

OCTOBER 2022 | VOL. 2



THE NOR'EASTER

A Newsletter from the Northeast Aquatic Plant Management Society



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The purpose of the Society shall be to promote appropriate management of aquatic vegetation, to provide for the scientific and educational advancement of members, to encourage scientific research in all facets of aquatic plant and algae management, to promote an exchange of information among members, and to extend and develop public interest in the discipline.

Mission Statement, adopted January 9, 2019.

2022 Directors



2022 Plant Camp

Plant Campers assessing plants with camp instructor Chris Doyle



Plant Camp participants listen to lectures Day 1

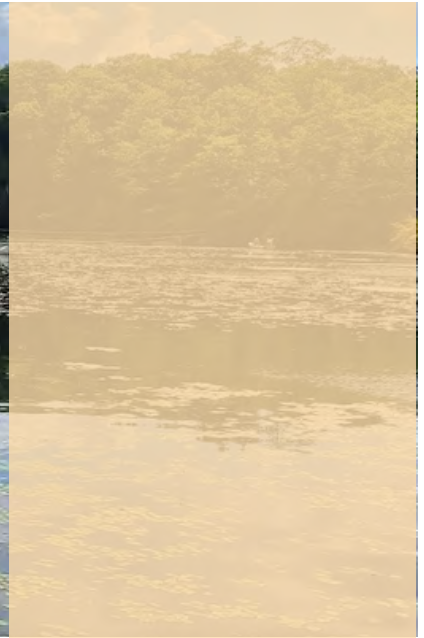
Leafy pondweed sample



Campers prepare for SAV surveys



Erin Vennie-Vollrath and Meg Modley look for SAV



The President's Message

Dear NEAPMS Members,

Autumn has arrived with its sapphire skies and misty mornings. The year is winding down, and my tenure as president will soon have passed. I like to think that during that time, we've laid the groundwork for future NEAPMS endeavors and expanded on what the society offers its members.

Last month we completed the first-ever NEAPMS Plant Camp, which provided instruction about aquatic plant surveys, identification, and management. We are developing a repository for aquatic plant control and management information that will be housed on the website, gearing up for a late autumn webinar series on stakeholder communication, and preparing for the 24th annual meeting in Hyannis, MA. The meeting will be our first in-person event in three years! It's a bit exciting and scary. We'll look forward to seeing many familiar faces and new ones, too. And we'll have a chance to share experiences, network, catch up, and enjoy each other's company.

See you all in January!

Cathy McGlynn

*"[.] first-ever
NEAPMS Plant
Camp, which
provided
instruction
about aquatic
plant surveys,
identification,
and
management ."*



Cathy McGlynn with her rake bouquet at Plant Camp.

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NORTHEAST APMS

Plant CAMP

PLANT CAMP HAPPENING NEXT WEEK!

SEPTEMBER 13-15, 2022

Liked by **littlebeareenvironmental** and 6 others

northeast.apms Are you ready for #NEAPMS #plantcamp? Make sure you bring your gear w... more

September 9



NORTHEAST APMS

CALL FOR ABSTRACTS!

Deadline: October 4, 2022

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northeast.apms The Northeast Aquatic Plant Management Society (NEAPMS) will hold its... more

September 9



Cover Photo Credit: Emily Mayer
Seven Lakes Drive



Plant Nerds Unite!

By Cathy McGlynn, NYSDEC and NEAPMS President

In mid-September of this year, forty-three people from six states arrived at the Taconic Outdoor Education Center in Cold Spring, NY, for three days of aquatic plant presentations, surveys, and field identification. Those three days were more than a year in the making. Our dedicated plant camp planning committee worked through all the details for registration, meal planning, lodging, schedule, instructors, plant samples, swag bags, and, well, you get the picture. We prayed for good weather, and the sun came out for both field classes. Teachers, consultants, non-profit employees, students, volunteers, and public servants all tried their hand at point intercept surveys and plant identification. And in the evenings, after dinner, they sat around the campfire enjoying all that late summer near Fahnestock State Park offers. Below are pictures of their adventures and an article from one of our scholarship recipients!



Ken Wagner, describes plant ID tips with plant campers.



Campers prepare for SAV surveys



Erin Vennie-Vollrath closely inspects watershield at Duck Pond.

PLANT CAMP EXPERIENCE

By: Derek Shea, Scholarship Recipient

I first heard about NEAPMS Plant Camp through an email from my advisor at SUNY Oneonta. In the middle of the summer, I was working long hours for an environmental testing lab but felt very distanced from science. Returning to school from the workforce, Plant Camp sounded like a fun way to connect with the scientific community and get my feet wet in the world of aquatic plants. This sense of connection and community was something I greatly missed during the busy summer season at an environmental testing lab. Part of me also thought it was mandatory for the Lake Management program, but I am so glad I signed up.

Driving down the Catskills, I was mainly excited but also nervous. I was the only one from my program going, and I had no idea what to expect. The Taconic Outdoor Education Center immediately blew my expectations out of the water. The inside of the cabins seemed brand-new. The main building was inviting, with an extensive educational display in the lobby. After the initial awkwardness of finding seats and introducing ourselves, our table seemed to connect quickly despite people coming from various sectors. It was refreshing to set work and courses aside and collectively learn from some fantastic voices within the New York State Department of Conservation and New York Natural Heritage Program, as well as those from the private sector. Plant camp also brought together a wide range of attendants from New York, New Jersey, Massachusetts, Vermont, and further afield.

I believe the structure of the camp allowed me to learn a ton in the short time we had together. Each day started with a few hours in the lodge, hearing from lecturers in the field. We would then implement the methods and skills we learned by practicing rake toss surveys and plant identification. Not only did this provide space between lectures to keep us attentive, but it was also great to get on the water and go out and do it. The talks spanned a range of topics from pondweed identification, the history of aquatic invasives, and the recent efforts to eradicate Hydrilla in the Croton River. It was great to hear from so many voices and be able to envision different career possibilities.

Beyond the knowledge I gained, it was great to connect with scientific-minded people. At the end of each night, people would flock to a campfire, discussing the events of the day and mindless things like the best Doritos flavor. It was a great time to unwind and rest from our field days. As someone with a rudimentary but budding knowledge of aquatic plants, it was great to connect with incredibly knowledgeable people on a personal level. This networking element allowed me to meet contacts and maybe even potential collaborators someday.

As a graduate student, I can highly recommend the NEAPMS Plant Camp. It was a fantastic experience that taught me so much about identifying plants in the field, management strategies, and permitting options when working with stakeholders. Beyond the knowledge I gained, it was a lot of fun. It is not every day you get a group of people to leave work or school behind and talk about aquatic plants for three days in the Catskills. The Taconic Outdoor Education Center did a great job hosting this event; the food and facilities were outstanding. I also want to thank everyone who organized this; the itinerary for an inaugural event was intuitive and maximized our time together. I'm already hoping to make it to the next one!



Chris Doyle, one of the plant camp instructors, provides tips on how to identify variable-leaf milfoil.



@NEAPMS



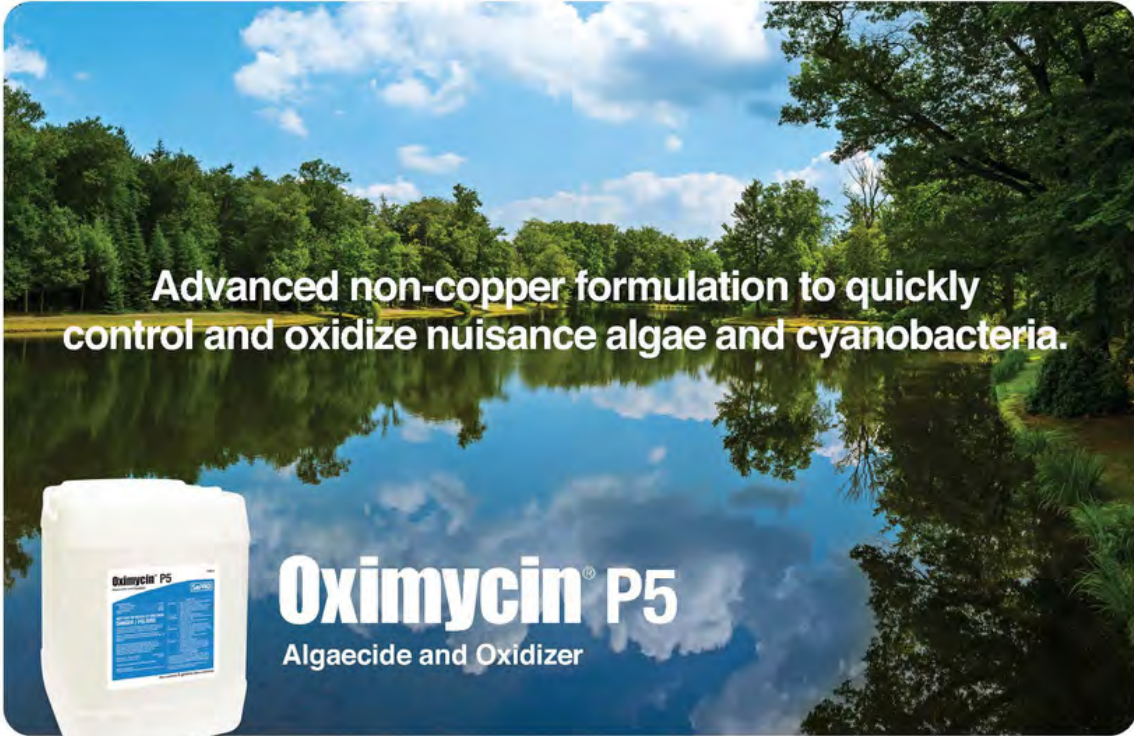
Scott Kishbaugh, plant camp instructor, presented about the unnatural history of AIS.




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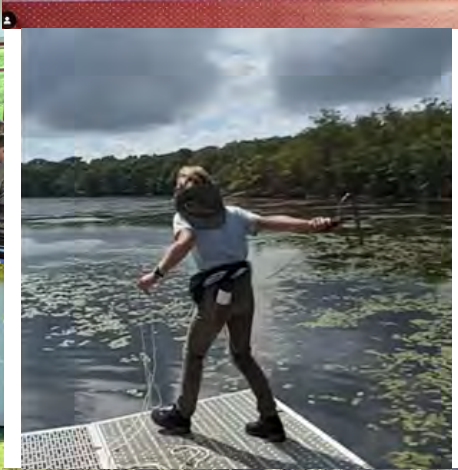
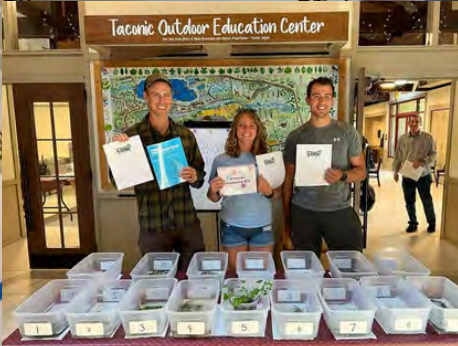
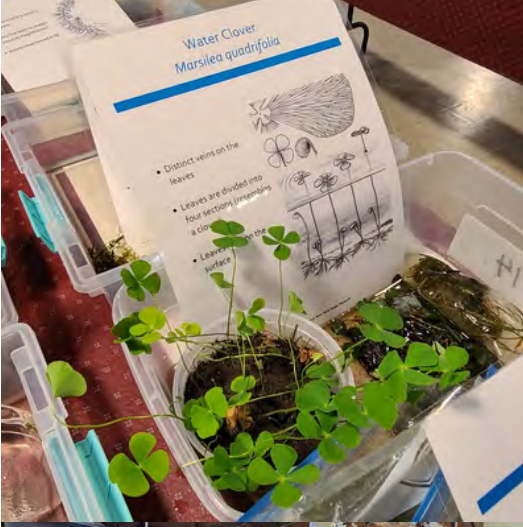
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2022 Plant Camp Photos



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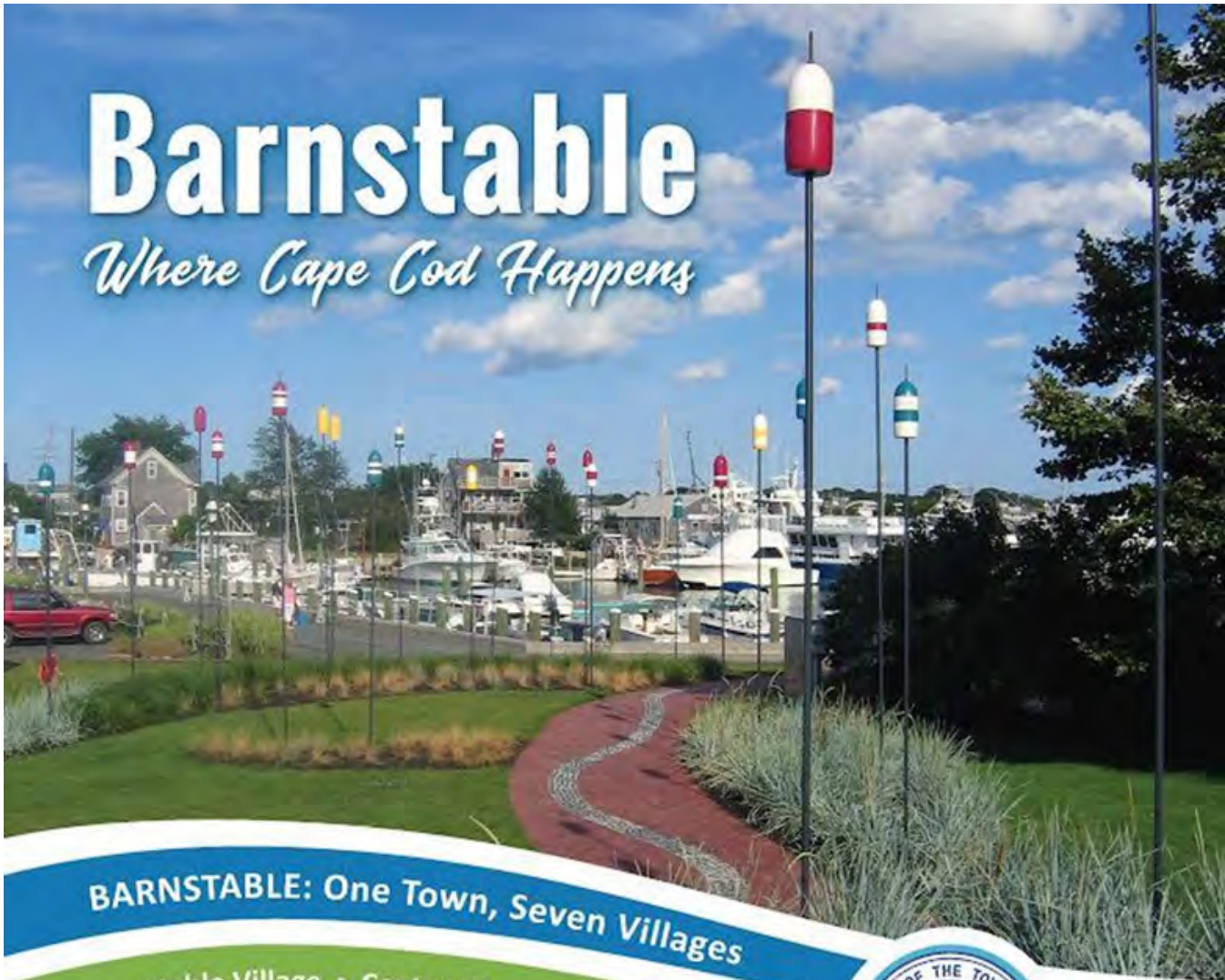
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- PAUL LORD (2013)
- JOANN DUNLAP (2014)
- CHARLES BOYLEN (2015)
- CHRIS DOYLE (2016)
- MARK HEILMAN (2017)
- MEG MODLEY (2018)
- WILL STEVENSON (2019)
- BIN ZHU (2020)
- GREG BUGBEE (2021)
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Plant Quiz!
Test your identification skills,
answer on bottom of page 25.

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NYSDEC CASE STUDY OF (LUDWIGIA PEPLOIDES)

By Cathy McGlynn, AIS Coordinator, NYSDEC

Floating primrose-willow (*Ludwigia peploides*) is an herbaceous aquatic plant native to South America, Australia, New Zealand, and parts of North America, including the South, Pacific Northwest, and Midwest. It is invasive in Europe, with France having considerable challenges with control. It is found in the Peconic River and Artist Lake on Long Island in New York State, including a most recent discovery at one location in Staten Island.



Floating primrose-willow (*Ludwigia peploides*)

Floating primrose-willow grows both in water and on muddy shoreline edges. Its alternate leaves vary from lanceolate to ovate and are hairless with smooth margins. Leaf size ranges from 0.5 to 4 inches (1.27 to 10.2 cm) long. It produces single yellow flowers with five notched petals on stems from upper leaf axils. It reproduces from fragmentation and many seeds [0.04 in (1 mm)] held in cylindrical capsules.

Recent research indicates that the climatic origin of seeds has a significant impact on germination rates (Gillard et al. 2017) this strongly suggests that existing infestations be controlled before climate change increases the likelihood of germination and spread via sexual reproduction. In addition, laboratory studies have demonstrated that floating primrose-willow possesses allelopathic activity that influences water quality and may impact the ability to out-compete plants to germinate (Dandelot et al. 2008).

Floating primrose-willow was first documented in the Peconic River in Suffolk County, NY, in 2003. NYSDEC and many volunteers have spent more than 5,000 hours pulling floating primrose-willow, which provided temporary plant management but did not keep it from returning and spreading each season. In 2021, the Bureau of Invasive Species and Ecosystem Health's Invasive Species Coordination Section performed a pilot control project on a 0.97-acre treatment area within the river. The foliar application of imazamox (32 fl. oz /acre) and florpyrauxifen-benzyl (10 PDU/acre) proved successful on floating primrose-willow.

"NYSDEC and many volunteers have spent more than 5,000 hours pulling floating primrose-willow, which provided temporary plant management but did not keep it from returning and spreading each season."



Dense amounts Floating primrose along a shoreline encroaching into water.

NYSDEC CASE STUDY OF (LUDWIGIA PEPLIDES) (CON'T)

That herbicide combination was also successfully tested on European frogbit (*Hydrocharis morsus-ranae*) by SePRO and University of Hartford, allowing DEC to issue a FIFRA 2ee Recommendation. During this season, an aquatic plant survey was conducted within the entire freshwater section of the river to guide the large-scale 2022 treatment. Macroinvertebrate surveys were conducted at four locations pre-and post-treatment with no recorded impact.

After holding stakeholder meetings and submitting and receiving all the necessary permits, pre-treatment aquatic plant surveys were conducted in early July 2022 to direct the foliar application of floating primrose-willow infestations, which occurred on July 27th. About a week before treatment, DEC performed macroinvertebrate and mysid shrimp surveys. In addition, we deployed data loggers to record dissolved oxygen within the center and the outer edge of a floating primrose willow patch and in an open water area. Treatment results indicate we will need to tweak the application method at some locations, but we have gotten good control of many patches. We have not found impacts on macroinvertebrates nor mysid shrimp, but some native plants, such as water shield (*Brasenia schreberi*) and spatterdock (*Nuphar advena*) exhibited some damage. Over the winter, our Region 1 AIS Coordinator, Ashley Morris, will assess the viability of Ludwigia seeds collected at the end of the season. Then, the remainder of the team will analyze data, report to stakeholders, and prepare for the next season.

References:

Dandelot, S., C. Robles, N. Pech, A. Cazaubon, and R. Verlaque. 2008. Allelopathic potential of two invasive alien Ludwigia spp. *Aquatic Botany* 88 (4): 311-316. <https://www.sciencedirect.com/science/article/abs/pii/S0304377007001805>

Gillard, M., B.J. Grewell, C.J. Futrell, C. Deleu, and G. Thiébaud. 2017. Germination and seedling growth of water primrose: A cross experiment between two invading ranges with contrasting climates. *Frontiers of Plant Science*. <https://www.frontiersin.org/articles/10.3389/fpls.2017.01677/full>



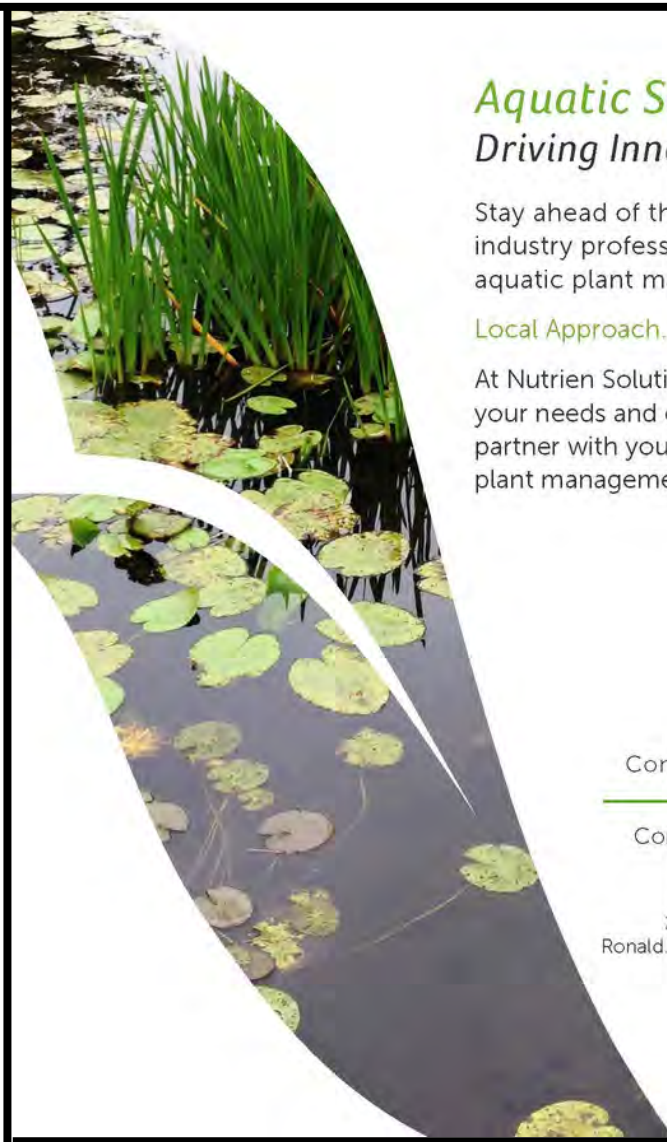
NYSDEC AIS Team on the Peconic River.



Floating primrose-willow (*Ludwigia peploides*)



Biological monitoring of macroinvertebrates. Pictured is a Mayfly. (Sourced NYSDEC website).






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Parrot Feather infestation in Liberty, Maine.

MAINE STATE UPDATE

By John McPhedran, Maine Department of Environmental Protection (DEP)

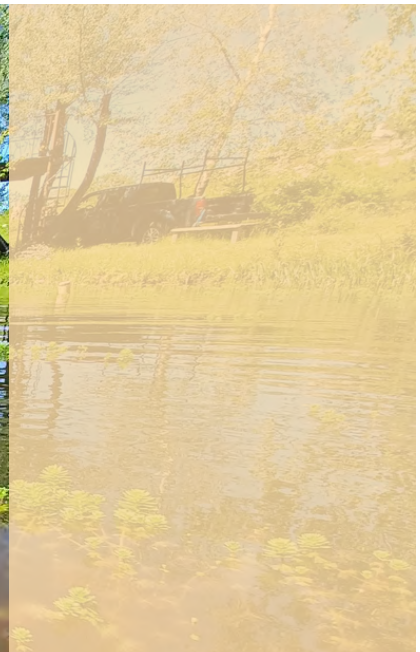
Staff Change:

DEP bid farewell to long-time colleague Karen Hahnel who retired in July after almost forty years of service to the State of Maine. Karen had been with Maine's Invasive Aquatic Species Program since 2002. We welcome new staff member Chris Reily, who has spent the past five years working for Maine DEP in other capacities. Before coming to Maine, he worked with US Fish and Wildlife Service in Maryland. Chris is taking over the Courtesy Boat Inspection Program, and we are pleased to have him on board.

New Infestations:

A concerning trend in Maine is the confirmation of several new infestations in 2022:

- A well-established infestation of variable leaf water-milfoil (*Myriophyllum heterophyllum*) was discovered in Shapleigh Pond in southwest Maine.
- A DEP contractor discovered brittle naiad (*Najas minor*) during a plant survey of Sokokis Pond, also in southwest Maine. This appears to be an incipient infestation: only one plant was found and removed in the fall of 2022. Maine DEP staff will continue to work with local surveyors to understand the extent of the infestation and determine a plan of action. Sokokis Pond is two miles from Lake Arrowhead where brittle naiad was confirmed several years ago.
- Eurasian water-milfoil (*Myriophyllum spicatum*) was discovered by colleagues in Maine's Natural Areas Program in the Department of Agriculture, Conservation, and Forestry. The plant was found growing in three small ponds near – but not connected by surface water to – the Sebasticook River in central Maine. SOLitude Lake Management applied a late-season herbicide treatment using ProcettaCOR. Maine DEP staff will continue surveying area ponds and monitor treatment efficacy in 2023.



"The first and only known Maine infestation of parrot feather (Myriophyllum aquaticum), in a private pond [..]"

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CALL FOR ABSTRACTS!

Deadline: October 4, 2022

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northeast.apms The Northeast Aquatic Plant

MAINE UPDATES (CON'T)

To our north, zebra mussel (*Dreissena polymorpha*) was recently confirmed in Lac Témiscouata, Quebec. This lake flows into New Brunswick's Madawaska River and the Wolastoq (St. John) River. Lac Témiscouata is 20 miles from Madawaska, Maine. The water quality of Maine's northern lakes is more likely to support zebra mussel populations than other parts of the state. This new infestation is a serious threat to Maine lakes that share use with our northern neighbors. Maine DEP will begin strategizing a plan to prevent the spread of this species to Maine waters.

Clean Drain Dry Campaign:

The stakeholder group formed in 2021 by Maine's DEP and Department of Inland Fisheries and Wildlife (DIFW) recommended ways to improve invasive aquatic species spread prevention in Maine. A boater/angler survey was conducted to better target outreach efforts; more than 12,400 people responded to the survey. As a result, new ramp signage was created, and sign installation began in late summer 2022. The stakeholder group will reconvene this fall and continue to work on a unified outreach message for the 2023 boating season. In addition, Maine DIFW is working to fill a new position for a full-time Invasive Aquatic Species Coordinator focusing on invasive aquatic animals.

Courtesy Boat Inspection (CBI) Program:

Preliminary data for the 2022 boating season show 121 saves in 2022. A save is when inspectors find and remove invasive aquatic plants from boats before or after launching. Maine DEP awarded \$289,000 in grants in 2022 to local and regional lake associations to organize and conduct inspections of boats entering and leaving lakes and rivers.

Infestation Highlights:

DEP's effort to eradicate Eurasian water-milfoil from south-central Maine's Cobbosseecontee Lake continued in 2022. DEP hired SOLitude Lake Management to apply herbicide (ProcellaCOR) in two new treatment areas. A combination of herbicide and diver removal will continue in 2023. DEP will continue to work with local and regional associations to respond to this infestation, including determining if eradication remains feasible.

An incipient infestation of curly-leaf pondweed (*Potamogeton crispus*) confirmed in central Maine in 2021 is being successfully managed by diver removal. The population appears to be reduced, and we are hopeful that this trend will continue in 2023.

Most of the continued manual removal of an incipient infestation of variable leaf water-milfoil in Androscoggin Lake (central Maine) was done in 2022 by the 30-Mile River Watershed Association. However, this invasive plant still appears confined to one cove of this lake, where Commissioners of Maine DEP and DIFW ordered a surface use restriction to keep boaters out of the area while removal occurs.

"A boater/angler survey was conducted to better target outreach efforts; more than 12,400 people responded to the survey."



@NEAPMS1



Eurasian watermilfoil (*Myriophyllum spicatum*).

MAINE UPDATES (CON'T)

The first and only known Maine infestation of parrot feather (*Myriophyllum aquaticum*), in a private pond in Liberty, was treated in July with ProcellaCOR by SOLitude Lake Management. The treatment appears to have been effective in reducing the population. However, we will continue to monitor this infestation in 2023 and retreat if necessary.

Late in 2021, genetic analysis by Luc Bernacki at St Joseph's College in Standish confirmed variable leaf water-milfoil (*Myriophyllum heterophyllum*) in Alamoosook Lake, located in mid-coast Maine. This plant morphologically appeared to be the native alternate-flowered water-milfoil (*Myriophyllum alterniflorum*). DEP is working with Dr. Bernacki and Ryan Thum (Montana State University) to get further clarification of exact species and investigate potential hybridity. Out of an abundance of caution, DEP staff removed all milfoil from the area where the apparent invasive plant had been seen previously. Stay tuned.

Local and regional lake associations continued tireless work to survey for and manage established infestations in Maine, supported in part by \$543,523 in grants from DEP.

"A boater/angler survey was conducted to better target outreach efforts; more than 12,400 people responded to the survey."

For more information, please check DEP's website <http://www.maine.gov/dep/water/invasives/> or email milfoil@maine.gov.

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NEW HAMPSHIRE STATE UPDATE

By: Amy Smagula, Limnologist/Exotic Species Program Coordinator

Water Violet Update:

In 2020, New Hampshire documented the growth of water violet (*Hottonia palustris*) in coves on Lake Winnepesaukee (the state's largest lake) and in a marina on Lake Winnisquam. This summer, we documented the abundance of the plant in a third lake, Lake Opechee, which is immediately downstream of Lake Winnepesaukee.

The plant has proven to be efficient with vegetative means of spread. Management efforts (herbicide treatment and diving) checked the growth of the plants in their initial locations in Lake Winnepesaukee. Still, growth rebounded in shallow coves following herbicide treatment, and the plants continued to spread. Areas with low-density growth are still being managed by diving as new plants emerge.

Quarantine or restricted use of these areas is a challenge due to resident and transient boaters' high rate of ingress and egress. New Hampshire does not have a quarantine law for waterbodies, and while we can restrict access to infested areas, we must still allow for ingress and egress for abutting boat owners.

Prevention:

Prevention efforts in the summer of 2022 included coverage of approximately 100 high-use public access sites across the state by the Lake Host Program, an education and courtesy boat inspection program coordinated by NH LAKES. Funding for the program is derived from state grant funds, with a mix of hard and soft match. In 2022, there have been a total of six "saves" where aquatic invasive species (AIS) were intercepted attached to recreational gear as boaters were leaving or as they were about to launch into a waterbody.

The graph below (data from NH LAKES) shows trends in Lake Host Program efforts from 2002 through 2021 (data from 2022 are still being reported). It is encouraging to see that while inspections have increased (blue line) over time, "saves" have declined in the last seven-plus years due to transient boaters being more aware of AIS and doing their part to clean, drain and dry their gear, so they are not transporting AIS. In addition, the number of staffed ramps has remained constant for several years.

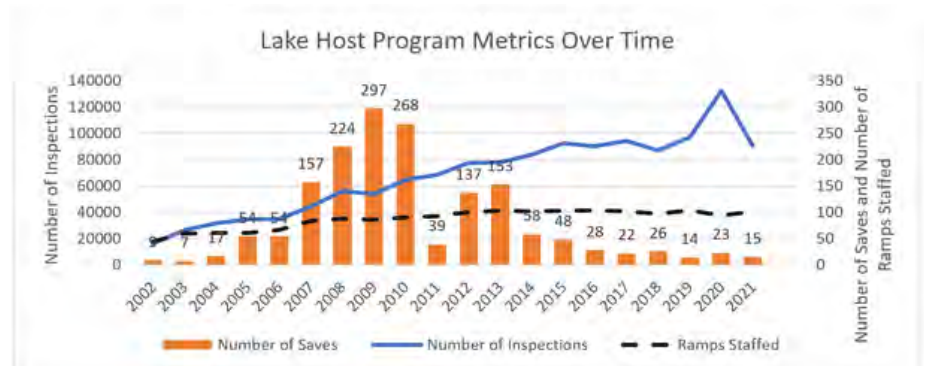


Figure 1. Lake Host Program Metrics Over Time - data from NH Lakes shows trends in Lake Host Program efforts from 2002 through 2021 (data from 2022 are still being reported).

"[..] "saves" have declined in the last seven-plus years due to transient boaters being more aware of AIS and doing their part to clean, drain and dry their gear[..]"



NH AIS boat inspections.

NEW HAMPSHIRE STATE UPDATE (CON'T)

Early Detection:

The Weed Watcher Program, the state's volunteer monitoring program for AIS, helped identify new growths of species of concern in the state. Two species were detected, one new variable milfoil infestation was identified (Swains Lake, Barrington) and one new brittle naiad infestation was found (Canobie Lake, Windham) in the summer of 2022.

The Weed Watcher Program grows yearly, with 3-5 new groups usually added. This volunteer network has been invaluable in expanding the number of eyes on the water looking for new infestations.

Long-Term Management:

This summer, herbicide treatments were performed at 17 waterbodies, primarily to control variable milfoil. However, other targeted species did include fanwort, Eurasian water milfoil, curly-leaf pondweed, and brittle naiad.

Diving or Diver-Assisted suction harvesting took place on 32 waterbodies across the state, targeting a range of species.

Legislation:

This legislative session will likely include a review of fees attached to boat registrations, which is the primary funding source for New Hampshire's Exotic Species Program. The United States Coast Guard will begin restricting grant funds to states that include fees lumped in with boat registrations, which New Hampshire does now. In addition to a fee for AIS mitigation, a series of other small fees are included with boat registrations, such as harbor dredge, agent fees, search and rescue, among others.

The legislative work will focus on finding alternative funding options or alternate means of charging these fees so that they are not tied to boat registrations. If fees are removed, the entire Exotic Species Program in New Hampshire is in jeopardy. It is unclear if other bills related to AIS will manifest.

Exotic Species Program Report:

A program report from 2018-2021 has been completed and posted online. The report includes information on all programmatic aspects of the Exotic Species Program during these years. The report can be found at <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-22-14.pdf>.



"If fees are removed, the entire Exotic Species Program in New Hampshire is in jeopardy."



Brittle naiad (*Najas minor*).



Variable-leaf milfoil (*Myriophyllum heterophyllum*).



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VERMONT STATE UPDATE

By: Kimberly Jensen

Vermont Department of Environmental Conservation (VTDEC)

VTDEC hired four seasonal technicians, an ECO AmeriCorp member, and a University of Vermont intern to assist with the Aquatic Invasive Species Program instead of replacing one full-time position lost in 2019. VTDEC is in the process of hiring an additional full-time position, and with this addition, the AIS Program will also be responsible for Aquatic Nuisance Control Permitting.

VTDEC provided grant awards for sixty-one Aquatic Nuisance Control Grant in aid projects throughout the State. In 2022, the administration for the grant program will be outsourced in the form of a Block Grant and a Request for Proposals will be available soon.

VT Public Access Greeter Programs

Municipal and Lake Associations hosted thirty-three VT Public Access Greeter Programs throughout the State with training provided by VTDEC for 147 participants. In 2021, 29,110 watercraft inspections were conducted with 346 interceptions of AIS. In addition, VTDEC developed a new VT Watercraft Inspection Dashboard so that greeters, coordinators, and VTDEC staff could view their data and all the statewide data together, and view instant notifications of any new threats.

Early Detection Rapid Response Activities and Events

VTDEC responded to twelve early detection reports in Vermont waterbodies. After surveying and investigating these reports, VTDEC found five new locations (or waterbodies) of invasive species to add to the Vermont Infested Waterbodies List. A new infestation of Eurasian watermilfoil (*Myriophyllum spicatum*) found in Lake Eden was reported by a volunteer patroller and received assistance from the Lake Champlain Basin ANS task Force, which resulted in support an aggressive handpulling and DASH harvesting effort, and underwater surveys led by VTDEC. Three locations found with water chestnut (*Trapa natans*) will be monitored and surveyed annually. A new infestation of Eurasian watermilfoil was found thriving in a USFWS Green Mountain Forest waterbody, and it is hopeful that federal, state, and local partners may develop a long-term management plan in collaboration.

A new introduction of American lotus (*Nelumbo lutea*) was reported by several botanists in the Brattleboro region and was later detected in several locations. In one location, the growth was aggressive, taking over most of the open water. VTDEC will work with various state partners throughout the winter to determine the status of the species and how best to move forward with any potential management that may occur.

VTDEC staff supported and worked with Alison Watts (UNH) to develop environmental DNA methods in New England lakes to detect Zebra mussel (*Dreissena polymorpha*) better. The study compared eDNA sampling methods with roving underwater units and physical surveys, to better understand the proximity for eDNA positive test results.



eDNA efforts are being made by VTDEC. (Image sourced from teatown.org).

"[..]VTDEC found five new locations (or waterbodies) of invasive species to add to the Vermont Infested Waterbodies List."



American lotus (*Nelumbo lutea*).

VERMONT STATE UPDATE (CON'T)

VTDEC staff monitored and sampled twenty-four high-risk waterbodies for zebra mussels, the analysis of the samples will continue this fall.

VTDEC Lakes and Ponds staff completed approximately fifteen aquatic macrophyte surveys within the State to monitor native and invasive aquatic species over time. VTDEC continued its partnership with CTDEP to survey and monitor the Connecticut River for Hydrilla and have found no suspicious specimens.

A new Vermont Invasive Patrollers for Animals (VIPA) Program was launched this year with an extraordinary amount of work by ECO AmeriCorps member Carly Alpert. A VIPA Manual, trainings, and VIPA Kits were developed and well-received by eager volunteers. The VIPA Program is a much-needed addition to help understand the presence of invasive aquatic animals throughout the state. The Vermont Invasive Patrollers for plants trainings and in-person on-water sessions also returned this year to the delight of many volunteers.

Aquatic Plant Management Program

VTDEC continued the long-term Lake Champlain Water Chestnut Management Program providing oversight to large-scale mechanical and hand-pulling harvesting operations throughout the Lake with the full contingent of contractors and crews for the season. Last season, in 2021, environmental conditions uncovered historic seed beds in some sites where populations were historically low, causing a huge spike in growth. Although overall populations within the 80+ sites were lower in the 2022 season, the continued effects of last year's boom were still prevalent. A handful of sites saw a 400% increase in the number of plants harvested in the previous two years. Despite this, the hand-pulling operations successfully met the goals set at the beginning of the season. Hand-pulling operations by contractors, volunteers, and VTDEC staff yielded 126,649 rosettes, logging over 2,211 hours in the field. The mechanical operations concentrated their efforts on their three northernmost mechanical harvest sites and removed approximately 1,186 tons of water chestnut from Lake Champlain.

Two new northern sites of Water chestnut were discovered and reported by anglers, one in Lake Champlain off Isle La Motte shore and the other in Arrowhead Mountain Lake. The discovery of four new sites in the last three years indicates the threat of more frequent introductions in Northern Lake Champlain. It underlines the need for extensive monitoring, effective communication with the public, and aggressive control by hand-pulling operations.

Throughout the State, municipalities and lake associations continued local aquatic nuisance control for Eurasian watermilfoil management programs using hand-pulling, bottom barriers, diver-operated suction harvesting, and herbicide practices. Three waterbodies have reported the absence of Eurasian watermilfoil, Lake Iroquois due to long-term management practices including recent herbicide treatments, and Ticklenaked Pond and a bay in Lake Champlain, the absence most likely due to seasonal trends.

"A new Vermont Invasive Patrollers for Animals (VIPA) Program was launched this year with an extraordinary amount of work by ECO AmeriCorps member [..]"



Water chestnut (*Trapa natans*).

MASSACHUSETTS STATE UPDATE

By: Kara Silwoski, MA Dept. of Conservation and Recreation

Through 2022, the Department of Conservation and Recreation (DCR) was busy. Staff has still primarily been working from home, with the primary Boston office closing in spring 2023 for consolidation. Despite some changes to the physical workspace, DCR's budget has been essentially unchanged, and the agency has continued to receive important funding for aquatic invasive species work.

DCR proceeded with aquatic plant management work using chemical and mechanical approaches, as appropriate. Water chestnut management was ongoing in the Charles, Mystic, and Nashua Rivers. DCR has also continued to collaborate and partner with other groups through its matching fund program, including developing a plan to address water chestnut on the Connecticut River. Cyanobacteria blooms have also continued to be an issue in many MA lakes.

Through the early summer of 2022, staff obtained permits for managing the Lakes District portion of the Charles River (approximately 250 acres). With all eight permits in hand for both upstream (Lakes District) and downstream (Lower Basin) portions of the Charles River, management was able to commence, and approximately 150 acres of Eurasian and variable watermilfoil were treated with ProcettaCOR in mid-August. Preliminary survey results are incredibly positive. The Charles River has been plagued with aquatic invasive plant growth for decades which has only been historically managed in small, localized areas, primarily for water chestnut growth.

Since 2020, DCR has worked on a two-part eDNA project focusing on zebra mussels and hydrilla. Staff continued to search for zebra mussels in the Berkshires and Western MA, the most high-risk areas due to the water chemistry of the waterbodies and proximity to infestations in nearby states. However, to date, there have been no new detections beyond the initial detection in Laurel Lake in Lee and Lenox in 2009. In 2021, the project included the development of a new assay for hydrilla analysis; additionally, staff are evaluating the addition of an assay for Asian clams to the project next season. In collaboration with other state agencies and entities throughout New England, staff have continued to survey and evaluate the hydrilla infestation within the Connecticut River to develop an appropriate and coordinated management strategy.

Since 2021, staff have implemented the use of iPads by Boat Ramp Monitors (BRMs) at seven monitored priority lakes in the state parks system. Each summer, the BRMs inspect vessels entering or exiting a waterbody to ensure no AIS are being transported. Utilizing the iPads and Survey123, species presence/absence, the last waterbody entered, and when photographs and other qualitative data were recorded in real-time, which allowed for monitoring and rapid response if an organism was identified. In addition, all data are displayed live on a dashboard for staff to analyze and export as needed.

Through its Chemical Application License Program, the Department of Environmental Protection (DEP) issued 416 individual, annual permits to treat algae and/or invasive/nuisance plants in lakes, rivers, and wetlands throughout the state as of early October.



Charles River in Massachusetts.

"[.] DCR has worked on a two-part eDNA project focusing on zebra mussels and hydrilla."



Zebra mussels (*Dreissena polymorpha*).

RHODE ISLAND STATE UPDATE

By: *Katie DeGoosh-DiMarzio*

RI Department of Environmental Management c/o New England Interstate Water Pollution Control Commission

Monitoring Results: One New Lake on the Invasives List as *Trapa natans* continues to expand in RI

RIDEM staff monitored for invasive plants at 25 unique locations (lakes/ponds/streams) via canoe or kayak during the 2022 summer field season. In addition, staff received over 60 calls from the public concerned about their lake. The combination of these efforts resulted in one new lake added to the list of lakes, ponds, and rivers in RI with an aquatic invasive plant population, bringing the new state total to 109 lakes documented with one (or more) invasive plant and an additional 28 river segments. A handful of water chestnut plants were found in the new location, Rawson Pond in Cumberland, RI. Rawson Pond is a run-of-the-river impoundment and tributary to the City of Pawtucket Water Supply reservoirs. All water chestnut plants were removed by hand. Unfortunately, the prevalence of water chestnut appears to be increasing in RI, as observations have almost tripled in the past five years (Figure 1). To help thwart new populations, in 2021, the Office of Water Resources developed a flyer (<http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/pdfs/invasiv-e-spot-water-chestnut.pdf>) to post online and sent to local lake residents as an outreach effort encouraging removal any isolated, pioneering plants. The flyer was also shared on social media, and it is believed this flyer led to the discovery, reporting, and removal of the plants from Rawson Pond.

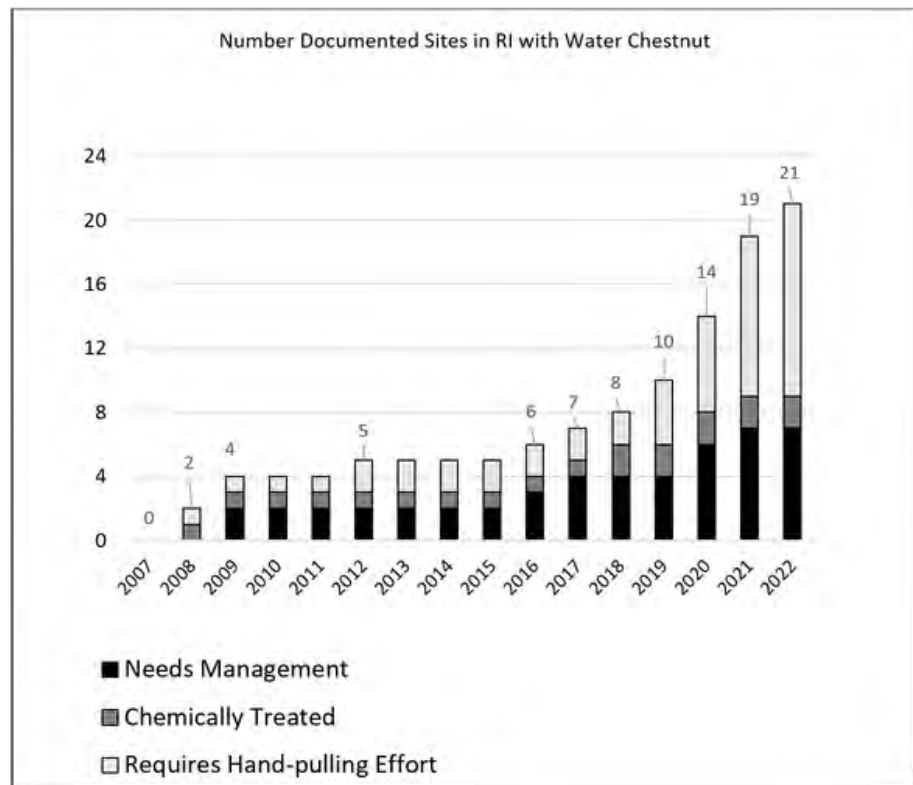


Figure 1. Number Documented Sites in RI with Water Chestnut.

"[...] one new lake added to the list of lakes, ponds, and rivers in RI with an aquatic invasive plant population, bringing the new state total to 109 lakes documented with one (or more) invasive plant and an additional 28 river segments."

"[...] prevalence of water chestnut appears to be increasing in RI [...]"

RHODE ISLAND STATE UPDATE (CON'T)

See the most current AIS distribution map and list of 137 lakes or river segments (with one or more invasive plants), including which invasive plants are present at each locale:

(<http://www.dem.ri.gov/programs/benviron/water/wetlands/pdfs/invasive.pdf>)

. RIDEM (AIS) monitoring activities are supported in part with federal funding provided by the US Environmental Protection Agency under Section 106 of the Clean Water Act. In addition to coordination with the Rhode Island Coastal Resources Management Council provided by the US Fish and Wildlife Service as authorized under Section 1204 of the Aquatic Nuisance Species Prevention and Control Act.

Management Efforts:

This year RIDEM reached out directly to local watershed and kayaking groups to expand outreach focused on water chestnut by hosting several online presentations in the spring. As a result, three local volunteer groups stepped up to attempt some community water chestnut pulls at Turner Reservoir (East Providence) and Blackstone River (Cumberland/Central Falls). In addition, RIDEM was able to hand-pull water chestnut at 11 of the 21 populations this summer. In total, 25 days were spent pulling plants but reduced the time to monitor other lakes. Although federal sources fund monitoring efforts, there continues to be no state resources dedicated to control or prevention activities, as in many New England states. Recently, RIDEM has partnered with the New England Interstate Water Pollution Control Commission and received a grant under the Southern New England Program to conduct a demonstration project with three municipalities to manage the three largest water chestnut populations in the area. Additionally, funds were used to coordinate local hand-pulling efforts to restore habitat in locations in the Blackstone and Ten Mile River Watersheds.

"[...] there continues to be no state resources dedicated to control or prevention activities, [...]."



Water Chestnut (*Trapa natans*).



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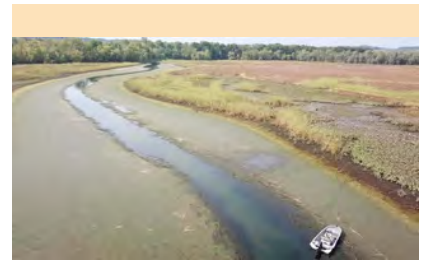
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CONNECTICUT STATE UPDATE

By: Greg Bugbee, Connecticut Agricultural Experiment Station

Efforts are ramping up to address the novel hydrilla biotype infesting the lower portions of the Connecticut River. Funding has been procured by the United States Army Corps of Engineers to test targeted herbicide applications as early as next year. The complexity and protection of the state-listed species within possible treatment sites will likely require considerable attention. The first treatment of the CT River hydrilla occurred in Wethersfield Cove this past summer. Diquat was the herbicide used, and the results provided relief from the weed throughout the season, but regrowth was observed over time. Areas exposed at low tide after treatment appeared less affected, as did hydrilla patches from the treatment site where the cove's outlet reached the river. Water chestnut is also a problem in the Connecticut River and is being addressed by robust harvesting. Unfortunately, hydrilla often replaces the water chestnut. After the initial application, tests using ProcellaCOR to control variable watermilfoil in Bashan Lake have shown excellent multiyear control. Grass carp have been introduced into several larger Connecticut lakes to control nuisance vegetation. These lakes have exhibited depletion of nearly all aquatic vegetation after five to seven years.

In the case of Candlewood Lake, Connecticut's largest lake, the vegetation loss was extremely rapid and occurred over 2021/2022 winter. CT DEEP announced the recipients of the second round of grant funding through the Aquatic Invasive Species Grant Program in June; \$370,000 was allocated to 15 projects aimed at reducing the impacts of aquatic invasive species on inland waters. The maximum allocation was \$50,000, and the minimum was \$3,000. The third round of AIS grants should be announced this fall. The Connecticut legislature created an Office of Aquatic Invasive Species housed at the Connecticut Agricultural Experiment Station (CAES). The office will coordinate research efforts throughout the state, serve as a repository for state-wide data on the health of rivers, lakes, and ponds concerning aquatic invasive species, perform regular surveys on the health and ecological viability of waterways, educate the public about aquatic invasive plants and efforts to reduce their impacts, advise municipalities on the management of aquatic invasive species, serve as a liaison among organizations and state agencies about the eradication and control of aquatic invasive species, and coordinate with the Connecticut Invasive Plants Council.



Connecticut River Hydrilla infestation.

"The first treatment of the CT River hydrilla occurred in Wethersfield Cove this past summer."



Combination of floating filamentous algae and floating Hydrilla fragments in the CT River.

NEW YORK STATE UPDATE

By: *Cathy McGlynn, NYSDEC*

Prevention/Education and Outreach:

-This season, the watercraft inspection steward program performed more than 220,000 inspections with 8,113 detections of AIS. Eurasian watermilfoil, curly leaf pondweed, and zebra mussels were the most frequently found species. In addition, we participated in both the Great Lakes and Northeast AIS Landing Blitz from July 1st to July 10th.

Monitoring and Detections:

- Aquatic plant surveys of the Peconic River have been completed for this season. Twenty-three native plants were found along with the following aquatic invasive species: Brazilian elodea, curly-leaf pondweed, european frogbit, fanwort, floating water primrose, and parrot feather.
- The 2022 aquatic plant survey of selected sites along the southern extent of the Hudson River were completed. No hydrilla was found.
- Hydrilla was found in three new locations: Lake Sebago in Harriman State Park (Rockland County), East Pier Marina, and Shores Waterfront Marina and Restaurant in Tonawanda (Erie County).
- Floating water primrose (*Ludwigia peploides*) has been confirmed in Wolfes Pond on Staten Island (Richmond County).
- Water spangles (*Salvinia minima*) have been confirmed in Van Cortlandt Lake in the Bronx (Bronx County) and Silver Mine Lake in Harriman State Park (Rockland County).

Control and Management:

- Additional hydrilla was found north of the treatment area in the portion of Cayuga Lake near Aurora.
- October 2022 marks the completion of the Croton River Hydrilla Control Project. The last Sonar (fluridone) treatment ended on September 6th, and aquatic plant surveys in early October found no hydrilla in the river. Monitoring will continue for an additional three years.
- Hydrilla control projects continued at Spencer Pond and Kuhlman Pond in Tioga County, Green and Hickory Lakes and Erie Canal/Tonawanda Creek in Erie/Niagara Counties, and at multiple locations in Cayuga Lake in Cayuga and Tompkins Counties. Work on Lake Sebago in Rockland County will begin next year.
- A total of 61 acres of surface area in the Peconic River were treated to control floating water primrose (*Ludwigia peploides*) and European frogbit (*Hydrocharis morsus-ranae*) using a combination florpyrauxifen-benzyl and imazamox on July 27, 2022.

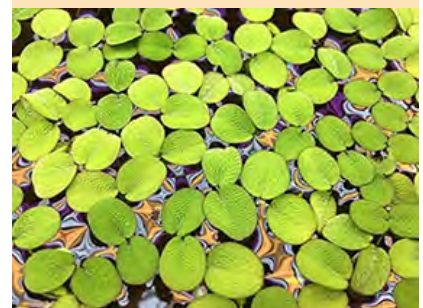
Research:

- Application of NYSDEC developed water chestnut biomass estimates to statewide management efforts.
 - Enables comparison between years within a site and across sites.
- Comparison of plant communities at waterbodies with and without a history of copper-based herbicide use.
- Comparison of plant communities at waterbodies with and without public access.



Left to right: Nicole White and Cathy McGlynn celebrate with partners as the Croton River Project comes to a close.

"October 2022 marks the completion of the Croton River Hydrilla Control Project."



Water spangles (*Salvinia minima*) have been confirmed in Van Cortlandt Lake in the Bronx (Bronx County) and Silver Mine Lake in Harriman State Park (Rockland County).

NEW JERSEY STATE UPDATE

By: Heather Desko, NJWSA

New Jersey Aquatic Invasive Species Management Plan:

The New Jersey Department of Environmental Protection was awarded \$20,000 from the Mid-Atlantic Panel on Aquatic Invasive Species to develop a state aquatic invasive species management plan. The plan will provide a framework for state coordination of AIS management, prevention, monitoring, education, and outreach. If you are interested in plan development, including content or status updates, please contact Heather Desko at hdesko@njwsa.org.

Hydrilla:

The Delaware & Raritan Canal project (New Jersey Water Supply Authority) has continued its sixth year of hydrilla control via injected herbicides. No hydrilla (rooted or floating) has been found throughout the treatment season, and the project will transition to intensive monitoring at this point. The pilot hydrilla management program has continued at the Manasquan Reservoir, successfully reducing tuber production, even in a small area.

The Boat Steward Program (New Jersey Water Supply Authority) entered its fourth year at Manasquan Reservoir and the second year at Spruce Run Reservoir. The Manasquan Reservoir stewards inspected 1,041 boats for "hitchhiking" invasive species fragments, intercepting 12 launching boats with fragments including Eurasian watermilfoil, curly-leaf pondweed, and fanwort, and 17 exiting boats with fragments of hydrilla or Eurasian Watermilfoil. The Spruce Run Reservoir steward inspected 1,009 boats, intercepting 15 launching boats with Eurasian watermilfoil.

CyanoHABs:

The New Jersey Department of Environmental Protection held the third annual Harmful Algal Bloom (HAB) summit in March 2022 to share information, updates, and progress related to HAB science, monitoring, response, management, treatment, and communication. Summit materials are available here: <https://www.nj.gov/dep/hab/summit.html>

A 26+ mile-long cyanobacteria bloom was documented in the Millstone River in July-September 2022. At the height of the bloom, cell counts exceeded 9 million cells/mL, and microcystin toxin levels exceeded 400 ppb. The bloom naturally attenuated with cooler temperatures and rainfall after this year's drought conditions.

"The New Jersey Department of Environmental Protection was awarded \$20,000 from the Mid-Atlantic Panel on Aquatic Invasive Species to develop a state aquatic invasive species management plan."

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PENNSYLVANIA STATE UPDATE

By: Nick Decker, PA Department of Conservation and Natural Resources

- Pennsylvania Fish and Boat Commission has a proposed rulemaking that would create new regulatory requirements for watercraft inspections and specifically addresses aquatic plants. [FISHING - Proposed Rulemaking - Propagation and Introduction of Fish into Commonwealth Waters.](#)
- Department of Conservation and Natural Resources coordinated its first three-day, hands-on workshop called Plant Camp. It focused on providing educators teaching high school with experiences to inform their teaching and an opportunity to earn the required continuing education ACT 48 hours. The workshop is planned again for August 2023. [2022 plant camp information.](#)
- The Controlled Plant and Noxious Weed Committee will be considering the inclusion of starry stonewort (*Nitellopsis obtusa*) in Pennsylvania's Controlled Plant and Noxious Weed List. [Controlled Plant and Noxious Weed Committee Meeting Information.](#)
- A population of *Hydrilla verticillata* was found at Conneaut Lake (Crawford County) in August 2022. [USGS specimen information.](#)



Starry stonewort (*Nitellopsis obtusa*).

*"The Controlled Plant and Noxious Weed Committee will be considering the inclusion of Starry Stonewort (*Nitellopsis obtusa*) in Pennsylvania's Controlled Plant and Noxious Weed List."*

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DELAWARE STATE UPDATE

*By: Mike Steiger, Aquatic Invasive Species Biologist,
Delaware Division of Fish and Wildlife*

The Delaware Division of Fish and Wildlife (DFW) was very busy controlling aquatic invasive species this year because of new invasions as well as staffing difficulties. The annual budget for aquatic plant management has stayed consistent over the last several years. The Fisheries section hired Mike Steiger for a much-needed position of Aquatic Invasive Species Biologist thanks to a Mid-Atlantic Panel on Aquatic Invasive Species (MAPAIS) grant. He will help develop Delaware's Aquatic Invasive Species Management Plan, as Delaware is one of only a few states not to have an approved plan. Having an approved plan will allow DFW to apply for additional funding to help further the research and control of aquatic invasive species.

The Delaware Division of Fish and Wildlife currently manages 36 impoundments totaling approximately 1,700 surface acres. Delaware has no natural lakes; most of the ponds in the State were originally created as mill ponds. When managing impoundments, DFW primarily focuses on hydrilla, creeping water primrose, and various filamentous algae species. DFW accomplishes its management goals through mechanical harvesting and chemical control. DFW treats between 3-5 waterbodies each year. Four ponds were mechanically harvested this year to remove nuisance filamentous algae. Annually between 800 and 3,500 cubic yards of algae are removed from Delaware ponds. The typical species are: *Rhizoclonium*, *Spirogyra*, *Lyngbya*, *Pithophora*, and *Hydrodictyon*.



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2022 PLANT CAMP EVALUATION REPORT

By: Emily Mayer, Watershed Scientist, Raritan Headwaters Association

The Plant Camp Planning Committee created a Plant Camp Evaluation Survey comprised of 14 questions for participants, aka plant campers, to respond. Overall, 31 participants submitted surveys, and of those 31 participants not everyone responded to every question. However, we were able to gain insight into participants' experience at plant camp and useful information to implement at future plant camps.

On a scale of 1 – 5, 1 being the worst to 5 being the best, participants' level of aquatic plant identification prior to training felt their identification was the worst or average skill-level. While few participants believed their skills were the best (Figure 1). Participants were also asked if they felt their knowledge or skills improved by participating in plant camp, and >15 participants rated this question at a 4 or 5 (Figure 2). The majority of participants provided a rating of 4 based on the rate of sequence of flow of balanced instruction, field time, and breaks.



Figure 1. How would you rate your knowledge of aquatic plant identification prior to the training?

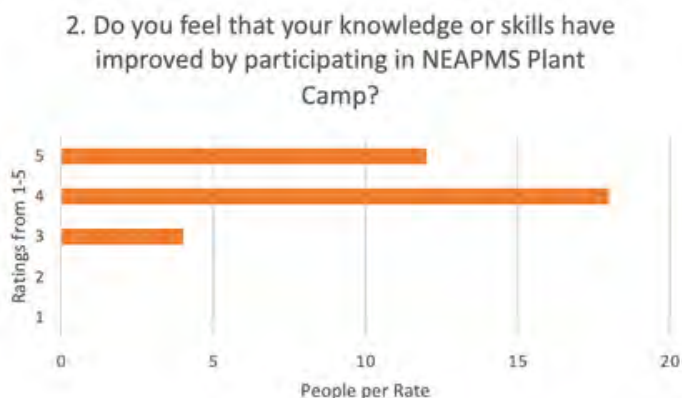
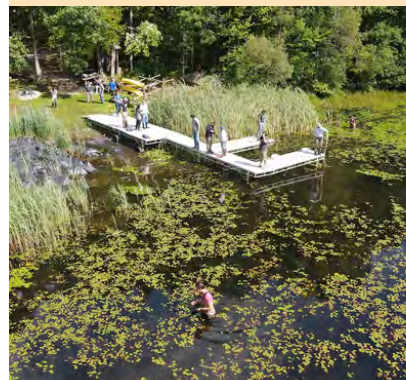


Figure 2. Do you feel that your knowledge or skills have improved by participating in NEAPMS Plant Camp?

In general, the majority of plant campers (54%) stated that plant identification, plant management (15%), and all topics (16%) were the most useful information they learned about. The remainder of the participants stated learning more specific topics such as pondweeds, case studies on specific plants, rake toss sampling techniques, and hands-on learning in the field. According to the evaluation, participants that responded found the following topics were least useful: learning about herbicides (9%), and case studies (6%).



Plant campers searching for aquatic macrophytes at Duck Pond.

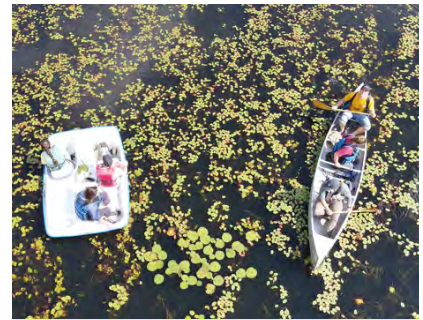


Left to right: Heather Desko, Emily Mayer, and Nicole White at Plant Camp.

2022 PLANT CAMP EVALUATION REPORT (CON'T)

The plant camp committee wanted to know what plant camp participants would have liked to have more detail on. Overall, 32% of participants wanted more detailed information on plant taxonomy, and 12% stated plant identification keys to further support their learning at camp. Other responses below 9% included more relevant case studies, point intercept methods/techniques, and water chemistry impacts on plants. Overall, 30 participants, or 96%, stated the training was a good value for the fee, while one participant, or 3%, stated they were unsure.

We asked our plant campers for suggestions that could help us improve the training program. Campers suggested more hands-on time identifying plants (19%) and to create more small group activities centered on plant identification (12%). Campers also recommended that we split up the beginners versus the more experienced biologists regarding plant identification (6%). Other responses (<6%) included microscope usage to identify plants, more in field time, and more breaks overall. An astounding 96% of participants said they would like to see the NEAPMS plant camp offered again in the future. Some of the suggested locations included Green Lakes State Park, somewhere in New York, and YMCA camps near lakes. However, many of our plant campers (approximately 45%) loved the current venue. Over 38% of participants enjoyed the meals at the training facility and enjoyed the lodging that was provided. We allowed respondents to provide additional comments which included changing the name to Aquatic Plant Camp so participants can bring proper gear/ equipment, healthier snack options, use less plastic waste, and provide information on how to become a volunteer. The committee's final question on the survey asked our plant campers if they would recommend this training to a colleague and 96% responded yes!



Plant Campers conducting PIM methods to collect plants to practice their ID skills.



Top to bottom: Chris Doyle, Ken Wagner and Emily Mayer work together to ID a plant specimen.

Announcements

- **Virtual**

- Nov 16th @ 2-3pm: EPA Water Research Webinar: Real-Time Risk Characterization Tool for Harmful Algal Blooms
- NEAPMS Webinar Series: The Communication Challenges of Aquatic Invasive Species Management: December 5, 2022, and December 12, 2022 - Register: <https://lnkd.in/dwDK937P>
- Feb 28th, Mar 2nd, 7th & 9th, 2023 @ 12:00-5:30pm: EPA 2023 National Fish Forum

- **Hybrid**

- Oct 24th-26th @ varying times, virtual as well as in Hyde Park and Kingston, NY: Hudson River Watershed Alliance Annual Conference

Calls/Opportunities

- **NEAPMS Calls for Student Posters (TBD)**

- Call for Abstracts for EPA's 2023 National Fish Forum (Virtual) – due Nov 2nd
- 2022 NALMS Conference Minneapolis, Minnesota November 14 - 17, 2022
- Call for Symposia Abstracts for Citizen Science Association's 2023 C*Sci Conference in AZ – due Nov 19th - call for talk and poster abstracts will open December 2nd
- 2022 North American Invasive Species Management Association (NAISMA) Annual Meeting - Kissimmee, Florida - Nov 07 - Nov 10, 2022
- 2023 31st USDA Interagency Research Forum on Invasive Species - Annapolis, Maryland - Jan 10 - 13, 2023
- 13th National Monitoring Conference April 24 - 28, 2023 - Virginia Beach, VA
- 2023 APMS 63rd Annual Meeting - Indianapolis, IN - July 24-27, 2023

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GRADUATE-SCHOLARSHIPS](https://www.neapms.org/graduate-scholarships)

PRELIMINARY PROGRAM
24nd ANNUAL CONFERENCE
OF THE



10-12 JANUARY 2023

Resort and Conference Center at Hyannis
Hyannis, MA

Tuesday, January 10, 2023

2:00-6:00 PM	REGISTRATION OPEN	NEAPMS BOD	
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Aquatic Plant Sampling Methods (Moderator: Erin Vennie-Vollrath)

2:30-3:00 PM	Sampling Design for Early Detection of Aquatic Invasive Plants in Coastal Waters of the Great Lakes	Andrew Tucker, Ph.D.	Page 6
3:00-3:30 PM	PIRTRAM Aquatic Plant Community Survey on Chautauqua Lake	Jessica Casey ¹	Page 7

Aquatic Plant Workshop (Moderator: Emily Mayer, Raritan Headwaters Association)

3:30-4:00 PM	Linear-leaved Potamogeton, Easily Confused and Often Misidentified	C. Barre Hellquist, Ph.D.	Page 8
4:00-5:00 PM	Aquatic Plant Workshop: Distinguishing Between Some Vegetative Look-alike Aquatics of the Northeast	Donald Padgett, Ph.D.	Page 9
5:00-6:00 PM	PLANT SPECIMEN VIEWING/NETWORKING		

6:00-8:00 PM	PRESIDENTS RECEPTION/DINNER ON YOUR OWN		
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Wednesday, January 11, 2023

8:30AM-6:00 PM	REGISTRATION OPEN	NEAPMS BOD	
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Opening Session/ Non-Chemical Methods (Moderator: Cathy McGlynn, New York State Department of Environmental Conservation)

9:15-9:30 AM	WELCOME AND OPENING REMARKS	Cathy McGlynn, Ph.D. NEAPMS President	
9:30-10:00 AM	Drawdown as a Lake Management Technique	Ken Wagner, Ph.D.	Page 10
10:00-10:30 AM	Grass Carp in Connecticut Lakes – Somethings Fishy Here	Greg Bugbee	Page 11
10:30-11:00 AM	Managing Eurasian Watermilfoil Using Hand Harvesting 2020-2022	Gerald Principe and Eric Gustavsen	Page 12
11:00-11:30 AM	What is the Desired Oxygen Level in the Water and at the Sediment-water Interface in a Lake? A Literature Review and Possible New Paradigm Shift	Patrick Goodwin, Ph.D.	Page 13

11:30-1:00 PM	LUNCH AND NETWORKING		
11:30-1:00 PM	STUDENT LUNCH AND PRESENTATION	Kyle Clonan	

Industry Updates (Moderator: Chris Hanlon, Lake Management Sciences)

1:00-2:00 PM	Twelve 5-MINUTE INDUSTRY UPDATES		
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Spotlight on Water Chestnut (Moderator: Jon Gosselin)

2:00-2:30 PM	Updates on Water Chestnut Research and Implications for Management	Lynde Dodd	Page 14
2:30-3:00 PM	Water Chestnut Biomass Estimates Using Density as a Proxy: Facilitating Multi-year Comparisons with a Streamlined Approach	Steven Pearson, Ph.D.	Page 15

3:00-3:30 PM	BREAK/NETWORKING		
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Stakeholder Communication and Lake Management Plans (Moderator: Meg Modley)

3:30-4:00 PM	Stakeholder Communication: Necessary Challenges	David Wick and Cathy McGlynn, Ph.D.	Page 16
4:00-4:30 PM	Love that Dirty Water: Successful Development and Implementation of a Large-Scale Management Program on the Charles River	Kara Sliwoski	Page 17
4:30-5:00 PM	A Watershed Approach for Raquette Lake	Blake Neumann	Page 18

5:00-5:30 PM	NEAPMS BUSINESS MEETING	Cathy McGlynn, Ph.D.	
5:30-6:00 PM	SCIENTIFIC POSTER SLAM SESSION	Erica Haug, Ph.D.	

6:00-7:00 PM	SCIENTIFIC POSTER VIEWING SESSION		
7:00-8:30 PM	BANQUET/AWARDS		
8:30-8:45 PM	NEAPMS AQUATIC PLANT CAMP PRESENTATION	White, McGlynn, Gosselin, Mayer, Modley, Vennie-Vollrath, Kishbaugh	
8:45-9:00 PM	RAFFLE		

Thursday, January 12, 2023

7:45-12:00 PM	REGISTRATION OPEN	NEAPMS BOD	
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Invasive Aquatic Plants (Moderator: Bo Burns, Alligare, LLC)

8:15-8:30 AM	OPENING REMARKS	Bo Burns, Incoming NEAPMS President	
8:30-9:00 AM	Documenting Phenological Growth Patterns of Connecticut River Hydrilla	Kara Foley ¹	Page 19
9:00-9:30 AM	Invasive Swollen Bladderwort <i>Utricularia inflata</i> in Massachusetts Lakes and Rivers	David Wong, Ph.D.	Page 20

9:30-10:00 AM	A Timeline of Interactions Between Two Highly Aggressive Invasive Species (<i>Hydrilla verticillata</i> and <i>Myriophyllum spicatum</i>) in a Kettle Lake System.	Ashley Morris ¹	Page 21
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10:00-10:30 AM	BREAK-SILENT AUCTION ENDS		
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Harmful Algal Blooms (Moderator: Heather Desko, New Jersey Water Supply Authority)

10:30-11:00 AM	Species-specific Gene Silencing-based Novel Approach for Harmful Freshwater Cyanobacterial Blooms Mitigation	Ping Gong, Ph.D.	Page 22
11:00-11:30 AM	Gaging Downstream Transport of Cyanobacteria from Persistent HABs in a New Jersey Drinking Water Basin	Kyle Clonan ¹	Page 23
11:30-12:00 PM	Assessing Nitrogen Removal by Coupled Nitrification-Denitrification in Intermittently Drained Bell-Siphon-Mediated Floating Treatment Wetland in Mesocosm Experiment	Ellie Sangree ¹	Page 24
12:00-12:30 PM	Tools and Techniques for Proactive Pond Management	Jon Gosselin	Page 25

12:30-1:30 PM	LUNCH AND SILENT AUCTION WINNERS ANNOUNCED MEETING ADJURNED		
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Scientific Poster Session

Student	<i>Assessing Nitrogen Removal by Coupled Nitrification-Denitrification in Intermittently Drained Bell-Siphon-Mediated Floating Treatment Wetland in Mesocosm Experiment</i>	Ellie Sangree	Page 26
Student	<i>Conservation of Rare Native Plants and Potential Impacts of Herbicides: An example of <i>Myriophyllum alterniflorum</i></i>	Matthew Speight	Page 27
Professional	<i>Spray Retention of Commonly Managed Invasive Emergent Aquatic Macrophytes</i>	Erika Haug, Ph.D.	Page 28
Professional	<i>Article 15 Aquatic Pesticide Permits</i>	Sofia Furlong	Page 29
Professional	<i>Modified SAV Survey of NJ Watershed (WMA8)</i>	Emily Mayer and Nicolle Fekete	Page 30