The Federation of
Vermont Lakes and Ponds

# Fall 2025 Newsletter

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cover photo: Nesting loon, Lake Fairlee (S. Brown)

# In This Issue


Message from the President 3

Another Record-breaking Year for Vermont Loons 5

FOVLAP Committee Reports 6

Colleen Breenan, Lake Eden Receives 2025 Bullard Award 8

Card Room January 8th 8

FOVLAP Video Coming 2026! 9

FOVLAP Visits Lake Associations 10

New VTDEC Commissioner Misty Sinsigalli 11

New Study from UVM on Cyanobacteria Blooms 11

FOVLAP Awarded Grant 12

Stormwater Management in the Face of Future Floods 13

University of Minnesota Saint Anthony Falls Laboratory Releases Phase II Study on Recreational Powerboats 14

New Web Content on LWAPs 15

Zebra Mussel Infestations Can Impact Human Health 16

Why Join FOVLAP? 18

Membership Map 19

# Message from President Pat Suozzi

**The Federation of Vermont Lakes and Ponds**

**"To preserve and protect Vermont's lakes, ponds and their watersheds for the benefit of this and future generations."**

Happy Holidays! The summer and fall flew by with so many activities and events. Among the highlights of the summer were our visits to several lake associations around the state.

It was great to meet so many of you in person, enjoy your hospitality and delicious food, learn about your lakes and concerns, share FOVLAP's lake protection initiatives, and discuss what FOVLAP is doing to support your efforts. You can find out more about our visits on p. 10.

If you would like me or a member of the FOVLAP board to visit with a small group of your members, your association board, or your annual meeting, please email Jeri Bergdahl, Membership Committee chair, at Jerilyn.Bergdahl@vermontlakes.org

Our June Lake Seminar this year focused on protecting lake tributaries. It was also our first hybrid meeting. The in-person venue was at the new South Burlington Public Library, which has a beautiful facility with all the necessary technology. The librarians were welcoming and so helpful in getting us set up to meet in person again while continuing to make our meetings accessible to all online.

In September, our annual membership meeting was also hybrid at the South Burlington Public Library, with the theme "Celebrating Lake Associations". At this meeting, FOVLAP director Jerremy Jones was elected vice-president, replacing Jackie Sprague, who completed her two terms as VP. I'm happy to report, though, that Jackie will continue on the board as a director for another term. Tracey Shadday, former FOVLAP board secretary, was elected secretary after Jeri Bergdahl completed her term as secretary. Jeri will also remain on the board. At the meeting, we also welcomed three new members to the FOVLAP board: Richard Williams from Hazelton Pond in the Margaret Williams Trust, David Roth from Lake Morey, and Jeff Schumann from Lake Dunmore-Fern Lake. Along with Richard, David, and Jeff, Christine Cano rejoined the board, and Erin Labovitz from Lake Paran was appointed to the auxiliary board. For pictures and bios of the new members, see here.

We also said farewell to long-time board and auxiliary board members: Judy Davis, who was project coordinator for FOVLAP's "A Guide to Healthy Lakes", and Mary Jo Teetor, former board secretary. Many thanks to both for their service to the Federation and to all of Vermont's lakes.

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Lake Fairlee (Photo: S. Brown)

*(President continued from page 3)*

The Clean Water Projects Series of webinars continued this fall with: Project Design and Permitting on October 30 and Project Implementation on December 11. Videos of these and all of our webinars and events are available on our website here.

Our noon webinar series will continue in 2026, with a January 29 webinar on how to use the Watershed modelling tool, presented by Dave Johnson (FOVLAP Board treasurer). On February 17, Annie D'Alton (Nichols Pond) will present a webinar on her work testing non-herbicidal control methods for Phragmites. Additional webinars on topics such as controlling runoff on dirt roads, creating buffers and rain gardens, understanding and controlling nutrient pollution, and much more are in process with dates and speakers to be announced soon. Be sure to subscribe to our email list and check the events menu on the website for the latest schedule and updates.

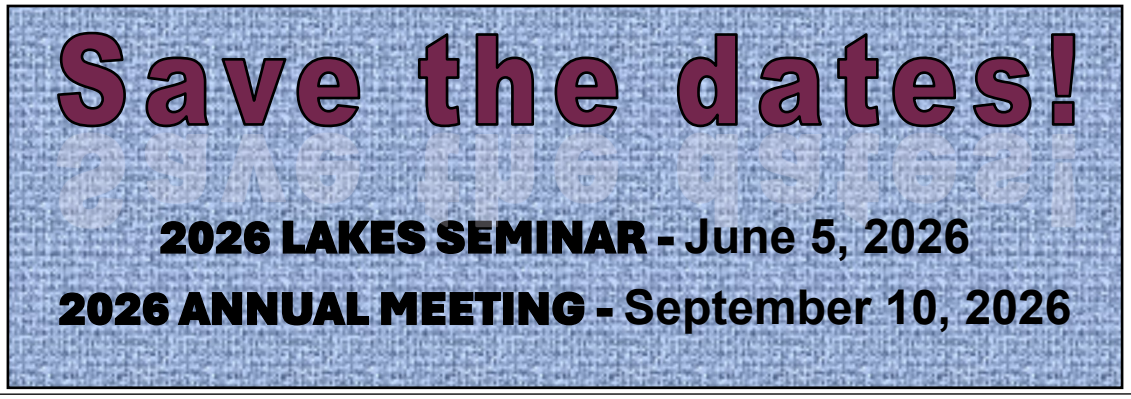
This summer, the Department of Environmental Conservation (DEC) released a set of proposed revisions to the Use of Public Water (UPW) Rules. These revisions include changes to the wake boat rule that was approved and implemented in 2024. As part of the pre-rulemaking process, several public hearings were held and written public comments were accepted. The Federation board submitted a lengthy response to the revisions, including opposing the proposal to remove the home lake rule. This statement is on our website here.

The formal rulemaking process began with the Agency of Natural Resources submitting the proposed rule changes to the Interagency Committee on Administrative Rules (ICAR), which, on December 9, 2025, voted to move the rules forward. The next step in the rulemaking process is slated for January–March 2026 and will include further public meetings, an additional opportunity to submit public comments and a review by the Legislative Committee on Administrative Rules (LCAR). The proposed revisions, all of the comments submitted during pre-rulemaking, and DEC's full timeline for the process are: https://dec.vermont.gov/watershed/lakes-ponds/lakes-and-ponds-rulemaking. We are continuing to follow this process closely and will provide updates via our email list.

On January 8, members of the FOVLAP board will be visiting the State House to meet with legislators and discuss lake issues. If you happen to be in Montpelier that day, please stop by the Card Room in the State House and say hello! We will be there from approximately 8:30 a.m. to 2:00 pm.

Our bill-tracking service will get underway once the legislative session begins in early January. We regularly post bills of interest to lakes on our website here. Among the bills that we will be watching is the Chloride Reduction bill (H.86), which is currently awaiting action by the House Environment Committee.

I wrote the President's message for the Fall 2024 newsletter just after the election. I noted then that we didn't know what might happen, but clearly change was on the way. Well, it has certainly been a roller coaster ride this year. It seems change is hitting us every week, sometimes every day, and the reasons, if any, can be baffling. Nevertheless, thanks to all of you, with your dedication and with the hard work and steady focus of the Federation board and auxiliary board, we have been able to continue our work of protecting Vermont's lakes. I suspect that 2026 is not going to be any easier, but I am confident that by working together we will be able to maintain our equilibrium and stand firm, basing our work on facts and science, and continuing to protect Vermont's precious water resources. Thank you for your work, your perseverance, and your support.



# Another Record-breaking Year for Vermont Loons!

Alden Wicker, Communications Director at the Vermont Center for Ecostudies

It was another good year for loons in Vermont. In fact, it was record-breaking!

Over 350 volunteers helped the Vermont Loon Conservation Project and the Vermont Fish and Wildlife Department monitor Vermont's loons this summer, and collectively we identified 115 common loon nesting pairs.

The north central part of the state (from Ryegate to Eden) is experiencing a loon boom; volunteers counted 182 adult loons on LoonCount day in July, over 30 more than in previous years.

Even more exciting for our volunteer Loon Monitors, for the first time, loon chicks hatched out and survived on Shadow Lake in Glover and the Cedar Point territory of Echo Lake in Charleston - both had failed nests in 2024. We documented three new nesting pairs at Colchester Pond, Lake Fairlee, and Long Pond in Milton.

Shadow Lake's first recorded loon chicks (Photo: C. Cano)

After a dip in 2023 and 2024, we're back up to a higher-than-average nest success rate - a record 103 chicks survived through August, and 15 fewer nests failed this year compared to last year. Loons are resilient! Of the 29 pairs whose first nest attempts failed, 11 re-nested, and 6 were successful.

In the past, humans caused a large portion of nest failures, but our signage and education seem to be working. This year, only one nest failed because of human disturbance. The rest failed because of flooding, depredation, loon disturbance, and over-incubation, in that order. Rafts, which can rise with changing water levels and hide nests from predators, continue to be the safest place to nest, and the shore the least safe. Eighty-eight percent of the 43 pairs that nested on rafts were successful, 82% of the 34 island nests and 28 marsh nests were successful, and only three of the 10 shore nests were successful.

We made seven rescue attempts in 2025. Three loons crash-landed and were moved to nearby waterbodies, and one loon likely landed on a pond too small to take off from and crawled out onto a private driveway. All appeared to be healthy upon release. The other three, unfortunately, died after capture. We documented eight adult loon mortalities - two died from lead poisoning from fishing gear, one from a boat hit, three from fights with other loons, one from a bald eagle, and one from an internal infection.

Eagles and territorial disputes likely caused the loss of most - if not all - of the chicks. Although losing a chick can cause our volunteers distress, it's a sign of a healthy population. As the population continues to grow and then stabilize, and more unpaired loons try to find habitat, we anticipate the chick survival rate will go down again - a stable and sustainable population of loons has an estimated chick survival rate of 0.48 per territorial pair (about one chick every other year) and we're at 0.65.

With this success, as we look toward 2026, we will reassess our deployment of rafts and whether more loons should be encouraged to nest naturally. We will also continue to encourage anglers to fish lead-free and lakeside owners to rewild their shorelines. A healthy lake for loons is a healthy lake for eagles, otters, fish - and all the humans - who enjoy them!

Lake St. Catherine (Photo: K. Velsor)

# FOVLAP Committee Reports

*Updates from Some of FOVLAP's Standing, Permanent and Ad Hoc Committees*

## AIS Committee

As we head into 2026, FOVLAP's AIS Committee will review the Department of Environmental Conservation's (DEC) Summary of Proposed Changes to Vermont's Use of Public Water Rules (UPW rules) and wakeboat decontamination guidelines. The committee's goal is to recommend possible comments on these matters to the board of directors. We also plan to continue exploring methods to prevent the spread of aquatic invasive species (AIS) and potential management techniques. As new information becomes available, we will present it to the board. Concurrently, we will collaborate with the Events Committee to develop communication strategies and provide public educational opportunities.

As most of you know, there is a concern about wakeboats moving from an AIS-impaired waterbody to uninfested lakes.

Due to the mechanics of current wakeboat models, their internal ballast tanks are closed and difficult to decontaminate, making wakeboats a significant vector for AIS spread. In addition, the boat washers at the greeter stations that have them do not have the capability to properly decontaminate these ballast tanks. The current wakeboat rule, which includes a Home Lake Rule provision, was approved and implemented in April 2024. In the new proposed changes to the UPW rules, the Vermont Agency of Natural Resources has eliminated this protective provision.

The FOVLAP board expressed opposition to eliminating this rule in an August 2025 statement. It was formally submitted to the DEC during the pre-rulemaking public comment period, and is available here. The following were among our concerns:

- **Risk of AIS Spread:** Of 18 wake sports eligible lakes, 9 are currently AIS-free.
- **Contamination Risk:** Neither the state nor the lake associations currently has adequate facilities to properly decontaminate wakeboats.
- **Legal Non-compliance:** The inability to properly decontaminate wakeboats means wakeboats cannot comply with Vermont's decontamination law (10 VSA § 1454).

The FOVLAP Board has suggested that the Home Lake Rule could be effectively implemented and the necessary water protection be achieved efficiently and effectively, with minimal state resources, by leveraging modern technology, enlisting and integrating the help and resources already offered by the affected lake associations and prioritizing the protection of Vermont's inland lakes. Besides implementing the Home Lake Rule, it is necessary that all boats, but especially wakeboats due to their closed ballast systems, are adequately decontaminated before moving between lakes.

The AIS Committee will be monitoring the state's UPW rule process and the efforts to develop decontamination protocols. Because scientific research shows

*(Continued on page 7)*

Lake Paran (Photo: E Labovitz)

*(Committee Reports continued from page 6)*

that zebra mussel veligers - the larval stage that develops into a mature, reproductive adult - can survive for 27 days in standing water, the committee members will work with the board to advocate for implementing a more protective state decontamination policy and science-based decontamination standards.

*Please feel free to contact Beth Torpey, FOVLAP board member and AIS Committee chair at beth.torpey@vermontlakes.org for additional information.*

## FOVLAP Events!

The FOVLAP Events Committee organizes the annual **Lake Seminar** in June, **Annual Meeting** in September and a variety of shorter webinars and special events throughout the year. In 2024-2025, the Events Committee hosted six Clean Water Projects webinars, all listed below and available on the FOVLAP website.

FOVLAP 2025 Annual Meeting (Photo: D. Miuccio)

Clean Water Projects Webinar #1:
**Lake Watershed Action Plans – Why Lake Associations Said 'YES!'**

Clean Water Projects Webinar #2:
**How To Assess Your Lake's Water Quality Data with Mark Mitchell**

Clean Water Projects Webinar #3:
**Creating A Watershed Action Plan Together: Partnerships & Collaborations**

Clean Water Projects Webinar Series #4:
**Making It Happen: Selecting Feasible Projects with Landowner Support**

Clean Water Projects Webinar Series #5:
**Project Design & Permitting for Clean Water Projects**

Clean Water Projects Webinar Series #6:
**Clean Water Project Implementation: Successes and Challenges**

## *New* Water Quality Committee

At an October meeting to discuss plans for the coming year, the FOVLAP Board voted to split the ad hoc AIS/ Water Quality Committee into two separate ad hoc committees. There is much to do in both areas. In 2026, the VTDEC is due to review and possibly revise Vermont's Water Quality Standards, and the Water Quality Committee will monitor this activity and provide input on any proposed revisions. The Lay Monitoring sampling protocol changes introduced in 2023 will affect the criteria used in the Standards, and this impact must be considered. New Water Quality Standards could also influence ongoing Lake Reclassification efforts. The Committee will be actively engaged with the Events Committee in selecting topics and speakers for the 2026 webinars, with the expectation that several webinars will address water quality issues.

## Colleen Brennan, Lake Eden Receives 2025 Bullard Award

Congratulations to Colleen Brennan of Lake Eden, the 2025 Bullard Award recipient. Established in 1990, the Town of Eden bestows this award to a community member who exemplifies significant service and outstanding dedication to the town. Colleen earned this honor for spearheading all efforts to mitigate an infestation of Eurasian watermilfoil in Lake Eden, while keeping the community informed and engaged in these lake protection initiatives. On behalf of FOVLAP, congratulations, Colleen for this well-deserved recognition!

(Photo: V. Brennan)

## Join FOVLAP at the Vermont State House Card Room January 8, 2026!

Members of the FOVLAP Legislative Committee will staff a display in the State House Card Room - a hallway before the cafeteria on the second floor - on **Thursday, January 8th from approximately 8:30am to 2:00pm.** Committee members will discuss issues affecting Vermont's lakes and ponds with legislators. If you happen to be in the Montpelier area that day, stop by and say hello.

Vermont State House, Montpelier (Photo: FOVLAP)

## Please consider making a donation!

Your gift to FOVLAP supports our work to promote the conservation of Vermont's lakes, ponds, and their watersheds. And here's some great news!

**Starting in 2026, even if you take the standard deduction, your cash contributions (up to $1,000 for individuals, $2,000 for joint filers) can qualify for a federal tax deduction.**

This makes your donation even more impactful while reducing your taxable income.

https://vermontlakes.org/donate/

# FOVLAP Video Coming 2026!

Deborah Miuccio, FOVLAP Outreach Coordinator

I'm excited to announce that FOVLAP embarked on an educational video project this summer, thanks to a grant from the Lake Champlain Basin Program. The goal of the project is to inform the general public in an engaging and visually appealing way about what they can do to help preserve Vermont's lakes and show how they can get involved in their care.

The three main topics of the video are:

1. Who Takes Care of Vermont's Lakes?
2. Aquatic Invasives
3. Cyanobacteria Blooms

With production services from Hen House Media, FOVLAP will create a high-quality three-minute video, and six shorter one-minute videos that will be shared during the Spring of 2026 on multiple platforms from the FOVLAP channels, as well as across the state in public service announcements, to schools, Vermont state agencies, conservation organizations and more.

It was an honor for me to reach out, organize, gather, and oversee the filming of interviews of a fantastic group of speakers with diverse knowledge and expertise. We filmed the interviews this past summer at several locations around Lake Iroquois and Lake Bomoseen. All interviewees shared their passion for protecting our precious resources. Our expert speakers include:

Julie Silverman, Senior Lake Keeper of the Conservation Law Foundation

Chris Conant, former President of Lake Iroquois Association

Alison Marchione, Shoreline Restoration Ecologist, VTDEC Lakes and Ponds Program

Liz Bird, Vice President of Lake Bomoseen Association

Pat Suozzi, President of FOVLAP

Mark Mitchell, Limnologist and Lay Monitoring Program Lead, VTDEC Lakes and Ponds Program

Sarah Wilson, Assistant Manager, Lake Bomoseen Association Greeter Program

Hen House Media is currently reviewing and editing all the footage and plans to have a first draft for us this winter, which I eagerly look forward to seeing!

Many thanks to our interviewees for sharing their time and love of Vermont lakes, and to the following FOVLAP board members for their help with this collaborative effort:

- Dave Johnson for applying for the grant to fund this project and for providing input on the initial outline
- Pat Suozzi for supporting the project, helping guide the project focus, hosting a photo shoot, and carefully reviewing scripts and transcripts
- Lisa Beroud for her guidance and film industry expertise and for lending her support from the project's inception
- FOVLAP Board members for uploading amazing photos of people having fun on the lakes, which provided essential B-roll footage

Behind the scenes: An interview with auxiliary board member Liz Bird on Lake Bomoseen with Hen House Media. (Photo: D. Miuccio))

We will look to our members and network to share these videos so we can all help raise awareness on how to protect Vermont's most precious resource.

Stay tuned for the video debut in our next newsletter!

# FOVLAP Visits lake Associations

Deborah Miuccio, FOVLAP Outreach Coordinator

During the summer of 2025, FOVLAP Board members provided direct support and visited five lakes and ponds around Vermont, both in person and virtually by Zoom. The goal was to share information and resources and spread the word about FOVLAP's mission and efforts. FOVLAP currently has 50 member Lake Associations, and we hope to add more. Expanding our membership enables members to exchange information, learn from one another and increase our effectiveness in advocating for lake protection measures in the legislature.

**Forest Lake** (also known as Nelson Pond)**:** Our virtual visit to the Forest Lake Association in Calais included a discussion of the lake's water quality, which showed a troubling trend in rising phosphorus from 2000-2015, when Lay Monitoring apparently stopped. Monitoring resumed in 2023, and the summer average Total Phosphorus (TP) - the standard measure of all phosphorus forms in a water sample - has now improved. We identified several potential factors, including less shoreline development and the elimination of farm animals in the nearby watershed.

The Forest Lake Association is now actively considering a Lake Watershed Action Plan. Our participating board member provided valuable information and resources on this topic and has been invited to present on the plan's advantages and initial steps at the association's 2026 annual meeting/picnic.

**Green River Reservoir:** Topics discussed during our virtual visit with the Friends of the Green River Reservoir in Hyde Park included:

- Increasing spring and summer phosphorus trends
- Preventing aquatic invasive species
- Hydroelectric/dam issues

After providing much helpful information, we were thrilled to welcome the Friends of the Green River Reservoir as our newest member of FOVLAP.

**East Long Pond**: Our in-person visit to East Long Pond in Woodbury focused on providing information on the benefits of starting a lake association, particularly how they differ from homeowners' associations. Since they are facing challenges relating to their dam, we shared how forming a Lake Association can help with communication, sharing notices of state updates and legislation, and community building.

President Pat Suozzi presenting at Friends of Wolcott Pond event (Photo: FOVLAP)

**Lake Elmore**: The Lake Elmore Association and Barbeque in Elmore was also a great success. Our presentation gave us the opportunity to educate their association members about the role of FOVLAP, share available resources, and answer questions. They are currently engaged in a Lake Watershed Action Plan. We explained how FOVLAP can provide guidance and support with several of the challenges they are facing.

**Wolcott Pond**: We also enjoyed attending the Friends of Wolcott Pond Lake Association Annual Meeting and Picnic in Wolcott. We learned how much members love their pond and all the efforts they make to protect it. In advance of our presentation, we had looked up their lake

*(Continued on page 11)*

(Visits continued from page 10)

scorecard information for them and shared that almost no data had been collected over the last 15 years. Given the pond's public access and close proximity to Eurasian watermilfoil at Lake Elmore, we advised the association to:

- Launch a Lay Monitoring Program to start collecting vital data.
- Recruit and train volunteers as Vermont Invasive Patrollers (VIPs) to regularly survey the pond to detect aquatic invasive species early.

## Schedule a 2026 Visit!

We plan to continue our statewide outreach next year. If your association or stewardship group would like a FOVLAP board member presentation, please contact

Deborah Miuccio at

deborah.miuccio@vermontlakes.org

## New Study from UVM on Cyanobacteria Blooms

### Beyond the Usual Suspect: UVM Researchers Find Nitrogen Feeds Algae Blooms

**November 14, 2025**

**By Kristen Munson**

Nitrogen is a bit of a conundrum. In its gaseous form it's the most abundant element in the atmosphere, but few organisms can readily use it. And while all living organisms contain nitrogen, a new University of Vermont study finds that even tiny amounts of nitrogen can fuel cyanobacterial blooms and disrupt lake ecosystems…click HERE to read the article in full.

## New VTDEC Commissioner Misty Sinsigalli

https://neiwpcc.org/commission/vt/

As VTDEC's Commissioner, Misty Sinsigalli will oversee the crucial work of protecting the state's air, water, and lands. Her pivotal role involves leading a dedicated team of environmental professionals, developing and enforcing statewide environmental policy, and fostering collaboration with community partners to ensure a healthy and sustainable future for all Vermonters.

As a lifelong Vermonter, Ms. Sinsigalli grew up by a Vermont lake and continues to enjoy water activities with her family. She holds a deep appreciation for Vermont's lakes, and this personal connection and lived experience are at the core of her commitment to conservation and the preservation of Vermont's natural beauty.

Commissioner Sinsigalli spoke at FOVLAP's 2025 Annual Meeting in September. You can view her presentation on YouTube at timestamp 29:10 HERE

## FOVLAP Awarded Grant

Dave Johnson, Board of Directors

We're pleased to announce that FOVLAP has been awarded $35,000 from Watershed United Vermont (WUV) through the DEC Clean Water Workforce Capacity Development Grant to continue our work in promoting Clean Water Projects. This funding will enable us to continue our efforts, including sponsoring more webinars and creating additional web content to help member associations and the general public understand watersheds and various aspects of stormwater project implementation. This funding will also help support FOVLAP's part-time Outreach Coordinator, Deborah Miuccio, over the next two years.

The Director of WUV stated, "The application was highly reviewed by our Review Committee. We appreciate FOVLAP's efforts to build capacity to propel others to more clean water work. Thanks again for FOVLAP's efforts to build capacity to improve water quality in Vermont!"

We look forward to amplifying our efforts to preserve and protect Vermont's lakes and ponds with this grant.

Hazelton Pond, Killington (Photo: R.Williams)

## Join Us!

If you are dedicated like we are to protecting and preserving Vermont's water resources for this and future generations, consider joining the FOVLAP Board.

From its inception in 1972 as an organization of lake associations in northern Vermont to its evolution into a statewide organization in 2001, the Federation remains dedicated to fostering water quality standards and preserving Vermont lakes, ponds, watersheds, and aquatic ecosystems.

Photo: C. Cano

### Director responsibilities

- Support and promote the mission and work of FOVLAP.
- Be an individual member in good standing of FOVLAP.
- Commit to attend the board meetings, the annual meeting and the annual lake seminar.
- Serve on one or more board committees.
- Adhere to FOVLAP policies and procedures.
- Ensure the continued viability, integrity and accountability of FOVLAP.

### Be an advocate for Vermont lakes and ponds!

Participating on the Board of Directors is an opportunity to get more involved in lake protection, and learn and work directly with a dynamic team of fellow lake and pond enthusiasts.

### Join us!

Contact FOVLAP President, Pat Suozzi at pat.suozzi@vermontlakes.org

# Stormwater Management in the Face of Future Floods

Will Marlier, Orleans County NRCD's Lake Watershed Program Specialist

Earlier this summer, I had the privilege of presenting alongside The Nature Conservancy's Watershed Restoration Manager, Shayne Jaquith, at an event hosted by the Echo and Seymour Lake Associations in Morgan, Vermont. Together, Shayne and I explored the history of Vermont's waterways, how increased flooding and human development impact them, and how individual landowners can manage their properties to mitigate these effects.

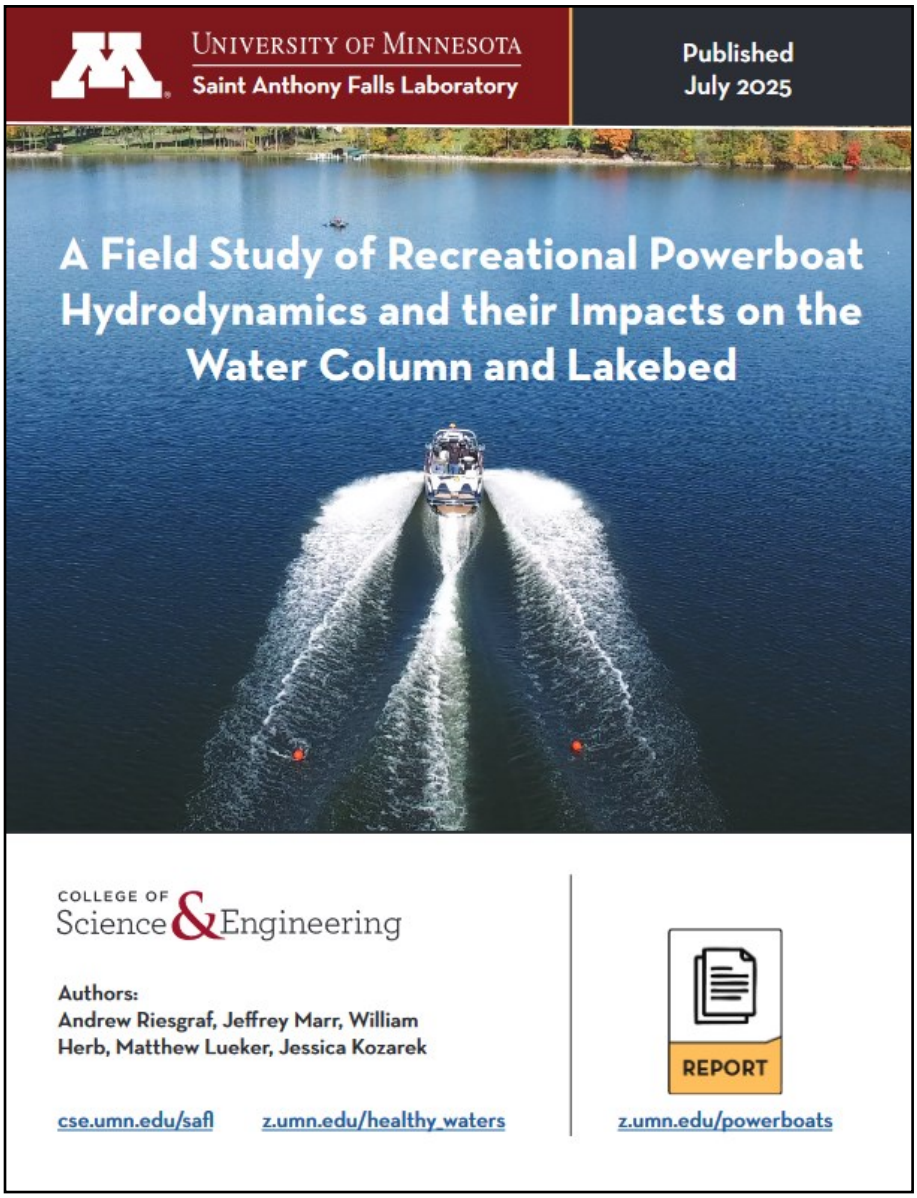
In this article, I focus primarily on that last part: what can individuals do in the face of overwhelming forces like climate change and flood events? Although it can sometimes feel like fighting an uphill battle, there are plenty of ways you can protect yourself and your neighbors from the negative effects of stormwater. When it comes to best management practices, the solution often boils down to simple physics. Fast-moving water causes the most damage. Stormwater that has been channelized, pressed into deepened and straightened waterways, moves at greater velocities (and with more force) than water that has the room to spread out. When framed this way, the solution becomes clearer. How do we slow stormwater down?

If you live near a natural stream or brook, I would encourage you to let nature take its course wherever and whenever possible. This means leaving trees and branches that fall into the channel where they are, allowing them to provide aquatic habitat, retain mobilized sediment, and slow-moving water. This also means giving the waterway room to grow and change. During the lifespan of a waterway, it will find new paths (generally within the same basic area) and will experience many floods. For this reason, it is important to allow streams and rivers to jump their banks and explore their natural floodplains without human intervention. This, too, will slow stormwater and allow it to infiltrate into the soil before rushing downstream.

You don't need to live near a stream, pond, or lake to have experienced the effects of fast-moving stormwater. Indeed, some landowners have lost property to driveway blowouts and landslides that were nowhere near these more prominent water features. That is because every square inch of dry land makes up the complex hydrological system of a larger watershed. Wherever you live, water is moving downhill. This is when smaller-scale best management practices really shine. Rain gardens, vegetated buffers, open-topped culverts, waterbars, infiltration trenches, and dry wells (just to name a few) all ultimately serve the same purpose. They slow the water down and help it infiltrate into the soil instead of rushing across the surface.

Slowing water down and keeping sediment where it is provides a myriad of benefits; it protects human infrastructure from inundation and erosive flood damage, it provides better habitat for aquatic organisms, and it improves the water quality of nearby lakes and ponds. If you'd like to learn more about the work of Orleans County Natural Resources Conservation District, please visit our website.

(Photo: D. Johnson)




# University of Minnesota Saint Anthony Falls Laboratory Releases Phase II Study on Recreational Powerboats

The Phase II University of Minnesota study concerning recreational powerboats (including wakeboard boats) and their impacts on the water column and lakebed is now available.

The Phase II study is part of a three-phase study by the **St. Anthony Falls Laboratory** (SAFL) at the University of Minnesota called **Healthy Waters** to investigate how boat wakes and propeller thrust impact lake ecology.

For a **SUMMARY** of the report and key findings (image at left), click HERE.

To view/download the **FULL** study, click HERE.

## SAFL Phase II Study RECOMMENDATIONS

- **Recommended depth of operation for planing mode (cruising)**

  Recreational boats, like the ones studied in this project, should operate in 10 ft of water or greater when planing to minimize impacts on the lakebed.

- **Recommended depth of operation for non-wakeboats and wakeboats in displacement mode (leisure cruising)**

  Recreational boats, like the ones studied in this project, should operate in 10 ft of water or greater when in sustained displacement mode to minimize impacts on the lakebed.

- **Recommended depth of operation for wakeboats in semi-displacement mode (surfing)**

  Wakeboats should operate in 20 ft of water or greater when in semi-displacement mode to minimize impacts to the lake bottom.

- Phase 1 is complete and characterized the height, energy, and power of divergent wake waves.
- Phase 2 is complete and investigated the impacts on the water column and lakebed beneath boats in transit.
- Phase 3 is in progress and looks to characterize wind and boat waves and investigate their impacts on the near shore environment.

**To sign up for UMN SAFL Healthy Waters updates, click HERE.**

# New Web Content on Lake Watershed Action Plans

Dave Johnson, Board of Directors

Supported by a Clean Water Workforce Capacity Grant from Watershed United Vermont, FOVLAP hosted six webinars on creating and implementing Watershed Action Plans. These free webinars were recorded and, together with the presentations, can be found HERE on the FOVLAP website. The website also contains a useful summary of this information in a new tab with the sections listed below.

- Effects of Runoff and Phosphorus
- Assessing Your Lake's Water Quality
- Collaborating with Partners
- Project Selection and Landowner Buy-in
- Design and Permitting
- Project Implementation

We plan to expand this content in the coming year, with more webinars and associated web content on topics related to understanding watersheds and implementing Watershed Action Plans.

Green River Reservoir (Photo: A. Bove)

(Photo: D. Miuccio)

# Zebra Mussel Infestations Can Impact Human Health

Dave Johnson and Rich Williams, Board of Directors

Zebra mussel (*Dreissena polymorpha)* infestations can create anaerobic conditions in lake sediments where insoluble mercury (Hg) has accumulated through atmospheric deposition. Anaerobic bacteria can methylate sediment Hg into soluble and neurotoxic methylmercury (MeHg). Methylmercury can then bioaccumulate in fish tissue through food webs, resulting in tissue concentrations that can exceed thresholds triggering more restrictive human consumption advisories for sensitive populations.

A native mussel infested by mostly juvenile non-native and invasive zebra mussels. (Photo: L. Sopher, LCC staff © Lake Champlain Committee)

A 2024 publication, "Increased mercury concentrations in walleye and yellow perch in lakes invaded by zebra mussels," concluded that "Increased fish tissue mercury in lakes invaded by zebra mussels has consequential implications for fisheries and human health." The researchers "assessed differences in fish tissue mercury concentrations and food webs" in 12 Minnesota lakes infested with zebra mussels and 9 lakes without infestations. These 21 lakes had "comparable water quality and watershed characteristics known to affect mercury loading, methylation, and bioaccumulation."

The findings from the study included: (1) "Mercury concentrations in adult walleye (*Sander vitreus*) and yellow perch (*Perca flavescens*) were 72% and 157% higher, respectively, in lakes containing zebra mussels compared to uninvaded lakes,"(2) "Mercury concentrations in adult walleye were more than twice as likely to be over 0.22 ppm" in lakes containing zebra mussels. The 0.22 ppm concentration is "a threshold triggering more restrictive human consumption advisories for sensitive populations."

The authors cite earlier studies by other researchers demonstrating: (1) "mercury bioaccumulation in fish can be affected by the amount of methylmercury produced in the aquatic environment, and also by fish growth rates, diets, and food web dynamics." (2) "aquatic invasive species can alter food webs and increase contaminant bioaccumulation in fishes by increasing reliance on littoral vs. pelagic prey resources and/or increasing trophic position."

The authors hypothesize that "zebra mussel accumulations in the littoral zone give rise to substantially reduced redox status of littoral sediments and thereby promote biogeochemical conditions more favorable for obligate anaerobic microbial communities capable of methylating inorganic mercury. Through this pathway, zebra mussels may increase methylmercury bioavailability and/or concentrations in the littoral zone." "Zebra mussels shunt nutrients from the open water pelagic zone to the nearshore littoral zone." The resulting "increased littoral zone productivity and consumption increases MeHg exposure" to organisms in the littoral zone.

The authors did find that walleye and yellow perch in their "study lakes relied more on littoral energy sources in zebra mussel-invaded lakes compared to uninvaded lakes, consistent with hypothesized food web alterations that can lead to increased contaminants in fish by concentrating consumption in areas where mercury methylation is occurring."

The authors state that this study is "the first to document increased mercury concentrations in fish tissues associated with zebra mussel invasion in inland lakes across multiple trophic levels and life stages." The authors caution that "littoral reliance varied substantially among lakes,

*(Continued on page 17)*

Lake St. Catherine (Photo: A. Gioulis)

*(Zebra mussel continued from page 16)*

suggesting that the overall effect of zebra mussels on fish tissue mercury operates on multiple pathways that we cannot completely describe with this study" and that "predicting the overall effects of aquatic species introductions on mercury concentrations in fish is not straightforward."

The ecological complexity observed in this study underscores the need for further research to clarify the relationships between zebra mussels, fish, lake characteristics, and mercury accumulation. Continued investigation will help improve understanding of how species invasions influence mercury dynamics in freshwater ecosystems.

[Citation: N.S. Blinick et al., Increased mercury concentrations in walleye and yellow perch in lakes invaded by zebra mussels. Science of the Total Environment 957 (2024)]

Left to right: FOVLAP Board members Jay White, Kent Henderson, Vince Pisegna, Jerremy Jones, Jackie Sprague, Pat Suozzi, and Dave Johnson; FOVLAP Outreach Coordinator, Deborah Miuccio; and, Board member, Jerilyn Bergdahl (Photo: FOVLAP)

# Why Join the Federation of Vermont Lakes and Ponds?

We connect lake associations, lake stewards, and all stakeholders concerned with the health of Vermont's lakes by being a central source of information about lake issues, and by representing and advocating for Vermont's lakes.

We do this by:

- **Sharing information and facilitating communication** about issues affecting the state's lakes and ponds through our newsletter, website, Facebook page, Instagram, YouTube channel, and our email list;
- **Sponsoring a variety of online, hybrid, and in-person events,** that bring together stakeholders in Vermont's lakes and ponds, along with experts from across the country, to learn about new developments and to share information that help all of us to better protect and improve the health of our lakes and ponds as well as their surrounding ecosystems. These include:
  - The Lake Seminar held annually on the first Friday in June
  - The Annual Membership Meeting and Conference held annually on the Thursday after Labor Day
  - Shorter webinars and online panel discussions held throughout the year on topics such as aquatic invasive species management and funding for greeter programs;
- **Advocating with the state legislature and administration** on issues affecting our lakes, including advocating for increased funding to support programs for prevention and management of AIS, improvement of water quality, and protection of the health of our lakes and ponds and their watersheds;
- **Providing information and updates on legislation and administrative activities** that affect the state's waters;
- **Acting as a liaison among lake and pond associations and state agencies,** especially the Vermont Department of Environmental Conservation.

*We can't do it without you! Your membership and support of the Federation helps all of our lake associations and lake stewards to continue to work to preserve and protect Vermont's lakes and ponds for this and future generations.*

**2025**

**FOVLAP Membership**

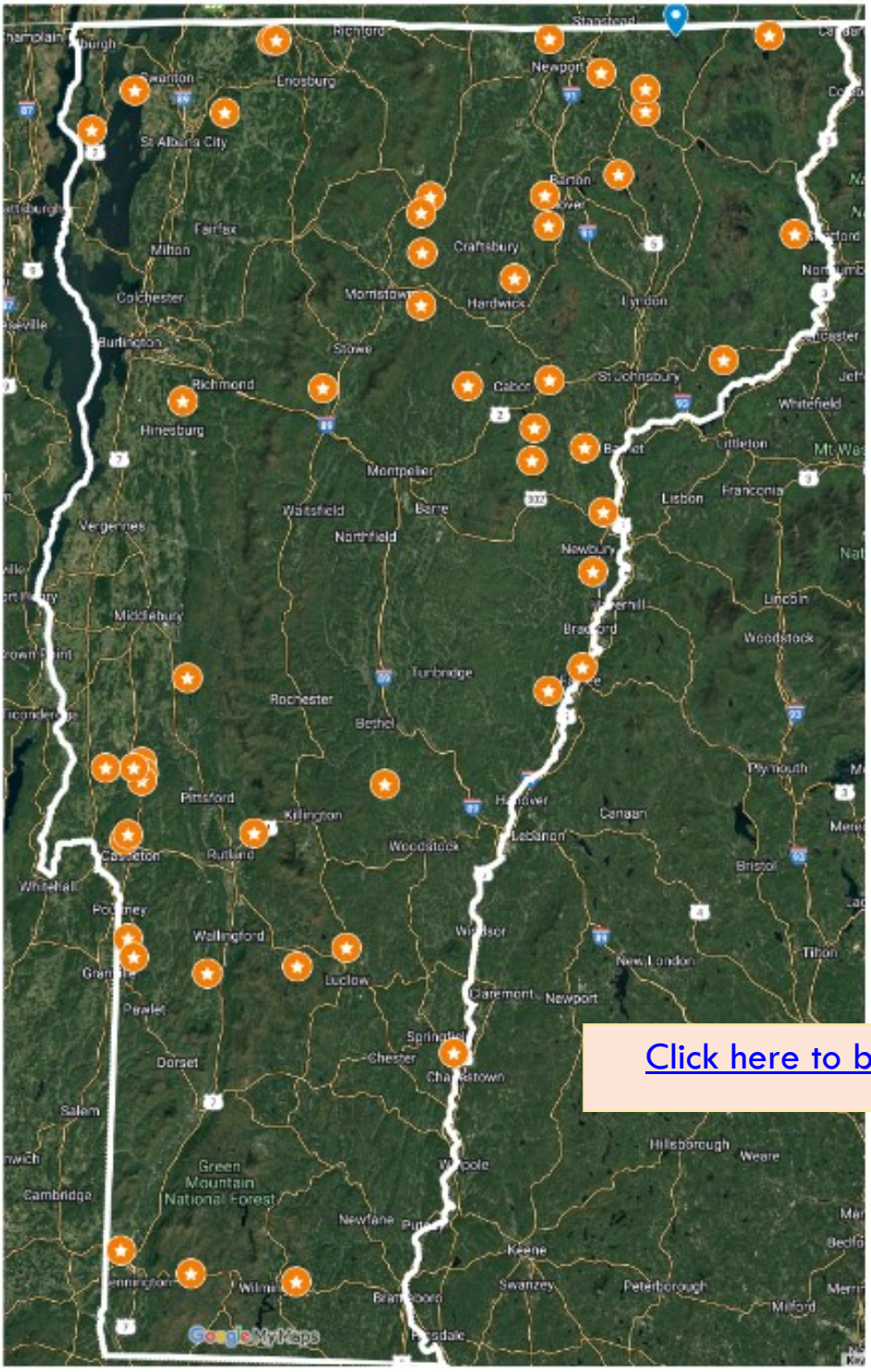
50 lake association members

54 individual members

South Pond (Photo: J. Bergdahl )

# FOVLAP

## Membership Map of Lake Associations




- Averill Lakes Association
- Barnard Silver Lake Associati...
- Black River Action Team
- Burr Pond Association
- Echo Lake Property Owner A...
- Echo Lake Protective Associa...
- Fairfield Pond Recreation Ass...
- Franklin Watershed Committ...
- The Friends of Green River Re...
- Friends of Northern Lake Cha...
- Friends of Waterbury Reservoir
- Greensboro Association, Inc.
- Halls Lake Association
- Hazleton Pond
- Holland Pond
- Joe's Pond Association
- Lake Beebe Watershed Asso...
- Lake Bomoseen Association
- Lake Bomoseen Preservation...
- Lake Carmi Campers Associa...
- Lake Dunmore Fern Lake Ass...
- Lake Eden Association
- Lake Elmore Association
- Lake Fairlee Association
- Lake Groton Association
- Lake Harvey Association
- Lake Hortonia Property Owne...
- Lake Iroquois Association, Inc.
- Lake Morey Protective Assoc...
- Lake Paran Recreation
- Lake Parker Association
- Lake Raponda Association, In...
- Lake Rescue Association, Inc.
- Lake St. Catherine Association
- Lake St. Catherine Conservati...
- Maidstone Lake Association
- Memphremagog Watershed ...
- Miles Pond Campers Associa...
- Mount Holly Conservation Tr...
- Partners for Bay Restoration ...
- Peacham Pond Association
- Salem Lakes Preservation As...
- Seymour Lake Association
- Shadow Lake Association
- South Pond Landowners Ass...
- Sunrise-Sunset Lakes Perch ...
- Ticklenaked Pond Association
- Tinmouth Pond Milfoil Project
- Westmore Association Inc.
- Woodbury Lake Association
- Woodford Lake Association

[Click here to become a member of FOVLAP]

# Clean Drain Dry

**Stopping aquatic hitchhikers is *THAT* simple.**

Photo: J Rathert

## Clean Boats Clean Waters

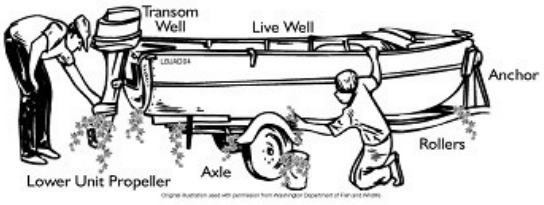
**Before Launching AND Before Leaving**

**Clean** off any mud, plants, and animals from boats, trailers, and equipment.

**Drain** your boat and equipment away from the water.

**Dry** anything that comes into contact with the water.

**Never** release plants, fish or animals into a body of water unless they came out of that body of water




**STOP AQUATIC HITCHHIKERS!**

Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net

**Under Vermont Law, you may be fined up to $1000 for transporting any aquatic plant or plant fragment, zebra mussels or quagga mussels.**

(pursuant to 10 V.S.A. 1454, 23 V.S.A. 3317, 6 V.S.A. 1034, 1037 & 1038)

VERMONT
AGENCY OF NATURAL RESOURCES

Please report suspected aquatic invasive species sightings to:

(802) 828-1535 www.vtwaterquality.org

**FOVLAP's past newsletter issues are available on our website. Click HERE to view.**

## got ideas???

FOVLAP produces a bi-annual newsletter in electronic format. The newsletter committee seeks member ideas on newsletter content and also welcomes article contributions.

Have some? We want to hear from you!

Reach out if you can help: vtlakesandponds@gmail.com


## The Federation of Vermont Lakes and Ponds

**Contact us!**

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www.vermontlakes.org

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