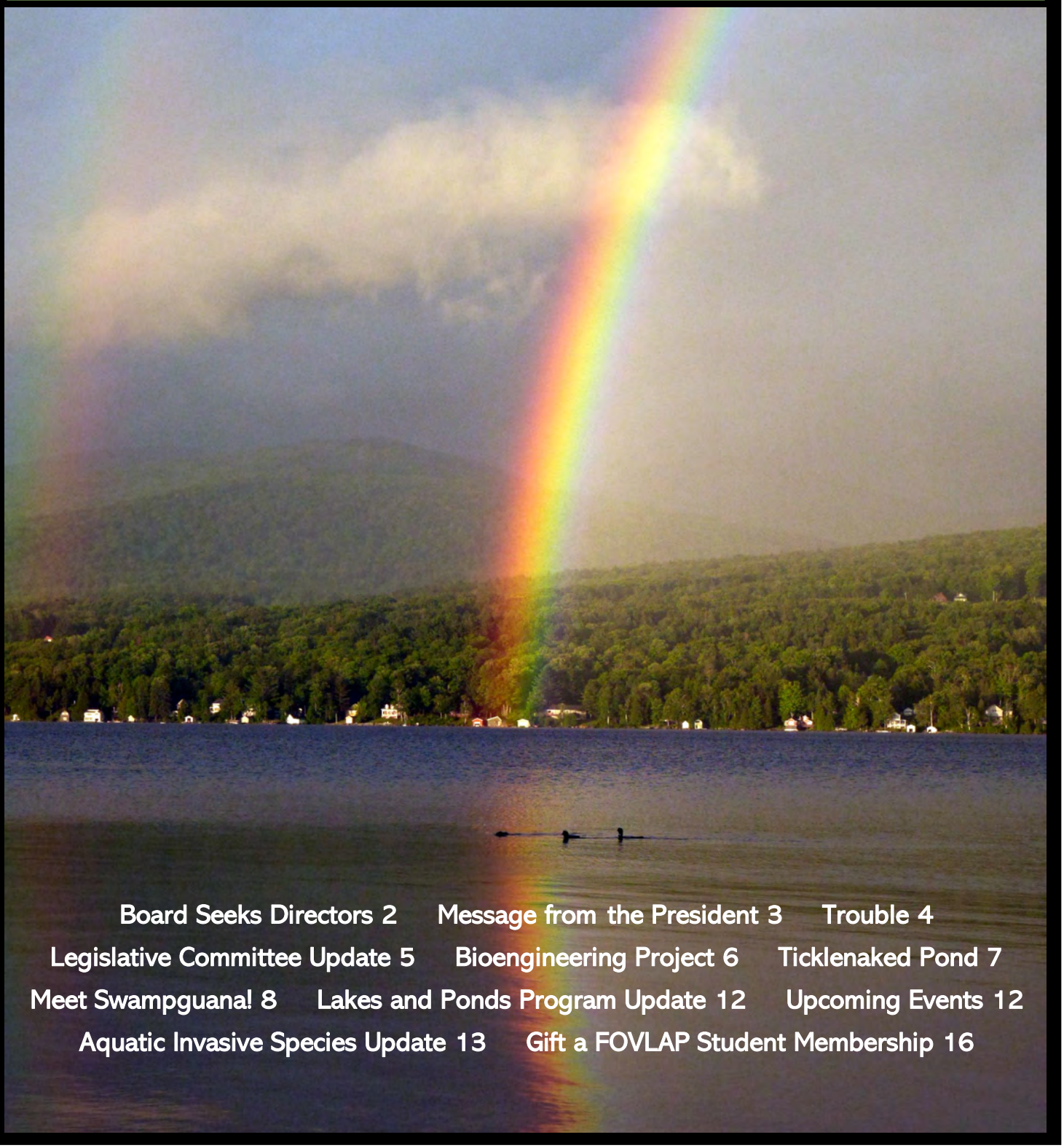
The Federation of Vermont Lakes and Ponds

Fall 2020 Newsletter



Board Seeks Directors 2 Message from the President 3 Trouble 4
Legislative Committee Update 5 Bioengineering Project 6 Ticklenaked Pond 7
Meet Swampguana! 8 Lakes and Ponds Program Update 12 Upcoming Events 12
Aquatic Invasive Species Update 13 Gift a FOVLAP Student Membership 16

FOVLAP Officers and Board of Directors

President: Don Weaver (North Lake Champlain)
Vice President: Jackie Sprague (Harveys Lake)
Secretary: Pat Suozzi (Lake Iroquois)
Treasurer: Bruce Tanner (Lake Willoughby)

Directors
Jerilyn Bergdahl (South Pond)
Christine Cano (Shadow Lake)
Kent Henderson (North Lake Champlain)
David Johnson (Lake Dunmore Fern Lake)
Jan Parsons (Harveys Lake)
Christopher von Alt (Maidstone Lake)
Jay White (North Lake Champlain)
John "Jack" Widness (Lake Raponda)

Auxiliary Board Members
Bruce Barter (Seymour Lake)
Peggy Barter (Seymour Lake)
Ann Bove
Art Brooks (Lake Willoughby)
Roger Crouse (Lake Iroquois)
Judy Davis (Little Hosmer)
Bruce Durgin (Lake Morey)
Tracey Shadday (Seymour Lake/Echo Lake)
Angela Shambaugh
Mary Jo Teetor (Lake St. Catherine)

VTDEC Liaisons
Laura Dlugolecki
Amy Picotte
Oliver Pierson

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."

cover photo: Lake Willoughby, Westmore
(Photo credit B. Tanner)

FOVLAP Board Seeks Directors

Join us! The FOVLAP Board of Directors currently has two director slots open: a one-year slot and a two-year slot. This is an opportunity to get more involved and work directly with a dynamic team of fellow lake and pond enthusiasts. Contact FOVLAP President Don Weaver at dbweaver1080@gmail.com if you are interested.

Your schedule won't allow a commitment at this time? No problem! Let Don know you are interested in a future board slot.

New Collaboration!

The Lake Champlain Basin Program, in partnership with the Lake Champlain Community Sailing Center, released this aquatic invasive species spread prevention sail designed by Burlingtonian artist Nikki Laxar. This sail will be flown on sailboats for the next three years on the Burlington waterfront - a great reminder to stop aquatic hitchhikers and CLEAN, DRAIN, DRY your boat and recreational equipment to prevent the spread of aquatic invasive species. (Photo credit LCBP)

Message from the President

By Don Weaver, FOVLAP President

FOVLAP started the year 2020 in high gear. The Events Committee met the first full week of January, laying the groundwork for the annual June Seminar and then everything changed: the coronavirus hit and now we have, "A New Normal!" We face challenging times and are figuring out how to deal with new pressures and situations.

With uncertainty regarding the pandemic, we see the hard work of many good efforts eroding; with uncertainty comes hesitancy to commit. We are finding ways to be "present at a distance." Your membership allows our work to continue and the FOVLAP Board thanks you for your continued interest and commitment.

Due to COVID-19, the executive committee and Department of Environmental Conservation (VTDEC) decided to cancel the 2020 Lake Seminar; however, we did hold a virtual Annual Meeting in July with most of the planned Lake Seminar presentations occurring during the afternoon session. A reminder, starting in 2021, *the FOVLAP Annual Meeting date is now changed to the 1st Thursday after Labor Day*. In 2021, the date of our Annual Meeting is September 9, 2021. The 2021 Lake Seminar is scheduled for June 4 at the Lake Morey Inn on Lake Morey in Fairlee.

Check "Upcoming Events" on page 12 for noteworthy events including the New England Chapter of the North American Lake Management Society's, NECNALMS webinars.

The Board of Directors (BOD) appointed three new directors at our November meeting:

Jerilyn Bergdahl, South Pond in Eden. Jerry is an active Vermont Invasive Patroller and is a long-time FOVLAP member.

David Johnson, Lake Dunmore Fern Lake Association in Salisbury. David is the lake association VP. He also serves on the association's aquatic invasive species committee and water quality committee.

Christopher von Alt, Maidstone Lake Association in Maidstone. Chris is the lake association VP and chair of the Maidstone Lake Greeter Program.

We have two more BOD slots to fill, a one-year and a two-year slot; contact me if you would like to be more involved in FOVLAP. We also welcome Angela Shambaugh as an auxiliary director. Angela recently retired from VTDEC's Lakes and Ponds Program (see below).

I would like to thank outgoing directors, Emily Porter-Goff (Franklin Watershed) and Susan Martin (Sabin Pond) for their service on FOVLAP's BOD. Their commitment, participation and efforts are appreciated.

We are all looking forward to returning to normalcy with many of our committees kicking off their monthly meetings in January 2021. Please check our website www.vermontlakes.org for updated information.

In appreciation of Angela Shambaugh's work to protect Vermont lakes and ponds at the Vermont Department of Environmental Conservation and her many contributions to FOVLAP, Angela was awarded this certificate of appreciation by FOVLAP:

"In recognition of valuable contributions to protecting all Vermont lakes and ponds. Angela is the expert so many of us turn to with questions on recent research and Cyanobacteria and so many other topics to help us all protect the lakes and ponds we cherish. The Federation of Vermont Lakes and Ponds is greatly appreciative of all the support she has contributed to the organization. She will be deeply missed."

Don Weaver, FOVLAP President
Jackie Sprague, FOVLAP Vice President

The Trouble Started 50 Years Ago

By David Price, Harveys Lake

In 1949 Green Mountain Power owned and deeded a dam on the Stevens River to the Town of Barnet. Twenty-one years later, the company removed that dam, which controlled the outflow from Harveys Lake and South Peacham Brook, replacing it with the 200-foot concrete gravity dam that exists today. Soon after those changes, stormwater laden with phosphorus and other nutrients from farms in the South Peacham Brook drainage area began backing up into the lake.

Over the following five decades, the backflow created by significant weather events deposited a great deal of silt in the outlet between the dam and the town beach. It also created an upsurge in the amount of algae and nuisance plants in the area, causing a deterioration of the lake's water quality.

A 1983 Vermont Department of Environmental Conservation study of the lake and its watershed concluded Harveys Lake would become eutrophic (rich in nutrients) unless phosphorus loading was reduced. Steps were taken in 2001 to reduce nutrient loading from farms on the lake's east side, but stormwater runoff continued to flow into the lake's north end. In 2003, the Harveys Lake dam renovation committee concluded that unless the existing dam were substantially modified or removed, the runoff would continue to back up into the lake, degrading water quality and reducing boat access in the outlet.

Moon set over Harveys Lake (Photo credit J. Sprague)

Dam Removal Effort Begins

In 2017, Dylan Ford, a member of the Barnet Select board, assembled a six-person citizens committee to assist the town in updating or replacing the dam. Ron Rhodes, a river steward with the Connecticut River Conservancy, was named project manager. With funding from a $32,000 Vermont Ecosystem Restoration Grant, Rhodes sent a request for proposal to 22 New England engineering firms for a 30% engineering study to evaluate options to improve water quality in the lake. Inter-Fluve, a Cambridge, Massachusetts firm, was selected for the project.

The goals of the scoping project included:

- Ensuring a positive water quality benefit in both Harveys Lake and the Stevens River.
- Examining the options for modifying or removing the dam to restore South Peacham Brook to its natural flow and prevent stormwater from backing up into the lake.
- Recommending engineering solutions for a "water control structure" near the outlet from Harveys Lake to maintain the lake level, mimic a natural stream system, and be maintenance-free.
- Improving the aquatic habitat in both bodies of water, including fish passage and loon nesting.
- Possibly removing the lake and river from the Vermont's impaired waters list.
- Ensuring the best outcome supported by the town, the lake community, and state and federal regulators.

Inter-Fluve submitted a 30% engineering design accepted by the State of Vermont in 2018. The plan called for removing the current dam and creating a permanent structure near the lake outlet to maintain the water level. In addition, the plan recommended returning the outlet channel to its original course, realigning South Peacham Brook to what is thought to be its 19th-century flow path, and restoring the floodplain.

The 100% Design and a Change in Regulations

The project was estimated to cost approximately $1 million at completion and at no cost to the town. To fund upgrading the engineering design to the 100% level, Rhodes obtained a $90,000 grant from the New Hampshire Charitable Foundation and an $85,000 grant from the Vermont Clean Water Fund. In May 2020, Inter-Fluve delivered its 100% engineering design.

During the same time, the Vermont Agency of Natural Resources was in the process of developing a revised Dam Safety Rule to cover all structures impeding the flow of rivers in Vermont. It defined a dam as any structure that is capable of impounding 500,000 cubic feet (11.48 acre-feet) of water. Harveys Lake exceeds that volume. As a result, the water control structure proposed in the engineering design would be deemed a dam under the new regulations and would need to meet all the new dam requirements. The anticipated cost more than doubled to $2.2 million.

(Continued on page 14)

Legislative Committee Update

By the FOVLAP legislative committee

FOVLAP's legislative committee was active this year, meeting regularly and tracking the Vermont 2020 Legislative Session's activity and bills. The committee is currently led by Board of Directors (BOD) Jack Widness and Christine Cano and includes Board member Jay White and Auxiliary Board member Ann Bove. The committee was also supported by Board member Susan Martin, who left the Board in September. President Don Weaver and Vice President Jackie Sprague regularly join in on committee calls.

On behalf of the FOVLAP BOD, the committee sent a letter to the Vermont Senate Natural Resources and Energy Committee, encouraging them to hold hearings on Senate bill 69 (S.69), wake boat regulation on state public waters. The letter emphasized FOVLAP's concerns to protect water quality as awareness grows regarding the rising popularity of the wakeboarding sport:

- FOVLAP received complaints from shoreland property owners across Vermont experiencing negative impacts from wake boat activity.
- Wake boats with specially designed propulsion systems and boats with wake-enhancing equipment create large wakes for wake surfing. These wakes can cause shoreline erosion and negatively impact wetlands, private property, wildlife, aquatic life and public safety.
- Residual water in wake boat ballast systems can spread aquatic invasive species because they are difficult to drain or dry out.

The committee expects to continue to monitor scientific studies, other states' development of wake boat investigations and regulations, legislative bills, etc.

The committee also wrote a letter to the chairs of the House Committee on Natural Resources, Fish and Wildlife, the Senate Committee on Natural Resources and Energy, the House Committee on Appropriations and the Senate Committee on Appropriations encouraging support of full funding for Act 64, The Vermont Clean Water Initiative. Act 64 enacted or amended statutes to address water quality issues, including provisions related to agricultural water quality, river basin planning, stormwater, and water quality on logging jobs. In addition, the Act enacted or amended provisions that raised revenue to fund water quality improvements or support State agency staff needed to implement water quality programs.

The committee created the following:

- A list of key legislative contacts: This list is regularly updated to maintain current contacts (typically in January) and is provided as a resource to the FOVLAP Board and members. A copy of the list is available here.
- An *Advocacy and Action Plan*: The impetus and initial outline for formalizing FOVLAP advocacy objectives to support our mission to

(Continued on page 11)

"Governor Scott, as you are aware, Vermont waterbodies have been negatively impacted by aquatic invasive species that have entered our state. These are a form of biological pollution with significant adverse impacts on the environment, our economy, and even the health and well-being of both Vermonters and our visitors…

The Federation of Vermont Lakes and Ponds seeks your support to fully fund existing grant programs, the State's Lakes and Ponds Program, and this Federation's and others' efforts to manage aquatic invasive species. We seek your support in helping us continue to protect and preserve Vermont's precious aquatic resources for this and for future generations to come."

An excerpt from the FOVLAP Legislative Committee's statement to Governor Phil Scott at the annual meeting as presented by Jack Widness.

A 2020 Bioengineering Project: FOVLAP Brightens North Hero Shore

By Amy Picotte, VTDEC Lakes and Ponds Program

Bioengineering projects to restore living shorelands were installed on four lakes during the 2020 field season. Typically, purchasing supplies for bioengineering projects involves ordering biodegradable and natural materials, and native plants ahead of time, which made planning during the COVID delays especially challenging. But despite the uncertainties, the Federation of Vermont Lakes and Ponds helped brighten and bring to life one bioengineering project along the shoreline in North Hero on Lake Champlain by a timely commitment to provide an assortment of native plants.

Sloughing, eroding shore (Photo credit A. Picotte)

It takes a team! A Lake Wise site assessment connected new North Hero shoreland owners, Laura McNally and Brook Anderson, with the ecological designer, Holly Greenleaf, and FOVLAP for funding to purchase native plantings to help stabilize the eroding shore. Through this collaboration, the McNally's shoreland property is now eligible to earn the Lake Wise Award for exemplary, lake-friendly shoreland management.

Shoreland native plants build resiliency along the shore, buffering property from wave, ice and wind erosion, and protecting it from upland erosive runoff while offering multiple wildlife benefits. The McNally property had been damaged during high water in 2011, where the shore sloughed away, leaving a steep vertical drop with an undercut bank along 250 feet of shore. The stretch of shore was eroding into Lake Champlain, degrading water quality and the property.

Greenleaf Design installed a bioengineering method, at the McNally property. The method used was first introduced to Vermont Natural Shoreland Erosion Control Professionals in 2015, through a project training on Lake Iroquois in Williston conducted by Brian Majka from GEI Consultants in Michigan. This softscape stabilization technique uses fiber coir rolls to establish a new "toe"- the base of the bank where the slope ends - after the shore has been regraded to a gentle slope and prepared for plantings. Native plants are always used because of their function and value as keystone species for healthy lake ecosystems and to avoid introducing invasive, non-native species. The network of plant roots grip and bind the bank, while the rest of the plant filters upland runoff, intercepts pelting rain and snow, shades the water, and feeds the wildlife. A win-win design for the property owner, water quality, and nature!

Every native plant and stretch of shore matters for clean lakes. Through this collaborative bioengineering project, butterflies and foliage colors now brighten a stable, living, natural shoreland along North Hero on Lake Champlain.

Ecological Designer, Holly Greenleaf uses the bioengineering method to restore a living shoreland along Lake Champlain in North Hero (top left): before (top center) and completed restoration (top right). (Photo credit A. Picotte)

Lessons Learned from Ticklenaked Pond

By Peggy Barter, FOVLAP Auxiliary Board Member

On July 1, 2020, Oliver Pierson, Lakes and Ponds Program Manager for the Vermont Department of Environmental Conservation (VTDEC), issued a press release beginning with these words: "While its name may conjure up an entertaining scene, water quality issues on Ticklenaked Pond in Ryegate, Vermont have been no joke. After many years of suffering from algal blooms due to high phosphorus concentrations, poor water clarity, and other challenges, Ticklenaked Pond was recently removed from Vermont's impaired waters list. The pond was removed after experiencing five consecutive years of water quality improvements. The delisting makes Ticklenaked Pond the first water body in Vermont to meet EPA-mandated phosphorus reduction goals."

The water quality improvements achieved at Ticklenaked Pond are the result of nearly 20 years of collaborative effort among the local community of Ryegate, Ticklenaked Pond Association, VTDEC Lakes and Ponds and Watershed Management staff, and Caledonia County Natural Resources Conservation District. Together the collaborative created and implemented a plan to reverse impaired water quality, restoring the pond to a place where again it is a pleasant place to swim, boat and fish. Here's the story.

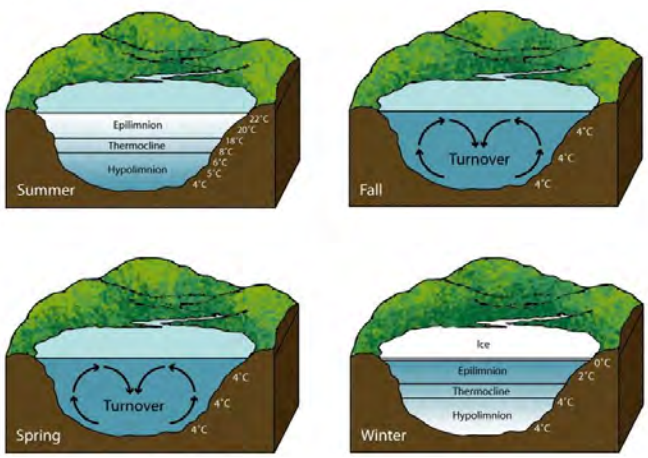
Ticklenaked Pond is a 55-acre water body with a small watershed. The pond doesn't mix every year (see below) resulting in low dissolved oxygen levels and the release of historical phosphorus in the pond's sediments back into the water column. Aside from these two circumstances, Ticklenaked Pond is like any other lake or pond in Vermont that suffers from elevated phosphorus levels. This includes watersheds with a mix of agricultural and developed land uses, often with the densest development along the lakeshore including roads, houses and lawns, all of which can contribute phosphorus. Increased phosphorus levels in a lake's water column can lead to rampant plant and algae growth, and deteriorating water quality.

Enjoying an afternoon at the Ryegate Town beach on Ticklenaked Pond (Photo credit B. Copans)

In 1998, a group of interested citizens concerned about Ticklenaked Pond's murky water and increasing algae blooms formed the Ticklenaked Pond Association and became involved in the Vermont Lay Monitoring Program. The group found it easy to find volunteers and others to support their efforts: people living near the pond were disgusted with the murky water quality which often made it unpleasant for swimming, fishing and even boating.

Work to restore the pond's water quality started in 2005 when VTDEC began the development of a "Total Maximum Daily Load" (TMDL) which set the maximum amount of a pollutant allowed to enter Ticklenaked Pond while allowing it to meet a target set for the pond of 24 micrograms per liter of phosphorus. Establishing a TMDL serves as the starting point for restoring water quality. Historical summer phosphorus levels in Ticklenaked Pond were often in the 30 to 40 micrograms per liter range. With a TMDL for phosphorus established, VTDEC developed an action plan that was approved in 2009.

(Continued on page 10)



Lake turnover is the process of a lake's water turning over from top (epilimnion) to bottom (hypolimnion). A biannual cycle of lake turnover is essential to mitigate the negative impacts of low oxygen dead zones and provide suitable habitat for fish and aquatic organisms to thrive.
Credit Lake Turnover, National Geographic Society

Meet Swampguana!

By Tracey Shadday, FOVLAP Auxiliary Board Member

If you've ever seen a boat displaying a red flag with a diagonal white stripe on a Vermont lake such as Lake Willoughby, Salem Lake or Shadow Lake, you may have wondered about the flag's purpose. This flag, pictured at right, signals that a SCUBA diver or snorkeler is in the water. For the lakes mentioned - as well as others in the Northeast—this could be a sign of important, yet tedious work below the lake's surface to remove the aquatic invasive plant, Eurasian watermilfoil.

Rob Patton, known affectionately by many as "Swampguana," has managed Eurasian watermilfoil in Northeast Kingdom watermilfoil-infected lakes for years. Swampguana began his SCUBA diving career in college. He started as a summer boat tender on Lake Willoughby for a commercial diving company hired to remove Eurasian watermilfoil. As tender, he assisted divers and watched over their safety, ensured boat organization and maintenance, checked all equipment regularly and properly disposed of plants removed. Later, Rob became an open-water certified SCUBA diver and continued his water work with the commercial outfit and on his own but now beneath the water as a SCUBA diver.

Swampguana is passionate about the environment and loves the world Vermont lakes and ponds offer to those willing to venture beneath their surfaces. Rob is always careful to protect the natural species living there whenever he works or recreates on or below the surface. In addition to Eurasian watermilfoil, Rob has seen and removed a lot of garbage on his many underwater excursions, from car batteries and bottles to a drowned drone.

Rob Patton relocating a snapping turtle before installing benthic mats in Salem Lake, Derby (Photo credit E. Wells)

When flown from a vessel or buoy, a "divers down" flag signals that divers and snorkelers are in the water; boaters are required by law to keep a 200-foot distance from the flag when present.

https://images.app.goo.gl/EFiun1LapuvAJKR76

When asked, Rob will tell you removal of Eurasian watermilfoil must be done carefully to ensure thorough removal of the plants' roots and stems, and no stem fragments float away. One small piece of a watermilfoil stem can produce a new plant and, could lead to a new infestation wherever it lands. Rob emphasizes lake water clarity, which depends upon each lake and weather conditions, is a critical factor in effective control. A diver must be able to see the plants they need to harvest.

Rob is experienced with several known watermilfoil management methods: surveying, hand pulling, use of a diver operated suction harvester[1], benthic mats[1], and proper plant disposal. Hand pulling is the best control tool when a plant population is small or when scattered plants are around a lake; a suction harvester and benthic mats work better for controlling larger patches. A suction harvester unit allows a diver to suction removed plants up to the water's surface for collection versus hand pulling, a diver must collect pulled plants into a mesh bag, and when full, transport it to the surface by swimming. To see an underwater video of Swampguana, or Rob Patton, hand pulling watermilfoil, click here. If conditions warrant, the use of a suction harvester can result in 60-70 five-gallon buckets of unwanted watermilfoil in only 4 hours.

Controlling Eurasian watermilfoil is not without costs. SCUBA divers with Eurasian watermilfoil control experience can cost a minimum of $50 per hour. Add a suction harvester boat and crew, and the price jumps to approximately $1,200 per day. To learn more about methods to manage Eurasian watermilfoil, click here.

Okay, so you have a control plan for Eurasian watermilfoil but how do you *find* watermilfoil in a lake or pond? Some groups hire a surveyor; others engage volunteers like Vermont Invasive Patrollers, trained to search for invasive aquatic species in Vermont water bodies. Surveyors swim, wade, kayak or canoe in their hunt for Eurasian wa-

[1] Use of benthic mats or a powered mechanical device like a suction harvester in waters of the state requires a permit.

(Continued on page 9)

(Continued from page 8)

termilfoil, and track or mark a site for a SCUBA diver like Swampguana to return to manage.

Take Shadow Lake in Glover's experience. The Shadow Lake Association's watermilfoil rapid response began in 2011 with the confirmation of Eurasian watermilfoil. Shadow Lake Association member and current FOVLAP board member, Christine Cano volunteered for several years, helping the lake association with their management efforts. Chris spent hundreds of hours researching control methods. As a snorkel volunteer, she methodically surveyed the entire lakeshore, pulling watermilfoil, taking detailed notes, marking and mapping each site, and coordinating volunteers. This effort enabled the Shadow Lake Milfoil Committee, and state and hired divers – in this case, Swampguana – to control underwater sites by either hand pulling or using benthic mats. After the initial six years of battling watermilfoil, successful management was achieved at Shadow Lake. By repeating the seasonal surveying effort with Rob and others, watermilfoil has not been found in Shadow Lake now for three years in a row!

The Shadow Lake watermilfoil story represents what it takes to manage an aquatic invasive plant - and keeps Rob feeling hopeful. Management of aquatic invasive species is a collaborative, on-going, detail-oriented and often expensive effort. Remembering the lesson from other watermilfoil management efforts, a new infestation can reappear anytime, especially if a lake has public access, is critical to success and means watermilfoil management at Shadow Lake must stay future-directed and is, unfortunately, a never-ending story.

Rob Patton, aka Swampguana, resides in Vermont's Northeast Kingdom and can be contacted at swampguana@gmail.com or 802-274-7016.

Rob Patton on the rare occasion he is above water, at Shadow Lake, Glover (Photo credit C. Cano)

CLEAN DRAIN DRY

CLEAN, DRAIN, DRY a simple three step process water enthusiasts can follow every time they move from one body of water to another and a national message.

CLEAN off visible aquatic plants, animals and mud from all equipment before leaving water access.

DRAIN plugs, bailers, valves and other water control devices including watercraft bilge, live well, motor and other water-containing devices, before leaving a water access. Even a small amount of water can harbor plant parts and microorganisms unseen to the unaided eye.

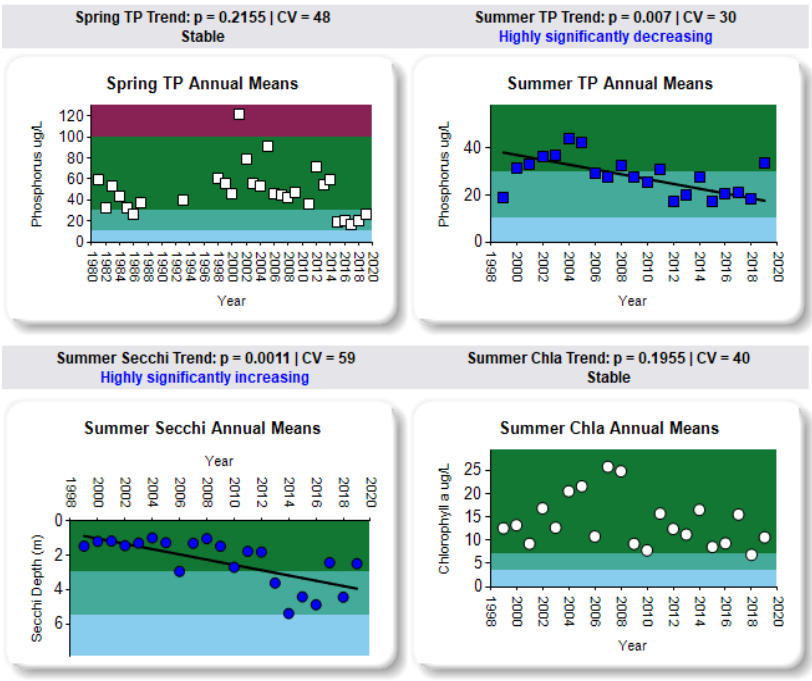
DRY everything for at least five days OR wipe with a towel before reuse.

For anglers, **DISPOSE** of unwanted bait, worms and fish parts in the trash. When keeping live bait, drain bait containers and replace them with spring or dechlorinated tap water. Never dump live fish or other organisms from one water body into another.

Did you know? Vermont law now makes it illegal to transport all aquatic plants or plant parts on the outside of a vehicle, personal watercraft, trailer, or other equipment. Boat owners are required to inspect any vessel, vessel trailer, motor vehicle and other equipment upon entering and departing a water body and remove any aquatic plants or plant parts. Any violation of Vermont's transport law, including the section pertaining to drainage of vessels and equipment, may result in a fine of up to $1,000.

(Ticklenaked continued from page 7)

Local efforts to address phosphorus sources in the pond's watershed were led by Ticklenaked Pond Association President, Khristine Elder and volunteer, Sally Wilson. They communicated with lakeshore property owners, public beachgoers, farmers in the watershed and town leaders to garner needed behavior changes to reduce the pond's phosphorus levels. When VTDEC suggested remedial actions, the community was willing to do its part and got to work. Volunteers surveyed the watershed, including the pond's tributaries, then presented and implemented needed remediation actions: planting native shoreland buffers, establishing no-mow zones, maintaining septic systems, reducing runoff from roads, installing water bars, fencing off grazing cattle, distancing pastures by at least 100 feet, cover cropping farmland, improving manure handling, and other actions.



Ticklenaked Pond nutrient trend data through 2019 from the Vermont Lake Score Card).

After nearly ten years of work, the data showed less phosphorus was entering the pond yet the TMDL target level set for phosphorus had not been met. More work was needed to address "internal loading" of phosphorus from sediments. VTDEC suggested an alum treatment to bind (or lock) phosphorus in the pond's sediments to prevent elevated levels in the water. An alum treatment, supported by state grant funds, was conducted in 2014. The treatment was successful, pond phosphorus levels dropped drastically and remained below the threshold set for the last five years. As a result, Ticklenaked Pond was removed from the state's impaired waters list this summer.

Although the alum treatment was successful in Ticklenaked Pond, local work to slow or reduce phosphorus runoff must continue well into the future. Lake leaders Kristine Elder and Sally Wilson are confident, "Those living near or recreating on Ticklenaked Pond remain dedicated to continuing needed efforts."

Current efforts continue this important collaboration and are led by VTDEC basin planner, Danielle Owczarski and Kerry O'Brien, the District Manager of the Caledonia Natural Resources Conservation District. Examples include monitoring the pond's main tributary to evaluate watershed nutrient sources, e.g., fertilizer use, erosion of roads, parking lots and driveways, land clearing and native vegetation removal; and continuing sampling efforts through the Vermont Lay Monitoring Program.

VTDEC Lakes and Ponds Program manager, Oliver Pierson stated, "Based on our monitoring data and efforts of local actors, we are optimistic that the alum treatment will remain in effect for many years to come, and if the treatment continues to be complemented by efforts to reduce phosphorus pollution from the watershed, Ticklenaked Pond will be a great place for Vermonters to enjoy clean water and excellent recreation

(Continued on page 11)

Eurasian watermilfoil at Ticklenaked Pond

The invasive aquatic perennial plant, Eurasian watermilfoil was confirmed in Ticklenaked Pond in 1998, well before the pond was treated with alum to address internal phosphorus loading. Because of the pond's poor water quality and clarity prior to alum, watermilfoil was present but not thriving. With the success of the alum treatment and resulting improved water quality and clarity, the amount of Eurasian watermilfoil increased.

Lake leaders, Khristine Elder and Sally Willson report local efforts to tackle phosphorus have expanded to meet the challenge of managing Eurasian watermilfoil in the pond. Methods used to date include diver operated suction harvesting and hand pulling.

(Ticklenaked continued from page 10)

opportunities."

There are many lessons other lake associations can take from this success story, although each lake and its watershed are unique. VTDEC will continue to use the processes developed to restore Ticklenaked Pond on other lake restoration projects while adjusting the strategies to fit the watershed of each unique lake or pond.

The removal of Ticklenaked Pond from the state's list of impaired waters shows how a scientifically-based approach to identify and address phosphorus source areas combined with a close collaboration among an engaged local community, VTDEC staff and others as well as adequate funding can be effective in achieving water quality targets. Ongoing efforts will ensure that the benefits of reduced phosphorus continue at Ticklenaked Pond.

The author would like to acknowledge the efforts of the many VTDEC staff involved in the Ticklenaked Pond Restoration Project, including basin planner, Ben Copans; lake analyst, Neil Kamman; lakeshore manager, Amy Picotte; basin planner, Danielle Owczarski, among others; and current Ticklenaked Pond volunteer water quality Lay Monitor, Julia Bergen Guay.

Important Takeaways from Restoring Water Quality at Ticklenaked Pond

- **Organize** a concerned group of citizens.
- **Define** a common purpose to create change.
- **Utilize** VTDEC staff expertise.
- **Involve** volunteers in the watershed community and environmental groups, e.g., the county Natural Resources Conservation District, the Vermont Center for Ecostudies, Northwoods Stewardship Center.
- **Collect** and **analyze** data.
- **Develop** an action plan.
- **Use** a collaborative, problem-solving approach.

(Legislative Update continued from page 5)

promote water quality came from board member, Christine Cano. With significant Board input, FOVLAP approved the committee's plan.

Co-chair Jack Widness says, "The new Advocacy and Action Plan will provide a sound basis for helping remind decision-makers of FOVLAP's values and beliefs in preserving Vermont's lakes, ponds and watersheds for the benefit and enjoyment of all—now and into the future."

The Plan is available on FOVLAP's website; click here to access the Plan.

- A 2019-2020 Legislative Bill Summary: At the conclusion of the 2020 Legislative session – representing the end of a two-year biennium for the legislature - the committee summarized bills related to lakes, ponds and their watersheds, and developed a 2019-2020 bill summary document. The summary is available on FOVLAP's website; click here to access the summary.

As an ongoing effort, FOVLAP's legislative committee will continue to create a culture of clean water through communication, education, and encouraging the membership to invest in how the Vermont legislative process works and join in lake environmental advocacy. The committee also hopes to create an "Advocacy Alert" FOVLAP website feature for subscribing members to receive automatic notices when key bills FOVLAP monitors gain traction, alerts to encourage public advocacy by individual lake associations, etc.

The legislative committee appreciates and wishes to thank Susan Martin for her support and involvement in the legislative committee.

VTDEC Update from Lakes and Ponds Program Manager, Oliver Pierson

Greetings, FOVLAP members. Here are a few updates about what has been going on in the VTDEC Lakes and Ponds Program.

Angela Shambaugh's Retirement

Angela Shambaugh, our aquatic ecologist working mostly on Lake Champlain Long-Term Monitoring and cyanobacteria issues, retired from the VTDEC after 16 years of service on October 23rd. Angela was a phenomenal resource for the Lakes and Ponds Program and all Vermonters, offering the rare mix of excellent scientific assessment and analysis skills, and an ability to communicate complicated concepts clearly. Her knowledge of cyanobacteria taxonomy and ecology was an extremely important element in helping the state respond to increasing blooms over the last ten years. Angela was also our expert on Lake Champlain water quality issues and has played a key role in increasing our understanding of the lake's challenges and how to address them. We will miss her calm demeanor, her patience, her willingness to spend long hours at a microscope looking at algae samples, and her enthusiasm for protecting and restoring Vermont's lakes and ponds. We wish her all the best in her retirement. Due to the COVID-19 related hiring freeze, the Lakes and Ponds Program is still waiting for permission from the State of Vermont leadership to recruit a replacement to continue Angela's essential work.

Lake Watershed Action Plans

A lake watershed action plan (LWAP) is an assessment to identify the highest nutrient/sediment pollution loading areas of a lake's watershed that results in water quality and habitat degradation. Lakes Eden, Elmore, Dunmore and Fern are recent examples. The Lakes and Ponds Program and Basin Planners have supported lake associations and conservation districts in development of LWAPs. The LWAP results in a prioritized list of projects and strategies to address the sources of pollution and habitat degradation identified in the assessment. The plan may also contain recommendations to preserve natural features and functions, encourage the use of low impact green stormwater infrastructure, and maintain the lake's aesthetic and recreational benefits. The plans can also be a springboard to seek funding to implement water quality improvement projects identified in the plan, and its existence lends credibility to a lake association and its partners as it seeks project implementation funding.

Developing these plans is a useful way to bring stakeholders around the table, identify the key stressors, propose solutions, and then use the completed plan to seek funding for projects. In early 2020, VTDEC suggested to the Lake Champlain Basin Program (LCBP) that LWAPs become a target for future grant funding opportunities. A recent LCBP request for technical project pre-proposals included LWAPs as an eligible funding category. Several lake associations, in-

(Continued on page 15)

UPCOMING EVENTS

2021 Lake Seminar — **June 4**
Lake Morey Inn
82 Clubhouse Road, Fairlee

FOVLAP 2021 Annual Meeting — **Sept 9**
Steak House Restaurant
1239 US-302, Barre

NECNALMS Webinars

The New England Chapter of the North American Lake Management Society is currently offering webinars at least twice a year in leu of in-person events.

Inaugural webinar, April 2020: *Restoring Living Shorelands*, is also available on the North American Lake Management Society YouTube channel here.

Fall 2020 webinar: ***Understanding and Managing Internal Phosphorus Loading in Lakes***, provided the opportunity to hear from a panel of international experts: Alan Steinman, Ph.D., (Grand Valley State University, Michigan) Ken Wagner, Ph.D., (Water Resource Services, Massachusetts) and Miquel Lurling, Ph.D., (Wageningen University, Netherlands). They explored internal phosphorus (P) loading, its link to cyanobacteria blooms, and methods to reduce internal P loading. To see it, visit the NALMS YouTube channel here.

Spring 2021 webinar: TBD; check the link below for more information or never miss a notification and join now.

For more information on NECNALMS, and links to webinars and updates click here.

NAISMA Webinars

The North American Invasive Species Management Association offers free webinars on the 3rd Wednesday of every month. Click this link for the NAISMA 2020 Webinar Schedule

Aquatic Invasive Species Update

Kim Jensen, VTDEC Lakes and Ponds Program (kimberly.jensen@vermont.gov) and Meg Modley Gilbertson, LCBP (MModley@lcbp.org) provided the content for this update.

New Aquatic Invasive Species (AIS) Introductions in 2020: After no reported new introductions of AIS in a Vermont waterbody this season, in late October a report of the invasive annual aquatic plant, water chestnut in Rockingham was received by VTDEC's AIS Program.

"I knew I spoke too soon. Fishermen fishing in the Connecticut River in Rockingham found and reported a large population of water chestnut plants in a back bay. This is the only new find in 2020," said Kim Jensen, VTDEC AIS Program Coordinator. Kim further clarified, "While water chestnut has been found in the New Hampshire portion of the Connecticut River, this is the first confirmation in a Vermont portion of the river."

The fishermen were initially directed to Laurie Callahan, a past FOVLAP board member who conducts annual AIS surveys on the Connecticut River. Laurie quickly completed a survey of the area finding numerous patches. The fishermen, Laurie and other volunteers harvested some of the hundreds of plants that are located there but seeds had already dropped. VTDEC plans to add this location to its overall annual AIS management plan and will visit the site in 2021.

In 2019, approximately 150 zebra mussels were found in Lake Dunmore (Salisbury, Leicester) and removed by diver operated suction harvesting. Although zebra mussel veligers (larval stage) were found in Lake Dunmore in 1999, no known occurrences of adults or veligers were confirmed until 2019. The 2020 rapid response plan efforts found no new adult zebra mussels or veligers in surveys or net tows.

"Another narrow miss that will continue to be monitored," said Meg Modley, Lake Champlain Basin Program AIS Coordinator. "The Lake Dunmore Fern Lake Association is still trying to find a workable location for a decontamination unit; the Vermont Department of Fish and Wildlife (VTDFW) public boat launch is too small and has limited parking. VTDFW would prefer not to have a station at the launch."

VTDEC received several intercepts and misidentified specimens of the invasive perennial aquatic plant, hydrilla listed on iNaturalist, a joint initiative of the California Academy of Sciences and the National Geographic Society. Fortunately, none of the received Vermont reports were confirmed as hydrilla.

VTDEC's Vermont Infested Waterbodies List was updated this year to account for "double-counts" of Lake Champlain in its list. As a result, the number of infested water bodies with the invasive perennial aquatic plant, Eurasian watermilfoil per VTDEC stands at 99.

Connecticut River Hydrilla: Northeast Aquatic Nuisance Species Panel-coordinated response for hydrilla in the Connecticut River continues (both VTDEC and LCBP are members of the Panel). However, the collaborative survey efforts planned for September 2020 with U.S. Army Corps of Engineers were canceled. Unfortunately, due to the COVID-19 pandemic and no clear plan for how to treat the river populations discovered, survey efforts were postponed until the results can be used. Data collected in a survey from fall 2020 might become out of date and inaccurate if action to limit spread or implement control is not scheduled to occur soon afterward.

To aid in future spread prevention efforts on the River, VTDEC and New Hampshire Department of Environmental Services have discussed developing a collaborative network of public access greeters on the VT and NH sides of the river in the future.

FOVLAP's Spring 2020 newsletter informed readers that genetic testing of hydrilla samples collected from the Connecticut River in Connecticut determined this hydrilla is a unique strain, or biotype, not known from another US location.

"Abundant turions [underground stems] but no tubers [winter buds] are a key feature of the biotype which may affect management options," said Greg Bugbee, Connecticut Agricultural Experiment Station and a member of the Connecticut River coordinated response.

For more information on hydrilla click here.

Water Chestnut Management: Management of water chestnut continued at full opera- *(Continued on page 14)*

Volunteers from VTDEC's Business Office and the Lake Champlain Basin Program harvest water chestnut at Black Creek Marsh while social distancing. (Photo credit VTDEC)

(Trouble continued from page 4)

According to Project Manager Rhodes, the next steps are unclear. In general, funding for dam removals in New England is readily available and permitting is minimal. However, the construction of a new dam is another matter. It requires substantially more money and obtaining the required state and federal permits are far more complicated.

(AIS Update continued from page 13)

tion in 2020 thanks to the enthusiasm, flexibility and safety measures put in practice by the many contractors, volunteers and partners to continue efforts. While VTDEC continues to process 2020 data, control efforts continue to show decreasing numbers of water chestnut at sites continuously managed and annually surveyed in Lake Champlain and other Vermont water bodies.

LCBP staff were responsible for survey and harvest efforts for the 2019 finding of water chestnut at Sand Bar State Park in Milton and found no new locations in 2020. Only a few small plants were harvested from this site last year.

Aquatic Nuisance Control (ANC) Grant-in-Aid Grant Program: The VTDEC ANC Grant-in-Aid Program developed a plan for 2021 Request for Proposals that is expected to be released in early December 2020. The amount of funds available is estimated to be similar to funding levels in 2020, approximately $450,000. Applicants can expect changes in how received applications are scored: projects that align with the ANC Statutory priorities for new infestations and spread prevention will score higher. A new application package is in development and will include an on-line application form. Applications will be due in mid-February 2021.

Vermont Public Access Greeter Program: A request by Jack Widness, a FOVLAP board member and volunteer greeter/supervisor/coordinator for three southern Vermont lakes, is interested in sharing ideas and suggestions for improving the operation of the statewide Vermont Public Access Greeter Program. Jack is also considering identifying and applying for other grants to support this effort. A meeting was held by Greeter Program Coordinators on November 11th to discuss suggestions for improvements to the statewide Greeter Program. A follow-up meeting was held on December 4th for all ANC Grant-in-Aid Program grantees to continue the Greeter Program discussion and provide feedback on the ANC grant program as a whole. Please contact Jack at johnwidness@uiowa.edu or Kim Jensen at kimberly.jensen@vermont.gov if you would like to be part of this Greeter Program initiative.

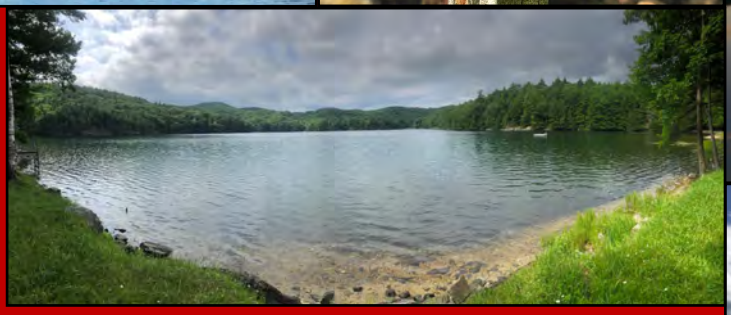
Lake Champlain Boat Launch Steward Program: 2020 put forth a challenging field season with pandemic related state emergencies being declared in the spring just as hiring and training of stewards was underway. LCBP was able to virtually interview Lake Champlain boat launch steward candidates. LCBP worked with NY and VT states and the Adirondack Watershed Institute (AWI) at Paul Smith's College to move the multi-day boat launch steward training to an on-line format. All stewards were hired and successfully trained with COVID safety precautions for the beginning of the field season (Memorial Day weekend). AWI covered the NY side of the lake at NY public boat launches with five decontamination units available. LCBP covered northern NY launch sites including the City of Plattsburgh, Point Au Roche state and public launch sites and VTDFW sites on the lake's eastern side. A launch site on Missisquoi Bay in Quebec was covered in partnership with the Organisme de bassin versant de la baie Missisquoi.

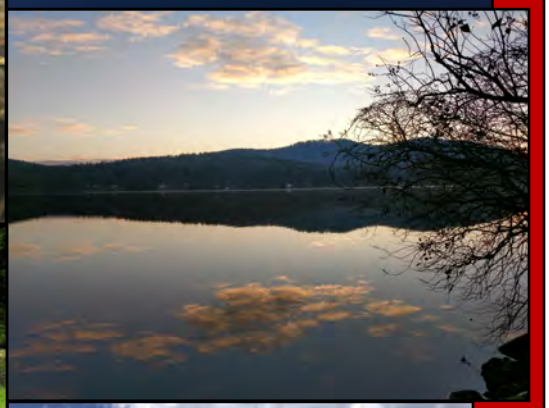
Lake Champlain stewards at Shelburne Bay public boat launch at their post (Photo credit LCBP)

Stewards saw an increase in boat launch usership with an increase of over 4,000 additional watercraft inspected. The LCBP expects that many more people utilized local launch sites as a pandemic-friendly family activity. While no new AIS were encountered, the stewards' efforts doubled down in June when the invasive aquatic fishhook water flea population exploded in the lake. Stewards carefully inspected and decontaminated equipment to prevent the spread of that organism to uninfested bodies of water. A handful of stewards worked through October 12th, the last day of the program. Decontamination stations on Lake Champlain in VT were located at Shelburne Bay, Colchester Point, and South Hero VTDFW launches.

Fouled fishing lines with fishhook and spiny water fleas (Photo credit LCBP)

CELEBRATE
Vermont Lakes and Ponds!





Clockwise from left - Shadow Lake, Glover (Photo credit C. Cano); white waterlily (Photo credit A. Bove;) Lake Morey, Fairlee (Photo credit B. Durgin); Lake Raponda, Wilmington (Photo credit J Widness); Lake Iroquois, Hinesburg, Williston, St. George (Photo credit P. Suozzi); Salem Lake (Photo credit A. Bove); Rutland County pond (Photo credit A. Bove); Harveys Lake, Barnet (Photo credit J. Sprague); Shadow Lake, Glover (Photo credit C. Cano). ***Center*** - dragonfly (Photo credit A. Bove)

(Continued from page 12)

cluding Lake St. Catherine, Caspian Lake and Lake Iroquois submitted pre-proposals and should hear if their applications were accepted to develop a full proposal by the end of the year. VTDEC is also seeking funding for LWAP development outside the Lake Champlain Basin, possibly from Clean Water Investment Program sector-based assessment funds. Stay tuned for more on that point.

Please don't hesitate to reach out to Oliver if you have any questions: oliver.pierson@vermont.gov or 802-490-6198.

FOVLAP
PO Box 766
Montpelier, VT 05601

Consider Giving a Gift of a FOVLAP Student Membership This Year

In 2020, FOVLAP voted to add a membership category for students older than age16 and reduce the membership fee by 50% to $13. Is there a young person you know who would welcome a membership in our organization?

As a lake association, consider sponsoring a FOVLAP student membership in your lake community. As an individual, consider a FOVLAP student membership as a year-long holiday gift. Click here to give the gift of a FOVLAP student membership today!

Did you know the Federation of Vermont Lakes and Ponds has a presence on social media? Check us out on Facebook at

https://www.facebook.com/VermontLakes

Check out FOVLAP's website at

www.vermontlakes.org

This newsletter was funded by a grant from the Lake Champlain Basin Program in cooperation with New England Interstate Water Pollution Control Commission.

Lake Champlain Basin Program

NEIWPCC

RECYCLED PAPER