Silver Lake Association Water Quality (SLAWQ) Updates
(November 05, 2024)

Dredging Project. Updates are received during the quarterly WCWRA (Wyoming County Water Resource Agency) meetings and Frank is a member. Unfortunately, the Oct '24 meeting was cancelled so we asked Scott Schrader (Wyoming County Administrator) for an update. [Scott replaced Steve Perkins as Wyoming County's lead on the dredging project.]

Scott's response of 11/04/2024 follows:

> *Frank,*
>
> *A new disposal site has not yet been formally identified. The DEC has responded to our permit application with numerous questions, one of which is disposal. We have reached out to DEC for guidance on whether land spreading with a lengthy (2 year) storage is possible or if the material can be taken outside the watershed area. We have advised that the County is abandoning its original plan to utilize the adjacent field given the archeological impact. I am planning on scheduling a meeting of the WCWRA in January to hopefully provide specificity on the County's next steps.*
>
> *Please be advised that my e-mail address has changed to sschrader@wyomingcountyny.gov*
>
> *Scott Schrader*
> *County Administrator*

Don't Rake in the Lake. We have been working hard to maintain Silver Lake's health and vitality. These efforts range from stream bed remediation and improving riparian buffers to improving our understanding of the complex interplay between the lake bed and surroundings.

Yard waste presents a significant historical challenge and SLA and CLEAN have worked with municipal and county leaders to minimize yard waste being dumped into Silver Lake. Excess yard waste breaks down and leads to increased organic load and increased nutrients in the lake. The added organic load causes problems for drinking water production. Given that Silver Lake is the drinking water supply to thousands of families in multiple municipalities, this is a major issue. Excess nutrients from decaying yard waste promotes aquatic weed growth and harmful algae blooms.

In '24 our "Don't Rake in the Lake" program purchased and distributed 1,000 leaf bags to our members and tract directors and arranged for two (2) dumpsters for yard waste disposal. These dumpsters are being used, but we have seen residents / contractors disposing of yard waste directly into Silver Lake. This is obviously unacceptable.

Several years ago we questioned the then DEC leadership about this issue and we were told there were no relevant laws. This seemed odd and we brought the matter up several times to our municipal leaders seeking new ordinances / laws only to be told there were no appropriate precedents. Frustrating!

During a recent meeting for the Local Water Front Revitalization Program (LWRP) with the new DEC Region 9 Director (Julie M. Barrett O'Neill, Esq.) and her staff we mentioned this issue again as art of a larger conversation. The Director, who is also a lawyer, thought there must be a suitable law.

After the most recent dumping incident into the lake we reached out to the DEC Region 9 leadership once again.

Julie's response of 11/01/2024 follows:

> *Dear Frank,*
>
> *Thank you for following up via Ryan regarding the leaf dumping issues on Silver Lake.*
>
> *Dumping of leaves in the lake is a violation of Environmental Conservation Law. The law applies regardless of who is doing the dumping - resident/homeowner, commercial company, etc.*
>
> *DEC's Law Enforcement Conservation Officers will gladly investigate dumping complaints and it sounds like our officers have advised property owners on this issue several times over the years. DEC's officers do routine boat patrols on the lake, and often check fisherman along the shore. You can call (716) 851-7050 at any time for complaints. It is also helpful when you can capture video or photos of any dumping, license plates or company names, together with dates and times.*
>
> *Your work in educating Lake residents, distributing yard waste bags, and providing dumpsters is fantastic support as well.*
>
> *We appreciate your efforts to keep Silver Lake healthy and clean.*
>
> *Best regards,*
>
> *Julie*
>
> ***Julie M. Barrett O'Neill, Esq.***
> *Regional Director, Region 9*
> *she/her/hers*
> ***New York State Department of Environmental Conservation***

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julie.barrett-oneill@dec.ny.gov

So, there is a law.

We have posted this new information on the SLA and CLEAN Facebook pages.

We have also forwarded this new information to the municipal leadership in the Village and Town of Perry and the Town of Castile requesting that they revisit the matter.

Aquatic Algae and Plant Management. In summer '24 we set-up a taskforce to look into these issues, explore options, and determine possible funding streams. Discussions with other NYS lake associations, Wyoming County Soil & Water Conservation District WCSWCD), a certified herbicide application vendor (A-TIP), and NYS-DEC took place.

Unfortunately, the individual chairing the taskforce resigned and nobody has stepped up to lead the group.

Despite this setback there are several strategies for managing aquatic weeds (macrophytes):

1. **Do Nothing.** Allows nature to takes its course. Weeds go through their natural growth and death cycle.
   Pro: Inexpensive / Cheap.
   Con: Not a solution. Residents will complain. Nutrients not removed.

2. **Benthic (Weed) Mats.** Shuts down plant growth by eliminating sunlight.
   Pro: Works very well for small nearshore areas (< 50 ft^2). Targeted. Homemade and commercial options available. Can cover larger areas with mat rotation schemes. Owner funded (SLA, CLEAN out of the loop).
   Con: Seasonal install / removal. Laborious. DEC permits. Does not remove nutrients.

3. **Chemical* Treatments.** Commercial vendor sprays to target specific, non-native species.
   Pro: Lawn service model? Target specific non-native species. In some cases, plants are killed. Homeowners work directly with the vendor (SLA, CLEAN out of the loop).
   Con: Cost depends on treatment area. Permitting required (vendor secures). Chemicals! Recurring $$s. Native plants could replace non-natives and problem continues; it just looks different. Does not remove nutrients. A co-funding model (owner, SLA, CLEAN, WCSWCD) may be necessary.

4. **Weed Harvesting.** Commercial vendor cuts and removes weeds from the lake.

Pro: Lawn service model? Target specific areas. Used in other NYS lakes. In some cases, plants are uprooted / killed. Homeowners work directly with the vendor (SLA, CLEAN out of the loop).
Con: Cost depends on area. Permitting needed. Recurring $$s. Nutrients are slowly removed. A co-funding model (owner, SLA, CLEAN, WCSWCD) may be necessary.

*There is an option to have an algaecide applied to treat algae at an additional cost (same Pros/Cons).

Aquatic Algaecide & Herbicide Treatment Service
A-TIP Control, Inc
5681 Zerfass Rd
Dansville, NY 14437
PoC: Luke Schmidt
luke@a-tipcontrol.com
585-732-4195 (cell)

Weed Harvesting Service
Aquatic Weed Control
PoC: Chuck Johnson
aquaticweedcontroll@gmail.com
585-770-8094

Walker Rd Bridge Replacement Project. The project has started and it is ongoing. Progress appears steady and has been reported on Facebook.

Drinking Water Source Protection Program (DWSP2). The project continues to move along.

Silver Lake Watershed Local Water Revitalization Program (LWRP) Waterfront Advisory Committee (WAC). This committee is led by Land Ethic Planning & Restoration (LEPR) with representation from the Towns of Castile & Perry and the Village of Perry, farmers, lake-front cottage owners, lake-front business owners, NYS Parks, and DEC.

There have been on-lake tours, tours of the Silver Lake State Park, and tours of the Silver Lake outlet area. SLAWQ team members and representatives from DEC Region 9 met on 09/26/2024 at the DEC offices in Buffalo to discuss Silver Lake. [We discussed one aspect of this meeting earlier in the discussion of yard waste dumping in the lake. Additional points are discussed below.]

Progress appears steady.

Japanese Knotweed (JK) Spraying. SLAWQ team members have surveyed all previously sprayed sites and touch-up treatments were performed. We will revisit these sites in spring ’25.

New infestations have been reported within the Silver Lake Institute (SLI). We have passed along relevant information to the SLI leadership and advised them regarding how previous efforts were funded.

A small infestation was recently discovered in Fairview North.

Citizens Statewide Lake Assessment Program (CSLAP). The ’25 campaign costs have been paid and we will continue with eight (8) samples per season.

Recent CSLAP reports for nearly all NYS lakes are available through the “CSLAP Dashboard”:

https://experience.arcgis.com/experience/c32878596a0a47deb5f97ea5e07ec9c5/page/Dashboard/

Silver Lake Bioreactor. The original Silver Lake Bioreactor project has been placed on hold.

WCSWCD staff are considering new sites. We suggested the original buffer planting site (Site P) as a possibility as a way to gain a foothold and secure before / after data.

During our recent discussions with the DEC Region 9 leadership they voiced strong support and interest in these types of projects and partnerships.

If one or more of these Bioreactor projects can get off the ground and prove to be beneficial, they would be an obvious target for inclusion within a LWRP.

Buffer Plantings. WCSWCD provided SLA / CLEAN with a list of potential sites.

We met in the field and discussed each site with the WCSWCD staff. The preference list follows:

Site #7 (Bacon Rd between houses 3271 and 3261). Potential site for shrubs or for a pollinator garden.

Site #31 (6574 Abbott Rd). Removal of non-natives. Potential tree and shrub planting site.

The site along the tributary paralleling Pvt Dr 1 was discussed too. It saw significant restoration work in 2017/’18 to create a plunge pool and reshape the tributary trek. This project was funded by WCSWCD, SLA, and landowners.

This area is currently infested with JK and the current property owner opted out of the original JK spraying effort. As a reminder the original JK eradication effort was funded by WCSWCD, SLA, CLEAN, and property owners with minimal cost to property owners (~5%).

Given the propensity of JK to displace most native plants, we feel JK issues must be addressed first prior to any planting efforts at any site. Also, based on our experience JK eradication can take several years, we should focus on other sites in the short term.

CLEAN / SLA Water Quality Golf Tournament. Planning for the 2025 event has begun.

Temperature Array. The Silver Lake temperature array has been working since it was rebuilt, repositioned, and reinstalled in '23.

The microprocessor was moved to be closer to the router, to better protect it from the elements, and to improve signal stability.

Data from the new array can be seen at the following web site:

https://karl.hanafins.com/silver-lake-thermocline-data---station-1

Water Steward. The Steward at the Silver Lake State Boat Launch did a wonderful job in '24.

We are working with Matthew Brincka (NYS Parks) to have a wash station on site for the '25 season. Ironically, providing a reliable water source to the power washer may be an impediment. A Tote tank might be an option.

Other DEC Region 9 Discussions (09/26/2024). We discussed strategies to manage excess nutrients in Silver Lake as a way to improve overall lake health and manage "weeds".

About 80% of the excess nutrients in Silver Lake are legacy nutrients meaning they are currently in the lake sediment. (All our efforts to remediate steam banks, etc. are focused on the 20% of nutrients that flow into the lake.) Given this, strategies to either tie these legacy nutrients up and/or remove them are preferable.

In the past alum was a treatment tool used to lower the dissolved phosphorous in freshwater lakes. Unfortunately, NYS DEC no longer allows alum treatments.

The plant matter removed during a harvesting and removal campaign contains nutrients. Thus, removal of harvested plant matter from the lake will eventually lower the nutrient load in the lake. Herbicide treatments, cut-and-drop harvesting, or benthic mats will not lower the nutrient load in the lake.

Hypolimnetic aeration (HA), also known as deep-water aeration, is a technique that supplies oxygen to deep water without disturbing the water's natural stratification. HA is used to increase oxygen in the water layer nearest the sediment which helps to keep the phosphorous tied up within the sediment layer. Dissolved phosphorous is the key nutrient feeding algae and plants. Keeping phosphorous tied up in the sediment keeps it from feeding algae and plants.

Another strategy for addressing excess nutrients within the sediment is to physically remove sediments with high nutrient loads. Clearly, this can become very expensive for a lake-wide campaign. Fortunately, we thought about this issue years ago and Todd Shuskey (Perry High School) and his students have mapped out the entire lake bed of Silver Lake and they have discovered there are nutrient "hot-spots". In principle these hot-spots could be targeted for nutrient removal efforts. (Todd's labs are unfortunately not certified by NYS. As such, sediment testing would need to be repeated, but we know where to focus any testing.)

All these efforts could become part of a LWRP.

New York State Federation of Lake Associations (NYSFOLA) Meeting. The 31st Western NYSFOLA meeting was held on 10/26/2024.

The SLAWQ representative left the meeting with three (3) useful bits of information:

a) The lecture by Prof Emeritus Greg Boyer, Emeritus Professor of Biochemistry, SUNY ESF entitled, "Rapidly Changing Cyanobacteria In A Changing World" Boyer's lecture focused on algae being populations and he went through the factors causing algae growth and more importantly leading to the **harmful** agents in harmful algae blooms (HABs).

b) A local vendor that offers weed harvesting services. Their contact information was given earlier. They operate like a lawn service. They have been contacted.

c) The "Lake Friendly Living" program at Canandaigua Lake. https://www.canandaigualakeassoc.org/education-outreach/lake-friendly-living/ This program has been created so it can be adopted by all watershed residents (Ag and lakers). We could create a similar program here at Silver Lake.