide lakes participating in CSLAP, which is administered by New York State Federation of Lake Associations (NYSFOLA) in coordination with DEC staff.

The CSLAP program collects lake water samples for nutrient level and biological productivity analysis. The DEC assesses each lake over time and produces reports on the health of each lake monitored in the state.



Pure Waters has 10 volunteers who sample in four locations—collecting shallow and deep lake water samples biweekly throughout the summer. The locations consisted of one mid lake location and three stream discharge locations at Geneva, Dresden, and Watkins Glen. The three discharge locations, classed as B grade water, are believed to contain higher nutrient levels than mid lake locations.

Samples are sent directly to a DEC-certified lab, Upstate Freshwater Institute (UFI), for analysis. The DEC supplies equipment, training, materials, and shipping.

The program is important for monitoring water quality and providing confidence or warning of emerging issues.

Lake Friendly Living

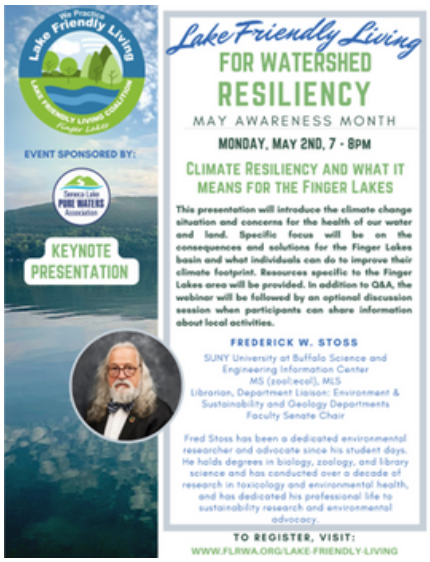
Love the Lake!

The Lake Friendly Living program continued to build momentum with 105 pledges by Seneca Lake watershed residents to adopt lake friendly practices around their homes. Lake friendly practices include easy techniques to minimize runoff and reduce pollutants—both are serious factors that impact the health of Seneca Lake.

The Spring of 2022 was a busy time with numerous events designed to educate and engage communities through live demonstrations centered around Earth Day celebrations and other climate focused activities.

The Seneca Lake Pure Waters Association is a founding member of the Lake Friendly Living Coalition of the Finger Lakes, a team of nine Finger Lakes associations. The coalition's aim is to develop and deliver educational information and resources to the public.

This year, the Lake Friendly Living Coalition's annual awareness program ran the entire month of May as opposed to just one week the previous year. Seventeen events were held, including ten virtual and seven live sessions. The theme of the series was "Lake Friendly Living for Watershed Resiliency."



Pure Waters hosted the keynote speaker event to kick off the month. Fred Stoss, renowned climate expert from the University at Buffalo, spoke on consequences and solutions for the Finger Lakes basin as it relates to climate change. Recorded webinars can be viewed at www.flrwa.org/lake-friendly-living. All webinars are free and open to the public.

Lake Friendly Living, continued

Take the Pledge!

This year, the Lake Friendly Living Coalition also coordinated commemorative resolutions among the NYS Assembly and Senate to provide for a combined legislative resolution for celebrating "Lake Friendly Living Awareness in the Finger Lakes Region."

Summer and Fall are excellent seasons for learning and applying Lake Friendly Practices. We encourage you to learn more at www.senecalake.org/lakefriendlyliving and start with taking the pledge!

Webinars and Education

Seneca Lake Pure Waters once again hosted a webinar series that engaged over 400 Pure Waters' members and the greater community throughout the winter and early spring months. The 2021-2022 webinar series began in December and hosted Dr. Lewis McCaffrey, Research Scientist from Le Moyne College, and Seneca Pure Waters' Board Member and HABs Director, William Roege. This one-hour Ebb and Flow webinar highlighted McCaffrey's research of Seneca Lake deep sea currents, their speed, direction, and cause, while Roege covered the unpredictable nature of the 2021 harmful algal bloom season.

The series continued in January, March, and May with a heavy focus on Climate Change in the Finger Lakes. Dr. Steve Shaw from the SUNY College of Environmental Science and Forestry presented 30 Years of Climate Science: What Do We Know and Not Know About Hydrologic Change in the Finger Lakes? Caroline Boutard-Hunt of Yates County Cornell Cooperative Extension and Heather Gilbert, owner of Finger Lakes Compost presented Healthy Land, Healthy Lake, which covered topics such as ecological gardening techniques, composting, and soil health.

Webinars and Education, continued

Fred Stoss of SUNY University at Buffalo as the Keynote Speaker during the 2nd Annual Lake Friendly Living Awareness Month presented Climate Resiliency and What it Means for the Finger Lakes. And finally, as Seneca Lake watershed residents deal with the effects of climate change and challenges of more severe storm events, Seneca Pure Waters hosted representatives from Gravity Renewables hydropower plant to teach us how the lake levels are managed on Seneca Lake in the webinar, Beyond Power: Hydropower on the Cayuga – Seneca Canal.

The monthly LAKEWATCH Newsletter continued another year around the sun, providing members and subscribers the opportunity to learn about the state of the lake, important water quality projects, educational and event opportunities, and Seneca Pure Waters' program updates. The LAKEWATCH Newsletter webpage also received attention and now includes highlights from past newsletters so members can easily find topics that interest them.

https://senecalake.org/lakewatch

Harmful Algal Bloom Program

The primary focus of the Pure Waters Harmful Algal Bloom (HAB) program is shoreline monitoring. In summer 2021, over 120 volunteers surveyed 84 zones, comprising over 80% of the shoreline, for 10 weeks starting the first week of August. The program started in 2014, with a call-in hotline and a couple of people chasing calls and has grown into a mature program in a few short years. In 2021, volunteers provided 818 observations.

After surveying their shoreline zone, volunteers report via a phone app whether they find a bloom or not. When they see a bloom, they describe the bloom and attach photos. This year there was no sampling as the New York State Department of Environmental Conservation (DEC) has changed to photo-only confirmations and Pure Waters decided to follow suit. Photo identification works very well.

Harmful Algal Bloom Program, continued

In 2019 and before, Seneca Lake had seen extensive blooms throughout the month of September. In 2020, there were only 15 blooms spotted all season. 2021 saw a more normal year, with 72 blooms during the season, but still far less than the 130 found in 2019. Of the 72 blooms, 53 occurred on just three days. In particular, October 6th saw 30 blooms reported around the lake—a record. Such a widespread and intense bloom that late in the season was a big surprise, but nearby lakes experienced intense blooms on the same day.

The offshore HAB monitoring program is still in the pilot stage. There still were not enough blooms to fully evaluate the reporting application.

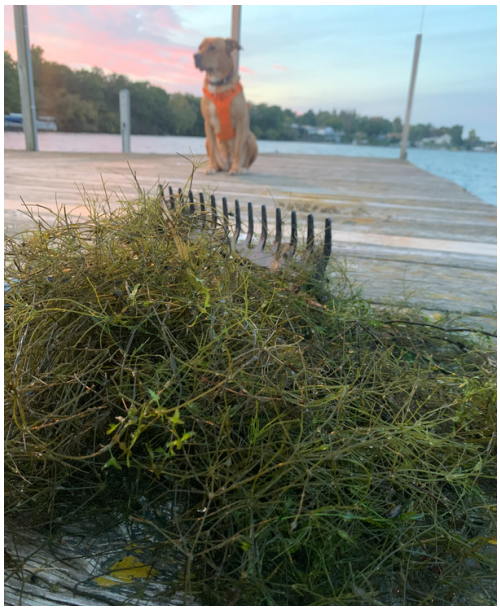
October 6th HAB in Geneva area

Research is another key component of the HABs program. Pure Waters provided a $6,595 grant to continue research on Seneca Lake with our partner Hobart and William Smith Colleges (HWS). The dock monitoring program continued into its third year and is a model for similar programs on other lakes. There are eight monitoring stations at key locations around the lake that gather important weather data and water temperature information every 30 minutes. Each station also has a time-lapse camera to capture HABs. In 2021, the cameras found about 12 HABs. The three years of data has provided insight into the near shore environment. This research project is complete.

The Pure Waters webpage **senecalake.org/Blooms** contains information about the HABs program and provides links for more information. In addition, the 2021 research report from Professor John Halfman is available there.

Invasive Species PRISM

Pure Waters participated again in the regional efforts to better characterize invasive aquatic plant species in Seneca Lake. The program is part of the New York State Partnership for Regional Invasive Species Management (PRISM) program. The regional PRISM program is funded and managed through the Finger Lakes Institute (FLI) at Hobart and William Smith Colleges.



The macrophyte (aquatic plants visible with the naked eye) survey process utilizes citizen scientists to identify invasive aquatic plants that are of concern. Pure Waters helps to recruit volunteers, while FLI/PRISM ensures that volunteers have the tools and materials they need to perform “rake toss” surveys, and to identify the plants they collect. Volunteers conduct surveys every two weeks throughout the growth season and report results to the PRISM staff, who then collate, analyze, and publish the data.

Findings in 2021 include:

- Starry Stonewort, an invasive species of significant concern, was found in the northwest region of our lake.
- No Hydrilla was found. Hydrilla is one of the most aggressive invasive aquatic plants threatening our lake. It is present in Cayuga Lake where a multimillion-dollar effort to eradicate it has been underway since 2011.
- Eurasian Milfoil is a prevalent invasive aquatic plant in the lake.

More focus will be placed on Starry Stonewort and its potential spread in the 2022 surveys. Potential management efforts could be initiated depending on survey results.

Invasive Species PRISM, continued

Pure Waters applied for and received a grant of $4,500 from the Great Lakes Commission to conduct an Aquatic Invasive Species (AIS) Landing Blitz in Summer 2022. The purpose of the Boat Launch Landing Blitz is to heighten awareness by fisherman and boaters on the lake, as well as the general public and media, to the threat of AIS and the importance of prevention controls.

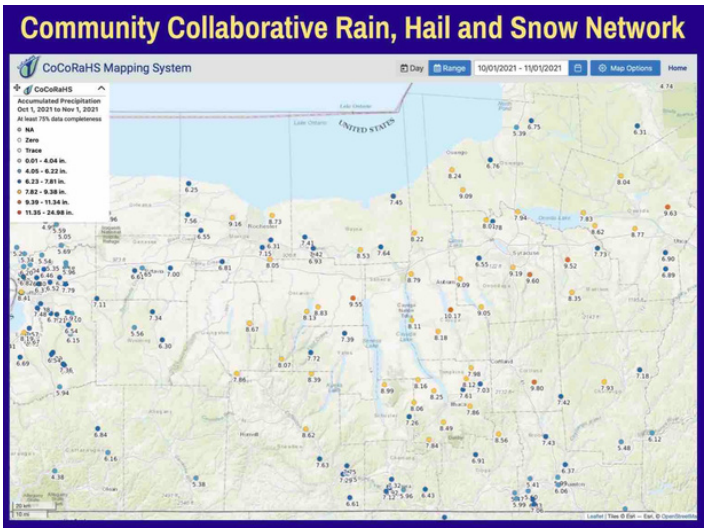
Three sites (Seneca Lake State Park, Sampson Marina, and Lodi State Park) that are not served by the PRISM Seneca Lake Boat Steward Program were selected for the focus of the Blitz activities. Seneca Pure Waters volunteers will assist the Landing Blitz Coordinator in providing AIS information to boat owners, surveying boats at the landings, and providing print flyers on "Clean, Drain, Dry" procedures, in which eight other "Great Lake states" will also participate.

Lake Level Monitoring

The Lake Level Monitoring Committee was established to monitor the water level of Seneca Lake, provide information regarding lake level to members, and implement a text message notification system to alert subscribers to possible hazardous conditions.

The Lake Level Committee hosted a webinar presented by Gravity Renewables in May 2022. Gravity Renewables owns and operates the hydropower plants in Waterloo and Seneca Falls which have been operating on the Cayuga-Seneca Canal since the early 1900s. Representatives of Gravity Renewables, Celeste Fay and Julie Smith-Galvin spoke about how the projects operate to maintain the water level of Seneca Lake. The presentation was recorded and is available on YouTube at **https://youtu.be/aJEvMrDdFMk**

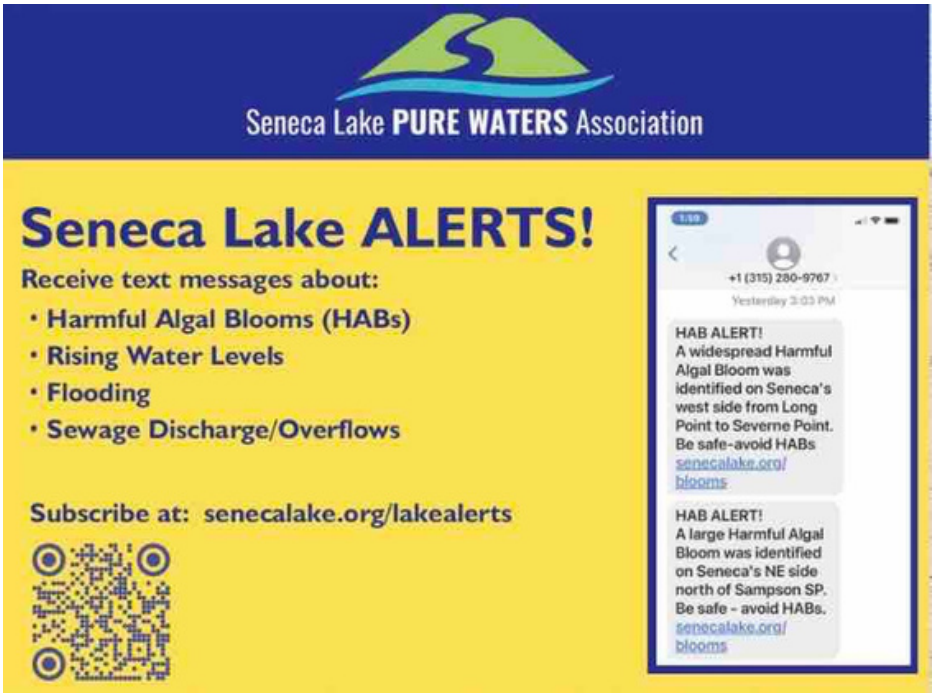
A few committee member volunteers are measuring rainfall and submitting their observations to the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) website. Observations are immediately available to the public via maps and data analysis tools, and to data users via the CoCoRaHS Web API. Data collected by CoCoRaHS volunteers are used by many professionals across the country—weather forecasters, hydrologists, water management, researchers, agriculturists, and climatologists. To learn more about CoCoRaHS or view precipitation data visit: **https://www.cocorahs.org**



The committee is participating in a citizen scientist project that measures and records the lake elevation to better understand changes in water quantity over time. At the end of May 2022, a lake level gauge was installed on a dock post at a committee member's property near Glenora Point. Lake level measurements are taken and submitted via the Lake Observations by Citizen Scientists and Satellites website twice a month.

Lake Level Monitoring, continued

This NASA-funded project is a collaboration between the Department of Geological Sciences at UNC-Chapel Hill, the UNC Institute for the Environment's Center for Public Engagement with Science, University of Washington Department of Civil and Environmental Engineering, and Tennessee Technological University Department of Computer Science. The lake height measurements combined with surface area measurements of the lake derived from satellite images will help researchers understand how the volume of water is changing over time. For more information about this project visit: **https://www.locss.org/**



The Seneca Lake Alert! text message notification system went live in June 2022. Service subscribers will receive text messages when hazardous conditions such as rising water levels, flooding, harmful algal blooms (HABS), or sewage overflows are occurring on Seneca Lake. Over 300 people have initially signed up to receive the alerts. Subscribe by visiting: **https://senecalake.org/lakealerts**.

Seneca Lake Fishery Initiative

Past Seneca Lake Pure Water Association surveys indicated member interest in addressing the perceived decline in the fish population in the lake.
In February 2022, Pure Waters met with the Finger Lakes Institute and NYS Department of Environmental Conservation to better understand the current knowledge of the Seneca Lake fishery and to discuss potential ways Pure Waters could help expand that knowledge.

The resulting first step is a three-year research project designed to understand the food chain for salmonids, specifically Lake Trout. FLI will lead this effort, while Pure Waters will provide financial support and volunteers. Other universities and NYSDEC will also collaborate.

The FLI research team gathers scales, heads, (a modest amount of) flesh, and most importantly, stomachs for examination and analysis. In order to get fish quickly, Pure Waters partnered with the 2022 Annual Lake Trout Derby by providing volunteers to man the weigh stations. Volunteers informed anglers about the research program and steered them to the FLI sample collection stations. The project was very successful, as 47 Lake Trout (out of a target of 50) were sampled as well as another 30+ salmonids for comparison.

In summer 2022, the researchers are completing the fish stomach content analysis. Results will be presented in Fall 2022.

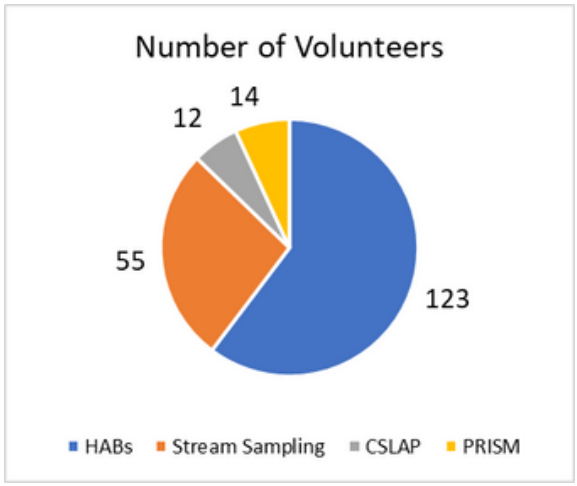
Finger Lakes Institute researchers dissecting a Lake Trout at the Lake Trout Derby, May 2022

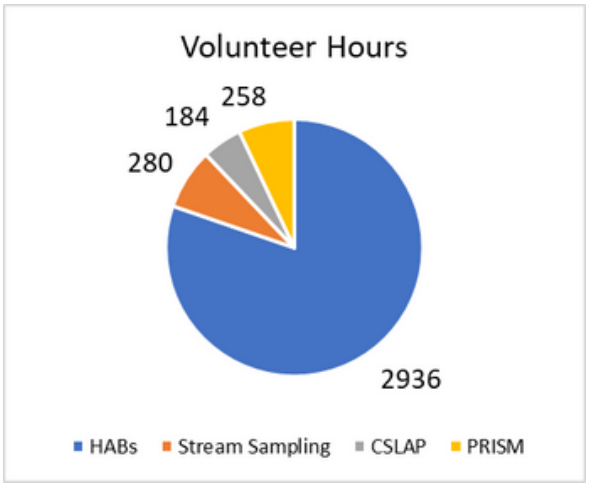
The NYSDEC is finishing a new fishery management plan for Seneca Lake. Once it is finalized, Pure Waters will sponsor a “state of the lake” presentation by the Region 8 fishery leadership.

Volunteers

Volunteers are the key to most Pure Waters water quality programs. In this fiscal year, over 200 volunteers contributed over 3,400 hours of their time working on water quality monitoring programs. The 3,400 hours equates to $68,000.

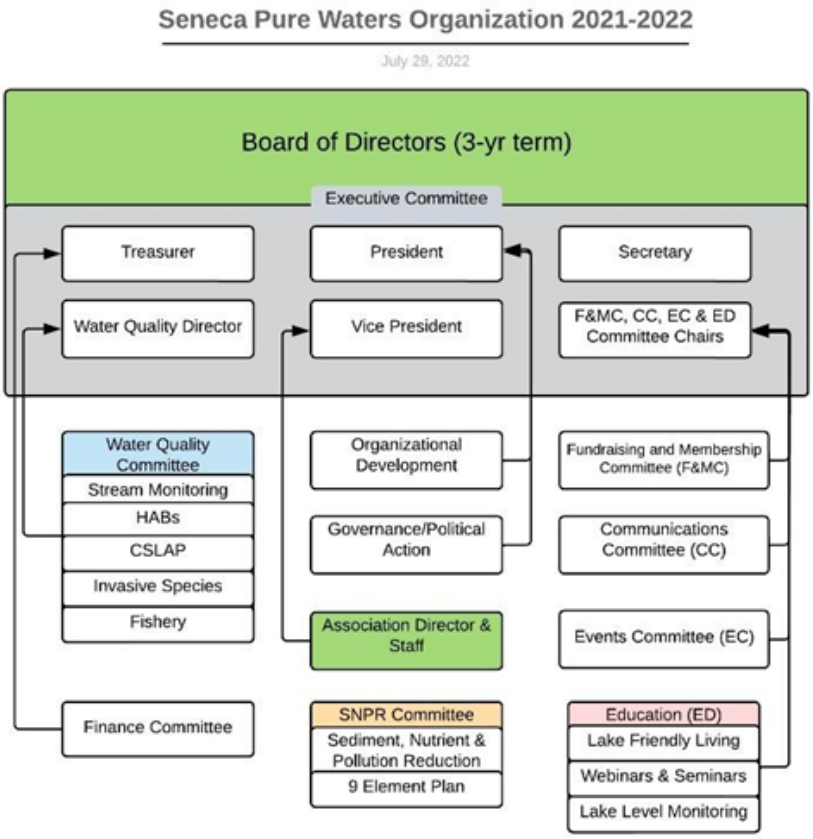
These two graphs show the estimated water quality volunteer contributions by monitoring programs.





Association Operations and Committees

Pure Waters adjusted its operating model during the fiscal year, changing from a Vice President for Operations overseeing committees and a Vice President for Water Quality to a single Vice President, while taking advantage of the full-time, experienced Association Director and stronger committee leadership. The Executive Committee is the coordinating forum, with all committees represented and accountable.



As the association grows, the administrative workload has become too much for one person. In Spring 2022, the association authorized and filled another part time position. Given the association's growth, this position may need to become full-time soon.

Kaitlin Fello
Association Director

Membership and Fundraising

Association membership continues to grow with active memberships totaling 970 at the end of the fiscal year, up from 712 the previous year (+36%). Business memberships were an emphasis area jumping from 42 to 122 during the year (up about 200%!).

Another initiative was dubbed "Neighborhood Connect." It focused on lakefront homeowners to encourage them to become members—a surprising number of lakefront homeowners are not members. This effort had modest success, but contributed to a rise in the number of individual memberships. Individual memberships rose from 670 to 848 (+26.5%). In the future, the lakefront effort will be folded into the traditional membership campaign.

Membership Tier	Number	Business Membership Tier	Number	Giving Level
Friend	144			$25
Supporter	283			$50
Partner	296	Bronze	102	$100
Protector	67	Silver	9	$250
Lake Defender	33	Gold	7	$500
Watershed Benefactor	25	Platinum	4	$1,000
Total	848		122	

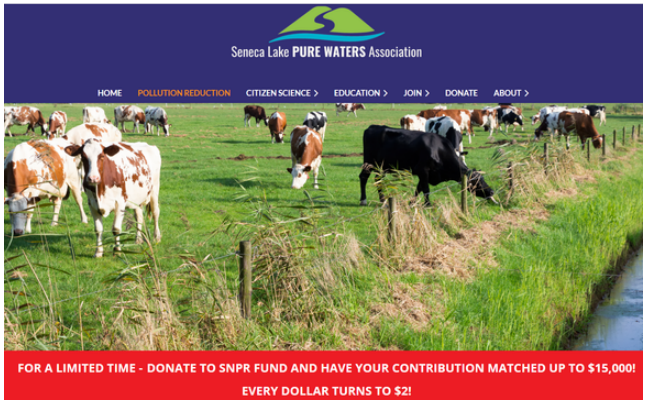
Table: Association membership as of June 1, 2022

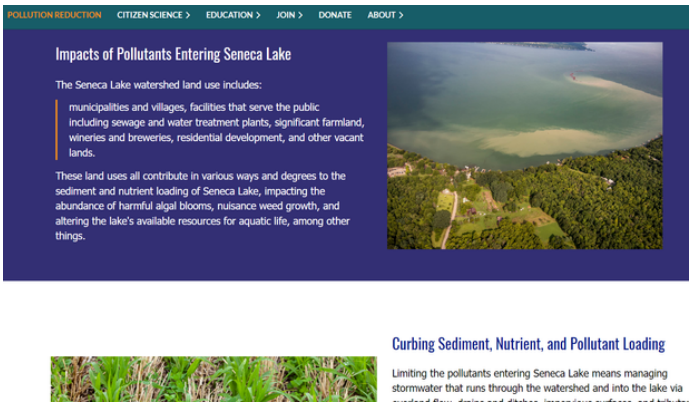
Fundraising efforts were very successful this fiscal year rising to over $140,000 compared to about $78,000 the previous fiscal year (up about 80%). The membership campaign and annual appeal both shattered previous revenue records. In addition, the association conducted a matching fund campaign to specifically fund the SNPR program. This was very successful, bringing in over $30,000 to get the program off to a good start.

The Fundraising and Membership Committee will continue its effort to increase revenues in order to fund continued program and staff growth. It will continue to actively pursue business partner memberships as well as try to encourage more substantial gift amounts.

Communications

Multiple additions were made to the Seneca Lake Pure Waters Association's website which now hosts the newest Pure Waters' program, the Sediment, Nutrient, and Pollution Reduction (SNPR) page: https://senecalake.org/SNPR. The SNPR page incorporates information about the program's mission and progress, as well as live updates on fundraising and Pure Waters' grant funded projects within the watershed. Significant improvements were also made to the Business Sponsorship page, underlining the importance of business support and highlighting those businesses who support Pure Waters' mission by donating to one of our many fundraisers throughout the year.

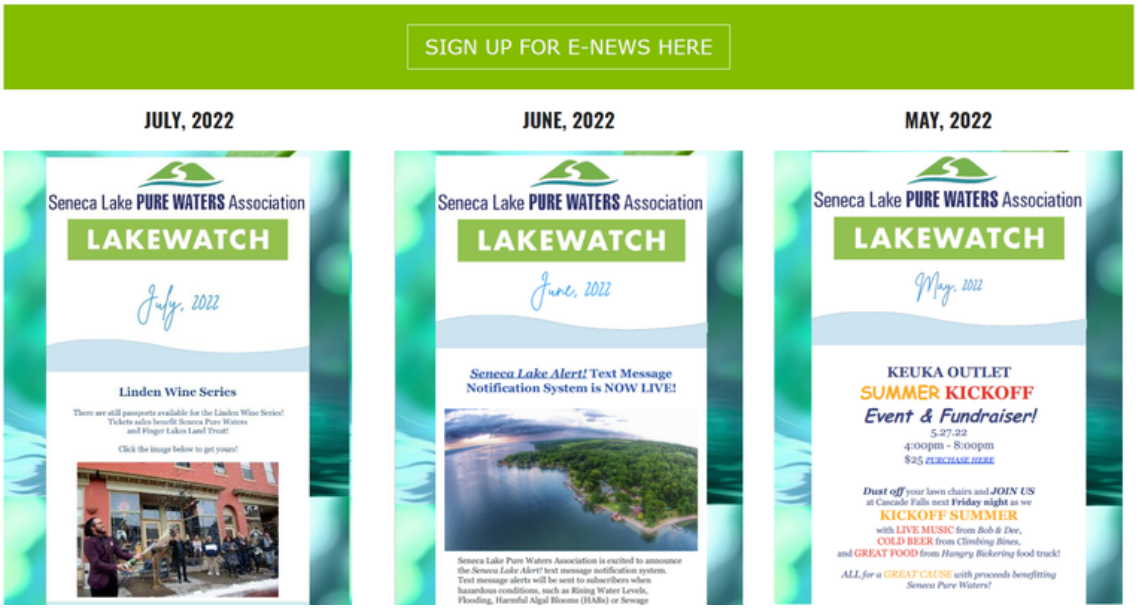




The committee additionally focused on making improvements, involving design and content, to other portions of the Pure Waters website, including the LAKEWATCH Newsletter page, Annual Report page, Blog page, and Business Supporters' pages. Social media was also strengthened with more consistent posting, especially regarding events, and by reviewing social media performance at each meeting. A volunteer spotlight social media post and newsletter article highlighting the work of a particular volunteer has also been planned for the near future.

Communications, continued

Members also expressed continued positive feedback regarding the LAKEWATCH and Bloom Watch online newsletters, which the communications committee discussed at monthly meetings. While LAKEWATCH is focused on year-round general organization and lake-quality news, Bloom Watch runs in the late summer to early fall to notify members about Harmful Algal Bloom sightings. As a supplement to notifications about confirmed HABs, the committee assembled informational articles to help Bloom Watch readers learn more about HABs, such as how to identify them.



The communications committee also provided support to the Lake Friendly Living program, particularly by assisting with social media posts and a radio interview to promote Lake Friendly Living Awareness Week in May. This radio broadcast was among others the committee coordinated with host Ted Baker of FingerLakes1 to help raise awareness of Pure Waters and its mission. Planning the promotion of webinars on social media, writing press releases on upcoming events, doing significant research for an online merchandise fundraiser, and coordinating a craft beer fundraiser involving multiple Seneca Lake breweries for Fall 2022 are among other ways the committee has helped communicate the importance of Pure Waters' work to protect, promote, and preserve Seneca Lake.

Events

Multiple new event opportunities arose in 2021 as Seneca Lake watershed residents became more accustomed to in-person gatherings while taking precautions to protect against Covid-19. Four volunteer appreciation events were hosted by breweries and wineries surrounding the lake, and we greatly appreciate the hosts of these events: Bottomless Brewing, Barnstormer Winery, Climbing Bines, and Hazlitt 1852 Vineyards.

Four successful fundraising events were held at Climbing Bines Brewery in July, Big aLICe Brewery in September, and Doug's Fish Fry – To Go in Watkins Glen both in July and October. Both brewery events included musical entertainment, food trucks, and brews, and Pure Waters collaborated with Big aLICe to create a new label for the canned Seneca Cream Ale, while proceeds from the entire month of September benefited the Association.

Seneca Pure Waters participated in numerous outreach events around Earth Day, 2022, including the Hector Earth Day and Speaker Series where Maura Toole, Lake Friendly Living Coordinator, spoke about the program. Pure Waters also participated in the Lodi Sustainable Education and SWAP Day, and gave in-person presentations in May, 2022 to the Chemung Audubon Society and the Geneva Rotary Club on the State of Seneca Lake and the Lake Friendly Living program.

Organization Development

The Nominating Committee name was changed to Organization Development this past year. With this name change came a redirection of activities and responsibilities for this committee. In the past, the Nominating Committee primarily focused on making sure the new line-up of Board members and officers was ready and available for the next term at voting time during the Annual Meeting. This responsibility continues for the Organization Development team. In addition, the Organization Development responsibilities include:

- Maintain a strong and healthy Board of Directors
- Ensure leadership roles are filled and succession plans maintained (officers and other key leaders)
- Oversee employee performance management and hiring practices
- Talent recruitment to meet ongoing organizational needs
- Manage recognition awards

Most importantly, the Organization Development Committee works to make sure there is a steady pipeline of new volunteers and leaders available to meet the growing overall demands of Pure Waters.

Financial Report

Fiscal Year 2021-2022 resulted in a healthy surplus for the organization, almost $90,000. This surplus supports a greatly expanded Sediment, Nutrient, and Pollution Reduction (SNPR) program in Fiscal Year 2022-2023.

The initial 2021-2022 budget projected an $8,000 surplus. The much larger surplus was a result of more than anticipated revenues and less than expected expenses. Despite COVID, revenues from all major fundraising initiatives were above planned levels. In addition, most water quality programs were not able to spend their budgeted funds for multiple reasons: the SNPR program took longer than expected to develop criteria and procedures, the stream monitoring program was unable to get a second storm sample, expected boat launch steward support was not needed, and the HABs program was not able to sample as much as planned.

Financials, continued

The fiscal year runs from June 1st to May 31st. The tables that follow show the financial status of the Association as of May 31, 2022.

Balance Sheet	2021-2022	2020-2021
Assets		
Bank Accounts	$222,210.23	$162,215.48
Accounts Receivable	--	--
Other Current Assets	$4,047.32	$5,425.98
Fixed Assets	$37,268.29	$37,611.84
Totals	$263,525.84	$205,253.30
Liabilities and Equity		
Current Liabilities	$5,924.65	$21,952.45
Restricted and Unrestricted Funds	$168,068.85	$137,914.34
Net Income	$89,532.34	$45,386.51
Total Liability and Equity	$263,525.84	$205,253.30

Revenue and Expense Summary	2021-2022	2020-2021
Revenue		
Grants	$33,758.20	$33,312.51
Annual Dinner	$21,225.55	$22,897.52
Dues/Donations	$140,527.85	$78,208.72
Other	$1,633.88	$4,264.37
Total Income	$197,145.48	$138,683.12
Expenses		
Water Quality Programs	$37,423.90	$29,602.23
Membership/Fundraising	$25,124.34	$14,304.40
Administration	$45,064.90	$49,389.98
Total Expenses	$107,613.14	$93,296.51

The jump in membership/fundraising expenses was due to a new accounting process that allocates labor expenses to specific activities instead of all being entered under administration.

Seneca Lake **PURE WATERS** Association

2021 - 2022 FISCAL YEAR
BOARD OF DIRECTORS

The Board consisted of 17 members after the 2021 Annual Meeting, but unfortunately lost two members during the year—both deceased. The board is authorized up to 30 directors and Pure Waters is aggressively recruiting additional directors. Having enough directors and other committee volunteers is critical to accomplish the Pure Waters mission.

Class of 2022
Kelly Coughlin (Geneva)
Peggy Focarino (Penn Yan)
Larry Martin (Penn Yan)
Bill Roege (Penn Yan)

All four of the Class of 2022 directors will be standing for reelection at the 2022 Annual Meeting.

New candidates, Class of 2025
Mark Gibson (Himrod)
Mark Petzold (Geneva)
Jill Ritter (Geneva)

Class of 2023
James McGinnis (Watkins Glen)
Maura Toole (Lodi)

Class of 2024
Steve Bromka (Romulus)
Thomas Burrall (Geneva)
Frank Case (Romulus)
Dan Corbett (Himrod)
Frank DiOrio (Himrod)
Ron Klinczar (Hector)
William McAdoo (Geneva)
Jody Tyler (Keuka Park)
Jacob Welch (Himrod)

Retired from the Board in 2022
Rich Adams (Geneva)
John Cooley (Dundee)