

Network News

*It takes a
Network to protect
a watershed.*



HABs, Science and Public Opinion: Where's the Disconnect?

Carly Shonbrun-Siege *Communications Intern, Summer 2018*

The hot summer of 2018

Reports of HABs (Harmful Algal Blooms) on Cayuga Lake began two weeks ahead of the official season kickoff for our HABs Monitoring Team. Starting with the July 4 weekend, the four Lake Quadrant Leaders, Claire Weston and her lab team at Community Science Institute, our staff, and the seventy trained HABs volunteers around the lake took photos, reported blooms, and drove/shipped samples to labs for analysis and determination of toxicity, locally by CSI and definitively by DEC. Results were posted at CSI's Cayuga Lake map (www.communityscience.org). Our intern Carly Shonbrun-Siege issued six weekly HABs Updates for the public (www.cayugalake.org). The public got the message: report HABs with photos and locations at habshotline@gmail.com, and avoid HABs. Experts will soon be making sense of the data collected statewide this summer. HABs are here, in part because of our warming climate, and we must adapt resiliently. In the following article, Carly Shonbrun-Siege discusses causes and solutions. —Hilary Lambert, Steward/Executive Director CLWN

AS a rising senior at Cornell University, in 2018 I was accepted for an environmental communication fellowship through the Cornell Communications Department. For twelve weeks this past summer I was the **Harmful Algal Blooms** Communications Intern for the Network. To prepare, I compiled research on what cyanobacteria are, why they bloom, which human-originating factors contribute to their growth, and why they are sharply on the rise globally.

As a member of the HABs monitoring team, my task was to communicate to the public about HABs via weekly newsletters, informational website pages, and the Network's listserv. The phrase "toxic cyanobacteria" sounds like something out of a science fiction novel and many people around the Lake were rightfully scared. We focused on lessening fear by providing facts that people can use to make decisions about how to enjoy and benefit from Cayuga Lake despite our new toxic cohabitants.

Even in this contentious time, I learned that the scientific community is in general agreement that a primary factor contributing to HABs is an overabundance in water of the nutrients used to raise farmland productivity. Phosphorus is an element, common in nature, essential for life and growth. It and other basic nutrients, centrally nitrogen and potassium, are synthesized and concentrated to make fertilizers and pesticides used in farming. Animal manures are also an important source of these nutrients.



Bill Ebert sampling a Harmful Algal Bloom, northwest shore of Cayuga Lake, September 2018.

TOM CASELLA

This article is focused on the phosphorus-rich nutrients that are not absorbed into farmland soils but, via rainfall and snowmelt, run off into creeks and lakes, resulting in overgrowth of plant life and algae there. According to the Cayuga Lake HABs Action Plan, "Phosphorus has long known to be a limiting nutrient in freshwater systems and a key driver of HABs... for every 0.01 mg/L increase in total phosphorus levels, the probability that a lake in New York will have a HAB in a given year increases by about 10% to 18%" (DEC *et al* 2018 p. 56). This much is clear.

However, getting this message to the public posed unexpected challenges. First, there seemed to be a deep reluctance to state outright that farming practices are a major cause of phosphorus **loading** in Cayuga Lake. Why is that? I discuss the reasons later on in this article.

Secondly, the public's response to our messaging included frustration that more wasn't being done to remove HABs. People

wondered why the Cayuga Lake Watershed Network was focused on monitoring HABs instead of targeting those responsible and tackling cleanups immediately. This was a puzzle for me, too—why spend so much time and energy alerting people about an issue, instead of just fixing the problem?

I addressed these questions with an informative page on the Network's website, "Why are we monitoring HABs and why are

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we focusing on monitoring?” The gist of the information is that, though our monitoring effort is an “end-of-the-pipe” reaction to the problem, it is this type of community action that spurs change up the regulatory ladder. Also, in terms of scientific understanding, monitoring HABs is essential to understanding the bigger picture of how these blooms spread and change with the climate over time.

Phosphorus in Cayuga Lake

But how about the sources of the problem? Let's have a brief look at the sources of excess phosphorus in Cayuga Lake. Phosphorus and other nutrients enter Cayuga Lake and other water bodies via “overland flow, tributaries, and other **nonpoint sources**, as well as **point sources**, where they become available for use by cyanobacteria and aquatic plants, or are deposited and stored in lakebed sediments” (DEC *et al* 2018 p. 59).

Agricultural land makes up 50% of Cayuga Lake's 500,000 acres (note: the Network's defined area for the watershed is somewhat larger). If half of the land in DEC's defined watershed area is used for agriculture, it makes sense that agriculture would have impacts on the quality of water flowing through the watershed and into the lake.

In preparing the 2018 Cayuga Lake HABs Action Plan, DEC used the Loading Estimator of Nutrient Sources (LENS) tool to estimate average annual loading rates from nonpoint sources, based on accepted literature values and estimates of point source contribution. LENS analysis found that 80% of the annual phosphorus loading to Cayuga Lake comes from the nonpoint source of agriculture. The agricultural phosphorus runoff accounts for more lake pollution than the septic load, natural areas, and developed areas combined.

Not only is the agricultural phosphorus input larger than the other nonpoint sources, but also the **soluble reactive phosphorus** associated with agricultural runoff is more biologically available for

cyanobacteria consumption than the particulate-bound phosphorus attributable to natural areas. This means that the nutrient runoff from farms feeds the cyanobacteria more efficiently than the “natural” phosphorus runoff that occurs in natural areas as a result of soil erosion.

Other factors contributing to Harmful Algal Blooms

Other factors besides nonpoint and point source phosphorus pollution contribute to harmful algal blooms. Nitrogen in excess becomes a pollutant, increasing susceptibility to HABs. Elevated inorganic nitrogen concentrations are positively associated with toxic blooms, and Cayuga Lake is relatively high in nitrate concentrations, suggesting that algal growth is not limited by nitrogen (DEC *et al* 2018 pp. 33, 57). High chlorophyll-a concentrations can indicate HABs in a water body. For Cayuga Lake, “a combination of southerly winds and flow towards the north is expected to result in the net transport of chlorophyll-a to the north end of the lake” (DEC *et al* 2018 pp. 49), which makes the north end of Cayuga Lake more susceptible to HABs. Additionally, “Most cyanobacteria taxa grow better at higher temperatures which may increase competitive advantages at higher temperatures” (typically above 25°C)” (DEC *et al* 2018 p. 28), which shows that extreme climate events such as rising temperatures and heavy rain can also contribute to HABs.

Lake fauna can also contribute to harmful algal blooms. “Abundant dreissenid mussels (both zebra and quagga mussels) can increase the bioavailability of phosphorus concentrations in both nearshore and deep water zones” (DEC *et al* 2018 p. 37). Furthermore, “alewife grazing has been shown to reduce zooplankton abundance and shift zooplankton composition to smaller taxa” (DEC *et al* 2018 p. 38), leading to an increase in phytoplankton abundance, including those that contribute to HABs.

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Sources of phosphorus in Cayuga Lake

DEC used a modeling tool to estimate the amount of phosphorus loading to Cayuga Lake annually, and from which specific sources. Results indicate that 92% of the annual **Total Phosphorus** loading to Cayuga Lake is from nonpoint sources. Specific phosphorus load source estimates:

- Septic Load = 1%
- Agricultural = 80%
- Natural areas = 6%
- Developed = 5%

Analysis of the data indicates that stormwater runoff from the agricultural portion of the watershed contributes the majority of the TP load to Cayuga Lake (DEC *et al* 2018 *Cayuga Lake HABs Action Plan*, pp. 62-63).

Glossary of terms in this article

DBP precursors: Disinfectants can react with naturally occurring materials in water (e.g., natural organic matter, bromide, or DBP precursors) to form unintended disinfection by-products (DBPs). Some of these are known human carcinogens.

Harmful Algal Blooms: “in freshwater generally consist of cyanobacteria (also referred to as blue-green algae). Cyanobacteria are naturally present in low numbers in most marine and freshwater systems but under certain conditions, particularly high nutrients and warm temperatures, the organisms can begin to multiply rapidly and form blooms. Similar to algae, cyanobacteria possess chlorophyll and are capable of photosynthesis. Several types have the potential to produce toxins and other harmful compounds that can pose a public health risk to people and animals through ingestion, skin contact, or inhalation. DEC suggests avoiding contact with any water that is discolored or has algal scums on the surface.” DEC 2017 p. 1.

Load: the amount (mass) of a pollutant that is discharged into a water body during a period of time (i.e. tons of sediment per year).

Nonpoint source pollution: pollution discharged over a wide land area, not from one specific location.

Point source pollution: water pollution coming from a single point, such as a sewage-outflow pipe.

Soluble reactive phosphorus: the chemically active dissolved form of phosphorus that is taken up directly by plants.

Total Phosphorus: a measure of all the forms of phosphorus, dissolved or particulate, in a water sample.

Annual Appeal Update and Volunteerism

Jenn Tufano Grillo *Programs & Membership Staff*

We asked and you more than answered! This year's annual appeal focused on our VOLUNTEERS - trusted, steadfast, passionate, tireless, and forward-thinking. Our cadre of local people who spend countless hours working on behalf of our watershed. We more than exceeded our Appeal budget target thanks to your generosity including the brand new donations of 14 people.

You may be asking...**what do volunteers do anyway...**so here is a brief recap. Not currently a volunteer yourself? While reviewing this list, you may envision yourself participating in one (or more) of these activities.

Current volunteers...

1. Scour shorelines looking for, and reporting if necessary, harmful algal blooms (cyanobacteria)
2. Hop on paddleboards and/or kayaks to search for and pull water chestnuts
3. Organize steam, ditch, park, roadside Embrace the Lake Cleanups to keep trash from entering our waterways
4. Regularly take water quality samples along three creeks and down the middle of Cayuga Lake
5. Sit on CLWN Board and Board committees to help direct and support CLWN activities and initiatives
6. Install and replenish Hydrilla kits up around Cayuga Lake (approximately 60 this year!) to alert boaters and paddlers to this invasive plant
7. Observe shore side Hemlock trees looking for invasive Hemlock Woolly Adelgid
8. Encourage and promote youth activities on the lake, encouraging as many children as possible to actually spend time on the water
9. Bring delicious casseroles, side dishes, and desserts to our conferences and meetings!

We could use help...

1. **Updating and maintaining our website**
2. **Dig in on particular issues of concern**—such as proposed trash incinerators, redevelopment of coal-fired power plants, proposed replacement of bridges in vulnerable areas, lead impacts from hunting clubs, pipeline and CAFO impacts, and others as they emerge.

- THEN research and report** to the Issues Committee and Board for possible re/action.
3. **Liaise with other organizations**, including the Finger Lakes Regional Watershed Alliance, the Great Lakes Southeast Working Group for Lake Ontario, the Intermunicipal Organizations for Cayuga and Seneca Lake, and our sister organizations on other lakes. **Go to their meetings THEN report back to us.**



Volunteer Lynn Leopold helps to install and maintain Hydrilla I.D. Kit information boxes around the south end of the lake.

Have some time to give? Please get in touch!
Jenn Tufano Grillo—programs@cayugalake.org

HABs, Science and Public Opinion: Where's the Disconnect? *continued from page 2*

Science has recognized the HABs role of phosphorus for decades

The scientific community has known that phosphorus is a driving factor of HABs since Dr. D. W. Schindler published "Eutrophication and recovery in experimental lakes: implications for lake management" in 1974. The scientific community around Cayuga Lake saw evidence that agricultural runoff was a major factor in HABs growth over a decade ago. In 2004, the NYS Department of Health (DOH) completed the Source Waters Assessment Program (SWAP), "to compile, organize, and evaluate information regarding possible and actual threats to the quality of public water supply (PWS) sources based on information available at the time" (DEC *et al* 2018 p. 53). The SWAP found that the elevated susceptibility to contamination for a large part of the watershed is "due primarily to the amount of agricultural lands in the assessment area that results in elevated potential for phosphorus, **DBP precursors**, and pesticides contamination" (DEC *et al* 2018 p. 53).

All right, no need to beat the proverbial dead horse. The central point is that DEC itself states, and is backed up by broad scientific consensus, that agricultural land use is the main source of phosphorus, a known primary factor for HABs on Cayuga Lake.

That sentence should be nonpartisan and inoffensive, simply a statement of fact proven by diligent, reviewed scientific research. At one point during the summer, I was asked to soften this message by deleting information from the Network's website, apparently because these fact-based statements would be offensive to some readers. I find it perplexing that factual, science-based statements and evidence are taken as partisan, elitist attacks on farmers.

Proposed agricultural reform can benefit farmers

The majority of the management plans proposed for development and implementation in the 2018 HABs Cayuga Lake Action Plan are focused on agricultural reform, much of which will benefit the farmer. The Plan also states that ALL sources of excess nutrients will be reduced. This approach cannot be characterized as unfairly targeting one sector: "The primary lake management/water quality goal for Cayuga Lake is to implement proactive management to minimize HABs through reducing nutrient input through well planned targeted nutrient reduction strategies from all contributing sources within the watershed" (DEC *et al* 2018 p. 64).

Most of these reforms are mutually beneficial for the environment

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Of Cheeseburgers and Protecting Finger Lakes Waters: A Superhero's Reflections Midway Through Watercraft Stewardship

Nick Aiezza *Watercraft Steward*

Long Point State Park Aurora, New York

And the breeze makes the mornings pleasantly cool. I know what to expect on any given day of work: sweatshirt in the morning, tee-shirt in the afternoon, and between that time an osprey fishing in the launch area. People will fish there, too. And it is not uncommon to see a great blue heron stalking where the shale stone beach meets the water's edge, looking for the same exact sustenance.

I am a watercraft steward here. This is the only launch I have known in this capacity at the Finger Lakes Institute. The job responsibilities are well known by you, dear readers: talking to boaters divides the time woven into the fabric of my summer, and I spend the rest of this time absorbed in the organic flow of Long Point turning through hours, days, weeks. The red shirt uniform lets boaters know that I am important, that I am an Olympian. That I am to be feared, respected. That I am the launch commander, granting access to a selection of exceptional beings with herculean watercrafts in which they will venture out into my lake, Cayuga Lake, and swim, tube, and fish some more—whatever mortals do when they zip around shouting, “Boat life or no life!”

Then I have lunch.

Being a vegetarian, I bring the leftovers I have from dinner the previous night. Being too relaxed on most nights to bother making dinner, I bring a sunflower butter and jelly sandwich. This is my own flair in the cyclical nature of Long Point, presented with glory, cut diagonally, and dripping on the sides of my *Little Playmate* cooler when I remove the sandwich every day at the lunch hour of the gods: 10:00am.

But sometimes the patterns are disrupted. A man plays guitar in the restroom. Another urinates on his own truck. One of the watercraft steward coordinators will drop by and see if I need refreshments of invasive species literature or popsicles. Yes, always refresh the popsicles.

One such disruption occurred on 10 June 2018, 1:47pm, when over the noise of my rumbling stomach a family of periodic launchers at Long Point offered me a cheeseburger. And pasta salad. With pepperoni and olives in the pasta salad. As a vegetarian, as an evolved being immune to dietary subsistence on meat—and also understanding the empirical truth that olives are for veggie-lovers pizza only, and even then, merely tolerated—I plunged into an existential crisis. There, in front of me, stood a happy family. They presented the food perfectly on my table, plated it on the appropriate recycled paper materials for a proper summer cookout, and they did so with smiling mouths and eyes and their spirits were visible, like hot pavement steam picked up by wind, dispersed in apotheosis, turning blue with the life of sky.

My father had given me two pieces of guidance when it comes to eating, intelligence that I consider each time I sit down to consume energy: 1) Never eat anything bigger than your face, and 2) Well, are you hungry? It is important to acknowledge that when considering these criteria meant to critique whether eating is the appropriate measure in any given food scenario, one need not meet both points in order to eat. I may be full, sure, but if the food item is less than or equal to the weight and/or distribution of my face then consumption is fair game.

Without getting into intricate caveats of each criterion, such as potential impaction on relative mass, an interesting pocket stitched into instruction piece number two is the following: If I am not hungry at the moment, will I even have the opportunity to eat again? This is particularly poignant when considering moments of food or dollar scarcity; therefore, when food is offered to me—out of the kindness of a human heart—I will take it happily and eat it. I call these moments “Food Opportunities.”

Thus, I accepted their offering of cheeseburger and pepperoni pasta salad.

But at the core of this acceptance is a genuine appreciation of that kindness. Time went into the preparation of that food. Human time. Energy and resources

It is by way of kindness, particularly meeting kindness with equal measurements of gratitude, that we arrive at this concept of stewardship.

were utilized, as well. A web of seemingly unrelated connections was meandered, traversed in a way that unified different socioeconomic and environmental sectors in order to lead a spirit family to my table, meeting the satisfaction of incredible odds with care, to deliver a cheeseburger and pasta salad. To me. At that exact moment in time.

This is not Indra's Net, nor will I allow this essay to become a present moment manifesto. Forget that. No moment of Zen, here. I attacked that cheeseburger like a Viking. Sent that cow to Valhalla. Ate every piece of pepperoni and olive. Licked the plate clean. Clean! I wasn't appreciating the moment in any Buddhist or New Age kind of way. I was savage, voracious, primal. I turned a corner in my vegetarianism that could not be unturned. This boat had no reverse drive. I would either come out on the other side, ephemeral in meat euphoria, or I would die of mad cow's disease.

Face-first in my simultaneous first and last bite of that cheeseburger, the only cheeseburger I had had in years of vegetarianism, my body felt warm. The sunny and warm weather of the Finger Lakes region in June started right here with me, in my upper-stomach in fact, right below my sternum, and it pulsated through my veins, reverberated through flesh, which itself knocked against skin, and arose from my feeling of gratitude and thanks, and, as a result, warmth will birth throughout central and western New York, warming more and

more through July, and banquet in influence and reach by the end of August.

The thing is that I had made a choice to set aside my vegetarianism, that piece of my arbitrarily constructed character, and meet their kindness with gratitude. After all, we were merely friendly acquaintances. We weren't good friends or family. Prior to their cheeseburger offering, I had only met them once before, but they felt the desire to include me in their family's celebration. I was brought into their circle. As evidenced by the gift of sustenance, I belonged to their collective. And although I sat by the launch and put down the cheeseburger in my own way, flawlessly, and they sat some good one-hundred yards from me, by one of the grills of my park, we were linked by the overwhelming care with which we had handled that exchange.

Their initial kindness. My gratitude in return.

We can't ignore, dear readers, that I had broken one of my own rules—as Olympians will often do when there is a message to deliver—in order to foster the relationship developing with that family: I ate meat. The word vegetarian, in this context and how it applies to me, is a symbol, a stand-in. It is a word that I have chosen out of millions of words to represent me, to speak for me, and to express one of the many possible, and potentially conditional, elements that compose my individuality. The point is that that word "Vegetarian" isn't real. I created it—at least I created the context for it. And I can, and should, go straight Odysseus on that symbol if that word becomes too important to me to be disregarded, and it becomes a barrier to nurturing goodwill through kindness and care.

This stewardship thing, right? Where is that in this mess? This is an essay on stewardship....

Right. It is by way of kindness, particularly meeting kindness with equal measurements of gratitude, that we arrive at this concept of stewardship. Stewardship requires an elevated level of responsibility when handling the management of energy and resources. Scaffolded within that

responsibility, into our understanding of stewardship, is a degree of care.

Of cheeseburgers and pepperoni pasta salad, recognized within the exchange of kindness and gratitude, I acted out a kind of stewardship of human tradition.

Therefore, stewardship of our regional waterways may potentially begin, for some people, within this conceptual framework of gratitude as an actual, measurable commodity. Kindness and gratitude become goods, and these goods are traded with care. This isn't capitalism. I imagine this exchange involves outlooks and actions, as there is no monetary commodity exchanged in the

active preservation of natural resources. In turn, people should be expected to maneuver their "returns" to the lake with appropriate respect in their responsibilities and actions.

The point is that these lakes are incredibly kind to us. I acknowledge the western philosophical and ecological quandaries of stating that the Finger Lakes are capable of expressing kindness, much less

kindness to specific entities: human beings. I'm sure that I don't need to ask you to suspend arguments and heckling, as you are all on my side, obviously, when you acknowledge that drinking water is a nice thing. Irrigation for crops is great, too, because eating is also kind of swell. And, if you recall the beginning of this piece, people can fish directly out of the lake and eat that. People can tube, waterski, and take their living room out onto the water, straddle it between two elongated barrels called pontoons, and enjoy the company of their collectives (special thanks to Sam Beck-Andersen for that final visual).

All of that, if offered by one human being to another, would be considered pretty kind. And gratitude expressed by the recipient of such a gift would be the appropriate response. And, if handled with care, would lead to the development of a mutually beneficial relationship. And as the relationship develops it is consistently met with mutual, equal amounts of gratitude, and a prolonged responsibility

to the demonstration of appreciation is developed naturally.

Thus, we arrive at an understanding of stewardship, at least as I have come to understand it, related to my capacity at the Finger Lakes Institute: As a Watercraft Steward Superhero God.

I have one final comment on all of this. Throughout the course of the entire workday, stewards set aside their Olympianhood. We demonstrate that we are human, after all. At least I am. I'm no different than boaters in regard to my appreciation and use of the lakes. Collectively, we appreciate them very very much. Sometimes—as is the case with casting away the identifier of vegetarian in order to greet and ascend mortality, join the heroic companionship of a pretty rad family, and eat a really damn good cheeseburger—these words, these fundamentally symbolic human creations, although they are wonderful in helping us construct our personalities, need to be divided cleanly and set aside: things like *angler*, *paddle boarder*, *wakeboarder*, *competitive bowler on an alleyway of floating party boats lined up perfectly*—and even *steward*. They are sometimes partitions in what should be a collective sense of protection. We can always pick them up and put them back together, reassembling our uniquely fashioned personhoods. And by all means, we should embody these levels of character again, as they are maintained within us after they are quieted in the name of championing this goodwill toward the waterways with which we live. This fluid, organic movement allows for one of the few forms of heroism available to us mortals: This warm display of caring for these waters: Our collective responsibility to greet their kindness with responsibility, care, gratitude. 🦸

About the Author: *Nick Aiezza lives in the Finger Lakes region of New York State. He is also Thor's hammer. This article was previously published online at the Finger Lakes Institute Watercraft Steward Program's web site flisteward.com/2018/08/29/857/. This great program, run by Sam Beck-Andersen at the Finger Lakes Institute in Geneva NY, provides trained, paid staff each summer for boat launches and parks, to better protect our lakes from invasive species. Look for them in their distinctive red outfits. The Watercraft Stewards provide information, offer boat inspections, and in some locations can power-wash watercraft.*



Nick Aiezza

Members Picnic & Annual Meeting: New Board members—gratitude to those departing

Hilary Lambert Steward/Executive Director, CLWN
Jenn Tufano Grillo Programs & Membership Staff

The afternoon of August 15 was a scorcher—like most afternoons this long, hot summer—but that did not deter our Lansing grillmaster Steve Smith, who endured the sun, heat and smoke to supply our Myers Park picnickers with abundant meat and vegan treats. Thank you to everyone who brought the lavish food offerings that filled two picnic tables with every sort of side dish and dessert.

Once the Annual Meeting commenced, our Vice-Chair Mike Duttweiler (Tompkins County) took the assembled membership through the election process with the help of staffer Jenn Tufano Grillo (ballots having been mailed several weeks earlier). The group voted to approve three-year Board appointments of two new members, Louise Mudrak (Ithaca) and Mark Sarvary (Newfield), and the re-appointment of John Abel (Treasurer, Ithaca).

green algae). She discussed the highs and lows of this amazing feat. We thanked her with flowers and a small gift, as she is heading off to join her partner in New Jersey in September.

In the brief August Board meeting following the Annual Meeting, the Board elected its Executive Committee for 2018-9. Deep gratitude goes to outgoing chair Patricia Haines-Gooding (Ithaca), who has a close kinship with our water, communities, and inclusive education. She remains on the Board. Our new

chair is Deborah Grantham (Ithaca), who has been with the Board and Network for a long time, and has previously served as Chair and Treasurer. Deb is joined by Treasurer John Abel, and Vice-Chairs from each of the three main watershed counties. These are Mike Duttweiler (Tompkins County), Eric Devin (Cayuga County), and Bill Ebert (Seneca County).

Our other at-large Board members are Paul Closs (Ithaca), Katherine Graham (King Ferry), Penney M. Cook (Aurora), Neil Schwartzbach (Ithaca), David Wolfe



Claire Weston of the Community Science Institute talks about volunteer monitoring for Harmful Algal Blooms. Annual Picnic & Meeting, Myers Park, Lansing.

We bid farewell to two Board members who stepped down—Mark Witmer and John Mawdsley. As Town Supervisor for Caroline, Mark has more than enough to keep him busy; John has been on the Network Board for a very long time, served in many capacities, and helped steer the Network through a time of change a number of years back. We will miss them both very much and hope they remain involved. We also mourn the bitter loss of Board member Carmelo “Mel” Russo, who died last spring.

Following the election, the hot but patient group heard from John Abel, briefly stating that our finances are in good shape; and from Steward Hilary Lambert who mercifully did not talk too long about all the things we are doing. Our keynote speaker was Claire Weston, who does public outreach for the Community Science Institute and this year developed and implemented a lakewide volunteer monitoring program to watch for, report on and take samples of Harmful Algal Blooms (blue-



The Network's Board of Directors held a brief business meeting at our August 15 Myers Park event.

(Lansing), and Doug Dixon (Romulus). To learn more about our Board, the history and governance of the Network, go to our website www.cayugalake.org and click on the “About” tab in the upper left. The Board’s monthly meetings are open to the public. The meeting site varies around the lake, with our Wells College office in Stratton Hall, Village of Aurora, as the default location. For details, check our calendar under the News & Events tab at our website. 🐾

and those who use it. For instance, one of the management actions currently being implemented is The New York State Agricultural Environmental Management (AEM) Program. Created by the NYS Department of Agriculture and Markets, The AEM Program “is a voluntary, incentive-based program that helps farmers make common-sense, cost-effective, and science-based decisions to meet business objectives while protecting and conserving New York State’s natural resources” (DEC *et al* 2018 p. 65).

This illustrates the mutually beneficial nature of many agricultural reforms. They do not entail masses of government-mandated environmentalists swarming American farms, demanding immediate action. Rather, farmers are given solid incentives and market-based opportunities to reduce nutrient runoff.

All of the immediate (short-term) Cayuga Lake priority projects listed in the 2018 Cayuga Lake Action Plan entail the implementation of “runoff reduction BMPs (Best Management Practices) on agricultural and non-agricultural lands to reduce nutrient runoff and soil erosion in the watershed” (DEC *et al* 2018 p. 73). These BMPs involve cover crops, field erosion control systems, vegetated riparian buffers, all of which are beneficial to the farms they’re implemented on.

Cover crops are used on fields that would be left bare between planting seasons and harvests to protect the soil from erosion and runoff. The roots of cover crops trap nutrients in the soil that would be prone to runoff and add organic matter to the soil. Planting cover crops can increase yields and improve overall soil quality (Unger & Vigil, 1998). Healthier soil also means less nutrients need to be purchased, which cuts costs for farmers; thus less nutrients are available to run off into the watershed’s creeks and lake. Additionally, implementation guidance will be given by local Soil and Water Conservation Districts, not foreign officials or D.C. suits.

Where is the disconnect?

Where is the disconnect between all the knowledge and scientific consensus backing the need for agricultural reform, and the fear of upsetting farmers? As an Environmental and Sustainability Science major at Cornell, I’ve taken many classes dealing with soil ecology, forest management, international development—course material culminating in the fact that many environmental problems stem from agriculture. The conclusion that agricultural inputs negatively affect the surrounding ecosystem has been drilled into my head and the heads of my fellow students.

Unfortunately, so has the message that farmers make up an entity unwilling to change, resentful of government and environmental reforms, and poised to defend themselves with huge coalitions and big money. We are constantly presented with examples of certain agricultural practices for which the solution is the implementation of BMPs—and the impassable road block of farmers who claim that “finger pointing” unfairly targets them.

Working with the Cayuga Lake Watershed Network and

participating in many different kinds of research throughout my Cornell career has allowed me to travel all over the Finger Lakes Region. I’ve had the chance to travel the entire perimeter of Cayuga Lake, speak with maple syrup producers throughout Tompkins County and beyond, and sample the soil at least a dozen vineyards in the region. The majority of farmers and foresters I got to know are disdainful of the “excessive” regulations they have to follow.

In a forest visit for one of my classes, we were lectured by a landowner about his struggle to install a small pond on his property—“just for his grandkids,” he said. After impressing our group of young forest enthusiasts with his beautiful, sustainable maple syrup operation and huge forest, he veered away from sustainable farming into partisan politics, describing his oppression by the permitting procedure in place for developing his land.

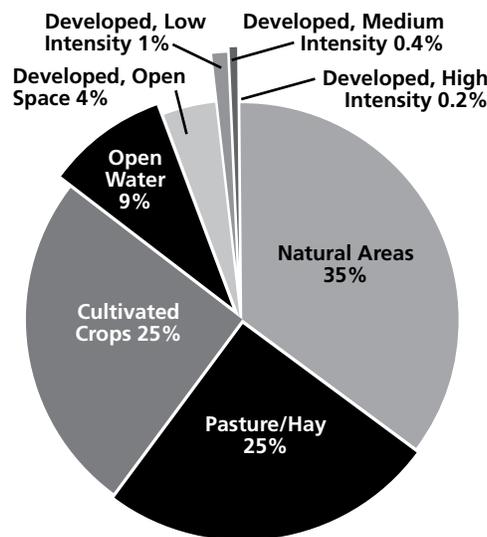
We students were polite, yet perplexed. We knew that the permitting policies were in place to protect the environment from negative impacts such as soil erosion, nutrient runoff, and effects on nearby septic systems and wells in the case of building a pond. We saw the positive need for these rules, that he and other farmer-foresters regard as excessive.

This summer, Hilary Lambert and I traversed the perimeter of Cayuga Lake to install Hydrilla Information Dispensers. Everyone we interacted with—winemakers, foresters, boaters, and farmers—were respectful, receptive, and even nice! Although we were not venturing onto farms to talk permits, the work we were doing was very similar—explaining the threat of hydrilla and asking them to host hydrilla information dispensers at their places of business.

I’m left to wonder if this positive treatment was due to the tentative way I approach most of these people, a caution drilled into me by environmentalists terrified of farmers, or because there is actually nothing to be afraid of. Maybe, just maybe, if we approach someone with respect and a firm grasp on the scientific data, they’ll be amenable to our suggestions.

I have loved meeting the wide spectrum of people that live in this area. Each of us has a different story, a unique past, a reason why we do what we do. I suggest that if more attention is paid to how these stories align, maybe future scientists won’t approach farmer interactions with the fear and trepidation that we feel currently.

This chart shows land uses and percentages in the Cayuga Lake watershed. Natural areas include forests, shrublands, grasslands, and wetlands. (DEC *et al* 2018, p. 60)



REFERENCES

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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.



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Current Resident

- Educate
- Advocate
- Protect

Upcoming Watershed Events

Check our website www.cayugalake.org & Facebook page for the latest!

OCTOBER 20-21 Lakewide Hydrilla Hunt—Check your shoreline, bring samples to us for expert diagnosis! From 10 am-1 pm, we will have plant sample collection tables at Cass Park, Ithaca; Frontenac Park, Union Springs; and Deans Cove, Romulus, during the weekend of October 20-21. Contact us for exact hours at each location: programs@cayugalake.org!

OCTOBER 20 (rain date October 21): Embrace the Lake Cleanup & Fall Get Together—1-3 pm at the roadside rest area on Route 89 in Covert, 4-5 miles north of Taughannock Falls State Park. The Network has adopted this rest area for regular cleanups. Come to help & stay for the donuts and cider! Consider a visit afterwards to one of the numerous nearby ciderys and wineries!

OCTOBER 27-28, Ithaca: Wizarding Weekend, Ithaca—The Network will have an otherworldly presence at this magic-themed Halloween event. Watch for our tent, Aqua Magicae, with the Golden Eggs. Bring kids

and grandkids to cast spells protecting our lake and waters! Free, donations welcome. More information here: www.wizardingweekend.com and on Facebook at Ithaca's Wizarding Weekend.

NOVEMBER 3, Ithaca-location TBA: The Network's Fall Community Conference—We are inviting numerous groups to give ten-minute presentations on the plethora of issues facing our waters. Free for the public, with refreshments. 9:30 am-1 pm.

NOVEMBER 27: #NYGives Giving Tuesday campaign! #NYGivesDay is a 24-hour giving challenge brought to you on the Tuesday after Thanksgiving by the New York Council of Nonprofits and United Way of New York State, to celebrate the life-changing work of nonprofits across the vast state of New York. Please plan to give! ➤

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