

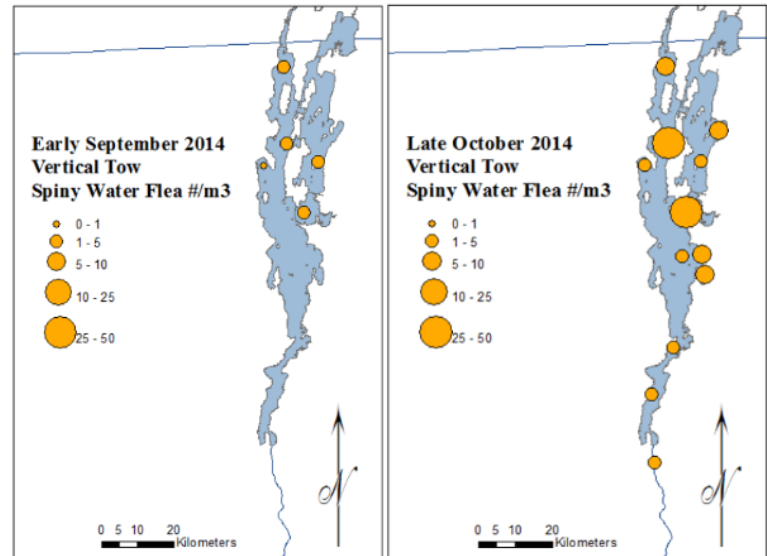


2014 Update

Vermont Department of Environmental Conservation, May 2015

Aquatic Animal Species Population Monitoring

- The aquatic invasive zooplankton, **spiny water flea** (*Bythotrephes longimanus*) – a crustacean not a flea as the name implies – was confirmed in one sample from Lake Champlain in late August. A few more sites documented their presence in September. By late October, individuals of this species were confirmed in samples from 12 of 14 long-term monitoring sites located throughout the lake. Spiny water flea is the 50th aquatic invasive species known from Lake Champlain. Spread prevention efforts to keep spiny water flea confined to Lake Champlain will be a high priority for VTDEC in 2015 and beyond.



- Nineteen inland lakes deemed vulnerable to **zebra mussel** (*Dreissena polymorpha*) establishment, and one river (Connecticut), were monitored for zebra mussel veligers using plankton net sampling. Results of microscopic examination of these samples found no zebra mussel veligers. Known zebra mussel populations in Vermont remain confined to Lake Champlain and Lake Bomoseen. Monitoring of all Lake Champlain segments was conducted for veligers and settled juveniles but samples have not been analyzed. Results will be available after January 1, 2015 at http://www.vtwaterquality.org/lakes/htm/lp_lczebramon.htm

Aquatic Plant Species Population Monitoring

- New sightings of two aquatic invasive plant species known to already exist in the state were confirmed this year. One new **Eurasian watermilfoil** (*Myriophyllum spicatum*) population was confirmed in Lime Pond in Barnard, bringing the total number of infested bodies of water to 68 in Vermont. Two new **water chestnut** (*Trapa natans*) infestations were found in the outlet area of Lake Carmi, Franklin and a drainage ditch on private land in Benson.
- No new **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.

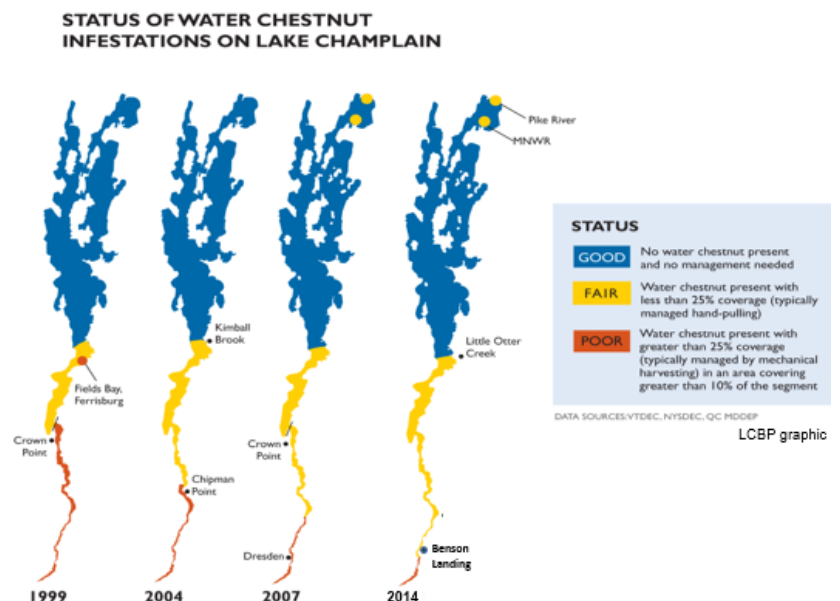
- Aquatic plant related **surveys** were conducted on 27 water bodies representing 46 survey days. These surveys map established species populations, search for new invasive plant introductions, or gather related data (e.g. rare, threatened or endangered species information).

Control and Spread Prevention Projects

- \$376,680 in grant funds (from 25% of annual Vermont motorboat registration receipts and federal funds) were awarded through the **Grant-in-Aid grants program to 31 municipalities** this year to support aquatic invasive or nuisance species projects. Funded projects included:
 - 19 Eurasian watermilfoil control projects, 8 of which also included a boat access area “greeter” program in cooperation with the Department of Fish and Wildlife or local partners.
 - 10 spread prevention projects, all of which included public boat access area “greeter” programs, in cooperation with the Department of Fish and Wildlife or local partners
 - 1 nuisance native plant control project
 - 1 professional quantitative aquatic plant assessment

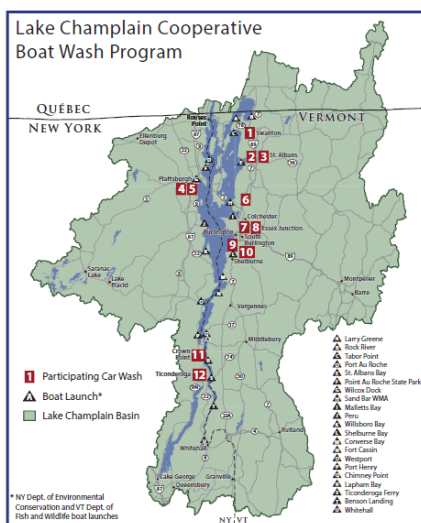
The results of these funded projects are currently under review.

- 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).
- **Water chestnut control** occurred in 23 of the 27 water bodies confirmed with this invasive aquatic plant. All but 2 of the 26 non-Lake Champlain sites had less than 20 plants and no water chestnut was found in 9 previously managed sites in Vermont. Handpulling continued to be the main control method used at all sites. Mechanical harvesting is used on dense mats and only in Lake Champlain. Adequate funding and help from NYSDEC and the Town of Dresden allowed all dense mats in Lake Champlain to be targeted except one. 100% of mechanical harvesting spoils were composted at a farm in Benson. Vermont Lake Champlain control efforts ended a 1.5 miles south of the Narrows of Dresden, 0.5 miles further than 2013 efforts. This management effort represents a partnership with numerous government and nongovernment entities, including The Nature Conservancy, The Lake Champlain Basin Program, the U.S. Fish and Wildlife Service, the US Army Corps of Engineers, the Lewis Creek Association, the State of New York, and the town of Dresden, NY.



- **Grant funds were provided to the Friends of Missisquoi Bay for a second year** to support a seasonal position to assist Missisquoi National Wildlife Refuge staff with water chestnut surveying and removal within the Refuge boundary.

- The Department provided Vermont Fish and Wildlife Department Game Wardens and Department of Public Safety 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. Results of this effort in 2014 are not yet available.
- A project cooperation agreement for a **Lake Champlain Canal Barrier Feasibility Study** was signed by the New York Canal Corporation and sent on to the US Army Corps of Engineers for execution. The study is for a hydrologic barrier between Locks 8 and 9 with an alternate means to move boats around the barrier, separating the Lake Champlain drainage from the Hudson drainage in the canal system. The effort is the needed next step to address preventing the spread of aquatic invasive species back and forth across the Champlain, Hudson and Great Lakes drainages which are all connected via canals. The feasibility study for an aquatic invasive species barrier on the Lake Champlain Canal is estimated to take two years.

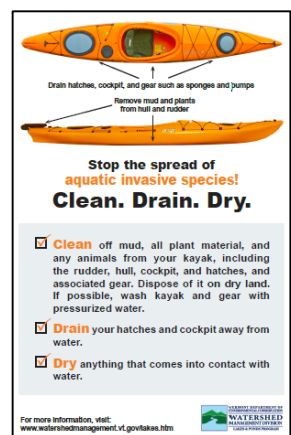


- **Lake Champlain Cooperative Boat Wash Initiative:** The Lake Champlain Basin Program and the Vermont Department of Conservation partnered again this year with car wash stations in Vermont and New York to connect boaters to pressure washing facilities for their boats, trailers, and other equipment. 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 launch kiosks.
- Staff provided **technical assistance** on management of aquatic invasive species to over 55 groups (e.g., lake and river associations, government and non-government entities, municipalities), often working with multiple individuals per group.

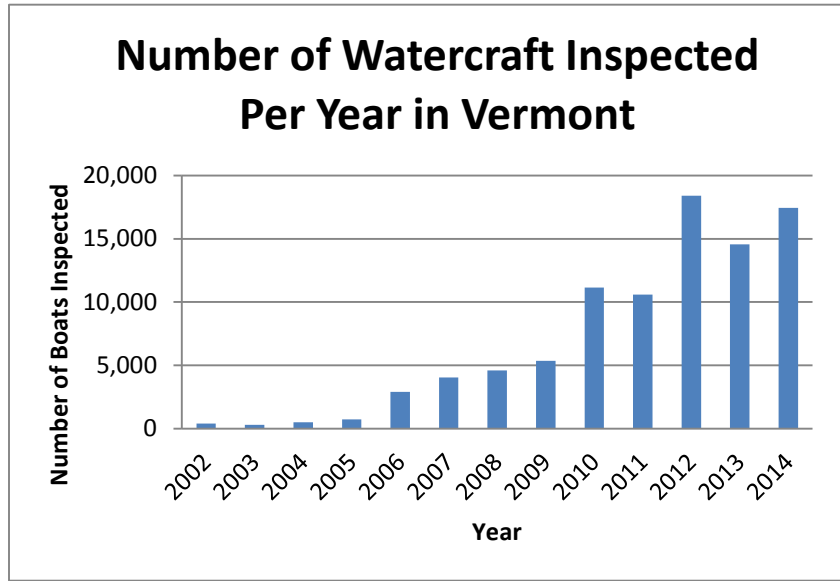
- A **spread prevention poster for paddlers** was created and distributed to Vermont State Parks, lake associations and municipalities.

Public Information and Education

- Staff held seven public water body access training workshops: four specifically for the **Vermont Greeter Program** and three for Vermont State Park employees. A total of 113 individuals were trained representing 30 bodies of water (95 individuals from 27 bodies of water were trained in 2013). Staff also partnered with the Lake Champlain Basin Program to train Lake Champlain Lake Stewards.
- Staff provided **sample identification support** to the Lake Champlain Lake Steward Program, confirming identifications of over a dozen samples retrieved from equipment by Stewards.



- **In 2014, Vermont Greeter Programs** conducted 17,434 inspections of boats at Vermont lake access areas (14,575 in 2013). Inspections were conducted by 24 locally-run programs located throughout Vermont. Of these, less than 1% of launching boats were found to be carrying plant material; however, 89% of what was found was identified as Eurasian watermilfoil. The program began in 2002 and last year brings the total cumulative number of boats inspected to 91,006.



- **Educational invasive species presentations** were provided for several organizations and events: the Westmore Association annual meeting, a gathering of the Lake Dunmore Fern Lake Association, The Governor’s Conference on Outdoor Recreation and VTANR’s Municipal Day.

- **Aquatic invasive species signs** posted at public boat access points were maintained; downed signs were re-installed, and brochure boxes were replaced if needed and filled. Visits to 67 of 68 priority high-use accesses were completed. An additional 23 accesses were visited for a 2014 total of 91 accesses.

Rapid Response

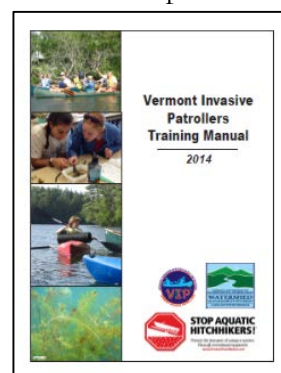
- Control and search efforts continued on Vermont’s first **variable-leaved watermilfoil** population in Halls Lake in Newbury (confirmed in 2008). One survey was conducted in 2014 with no variable-leaved watermilfoil found. Variable-leaved watermilfoil has not been found in the lake since June 2011.
- Two efforts to remove newly confirmed populations of water chestnut were instituted: Mill Pond in Franklin and a drainage ditch on private land in Benson. Staff and volunteers responded to a sighting of **water chestnut** in the outlet area of Lake Carmi in Franklin, an area known locally as Mill Pond. Over 6,487 water chestnut plants estimated at weighing 2,187 pounds wet weight were removed by hand over two days. Two farmers participating in the effort disposed of the collected water chestnut on their nearby farm. Staff also confirmed and removed 36 water chestnut plants by hand from a Benson drainage ditch located on private land where mechanically harvested Lake Champlain water chestnut spoils are composted.
- 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 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.
- A Vermont **emergency general permit** was authorized in February 2011. This general permit 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 2014. 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 a result of tropical storm Irene.

Regulatory

- 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 Shadow Lake Association (SLA) submitted a petition to the Department under **Section 4 of the Vermont Use of Public Waters Rules (VUPWR)**, requesting temporary closure of an approximately one acre portion of Shadow Lake in Glover 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. A decision by the Department is pending. This is only the second request for such a closure since Section 4 of the VUPWR was established in 1998.

Volunteer Early Detection

- Two **Vermont Invasive Patrollers (VIP) workshops** were attended by 26 people in 2014: one workshop hosted by the Northern Forest Canoe Trail and held at Missisquoi National Wildlife Refuge Visitor Center, and the other hosted by the Memphremagog Watershed Association and held at the Hebard State Office Building in Newport. Five workshop participants committed to survey through the VIP program.
- **Fifty VIP volunteers contributed over 215 hours collectively in their surveying efforts of 17 Vermont lakes.** No new invasive species infestations were reported as a result of these efforts.
- VIP staff conducted **four educational surveys** with 14 VIPs and lake residents at North Montpelier Pond, Lake Iroquois, Curtis Pond, and Silver Lake.
- A new **VIP Training Manual** was developed and distributed to 2014 workshop participants. This comprehensive manual includes a summary of the program, identification information for 13 aquatic invasive species, survey guidelines, sample submission forms, and instructions for making aquatic view scopes.
- Twenty **aquatic view scopes** were constructed, ten of which were distributed at the 2014 Vermont Lake Seminar, VIP workshops, and educational survey visits.



Other

- Vermont established cooperative invasive species partnerships or **CISMAs** - grassroots partnerships representing federal, state and local government agencies, individuals and non-government groups – continued efforts to manage invasive species in defined areas. Most CISMAs are challenged by the ongoing process of sustaining funds to support coordinators and efforts. Established CISMAs represent the Ottauquechee, Upper Connecticut and White rivers watersheds.
- An inter-state invasive plant collaboration, **the Connecticut River Watershed Invasive Species Leadership Initiative**— spearheaded by the Silvio O. Conte National Wildlife Refuge—continued to provide support to regional CISMAs. Six sub-watershed CISMAs currently exist in the region -- two in Vermont; two in CT; one in MA; and one spanning portions of Vermont, New Hampshire and Quebec. With the establishment of the Leadership Initiative and regional CISMAs, the opportunity to provide an integrated network better equipped to prioritize invasive plant control actions, and plan and implement early detection and rapid response actions now exists within the watershed.

For more information, contact:



Vermont Aquatic Invasive Species Management *
1 National Life Drive Main 2 Montpelier VT 05620-3522
PHONE: (802) 490-6120 FAX: (802) 828-1544
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.