



To reduce and prevent the environmental and socioeconomic impacts of aquatic invasive and nuisance species to protect and improve water quality, aquatic and terrestrial wildlife habitat, and lake ecosystem functions.

2015 Update

Vermont Department of Environmental Conservation, February 2016

In April, the Program welcomed **Josh Mulhollem**. Josh comes to the Program with a strong background in aquatic invasive species spread prevention and decontamination. He heads up spread prevention efforts and is the Program's animal lead.

The Program participated in the UVM Rubenstein School of Environment and Natural Resources' Perennial Summer Internship Program and was fortunate to have **intern, Ryan Colarusso** support a variety of Program activities during the summer months on a part-time basis. The opportunity provided Ryan with an introduction to the magnitude of Vermont's aquatic invasive species issue and an understanding of management efforts and partnerships. He travelled to over 100 water bodies statewide and conducted field-based activities on many of them.

Monitoring

- New sightings of two aquatic invasive plant species known to already exist in the state were confirmed this year. **Two new water chestnut** (*Trapa natans*) populations were confirmed, Coggman Creek (connected to already confirmed Coggman Pond) and an unused quarry pond in Blissville. Both populations were managed. **Five new locations of European frogbit** were identified, all in wetland locations.
- One species not previously confirmed in the state, the macroalgae **starry stonewort** (*Nitilopsis obtusa*) **was confirmed** in an isolated cove of Lake Memphremagog. See VIP post below. Management of this species is under consideration.
- No new **Eurasian watermilfoil** (*Myriophyllum spicatum*), **variable-leaved watermilfoil** (*Myriophyllum heterophyllum*), **curly leaf pondweed** (*Potamogeton crispus*) **brittle naiad** (*Najas minor*) or **yellow-floating heart** (*Nymphoides peltata*) sites were identified.
- For the other five invasive aquatic and wetland plants known from the state – **Japanese knotweed** (*Fallopia japonica*), **flowering rush** (*Butomus umbellatus*), **yellow flag iris** (*Iris pseudacorus*), **purple loosestrife** (*Lythrum salicaria*), **common reed** (*Phragmites australis*) – new distribution information was not collected.
- Aquatic plant related **surveys** were conducted on 16 water bodies representing 51 survey days. These surveys map established species populations, search for new invasive plant introductions, or gather related data (e.g. rare, threatened or endangered species information).
- Two, day-long **Vermont Invasive Patrollers (VIP)** workshops were attended by 21 people. VIP staff conducted four practice (educational) surveys with 29 VIPs and lake residents at Lake Memphremagog (13, also representing Holland Pond, Bliss Pond, and Lake Willoughby), Lake Eden (10), Lake Iroquois (4), and Mirror Lake (2). Surveys are still coming in.

- As of September 24th, VIP staff had been notified that **20 volunteers contributed over 80 hours collectively in their surveying efforts of 15 Vermont lakes.**
- A trained VIP on Memphremagog reported, and VT DEC staff confirmed, a new aquatic invasive macroalgae, *Nitellopsis obtusa* or **starry stonewort**. This is the first time this species has been recorded in Vermont. For more information, visit <http://vtwatershedblog.com/2015/09/16/new-aquatic-invasive-species-confirmed-in-lake-memphremagog/>
- Twenty-five inland lakes were sampled for the presence of invasive animals, and **no new infestations of zebra mussels or spiny waterflea were documented.**

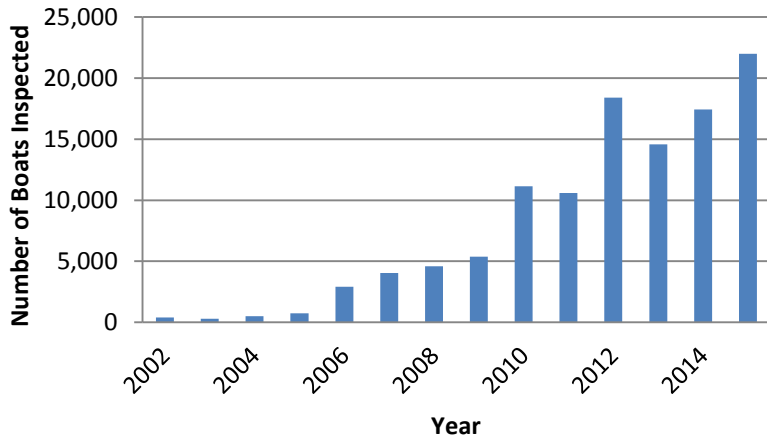
Control

- In the absence of an available local entity, Department staff continued to manage an incipient **Eurasian watermilfoil** population in Hinkum Pond (Sudbury). Control assistance was also provided to local partners associated with two waters, Crystal Lake (Barton) and Shadow Lake (Glover).
- Contracted and VTDEC staff-initiated **water chestnut management** operated for the first time in 33 years without the guidance of a field supervisor. Despite this handicap, 2015 management was successful and continued to make progress in reducing population densities and preventing spread in Lake Champlain and at other waterbody sites. Adequate funding, high water levels and experienced contractors contributed to this success. Water chestnut has been found in 30 water bodies, including Lake Champlain. Control occurred in 23 of the 30 (2 of these were newly confirmed populations in 2015) and 7 water bodies are “inactive,” no water chestnut has been found in a number of years. Hand harvesting continued to be the main control method used at all sites. Mechanical harvesting is was used on dense mats and has only been used in Lake Champlain. 100% of mechanical harvesting spoils were composted at one location in Benson. Vermont Lake Champlain control efforts span over an estimated 81 miles along the Vermont shoreline and 48 miles in New York. Control efforts ended 1.5 miles south of the Narrows of Dresden, with roughly 11 miles of the Lake with water chestnut not managed.
- **Grant funds were provided to the Friends of Missisquoi Bay** for a third year to support a seasonal position to assist Missisquoi National Wildlife Refuge staff with water chestnut surveying and removal within the Refuge boundary.
- Staff provided **technical assistance** on management of aquatic invasive species to over 40 groups (e.g., lake and river associations, government and non-government entities, municipalities), often working with multiple individuals per group.
- Control and search efforts continued on Vermont’s first **variable-leaved watermilfoil** population in Halls Lake in Newbury (confirmed in 2008). One survey was conducted in 2015 with no variable-leaved watermilfoil found. Variable-leaved watermilfoil has not been found in the lake since June 2011.
- **Educational invasive species management presentations** were provided for several organizations and events.

Spread Prevention

- Twenty-seven **public access greeter programs** were active in 2015. Staff conducted seasonal site visits to all programs, providing technical assistance, sample identification and general support. Three formal

Number of Watercraft Inspected Per Year in Vermont



trainings were offered in locations statewide in the spring, and staff provided many other informal training opportunities to greeters and coordinators throughout the year. **Over 21,000 watercraft were inspected in 2015**, which is a new record for the program. Of all watercraft inspected, 659 were found to either have plant or animal material in/on the vessel, and Eurasian watermilfoil was the culprit in a majority of those instances. Staff also provided **sample identification support** to the Lake Champlain Boat Launch Steward Program, confirming identifications of over a dozen samples retrieved from recreational equipment by Stewards at Lake Champlain accesses.

- The program purchased four **hot-water power-washers for decontamination of watercraft for aquatic invasive species**. These decontamination units will be used by DEC staff, public access greeters, and Lake Champlain Boat Launch Stewards beginning in 2016. As part of this program, courtesy watercraft decontaminations will be offered to the boating public at high-priority public accesses around the state.
- The Lake Champlain Basin **Rapid Response Task Force** is charged with implementing and overseeing rapid response actions in the Basin. The confirmation of spiny water flea in Lake Champlain in 2014 required action by the Task Force. The Task Force conducted a risk assessment associated with this confirmation and determined that eradication of spiny water flea in Lake Champlain was not technically feasible. The Task Force recommended that spread prevention measures be implemented as soon as possible. As a result, the Program produced a **SWF sign** and posted it at all Lake Champlain VTDFW public boat access points and many inland Vermont public accesses.



- **Lake Champlain Cooperative Boat Wash Initiative:** The Program and the Lake Champlain Basin Program partnered again this year with car wash stations in Vermont and New York to connect boaters to pressure washing facilities for their boats, trailers, and other equipment. Updated information regarding dimensions of wash booths, water temperature, and water pressure from the participating carwashes was collected, and a program brochure updated to reflect revisions. Brochures are distributed by Lake Champlain Boat Launch Stewards and Vermont greeter program staff and volunteers, and available at Lake Champlain public boat access point kiosks.

Spiny Waterflea has invaded!

Confirmed in Lake Champlain in 2014

Spiny waterfleas are invasive zooplankton that have adverse effects on native species, and are easily transported by bait buckets, bilge water, and other fishing gear.

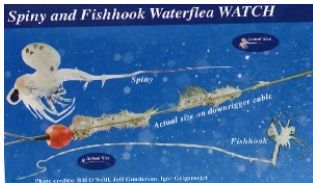
Many spiny waterfleas appear as a jellyfish glob of jolly with black eye spots on fishing lines and other gear.

Take these steps before launching AND before leaving any waterbody, including Lake Champlain, to prevent further spread of spiny waterflea and other invasive pests.

- Clean** off mud, plants, and animals from boats, trailers, and equipment. Rinse boats and trailers with hot water. Soak fishing lines, anchor lines, and all used gear in hot water for at least 5 minutes.
- Drain** your boat and equipment away from the water. This includes the motor, all live-wells, bait buckets, bilges, ballast tanks, and other reservoirs that could transport lake water.
- Dry** anything that comes into contact with the water for up to 5 days. This period of time is needed to completely kill nesting eggs of spiny waterflea and other invasives.

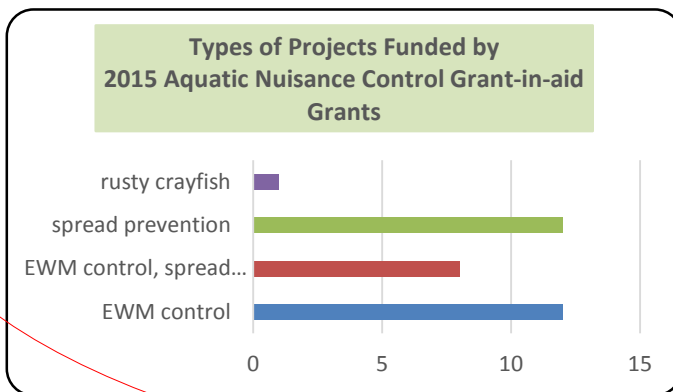
For more information or to report an invasive species sighting, call 802-828-1530 or visit www.watershedmanagement.vt.gov/akes.htm

- **Aquatic invasive species signs** posted at public boat access points to remind users to practice “Clean, Drain, Dry” spread prevention measures were maintained; downed signs were re-installed; and brochure boxes were replaced if needed and filled. The 2015 total represented over 200 public access sites.
- A **spiny waterflea rack card** promoting the “Clean, Drain, Dry” spread prevention message was developed by Program staff and partners in the Lake Champlain Basin Program and New York DEC. **Spiny waterflea “watch” cards** with identification information were purchased from U.S. Sea Grant. Both cards inform anglers, boaters, and other water users of the threat posed by spiny waterflea and what can be done to prevent their spread, and will be available in 2016.



Funding and Grants

- The Program was successful in obtaining federal funds to support 2015 program and partner efforts, and grants to municipalities from the following funders: Lake Champlain Basin Program, U.S. Army Corps of Engineers Aquatic Plant Control Program, and the USFWS through the Lake Champlain Basin ANS Plan and the Partnership Program.
- Funds from the Vermont Motorboat Registration Fund (\$376,739) and Army Corps of Engineers (\$86,691) supported \$463,430 in **grants awarded by the Grant-in-aid grant program**. 37 municipalities applied for these funds, requesting a total of \$1.31 million; 34 municipalities were awarded grants with one municipality declining. The majority of funded projects supported watermilfoil control, aquatic invasive species spread prevention efforts, e.g., public access greeter programs, or a combination of the two. Due to limited resources, both donated labor and services are critical components of most projects. Awarded grants supported the following percentage of *actual* project costs: 25% or less, 2 projects; 25-50%, 13 projects; 50-75%, 7 projects; and greater than 75%, 10 projects.



Laws and Regulations

- A Vermont **emergency general permit**, authorized in February 2011, allows the commissioners of the departments of Environmental Conservation, and Fish and Wildlife to seek coverage for rapid response to a new invasive species invasion. No requests for coverage were required in 2015. To date, extended coverage has been granted to the Department of Environmental Conservation for diver operated suction harvesting of variable-leaved watermilfoil in Missisquoi Bay. Harvesting did not go forward due to spread as a result of tropical storm Irene.

- Staff provided technical review of submitted applications seeking coverage under the **Aquatic Nuisance Control Permit Program**. Proposed projects included the use of herbicides, benthic mats, mechanical harvesting and diver operated suction harvesting. Species proposed for control were Eurasian watermilfoil and water chestnut.
- The Fern Lake-Lake Dunmore Association considered submittal of a petition to the Department under **Section 4 of the Vermont Use of Public Waters Rules (VUPWR)**, requesting temporary closure of portions of Lake Dunmore due to an infestation of Eurasian watermilfoil. Where necessary, Subsection 4.1b of the VUPWR allows for the temporary closure of a designated area of a lake to prevent, control, or contain the spread of an aquatic nuisance infestation. If an application is submitted, this is only the third request for such a closure since Section 4 of the VUPWR was established in 1998.
- The Department provided Vermont Fish and Wildlife Department (DFW) Game Wardens with **grant funds to support supplemental officer hours** at water body access points. Officers provide education and enforcement of Vermont's aquatic plant, zebra and quagga mussel transport law, and Vermont's (April 1, 2011) felt-soled wader prohibition. Unfortunately, DFW was unable to use these funds in 2015 but will in 2016.

For more information, contact:



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www.watershedmanagement.vt.gov/lakes.htm

* As of October 2012, the Watershed Management Division (formerly the Water Quality Division) permanently relocated to an office in Montpelier after a one-year temporary office in Winooski and a move from the State Office complex in Waterbury, flood-damaged by Tropical Storm Irene in August 2011.