



Seneca Lake **PURE WATERS** Association

LAKEWATCH

WINTER 2023/2024



Photo by Kevin Colton

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ANOTHER SUCCESSFUL YEAR FOR SENECA PURE WATERS

BY BILL ROEGE

With 2024 before us, this is a good time to ask, “How are we doing with respect to our mission?” This article will highlight Pure Waters activities and accomplishments during 2023.

Pure Waters uses a very simple strategic approach summarized in the diagram shown. It supports its mission using four interrelated strategic themes: partnerships, volunteerism and citizen science, and education, all supported by an efficient and well-resourced organization. Of course, these are all a work in progress.

Efficient, Well-Resourced Organization



Volunteerism & Citizen Science

Partnerships

This year was the first full year that the collaborative Seneca-Keuka Watershed Nine Element Plan (9E Plan) has been in place. Pure Waters is part of the executive committee tasked with monitoring its progress.

Aligned with the 9E Plan, 2023 was the year the Sediment, Nutrient, and Pollution Reduction (SNPR) program came of age. The program was able to provide funding for five successful projects in the watershed. These projects actively help keep nutrients on the land and out of the water, preventing water quality issues including harmful algal blooms (HABs). The primary partners for the SNPR program include the county soil and water conservation districts and the Seneca Lake Watershed Steward.

Pure Waters supports a collaborative fishery research project with Hobart and William Smith Colleges, Finger Lakes Institute (FLI), and SUNY College of Environmental Science and Forestry (SUNY-ESF). Like last year, Pure Waters helped gather field samples of mostly lake trout (partnering with the National Lake Trout Derby on Seneca Lake) to help determine what the food chain looks like in Seneca Lake, as well as test for harmful chemicals in the food chain like mercury and PFAS (per- and polyfluoroalkyl substances).

Pure Waters connected and collaborated with the New York State Department of Environmental Conservation (DEC), especially Region 8 and the Finger Lakes Hub on a variety of topics. Pure Waters also routinely partnered with other lake associations to share ideas and information. These are important relationships, as they help us to be more efficient and not have to reinvent everything ourselves.

Volunteerism and Citizen Science

Pure Waters has three very mature water quality monitoring programs that continued this year: Citizens Statewide Lake Assessment Program (CSLAP), Harmful Algal Blooms (HABs), and stream monitoring.

These programs all involve partners too, but we have a substantial number of volunteers, close to 150 in total, who are involved in these citizen science activities.

The HABs program started a text alert system this year that over 600 people have signed up for. Prior to this year, the monitoring focused on nutrients and coliform bacteria. This year, new programs began to test for pollutants, specifically neonicotinoids (insecticides) and PFAS. These projects are in their early stages and the goal is to do significant testing in 2024.

Pure Waters also monitors for invasive species. The focus has been on aquatic plants. The aim is to get early detection for hydrilla and starry stonewort, which if allowed to get a foothold in the lake, would be very problematic. To that end, Pure Waters also conducted a “Landing Blitz” a couple of weekends during the summer to engage boaters and educate them on how to prevent invasive plants from spreading from lake to lake.

Education

Pure Waters has an active Lake Friendly Living program that collaborates with other Finger Lakes lake associations. This Finger Lakes consortium sponsored many webinars and seminars describing actions individuals in the watershed can take to help improve water quality.

Pure Waters uses newsletters (Lake Watch and Bloom Watch), social media, radio, and other methods to get the word out on a variety of relevant topics.

Efficient and Well-Resourced Organization

This year, Pure Waters was able to recruit another great set of new board members. This brings us to 20 - still some room to grow, but we are almost there.

The board members and our part-time staff member stepped up big-time this year during the process of replacing our Association Director. It was a big effort, both to keep the organization running smoothly and to go through the recruiting process. Luckily, Pure Waters found a great fit among a group of very qualified candidates. We are sure the new Director, Emily DeBolt, will uphold the high standards set by the previous Association Director.

Pure Waters continues to attract volunteers. It has been easier to find field volunteers, but we are getting a few to help with our many committees that keep the organization humming. (However, we need more!)

Fundraising is always a challenge, but Pure Waters is making progress. This year, we received a \$100,000 memorial gift in memory of one of our founding members, Howard Kimball. Most of the funds are allocated to special projects, which will further the organization's mission. Pure Waters also received a substantial grant from the Rose Foundation, which greatly helped fund the water quality monitoring programs this year.

Pure Waters is financially benefiting from a few interesting partnerships. The Linden Wine Series and a consortium of beer brewers are each contributing some of their proceeds to our organization. There is a nice synergy with these groups as it helps get our name out to more potential members.

Speaking of membership...growth was steady this year after modest gains the last three years. Our goal is to eventually get to 2,000 members from the 1,000 we have now.



Future

Pure Waters is certainly not standing still. In the next couple of months, the goal is to get the new Association Director up to speed and to ensure the new pollution reduction projects are ready to go as we head into the new year.

Next year, one goal is to continue improvements to the education program. A lot is being done already, but we need a better way to think about what we do in a broad sense and to coordinate it better. Finally, Pure Waters will continue to find ways to increase its human resources and financial resources. (There is a big need for education expertise and fundraising expertise to show the way, preferably through volunteers.)

Hopefully, this article has helped show how much Pure Waters is doing toward its mission, but there is so much more that can be done. With your help, Pure Waters will continue to grow and lead the way toward a future where the next generation will enjoy Seneca Lake even more than we do today.

Bill Roege
President
Seneca Lake Pure Waters Association



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DID YOU KNOW?

ON AIR

Each month, Seneca Pure Waters joins Ted Baker on the **FLX Morning Podcast** to discuss current topics regarding Seneca Lake water quality.

Check out Ted's most recent interview with Pure Waters President Bill Roege **HERE!**





A Note from the Association Director

EMILY DEBOLT

I am so excited to be joining Pure Waters to support the work of all our amazing members and volunteers. While Seneca Lake may be new to me – lakes aren't. Some of my best memories as a kid growing up were from summer trips to 'the lake' – a small lake in the Poconos in Pennsylvania where we would swim and fish from the dock and paddle the canoe in the evenings along the shoreline to try to find the elusive beaver that lived in the outlet.



All these years later- my husband and I make lots of family memories now with our boys much the same way. The lake may have changed, and the old aluminum canoe has been replaced with kayaks and SUPs, but the feeling and experiences remain largely unchanged.

Yes lakes are important indeed. For the environment, and for the critical role they play in regional biodiversity. But they are also important for the communities that depend on them and the people that love them. Even more important to note - these reasons are not at odds with each other as some may think.

The strength of the Seneca Lake community is tied to the lake itself and the sense of place it provides for us all. And our collective interest in the lake is a powerful tool that brings us together. Remembering the past with nostalgia, planning for the future, and imagining the next generation of lake stewards, all of this is grounded in our sense of belonging and identity that the Lake provides. And it makes us stronger than we might realize.



Pure Waters has been providing invaluable monitoring and water quality data for years through its volunteer citizen science programs. More recently the SNPR program has been able to support actual boots on the ground projects. Now we aren't just measuring the amount of phosphorus in the lake – we are actively able to help reduce the amount getting in in the first place! And with the Nine Element plan completed – we have an amazing road map for where we need to go. We know what we need to do and we know how to do it. Now we just need the resources to get the work done. It may sound like a daunting amount to be done still – and it is – but it is also incredibly exciting.

What a great way to be starting off the New Year – forging ahead with such an inspirational lake community to ensure a healthy Seneca Lake for future generations to come. I hope you will join us this upcoming year in protecting this one of a kind place.

"The strength of the Seneca Lake community is tied to the lake itself and the sense of place it provides for us all."

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Seneca Lake Fisheries and Contaminants

BY MARK PETZOLD

In 2022, the Finger Lakes Institute (FLI) and Pure Waters entered a three-year agreement to work together to gather data on the Seneca Lake Fishery. The FLI team consisted of Lisa Cleckner (FLI), Susan Cushman (HWS), and Roxanne Razavi (SUNY College of Environmental Science and Forestry [SUNY-ESF]).

The study is currently looking at three aspects of fish health:

1. Diet. Checking stomach contents (what the fish ate recently) and stable isotope analysis (what the fish ate over time).
2. Mercury level, which is tested using flesh samples.
3. PFAS levels, which is also tested using flesh samples. (PFAS stands for Per- and polyfluoro-alkyl substances, which are man-made chemicals that have been used in a wide variety of products since the 1940's. PFAS may cause health concerns including increased cholesterol, changes in liver enzymes, decreased vaccine response among children, an increased risk of kidney or testicular cancer, and an increased risk of high blood pressure and preeclampsia in pregnant women.)



Volunteers working at the fish study station



The FLI team collected fish samples at the 2022 Seneca Lake Trout Derby over the Memorial Day weekend. Collection tables were set up at Stivers Marina in Waterloo and Clute Park in Watkins Glen. After a fish was weighed, the angler was asked if they wanted to donate a portion of the fish for research testing. The team collected samples from 47 lake trout, 12 brown trout, nine rainbow trout, and six landlocked salmon. The samples were frozen at FLI and used throughout the year for testing.

Preliminary results of the study showed:

1. The fish diet is composed of approximately 70% alewife (invasive species) which is to be expected. There was also 4% sculpin which is a native fish.
2. The mercury levels (350 parts per billion [ppb]) in the lake trout are similar to level from the 2016 FLI study (320 ppb). The levels are still below the New York State Department of Health (NYSDOH or DOH) general advisory limit of 1,000 ppb which means the DOH considers 4 meals/month to be safe.
3. The PFAS levels were consistent with a recent EPA study (the study was across New York state, but no Finger Lakes were represented) and a recent DEC study specific to Seneca Lake.

In 2023, FLI and Pure Waters again collected fish samples (stomachs, flesh, and heads) at the Seneca Lake Trout Derby. The goal was to collect 10 lake trout, 10 landlocked salmon, 10 brown trout and 10 rainbow trout. The team fell just short on the rainbow trout, but collected additional stomachs for the food web analysis. The samples were collected by a team of 23 Pure Waters volunteers under the direction of Dr. Susan Cushman. Additional volunteers also helped with the weigh station activities.

Other fisheries related activities in 2023 included:

1. Interfacing with the DEC on reported alewife die-off that turned out to be caused by a parasite. A similar die-off happened in 2017.
2. Round Gobies have become established in the lake as the DEC netting this summer has confirmed. The invasive Round Goby is the natural predator of the zebra mussel. The Goby has been in Cayuga Lake for years and is the primary bait fish for lake trout. The invasive alewife and native sculpin have been the primary bait fish on Seneca Lake. The Goby may drive changes to the fishery and water quality in the years ahead.
3. DEC nettings has also showed the lake trout have fewer lamprey wounds and the next lamprey control treatment will be in 2024.



A new focus for Pure Waters in 2023 has been pesticides and contaminants testing in the lake.

1. Through a grant with the Rose Family Foundation, we have begun a stream testing program for neonicotinoid pesticides. Neonics are a class of pesticides used in many products across the world. One use allowed through the EPA loophole called the “Treated Article Exemption”, allows seeds coated with a regulated neonic pesticide to be distributed without any regulation. Cornell did a study that showed the plant only uses 5-10% of the pesticide coating the seed. As neonics are water soluble, the rest enters the soil and the watershed. Legislation called [The Birds and the Bees Act](#) has been passed in the NYS Legislature after sitting on Gov. Hochul’s desk for months. Neonics are hazardous to aquatic invertebrates.



Volunteers at the fish study station at Stiver’s Marine

2. The second lake testing effort funded by the Rose Family Foundation is for stream and lake testing for PFAS. The FLI effort has shown PFAS is in lake trout. This testing will help identify the sources of PFAS entering the lake. The Army Depot is a known PFAS source. Landfill leachate is full of PFAS. Waste Water Treatment Plants are also a known source.

Pure Waters is committed to identifying contaminants entering the lake. There are other known contaminants in the world wide aquatic environment such as microplastics and Hexabromocyclododecane (HBCD) that we will evaluate in 2024. We want you to know what is in the lake water.

PURE WATERS PARTNERS WITH ONTARIO COUNTY SWCD

Stabilizing of Castle Creek will Reduce Sediment and Nutrient Flows into Seneca Lake

BY TONY SHELTON

Castle Creek runs through the heart of the City of Geneva and empties into the north end of Seneca Lake. A portion of the stream near Brook Street is eroding fast and bringing unwanted sediment and nutrients into Seneca Lake so we partnered with Ontario County SWCD for this project at Castle Creek. At this site, they estimated the soil bank erodes at 6 inches per year! They proposed stabilizing 100 linear feet of the 6-8 feet high bank which would result in preventing an estimated approximately 22 tons of soil per year entering the creek.

Figures 1 and 2 show the eroding banks causing them to become unstable and releasing sediment, nutrients, and plants into the creek. Other partners included the City of Geneva Highway Department and the Ontario County



Figure 1



Figure 2



Department of Public Works which would support engineering, permitting, labor and equipment for project installation.

The total cost of the project was projected to be \$16,000 with Pure Waters contributing \$10,000. It was proposed that work would begin during the summer when the stream level would be low and be completed before the end of 2023.

The first step was to bring in large boulders (Figure 3) and this was done in August. Next, strips were dug into the banks to hold the boulders.

Boulders were placed in strips perpendicular to the stream to create “fingers” that stabilized the banks (Figure 4). Once boulders were in place, the banks were seeded with various grasses to reduce soil erosion.

The project was completed on schedule in October and met its design goals. Now we’ll be watching to make sure it does its job. When checked on Thanksgiving Day, it seemed like the boulders performed well during the fall rains. We’ll keep an eye on it next spring and beyond.



Figure 3. Boulders brought in to stabilize the stream banks



Figure 4. Boulders positioned and planted grasses stabilize the banks (October 2023)

ANOTHER SUCCESSFUL YEAR OF PLANTING

Pure Waters SNPR Teams with Schuyler County

BY RON KLINCZAR



Figure 1



Figure 2

The Schuyler County Soil and Water Conservation District (SWCD) has always been aggressive in combatting the causes of erosion, and this year was no different. Together with funding awards from Pure Waters Sediment, Nutrient and Pollution Reduction (SNPR) team, the County successfully completed both of its Cover Crop and Hydroseeding Programs.

A look at the topography of the watershed around Seneca Lake is revealing. The south end of the lake, in the area which encompasses Schuyler County, has the highest hillside elevations and related steep slopes. The SWCD, under the leadership of Jerry Verrigni, has for many years recognized the need to act to reduce the erosive conditions that can run soils into the lake.



The SWCD planted over eight hundred acres of farmland with cover crops throughout the County, with Pure Waters covering about one quarter of the seed cost. The SWCD used their high boy inter-seeder where necessary which allowed for cover crops to be planted prior to the main crop being harvested.

“Cover crops are one of the most cost-effective conservation practices we have in our toolbox”, stated Jerry Verrigni, Schuyler County SWCD Manager.

In addition, the SWCD hydroseeded over thirty-four miles of bare ditches. Hydroseed mix is a combination of seed, fertilizer, and a stabilizing paste which is sprayable from a moving truck. The seed mix includes rye which will germinate quickly and help to stabilize the coating until the perennial grasses sprout and fully anchor the soil.

More than six hundred tons of soil will be saved from erosion thanks to the work of the Schuyler County SWCD staff efforts. Pure Waters SNPR contributions to the seed purchases increased the amount of work the District could accomplish and steel meet their budget allowance.

The Seneca Pure Waters’ SNPR program continues to fund watershed improvement projects through important partnerships with the Soil and Water Conservation Districts. Visit our website at senecalake.org for more information!



 **The Finger Lakes PRISM is Seeking Volunteers!** 

The Hemlock Woolly Adelgid (HWA) is a destructive invasive insect that is threatening the eastern hemlock, one of our region’s most important tree species. The FL PRISM HWA survey is a volunteer-based program that aims to prevent the spread of these tiny pests, and you can help!

Either survey on your own, or attend an upcoming hands-on workshop to learn directly from experts how to survey, identify, and report HWA!

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Visit the **Finger Lakes PRISM website** for more information:
fingerlakesinvasives.org/invasive-survey/

STOP THE SEDIMENTS!

Partnership with Yates County SWCD Yields a Protective Solution

BY RON KLINCZAR

Soil Sediments carry phosphorus and nitrates, which cause nuisance weed growth, Harmful Algal Blooms (HABS), and which upset the food chain balance in the lake.

Recently, the Yates County Soil and Water Conservation District (SWCD) completed an erosion reduction project at Scout Vineyards in Penn Yan. Pure Waters Sediment, Nutrient and Pollution Reduction Program (SNPR) provided funding in partnership with the District and the landowner.

Phase I of the project stabilized three hundred feet of ditch which runs perpendicular to the lake and to NY 14. The original ditch suffered from erosion each time there was a storm event, due to the rush of upland waters which carried their own sediments down the slope. These sediments pass through a culvert under NY 14, down the steep embankment that is characteristic of the lakeside, and into Seneca Lake.



Figure 1: Tom Eskildsen, Yates Co. SWCD, and Daniel Budman, Scout Vineyards Owner at the completed ditch stabilization project.



Figure 2: Armormax stabilization fabric being mechanically fastened into place in the ditch



During the design of the project material costs of stone armoring began to rise and Tom Eskildsen, SWCD Senior Technician, informed Pure Waters that the project would be split into two phases of equal length to accommodate available funding. However, the District was able to redesign the project to save money using “Armormax” Soil Stabilization fabric in lieu of continuous stone fill.

The District placed stone at culvert openings and other areas where most appropriate including using it to tie down the ends of the Armormax fabric. They covered the Armormax with soil and hydroseeded to protect it. The cost savings means that the District will not need to ask Pure Waters for Phase II funding in 2024. The second three hundred feet of ditch stabilization will carry the work to the culvert that crosses under NY-14.

Pure Waters is committed to continuing funding for these types of projects all with the mission of keeping our lake clean. If you would like to be a funding partner, we can use your donation! [Visit our website](#) at for more information on how you can assist in lake stewardship.



Figure 3: Phase II of the ditch project is scheduled for completion in 2024. Note how erosion is cutting away at the bank.

In Memoriam

We extend our heartfelt gratitude to all those who have chosen to honor their loved ones' memories through generous donations. Your thoughtful contributions not only commemorate the lives of those dear to you but also make a meaningful impact in our mission.



Generous contributions have recently been made in memory of:

Judge David Brind

Carol DeSarno

Lois Gridley

Bill Moffett

Vincent Scalise

And in honor of:

Heather DeMoras

LAKEWATCH

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All of the funds raised by Seneca Pure Waters supports projects and programs that benefit the Seneca Lake watershed, the drinking water for residents, the economic value for business owners, and the quality of life for all who encounter it.

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Become a Pure Waters Volunteer!

It takes many hands to build and manage Pure Waters' programs. It also takes many hands to manage our overall organization.

That's where your skills come in.

We need your help supporting our organization as we work to deliver on our mission to Preserve, Protect, and Promote Seneca Lake water quality.

No matter what skills you have, we can put them to good use!

[CLICK HERE](#) to learn more about becoming a volunteer!

