The Federation of Vermont Lakes and Ponds Newsletter
Spring 2017

The President's Corner
by Don Weaver, FOVLAP President

In the fall we look forward to winter, the ground covered with snow and the many activities that take place during this season. However, Spring is the time of year when daylight increases, temperatures rise, snow melts, the grass becomes green, flowers pop up and the list goes on and on. FOVLAP had a very busy winter season this year with an invitation to join the "2017 ECHO, Leahy Center Environmental Summit", a huge learning curve for all of us. In January the FOVLAP Issues Committee went into high gear planning the late spring "Lake Seminar", followed by preparations for the July Annual Meeting. The Seminar and the Annual Meeting will both be held at a mid-state location this year. Additional information follows on all events; check the FOVLAP web site, www.vermontlakes.org for updates and registration. The committees have worked hard to produce a very interesting and educational program for the Seminar. A Panel discussion is planned for the Annual Meeting, covering the "Summit" and how Lake Associations may become involved in the "Vermont Clean Water Initiative" program. Please mark your calendars and plan to attend both events.

FOVLAP Seminar, June 2, 2017 Annual Meeting, July 24, 2017
by Jackie Sprague

Lake Seminar 2017 – Pathways to Healthy Lakes will be held on June 2, 2017 at the Canadian Club in Barre, Vermont. The day will be filled with new information beginning with a keynote, Rebecca Lindemeyer discussing *Landscape for the Lake.* Following the keynote will be a presentation on Roads to heathy lakes. Jim Ryan will present on what road standards will be required by all towns to improve stormwater runoff and help protect water quality. Linda Blasch and Amy Picotte will present on finding available for road projects and specific examples of bioengineered stabilization projects. The afternoon offers three choices; Track 1, a combined Cyanobacteria monitoring with AIS decontamination and demonstration. Track 2, a field trip to North Montpelier Pond, and Track 3, Pathways to Vermont Lakes with designs that show how to retrofit lake friendly practices on existing developed sites. For more information check out our website at www.vermontlakes.org

The Annual Meeting 2017 will be held at the Steak House on the Barre -Montpelier Road on Monday, July 24, 2017. The morning offers a presentation on the Clean Water Imitative Program / roadmap toolkit along with FOVLAP business. The afternoon, a panel discussion by local Watershed Associations, presents their work from support and funding through the Leahy Center Environmental Summit. Don't forget the Lake Association reports and door prizes! We are all very excited about these two exciting and informative events. More information may be found on the FOVALP website. www.vermontlaske.org

Big Plans at Seymour Lake for Summer of 2017

by Peggy Barter

Seymour Lake Association is planning a major effort this summer to engage more lake shore owners in Lake Wise. SLA Director and Water Quality Committee member Erik Lessing has produced maps of the lake shore properties. These maps will be used to help committee members identify properties which appear to qualify or nearly qualify for the Lake Wise Award. Committee members will then contact the owners of these properties to invite them to participate in Lake Wise. In the past few years about 40 lake shore owners have participated, with approximately 12 properties qualifying for the Award. Another dozen or so have been working to implement the suggestions given them in their Lake Wise Evaluations. Another dozen or so have made lake shore improvements to further protect water quality, but have not completed all recommendations they received in their Evaluation. Almost all lake shore owners who received an evaluation have taken at least one action to better protect the lake. Last fall, a property owner planning to have a seawall installed, contacted Amy Picotte instead. Amy helped those owners solve their erosion and runoff issues by constructing a berm to redirect some of the runoff and adding numerous shrubs and some trees to the lake shore. The landscaping was designed to allow the owners to still view the lake from the deck on their dwelling. We encourage all to take advantage of Lake Wise!

Monitoring Alerts

by Perry Thomas, Lakes & Ponds Program Manager

This year we recognize the 40th anniversary of Spring Phosphorus Monitoring, an annual effort that takes our monitoring team members out onto lakes just after ice melt—survival suits are mandatory equipment. If you are not familiar with Spring P, we invite you to visit our website to learn more about it (dec.vermont.gov/watershed/lakes-ponds/monitor) and follow the links there to view data for individual lakes.

Our intrepid monitoring team will participate this summer in the 2017 National Lakes Assessment, coordinated by the U.S. Environmental Protection Agency. Results from the 2007 and 2012 NLA (including an interactive dashboard for the 2012 data) are available on the EPA's website at www.epa.gov/national-aquatic-resource-surveys/nla.

Follow the activities of our monitoring team as well as other Lakes and Ponds Program staff members on our new Facebook page at www.facebook.com/VTLakes/!

Pictured: Aquatic Biologist Kellie Merrell on a lake during Spring Phosphorus sampling.

Natural Shoreland Erosion Control Certification

by Perry Thomas, Lakes & Ponds Program Manager

We continue to offer the Natural Shoreland Erosion Control Certification course, and there is a growing list of certified professionals available on the Lake Wise website under "Current Events." If you plan landscaping or other work on your shoreland, we hope you will consider hiring one of these trained professionals. Additional Natural Shoreland Erosion Control Certifications Courses will be offered again this fall:

November 6th at the Montshire Museum in St. Johnsbury
November 8th at the Associated General Contractors of Vermont in Montpelier

November 15th with UVM's Lake Champlain Sea Grant at DEC's Regional Office in Essex Junction For more information, contact Amy Picotte (Amy.Picotte@vermont.gov or 802.490.6128) or visit the Lake Wise website (dec.vermont.gov/watershed/lakes-ponds/lakeshores-lake-wise).

Clearing or Developing Shoreland?

by Perry Thomas, Lakes & Ponds Program Manager

A reminder: any new clearing or development on your lakeshore may require a Shoreland Permit. To determine whether you need a permit, use the "Shoreland Project Worksheet" or talk with one of our friendly regional permit analysts. During 2016 we welcomed three new regional permit analysts, pictured below. You will find their contact information, along with the worksheet, on our website at dec.vermont.gov/watershed/lakes-ponds/permit/shoreland.

Laura Dlugolecki for Addison, Bennington, Rutland, Windham, and Windsor Counties.

Michaela Stickney for Chittenden,

Lindsay Miller for Caledonia, Essex, Lamoille, Washington, Orange, and Orleans Counties.

Greeter Trainings

Ann E. Bove, Aquatic Invasive Species Management

The Vermont Lakes Program staff has planned five free workshops to train Public Access Greeters. They are:
Saturday, May 6, 2017 9:00 AM –1:00 PM Bois Residence, 23 Stearns Ave, Wilmington,
Tuesday, May 9, 2017 9:00 AM –1:00 PM Agency of Natural Resources Storage Annex, 100 Junction Rd, Berlin,
Wednesday, May 10, 2017 9:00 AM –1:00 PM Westmore Community Church, 27 Hinton Hill Rd, Westmore,,
Saturday, May 13, 2017 9:00 AM –1:00 PM Castleton Community Center, 2108 Main St, Castleton, and
June 9, 2017 10:00 AM –3:00 PM, North Country Career Center, 209 Veterans Ave, Newport.
Covered topics include: Aquatic invasive species biology, threats to Vermont, the importance of spread prevention, hands-on aquatic invasive species identification, access area rules and regulations, baitfish regulations, invasive species laws, invasive species messaging; tips on interacting with the public and watercraft inspection and decontamination training. Pleased arrange for greeters to attend. Pre-registration is required. Contact Josh Mulhollem at Josh.Mulhollem@Vermont.gov to reserve a spot or with questions.

Will Shadow Lake Conquer Eurasian watermilfoil in 2017?

By Chris Cano, FOVLAP Board Member

Will Shadow Lake Conquer Eurasian watermilfoil in 2017? Shadow Lake is a well-loved destination of clear water quality located in Glover in the NEK. Shadow is a small lake at 210 acres and 139 feet deep. Shadow is recognized as one of the few places in the State with a truly successful lake management and Eurasian watermilfoil (EWM) mitigation plan. The Shadow Lake Association (SLA) established a hot water high-pressure boat wash/decontamination station in 2003, typically open from Memorial Day through Labor Day. There are many times when vessels can access the lake when our boat wash is not in operation. Unfortunately, like many other lakes in Vermont, Shadow fell victim to the ever rampant spread of EWM in 2011, when a pioneering infestation of EWM was discovered in a north cove of the lake. That infestation was estimated at approximately 10,000 square feet. Benthic barrier mats were installed to cover and contain the largest area of EWM while SLA volunteers worked to hand pull plants in the smaller outlying patches. Eventually, the mats successfully killed the EWM in the Cove. During the meantime, the SLA began diver-assisted lake wide surveys to search for any emerging EWM spread. Over the past five years, a total of 22 other sites of EWM were discovered popping up around the lake. All sites were carefully monitored, managed and mapped by SLA. We are pleased to report that in 2016 we were now down to just 3 sites of EWM in the entire lake and during that summer we found and pulled a total of only 18 small plants. This is encouraging success! Milfoil control takes time, a united force and dedicated diligence. SLA remains steadfast and are hopeful 2017 may well prove to be the year Shadow might finally conquer Milfoil. The SLA wishes to help any lake association strengthen their Lake protection efforts. Currently we have several good 'gently used' benthic mats available for sale at discounted pricing in convenient sizes of 30 feet length X 7 feet wide to anyone interested in adding to their EWM control arsenal. Inquires can be made through http://shadowlakeassociation.org/contact-usform/

2017 Leahy Center Environmental Summit

by Don Weaver, FOVLAP President

During the winter season, FOVLAP was invited to join the 2017 Leahy Summit Steering Committee. The Committee provided support and the tools necessary for Watershed Associations to tackle large long term environmental projects, resulting in the means leading to clean water. Watershed teams were formed, direction was provided by the Committee, Clean water projects were summited, reviewed for merit and feasibility, all leading up to the 2017 Leahy Center Environmental Summit.

On March 24-25th, ECHO, Leahy Center for Lake Champlain hosted the 2017 Leahy Center Environmental Summit, where more than 160 participants representing 12 teams worked over two days to develop projects that build resilience and create a culture of clean water. Public Awareness and Ease of Action teams from the Vermont Clean Water Network worked to develop plans for the next 90 days and beyond. To learn more about these teams, and the Network's Solutions and Policy teams, visit the Vermont Clean Water Network website or contact Barry Lampke at blampke@echovermont.org.

Three others attended: Beth Torpey, a FOVLAP board member, now a team member on the Memphremagog Watershed Association team, and two VT DEC folks, Angela Shambaugh and Mark Mitchell, both serving as resource people at the Summit. Their comments follow.

Beth; I had the pleasure of attending the Leahy Environmental Summit as part of the Memphremagog Watershed Association (MWA) Team. As a member of one of the invited teams, we had a full schedule for the two days of the conference including having the pleasure of listening to the keynote speakers, Senator Patrick Leahy and climate negotiator Todd Stern

Zebra Mussels Still A Threat!

By Josh Mulhollem, Environmental Scientist, VTDEC

As Vermont lakes continue to warm and thaw, throngs of boaters, anglers, swimmers, and divers being to appear on some of Vermont's most beautiful natural resources. There are endless opportunities to enjoy the State's waterbodies during the summer months, and many of us will spend countless hours on or near the water as temperatures rise. However, for the invasive species that reside in some of our waters, this is also a time for growth and reproduction. This also means that the risk of spreading these invasive pests is highest during the summer, and that is especially true of one of North America's most notorious aquatic invasive species: the zebra mussel.

Remarkably, the threat of zebra mussels is often overlooked in Vermont. Eurasian watermilfoil is the poster child for aquatic invasives in the Green Mountain State, and many in the Champlain basin are well aware of the capacity of water chestnut to completely choke out large expanses of water. In the last couple years, we have witnessed new invasives including Asian clams, starry stonewort, and spiny waterflea. Zebra mussels have been in Lake Champlain for over two decades, and have been documented in Lake Bomoseen for almost as long, yet there hasn't been a new confirmed population in Vermont in 18 years, which can surely be attributed in part to statewide education efforts on the importance of draining and drying vessels and other equipment. But zebra mussels are no less of a threat to other Vermont lakes now than they were years ago, and efforts to stop their spread are just as important now as they were in the 1990s.

Zebra mussels are small (quarter-sized, at most), freshwater mollusks native to the Caspian and Black Seas. When introduced to a system, they can quickly reproduce and infest an area, reaching 700,000 individuals per square meter in a short time period. Reproduction occurs when water temperatures are above 50˚ F, which constitutes roughly half of the year in Vermont. During this time, adult mussels are laying eggs that quickly hatch into free-floating juveniles, called veligers. These veligers, undetectable to the naked eye, eventually settle onto hard or semi-soft surfaces, where they then grow into adults and begin reproducing themselves. During this free-floating stage, the risk of unknowingly transporting this invasive pest is highest, as dozens can exist in even a few drops of water from a contaminated waterbody. Unlike all other freshwater mollusks, these mussels attach to surfaces using string-like structures called byssal threads. Many of the problems caused by these creatures are due to that ability to bind themselves to pipes, rocks, plants, other creatures, and almost anything else found on a lake bottom other than silt and mud.

Ask any freshwater aquatic resource manager west of the Mississippi River which invasive species they most fear, and Dreissenid mussels (zebra mussels and their close cousin, quagga mussels) will be the universal answer. You will probably get the same response if you ask anyone that has been recently swimming or diving in Lake Champlain. The ability of these small mussels to quickly colonize every square inch of hard substrate in a waterbody can wreak havoc on infrastructure, as well as anyone unlucky enough to step on their shells in bare feet. They can clog intake pipes so quickly that some western states now must spend millions of dollars annually just to keep those pipes clear enough to transport drinking water from large reservoirs to their populace. From an ecological perspective, research has demonstrated the disastrous effects that they can have on fisheries and native species. Each adult mussel has the potential to filter over a liter of water per day, removing the microscopic organisms that form the base of all aquatic food chains. This may not seem like a lot, but considering the high densities that these animals can attain, it is quite substantial. A significant amount of energy ends up sequestered on the lake bottom, and therefore unavailable to other benthic creatures and to desirable sportfish.

There are certain environmental limitations that may restrict the proliferation of Dreissenid mussels in certain lakes, including nutrient limitations and lack of available substrate. And, there are probably lakes in Vermont that are more likely to support a problematic population than others, but all are at risk to some degree. So, as the sun begins to shine and we spend our days kayaking through wetlands or hitting our

favorite bass-fishing hole, we should be taking precautions so that we are not spreading aquatic invasives. This is especially true if your favorite haunts are on Lake Champlain. Make sure that all gear is drained, clean, and dry before entering and upon leaving a waterbody, and let gear dry as long as possible in the sun before moving it from one waterbody to another. Remember, it only takes a few drops of water to sustain viable juvenile mussels. Let's keep zebra mussels from spreading to other Vermont waterbodies for another 18 years (and beyond)!

Zebra mussels can quickly attach to and populate all hard surfaces found on a lake bottom.

Vermont Invasive Patroller Training
Ann E. Bove, Aquatic Invasive Species Management

Note that Vermont Invasive Patroller training will be held in Newport on June 9th following the Greeter training. Kill two birds with one trip to Newport. Contact Ann Bove, ann.bove@vermont.gov for more information and registration

Lake Score Card Webinar
Angela Shambaugh, DEC Liaison

A webinar has been created that explains the new lake scorecard. You can find the YouTube video at- https://youtu.be/iNkhA0v9aZA . It is a little rough yet, but we will get better with practice! I may re-record this at a later date, but we'll go with this for now. Should you have questions, contact me at angela.shambaugh@vermont.gov (out for the month of May) or Mark Mitchell at mark.mitchell@vermont.gov.

Official Bylaws Change Notification
By Roger Crouse, FOVLAP Board

At the annual meeting of FOVLAP, to be held on Monday, July 24, 2017, voting members will be asked to approve a change to the federation bylaws. The change is to define "auxiliary board members, people who are recognized by the board as being significant contributors to the foundation. The change (addition) is an additionalparagraph (7) under Article V, and would state as follows:
7. Auxiliary Membership. A person wishing to serve FOVLAP may be appointed by the Board of Directors as an "Auxiliary Member" of the Board of Directors, has no vote on the board and shall serve at the pleasure of the Board of Directors.

We were lead through a variety of exercises designed to assist with visioning, designing and solidification of our project, particularly in relation to the associated partners. A variety of ideas and tools for implementation were also provided.

Some of the highlights included listening to the ideas and successes of Watershed Resiliency Teams who received the grant award two years ago and the final skit, which depicted part of what our team intended to do. Although it was hard work, the conference was inspirational and well worth it.

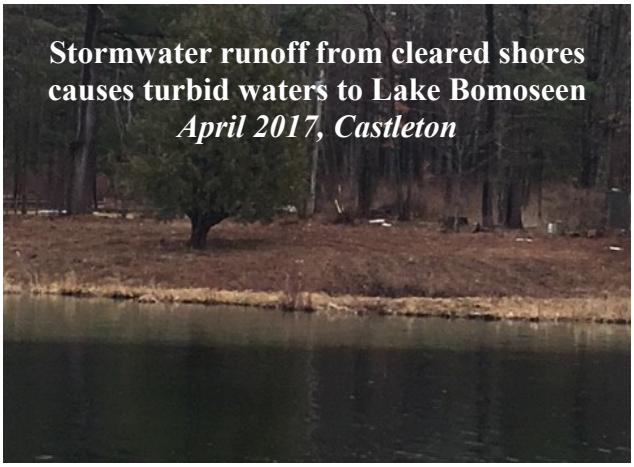
Angela; I attended the Leahy Summit to both serve as a resource for the teams and learn more how the Summit might assist Vermont's lake associations reach their protection and restoration goals. Over two days, expert facilitators assisted the teams as they fine-tuned their vision, identified their audience, and developed a concise plan to achieve that vision. Along the way, teams were introduced to new tools, received feedback from their peers, and had nearly 16 hours of focused discussion with their teammates. In my mind, that extended deep discussion was the most beneficial aspect of the Summit and helped teams fully develop a shared vision around their project. Teams made tremendous progress by the end of the Summit and left feeling energized. Though I had been unsure of my role, my expertise and experience was useful for the Memphremagog Stormwater Collaborative, and I came away with new tools for my own work.

Mark: The 2017 Leahy Summit was a unique opportunity to gather together large teams consisting of various partners working on watershed projects with a common theme: creating a culture of clean water. The mix of scheduled talks and group presentations with the open table environment allowed for continuous sharing of creative ideas and success stories. Enough guidance and worksheet materials were provided to support development of a project action plan and a proposal for possible funding through the High Meadows Fund or Lake Champlain Basin Program. Resource participants provided input and a fresh perspective to

teams and included staff from the High Meadows Fund and Lake Champlain Basin Program, as well as the State of Vermont. My experience working with the Memphremagog Watershed Association was very positive and engaging as we made real progress on outlining a plan for creating a sustainable stormwater collaborative representing all stakeholders. I would recommend other lake associations with watershed project ideas to apply to future Leahy Summits.

Treat Stormwater by Becoming a Lake Wise Gardener
Follow the Flow on Your Shore
By Amy Picotte, DEC Liaison to FOVLAP

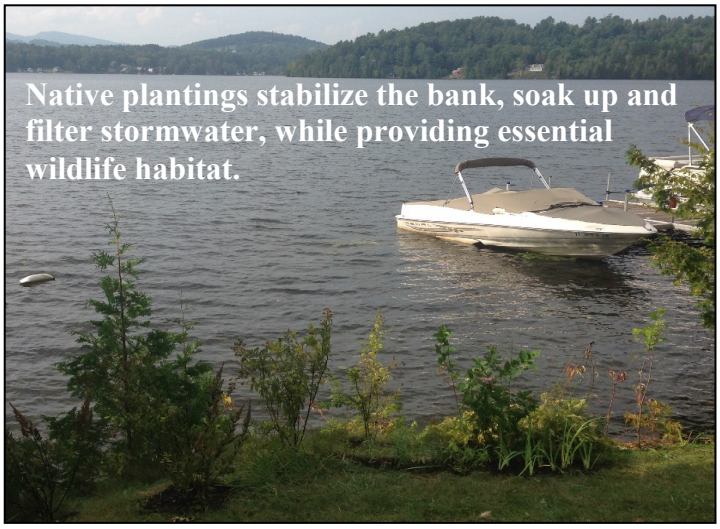
It's true that "April showers bring May flowers," but unless your shoreland is well armored with native plantings, rains can cause erosive runoff and destabilize banks, bringing sediment and nutrients to the lake. This spring, during a rain event, venture outside and follow the flow on your property to learn the sources of stormwater runoff. Then, as you prepare to plant this season, you will be able to nurture beautiful native species as well as site them to soak up the flow, protecting lake water quality.



Stormwater runoff from cleared shores causes turbid waters to Lake Bomoseen
April 2017, Castleton

Stormwater occurs when rain and snow melt events run off the land instead of being absorbed by it. Impervious surfaces, such as roofs, decks, and driveways shed water and cause stormwater flow. Lawns, especially on sloped shores, also contribute to stormwater as they only soak up a little runoff. By observing a storm event on your shore, you can identify both the sources and solutions for treating the stormwater, and keep it from polluting the lake.

Wisconsin studies have shown that developed shores contribute five times more runoff, seven times more phosphorus (the nutrient that feeds aquatic plants and algae) and 18 times more sediment to the lake than undeveloped shores. Cleared shores not only lead to nutrient loading, but also break the interface between lake and shore, disrupting the lake ecosystem. Removing native shoreland vegetation decreases shade and increases water temperatures, undermines bank stability with the loss of root structure to hold a bank together, removes the duff layer which is the spongy decomposing leaf and twig litter that protects the lake by absorbing and treating runoff; and diminishes critical wildlife habitat.



Native plantings stabilize the bank, soak up and filter stormwater, while providing essential wildlife habitat.

The Lake Wise Program offers solutions for managing stormwater. Some of these shoreland Best Management Practices are structural, like using driveway waterbars to slow and direct runoff to a side treatment area; or infiltration stairs to prevent pathway erosion. However, most shoreland BMPs use vegetation, such as raingardens, swales, berms, and shoreland buffers. Re-establishing native plant species will absorb and treat stormwater and provide essential wildlife habitat.

Each black cherry tree, *Prunus serotina*, plays host to over 450 insects, an oak, *Quercus* spp., over 530, a birch, *Betula* spp., more than 400, and so forth for native trees, shrubs and herbaceous plants playing host to

native insects. Native host plants are critical for feeding birds and provide up to 40% of protein (insects dropped from overhanging branches) for fresh water fish. Doug Tallamy, entomologist from the University of Delaware, teaches how native insects co-evolved with their native host plant and that they can't survive on nonnative plants because they can't break down their chemical defenses. Tallamy says, "Caterpillars, a particularly important food source for birds, are especially picky about what they feed on. Like the famous monarch butterfly larva, which must have milkweed to survive, more than 90 percent of moth and butterfly caterpillars eat only particular native plants or groups of plants." **Basically, no native plants, no native insects, no food for birds and fish and one sterile lakeshore.**

As you enjoy all the familiar signs of spring this year, consider ways to manage the stormwater on your property by minimizing your lawn and revegetating areas with native plants to soak up and filter the rains and to welcome back the birds and the bees. For suggestions on stormwater BMPs and native plantings or to learn how to participate in the Lake Wise Program, visit the Vermont Lake Wise web site or contact Amy Picotte at Amy.Picotte@Vermont.gov

The Lake Wise Program is a Vermont Agency of Natural Resources initiative that supports and awards lake-friendly shoreland property.

The Value of FOVLAP Membership

Reprint from Chris Cano

Your membership in the Federation of Vermont Lakes and Ponds supports the following:

- An Annual Meeting where lake associations from throughout Vermont have the opportunity to network to hear about and share their experiences with the successes and challenges of lakeside living and lake management protection efforts
- FOVLAP's Buffers for Blue Lakes program that assists landowners in planting lakeshore buffers for shore land stabilization to protect water quality
- Coordination with Lake Wise, the VT Department of Environmental Conservation's program to promote lake-friendly property management techniques that limit negative impacts to our waterbodies
- FOVLAP's booklet of design templates and easy-to-use planting plans, 'A Guide to Healthy Lakes Using Lakeshore Landscaping'
- Regular monitoring of the Vermont Legislature and the distribution of Legislative Updates on bills of particular relevance to lakeshore property owners and lake water quality
- An informative website: http://vermontlakes.org that fosters communication among Vermont's 80+ lake associations providing resources and an email list of lake associations for networking
- Wise About Water: Knowledge in Action, FOVLAP's blog to share news of how Vermont's lake and watershed associations translate knowledge into action
- A yearly newsletter and a Facebook presence to inform and educate lakeshore and watershed property owners and others interested in the protection of Vermont's lakes and ponds
- Student Scholarships, awarded annually to college students pursuing a degree in an environmental field
- Membership on State and Federal advisory groups regarding lake management and protection
- Affiliation with regional and national lake managers through the New England Chapter of the North American Lake Management Society (NEC-NALMS) and NALMS

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Dedicated to the conservation, promotion and development of environmental quality standards for Vermont lakes and ponds

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