CAYUGA LAKE WATERSHED

Network News

It takes a Network to protect a watershed.

2017 i2

We are up against enormous challenges Let's start with small, local steps

Hilary Lambert *Steward/Executive Director, CLWN*

Many of us are overwhelmed and daunted by the sudden, recent changes in our climate, politics, economy, and simply trying to get along with others. It often seems that everything is out of control, spiraling toward doomsday.

Let's anchor ourselves to a calmer reality by appreciating what we have here locally, and taking steps to protect it. I will go first, by describing some of the great things that the Network and our members and supporters have been doing to protect Cayuga Lake and our creeks. Here's hoping you will find reassurance, inspiration, delight, and a call to actions you feel comfortable taking that can make a small local difference.

And—please give to our 2017 Annual Appeal—help us protect our lake and creeks. Let your friends and families know about us, and encourage them to join and give (see page 3).

The Glorious Trash Birds & Embrace the Lake

The Glorious Trash Birds (find them on Facebook) is a trash pickup group organized by Ithacan Paul Closs and his paddling community friends. On One-Day Wednesdays, pick up just one piece! It makes a difference. On Plastic-Free Fridays, do without plastic of any kind. *Every* day, take a bag with you and collect trash from our waterways, pathways and ditches. Get a group together and Embrace the Lake by cleaning up a nasty trash spot that has been bugging you for years. Yes you can! We provide gloves and bags. Thank you to the Poplar Ridge Friends Meeting for their annual cleanup of the Village of Aurora creeks and lakefront—and to all the other good folks out there this spring, cleaning and picking up after others for the benefit of all.

Ithaca Falls and the underlying problem of trash in our waterways. Let's pick it up!

VICKI TAYLOR BROUS

Completing and using the Cayuga Lake Restoration and Protection Plan

The Plan has been updated from 2001, focusing on watershed-wide monitoring of water quality and working across the boundaries of townships, counties and public agencies to develop actions that keep our lake and creeks safe from pollution; and to clean up problematic pollution legacies and ongoing bad practices. Community groups are key to guiding their leaders to take effective actions. You can read the 2017 RPP online at our website www.cayugalake.org . We will be

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The Littoral Zone

Tales from the Littoral Zone

The littoral zone is that three dimensional outer, shallower region of a body of water, including the shore, where most of the life activities take place. These writings originate from the "Littoral Zone".

Seiches on Cayuga and Seneca

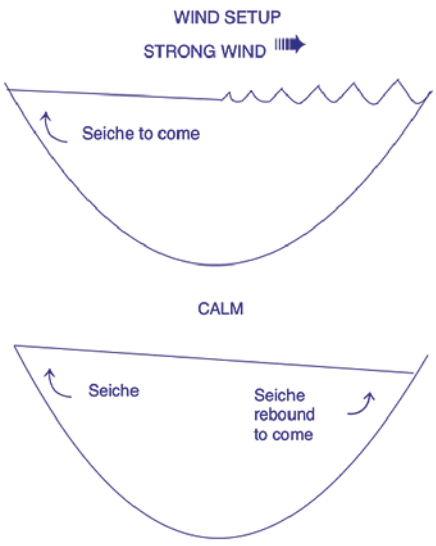
Mel Russo *Finger Lakes area naturalist and life-long resident*

Perhaps on a calm evening or even mid-day or morning, you may have noticed the water flowing around a dock post on what appears to be an otherwise motionless lake. This is most likely a visual notification that you are experiencing a seiche oscillation.

This subtle movement of lake water results when sustained high winds, especially from the north or south, pile up water on the leeward (downwind) end of the lake. This creates what is known as a "wind set up" on the end of the lake toward which the wind is blowing. The pileup of water may be up to a half foot—or more—high.

When the wind subsides to relative calmness, the lake water slowly sloshes back and forth in its basin like a giant bowl of water. The "sloshing" movement, if north and south, may reverse direction in hourly intervals on Cayuga and Seneca Lakes. The alternate raising and lowering of water levels without observable surface waves may be seen at either end of the lake or perhaps around dock posts if you're located fairly north or south of the halfway mark of the lake length. At tributaries entering opposite shores and at streams distal to the mid-point of the lake, water may be seen flowing upstream as floating debris moves in the opposite direction of the normal creek current. In a sluggish stream this effect may sometimes be observed several miles inland as surface material moves against the bottom gradient. This alternate rising and falling of levels at opposite ends of the lake continues for several hours, with each action and reaction becoming less and less, until the "big bowl" settles or another wind picks up.

When in proximity of the lake, the presence of a seiche may be verified by observing the water on a calm day against a vertical wall. On Cayuga and Seneca, the elevation changes approximately hourly, up to eight inches, higher and then lower. At shore, this is manifested by what appears to be a slow, crestless wave against the shore while the lake appears to be still. Thus, seiches are often referred to by some as an invisible, underwater wave.



IMAGES NOT TO SCALE

The existence of seiches further helps to circulate and free up nutrients from the shallower lake bottoms and shelves as well as assisting in the dispersal of plankton. It can further accelerate the transportation of other aquatic organisms including invasive species. In the Great Lakes this phenomenon may reach several feet in elevation, occasionally causing flooding without significant precipitation.

So, when you're seeing the water level rise rather slowly without precipitation or if you see water flowing upstream on a calm day: you could be suffering from a vestibular (middle ear) disorder; you may have visited too many wineries; you could be in another dimension—or even in a parallel universe. It is most likely, however, that you are in the Finger Lakes having a close encounter with a seiche: yet another commonly unrecognized, unappreciated and often unwittingly unnoticed phenomenon of the larger Finger Lakes.

Edited by Susan Backlund.

We are up against enormous challenges... *continued from cover*

providing excerpts in these pages, and are hoping to share with local newspapers.

Hydrilla on the Aurora shoreline—Hemlock Wooly Adelgid in the woods

Everyone, lakewide, needs to be a Hydrilla Hunter this summer. With 25 acres along the Aurora shoreline infested with this fast-spreading invasive, this harmful genie has escaped from the bottle of the lake's south end, where it is controlled, and may be showing up in other places. We will be working with the Village of Aurora, Cayuga County, Seneca County, and the Boat Stewards program to educate and alert the public to report it if they think they see it. If you are an Aurora area resident please volunteer to help monitor the shoreline.

The young, friendly boat stewards will be examining watercraft this summer at Taughannock, Cayuga, Long Point and Treman Marine state parks, and at Dean's Cove. One challenge is that hydrilla appears at the water surface in late summer and early fall, when students are headed back to school. Interested in being a volunteer senior boat steward this fall? Contact me steward@cayugalake.org . Watch for information at our website and at FL PRISM (Finger Lakes Partnership for Regional Species Management) http://fingerlakesinvasives.org/hydrilla/ .

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Jennifer Tufano *Members & Programs Staff*

We are working every day to protect the health and wellness of Cayuga Lake. We do this work with you because of our shared love for Cayuga Lake and its creeks, wetlands, streams & waterfalls. Our support comes from memberships, gifts, and grants. *At a time when government support is in jeopardy, we call on you to step up, and make up the difference.*

Working with you to protect our lake.

Your contributions support: Our website and this quarterly newsletter; Training volunteers to monitor creek water quality & watch for invasive species; Twice-annual community conferences with local experts on a wide range of lake and creek issues; Implementing the top protection recommendations of the 2017 Cayuga Lake Restoration & Protection Plan; Actions to protect our precious water from degradation by excess salt and other pollutants; Dialogue with local, state and federal leaders to keep our water laws and funding strong.

Share this appeal with friends and family. Thanks to a grant from the Park Foundation, first-time donors will have their gift (includes membership!) matched. This means double the money for the Network.

To give online: Go to our website at www.cayugalake.org , click on "Get Involved" then "Contribute."
Send a check: CLWN PO Box 348, Wells College, Aurora, NY 13026 with a note in the memo for "Annual Appeal."

If you are a member or recent supporter, you will receive a 2017 Annual Appeal request in the mail in June-July. Thank you in advance for finding value in our work and for making a financial contribution to help us carry on.

We still have a few copies of composer David Borden's "Cayuga Night Music" CD. Until they run out—your premium for a gift of $100 or more. For a sample: https:// soundcloud/ davidborden/sets/cayuga-night-music

NY State Expands Emerald Ash Borer Quarantine

Restricted Zone now includes all six Cayuga Lake watershed counties

The May 11, 2017 notice from NYS DEC about the Emerald Ash Borer Restricted Zone now applies to all six Cayuga Lake watershed counties—Cayuga, Cortland, Schuyler, Seneca, Tioga, and Tompkins. Please pay attention. While not directly water-related, the loss of our ash trees is significant to our landscapes and ecosystems. Thanks!

New York State Department of Environmental Conservation (DEC) and Department of Agriculture and Markets (DAM) recently announced that eight existing Emerald Ash Borer (EAB) Restricted Zones have been expanded and merged into a single Restricted Zone in order to strengthen the State's efforts to slow the spread of this invasive pest.

The new EAB Restricted Zone includes part or all of Albany, Allegany, Broome, Cattaraugus, **Cayuga**, Chautauqua, Chenango, Chemung, Columbia, **Cortland**, Delaware, Dutchess, Erie, Genesee, Greene, Livingston, Madison, Monroe, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, **Schuyler**, **Seneca**, Steuben, Sullivan, **Tioga**, **Tompkins**, Ulster, Wayne, Westchester, Wyoming, and Yates counties. The EAB Restricted Zone prohibits the movement of EAB and potentially infested ash wood. The map is available on DEC's website: http:// www.dec.ny.gov/animals/7253.html .

"The expanded Restricted Zone for the destructive pest Emerald Ash Borer will help to slow the spread of this tree-killing beetle, protecting millions of ash trees in New York," said DEC Commissioner Basil Seggos. "DEC will continue our efforts to slow the spread of this beetle and do what we can to help communities prepare for EAB."

"It's critical that we continue to track the Emerald Ash Borer and adjust our efforts to combat and slow the spread of this invasive beetle that damages and kills ash trees in both our forested and urban settings," said State Agriculture Commissioner Richard A. Ball. "By expanding the Restricted Zone, we can ensure that EAB and potentially infested ash wood does not leave the quarantine areas."

Emerald Ash Borer (Agrilus planipennis) or "EAB" is a serious invasive tree pest in the United States, killing hundreds of millions of ash trees in forests, yards, and neighborhoods. The beetles' larvae feed in the cambium layer just below the bark, preventing the transport of water and nutrients into the crown and killing the tree. Emerging adult beetles leave distinctive D-shaped exit holes in the outer bark of the branches and the trunk. Adults are roughly 3/8 to 5/8 inch long with metallic

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Seneca Meadows, Inc.: Water Quality Sampling and Monitoring—Part 2 of 2

Seneca Meadows landfill in Waterloo NY is the largest landfill in New York State, providing waste management and recycling services for a wide area across the Finger Lakes region, including municipalities in the Cayuga Lake watershed. The facility also accepts waste from other states.

A note from the authors: Part I, published in our 2016 #3-4 issue,"only called out the parameters that were tested for. The charts below actually call out the levels that our water needs to be within or below. The first chart represents the testing that is conducted on the pond prior to discharge and the second chart represents the annual testing that is conducted during a discharge event."

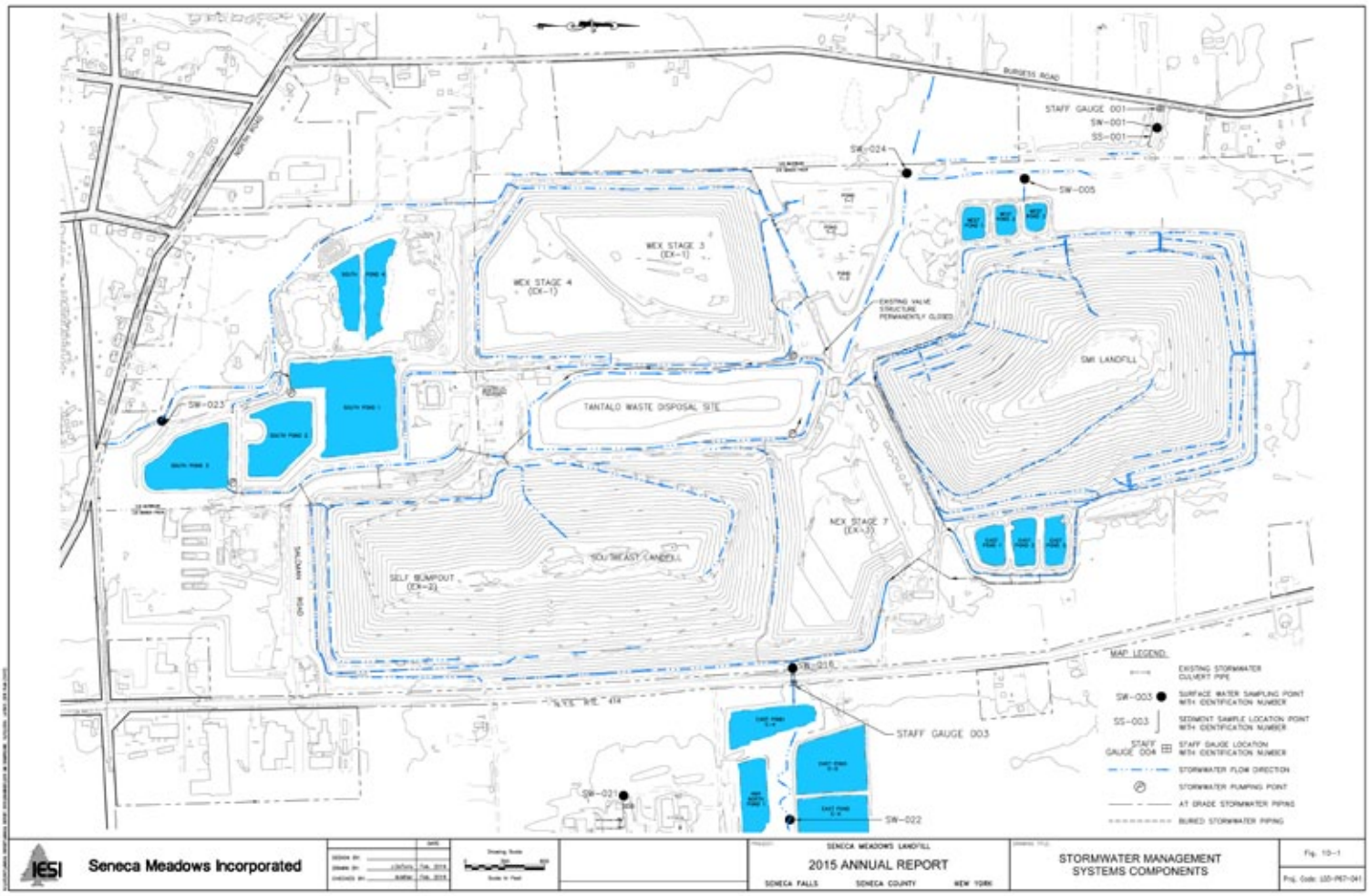
Kenneth Applin, Ph.D.
David Pannucci

Protecting groundwater and surface water quality at the Seneca Meadows Waste Management Facility is a primary concern. Monitoring water quality within and surrounding the facility is an ongoing effort that requires the skills of several scientists and technicians with education and training in sample collection and handling, analytical chemistry, geology, hydrogeology, geochemistry, information technology, and statistics.

Water quality monitoring at the facility is conducted in accordance with an Environmental Monitoring Plan (EMP) and a Site Analytical Plan (SAP). These documents, developed with the guidance and approval of the NYSDEC, provide the methods and procedures that are followed for ensuring the proper collection and handling of samples, the chemical analysis of samples, the reporting of laboratory data, and the evaluation of the laboratory data.

Groundwater quality monitoring

The monitoring of groundwater quality at the facility is accomplished with the analysis of groundwater sampled at



Map of the Seneca Meadows landfill, focused on stormwater management systems components. North is to the right. Areas mentioned in the article include the South Pond system on the left side of the map. The Seneca-Cayuga Canal is off the bottom of the map, draining east to the north end of Cayuga Lake. Black Brook, re-routed in 2013, becomes a significant stream at surface water sampling point SW-024, top right, draining north and east around the landfill property.

33 shallow wells installed in the unconsolidated overburden sediments that blanket the site and 27 wells that extend into bedrock beneath the site. New wells are added or deleted from the monitoring well array as new fill areas are developed. The well depths range from about 15 feet to over 120 feet. The wells are 2 inches in diameter and are constructed of PVC. The lower portion of each well has a 10-20 feet section of slotted screen that allows for the collection of samples from a given stratigraphic zone (e.g., glacial till, lacustrine or lake bed sediments, shallow bedrock, and deep bedrock).

Groundwater monitoring is conducted quarterly during January, April, July, and October. During January, April, and October, samples are collected from each well for the laboratory analysis of the routine list of chemical parameters as specified in 6 NYCRR Part 360, the regulations that pertain to groundwater monitoring at solid waste facilities. The routine list of parameters includes 8 metals (cadmium, calcium, iron, lead, magnesium, manganese, potassium, and sodium) and 13 additional general chemical parameters including alkalinity, ammonia, biological oxygen demand (BOD), chemical oxygen demand (COD), chloride, hexavalent chromium, nitrate, sulfate, and others).

In July, when water quality constituents are likely to be more concentrated than at other times of the year, samples are collected for the analysis of baseline chemical parameters. Baseline parameters include all the routine parameters plus additional chemicals. As defined in the Part 360 regulations, the baseline parameters include 48 volatile organic compounds (VOCs), 24 metals including trace or heavy metals such as aluminum, barium, boron, copper, cobalt, chromium, mercury, selenium, silver, zinc and others, and a few more general chemistry parameters than those in the routine list.

New wells added to the monitoring well array are subjected to extensive testing prior to going "on-line," to establish the existing water quality of the water-bearing zone that the well is intended to monitor. The first round of samples are analyzed for the Part 360 expanded list of parameters, which includes 59 VOCs, 109 semi-volatile organic compounds (SVOCs), 22 pesticides, 7 polychlorinated biphenyls (PCBs), 3 herbicides, 25 metals, and 17 general chemistry parameters. The samples collected during the three successive quarters are analyzed for the Part 360 baseline parameters. Using these data, various statistical parameters are computed that are used along with other methods to evaluate future monitoring results.

The samples obtained from each quarterly sampling event are analyzed by a laboratory certified by the New York State Department of Health's Environmental Laboratory Approval Program (ELAP). The analytical methods used are those established by the U.S. Environmental Protection Agency (USEPA). The results of the analyses are reviewed for accuracy, precision, and compliance with the USEPA analytical methods.

Determining potential impacts to water quality requires rigorous reviews of the quarterly data for each monitoring well and surface water sampling point. Comparisons of the data to NYSDEC water quality standards and to historical monitoring data are among the simpler methods used to assess changes in water quality that may signal a developing impact. In addition to these, the data are examined using sophisticated geochemical and statistical methods that provide for the early detection of a contaminant release from any of the fill areas at the facility. The findings from each quarterly monitoring event are compiled into a report and submitted to the Region 8 office of the NYSDEC, Avon, NY.

The findings from each quarterly monitoring event are compiled into a report and submitted to the Region 8 office of the NYS DEC in Avon NY.

As new fill areas are developed at the facility, the array of groundwater monitoring wells is modified to accommodate the development. Older wells are decommissioned and new wells are installed in accordance with regulatory guidelines to provide for adequate detection monitoring at the facility.

Black Brook water quality monitoring

Black Brook, a small stream that borders the west side of the Seneca Meadows facility, is also monitored quarterly. During each quarterly event, samples of the stream water and bottom sediment are collected at one location upstream of the facility and at three locations downstream of the facility. The samples are analyzed for modified lists of the Part 360 routine and baseline parameters that include specific chemical parameters that may indicate potential impacts by the facility.

Prior to 2013, Black Brook followed a channel that traversed the facility from west to east. During 2013, following approval by the NYSDEC, the course of Black Brook was re-directed to bypass the facility altogether. Black Brook now flows northerly along the west side of the facility and, after passing the facility, eventually flows to the east crossing beneath Route 414.

Retention ponds—stormwater runoff water quality

Stormwater runoff at the facility is diverted to a few on-site retention ponds that are periodically discharged to Black Brook or the Seneca-Cayuga Canal. However, prior to discharging to any stormwater retention basin, SMI must ensure that each of the ponds is in compliance with the analytical requirements provided in Table 1, List of Analytical Parameters.

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Table 1. List of Analytical Parameters

Analytical Parameters	Limits	
General Chemistry Parameters		
CONDUCTIVITY	1000	µmhos/cm
DISSOLVED OXYGEN	>7.0	mg/L
PH	6.5 - 8.5	SU
REDOX		M
TEMPERATURE		M
TURBIDITY		M
TOTAL ALKALINITY		M
AMMONIA		M
BOD-5		M
BROMIDE		M
TOTAL ORGANIC CARBON		M
CHEMICAL OXYGEN DEMAND	90	mg/L
CHLORIDE		M
NITRATE as NITROGEN		M
TOTAL KJELDAHL NITROGEN	3	mg/L
TOTAL PHENOLICS	0.005	mg/L
TOTAL DISSOLVED SOLIDS		M
TOTAL SUSPENDED SOLIDS	20	mg/L
SULFATE		M
Inorganic Parameters		
CADMIUM	0.01	mg/L
CALCIUM		M
CHROMIUM	0.02	mg/L
COPPER	0.02	mg/L
TOTAL HARDNESS		M
IRON	1.4	mg/L
LEAD	0.09	mg/L
MAGNESIUM		M
MANGANESE	0.2	mg/L
MERCURY	0.0004	mg/L
POTASSIUM		M
SODIUM		M
ZINC	0.15	mg/L
PCBs *		
AROCLOR 1016	0.05	µg/L
AROCLOR 1221	0.05	µg/L
AROCLOR 1232	0.05	µg/L
AROCLOR 1242	0.05	µg/L
AROCLOR 1248	0.05	µg/L
AROCLOR 1254	0.05	µg/L
AROCLOR 1260	0.05	µg/L

Notes: "M" indicates for monitoring purposes only

If any of the parameters exceed the limits, Seneca Meadows will allow the pond to settle over a period of time. A new sample will then be taken from the pond and sent to the lab. This is done until Seneca Meadows receives a passing result from the lab for the parameter that initially exceeded the limit. Once approval from the NYSDEC is granted, Seneca Meadows proceeds with discharging the stormwater retention basin.

During discharge events, once a year, Seneca Meadows tests each of the outfalls onsite for additional parameters, provided in Table 2, Additional Parameters.

Table 2. Additional Parameters

Parameter *(Sector L)*	Numeric Effluent Limitations	
	Daily Maximum	30-day Average
Biochemical Oxygen Demand (BOD5)	140 mg/L	37 mg/L
Total Suspended Solids (TSS)	88 mg/L	27 mg/L
Ammonia	10 mg/L	4.9 mg/L
Alpha Terpineol	0.033 mg/L	0.016 mg/L
Benzoic Acid	0.12 mg/L	0.071 mg/L
p-Cresol	0.025 mg/L	0.014 mg/L
Phenol	0.026 mg/L	0.015 mg/L
Zinc (Total)	0.2 mg/L	0.11 mg/L
pH	6.0 - 9.0 SU	6.0 - 9.0 SU

Parameter *(Sector L)*	Benchmark Cut-off Concentration
Total Suspended Solids (TSS)	100 mg/L
Total Nitrogen (TN)*	6 mg/L
Total Phosphorus (TP)	2 mg/L
Total Recoverable Iron	1 mg/L

Parameter *(Sector N)*	Benchmark Cut-off Concentration
Total Suspended Solids (TSS)	100 mg/L
Chemical Oxygen Demand (COD)	120 mg/L
Oil & Grease	15 mg/L
Total Recoverable Aluminum	750 µg/L
Total Recoverable Cadmium	1.8 µg/L
Total Recoverable Chromium	1.8 mg/L
Total Recoverable Copper	12 µg/L
Total Recoverable Iron	1 mg/L
Total Recoverable Lead	69 µg/L
Total Recoverable Zinc	110 µg/L
Total Mercury	50 ng/L
Benzene	50 µg/L
Ethylbenzene	50 µg/L
Toluene	50 µg/L
Xylene	50 µg/L
Aroclor 1016	200 ng/L
Aroclor 1221	200 ng/L
Aroclor 1232	200 ng/L
Aroclor 1242	200 ng/L
Aroclor 1248	200 ng/L
Aroclor 1254	200 ng/L
Aroclor 1260	200 ng/L

Parameter *(Sector P)*	Benchmark Cut-off Concentration
Oil & Grease	15 mg/L
Chemical Oxygen Demand (COD)	120 mg/L
Benzene	50 µg/L
Ethylbenzene	50 µg/L
Toluene	50 µg/L
Xylene	50 µg/L

Sector L is required for all of the outfalls on site. Sector N and Sector P are required only for the South Pond system due to the stormwater runoff from industrial activities that ultimately ends up there.

The monitoring of water quality at the Seneca Meadows facility is an ongoing process and will continue well into the future. To date, the results of the quarterly monitoring have shown no serious impacts to groundwater or surface water at the facility.

NY State Expands Emerald Ash Borer Quarantine *continued from page 3*

This is one of several ash varieties. Go to https://treedoctor.msu.edu/ash/ashtree_id for photos of other beautiful ash trees. More information about ash trees and EAB can be found at http://genesee.cce.cornell.edu/agriculture/natural-resources/invasive-pests/emerald-ash-borer .

green wing covers and a coppery red or purple abdomen. They may be present from late May through early September but are most common in June and July. Other signs of infestation include tree canopy dieback, yellowing, and browning of leaves.

EAB was first discovered in the U.S. in 2002 in southeastern Michigan. It was also found in Windsor, Ontario the same year. This Asian beetle infests and kills North American ash species (Fraxinus sp.) including green, white, black and blue ash. Thus, all native ash trees are susceptible.

EAB larvae can be moved long distances in firewood, logs, branches, and nursery stock, later emerging to infest new areas. **These regulated articles may not leave the Restricted Zone without a compliance agreement or limited permit from the Department of Agriculture and Markets, applicable only during the non-flight season (September 1 - April 30). Regulated articles from outside of the Restricted Zone may travel through the Restricted Zone as long as the origin and the destination are listed on the waybill and the articles are moved without stopping, except for traffic conditions and refueling. Wood chips may not leave the Restricted Zone between April 15th and May 15th of each year when EAB is likely to emerge.**

For more information about EAB or the emergency orders, please visit DEC's website. If you see signs of EAB attack on ash trees outside of the Restrictive Zone, please report these occurrences to the DEC's Forest Health Information Line toll-free at 1-866-640-0652.

Become a Member of the Cayuga Lake Watershed Network!

IN 2017, FEDERAL SUPPORT FOR CLEAN WATER PROTECTION IS IN DOUBT, so our locally-focused work is more important than ever. Your membership adds to the clout we need to protect our lake.

PLEASE JOIN CLWN, your watershed protection organization. Thanks to a grant from the Park Foundation, all new member dues are matched dollar-for-dollar. So if your membership costs $50, the CLWN receives an additional $50 from Park!

ENCOURAGE FRIENDS, FAMILY, GROUPS AND BUSINESSES TO JOIN. You can use the form below to join or renew. Mail completed form with check to CLWN, PO Box 348, Aurora NY 13026. *Thank you.*

Name _____

Address _____ City _____ State _____ Zip _____

Email _____ May we add you to our listserv? ❍ Yes ❍ No

We have membership levels to suit everyone's needs. Please check one of the levels below.

❍ $10 Student/Senior ❍ $25 Individual ❍ $35 Family ❍ $50 Organization/Agency ❍ $50 Business/Farm ❍ $100 Headwaters Donor ❍ $250 Lake Sponsor ❍ $500 Watershed Benefactor

We are growing and expanding our effective programs. Would you like to make an extra donation to support this work?

$_____ Unrestricted – for general operations.

$_____ To support water quality tests on Canoga, Burroughs, Yawger and Milliken Creeks.

$_____ To support improved outreach to YOUTH, our watershed's future protectors.

$_____ To expand our springtime Embrace the Lake creek, lakefront & ditches cleanups.

TOTAL ENCLOSED: $_____ Check # _____ (payable to *Cayuga Lake Watershed Network* please)

Payment can also be made via Paypal/credit card at our website www.cayugalake.org

Your Contributions to the Cayuga Lake Watershed Network are Tax Deductible.

Would you like ❍ 1 or ❍ 2 full-color CLWN logo window stickies (4 x 6″)

"Look for the Zero" campaign urges homeowners to purchase phosphorus-free lawn fertilizer

DEC Encourages Homeowners to Practice Sustainable Lawn Care to Protect NY's Waterbodies

TO protect water quality this year, the New York State Department of Environmental Conservation (DEC) is urging New Yorkers to practice sustainable lawn care by going phosphorus free, using native plants and grasses, and reducing fertilizer use. DEC has launched the "Look for the Zero" campaign to encourage New Yorkers to purchase phosphorus-free lawn fertilizer, as more than 100 water bodies in New York State cannot be used or enjoyed as a result of too much phosphorus.

"The actions New Yorkers take in their backyards can have a big impact on the environment. By choosing sustainable lawn care, homeowners are helping protect water quality and public health," said DEC Commissioner Basil Seggos. "Excess phosphorous is causing problems in many New York waterbodies, making them unusable for swimming, fishing, or as a source of drinking water. I urge residents to 'look for the zero' and buy phosphorous-free fertilizer this spring. By eliminating phosphorus and reducing pesticide use on lawns, New Yorkers can play an important role in addressing water quality impairments across the state."

New York's nutrient runoff law prohibits the use of phosphorus lawn fertilizers unless a new lawn is being established or a soil test shows that the lawn does not have enough phosphorus.

Generally, only newly established lawns or those with poor soil need phosphorus. Phosphorus applied to lawns that don't need it will not be used and can cause water pollution. Regardless of the location, excess phosphorus from lawns can wash off and pollute lakes and streams, harming fish and ruining boating and swimming.

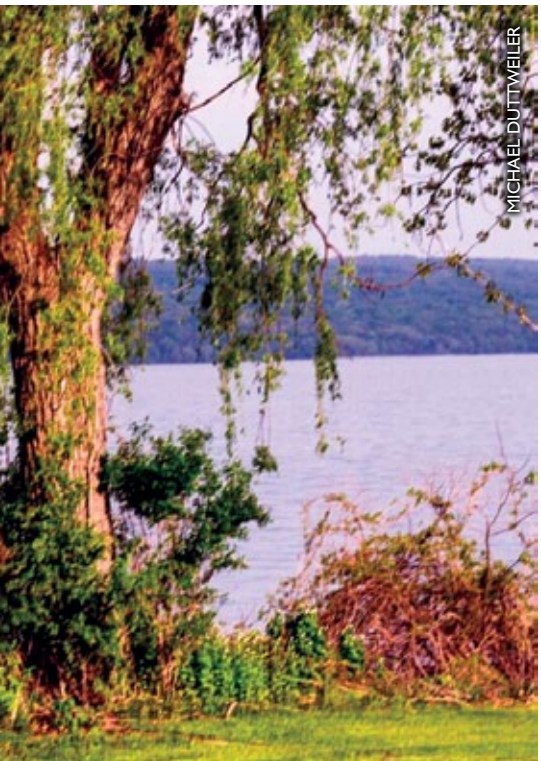
Consumers should review bag labels for phosphorus content when shopping for fertilizer. Fertilizer labels have three bold numbers. The number in the middle is the percentage of phosphorus in the product, such as: 22-0-15. The state's law requires retailers to display phosphorus fertilizer separately from phosphorus-free fertilizer and post signs notifying customers of the terms of the law.

Homeowners have several options to practice more sustainable lawn care. DEC encourages homeowners to choose native plants and grasses, which are adapted to the local climate and soil conditions. These plant species provide nectar, pollen, and seeds that serve as food for native butterflies, insects, birds, and other animals.

Sustainable landscaping and lawn care

Organic lawn care can easily be implemented on any lawn. Safe and effective alternatives exist for most chemical pesticides and fertilizers. Organic lawn care treatments promote deep root systems, natural photosynthesis, and longer grass growth. Visit DEC's Sustainable Landscaping web page to learn more, at http://www.dec.ny.gov/public/44290.html .

Additional recommendations for sustainable lawn care include spreading a quarter inch of compost on the lawn to improve moisture retention and soil texture and add beneficial microorganisms and nutrients. Another suggestion is to allow grass to grow to three inches and then cut no more than one inch off the top. This is the "one-third" rule and helps to develop a deeper root system, which is a natural defense against weeds, disease and drought. Visit


MICHAEL DUTTWEILER

Lakeside lawns need vegetation buffers and phosphorus-free chemical treatments, to minimize lake impacts.

DEC's Lawn Care web page for more information: http://www.dec.ny.gov/chemical/8816.html .

Lawn fertilizer video and information

DEC also encourages homeowners to leave lawn clippings on the yard in order to improve the health of the lawn. Grass clippings are 80 percent water and contain 2-4 percent nitrogen, phosphorus, potassium, and other nutrients. Leaving clippings also saves homeowners time while mowing and reduces the amount of garbage thrown out. Grass clippings can account for as much as 10 percent of garbage.

DEC has posted a new video, "Look for Zero Phosphorus Lawn Fertilizer", to its YouTube channel that shows how phosphorus and other chemicals can run off lawns and enter our waterways. For more information, visit DEC's Lawn Fertilizer web page: http://www.dec.ny.gov/chemical/67239.html

The nutrient runoff law does not affect agricultural fertilizer or fertilizer for gardens.

Water: Too much, not enough—new norms needed

Hilary Lambert *Steward/Executive Director, CLWN*

The spring, summer and fall of 2016 comprised the worst drought on record for our area. In the early months of 2017, we have experienced what some might call "too much" rainfall. Many local residents, farmers and gardeners are feeling waterlogged. Cayuga Lake's waters flow north to Lake Ontario, where flooding continues on the lake shoreline and along the St Lawrence River/Seaway.


HILARY LAMBERT

Not a drop to waste, not a minute to lose.

However, it took until the week of May 7 for the Northeast to be finally declared free of drought for the first time since April of 2016. According to the Northeast Regional Climate Center (located at Cornell University), we are experiencing the "new normal" of weather turbulence in this emerging era of rapid climate change. While our overall precipitation levels are not going to drop, rain and snow will be arriving in heavier bursts in big storms—as we have seen this spring—interspersed with short and longer dry periods—as we saw during 2016.

All of us need to be planning for better water storage and more conservative water use. We were taken off-guard by the sudden and intense drought last year. As the creeks dropped and water supplies were diminished, our schools and businesses had to cut back on services; and water quality was affected in some areas. Last fall, homeowners, students and residents were urged to adopt conservation measures.

This was a new experience for Cayuga Lake area residents, who are accustomed to unthinking, unmeasured, and unstinting use of clean, abundant water whenever we want it, for as long as we want it. This free and easy water availability is becoming more constrained, with the emerging new normal of "too much" water interspersed with "not enough."

More water storage is needed from the home level to the municipal level, and less wasteful use must become a new norm of our everyday lives. For good information on how to change our wastrel water use, County Cornell Cooperative Extension's Tompkins County website provides excellent resources, online at http://ccetompkins.org/environment/water-conservation-quality/drought . Look there for how to manage drought for farming and households: 'Drought management revised,' '20 ways to save water,' and 'Indoor water conservation tips prior to a drought.' Find also drought tolerant plant selection information and a lot of lawn and garden advice for 'water wise' gardening.

For weekly updates, background information and links to the latest research about drought, rainfall, weather and climate for our region, go to the Northeast Regional Climate Center: http://www.nrcc.cornell.edu . Also check out Cornell's EDEN (NY Extension Disaster Education Network) resources about drought: http://emergencypreparedness.cce.cornell.edu

Let's change our ways now, while we apparently have more than enough water—when in fact, we do not have a drop to waste.

Did you know there's a 13,000 acre salt mine under Lansing and Cayuga Lake?

Deborah Dawson *and* **Cait Darfler**

Seven of us arrived at the NY DEC Region 7 Headquarters on Monday May 1st, 2017 for a meeting with the Regional Director, Matt Marko, and 6 other DEC lawyers and scientists. For some in this group of Tompkins County residents, geologists, activists and Lake lovers, this has been a fight for over 30 years to bring transparency and environmental review to the massive salt mine under our precious Lake; for others, this is the first step.

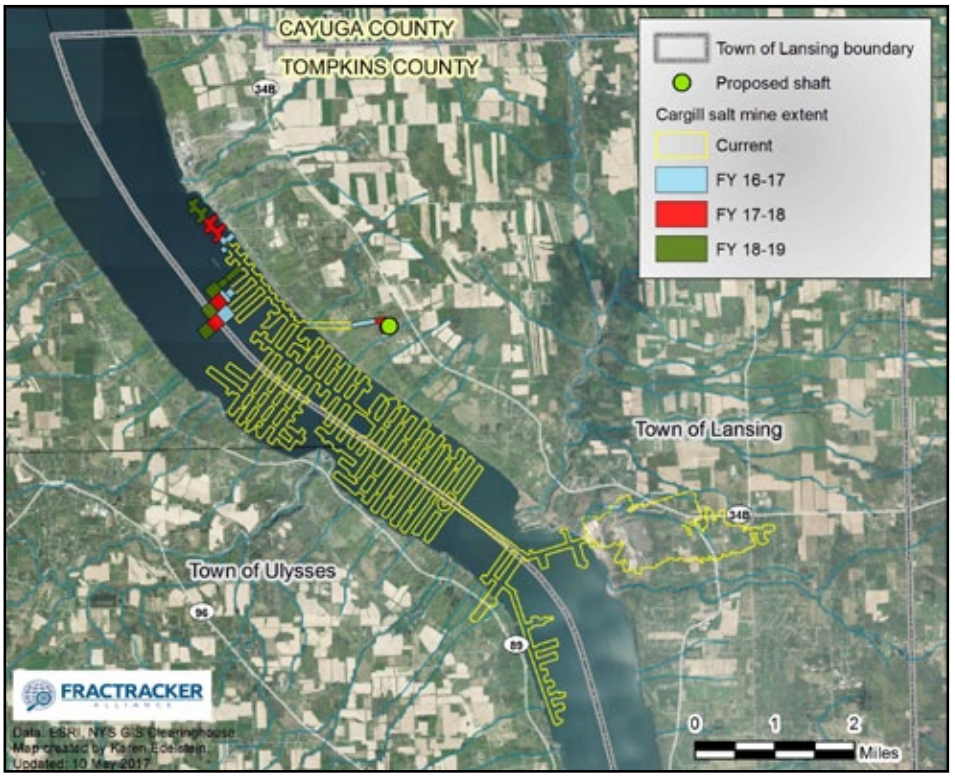
How did we get here?

Solution salt mining began at the south end Cayuga Lake 1890s, and by the early 1900s the salinity of the lake was higher than that of any other unmined Finger Lake. Cargill bought the 50-year-old room and pillar Cayuga Salt Mine in 1970. At the time, mining operations were entirely under the Town of Lansing on the east side of Cayuga Lake. Historically, mine operators simply dumped their tons of salt fines into the Lake, polluting the lake and making it saline. To its credit, Cargill stopped that polluting practice, and chloride levels in the Lake dropped accordingly. The passage in 1972 of what is now the Clean Water Act made the practice of dumping salt fines in the lake illegal.

In 1986, Cargill expanded its mining operations into salt deposits under Cayuga Lake. This was easier and more profitable for Cargill: rather than negotiating mineral rights with multiple land owners, Cargill only had to deal with New York State, which owns the Lake and the mineral rights, and charges only a modest fee per ton for the salt Cargill mines.

By 2012, Cargill had extended its mining operations under the Lake northward for six miles. This meant that miners had to travel more than 45 minutes to get from the access shaft to the mining area. Since Federal mine safety laws and regulations require that miners must be able to evacuate a mine within an hour, this situation was unsustainable. Cargill began looking for a way to build an access shaft farther north in Lansing, closer to current mining operations. And ***that*** brings us to why we were meeting with the NYS DEC on a Monday morning, and the beginning of grassroots resistance to Cargill's expansion plans.

In 2012 Cargill bought a 57-acre parcel on east side of the Lake, across from the iconic Taughannock Falls State Park, and began planning what has become known as the "Shaft 4" project. Shaft 4 was originally proposed as an "air shaft," but, as Cargill's plans have unfolded over time, it is clear that it will be used for ventilation, electricity, materials supply, and three shifts of worker access to the mine. This "mission creep," coupled with Cargill's improper segmentation of the project into 1-mile connecting tunnel portion and a 2,500' deep vertical shaft portion and Cargill's limited, selective, and, more recently, adversarial approach to "sharing" information about both project components, has aggravated residents' and scientists' concerns about the safety of the overall mine and the impact that the expansion enabled by the shaft could have on Cayuga Lake and the surrounding area.



Cargill's salt mining operation extends under 13,000 acres of the Town of Lansing and Cayuga Lake, with expansion possible to the north via a proposed new shaft. For a full-color view of this map, go to http://www.cayugalake.org/content/view/CLEAN. Map by Karen Edelstein, FracTracker.org .

A small group of residents and scientific experts, led by local activist John Dennis and Tompkins County Environmental Management Council Chairman Brian Eden, have been filing requests for information under New York's Freedom of Information Law (FOIL), and lobbying the New York State Department of Environmental Conservation (DEC), to obtain information that would allow objective third-party experts to determine what environmental risks the mine expansion and Shaft 4 project actually pose. FOIL requests are often denied because Cargill claims that much of the requested information is proprietary and protected by the FOIL's "trade secrets" exemption.

Although the DEC could issue a permit for the Shaft 4 project at any day, and the official public commenting period closed in December of 2016, those who believe that this shaft urgently needs substantive and unbiased environmental review continue

to fight daily for our Lake. The meeting on May 1st with the DEC was another attempt to show documented scientific evidence that this project has many unanswered technical questions remaining.

Cargill is the world's largest privately owned corporation. Its fiscal 2016 gross revenues were $107 billion, compared to New York State's 2016 combined tax revenues of $70.6 billion. Cargill enjoys the financial rewards of its $50+ million investment in mining operations under Cayuga Lake, but pays no real property taxes because the mine is technically owned by New York State.

Although the DEC could issue a permit for the Shaft 4 project at any day, and the official public commenting period closed in Dec of 2016, those who believe that this shaft urgently needs substantive and unbiased environmental review continue to fight daily for our Lake.

At the same time, Cargill does not deign to recognize the DEC's statutory right to evaluate and regulate its underground mining operations. Cargill provides the DEC with incomplete information about the mine's environmental impact, prevails upon the DEC to withhold information under FOIL, and has so far managed to avoid having to provide even a Draft Environmental Impact Statement (DEIS) in connection with any mine expansion or related project undertaken since it acquired the mine in 1970. Consequently, recent grassroots efforts have focused on persuading the DEC to require a DEIS before it issues a permit for the Shaft 4 project. The DEC is requiring a DEIS at the Hampton Corners Salt Mine in Livingston County as part of an application to expand. Cargill should be required to provide the same level of environmental review.

Larger numbers of Tompkins County residents, scientists and activists are becoming concerned and taking action against Cargill's expanded footprint in Lansing and under Cayuga Lake. Geologists, hydrologists, and environmentalists have raised serious questions about the potential impact of expanded mining operations on surrounding areas, and on Cayuga Lake itself. The Lake is the source of drinking water, the centerpiece of our eco- and agro- tourism industries, and an overall economic driver for our region. Cayuga Lake, which is believed to be a multi-billion dollar asset, has a risk of becoming salinized if the mine is ever flooded. And yet, DEC only requires Cargill to place in escrow $3.5 million in financial security. At the very least, we believe that DEC should require Cargill to provide a DEIS before it is allowed to endanger our Lake by expanding its operations beneath Cayuga's waters.

To learn more about the Cargill project contact environment@tcprogressives.org or CLEAN at CayugaLakeEANow@gmail.com. The Cayuga Lake Watershed Network has provided a webpage, with more information, background documents, etc: http://www.cayugalake.org/content/view/CLEAN. You can also find CLEAN on Facebook.

Upcoming Events & Volunteer Activities
in the Cayuga Lake Watershed

HYDRILLA HUNTERS

Summer & autumn Hydrilla Hunting: We need your eyes on the lake looking for hydrilla along the Tompkins, Cayuga and Seneca counties shorelines from late July to when the weather turns cold. Contact steward@cayugalake.org to get information and sign up to monitor a stretch of shoreline on a regular basis.

Senior boat stewards: Interested in donating volunteer time sitting at a boat launch, informing the boating public about invasives? We need older folks, who won't be going back to college just when hydrilla is nearing the surface of the lake! Contact steward@cayugalake.org .

HEMLOCK GUARDIANS

Paddlers helping hemlocks in trouble: Would you help us find and record locations of ailing hemlock trees along the lake? We are working with the NYS Hemlock Initiative at Cornell. They are seeking a few good paddlers who would be willing to paddle while carefully scanning the shoreline for hemlocks in poor health. Contact steward@cayugalake.org if interested!

ANNUAL MEETING & PICNIC: On Wednesday August 16, join us at Taughannock State Park's north side pavilion, 5:30 - 9 pm. We provide burgers, dogs, veggie burgers and fixins', beverages, and a lively set of speakers bringing you up to date on what YOUR watershed protection organization is doing to protect OUR lake – and what YOU can be doing to help. Bring a dish to share/just show up! You do not have to be a member to attend. RSVP if you can to programs@cayugalake.org. Members please watch for and respond to election information during July.

AUTUMN COMMUNITY CONFERENCE: Details to be announced – will take place in October. We provide two community conferences each year. Autumn brings the lake's south end event, with presentations focused on water quality and water protection issues of concern at the south end of the lake. The presentations from our 2017 spring time conference are viewable here http://www.cayugalake.org/spring-2017-north-end-conference.html

CYCC – BACK IN 2018! We are not doing our paddling event in 2017 - are working with community and youth groups to make CanYou Canoe Cayuga more widely inclusive in 2018. Want to help? Contact programs@cayugalake.org

The mission...

The Cayuga Lake Watershed Network identifies key threats to Cayuga Lake and its watershed, and it advocates for solutions that support a healthy environment and vibrant, sustainable communities.

PO Box 348
Aurora, NY 13026

- Educate
- Advocate
- Protect

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The Cayuga Lake Watershed Network thanks Leigh Dezelan of Dezelan Dezign and Pioneer Printing of Lodi for newsletter production excellence.

We are up against enormous challenges... *continued from page 3*

Interested in paddling the shoreline this summer to look for and map the locations of hemlock trees harmed by **Hemlock Wooly Adelgid**? Or to walk through woodlands looking for damaged trees? Contact me for more information. We will do organized trips if the interest is there, or you can look and report on your own. More about HWA at the NYS Hemlock Initiative website https://blogs.cornell.edu/nyshemlockinitiative/. We will be helping the HI with more HWA surveys around the lake this coming winter. Last winter we found it in Great Gully and it is reported along Moonshine Creek. Please volunteer to help.

Recent and upcoming—one step at a time

Our website: We are developing new action-focused pages to help you contact our leaders about the need to protect our water resources, our lake, creeks and communities (natural and human), and uphold the Clean Water Act: http://www.cayugalake.org/volunteer.html . If you have time to give to do research and update these pages, please contact me.

Caring for Cayuga: Thank you Mel Russo for your compelling multi-media presentation, "Origin of Species of Fish in the Finger Lakes," and to the Cayuga Lake Floating Classroom and Trout Unlimited's Leon Chandler Chapter for the annual Ithaca Fishing Day, held at Ithaca High School in late March.

Our Spring Conference: Thank you to the presenters and to Bill Ebert, the Canoga Shoreliners water monitoring group, and our members/programs staffer Jennifer Tufano for organizing a well-attended, informative community conference at the Canoga Fire Hall on May 6. Presentations are viewable online here: http://www.cayugalake.org/spring-2017-north-end-conference.html

Summer picnic and annual meeting: Be sure to attend our 2017 Annual & August Meeting & Picnic Wednesday August 16 from 5:30-9 pm at Taughannock Falls State Park's north end pavilion—details on page 11.

Fall Conference: Our fall community conference will be held at the south end of the lake in October and will include presentations and updates on the issues discussed above, plus water-focused topics of concern to south-end residents. Please plan to attend, please support our work, and please pick up that piece of trash every Wednesday! Contact Hilary Lambert steward@cayugalake.org Jenn Tufano programs@cayugalake.org