Waterworks

New York State Federation of Lake Associations, Inc. Autumn 2021

Inside this issue:

Droughts, as well as downpours, are shifting the patterns of nutrient transport into our New York lakes

By Maria Sol Lisboa, PhD Candidate, Department of Biological and Environmental Engineering, Cornell University

The disturbing increases in the occurrence of hazardous algal blooms (HABs) in lakes across New York and the northeastern U.S. have brought renewed attention to the need for controlling nutrient runoff coming from the surrounding landscapes. In the United States (US), the extensive and diverse types of pollution, called non-point sources (NPS) are considered to be the leading contributors to water quality impairments. Nutrients, applied to agricultural soils in the form of either animal manure or chemical fertilizers, are among the main non-point source pollutants of concern. Nutrient runoff is the main driver of eutrophication and algal blooms in our lakes, and phosphorus in particular is naturally limiting in freshwater ecosystems. Phosphorus (P) binds readily to soil particles, and so sediment erosion from steep slopes, farm drainage, new construction sites, as well as exposed farm fields are major sources of phosphorus into lakes. Excess P loading was successfully reduced in the 1970s when US Environmental Protection Agency placed limits on detergents with P content. However, the increase in toxic algal blooms has brought the issue of nutrient management back into sharp focus for private citizens, lake managers, and scientists alike.

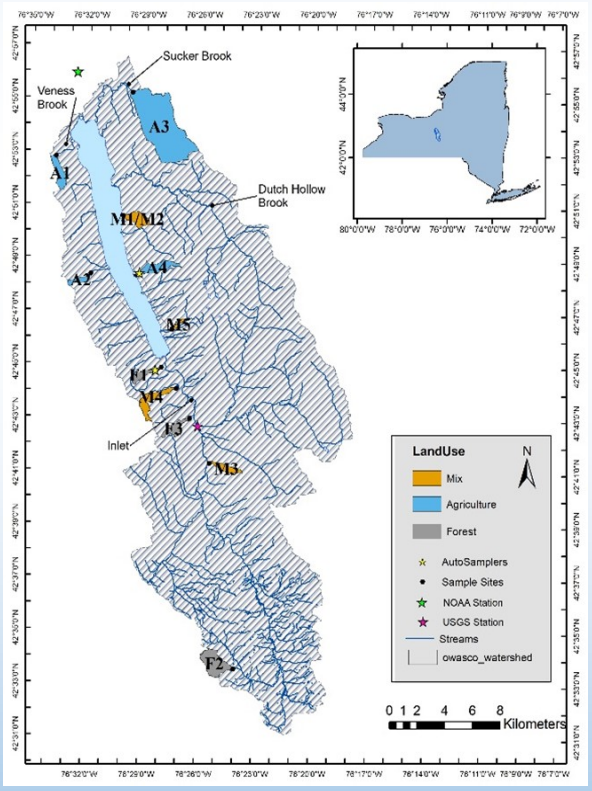

Figure 1. Map of Owasco Lake watershed, NY, showing locations for sampling sites, its respective sub-watersheds, and its predominant land use.

(Continued on page 4)

NYSFOLA's mission is to protect the water resources of New York State by assisting local organizations and individuals through public dialogue, education, information exchange and collaborative efforts.

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All letters to the editor represent the viewpoints of the author and may or may not reflect the opinion of the NYSFOLA membership or Board of Directors.

President's Letter - Tarki Heath

It seems no matter where you live in New York State, autumn brings refreshingly cool air and gorgeous tree color. It also means the end of summer, which always feels far too short, and this has been yet another challenging season. Most lakes across the state experienced some level of intense rainfall, heat, and flooding from a series of tropical storms. Lake levels remain high here in Central New York, as we keep a watchful eye on the tropical storms still developing in the Atlantic Ocean.

Regarding CSLAP: Despite these weather challenges, coupled with the ongoing pandemic, the Citizen's Statewide Lake Assessment Program (CSLAP) completed its 36th year of testing with the close of the 2021 season. Once again, we applaud and appreciate the time and effort that our volunteers put into this important program. Each year, this program has expanded to include new lakes, more volunteers, and more data for lake management programs across the state. This information has helped lake associations and managers work with a variety of stakeholders, including landowners, municipalities, and other agencies. NYSFOLA is currently working with the NYS Department of Environmental Conservation (NYSDEC) to plan another successful CSLAP year in 2022.

We want to take a moment to recognize this partnership that began with the enactment of the New York Environmental Conservation Law (ECL), Section17-0305 for the "Establishment of a program to monitor water quality by private citizens under the direction of the department." This law states: "The commissioner shall establish a program which shall be known as the 'citizens statewide lake assessment program'. The purpose of this program is to establish a network of volunteers belonging to lake associations throughout the state to monitor the condition of their respective lakes under the guidance and direction of the department."

From the first pilot program in 1985, to the present day, NYSFOLA has acted in partnership with the NYSDEC to keep CSLAP operating and to meet the needs of the Department as well as NYSFOLA and its members. As many of you know, we are currently in negotiations to renew the NYSFOLA contract with the DEC. Please be assured that we are working through this process to ensure the ongoing success of this program, and we will keep our membership and volunteers informed.

Regarding Conferences: The virtual Lower Hudson Regional conference was well attended, and plans are currently underway for our Western and Finger Lakes regional meeting. NYSFOLA was also present at the Indian River Lakes Conservancy Conference which went live this year, with great appreciation shared by all those who attended. Executive Director Nancy Mueller's article on the success, and fun, of this conference can be read on page 8.

Planning for the April 29-30, 2022, NYSFOLA Annual Conference has begun. However, as with the regional conferences, planning must remain fluid to accommodate the twists and turns of this pandemic. While we have great hopes for an in-person conference in the spring, we are prepared to meet safety protocols and the safety needs of our membership, at that time.

Other NYSFOLA initiatives: Since 2012, NYSFOLA has partnered with the SUNY Oneonta Graduate Program in Lake Management to have one of

their graduate students prepare a management plan for one of our member lakes. NYSFOLA provides funding to the Oneonta Foundation to support a student. The recipients for this year's funding have not yet been chosen, but we are pleased to announce that board members Ina Cholst (Roaring Brook Lake Property Owners Association) and Laurel Wolfe (Association of Property Owners, Sleepy Hollow Lake) have agreed to assist in this process. You can learn more about lake management plans on the Resources page of our website.

Following in this line of working with academic institutions, NYSFOLA is piloting a program to assist young scientists share their research with our members. The Science Review Committee, headed by our board member, Dr. Rebecca Schneider, Associate Professor in the Department of Natural Resources and the Environment at Cornell University and Faculty Fellow for the Atkinson Center for Sustainable Futures, will be selecting student submissions for further review by the committee with the goal to publish the highlights of these papers in *Waterworks* and on our website.

This is important work both for our members and the students selected. The wait time for students' scientific articles to be published may be several years. At the same time, scientific words can be ambiguous and hold either conflicting meanings or be meaningless to a nonprofessional reader. The Scientific Review Committee will provide our members the benefit of learning significant and new ideas through faster transmission, in a product that will be accessible to lake managers and the public. Our first submission is by Maria Sol Lisboa, *Droughts, as well as downpours, are shifting the patterns of nutrient transport into our New York lakes*. We hope that you enjoy this important piece in this edition of *Waterwork*s.

This fall season, we hope you can enjoy our New York lakes as they transition to winter. A lot goes on in our lakes during this season, and our director has written an article about fall turnover, that we hope you will enjoy reading. Please remember to keep in touch with us during the winter. We depend on your comments and suggestions to help us keep NYSFOLA "your" voice for NYS lakes.

Save the Dates!

2022 NYSFOLA Annual Conference

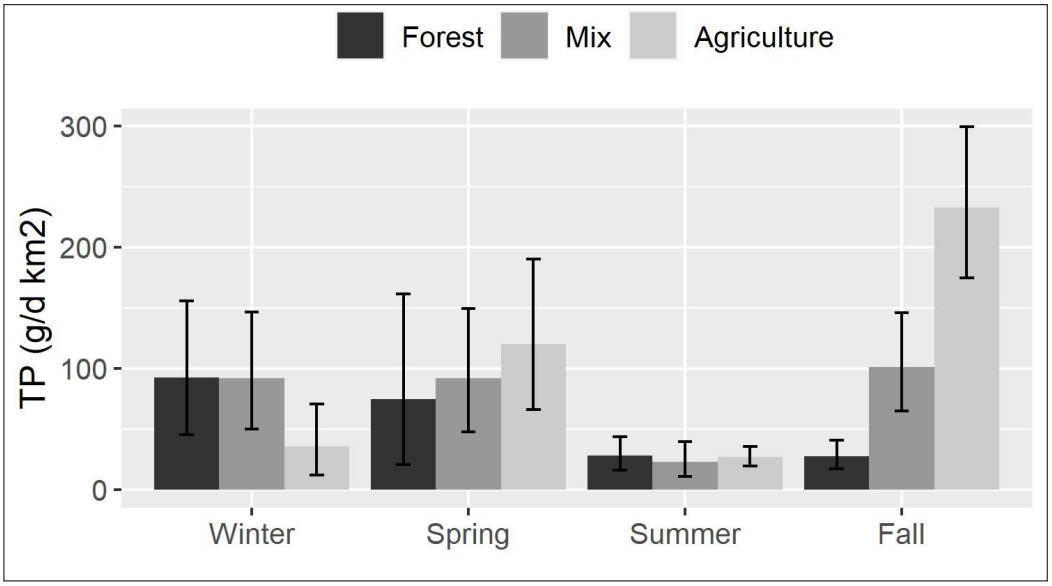
April 29 - 30, 2022

We are tentatively booked at the Fort William Henry Hotel and Conference Center in Lake George, but this may become a virtual conference once again due to COVID-19. The NYSFOLA Conference Committee will begin meeting soon and keep everyone posted. Topics you want to hear more about? Let us know! Email - Nancy Mueller at fola@nysfola.org

The issue of nutrient transport is simultaneously complicated by our changing climate. The frequency and intensity of both storms and droughts impact nutrient delivery processes from the land to our streams and lakes. In the Northeastern US, global warming is already manifesting as an increase in torrential downpours, which are leading to increased overland flow, erosion, and associated downstream pollution. Most research is focused on the impacts of these more intense storms on nutrient transport. However, the occurrence of summer droughts is also projected to become more frequent, from once every three years to one drought every year under the highest greenhouse gas emission scenario. Very little research has evaluated the impacts of prolonged droughts on nutrient processes. It is critical that we improve our understanding of how human activities interact with changing weather patterns, both floods and droughts, to control runoff and nutrient loadings into water bodies, and to find strategies to reduce the associated impacts.

As part of a study conducted by Cornell University in collaboration with Cayuga County, we monitored12 small tributaries to Owasco Lake, located in Central NY, to determine their roles in nutrient loadings. We had the advantage of being able to set up and evaluate these processes during an unusually dry year in 2016. Each stream was classified based on the primary land use of its contributing area into one of three categories: agriculture (80 % or more of the total surface dedicated to agriculture), forest (70 % or more forest cover) and mixed (agriculture and forest, where between 40–60 percent of total surface was dedicated to agriculture). Under normal rainfall patterns, we would expect to see the highest loads and concentrations of nutrients coming from agricultural areas throughout the growing season. Other research has shown that phosphorus loads in agricultural streams tend to spike during and after rain events. However, between August and October 2016, the Owasco Lake watershed and surrounding region were declared under a severe or extreme drought category by the US drought monitor (NDMC, University of Nebraska, USDA, 2017). As a result, we did not observe the usual nutrient export pattern.

During the spring and summer, stream flow and runoff were low, and nutrient loads were similar between the forested and agricultural sites. However, the dry period ended in October with an extreme rain event, where 5.3 in. of rain fell in four days. Based on the Precipitation Frequency estimates for the Meteorological Station in nearby Auburn, a rain such as this will occur approximately once every 25 years in the region (NOAA's ATLAS 14). The nutrient loads during the rain event tripled from those observed during summer and spring, but only in the agricultural areas, with major impacts on water quality. The dry conditions seem to have masked the differences between forested and agricultural areas in terms of runoff contribution, while the following rain event exacerbated them. But the ultimate effect was a shift in peak nutrient delivery from summertime to late fall, after the normal period of algal population growth.



Both hydroclimatic conditions and human activities seem to be controlling factors of phosphorus dynamics in the Northeastern US. However, the effect of climate change on top of those still remain uncertain. Since dry years do not occur on a regular basis in the NE US, the observations, preliminary conclusions, and inferences drawn from this study could prove useful for management purposes in the context of climate change. One outstanding question from this research is to determine the ecological implications of the unusual P-loading patterns in the receiving lake or reservoir, i.e., how does a seasonal shift in P loading to later in the most biologically active period affect eutrophication risks and impacts?

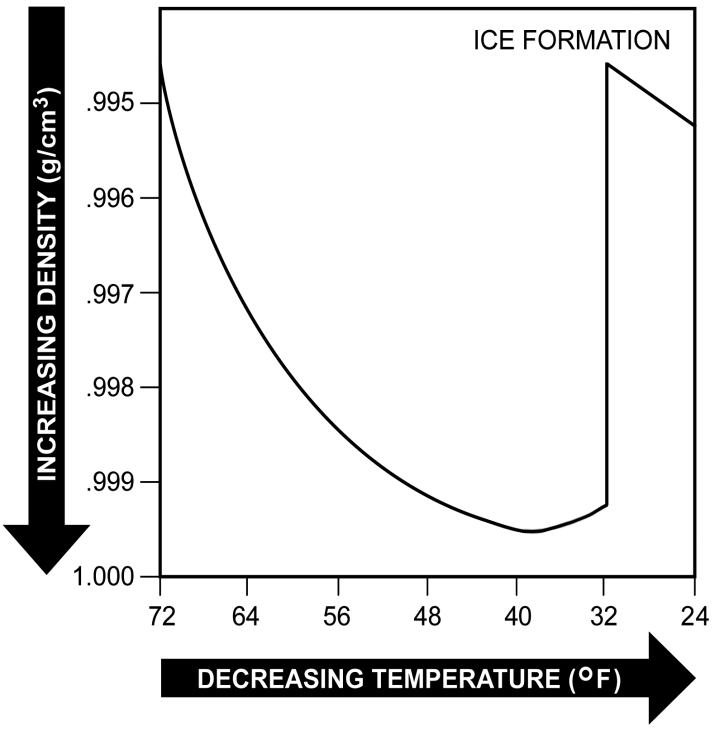
What's so special about water? (Why some lakes turn over in the fall)

(Reprinted from "Diet for a Small Lake")

Water possesses many unique properties that serve as the foundation for life and are fundamental to the way a lake behaves.

Through the hydrologic cycle, we can experience water in all three states of matter. On a hot day, sweat and water evaporate. In New York State, precipitation condenses and falls as rain, snow, sleet, and sometimes as hail. At normal atmospheric temperature and pressure, water is a liquid rather than a gas or vapor. Quite simply, this cycle allows lakes to form.

Temperature variations too small to change the state of water will still change its density. The density of water is greatest at 39°F (Fahrenheit). It is fortunate that water is neither like most other liquids that get denser as they get colder nor like other substances that are densest in their solid state. Surface waters become denser as they lose heat to the colder fall air and sink to the lake bottom. This continues until the lake water column is a uniform 39°F. Waters cooling below 39°F become less dense and remain at the surface. When surface waters cool to 32°F, ice begins to form. If the coldest water were the densest, lakes would freeze from the bottom up, which would obliterate all aquatic life each winter in shallow waterbodies. Instead, the water just below the ice is 32°F and the densest water at 39°F is at the bottom of the lake. This temperature demonstrates both a divine sense of humor (why 39?) and the unique qualities of water.

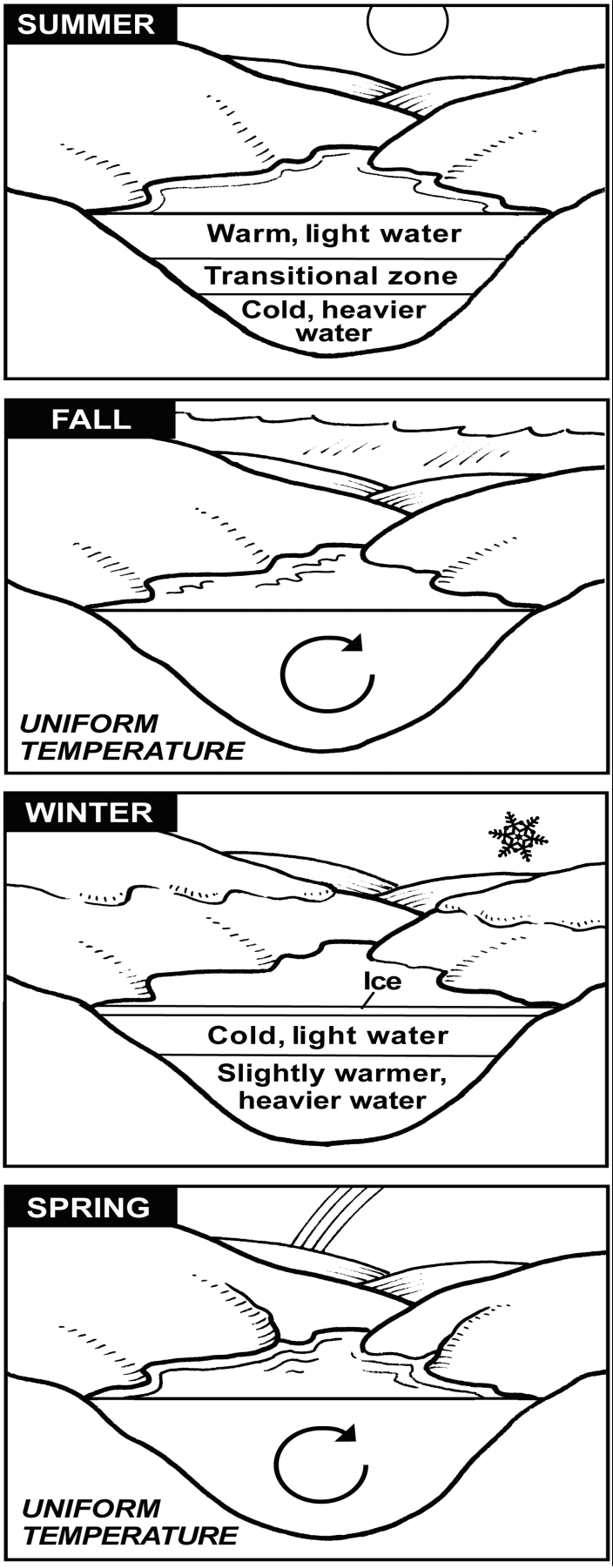


As water cools, it becomes denser until it reaches 39°F. It becomes lighter as it continues to cool. When water cools to 32°F and becomes ice, it reaches maximum lightness, causing it to float. (Graphic by Wendy Skinner for NYSFOLA)

The differing densities of water are important during the warmer months of the year as well. Starting in the spring and early summer, most New York State lakes deeper than about 15 to 20 feet form distinct temperature layers, with the top layer warmer than the bottom layer. During the summer, the top layer gets warmer, while the bottom layer stays pretty cold. This upper layer is called the **epilimnion** (literally *over* [French} the *open water* [Greek]. It is separated from the lower layer, called the **hypolimnion** (*under water* [Greek] by a very thin layer called the **metalimnion** (*among* or *within)* [Greek]. Within the metalimnion, the temperature changes rapidly over a very short vertical distance with the most rapid change occurring at the **thermocline.**

The thermocline creates a thermal barrier to the mixing of surface and bottom waters because different densities created by temperature differences resist mixing. These layers remain until fall air temperatures decrease, causing the water temperature and resulting density differences to decrease sufficiently to allow complete lake missing.

A similar but less dramatic situation occurs under the ice,



*Waters **in** dimictic lakes in New York State either stratify or mix depending on the season.* (Art credit:: Wendy Skinner for NYSFOLA)

when less dense, slightly colder water overlies a dense 39°F bottom layer. This persists until warmer spring air melts the ice and warms the less dense water. As the temperature of the less dense, cold water warms closer to 39°F, differences in density are again reduced allowing complete lake mixing. In most relatively deep New York State lakes, complete mixing occurs in the fall and spring. A **dimictic lake** is one in which this complete lake mixing occurs twice a year.

The process by which thermal layers break down and the lake mixes again is usually called **turnover**, during which time the lake is often referred to as "working." If accelerated by cold, windy weather, it can occur rapidly, completing the turnover within a few days. If delayed by calm, warm days, it can occur in stages over a long period.

The depth of the thermocline generally is related to the **transparency** or clarity of the lake water and how exposed the lake is to wind. Sun penetrates more deeply into a clear lake, resulting in a deeper thermocline than in a turbid lake. A wind-exposed lake will have a deeper thermocline than a protected lake. If the lake is very windy and clear, or very shallow, it may not even have a thermocline. A few deep New York State lakes, such as Green and Round Lakes near Syracuse, never mix due to very steep slopes and small surface areas. This is also related to very high mineral content in the bottom waters that result in chemical stratification, or a **chemocline**. These unique lakes without a thermocline are referred to as **meromictic** lakes.

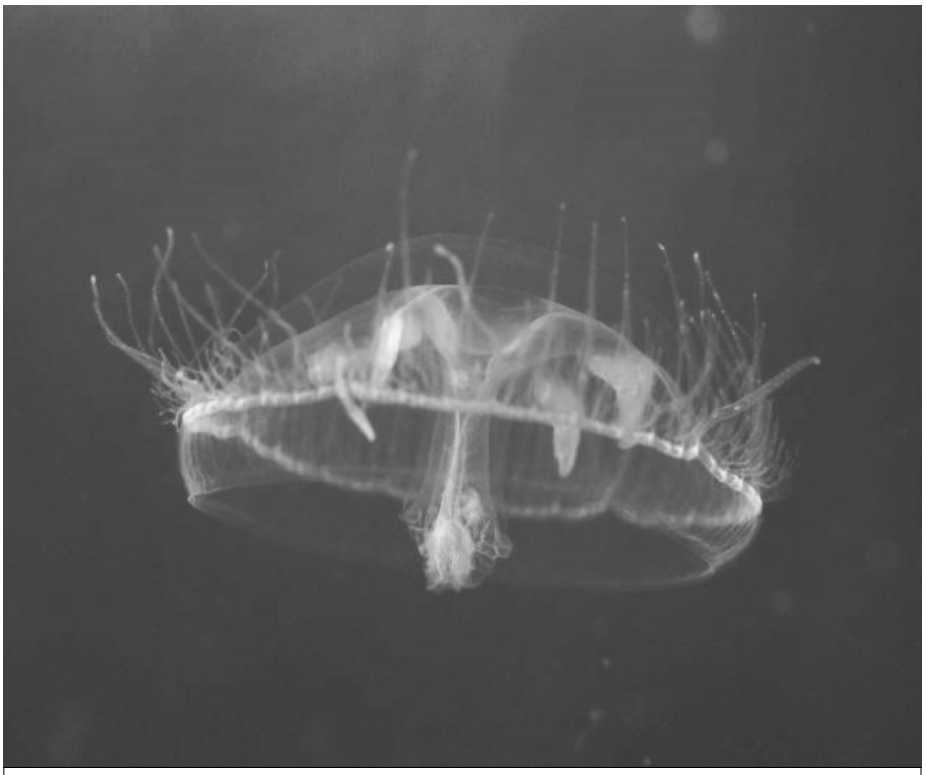
Jellyfish in New York lakes?

By Dr. Willard N. Harman

It seems that nearly every September, the NYSFOLA office gets a few reports of freshwater jellyfish sightings in New York lakes. This year, they were seen in at least two CSLAP lakes: Millsite and Petonia. We thought you would like to know more about them with special thanks to NYSFOLA Board member Bill Harman.

What are freshwater jellyfish?

The freshwater jellyfish *Craspedacusta sowerbii* was introduced from the Yangtze River basin in China and first discovered in the United states around 1908. These organisms are small, about the size of a coin, with a clear or translucent bell-shaped body. Unlike some marine species, *Craspedacusta sowerbii* does not pose a hazard to human swimmers although they do have stinging cells that are used to catch their prey. Like many exotic introductions, the jellyfish is neither aggressive nor a nuisance.



There are two separate life phases in freshwater jellyfish. This is the most commonly seen, free-swimming, "medusa" stage, which has an umbrella-like body with a stomach extending downward from the center.

Photo by Jim Rathert, Missouri Conservation Department. Used with permission.

Jellyfish Biology 101

These animals are assigned to the Class Hydrozoa, one of three classes in the Phylum Cnidaria. The true corals in the Class Anthozoa, live as **polyps**. The sea anemones (single flowerlike polyps) or corals (colonies of polyps) reside on hard substrates. The true jellyfish, Class Scyphozoa and their relatives live as medusa free-swimming in the oceans. There are two separate life phases in freshwater jellyfish. The planktonic **medusa** stage in the life cycle of *Craspedacusta* is what people usually see.

Craspedacusta polyps resemble the small *Hydra* that most people have seen in high school biology courses. *Hydra* polyps are usually found living on submerged aquatic plants and other firm surfaces, but they are small enough to be difficult to see with the naked eye. Freshwater jellyfish polyps are also there, but they are even more conspicuous. Over 55 years ago, my major professor at Cornell University offered to pay any of his graduate students, including me, $50 if he was unable to find polyps in any lake. He never paid a cent! Freshwater jellyfish most commonly reproduce asexually by budding more polyps but occasionally budding medusa, the sexual body form.

When fully grown, medusa are about an inch in diameter, practically transparent with a whitish or greenish tinge and shaped like an inverted soup bowl. They have hundreds of tentacles around the edge of the bell or umbrella.

The medusa stage is generally visible when water is warmer from late July through early October. You may or may not see them two years in a row. Have you seen freshwater jellyfish in your lake?

Indian River Lakes Conservancy Water Quality Conference

NYSFOLA was happy to participate once again in the Indian River Lakes Conservancy's (IRLC) annual Water Quality Conference. As always, it was a wonderful opportunity to network with lake associations in the greater Thousand Island region and to share the knowledge of our organization while learning about others.

Executive Director Nancy Mueller gave a presentation about the Citizens Statewide Lake Assessment Program (CSLAP), and a few CSLAP volunteers, including NYSFOLA Board members Walt Dutcher and Jan Douglass, were on hand to comment on what the program has meant to their lake associations.

Other presenters included DEC's Emily Sheridan who spoke about grant opportunities in the Eastern Great Lakes watershed; Dr. Michael Twiss from Clarkson University who gave a presentation entitled "Lake Associations' Role in Environmental Governance"; Butterfield Lake President Joe Pasquini who described the chemistry of cation exchange and its impact on nutrient cycling in lakes; and Dr. Cathy Kling from Cornell University who discussed "The Social Cost of Water Pollution: The Economics of Ecosystem Services."

An enthusiastic presentation about the IRLC's "Project Whirl" was given by Andrea Inserra from the Indian River School District and IRLC Educator Sarah trick. This experiential learning program is a partnership designed to engage high school students in environmental science. Many of the program's participants have continued their studies at the college level. You can read more about the program here: https://indianriverlakes.org/project-whirl/.

Attendees were also able to view a non-traditional replacement septic system on Butterfield Lake thanks to Eric Murdock, P.E. from Onsite Engineering http://www.onsite-engineering.us/. Many of our NYSFOLA members have probably heard Eric describe non-traditional replacement systems for lakefront properties at our annual conference.

And finally, a thank you to long time NYSFOLA members and IRLC stalwarts Elliott "Sandy" and Marjorie Hillback for sharing their lakeside property for some social time after the presentations. Everyone enjoyed both the networking opportunity and the lovely scenery. We hope to see everyone next year!

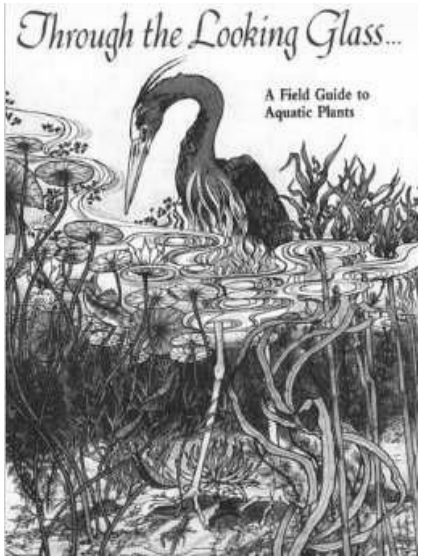
Not all Milfoil is bad: A native species from Canada Lake

When most NYSFOLA members hear the word "milfoil", it inevitably conjures up fears of the non-native, invasive *Myriophyllum spicatum*, commonly known as Eurasian watermilfoil. But some milfoil species in New York are considered native, and they don't necessarily take over a lake the way their more famous relative can.

CSLAP volunteer John Byrnes sent us this great picture of a native milfoil he found in Canada Lake in Fulton County. It has been identified as either *Myriophyllum farwelli* (Farwell's watermilfoil) or *Myriophyllum humile* (Low watermilfoil). We thank aquatic biologist and writer Chris Doyle, formerly with SOLitude Lake Management, for helping with the ID. The distinction between the two native varieties lies with the fruit which was not yet visible on the sample.

How do we know it's not Eurasian? The biggest clue was the in the leaves. The leaves on Eurasian watermilfoil form distinct whorls of four. As you can see in the photo, the leaves on this plant have more of an alternate pattern or are only partly whorled. The tips of the leaves are also tapered, unlike Eurasian watermilfoil which has a much blunter tip.

Want to know more about the plants in you r lake? We recommend "Through the Looking Glass...A Field Guide to Aquatic Plants" by the Wisconsin Lakes Partnership. It is available to order on the NYSFOLA website: https://nysfola.org/books/. See pages 216-217 to learn more about Farwell's and Low watermilfoil.



nalms 2021

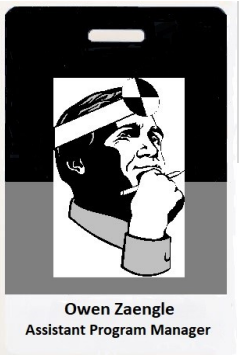
NALMS 41st International Symposium

Valuing Water: Economics, Ecology & Culture

Now Virtual!! November 15-19, 2021

The North American Lake Management Society International Symposium originally planned for Oklahoma City, is now going virtual. You can view the program and register here at https://www.nalms.org/nalms2021/.

Ask Dr. Lake...


Owen Zaengle
Assistant Program Manager

Dear Dr Lake,

I was about to head to the beach to meet my brother Eric the other day when I heard on the radio that the beach had been closed due to the presence of E. Coli. I'm not sure why they would close down the beach because my brother was there, he swears he didn't do anything. Do you have any ideas what's going on?

Concerned,

Brad Coli

Dear Brad,

Although it is a possibility, I am quite sure that the closing of the beach had little to do with your brother Eric. Typically when swimming beaches are closed due to the presence of E.coli, it refers to the bacteria Escherichia Coli, a rod-shaped bacterium that is often found in the lower intestine (and feces) of warm-blooded animals. Though often harmless, E. coli represent a human health hazard as they can cause illnesses such as intestinal infections, urinary tract infections, meningitis, and septicemia. It is for this reason that swimming beaches often periodically test for the presence of E. coli. State Park beaches in New York State are tested at least once a week; they are closed and the public is notified for 18-24 hours if testing finds greater than 235 E.coli colonies per 100/ml sample.

Elevated concentrations often occur after large rain events, where runoff carries E.Coli from sources such as aging sanitary sewer infrastructure, failing septic systems, livestock waste, waterfowl waste, decaying plant or animal material, or from naturally occurring bacteria in the soil. It is difficult to pinpoint exact sources for a particular event. Water quality issues associated with E.coli are often localized. In large lakes, high E.coli at one beach (or section of the lake) does not necessarily mean high E.coli in another section of the lake. If you are worried about E.coli exposure and do not have the means to test your swimming area regularly, you may want to consider avoiding the swimming area for at least 24 hours after a large rain event.

There are preventative measures that property owners or municipalities can take to reduce the likelihood of high levels of E.coli. Property owners can support this effort by picking up pet waste, reducing surface runoff into the lake by maintaining a well-vegetated buffer along the lake shore, and through proper upkeep up septic systems. Municipalities might support reduced risks of high E.coli events through stormwater management techniques such as retention ponds or vegetated buffers, particularly in areas that receive waters from agricultural areas. They might also support the agricultural community to reduce manure runoff and identify and repair failing sanitary sewers systems. Beaches can reduce the likelihood of high E.coli concentrations by discouraging geese, seagulls, and other waterfowl from congregating in large groups along the lakeshore.

Also be aware that there is a large intestinal parasite that is referred to as B. coli (Balantidium coli); it is very rare in the United States. So, if you do come across warnings or notifications related to B.coli, it probably has nothing to do with you personally.

If you have any other questions, please let me know.

Dr. Lake.

Looking for a lab to test for E. coli?

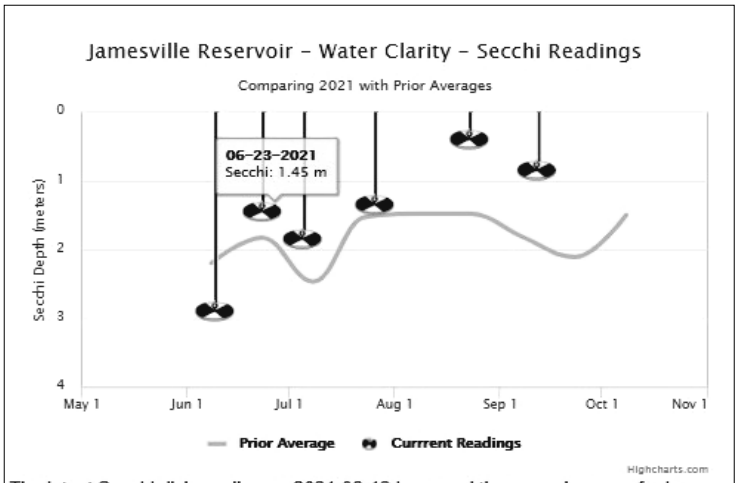
Bacteria samples need to be collected, kept cool, and delivered to the laboratory quickly. They need to be analyzed within a very short time frame. It's best to use a laboratory close to your lake that has New York State Department of Health ELAP Certification. The Environmental Laboratory Approval Program (ELAP) of the Wadsworth Center was established in 1984, under Section 502 of the Public Health Law and is responsible for the certification of laboratories performing environmental analyses on samples originating from New York State, thus ensuring the accuracy and reliability of these analyses.

Learn more, or find a lab near you, at: https://www.wadsworth.org/regulatory/elap.

CSLAPpenings

The 37th season of the Citizens Statewide Lake Assessment Program (CSLAP) has certainly been an interesting one. The summer of 2021 started out with most of the state experiencing moderate to severe drought and ended with many lakes at flood stage. For example, Jamesville Reservoir in Onondaga County turned chocolate brown following heavy rainfall from Tropical Storms Fred and Ida. The water clarity readings clearly show the impact.

The data will certainly be interesting to look at, and we are already starting to prepare the In-Season Field Data Reports for lakes that have completed all 8 rounds of sampling.



The latest Secchi disk reading on 2021-09-12 is around the normal range of prior year readings for the period September 1 to 15.

This year's Secchi disk readings tend to indicate less clear water when compared to the normal range of readings collected from 2015 to 2020.

Paperwork for the 2022 season will be going out before the end of the year, but first we want to thank our volunteers for their time commitment and dedication to the program this season.

Anawanda Lake - Karl Stahl

Augur Lake - Paul & Kay Knott

Babcock Lake - Megan Myers, Jan Shields

Ballston Lake - Peter Herman, Larry Hausheer

Barger Pond - Tony Morosco, Tim Oung, Natasha Prenn, Sylvia Humphrey, Julie Ruben

Barrett Pond - Richard Lewis & Joan Sapinsley

Beaver Lake - Charles Heesh, Karen Madsen, Susan & Larry Paul

Beaver Dam Lake - Fred Widman & Molly Widman, Kevin Boyle

Bedford Lake - Peter Chieco

Big Bowman Pond- Jack Betterly, John Losee, Matt LaFleur

Big Fresh Pond - Fred Vanderwerven, Norman Friberg, John Simoni

Black Lake - Libby & John Chetwin, John Compo

Lake Bonaparte - Ray Powers, Dick Kahn, Glenn Johnson, Julie Wicks

Bradley Brook Reservoir - James Kallmerten, Don Bigelow

Brant Lake - Wayne Butler

Brantingham Lake - Chris Murphy

Buckingham Pond - Felton McLaughlin, Sara Hart, Grace Bennett, Gabi Sarhos, Charles Rhynhart

Burden Third Lake - Dennis Ryan, Steve Scarlata, Craig Cioffi, Chelsea Zantay

Butterfield Lake - Walter Dutcher, Joe Pasquini

Canada Lake - John Byrnes, Sabina Perkins

Canadarago Lake - Susan Rosengrant, Ryan Fagan, Pam Lea, Christine & Chuck Kuhn, Rita & Doug Hitchcock, Barb Crandall

Canadice Lake - John Maier, Rob Holland, Amanda Little

Canandaiga Lake - Steve Zumbo, Marty Lasher, Deirdre Crofton

Lake Carmel - Bobby Ulich

Cayuga Lake - Bill Ebert, Tom Casella, Sarah & Peter Gould, Marina Howarth, Shelley Blackler, Frances Lux, Bill Foster, Jim & John Murphy

Cazenovia Lake - Margot Giblin, Teresa Parke

Chautauqua Lake - Doug & Jane Conroe, Jeff Moore

Chenango Lake - Brian Brennan, David Forster, Col Fraser

China Pond - Dora & Scott Keller, Michael Schoolman

Lake Como - Patrick Mooney

Conesus Lake - Karl Hanafin, Chris Willoughby

Cossayuna Lake - Bill Zeppetelli, Lynn Clauer, Lynn Wilbur,

Craine Lake - Patty Matson

Crooked Lake - Seth Aldrich, Gary Kittell

Cuba Lake - Scott Barrey, Dana Harvey

Deer Lake - Dan Zembek

Deer River Flow - Rich Grayson

Lake Demmon - John & Shelley Clancy

DeRuyter Reservoir (Madison County) Kathy Sherlock

Duane Lake - Ken Pearsall

Duck Lake - Joe Tumia

Eagle Lake - Rolf & Dianne Tiedemann, Keith Park

Eagle Pond - Gerry Gould

Eatonbrook Reservoir - Jim & Stephanie Crawford

East Caroga Lake - Marc Platt, Gary Gent

Echo Lake - Tim & Roz Conner

Forest Lake (Rensselaer County) - David Bruso

Forest Lake (Warren County) - Rose O'Boyle

Fresh Pond - James Eklund

Friends Lake - Larry Estill, Steve & Hali Holmes, Lou Fortin, John Hodgson, Carl Tagliabue

Fulton Chain Second Lake - Tom Vawter, John Jeffery

Galway Lake - Ed Piotrowski

Geneganslet Lake - Linda Best, Ginger Potter, Deb Waziak, Peter Kirkaldy,

Lake George - Kristen Wilde, Emily Boucher, Kate Riordan, Tom & Jill Cunningham

Glen Lake - Paul Derby, Dave Hodgson

Grass Lake - Jim Ninos, Gerard Cole

Guilford Lake - Tommy Shedd

Lake Guymard - Robb & Peter Adams, Eugene Stratis

Hadlock Pond - Sal Ricciardone, J.T. Cashman, Ernest Small

Hatch Lake - Ken & Jan Walterick

Hemlock Lake - Amanda Little, Rob Holland, John Maier

Honeoye Lake - Terry & Dorothy Gronwall

Hunt Lake - Bob Cady

Indian Lake - Laurie Levy, Steve Altarescu

Jamesville Reservoir - Mark Teece

Java Lake - Keith Davis

Jenny Lake - Charles Moore, Robin Stocks, Skip Merriam, Jeanne Shoulder, Betty Castle, Ed Linville,

Kasoag Lake - Tim Hartmann, Mary Augustus, Robert Thompson

Kentwood Lake - John Christensen, Donald Bly, Hugh Smith

Keuka Lake - Maria Hudson

Kinderhook Lake - Ron Jensis

Kirk Lake - Alan Belsky

Lake Lacoma - Fred Beer, Mark Rosenzweig

Lake Lamoka - Bill Hassoldt, Patty & Al Ferrara, Brian Hayes, Charles Rybak

Lebanon Reservoir - Bob Washbon, Ted Neveldine

Lime Lake - Tom & Gail Reese, Marcia Bender, Karen Insley

Lincoln Pond - Wayne Johnson, Gerald Zahavi

Lake Lincolndale - Mike & Melinda O'Keefe, Michael Schartzchild

Little Fresh Pond - Ann Barzola, Jo Viola

Little Long Pond - Dai Dayton, Jean McDermott, Jean Dodds

Little Wee Wah Lake - Rachel & Christine Peverly, Jim Hays, Sue Haywood

Long Pond - Mark Pitsch

Long Pond (Suffolk County) - Dai Dayton, Jean McDermott, Jean Dodds

Loon Lake - John & Susan Pryor, Bernie & Paula Thoma

Lorton Lake - Jim Burba, Jan Ivkovich

Lower Rhoda Pond -Tad Higgins, Jamie Purinton

Lake Lucille - Juli Schaefer, Rik Paul, Judy Andersen, Kathleen Brennan, Daniel Petrow, Teri Collins

Lake Luzerne - Kurt & Keala TeKolste, Mike Schaffer, Jane Oppenlander, Kevn McGuinn, Preston France

Melody Lake - Bob Rosati,

Millsite Lake - Jan Douglass

Mirror Lake - Marcy Fagan, Steven Detwiler

Mohegan Lake - Randall Dugan, Joe Pacchiana

Montgomery Lake - Brenda Derfner, Peter Kolesar

Lake Moraine - Tim Peach, Ann Palmiter, Terry Spooner, Alan Tuttle, Eileen Fehlner, Janet Walsh

Mountain Lake - Kelley Vaughn Kaufman, Sharon Silverman, Wilhelm Figuroa,

Nassau Lake - Brian Wilson, Jim Prime

Oquaga Lake - Ben & Emmett Hanson

Orange Lake - Don, Karen, Kayla & Bo Dubois

Lake Oscaleta - Lou Feeney, Janet Andersen, Grace Mango

Otter Lake - Bob Vandewater, Joyce Ryan

Otisco Lake - Benjamin Hardwick

Owasco Lake - Brian Brundage, Mark & Michele Plis

Palmer Lake - Ellen & John Mueller, John Olson, Nicky Roe, Kathy Kahng

Panther Lake - Arthur & Lynn Montani, Bruce & Debora Walters

Peach Lake - Lorraine Janus, Mary Cooper

Peck Lake - Tom Bielli

Lake Peekskill - Michael & Christine Hritz

Petonia Lake - Aubrey, Jim & Valerie Kozak, Ryan Fisher, Vicki Bloch, David Arkin

Lake Placid - Mark Wilson, Mary Thill

Pleasant Lake (Fulton County) Christopher Wester, James Snyder

Lake Pleasant (Hamilton County) Jim Olsen, Peter Tobiessen, Mark Donecker, Kim Lewis

Pleasant Lake (Oswego County) Jim & Mary Hettler

Pleasure Lake - Bob Scott, Mike Meier, Bob McPhillips

Plymouth Reservoir - Paul Simack, Gregg Farley, Gary Callea, John Carroll

Queechy Lake - Craig Skerkis, Craig Warn, David & Nicole Hausman, Adrienne Allen, Bridget & Kevin Vasquez, Pete Doyle, Ellen Waggett

Raquette Lake - Dick Gentry, Lynn Ballou-Gentry, Lenny Schantz, Kim Hoffman

Lake Rippowam - Lou Feeney, Jan Andersen, Grace Mango

Roaring Brook Lake - Ina Cholst, Ira Goldberg, Sam Lee

Robinson Pond - Gary Menchen

Round Pond - Melanie Coupland

Rushford Lake - Tina & Harmon Smith, Wendy Bastian, Daryl Stevenson, Patrick Burkhart, Dan Harris, Patrick Tyndall

Lake Sagamore - Judy Campbell

Lake Salubria - Istvan Szabo, Steve Bokowski

Saratoga Lake - Karl Hardcastle, Bill LaMay, Neal Kramer

Schroon Lake - Charles Harste, Peter White, Bob Colegrove, Everett McNeill, Neil Chippendale, Scott Ireland, Glen Repko, Bill & Ann Marie McKeon

Seneca Lake - Dan & Laurie Corbett, Addison Mason, Susan & Larry Martin, David Granzin, Ted Carleton, Jim McGinnis

Sepasco Lake - Carl Parris

Seven Hills Lake - Joseph Perotti, Maureen Galway Perotti,

Silver Lake (St. Lawrence County) Dan Heneka, Bernard Van Brocklin

Silver Lake (Wyoming County) Frank Bright

Skaneateles Lake - Bill & Phil Dean, Rich Hole, William "Buzz" Roberts

Sleepy Hollow Lake - Laurel & Walter Wolfe, Julia DiGiovanni, Grace Mann

Smith Pond (Steuben County) Beth Cartella, Terry Vanderlinder, John Walther, Linda McGuffie, Linda Russwarm

Sodus Bay - Tom VanEtten

Somerset Lake - Wil Kamp, Cheryl Stockton

Song Lake - Donna Evans Orr, Terry Orr, Tarki Heath, Carl Grillo, Tom Abrams, Gloria Wright

Spring Lake - Liz Mastriani, Frank Ralborsky

Stissing Lake - Rachel Minkoff, Kim DeNardis, Sarah Miller

Lake Sunnyside - Christie & Bill Bennett

Taconic Pond - Paul Thomas

Tanglewood Lake - Derek & Mary Woollatt

Thunder Lake - David & Joy Klimachefsky

Lake Tibet - Vivian & Denis Gufarotti

Timber Lake - Eric Stand, George Levites, Ben Lieman, Michael Brown, John Turiano

Tomkins Lake - Alan Levin, Rick Sibbelkow, Michael Heller, Maria MacArthur

Tuscarora Lake - Jeff Edgarton

Tully Lake - Chris Kruth, Carl Kirshbaum, Jeffrey Schardt, Sam Columbo, Melinda Portmess

Tuxedo Lake - Jim Hays, Sue Heywood

Ulster Heights Lake - David & James Smith, Douglas Fraser

Unnamed Walkill Pond - Angela Sisson, Lee Rosenthal

Upper Little York Lake - Don & Robyn Fisher, Mike McNerny, Gary& Cathy Lawrence

Upper Rhoda Pond - Jean Hollaran, Heather Parsons, Johanna Vriens, Signe Adams

Vosburg Pond - Alene Onion, Steve Keller

Lake Waccabuc - Jan Andersen, Lou Feeney, Grace Mango

Waneta Lake - Terry Fisk, Jay White, Ed Sharpe, Ronald Tucker, Tom Webb

Lake Warn - Jim & Elaine Hill

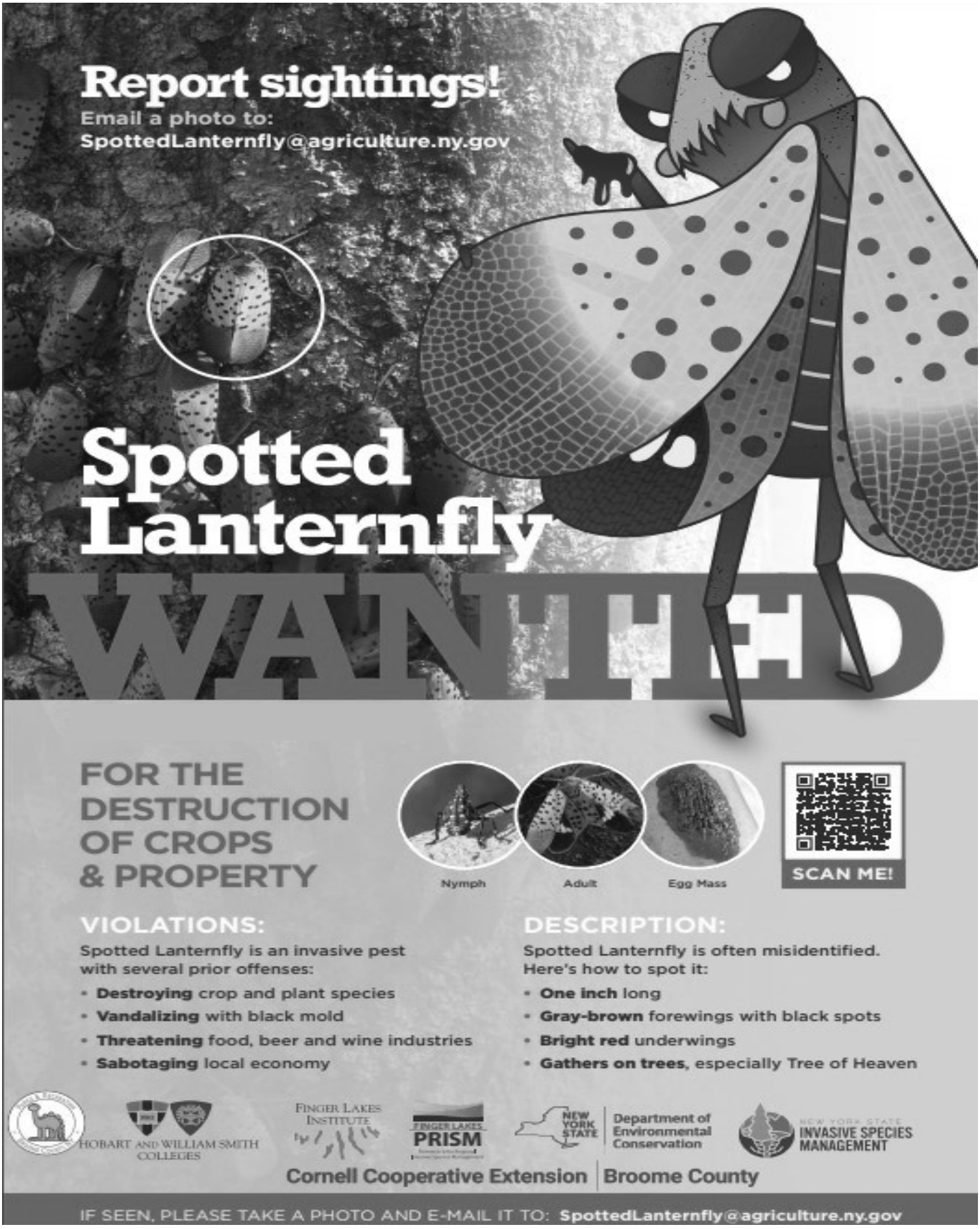
Wee Wah Lake - George Roberson, Odeta Beggel, Jim Hays

Weiden Lake - Tim Wood

West Caroga Lake - Jed Potocar, Walt Hogan, Don Hopper, Brian Drain

Lake of the Woods - John Weymann, Kevin McCarthy, Francis Wood

We also thank the staff at Upstate Freshwater Institute for all their continued support of the program and, of course, DEC's CSLAP Coordinator Stephanie June.


Report sightings!
Email a photo to:
SpottedLanternfly@agriculture.ny.gov
Spotted Lanternfly
WANTED
FOR THE DESTRUCTION OF CROPS & PROPERTY
Nymph
Adult
Egg Mass
SCAN ME!
VIOLATIONS:
Spotted Lanternfly is an invasive pest with several prior offenses:
• Destroying crop and plant species
• Vandalizing with black mold
• Threatening food, beer and wine industries
• Sabotaging local economy
DESCRIPTION:
Spotted Lanternfly is often misidentified. Here's how to spot it:
• One inch long
• Gray-brown forewings with black spots
• Bright red underwings
• Gathers on trees, especially Tree of Heaven
Hobart and William Smith Colleges
Finger Lakes Institute
Finger Lakes PRISM
New York State Department of Environmental Conservation
New York State Invasive Species Management
Cornell Cooperative Extension | Broome County
IF SEEN, PLEASE TAKE A PHOTO AND E-MAIL IT TO: SpottedLanternfly@agriculture.ny.gov

2022 Membership Form

New York State Federation of Lake Associations, Inc.

Lake, Watershed and other Associations:

Small Association (10-74 members)	$ 50.00
Medium Association (75-149 members)	$ 100.00
Large Association (150 or more members)	$ 175.00
Foundation (affiliated with NYSFOLA member)	$ 100.00

Individual Memberships:

Individual Membership (not a member of a NYSFOLA lake association)	$ 25.00
Individual Member of a 2018 NYSFOLA member lake association	$ 15.00
Student Membership	$ 15.00

Corporate Membership: $ 250.00

Name of Lake Association or Individual_____

Location (County)_____

(important if your lake is one of many in the state with the same name)

Contact Name _____

Address_____

City, State, Zip_____

Telephone_____

E-Mail_____

Web site _____

Amount Remitted _____ Check #_____ Date_____

Any Additional Donation?_____

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