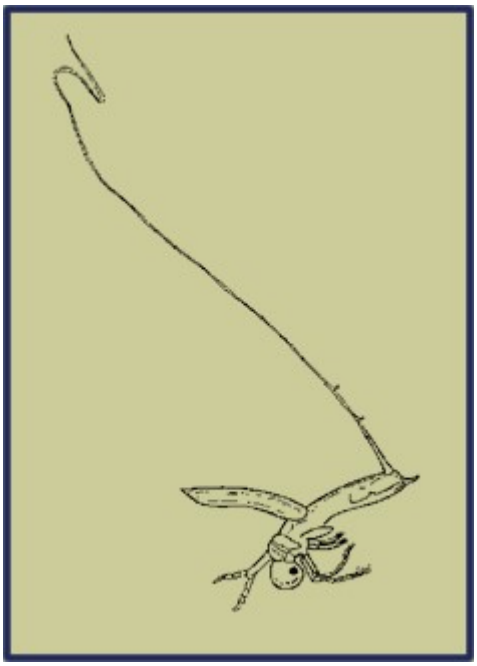
Early Winter Newsletter 2018

Fishhook Waterflea Discovered in Lake Champlain; Boaters Must Help Prevent Its Spread to More Lakes



Fishhook waterflea Actual **size = 1cm.** Illustration from the Ontario Federation of Anglers and Hunters

GRAND ISLE Researchers confirmed the presence of fishhook waterflea **(*Cercopagis pengoi*)** in Lake Champlain, bringing the known number of nonnative and aquatic invasive species in Lake Champlain to 51. The fishhook waterflea is similar to the spiny waterflea, which was identified in Lake Champlain in 2014; they are both small crustaceans that are aggressive predators of zooplankton and are known to foul fishing lines.

The fishhook waterflea specimens were collected in September in the Main Lake segment of Lake Champlain, near Valcour Island and at an established Lake Champlain Long-term Biological Monitoring Program (LTMP) site supported by the Lake Champlain Basin Program. Sample analysis by the Lake Champlain Research Institute (LCRI) at SUNY Plattsburgh confirms high densities with over 100 individuals present in each sample.

Spiny waterflea. photo by Vermont Department of Fish and Wildlife

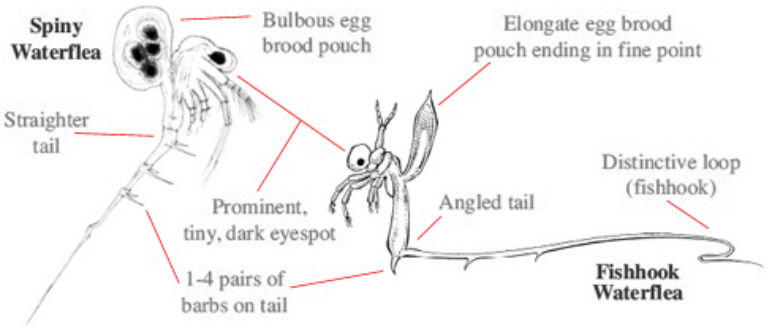
Dr. Tim Mihuc and staff at LCRI analyzed Lake Champlain 2018 LTMP samples through June and did not detect fishhook waterflea. This is not a surprise as both species typically appear later in the season. The fishhook and spiny waterflea lay resting eggs that overwinter in the sediment, and once the lake becomes warm enough they hatch in late July and their densities are highest through early fall. Females also reproduce parthenogenetically during the summer season, meaning they grow clones of themselves in a brood sack. Brood sacs were present on the fishhook waterflea that were collected in September. Mihuc

observed, “This invasion represents a major change in the Lake Champlain food web. Fishhook waterflea is a voracious predator that will eat native plankton species as its main food source.”
The Lake Champlain Research Institute noted that no fishhook waterflea were identified in the 2017 lake samples from the monitoring program, and only a handful of spiny waterflea were detected in 2017. Once all 2018 samples are analyzed, scientists will have a better understanding of how widespread fishhook waterflea is in Lake Champlain. If their distribution pattern follows that of the spiny waterflea infestation, the fishhook waterflea would be widespread throughout the Lake by the end of 2018.

A Joint Effort

The Lake Champlain Basin Aquatic Invasive Species Rapid Response Task Force includes representatives from New York State Department of Environmental Conservation, Vermont Agency of Natural Resources, US Fish and Wildlife Service, Adirondack Park Agency, Québec Ministries of Environment and Wildlife, and the Lake Champlain Basin Program. This organization is currently assessing the potential impacts from this detection and evaluating management options. There are no known control technologies to eliminate fishhook waterflea once established in a water body. Efforts will focus on preventing the spread of this species to other bodies of water in the region.
“The detection of fishhook waterflea in Lake Champlain is disappointing and reinforces the need for lake users to take appropriate spread prevention measures. We have increased our watercraft inspection and decontamination program, in recent years, in partnership with the states, Québec, and the Adirondack Watershed Institute to reduce the risk of all invasive species spread,” said Meg Modley, Lake Champlain Basin Program Aquatic Invasive Species Management Coordinator. Fishhook waterflea and many other aquatic invasive species have life stages that are invisible to the naked eye so it is important to be diligent. Lake users are asked to take spread prevention measures to help prevent the spread of fishhook waterflea to other inland waterbodies.

Identify Invasive Waterfleas



Illustrations: Michigan Sea Grant Program, Ontario Federation of Anglers and Hunters

The Minnesota Sea Grant Program outlines these general characteristics of waterfleas:
*Difficult to distinguish without magnification, 1/4 - 5/8 in (5-15mm) total length
*Clumps look and feel like gelatin or cotton batting with tiny black spots
*Prefer deep lakes, but can establish in shallow waterbodies and rivers
*Abundant during summer (June-September) depending upon water temperatures

Some Background

Native to Eurasia, the fishhook waterflea arrived in the Great Lakes in ballast water in the 1980s, and has since spread to other waterbodies. They feed on tiny crustaceans and other zooplankton that provide food for native species. Fishhook waterflea causes no known risk to human health, though the tail spines of the fishhook waterflea may foul fishing gear.
(Waterflea continued on page 4)

Message from the President
by Don Weaver, FOVLAP President

The fall season came September 23 and though winter is not officially due until December 21, the below average temperatures these days make it feel like it arrived early. Water levels in our lakes and ponds were below normal due to a lack of rain, and made for a difficult season with unusual environmental issues. However, warm days and crispy nights gave us beautiful fall colors.

The FOVLAP Lake Seminar on June 1 explored the science of lakes and how the lake is connected to its watershed. This was followed by "A Deeper Dive into Lake Science - How are Vermont's Lakes?" looking at trends from over 40 years of data. During the afternoon session, attendees had their choice of learning about "Partnership and Funding Opportunities" or "A Hands-on Workshop Using the Tools Available, on-line, for Lake Protection." Attendees' comments were highly favorable about the presenters and content of the presentations.

Our Annual Meeting was held July 23. At the end of the normal business session, the lake associations elected four new directors: Martha Pofit, Lake St. Catherine; Emily Porter-Goff, Franklin Watershed; Kendall Lambert, Lake Memphremagog; and Jay White, Northern Lake Champlain; and reelected one director whose term had expired, Christine Cano, Shadow Lake. Department of Environmental Conservation (DEC) updates were presented by Commissioner Emily Boedecker; and DEC Lakes and Ponds Program Manager Perry Thomas, and Lindsay Miller, who provides technical assistance for the Lake Encroachment and Shoreland Permit Program. A panel discussion, "Managing Roads in Lake Watersheds," was conducted by Bethany Remmers from Northwest Regional Planning.

FOVLAP started the season with an all-directors/officers face-to-face meeting in September. Two dates were set for the 2019 season: Lake Seminar, June 7, 2019, location to be determined, and the Annual Meeting, July 22, 2019 to be held at the Steak House in Barre. During the meeting, a presentation on "Shoreline Violations" and how to handle them drew a lot of interest. Currently, we are learning as much as possible about shoreline protection and environmental enforcement. I expect this topic will be carried forward and included as part of the next seminar.

FOVLAP is very happy to announce the North American Lakes Management Society (NALMS) will be holding its Annual Conference in South Burlington at the Double Tree by Hilton November 11–14, 2019. Currently, Perry Thomas represents Region 1, which includes all of New England on their Board of Directors. She has just been chosen president-elect of the whole organization and will begin her term in November 2019.

The 2019 Leahy Center Lake Champlain Environmental Summit will take place April 5, 2019 in the Burlington area. The Steering Committee is in process of planning the event under the direction of Barry Lampke, who manages the Vermont Clean Water Network, a network of more than 65 organizations dedicated to creating a culture of clean water.

Mark Your 2019 Calendars

Environmental Summit Aprl 5
Burlington Area
FOVLAP Lakes Seminar June 7
Location TBD
FOVLAP Annual Meeting July 22
Steak House, Barre
NALMS Annual Conference Nov 11-14
Burlington

International Lakes' Society Elects Vermonter to Head the Organization

Vermont DEC Lakes and Ponds Program Manager, Perry Thomas, was recently elected president-elect of the North American Lake Management Society (NALMS). In this role, Thomas looks forward to expanding Vermont's lake management network. As president-elect, she will serve as vice president for the coming year and then begin a one-year term as president in November 2019 when the New England chapter of NALMS hosts the 39th Annual NALMS Symposium in Burlington. Thomas brings to the NALMS Executive Committee experience in strengthening federal partnerships (as chair of the adhoc NALMS Government Affairs Committee) and a keen interest in collaborating with other lake-focused organizations. Most importantly, she looks forward to following through with building and maintaining an inclusive culture in which NALMS supports diverse perspectives.

Perry Thomas

"The decline in oligotrophic lakes between the 2007 and 2012 National Lakes Assessments is of particular concern in Vermont, where we see a similar trend in our 40 years of spring phosphorus data," Thomas told NALMS in a statement. "Regardless of the ultimate causes, these patterns underscore the importance of encouraging all North American lake communities to work with regional, state/provincial, and federal partners to reduce nutrient runoff from watersheds. By expanding and diversifying membership, NALMS broadens its network of professionals and improves our ability to protect and restore lakes."

Elizabeth "Perry" Thomas has been Region 1 Director on the NALMS Board since 2016 and recently became co-chair of the newly formed Ethics Committee. She brings to the Board 15 years of management experience, ranging from working as dean of Sterling College to volunteering as president of the Federation of Vermont Lakes and Ponds. Thomas currently practices strengths-based supervision as manager of Department of Environmental Conservation's Vermont Lakes and Ponds Program—charged with protecting 823 inland lakes plus Lake Champlain. Perry earned a B.A. in Biology from Dartmouth College and a Ph.D. in Biology, with emphasis on Aquatic Ecology, from Northern Arizona University. NALMS includes members from the U.S., Canada, Mexico and countries on other continents.

(Waterflea continued from page 2)

While the impact from this species to the lake's food web is unknown, spiny waterflea has altered zoo plankton communities in Lake Champlain and other lakes where the species has become established. The eggs are resistant to drying, which has implications for the types of actions that will prevent their spread.

The Finger Lakes and Lake Ontario are the closest lakes known to host fishhook waterflea. The fishhook waterflea likely arrived in Lake Champlain by hitchhiking over land on recreational boats, trailers, or equipment, which is why it is so important for boaters to wash down their boats before entering other waterbodies.

Anglers may have a greater likelihood of seeing fishhook waterflea on their equipment. Some useful tips for anglers include changing fishing line and tackle when moving from one water body to another and carefully inspecting and removing any debris from fishing gear (including rods, spools of fishing line, nets, and downrigger cables). All boaters should focus on draining bilge water and checking anchor lines as they are likely vectors that spread fishhook waterflea. Hot water, high pressure disinfection of boats and equipment that are in contact with water bodies known to contain fishhook waterflea is recommended. Allow your boat, trailer, and all equipment including fishing gear, bumpers, ropes, and anchors to completely dry. Drying times vary based on temperature, humidity, and material. Visit the 100th Meridian Initiative for guidance on drying times: https://www.fws.gov/fisheries/ans/pdf_files/100thmeridian.pdf

Zebra Mussels Confirmed in Canadian portion of Lake Memphremagog; Not Yet on the US Side

Photo by Vermont Department of Environmental Conservation

Memphremagog Conservation Inc (MCI) has confirmed that there are zebra mussels present in Magog Bay, located at the northern edge of Lake Memphremagog in Quebec. “Currently we have not found any zebra mussels in the US portion of Lake Memphremagog,” said Kendall Lambert, Administrative Director of the Memphremagog Watershed Association, “Every year, we work closely with the Vermont Department of Environmental Conservation (VTDEC) and a group of local volunteers to patrol our lake and survey for aquatic invasive species. Our patrollers will be on the lookout for zebra mussels.” Zebra mussels are an invasive species; they are a small freshwater mollusk that attaches to firm surfaces and can clog pipes and other underwater infrastructure. They are also filter-feeders, consuming microscopic aquatic life that is the base of the food web for our lakes. Their feeding habits can impact the native species that also consume those food sources.

The Vermont Department of Environmental Conservation (VTDEC) received the report from MCI last summer. Josh Mulhollem, Aquatic Invasive Species Management Coordinator at VTDEC, indicated that the Department will ramp up sampling efforts for zebra mussels, expand the educational campaign in the region, and work with all involved stakeholders to discuss steps going forward. And although no zebra mussels have been found in the southern part of Lake Memphremagog, the DEC encourages all visitors to the lake to take extra caution in draining and drying watercraft and equipment after leaving the lake.

Act 67

It is illegal in the state of Vermont to transport aquatic invasive species, including zebra mussels. Act 67, which came into effect in 2017, states that if a certified attendant at a watercraft decontamination station identifies a vessel or trailer as requiring decontamination, boaters are obligated to comply. Failure to do so can result in fines and the involvement of law enforcement.

This year, the city of Newport received just over $17,000 in grant money from the State of Vermont to support a high-tech boat washing station with State-trained greeters at the city dock. The city has also invested in a hydro-raking operation to control the infestation of the invasive Eurasian watermilfoil that impedes navigation around the boat launch.

“There are a lot of factors which contribute to whether or not zebra mussels can thrive in a lake. Right now, we simply don’t have enough information to know how or if they might spread,” said Lambert. “It’s about early detection, planning, and spread prevention.”

VTDEC works in collaboration with many partners to prevent the spread of aquatic invasive species. The Department oversees the Public Access Greeter Program which is a trained network of municipal staff and volunteers that provide informational materials on invasive species to boaters, inspect watercraft for invasive species and vectors of invasive species, and in some cases, provide courtesy watercraft decontaminations.

Because early detection is a key component of any successful aquatic invasive species management effort, VTDEC also coordinates the Vermont Invasive Patrollers. Dozens of lakes around the State are monitored annually by VIPs to aid in identifying incipient populations of invasive plants and animals, and their work has been invaluable to statewide management of aquatic invasives. For years, both programs have been active on Lake Memphremagog.

All users of Vermont lakes, whether boating, fishing, or wading, need to CLEAN, DRAIN, and DRY everything that has been in the water, especially before moving to another water body. This is more important than ever with the possibility of spreading zebra mussels, as juvenile zebra mussels are microscopic and are suspended in water.

Fall Equinox on Harvey Lake - West Barnet, Vermont
photo by Jackie Sprague

Shadow Lake Association Beats Milfoil in Six Years

By Jenifer Andrews, SLA President

GLOVER The Shadow Lake boat wash greeter staff discovered Eurasian watermilfoil in three separate cases in August 2011 and an official VTDEC survey determined the size of the infestation at about a quarter of an acre. The SLA president at that time applied for a state permit to install benthic barrier mats to cover and contain the growth as we worked to gain control of this aggressive nuisance species.

Shadow Lake photo by Christine Cano, FOVLAP Director

Science has shown if you are able to reduce the number of fragments being produced by reducing the biomass that you can reduce and even stop the spread of milfoil. Once we obtained a state permit, approximately 10,000 square feet of benthic mat held in place with rebar was installed by professional divers and volunteers hoping to smother the life out of this invasive species. The Shadow Lake Association and an anonymous donor funded the project. The main area of dense plants was covered but many scattered patches and outliers required an extensive hand pulling campaign, mostly managed by two very dedicated volunteer snorkelers. Shadow Lake Association provided education and updates to lake residents so they understood what we were doing and why we must all work together as a united force.

The cove area in jeopardy was waterfront shared by a few residents and a bed & breakfast rented out for the summer. High recreation activities at the cove interfered with the control program. In full compliance with Vermont state regulatory requirements and with technical advice from DEC, we placed buoys in the water to delineate a 'No Boating or Swimming' perimeter around the milfoil stand in order to safeguard not disturbing or spreading the milfoil. Monitoring the condition of and the frequent straightening of the mats became a weekly schedule. Recreation disturbance caused the mats' edges to open in gaps allowing for milfoil to escape.

We had purchased AquaScreen matting for its lightweight ease to install and needle punch fabric which allowed for gasses built up from decomposing plant matter to escape. At Shadow, we enjoy high water clarity. Because the cove site was shallow, sunlight easily penetrated the mat screen helping the milfoil to remain viable so we obtained a suction harvesting permit to use if the mats failed. The state advised us to wait one more year for the mats to do their job.

Eventually, after three years the mats did work and we finally saw signs of milfoil collapse in the cove. After DEC determined the milfoil was dead, divers were once again hired and many volunteers assisted in the removal of the mats and the rebar in 2014. Our management worked to save the cove but the milfoil had time to insidiously spread to many areas around the lake. Shadow Lake Association also hired experienced divers to examine the rest of the lake with a fine-toothed comb. A total of 22 sites of milfoil were found and managed over the past six years. Both trained volunteers and divers marked, pulled, and properly discarded the invasive species. Maps were made and records were kept of each milfoil site, depth found and dive dates filed. We were methodic in our lakewide milfoil attack.

As the years progressed, our vigilance has finally paid off. During the season of 2017, we found only two small milfoil plants and at the end of September 2018, after 4 1/2 back-to- back diver-assisted lake surveys, **NO milfoil was found anywhere in Shadow Lake!** Next year, once again, we will hire divers to inventory the lake beginning in June through September so we can quickly find any milfoil or other Aquatic Invasive Species (AIS) before they become firmly established in this beloved lake.

We figure the project from 2011-2017 roughly cost upwards of $35,000 with many hundreds of volunteer hours worth thousands of dollars.
Current science indicates the primary vector of AIS is through watercraft moving between waterbodies. Prevention through boat washing is our first line of defense. Our boat wash station in partnership with the Town of Glover, in 2003 was the first in Vermont to have an active greeter program equipped with a hot water pressure wash. We implore all visitors to be responsible and practice 'Clean, Drain, Dry' while also complying with Vermont law to inspect and wash their watercraft at our boat wash station before entering and after exiting Shadow Lake. In 2017, I along with a fellow director who is chair of our milfoil committee provided strong testimony at the statehouse to support passing Vermont Act 67 which addresses aquatic nuisance species control.
In closing, I would like the State to seriously reconsider allowing permitted mats to remain in the water for at least one complete year which would be necessary to smother milfoil in many of our lakes that still have high water clarity. Currently the permitting expectation is no mats can be installed until July 1st and must be removed by Oct 1st. This limited timeframe does NOT allow for a true rapid response to infestations. Invasive plant species typically begin growing ahead of native plants, often long before June. Early detection and a rapid response to contain highly invasive species is key for control. Depending on the choice of matting and other factors, the time needed to kill milfoil will more often take considerably longer than the current three-month time period allotted.
We hope to be of good help to others struggling with Aquatic Invasive Species. For more information or to contact us, please visit our website: shadowlakeassociation.org

Manuscript Outlines Issues at Lake St. Catherine

A manuscript portraying the past, present and future issues at Lake St. Catherine has been approved by the Board of Lake St. Catherine Association. It is entitled: "Lake St. Catherine Association Evidence-Based Decision-Making: 1978-2018." The 34-page document and appendices could serve as a template for other lakes seeking a common understanding of lake issues. The report looks at measuring water quality, protecting the watershed, mitigating invasive species, cultivating a healthy ecology for fish and wildlife, and promoting recreational safety. You can review it at https://goo.gl/Mt84S2

Lake Seymour aerial photo by Doug Gimler

Dead or Alive, Trees are Vital to a Healthy Ecosystem

By Tracey Shadday, FOVLAP Vice President

MORGAN Next summer, scan above the cottages anywhere on the shores of Seymour Lake to the distant blanket of forested woodlands, and you'll discover in the rich soil that gives rise to canopies of green, a secret to our healthy lake. Reconnecting to the vital role our forests play in the watershed was the theme of a well-attended workshop sponsored in part by the Seymour Lake Association last summer.

Workshop topics included the threat to Vermont's ash trees by the emerald ash borer, presently infesting trees in Orange, Caledonia, Washington and Bennington counties; some basic guidelines for harvesting trees; activities along the shoreline that require permitting since the passage of the 2014 Shoreland Protection Act, and an introduction to Lake Wise, an incentive program that defines best management practices for lakeshore property owners.

The Walk & Talk was held on a ridge above Seymour Lake and at the base of Mt. Elan; it was from this vantage point that Jared Nunery, an Orleans County forester, introduced us to the emerald ash borer, an attractive beetle despite its appetite and ability to destroy the trees in its path. Confirmed in Vermont last February, the insect kills when larvae feed on the inner bark of ash trees, disrupting the tree's ability to transport water and nutrients. An important vector of transmission is human transport of firewood. For this reason, it is illegal to move firewood from quarantined areas.

Nunery also discussed the importance of harvesting trees using principles of silvaculture, a system begun in Germany over 300 years ago that involves designing a plan to make effective use of growing spaces for productivity. This plan can include cutting foliage and strategically removing the right trees to encourage more natural light for others. The plan has worked on the property and location of our workshop, today a dense forest that 50 years ago was open meadow used for sheep farming. Appropriate silviculture principles led to the development of a maple tree stand that sustains a thriving maple syrup business. Regular evaluations by the forester has encouraged growth and biodiversity, management of wildlife, and practices that manage stormwater runoff.

Diversity of Wildlife

Trees, dead or alive, are vital for diversity of wildlife. Hundreds of woodland species use snags - dead trees - for habitat and food sources whether standing or lying. An enormous buffet of insects live under peeling bark, providing a food source for birds and aquatic organisms like young salmon and trout. The dead wood on the forest floor creates a moist microclimate that allows seeds to germinate, provides habitat for animals such as the Eastern redback salamander and stores atmospheric carbon. Trees and shrubs provide in multiple ways: willows are among the first trees after a long winter to flower and provide nectar for pollinators like native bees. Beavers and grazing animals browse on the leaves in summer and willow twigs in the winter. Landowners can encourage wildlife by keeping three snags per acre of land and avoiding the antiquated German practice of cleaning the forest floor of fallen trees.

Encouraging diversity of trees also increases the bird population as each species has its own niche requirements. The stems and twigs on a yellow birch, for example, are used for warblers to perch upon so they can forage. According to the VT Center for Ecostudies, Vermont forests support more than 125 bird species. A disturbing new finding, from a new 25-year study of Vermont's birds, shows a 14.2 percent decline in their overall population which raises concerns about the health of our forests. While birds depend upon forests for nesting, food and habitat, forest health is improved by seed dispersal and pollination.

One of the most useful practices to decrease phosphorus and other pollutants from entering a body of water is to retain duff, the spongy layer of forest floor that slows the percolation of rainwater as it returns to the ground; where duff has been removed, runoff is more likely. It is the entrance of phosphate-laden runoff into the lakes that creates nutrient-rich water that can lead to algae blooms. Ben Copans, Memphremagog Watershed Coordinator for VT DEC, informed the workshop attendees of three technical innovations to manage runoff: use of the correct size culvert, placement of water bars on roads and driveways to direct stormwater into vegetated areas and creation of weaving paths of minimal width to slow the movement of water.

The Shoreland Act

Amy Picotte, Lakeshore Manager and Lake Wise Coordinator for VT Department of Environmental Conservation, and Lindsay Miller, Regional Shoreland Permit Analyst, provided guidance on the regulations in the Shoreland Act (2014) concerning activities within 250 ft. of a lake's mean water level, for lakes that are greater than 10 acres in size. The purpose of the act is to prevent degradation of water quality, preserve habitat, stabilize shorelines and maintain the economic benefits of lakes.

Examples of permissible activities that do NOT require a permit include:

1. Removal of 250 square feet of vegetation under three feet in height, 25 feet from the mean water level as long as the Vegetation Protection Standards are met and the duff layer is not removed
2. Pruning of branches on the lower one-third of a tree height
3. Removal of dead, diseased or unsafe trees
4. Cutting or pruning of individual trees that are not part of the natural vegetation but are part of a garden or landscaped area
5. Cutting of trees in accordance with the Vegetation Protection Standards
6. Removal of noxious and nuisance species

The Vegetation Protection Standards involve rating shoreline vegetation on 25 feet by 25 feet sections using a point system that is described at http://dec.vermont.gov/sites/dec/files/wsm/lakes/docs/Shoreland/lp_AppendixDVMPGuidance.pdf. In order to determine if your project requires a permit, you can find a user-friendly worksheet, "The Vermont Shoreland Protection Act Project Worksheet" at www.dec.vermont.gov/watershed/lakes-ponds/permit/shoreland.

The shoreland is a very important place to focus our efforts. They are the last line of defense for runoff and pollution before entering a body of water. Lake Wise is an incentive program that defines best management practices for homeowners and encourages shoreline vegetative zones that are a minimum of 15 feet. The zone requires green at every level, from trees, to saplings, shorter vegetation and ground duff. A shoreline that mimics the woods provides the best prevention of runoff pollution and increases habitat for land and aquatic organisms.

Long ago trees that hung over the water from the shore may have been removed by a homeowner who didn't consider what they provide. Insects drop from overhanging branches into the water and provide food for fish, increased populations of fish provide protein sources for bears and other wildlife. Woody structures also provide shade over the water, cooling temperatures and improving the amount of oxygen in the water. Overhanging trees also improve fish spawning and decrease the growth of invasive plants.

Our forests play a vital role in the health of the lakes and ponds we love. Through awareness of its interconnectedness to other elements of the ecosystem, our well-managed forests can maintain or improve the health and quality of Vermont waters.

For More Information:

1. Emerald Ash Borer
http://www.emeraldashborer.info/eabu.php
https://vtinvasives.org/invasive/emerald-ash-borer
2. "New VCE Study Reveals Decline in Vermont Forest Birds", posted April 15, 2017
https://vtecostudies.org/blog/new-vce-study-reveals-decline-in-vermont-forest-birds/
3. Voluntary Harvesting Guidelines
http://fpr.vermont.gov/forest/your_woods/voluntary_harvesting_guidelines
4. Lake Wise
http://dec.vermont.gov/watershed/lakes-ponds/lakeshores-lake-wise

Harvey Lake in November photo by Jackie Sprague

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