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Board of Directors:

Richard Ahola (Dundee)
James Bromka (Romulus)
Thomas Burrall (Geneva)
Oskar Bynke (Dundee)
James Carter (Burdett)
Daniel Corbett (Himrod)
John Flowers (Hector)
Paula Fitzsimmons (Hector)
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Jill Ritter (Geneva)
Barbara Schiesser (Dundee)
Mark VanDoninck (Hector)
Richard Weakland (Burdett)
Happy, Happy Birthday to us! For 25 years, Seneca Lake Pure Waters Association (SLPWA) has been working to enhance and preserve the waters of the largest of the Finger Lakes. We have worked to assure that lake levels are maintained within metrics dictated by the Hanson Rule Curve; enough (but not too much) water during the Spring, Summer, and Fall to meet the needs of recreational users of the lake, marinas, restaurants and agricultural interests, among others and a slightly lower amount during the Winter to minimize damage along the shore.

We have worked collaboratively with other organizations to assure that hydraulic fracturing for natural gas did not rob the lake of millions of gallons of water or suffer from the dumping of that contaminated water back into the lake, protecting the drinking water of more than 80,000 residents.

During the last several years, we have worked diligently with other organizations to thwart efforts by Crestwood to create a mammoth gas storage facility in abandoned salt mines near the lake. The questionable structural stability of these salt formations coupled with the development of lakeside brine storage facilities, is a recipe for a catastrophe. SLPWA, through its pro-bono legal counsel, Rachael Treichler, is currently challenging the State’s approval of the storage facility based upon the fact it has not had the legally required approval.

In addition to the above, our efforts for the past two years have focused on two areas; stream sampling for hazardous substances and harmful algae blooms (HABs). Using state certified labs, SLPWA has identified unacceptably high levels of phosphorus and E. coli flowing into the lake from Reeder Creek, Catherine Creek, Keuka Outlet and Big Stream. We have expanded stream monitoring to include other areas and I encourage you to view the details of SLPWA’s Stream Monitoring program on our website.

Most of what we have accomplished the last 25 years has been through the efforts of volunteers using modest grant money and member dues. We are proud of what we accomplished, but we want to do more. If you drink water, sail, swim, boat, fish, or just feast your eyes on the amazing sunsets on Seneca Lake, why not consider giving SLPWA a birthday present? A year’s membership costs less than dinner for one at a lakeside restaurant. We are a 501 (c)(3) organization, so donations are tax deductible. A modest (or grand) SLPWA birthday present just might assure that the water you or your kids or grand kids drink will be wholesome and the water they swim in will not make them sick. Who knows, maybe someday the fish might come back! Thank you for thinking of Seneca lake Pure Waters Association, Inc.!
25 YEARS AGO: THE FORMATION OF SENECA LAKE PURE WATERS ASSOCIATION

The first meeting of what would become the board of directors of SLPWA was held in August 1990. Those in attendance were well-known community leaders from Elmira, Watkins Glen and Geneva and were recruited by Howard Kimball of Glenora. Kimball chaired the meeting and after the Association was designated as a 501(c)(3) corporation, he became President of the Board.

Subsequent meetings during the fall resulted in the formation of a nine-member Board, with each member appointed to serve in a particular and significant role under the leadership of Kimball.

The Board approved a partnership with Hobart and William and Smith Colleges to provide research support resulting in the formation of the Finger Lakes Institute, accepted a $70,000 grant from the Tripp Foundation to finance its first year expenses, agreed that the primary functions of the Board would be fund-raising and membership development and appointed Mary Ruth Sweet as its Executive Director. With this foundation, the Seneca Lake Pure Waters Association was prepared to fulfill its mission to protect the pristine waters of our beloved Seneca Lake.

ANNUAL MEETING

Jim Carter

Article I. Section 2. The by-laws of Section 2 state that an annual meeting of the members of the Corporation shall be held for the “election of members of the Board of Directors and for receiving reports of Officers, Directors, and Committees, and the transaction of other business.” The annual meeting shall be held on a date, time, and place fixed by the Board. This year the annual meeting will be held on September 14, 2016 at Glenora Wine Cellars in conjunction with the 25th year celebration. Annual reports are included in this Lake Watch edition and must be mailed to members “at least ten days but not more than 40 days before the time appointed for the meeting.”

Board terms are expiring for seven Board Members. Some have indicated they wish to continue, others not. Any member of the Association is eligible to serve. If you are interested in serving on the SLPWA board, please contact one of the following nominating committee members: Barb Schiesser, Rich Ahola, Bob Kayser, Jim Hazlitt, Jim Carter, Jill Ritter and Addison Mason or email slpwa@senecalake.org.
Members and Supporters of SLPWA are cordially invited to the

ANNUAL MEETING & DINNER
Wednesday, September 14, 2016 at 5:00 pm

@ the tent at Glenora Wine Cellars, 5435 State Route 14, Dundee

Guest Speaker
Dr. John Halfman
Professor of Geolimnology & Hydrogeochemistry
Inaugural Finger Lakes Institute Endowed Chair in Environmental Studies

5:00 pm Silent Auction Bidding, Cash Bar and Music by Bob and Dee
6:00 pm Picnic-style Buffet Dinner
7:00 pm Brief SLPWA Board Meeting and Closing of Silent Auction Bids
7:15 pm Guest Speakers:
   Dr. John Halfman—The Changing Health of Seneca Lake Since 1990
   Mr. Richard Weakland—Drafting a Strategic Plan for SLPWA’s Future

Registration Form for Annual Meeting and Dinner – September 14, 2016

Name(s): ____________________________________________________________

Address: ______________________________________________________________________________________________________

Phone: ____________________________ Email: _______________________________________________________________________

# Attendees: _______ ($35.00 Per Person, Tax Deductible) □ Vegetarian Option

Gift Amount: ___________________________________________ Total Enclosed: __________________

Please register by September 1, 2016 by mailing registration and check made out to SLPWA:
Seneca Lake Pure Waters Association, P.O. Box 247, Geneva, NY 14456
ACHIEVEMENTS

Stream Monitoring Program:

SLWPA’s Stream Monitoring Program consists of over sixty volunteers obtaining water samples four times throughout the year from four different streams that flow into Seneca Lake. Each stream is sampled in four different locations and samples are taken during normal flow and high flow conditions. The Community Science Institute (CSI) analyzes the water samples and provides SLWPA with the results. SLWPA and CSI present the results at regional “What’s in Your Watershed” meetings and on their respective websites.

Last year, SLWPA took samples at Catharine Creek (Reading), Big Stream (Starkey), Reeder Creek (Varick) and the Keuka Outlet (Torrey). These streams represent 75-80% of the total inflow from streams into Seneca Lake. The results point to serious problems affecting the quality of water in Seneca Lake including high levels of Phosphorus, Nitrates, E.coli and Coliform; all streams sampled had levels above the DEC recommended levels at some point.

Based on the results of the Stream Monitoring Program, Reeder Creek was placed on the NYS Department of Environmental Conservation (DEC) Impaired Water Body list and the village of Dundee decided to re-evaluate upgrade plans for their Waste Water Treatment Plant (WWTP).

Harmful Algae Blooms (HABs):

SLPWA HABs Hotline received seventeen reports of suspicious algae blooms last summer. Three of the blooms were laboratory-confirmed, blue-green algae blooms. SLPWA alerted the public and urged them to use caution when in the proximity of the three toxic blooms found at Kime Beach (Seneca County), Severne Point (Yates County) and Serenity Road (Yates County).

Potential Threats from Industrial Development:

SLPWA continues to monitor the development of businesses that may have an effect on the lake:

- LPG Storage project in the Town of Reading, near Watkins Glen.
- Greenidge Power Plant and Lakewood Ash Landfill in the Town of Torrey, near Dresden.

Lake Level:

SLPWA met with Seneca Falls Power Corporation (SFPC) to better understand the lake level and establish a process to report lake level concerns to SFPC.

FINANCIAL REPORT

Fiscal Year June 1, 2015 – May 31, 2016
MOVING TOWARDS A NEW STRATEGIC PLAN

Rick Weakland

This year’s annual meeting for the Seneca Lake Pure Waters Association (SLPWA) celebrates 25 years of Seneca Lake stewardship. The annual meeting and dinner to celebrate this milestone will be held September 14, 2016 at Glenora Wine Cellars. The program for the evening will include review of a draft strategic plan and opportunities for attendees to provide input necessary to finalize the plan.

Seneca Lake water quality is changing in a direction that may not bode well for the future. Long-term studies by the Finger Lakes Institute and others show that the lake has moved from a pristine, weed-free, algae-free water body (oligotrophic) to one that produces weeds and algae as a result of increasing nutrient levels in the lake water (mesotrophic). Over the past three years, SLPWA has studied the water quality of the streams that feed Seneca Lake. This work shows that these streams carry nutrients higher in concentration than the water found in the lake. Left unchecked, the nutrient levels in the lake will rise and the production of weeds and algae in the lake will continue to rise, including harmful algae blooms.

SLPWA hopes to alter the present trend by providing a scientific basis to identify point and non-point sources of nutrients and hazardous substances entering the lake. SLPWA is collaborating with the Community Science Institute in Ithaca to provide a basis for educating property owners, communities within the Seneca Lake watershed and the general public about the issues identified and actions that can be taken to restore the lake to its former pristine condition.

Three education priorities have emerged from preliminary discussions by the SLPWA board of directors:

(1) a need for education on best practices for watershed management and actions to manage and reduce nutrients entering the Lake with farmers, municipal highway departments, property owners, developers and others;

(2) a need for education and support to encourage uniform sanitary laws and best practices related to septic tanks within 1,000’ of the lake;

(3) a need for education to enable direct efforts by municipalities, property owners, boaters and others to combat and prevent invasive species and their impacts in the lake. Each of these priorities depend upon a continuation of the stream monitoring, harmful algae bloom (HABs) shoreline monitoring and other future studies of lake and watershed conditions to better understand emerging conditions in the lake, their causes and opportunities to remedy the problems identified.

It is clear to the SLPWA board of directors that a greater level of organization and effort is required to restore Seneca Lake. To that end, three organizational priorities have emerged from recent discussions:

(1) there is a need to increase the SLPWA membership base, funding and other resources dedicated to restoring and protecting the lake;

(2) it is clear that SLPWA cannot undertake this effort alone and must collaborate with regulators, such as the NYSDEC, research groups like the Finger Lakes Institute and the Community Science Institute and local governments, most likely through the emerging Seneca Lake Watershed Inter-municipal Organization; and

(3) through a broader membership base and collaboration with other stakeholder groups it may be feasible to leverage larger grants and donations to facilitate implementation of the education priorities above, as well as implement projects aimed at remedying identified problems in the lake.

SLPWA’s annual meeting provides an opportunity to discuss these ideas and incorporate the inputs of SLPWA members, prospective members and partners. Please plan to attend and be prepared to react to the priorities outlined above with your thoughts and inputs. We are serious about mapping a new strategic plan to launch the next 25 years of SLPWA stewardship related to Seneca Lake.
The 2016 summer season on Seneca Lake is shaping up to be very different than what we experienced in 2015. The lack of rain and major storms this year means that we have not had an opportunity to sample the high water run-off events that can bring much pollution into the lake. The good news is that the lake is not suffering from the effects of run-off pollutants. We are likely to see some major storms, and the stream monitoring team is poised to capture the events. We are budgeted to take samples for two high water events this year.

Our first two years of this program have shown high levels of nutrients, especially phosphorus, entering the lake. Bacteria flows into the lake at all times, but is especially exacerbated in storm run-off events. These results vary by stream (Catharine Creek, Big Stream, Reeder Creek, and Keuka Outlet), but all results indicate problematic levels. Detailed data and conclusions can be found at the SLPWA website and the website of our partner in this effort, Community Science Institute (CSI) of Ithaca, NY.

In early July, we conducted the first of two synoptic (same day for all streams) sampling events. Water was low due to drought conditions, but we had enough good flow in all cases. This is the lowest stream flow sampling event that we have had in more than two years and should provide an interesting benchmark for nutrient and bacteria levels. We are maintaining our sampling efforts on the four streams previously evaluated. A site in Penn Yan (Jacob’s Brook) was added to the Keuka Outlet study in an effort to better isolate the source of very high phosphorus levels identified in the storm run-off event tested in 2015.

We have received additional funding this year to allow the evaluation of Kashong Creek. This watershed is of interest based on historic data and a high level of agriculture use in the area. Sampling of this stream will occur on a different schedule, focusing on late fall and spring when significant flow is available. We are poised now, with a newly trained team to capture a storm run-off event should one occur.

The team will be busy this summer collecting data and incorporating results into the past findings and conclusions. We will plan to communicate the updated results in upcoming LakeWatch newsletters as well as in public meetings around the lake this fall.

Thanks go out to all our 80+ stream sampling volunteers for their continued efforts, and also to our major funding sponsors; Tripp Foundation (Dundee, NY), Freshwater Future (Petoskey, MI) and SLPWA membership support.
**Volunteer Recognition**

SLPWA would like to thank the volunteers that help us accomplish our mission.

### HABs Shoreline Monitoring

Dave Bollech  
Jim Bromka  
Kenneth Campbell  
Jim and Lois Carter  
Dan Corbett  
Robert Crawford  
Susan Davie  
Patty Dawson-Elli  
Linda Downs  
John D and Anne  
Nancy Fulkerson  
Jim Gillio  
David Granzin  
Mimi Gridley  
Eric Happ  
Emily Hauck  
Andrew Herkovic  
Adrianna Hirtler  
Dana Hollenbeck  
Gary Judson  
Jeanne Judson  
Alan Kiehle  
Liam Maher  
Larry Martin  
Susan Martin  
Addie Mason  
Gerald Masucci  
Eileen Moreland  
Kirk Peters  
Ed Przybylowicz  
Jill Ritter  
Mary Rose  
Turk Rose  
Alida Schamel  
Nate Schamel

Bob Schiesser  
Jim Smith  
George Thompson  
Matt Tierney  
Pam Tierney  
Thomas Tierney  
Connie Vangorden  
Rick Weakland  
Sally Webster

### Stream Sampling

Dick and Liz Adams  
Nadine Bocek  
Mary Bogin  
Dave & Linda Bollech  
George Bulin  
Jim & Lois Carter  
Steve & Carol Clendenin  
Dan Corbett  
Laurie Corbett  
Noreen Nolan & Robert Crawford  
Fred Crusade  
Elaine Dalrymple  
Susan Davie  
Bridgette Dean  
Ray DeRuyter  
Lou, Carol Desarno  
Frank & Nancy DiOrio  
Tim Dunlap  
Anne & John Elder  
Paula Fitzsimmons  
John Flowers  
Max Freeman  
Nancy Fulkerson  
Sayre Fulkerson  
Greg Gaffin  
Fred Geyer  
Louella (Ellie) Gilbert  
Dennis Gildea  
Mimi Gridley  
Eric Happ  
Carol Hardy  
Jim Hazlitt  
Michelle Holgate  
Bob Huber  
Alan Kiehle  
Roger Kjar  
Tom Lochner  
Ted Marks  
Mary Anne Marks  
Larry & Susan Martin  
Addie Mason  
Gerald Masucci  
William McAdoo  
Janet Meaney  
John & Eileen Moreland  
Kirk Peters  
Faye Phillips  
Shelly & Dan Pletcher  
Norma Press  
Ed Przybylowicz  
Bobbi Przybylowicz  
Robert Putnam  
Jim & Audry Riesenberger  
Jill Ritter  
Mary Rose  
Bob Schiesser  
Sam & Carol Shama  
Dan Strong  
Peg Thompson
The summer of 2016 is the third year in which SLPWA has had an active program to alert residents and users of Seneca Lake regarding harmful (toxic) algae blooms that may appear on Seneca Lake. Unusual looking blooms, which were confirmed through laboratory analysis in 2015 as being HABs, were initially reported by observant people through a SLPWA “hotline.” In a collaborative program with the New York State Department of Environmental Conservation (DEC), photographs and samples of blooms were evaluated. Three of the 17 reported instances of unusual blooms were confirmed as cyanobacteria (HABs) at levels that exceeded health safety thresholds for human and animal contacts.

This summer, in collaboration with the DEC and the Finger Lakes Institute (FLI), SLPWA established more comprehensive monitoring of the occurrence of unusual algal blooms around the lake. Beginning in July and ending October 1, 2016 a weekly shoreline survey is carried out synoptically (same day) in 32 shoreline “zones” that range in size from a few hundred feet to more than a mile, by 45 volunteers who have gone through a two-hour, DEC training program. These volunteers assess the near-shore waters of the lake looking for any unusual algal blooms. Weekly reports on the condition of the water and shore in these zones are filed. If unusual algal blooms are present, the volunteers are prepared to take photographs and samples for further analysis by FLI and DEC experts.

The purpose of this comprehensive assessment through this summer is (1) to alert users of Seneca Lake and its waters to possible hazards associated with local HABs blooms and (2) to learn more about the conditions on Seneca Lake that generate these unusual blooms with the goal of finding ways to mitigate their occurrence in the future.

SLPWA continues to operate both a telephone hotline (1-800-220-1609) and a special email address (senecahabs@senecalake.org) for use by anyone who observes an unusual algal bloom on the lake at any time. These hotlines will alert the volunteer network to promptly investigate such blooms.

The characteristics of HABs blooms on Seneca Lake, given its size and variable wind and water conditions requires that when a bloom is observed quick response is needed to record its characteristics and capture samples. Experience has shown that these blooms sometimes change location and appearance in short periods of time.

A comprehensive program such as the 2016 HABs project could not be done without the dedication and work of many volunteers who are committed to improving the quality of Seneca Lake.

This report is being written during the first week of the HABs shoreline survey work (July 11-17, 2016). One bloom sample was taken for laboratory assessment, but most of the shoreline reports indicated that the lake was free of HABs blooms. Some shorelines reported heavy algal growths of other types of non-toxic, but nonetheless undesirable species which limit the use of the shore for swimming and boating. Nutrients are necessary for all algae to thrive in the lake. Other SLPWA programs are addressing the issue of nutrient build up in the lake.
Have you noticed the green shorelines and algae streaming off of the rocks in your lake this summer? Residents of Cayuga and Seneca Lakes have been reporting lots of algae sightings - both in the water and washing up on shorelines.

What exactly is this algae and is it dangerous?

Much of the algae is Cladophora, including those long strings of algae hanging on rocks. Cladophora looks dark green and is often attached to hard substrates such as rocks, break walls, and docks. Since it propagates on the bottom of lakes it is referred to as ‘benthic algae’. To the left is a picture of a rock from Seneca Lake with Cladophora attached.

However, other algae can grow on top of Cladophora and aquatic plants. This algae often appears to be finer and silkier and is brighter green color. To the right is a picture of some aquatic plants in Seneca Lake covered in filamentous algae. And, here is a link to a video shot at Cayuga Lake in late June showing the underwater view of the filamentous algae attached to Eurasian water milfoil and other macrophytes:

https://www.youtube.com/watch?v=QsFf6Z-umYM.

From some microscopic analysis done at the FLI on the algae attached to plants, Spirogyra is the dominant algal genus, but there are also occurrences of other filamentous genera including Ulothrix, Zygnema, and Mougeotia, among others. All of these algal genera are classified as green algae.

Green algae are not known to produce toxins like cyanobacteria or blue-green algae can. But, the green algae can be a nuisance that hinders aquatic recreation including swimming. Further, the green algae can foul beaches when wind and wave conditions result in sloughing of the algae from where it is attached and it washes onto shore. While sitting on shore, decomposition of the organic material can start to occur resulting in unpleasant odors. And, the sloughed algae can also harbor bacteria and other potential pathogens in...
near shore areas. This phenomenon has been investigated extensively in the Great Lakes and more information about pathogens and algae can be found at [http://greatlakesbeaches.usgs.gov/publications/2009-1%20Cladophora.pdf](http://greatlakesbeaches.usgs.gov/publications/2009-1%20Cladophora.pdf).

The growth of green algae and Cladophora specifically is dependent on the presence of substrate, light, and temperature. Growth of Cladophora is tied to the amount of nutrients available and excessive growth has been linked to the levels of biologically available phosphorous.

**What does this have to do with invasive species?**

Extensive beds of invasive quagga and zebra mussels are good substrates for Cladophora to attach. Furthermore, the invasives are very good filter feeders and can process nutrients from sources including non-point runoff from agriculture, streams, septic systems, and wastewater treatment plants that then become available to fuel Cladophora growth. And, the filter feeding invasive mussels have removed much plankton from the water resulting in increased light penetration in many lakes thus enabling benthic algae to grow at deeper depths. Thus, the presence and growth of Cladophora and invasive mussels are very tightly linked.

**New benthic algae study at the FLI**

In order to understand better nearshore nutrients and the growth of benthic algae, the FLI has been conducting a study of benthic algae on Cayuga Lake this season. This study has been funded by NY Sea Grant and is part of the small grants demonstration program that NYSDEC has initiated through the Great Lakes Action Agenda.

Starting with water sampling in April, we have been documenting the growth of benthic algae at six locations between Union Springs and Aurora every three weeks. We are also working with the Cayuga Lake Watershed Network and a citizen science group, the Canoga Shoreliners, on some tributary sampling through late summer and early fall to look at potential nutrient sources to the lake.

This project has an educational component to inform residents of the differences between benthic algae and cyanobacteria blooms, which are frequently confused and lead to misreports of harmful algal bloom events. These false alarms can become a resource burden to local and state agencies trying to assess harmful algal blooms and the production of toxins. The project is expected to be completed in early 2017, but we are looking for other pictures of benthic algae from around the Finger Lakes. If you have some to share, please contact Lisa Cleckner via email: [cleckner@hws.edu](mailto:cleckner@hws.edu). Or, please contribute photos directly to a flickr group collecting shots of algae in the Finger Lakes, [https://www.flickr.com/groups/flxalgae/](https://www.flickr.com/groups/flxalgae/).
SLPWA MISSION:

*Enhance and Preserve the Quality of Seneca Lake*

Seneca Lake Pure Waters Association will further its mission through efforts to:

- **Promote the understanding, preservation and improvement of the water quality, natural habitat and general environmental conditions of Seneca Lake and its watershed;**
- **Sponsor scientific research of the watershed to establish baseline data and monitor changes;**
- **Collect, preserve, publish and disseminate information concerning Seneca Lake and its watershed;**
- **Encourage and support the compliance with laws and regulations;**
- **Collaborate with like-minded organizations; and**
- **Promote patterns of development and technology to further our mission.**