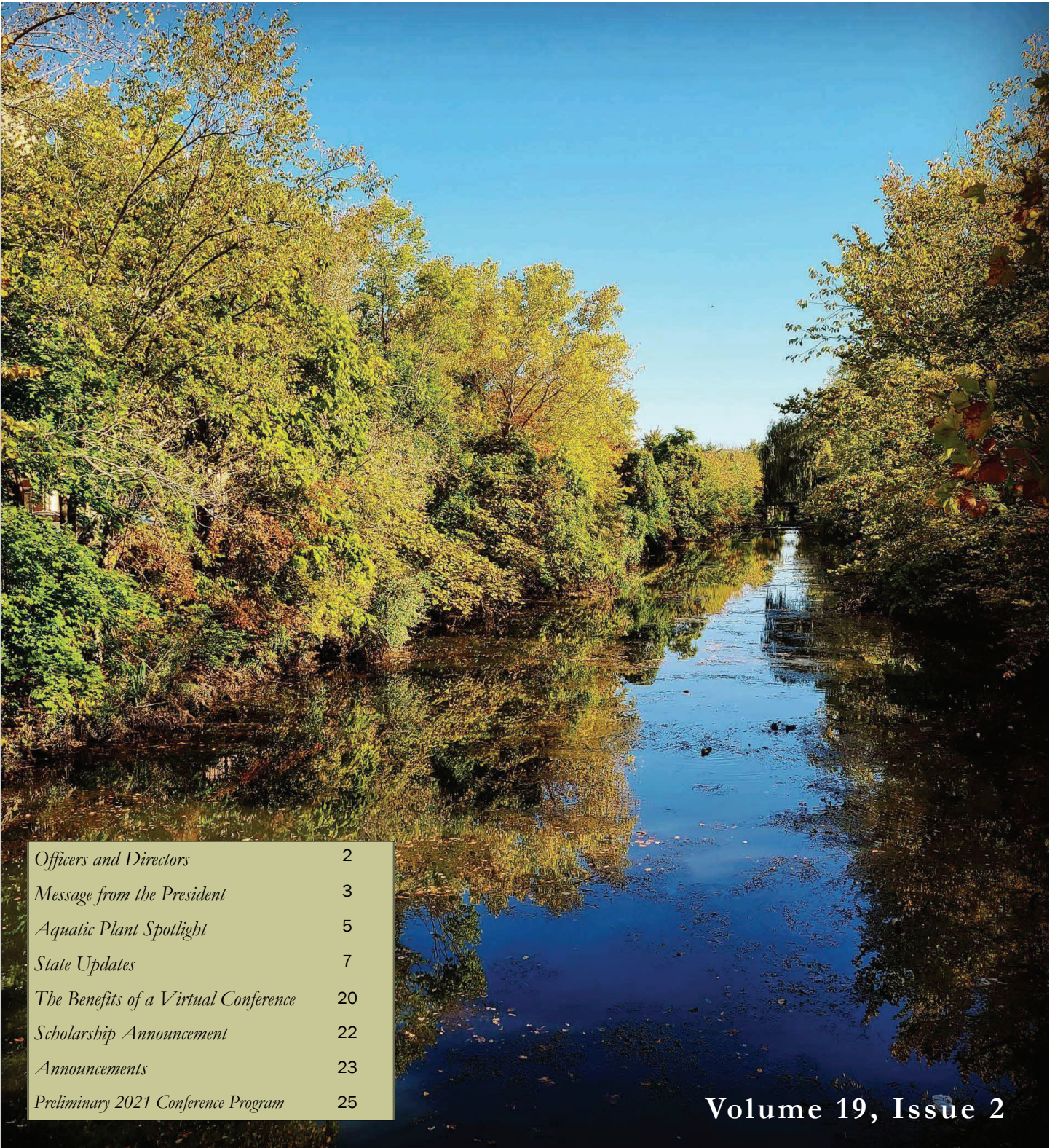




# NOR'EASTER

A Newsletter of the Northeast Aquatic Plant Management Society

Volume 19, No. 2



<i>Officers and Directors</i>	2
<i>Message from the President</i>	3
<i>Aquatic Plant Spotlight</i>	5
<i>State Updates</i>	7
<i>The Benefits of a Virtual Conference</i>	20
<i>Scholarship Announcement</i>	22
<i>Announcements</i>	23
<i>Preliminary 2021 Conference Program</i>	25

Volume 19, Issue 2



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[zhu@hartford.edu](mailto:zhu@hartford.edu)**Past President****Will Stevenson**

508-765-0101

[wstevenson@solitudelake.com](mailto:wstevenson@solitudelake.com)**Editor****Chris Doyle**

908-507-0923

[naiadconsultants@gmail.com](mailto:naiadconsultants@gmail.com)**President Elect****Greg Bugbee**

203-974-8512

[gregory.bugbee@ct.gov](mailto:gregory.bugbee@ct.gov)**Vice President****Cathy McGlynn**

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[Catherine.McGlynn@dec.ny.gov](mailto:Catherine.McGlynn@dec.ny.gov)**Secretary****Amy Smagula**

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[amy.smagula@des.nh.gov](mailto:amy.smagula@des.nh.gov)**Treasurer****Glenn Sullivan**

908-850-8775

[gsullivan@solitudelake.com](mailto:gsullivan@solitudelake.com)**DIRECTORS****Web Administrator****Chris Borek**

609-815-1654

[chrisborek@blacklagoon.us](mailto:chrisborek@blacklagoon.us)**Student Director****Emily Mayer**

908-850-0303

[emayer@solitudelake.com](mailto:emayer@solitudelake.com)**Erika Haug**

919-515-5653

[ejhaug@ncsu.edu](mailto:ejhaug@ncsu.edu)**Heather Desko**

908-730-0270

[HDesko@raritanbsin.org](mailto:HDesko@raritanbsin.org)**Meg Modley**

802-372-0215

[mmodley@lcbp.org](mailto:mmodley@lcbp.org)**Chris Hanlon**

973-417-3034

[aquaticnj@optonline.net](mailto:aquaticnj@optonline.net)**Jon Gosselin**

603-494-5966

[jong@sepro.com](mailto:jong@sepro.com)

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

*Mission Statement, adopted April 20, 1999*

On the Cover: The Overpeck Canal (New Jersey) in autumn (E. Mayer)

# MESSAGE FROM THE PRESIDENT

Dear NEAPMS members and friends,

I hope you are enjoying the beautiful fall season in the Northeast or wherever you are!

First, thank you for your patience and understanding as we worked through all the logistics for the announcement I sent out on September 21. We will still hold our upcoming annual conference, albeit in an online format, from January 12-14, 2021, and we plan to have our next in-person conference on January 11-13, 2022 in Cape Cod, MA. Our primary goal is to keep you safe, while enjoying learning and socializing at our conference. Because of the complex nature and being unprecedented, the Executive Committee weighed its options and took the time to finalize the logistics and decisions of such a switch.

Let me introduce more about our exciting virtual 2021 conference. The format of our virtual conference will be different, but we are trying to minimize these changes. We will have an algae workshop on Tuesday afternoon and invited oral presentations on both Wednesday and Thursday mornings. There will be no events or programs on Wednesday afternoon or the evening. We invited keynote speakers Stanley "Stas" Burgiel, the Executive Director of the National Invasive Species Council and Hilary Smith, Sr. Advisor for Invasive Species, U.S. Department of the Interior. Many other well-known experts are invited to present at our conference, such as Dr. Ken Wagner, Dr. John Madsen (USDA), and Dr. Stuart Findlay (Cary Institute of Ecosystem Studies). There will be a wide range of topics such as eDNA, harmful algal blooms, submersed aquatic vegetation, and invasive aquatic plant control. We also welcome you to submit poster presentations. An official call for posters and detailed programs will be announced shortly. In addition, the registration cost is heavily reduced to only a quarter of our regular fee. Please help us spread the word, join us at the 2021 virtual conference, and participate in the conference in any way. Remember this will be our first online conference, your attendance will make your name permanently recorded in the history of NEAPMS. Who doesn't want to leave a mark in the history?

Finally, I'd like to acknowledge our entire Board for deciding on a virtual format and diving in to create a comprehensive program. They have been working so hard behind the scenes despite those challenges we all face during these times, such as a global pandemic and the end of the field season. Particularly, I would thank the Program Committee led by Chris Doyle for putting together the framework for the conference.

Whether you are home-owners, managers, regulators, benefactors, applicators, industry sponsors, researchers, or students, please join us in our 2021 conference. We sincerely welcome your continued involvement, sustained sponsorships, and generous contributions to our scholarship fund. Together, we will work to keep our society vibrant and safe. I remain grateful for your patience, passion, and participation.

Faithfully,

Dr. Bin Zhu  
NEAPMS President

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<b>Mark Heilman</b> (2017)
<b>Meg Modley</b> (2018)
<b>Will Stevenson</b> (2019)

**Below:** NEAPMS President Dr. Bin Zhu at the summit of Whiteface Mountain during our September 2019 BOD meeting. You can see Lake Placid in the distance to the left. (Photo Courtesy: B Zhu).





# YOUR 2020 NEAPMS BOARD OF DIRECTORS AND OFFICERS



Back Row (L-R): Erika Haug, Jon Gosselin, Greg Bugbee, Glenn Sullivan, Chris Hanlon, Will Stevenson.  
Front Row (L-R): Chris Doyle, Emily Mayer, Heather Desko, Cathy McGlynn, Amy Smagula, Bin Zhu, Chris Borek  
Not Pictured: Meg Modley



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# AQUATIC PLANT SPOTLIGHT:

*FLAT-LEAVED BLADDERWORT (UTRICULARIA INTERMEDIA )*

**Chris Doyle, CLM**  
Naiad Consultants

Flat-leaved bladderwort (*Utricularia intermedia*), sometimes called northern bladderwort, is a submersed aquatic carnivorous plant. Although considered carnivorous, bladderworts do not get nutrients solely from trapping prey. While not as common as some of the other bladderworts in the region, it nevertheless occurs throughout the Northeast. Its preferred habitats are shallow ponds, pools, lakes, peat bogs, swamps and wetlands, and it often becomes stranded when water recedes. Flat-leaved bladderwort is typically associated with other bladderworts and emergent aquatic plants such as reeds and sedges.

Flat-leaved bladderwort is most similar to small bladderwort (*U. minor*), but that species bears the bladders among the leafy branches. The minute bladders (typically 1-3

mm long) of flat-leaved bladderwort are borne on leafless (often pale white) specialized stems, often under the substrate (see upper picture, right). Its possible that these submersed bladders not only are used for prey capture but some studies have revealed microbial communities present, alluding to a potential mutually beneficial relationship. Flat-leaved bladderwort has alternate leaves, palmately divided near the base into 2-3 divisions (typically). These divisions, or segments, are somewhat flattened and each is forked 2 to 5 times. Stems typically reach lengths up to 15 cm. When viewed underwater (see bottom picture, right) the stems appear to be pale green bottle-brush or pine tree-like in shape. Roots are fine and fibrous.

Flowers are bright yellow snap-dragon-like blooms that emerge out of the water on a slender green stalk. The flower has a large lower lip that fans



Flat-leaved bladderwort displaying both upper branches and lower branches which bear the tiny bladders.

**Check Out Our Website:**  
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The upper branches of flat-leaved bladderwort, as seen underwater.



Photo: Donald Cameron



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Unless otherwise noted, all pictures are credited to E. Mayer and C. Doyle

*“However, its delicate and diminutive structures rarely, if ever, become a nuisance that requires management.”*

## AQUATIC PLANT SPOTLIGHT: FLAT-LEAVED BLADDERWORT (*UTRICULARIA INTERMEDIA*) (CONTINUED)

out along with an inflated pouch mid-lip and a curved spur underneath. The center pouch and upper lips usually have crimson venation. When it produces fruits, they are a round capsule about 30 mm in diameter. Underwater stems may produce turions, over-wintering vegetative buds, late in the season.

When flat-leaved bladderwort finds a suitable habitat, it tends to be prolific. However, its delicate and diminutive structures rarely, if ever, become a nuisance that requires management. In some Northeast states it's considered rare, and it often carries a Coefficient of Conservatism of 10, indicating it's a very desirable member of the aquatic macrophyte community. Since it prefers restricted water chemistries and soft unconsolidated substrates, it often has an advantage over other more common aquatic macrophytes. Therefore, it serves an important niche for invertebrate habitat, but less so for juvenile fish, simply due to the size of the branches.

### References:

<https://gobotany.nativeplanttrust.org/>

Maine Field Guide to Aquatic Invasive Plants: <https://www.lakestewardsofmaine.org/>  
*Through the Looking Glass, A Field Guide to Aquatic Plants*, 1997. Wisconsin Lakes Partnership, 2nd Edition.

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# STATE UPDATE: NEW YORK

**Cathy McGlynn**  
 New York State Department of Environmental Conservation

Comprehensive Point Intercept surveys are being conducted on the Mohawk River. The easternmost third has been completed in 2020. No hydrilla was found, but established populations of water chestnut (*Trapa natans*), brittle naiad (*Najas minor*), and curly leaf pondweed (*Potamogeton crispus*) were documented.

Brazilian elodea (*Egeria densa*) was confirmed in a small private pond in Erie County.

Hydrilla control projects via herbicide use continue in the Croton River in Westchester County, Spencer Pond and Kuhlman Pond in Tioga County, Green and Hickory Lakes and Erie Canal/Tonawanda Creek in Erie/Niagara County, and at multiple locations in Cayuga Lake in Cayuga and Tompkins County.

The watercraft inspection steward programs have conducted more than 335,000 inspections and made more than 18,500 plant and animal detections so far this year. Boat stewards intercepted hydrilla at boat launches on Lake Ontario and Lake George. Programs reported an increase in boater traffic by 10 to 20% this season.

The LI-Metro AIS Task Force completed hand removal projects for water chestnut and *Phragmites* at four locations on Long Island. Preparation for a pilot herbicide treatment of floating primrose-willow in the Peconic River is underway.

A water chestnut working group will convene its first meeting in November 2020.



*“The watercraft inspection steward programs have conducted more than 335,000 inspections and made more than 18,500 plant and animal detections so far this year.”*

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## STATE UPDATE: NEW JERSEY

Did you know that the Northeast Aquatic Plant Management Society has a presence on social media? Check out our social media contacts on page 24. If you have questions regarding social media, reach out to our current Student Director.

*“This year, hydrilla was confirmed in Overpeck Creek in the Hackensack River Watershed.”*

**Heather Desko**  
New Jersey Water Supply Authority

### Hydrilla

The Delaware & Raritan Canal Project (New Jersey Water Supply Authority) has continued its fourth year of hydrilla control via injected herbicides. No rooted hydrilla has been found throughout the treatment season. However, a few floating fragments were found in late June, prior to the start of the herbicide application. A total of 250 sediment cores were collected at the end of the season, yielding only two tubers.

The 2020 Manasquan Reservoir Boat Steward program had a delayed start due to the COVID-19 pandemic; however, stewards inspected more than 1,400 boats this year for hitchhiking invasive species fragments.

This year, hydrilla was confirmed in Overpeck Creek in the Hackensack River Watershed.



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# STATE UPDATE: NEW JERSEY (CONTINUED)

## Harmful Algal Blooms

In 2020, the New Jersey Department of Environmental Protection revised the Harmful Algal Bloom (HAB) Alert Levels and developed updated signage to reflect the five levels of confirmed HABs. Previously a confirmed bloom was >20,000 cells/ml or >3 ug/L of Microcystin. At the time of publication, there have been 91 samples analyzed that are confirmed HABs: 50 at the Watch level (20,000-80,000 cells/ml and no toxins above thresholds), 38 at the Advisory level (>80,000 cells/ml or toxins above public health thresholds), and 3 at the Warning level (Microcystins >20 ug/L). The updated HAB strategy and alert levels are available here: <https://www.state.nj.us/dep/hab/>. NJDEP has developed an interactive mapping tool to view up-to-date HAB status across the state: <https://njdep.maps.arcgis.com/apps/opsdashboard/index.html#/49190166531d4e5a811c9a91e4a41677>

As part of the Governor’s HAB Initiative, two rounds of grant funds have been awarded this year. Nine grants were issued to prevent, mitigate, and/or control HABs. Some of the water bodies that received mitigation funding included Lake Hopatcong, Greenwood Lake, Lake Mohawk, Spruce Run Reservoir, and Budd Lake. The second round of grant funding is for nonpoint source pollution restoration and mitigation. Some of the water bodies and watersheds that received this funding include Lake Hopatcong, Budd Lake, Spruce Run Reservoir, Swartswood Lake, and the Musconetcong River Watershed. Details of the funded grants are available here: <https://www.nj.gov/dep/wms/bears/2019grants.htm>

The New Jersey Sea Grant Consortium (NJSGC) has partnered with the New Jersey Department of Environmental Protection (NJDEP) to increase the state’s capacity for HAB response by recruiting and coordinating a team of lakes management and HAB experts. The expert team’s primary objective is to provide guidance to the NJDEP on HAB prevention, mitigation and practical management for New Jersey lakes and other water bodies.



Harmful Algae Bloom in New Jersey (Photo: H. Desko)

*“Nine grants were issued to prevent, mitigate, and/or control HABs.”*

*“NJDEP has developed an interactive mapping tool to view up-to-date HAB status across the state.”*

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*“A total of 23 saves were made, counted as an invasive species removed from recreational gear that was about to be transported into or away from a waterbody.”*



Flowering rush (*Butomus umbellatus*) Photo: Donald Cam-

*“Fanwort was identified in Long Pond in Danville, the first new fanwort infestation in several years in New Hampshire.”*

## STATE UPDATE: NEW HAMPSHIRE

**Amy Smagula**

**New Hampshire Department of Environmental Services**

### Prevention

Prevention activities in 2020 included those related to the state's lakewide association NH LAKES Lake Host Program. Roughly 100 public access sites had paid and volunteer staff conducting courtesy boat inspections and boater education activities. A total of 23 saves were made, counted as an invasive species removed from recreational gear that was about to be transported into or away from a waterbody. The saves this year were a mix of species, including Eurasian water milfoil, fanwort, variable-leaved water milfoil, Chinese mystery snail, and curly-leaf pondweed, as the more common species removed from boats and trailers.

### Education and Outreach

Signage and educational handouts and postings were distributed around the state through the growing season, including new signage for access sites along the Connecticut River, which was part of a multi-state collaborative effort, to warn boaters about hydrilla and other invasive species in the Connecticut River system. Volunteer Weed Watchers were also trained this season, albeit through a virtual platform. Rather than live specimens sent into the laboratory, voucher specimens were switched over to digital photos emailed for species identification, which worked well, and could be a suitable alternative even in non-pandemic years. NHDES partnered with NH LAKES to air webinars on various topics, including one on aquatic invasive species, and one on the functions and values of native aquatic plants and options for management.

### Early Detection

Two new infestations were confirmed in New Hampshire this summer, and both of them were early detections. Fanwort (*Cabomba caroliniana*, pictured to the right) was identified in Long Pond in Danville, the first new fanwort infestation in several years in New Hampshire. The lake did already have variable-leaved water milfoil, and a biologist who was out mapping that plant for treatment spotted the fanwort. Divers were immediately dispatched to the fanwort patch, to remove it before it spread. The other new infestation was in the Connecticut River, where a nearby resident found a couple of stems of flowering rush (*Butomus umbellatus*) growing along the New Hampshire shoreline of the river. While the infestation is not new to the river, the plant had previously only been documented along the Vermont side of the river. The same individual hand removed the plant and roots, and shared a digital image of the plant in a vase in their house as the voucher specimen for identification, and verification of removal!



### Management

Grants were awarded to a total of 48 different groups around the state for control of aquatic invasive plants. These groups used the grant funds, in combination with local match, to fund hand harvesting, diver assisted suction harvesting, benthic barrier and/or herbicide projects to control a variety of state listed invasive species in waterbodies across the state.

## STATE UPDATE: NEW HAMPSHIRE (CONTINUED)

### Research

New Hampshire had previously participated (through funding and offering sample sites) in a regional and multi-state effort to evaluate eDNA techniques for Asian clam and zebra mussel. To expand eDNA work more in the region, we partnered with the University of New Hampshire (UNH) on an additional eDNA project to evaluate additional species including spiny and fish hook water fleas, hydrilla and Chinese mystery snail. This new project was funded by a Water Resources Research Center grant to Dr. Alison Watts at UNH, and field work for the project started this summer, with NHDES and UNH reaching out to states in the region to determine sample sites and collaborate on specimen sharing.

### Legislation and Regulations

This is likely going to be a slow year for legislation and regulations due to the pandemic. The in-state standing legislative group (the Exotic Aquatic Weeds and Species Committee) and other partners are likely going to hold on proposing any legislation this year due to uncertainty related to the pandemic. Similarly, no regulatory changes are in play right now either.

#### How Are We Doing?

What do you think of our newsletter? Please forward any suggestions, or if you would like to contribute an article or update to an upcoming newsletter, please contact

Chris Doyle  
(naiadconsultants@gmail.com)

*“To expand eDNA work more in the region, we partnered with the University of New Hampshire (UNH) on an additional eDNA project to evaluate additional species including spiny and fish hook water fleas, hydrilla and Chinese mystery snail.”*

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## STATE UPDATE: CONNECTICUT

Greg Bugbee

Department of Environmental Science, Connecticut Agricultural Experiment Station

The Connecticut Agricultural Experiment Station (CAES) has completed surveillance of the Connecticut River from Agawam, MA south for hydrilla (*Hydrilla verticillata*). The infestation is far more extensive than imagined with dense beds along the river's mainstem, coves, and tributaries (see picture below). Genetic testing determined the Connecticut River hydrilla is a unique biotype. Abundant turions but no tubers are a key feature of the biotype which may affect management options.

North Carolina State University and CAES were awarded the Dr. Michael D. Netherland Aquatic Plant Society Graduate Student Research Grant for a proposal entitled 'Evaluation of effect of biotype on biology and response to herbicides of aquatic macrophyte species.' This work will study the efficacy of various herbicides on the Connecticut River hydrilla and the possible collateral effects on native eel grass (*Vallisneria americana*). Both plant species are currently growing in mesocosms at North Carolina State University, and trials will begin when they are established.

After spot applications of ProcellaCOR in 2018 and 2020, variable-leaved water milfoil (*Myriophyllum heterophyllum*) is no longer found in Bashan Lake. Other herbicides have been used for decades with far less efficacy.

Water chestnut continues to spread throughout the state with North Farms Reservoir in Wallingford the latest water body to be added to list of infested lakes.

The Connecticut Department of Energy and Environmental Protection is announcing the availability of funding through Public Act 19-190 for projects to control aquatic invasive species and manage cyanobacteria blooms, conduct aquatic invasive species research, provide public education and public outreach to enhance understanding and management of aquatic invasive species. The goal of this program is to conserve the state's resources by providing additional opportunities for the control of and/or prevention of aquatic invasive species. For additional information, contact Bill Foreman (860-424-3868), Matt Goclowski (860-424-3926), or email [deep.aisgrants@ct.gov](mailto:deep.aisgrants@ct.gov).



Beds of hydrilla at the surface along the Connecticut River. (Photo: Greg Bugbee).

*“This work will study the efficacy of various herbicides on the CT River hydrilla and the possible collateral effects on native eel grass (*Vallisneria americana*).”*

*“The goal of this program is to conserve the state's resources by providing additional opportunities for the control of and/or prevention of aquatic invasive species.”*

## STATE UPDATE: MAINE

John McPhedran

Maine Department of Environmental Protection

*“Approximately 92,000 inspections are entered to date, a new record for Maine’s CBI Program.”*

Maine DEP’s 2020 field season was slow to start while Maine state agencies determined how to operate in the pandemic while significantly reducing risk of disease transmission. In time, the state’s Invasive Aquatic Species Program was able to operate effectively in this new norm.

### Courtesy Boat Inspection (CBI) Program

Approximately 92,000 inspections are entered to date, a new record for Maine’s CBI Program. Most inspections were entered using a CBI-specific app. Lake groups using the app see their data on the app dashboard. Inspectors found Eurasian water milfoil (EWM) on a boat from Lake Ontario/Henderson, NY. When it launched in Kezar lake in Western Maine, EWM fragments were released from the area between the boat hull and trailer bunks. The inspector collected all fragments seen. The fragments were clearly EWM by morphology but were degraded to the point that genetic confirmation failed. We hope this means that any fragments not collected were not viable.

### Infestation management highlights

Maine DEP hired a lake consultant to apply the herbicide ProcellaCOR to 90 of Annabessacook Lake’s 1420 acres for variable-leaf water milfoil control (VLM, *Myriophyllum heterophyllum*) Post-treatment surveys by DEP and local lake groups show high level of control on the target. Initial post-treatment surveys also reveal non-target plant impacts, especially on spatterdock (*Nuphar variegata*) One condition of DEP’s discharge permit required monitoring state-listed aquatic plant species *Wolffia* spp. and *Heteranthis dubia*. DEP will re-survey specific monitoring points in 2021 to assess treatment impacts on target and non-target plants.

*“Post-treatment surveys by DEP and local lake groups show high level of control on variable-leaved water milfoil. Initial post-treatment surveys also reveal non-target plant impacts, especially on spatterdock.”*

As noted in Maine DEP’s October 2019 update, variable-leaved water milfoil was confirmed last year in Big Lake in interior Washington County, a relatively remote area of the state. A lake-wide survey of the lake, planned by Lake Stewards of Maine (LSM) for 2020, was derailed by the pandemic. DEP staff conducted two September trips to the lake to survey additional areas for variable-leaved water milfoil, collect samples for genetic work and direct a contractor conducting plant removal. Several LSM volunteers also contributed to survey work in 2020. Big Lake is part of an extensive flowage of the St. Croix River. Boating is treacherous as unmarked rock piles abound. No formal lake association exists but there is local interest in addressing the infestation and preventing spread in the region.

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# STATE UPDATE: MAINE (CONTINUED)

Brittle naiad (*Najas minor*) was found in Lake Arrowhead in southern Maine by a trained volunteer. This is particularly alarming for southern Maine given the prolific seed production by this plant and potential to spread to other lakes in the region. Lake Arrowhead already has a significant infestation of variable-leaved water milfoil. The York County Invasive Aquatic Species Project, led by contractor Laurie Callahan, organized four survey days by volunteers. A DEP-hired contractor removed large patches. The local couple who found this new infestation has been snorkeling, surveying and developing novel removal techniques for individual brittle naiad plants. Additional surveying in 2021 will determine the extent of the infestation in Lake Arrowhead.



Brittle Naiad

The latest infestation in the state, confirmed in September, is variable-leaved water milfoil in Androscoggin Lake in central Maine. As with the new Lake Arrowhead discovery, a trained volunteer found the plant in early September. Genetic analysis by St. Joseph's College in Standish, Maine confirmed the identification. Late season surveying by DEP and local volunteers is ongoing to determine the extent of infestation.

### Environmental DNA (eDNA) Regional Project

Maine DEP received funding from the US Fish and Wildlife Service to continue development of an eDNA sampling program for invasive mollusk species in northeastern lakes. The work is a collaboration of the University of New Hampshire and northeast regional and State agencies (Maine Department of Environmental Protection, New Hampshire Department of Environmental Services, New York Department of Conservation, Vermont Department of Environmental Conservation, and Lake Champlain Basin Program). The objective is to have a technique for early detection of invasive mollusk species in the northeast. Early detection is critical for rapid response to allow management that prevents widespread ecological and economic impacts.

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

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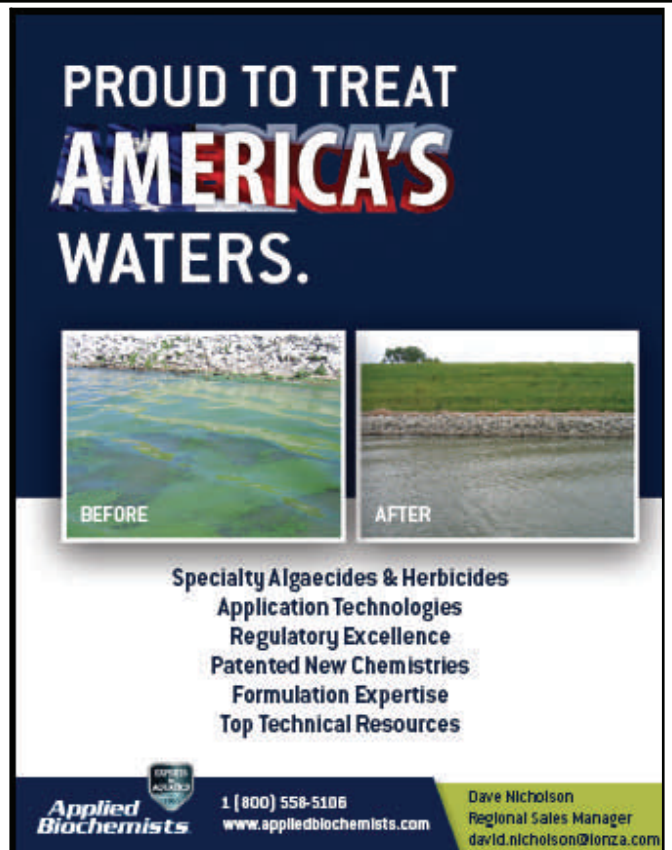
	
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# STATE UPDATE: RHODE ISLAND

*“The Rhode Island Department of Environmental Management, Division of Fish and Wildlife amended the state’s Freshwater Fisheries Regulations (Section 10.6.1 A18) to prohibit the transport of any plant or plant part into or out of any Rhode Island waterbody on any type of boat, motor, trailer, fishing supplies, or gear.”*

**Katie DeGoosh-DiMarzio**  
**Rhode Island Department of Environmental Management**  
**c/o New England Interstate Water Pollution Control Commission**

### Progress on Regulations

In February, the Rhode Island Department of Environmental Management (RIDEM), Division of Fish and Wildlife amended the state’s [Freshwater Fisheries Regulations](#) (Section 10.6.1 A18) to prohibit the transport of any plant or plant part into or out of any Rhode Island waterbody on any type of boat, motor, trailer, fishing supplies, or gear. The new regulation carries a \$100 fine for each violation. Although the press release was well received and carried in local papers, plans to further publicize the new rule as the boating and fishing season started were thwarted by the COVID-19 pandemic. This effort, in part, promulgates a section of the state Statute Section 20-1-6 to prohibit the import and possession of freshwater invasive aquatic plants passed in 2008 and amended in 2012. The Department continues to work on regulations to address import, sales, and purchasing of invasive plants.

### Monitoring Results: New Lakes on the Invasives List

RIDEM staff monitored for invasive plants at 39 unique locations (lakes/ponds/streams), paddling kayaks during 21 visits, and visiting shoreline access locations at the remaining 18, July through the end of September of 2020. In addition, staff received 41 calls from the public concerned about their lake, leading to documentation of an invasive plant in three new locations. The combination of these efforts resulted in four new locations added to the list of lakes, ponds and rivers in RI with an aquatic invasive plant population,

bringing the new state total to 106 lakes documented with one (or more) invasive plant, and an additional 27 river segments. The four new locations with invasive plants are: Carl’s Pond, Cumberland (11.3 acres), Lower Sprague Reservoir, Smithfield (27.6 acres), Quicksand Pond, Little Compton (391 acres) and a pond at Lakeside Cemetery, East Providence (0.82 acres). For the most recent AIS distribution map and list of 133 lakes or river segments (with one or more invasive plant) including which invasive plants are present at each locale, see: <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 and in 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.

To Right: Water Chestnut (*Trapa natans*).



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# STATE UPDATE: RHODE ISLAND (CONTINUED)

**Monitoring Results: Observed expansions to Official Species Distributions:**

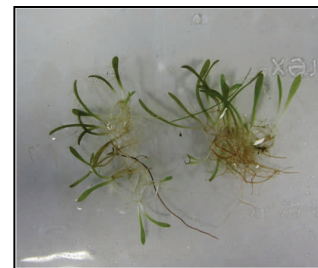
Review of the species distribution numbers indicate 5 species have broadened their expansion to more lakes, most commonly variable-leaved water milfoil (*Myriophyllum heterophyllum*), now in 69 lakes and 19 river segments, and fanwort (*Cabomba caroliniana*) which has been documented in 61 lakes and 16 river segments. The table below summarizes which species have been documented in the state by RIDEM.

Table 1: Summary of Invasive Aquatic Plants Documented in Rhode Island.

Scientific name	Common Name	# of Lakes/Ponds	# River Segments
<i>Cabomba caroliniana</i>	fanwort	61	16
<i>Egeria densa</i>	Brazilian elodea	5	
<i>Eichhornia crassipes</i>	water hyacinth	4	1
<i>Glossostigma cleistanthum</i>	mudmat	12	1
<i>Myriophyllum aquaticum</i>	parrot feather	1	
<i>Myriophyllum heterophyllum</i>	Variable-leaved water milfoil	69	19
<i>Myriophyllum spicatum</i>	Eurasian milfoil	11	2
<i>Najas minor</i>	spiny naiad	9	
<i>Nelumbo lutea</i>	American lotus	2	
<i>Nelumbo nucifera</i>	sacred lotus	1	
<i>Nymphoides peltata</i>	yellow floating heart	3	
<i>Potamogeton crispus</i>	curly-leaf pondweed	13	7
<i>Trapa natans</i>	water chestnut	13	1
<i>Utricularia inflata</i>	inflated bladderwort	7	

**Management Efforts**

Despite constrained resources, RIDEM was able to hand pull water chestnut at five of the 13 populations this summer (Belleville Pond, Sylvestre Pond, Pond at Lakeside Cemetery, Olney Pond and Barney Pond). Luckily the populations at most of these locations are small enough that they can be managed by 2-4 interns hand pulling plants during two visits annually to each pond. Annual efforts to hand pull at Sylvestre Pond since 2015 appear to be especially productive, as only one rosette was found this summer over the course of two visits. The new population located at the small pond in Lakeside Cemetery is robust and was found too late in the season to pull it all before it went to seed. This effort may have been more successful with community involvement, but events were limited to RIDEM staff this year, as COVID-19 restrictions precluded the inclusion of volunteers. In total, the 12 days spent culling plants were essential for control in these five locations, but it reduced the amount of time available for monitoring other lakes. Although monitoring efforts are funded by federal sources, there continues to be no state resources dedicated to control or prevention activities, as in many other New England states.



Mudmat (*Glossostigma cleistanthum*)

*“Review of the species distribution numbers indicate five species have broadened their expansion to more lakes.”*



Water Hyacinth (*Eichhornia crassipes*)

*“Annual efforts to hand pull at Sylvestre Pond since 2015 appear to be especially productive, as only one rosette was found this summer over the course of two visits.”*

# STATE UPDATE: PENNSYLVANIA



Water Soldier

*“Recent progress towards implementing this plan as it relates to aquatic invasive species included the Commission hiring a full-time Aquatic Invasive Species Coordinator ...”*

**Nick Decker**  
Resource Manager, Department of Natural Conservation

In July 2020, Pennsylvania Fish and Boat Commission adopted a new [Strategic Plan](#) to guide the agency over the next three years. Recent progress towards implementing this plan as it relates to aquatic invasive species included the Commission hiring a full-time Aquatic Invasive Species Coordinator in the Environmental Service Division, Sean Hartzell. Sean started with the Commission in this role in September 2020.

The U.S. Army Corps of Engineers, Baltimore District, began controlling hydrilla on [Raystown Lake](#) in July 2020 as part of efforts to manage the invasive species and its negative impacts on native ecology and aquatic plant communities.

The first recorded occurrence of invasive [Oenanthe javanica](#) in Pennsylvania was documented and verified in Berks County near the town of Lobachsville.

Effective January 2020, Pennsylvania added Brazilian waterweed (*Egeria densa*) as a Class A noxious weed, water soldier (*Stratiotes aloides*) as a Class C noxious weed, parrot feather (*Myriophyllum aquaticum*) as a Class B noxious weed, and yellow floating heart (*Nymphoides peltata*) as a Class A noxious weed to the [Controlled Plant and Noxious Weed List](#).



Invasive Aquatic Plant Pictures to the right, top to bottom: Yellow Floating Heart, Brazilian Elodea, Parrot Feather.



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Cary.Martin@nutrien.com  
(704) 305-7752





# STATE UPDATE: VERMONT

**Kimberly Jenson**  
Vermont Department of Environmental Conservation  
Watershed Management Division, Lakes and Ponds Program

Due to the COVID-19 pandemic, Vermont experienced similar restrictions as other states in the early season. As a result of the hiring freeze and restrictions in travel, the Lakes and Ponds Aquatic Invasive Species (AIS) Program was limited in completing many of the annual seasonal activities. Fortunately, the priority work continued and included awarding Aquatic Nuisance Control Grants, training VT Public Access Greeters, operating the Lake Champlain Water Chestnut Management Program, and completing AIS Plant Surveys on water bodies with known AIS infestations and on those that are at risk of introductions.

Thanks to Contractor’s flexibility and innovation, the VTDEC continued to spearhead water chestnut control efforts in the Lake Champlain Basin and within other lakes and ponds throughout Vermont. Though limited in the ability to hire staff, a combination of mechanical harvesting contractors, hand-pulling contractors, VTDEC staff, and a considerable number of volunteers were successful at removing plants at over 90 locations. Throughout the majority of the season, the water levels were lower than average and in drought-like conditions, but all sites were surveyed and the majority of the populations were harvested successfully.

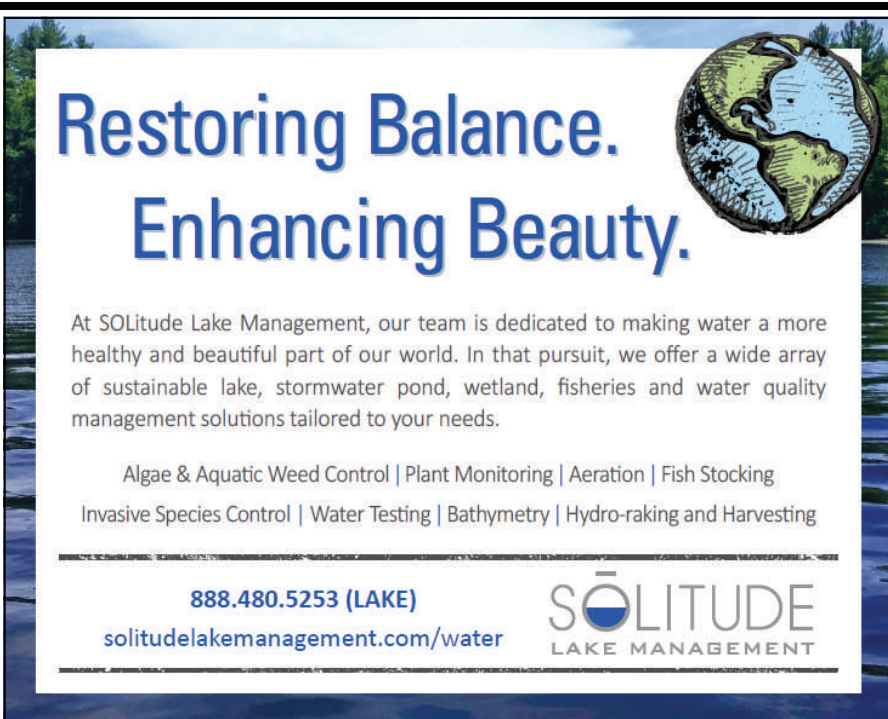
Now in its third year, VTDEC continued a partnership with the Vermont Youth Conservation Corps to assist with hand harvesting operations within sites that have historically large populations of water chestnut. Two crew leaders led the five to nine crew members comprised of local crewmembers, volunteers, and headquarters staff.

*“Though limited in the ability to hire staff, a combination of mechanical harvesting contractors, hand-pulling contractors, VTDEC staff, and a considerable number of volunteers were successful at removing plants at over 90 locations.”*

### Aquatic Plant Quiz

Can you guess the genus and species of the aquatic plant pictured below?

(Answer on page 22)



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*“VTDEC continued work assessing water chestnut populations using aerial photography (drones) to inform in-water water chestnut removal efforts and to gauge the long-term effects of the state’s water chestnut management program in Lake Champlain.”*



*“VTDEC and Lake Champlain Basin Program’s (LCBP) successful partnership to prevent the spread of aquatic invasive plants and animals expanded watercraft inspection programs to over 37 locations.*

## STATE UPDATE: VERMONT (CONTINUED)

VTDEC continued work assessing water chestnut populations using aerial photography (drones) to inform in-water water chestnut removal efforts and to gauge the long-term effects of the state’s water chestnut management program in Lake Champlain. This year, VTDEC worked with a contractor who used a motorboat to launch and retrieve the drones in locations that are difficult to access.

VTDEC and Lake Champlain Basin Program’s (LCBP) successful partnership to prevent the spread of aquatic invasive plants and animals expanded watercraft inspection programs to over 37 locations. At six of these locations, hot water decontamination equipment was also available. Greeter and Boat Stewards continue to intercept zebra mussels, Eurasian water milfoil, and look out for hydrilla, a potential new threat.

Last summer, a new water chestnut population was discovered off the shore in Sand Bar State Park and with a quick response by VTDEC and LCBP, 35 plants were hand pulled. This year, LCBP Staff took the lead and harvested only eight plants. The area will continue to be monitored in future years.

This fall, VTDEC received a concerned citizen’s message that zebra mussels were observed at Lake Dunmore in central Vermont. Last year, a small population of approximately 150 mussels were found and suction harvested. While veligers have been discovered here in the past (1999), there have been no known occurrences of adult specimens or veligers since that time. VTDEC surveyed the areas where adults were found last year and the locations as identified by the citizen, and found none.



VTDEC and LCBP team up to harvest water chestnut at Black Creek Marsh on Lake Champlain. Photo: K.Jensen



# THE BENEFITS OF A VIRTUAL CONFERENCE

**Chris Doyle**  
**Naiad Consultants**

As the world grapples with the challenges of a global pandemic, scientific societies have had to be nimble, converting traditional in-person conferences to virtual conferences, sometimes in a matter of weeks. Now that we have settled into a “new normal” it appears that virtual conferences will be a necessity at least into the first half of 2021. The Northeast Aquatic Plant Management Society decided in September to go virtual instead of cancelling the annual conference in January, 2021. The host facility was very accommodating and we fully expect to meet again in person on Cape Cod in January 2022.

While we understand that a Virtual Conference is no substitute for an in-person conference, especially when it comes to networking and social interaction, there are many benefits to the virtual format. Here are just a few.

**A virtual conference broadens the appeal to your target audience.** And that could mean additional attendees, which facilitates the spreading of the society message and mission statement. We joked a few years ago that our conference “went international” when a few attendees from Canada made the trek to New York to share data on their aquatic plant management challenges. A virtual format opens up our potential attendees to outside of the region and even to the entire world. Just jump on from a computer or phone with reliable internet service.

**A virtual conference generally has lower registration fees,** since venue fees or food service is not required. Anybody who has hosted a conference, even with as few as 100

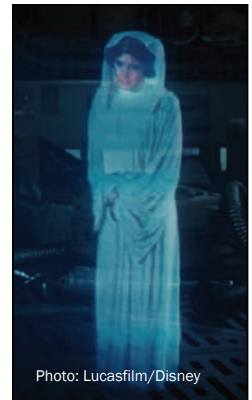


Photo: Lucasfilm/Disney

*“The Northeast Aquatic Plant Management Society decided in September to go virtual instead of cancelling the annual conference in January.”*

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## THE BENEFITS OF A VIRTUAL CONFERENCE (CONTINUED)

*“We are trying to reach out to experts in the lake management field outside of the Northeast to share their knowledge for the benefit of our members and attendees.”*

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*“Social media, chat forums, video chat, and voice servers are all methods that can be deployed during a virtual conference to make the professional connections required.”*

attendees, understands just how much food costs and how critical it is to attendees. Lower fees are more budget friendly, especially in economic downturns such as now. This too could translate into larger attendance. Perhaps a company that once sent five attendees, can now afford to send ten, since the fee is lower and there are no travel costs. And during economic downturns, often government agencies restrict travel out of state, so a virtual conference could remain a viable option to attend without crossing state lines

**There is no travel to and from a virtual conference.** The time and expense required to travel, sometimes to a remote location in the Northeast in January, can be a deterrent to attending our in-person conferences. The unpredictability of the weather can't be understated, as we have all had a white-knuckle drive to or from a NEAPMS conference in the snow or ice, or had travel plans changed or cancelled at the last minute. Travel is a hassle and expensive. Trundling over to your home office with your beverage of choice in comfy clothes is not.

**A virtual conference is easier to get high profile keynote speakers,** or presenters not in the Northeast geography. In the past, high profile keynote speakers would require a speaking fee plus travel costs, or their schedule just didn't allow attendance at smaller venues. Conference planners likely have more options, or could consider a second keynote speaker for the same cost. This is one of the goals of the NEAPMS Program Committee this year. We are trying to reach out to experts in the lake management field outside of the Northeast to share their knowledge for the benefit of our members and attendees.

**Putting on a virtual conference is easier for a host committee.** Putting on an in-person conference is a tremendous amount of behind the scenes effort, regarding the set up of meeting spaces, printing registration materials, and arranging for food and beverage services. Sometimes, security needs to be considered as well. While many venues handle some of these arrangements, there is a substantial cost associated with these services. Sure, a virtual conference often requires a bit more technical set-up, but as we all attend more of these virtual events, our aptitude increases and we learn from our experiences. Many virtual conference platforms, apps, and companies have pivoted and made great improvements on the service front in the last six months.

**A virtual conference is much more environmentally friendly.** Its obvious that the reduction of travel reduces the carbon footprint of all of us attendees, and the conference venue. Since printed materials are not required, conference programs, abstracts, and marketing materials from exhibitors can all be saved as electronic documents, reducing paper waste and saving trees.

Although networking in the virtual space can be limiting, that doesn't mean your presenters and exhibitors are unreachable. **There are many tools available to connect with these attendees.** Social media, chat forums, video chat, and voice servers are all methods that can be deployed to make the professional connections required. Of course, good old-fashioned phone calls or e-mail might be the route you take to follow up with a speaker or that exhibitor you needed to “talk shop” with. And a virtual format forces conference content, such as presentations and contact lists, be posted on servers or the cloud making them easier to retrieve months after conference is over.

Ultimately, the more you, the attendee, apply yourself, the more benefit you will gain from the virtual conference format. The scientific community has embraced the virtual format for conferences, and it seems likely that even when the pandemic is over, virtual conferences, or hybrid virtual/in-person conference will be here to stay. So, consider supporting virtual conferences by attending and engaging with others in our field. We hope to see you at virtual NEAPMS in January!



# NEAPMS SCHOLARSHIP

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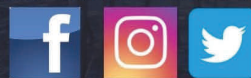
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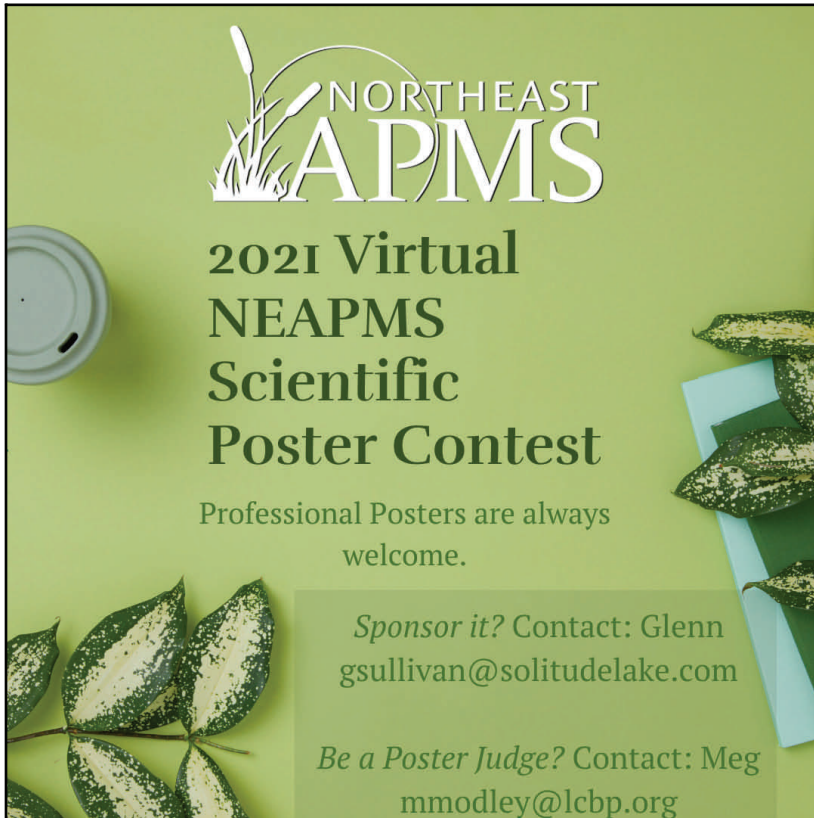
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Answer from page :18  
Potamogeton praelongus  
(White-stem pondweed)

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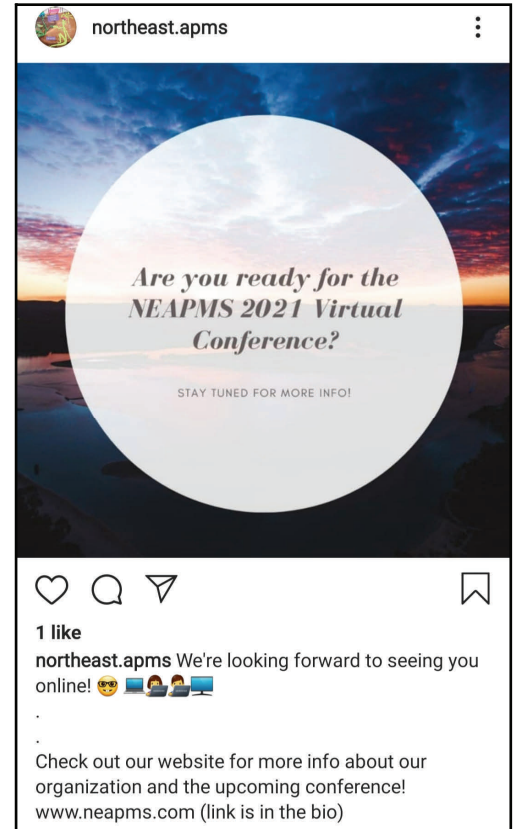
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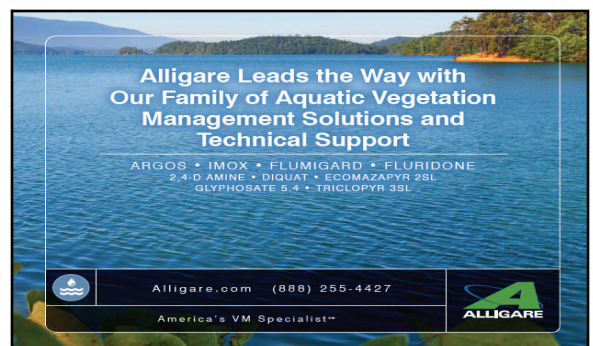
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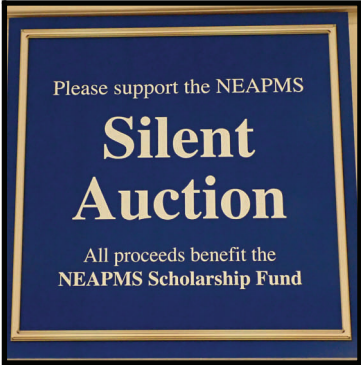
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**Silent Auction Questions?**

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 203-885-0184



## 22<sup>nd</sup> Annual Meeting – Virtual Platform Preliminary Program

January 12-14, 2021 – Online: Details to be provided closer to the conference date

**Tuesday, January 12, 2021**

12:00pm to 4:00pm

### ***Algae Ecology, Identification and Control Workshop***

**(Moderated by Chris Doyle, Naiad Consultants)**

*Ann St., Amand, Ph.D., CLP*

*PhycoTech, Inc.*

*Ken Wagner, Ph.D., CLM*

*Water Resources Services*

**Wednesday, January 13, 2021**

8:45am to 9:00am

### ***Opening Remarks***

Bin Zhu, Ph.D., NEAPMS President

Hartford University

### ***Keynote Speaker***

**(Moderated by Meg Modley, Lake Champlain Basin Program)**

Department of the Interior Invasive Species Strategic Plan

*Hilary Smith, Senior Advisor for Invasive Species, U.S. Department of the Interior*

9:00am to 9:30am

### ***New Technologies***

**(Moderated by Alyssa Calomeni)**

9:30am to 9:55am

Tracking Invasive Aquatic Plants with Environmental DNA (eDNA)

*Michael Tessler, American Museum of Natural History*

9:55am to 10:20am

Gene Silencing-Based Nanobiotechnology for Mitigation of Invasive Aquatic Plants and CyanoHABs

*Ping Pong, Senior Research Biologist, US Army Engineer Research and Development Center*

10:20am to 10:40am

**BREAK**

10:40am to 11:00am

**SPONSOR UPDATES**

### ***Harmful Algal Blooms***

**(Moderated by Heather Desko, New Jersey Water Supply Authority)**

11:00am to 11:25am

Cyanobacterial Harmful Algal Blooms Management at a New Jersey Drinking Water Reservoir

*Meiyin Wu, Ph.D., Director of the New Jersey Center for Water and Technology, Montclair State University*

11:25am to 11:50am

Implementation of Various In-Lake Management Techniques to Address Harmful Algal Blooms in Lake Hopatcong, New Jersey



Fred Lubnow, Ph. D., Princeton Hydro

11:50am to 12:15pm  
(1-2 minute presentations)

**POSTER SLAM**  
**(Moderated by Meg Modley, Lake Champlain Basin Program)**  
1 Minute Presentations followed by breakout sessions

12:15pm to 1:00pm

**VIRTUAL LUNCHEON STUDENT/EARLY CAREER PANEL**  
**(Moderated by Emily Mayer, NEAPMS Student Director, SOLitude Lake Management)**  
**Student Vote to Elect 2021 Student Director Candidate**

### Thursday, January 14, 2021

8:45am to 9:00am

**Opening Remarks**  
Bin Zhu, Ph.D., NEAPMS President  
Hartford University

9:00am to 9:30am

**Keynote Speaker**  
**(Moderated by Meg Modley, Lake Champlain Basin Program)**  
National Invasive Species Council: Major Priorities, Activities, and Opportunities for Engagement  
*Stanley "Stas" Burgeil, Ph.D., Executive Director, National Invasive Species Council*  
*U.S. Department of the Interior*

9:30am to 9:55am

**Aquatic Plant Emerging Threats and Ecology**  
**(Moderated by: Cathy McGlynn, New York State Department of Environmental Conservation)**  
Emerging Species of Concern: Flowering Rush (*Butomus umbellatus*) and Watercress (*Nasturtium officinale*)  
*Lauren Henderson, Aquatic Invasive Species Coordinator, Capital Region PRISM*  
*Kristopher Williamson, Coordinator, Capital Region PRISM*

9:55am to 10:20am

Native Submersed Aquatic Vegetation in the Hudson River  
*Stuart Findlay, Ph.D., Cary Institute of Ecosystem Studies*

10:20am to 10:45am

Water Chestnut (*Trapa natans*) in New York State  
*Steven Pearson, New York State Department of Environmental Conservation*

10:45am to 11:00am

**BREAK**

11:00am to 11:20am

**NEAPMS BUSINESS MEETING**  
Approval of Minutes  
Membership Update  
Treasury Update  
Board Nominations

***Aquatic Plant Control***

**(Moderated by: Emily Mayer, SOLitude Lake Management)**

- 11:20am to 11:45am ProcellaCOR Results After 2-3 Years of Use in the Northeast  
*Kara Silwoski, Project Manager, SOLitude Lake Management*
- 11:45am to 12:10pm Understanding the Glyphosate Controversy  
*Jason Ferrell, Ph.D., Director of the Center for Aquatic and Invasive Plants, University of Florida*
- 12:10am to 12:35pm Herbicide Trials with Brazilian Elodea (*Egeria densa*) for Management in the Sacramento-San Joaquin River Delta  
*John Madsen, Ph.D., Research Biologist, US Department of Agriculture, Agricultural Research Station, Invasive Species and Pollinator Health Research Unit*
- 12:35pm to 12:45pm **SCHLORSHIP RAFFLE**  
**MEETING ADJOURNED**

**NEAPMS Poster Presentations**

*Connecting Physical, Chemical, and Biological Factors to the Distribution of Hydrilla verticillata in a Freshwater Reservoir.*

\*Kara Foley, North Carolina State University

*Small Bubbles, Big Impact: Nanobubble Oxygen Injection as a Method for Reversing Deep-Water Anoxia, Nutrient Reduction, and Algae Control.*

Christian Ference, Moleaer, Inc. Application Engineering

Title: TBD

Christopher Lee, AquaRealTime

Title: TBD

\*Melissa Mazzaro, Montclair State University

Title: TBD

\*Yazarita Acosta, Montclair State University

\* Denotes a student presentation