

New Hampshire Lakes Association

Exotic Aquatic Plant Species Education and Prevention Program



Lake Host™ Program Manual 2011

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Members dedicated to protecting lakes

NEW HAMPSHIRE LAKES ASSOCIATION (NH LAKES) Lake Host™ Program

Goal: To prevent the introduction and spread of exotic aquatic plants (such as variable milfoil) in New Hampshire's lakes and ponds.

Target Audience: Resident and out-of-state recreational boaters and anglers who launch on public waters, all lake users, lawmakers and the general public.

Objectives: To place trained Lake Hosts at public motorized boat launch sites to: educate visiting boaters about exotic plants by distributing brochures, answering questions, and completing a brief boater survey; conduct courtesy boat and trailer inspections of vessels both entering and leaving public waters; show boaters where to look for hitch-hiking plant fragments on boats and trailers and encourage them to conduct self-inspections; remove and properly dispose of all plant material found, and; send samples of suspicious plants removed from vessels to the New Hampshire Department of Environmental Services (NHDES) for identification.



Program Need: Exotic aquatic plant infestations make recreation in and on lakes and ponds dangerous and unpleasant, they disrupt the ecological balance of waterbodies, they reduce shoreline property values through the reduction of aesthetic and recreational uses of the water body, and they are difficult and expensive to control once they infest a waterbody. The main way exotic invasive aquatic plants spread in New Hampshire is through the transportation of plant fragments on boats and trailers from infested water bodies to uninfested water bodies.

Background: In 2002, NH LAKES received a two-year grant from the National Oceanic and Atmospheric Administration (NOAA) as a result of an appropriation secured by U.S. Senator Judd Gregg. The grant supported a comprehensive exotic aquatic plant education and prevention program involving the creation of two videos, the development of plant identification cards, and the staffing of public motorized boat ramps with trained Lake Hosts.

Also in 2002, state legislation was passed to raise boat registration fees by three dollars, effective January 1, 2003. The money collected by this increase, approximately \$300,000 per year, would fund milfoil and other exotic plant prevention and research activities through a grants program administered by NHDES. Up to two-thirds of this amount would be available annually as grants to support exotic aquatic species education and prevention activities (such as the Lake Host™ program). In the winter of 2003, NH LAKES applied for, and was awarded, a \$165,000 grant from NHDES to administer the Lake Host™ program that summer. Subsequent state grants for 2004 through 2010 are indicated below.

Lake Host Program Statistics 2002 – 2010

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of Participating Organizations	38	46	51	56	57	68	70	71	73
Number of Paid Lake Hosts	102	149	190	175	204	221	240	236	230
Number of Volunteer Lake Hosts	59	167	216	318	353	429	470	420	531
Number of waterbodies with Lake Hosts	37	45	50	56	56	64	70	71	75
Number of Ramps Covered	45	59	61	61	66	83	88	86	90
Number of Inspections Conducted	15,878	26,583	31,629	34,878	34,573	44,183	55,924	53,629	64,661
Number of "saves" (exotic plants found)	4	7	16	54	54	157	224	297	268
Federal Funds	\$ 260,100	\$10,000	\$85,300	\$35,000	\$117,000	\$117,000	\$89,206	\$89,206	\$0
State Funds	\$0	\$165,000	\$150,000	\$185,000	\$185,000	\$185,000	\$161,000	\$123,333	\$136,667
Private Foundations								\$4,000	\$22,000
Local Funds (hard cash and cash-equivalents)	\$37,155	\$112,382	\$151,238	\$200,756	\$183,179	\$292,017	\$334,061	\$341,535	\$401,977
NH LAKES Youth Employment Program Match								\$32,944	\$6,960
TOTAL PROGRAM	\$297,255	\$287,382	\$386,538	\$420,756	\$485,179	\$594,017	\$584,267	\$591,018	\$567,571

Additional Funding Sources: State grants require a dollar for dollar match in hard cash and/or cash equivalents. Beginning in 2003, NH LAKES, as the grant recipient, required an increasing match each year from local groups participating in the program until 2005, and it has stayed level since 2005 (25% in 2003; 33% in 2004; and 50% in 2005 through 2010). "Local funds" indicated in the chart below include both hard cash to extend ramp coverage and cash-equivalents in volunteer time. In addition, the following supplemental funding has been secured since the program began from the following sources: EPA New England Office (2003); NOAA (2004, 2006, 2008, 2009); Watershed Assistance

Grant (319 Clean Water Program); EPA's Healthy Communities Grants Program (2005); Badger Monadnock Fund (2010); Saul O'Sidore Foundation (2010); TransCanada (2009, 2010); and an anonymous private foundation (2010). In 2009, the NH LAKES Summer Youth Employment Program (SYEP), funded through the American Reinvestment and Recovery Act, provided students to work as Lake Hosts. In 2010, the SYEP, funded by private foundations including the Wellborn Ecology Fund, the Byrne Foundation, the Samuel P. Pardoe Foundation, and the Neil and Louise Tillotson Fund provided students to work as Lake Hosts.

As a result of the program, the following "saves" have been made of exotics entering, or leaving, a waterbody:

- **Beaver Lake** (Derry): Fanwort (2008, 2009), Variable milfoil (2008)
- **Bow Lake** (Northwood): Variable milfoil (2003, 2005), Eurasian milfoil (2005,2009)
- **Clough Pond** (Loudon): Variable milfoil (2005)
- **Connecticut River** (Hinsdale): Eurasian milfoil (2010), European naiad (2010)
- **Crescent Lake** (Acworth): Eurasian milfoil (2003), Fanwort (2003)
- **Crystal Lake** (Enfield): Water chestnut (2005), Eurasian milfoil (2010)
- **Eastman Lake** (Grantham): Eurasian milfoil (2010)
- **Gilmore Pond** (Jaffrey): Water chestnut (2005)
- **Goose Pond** (Canaan): Eurasian milfoil (2007), Variable milfoil (2009)
- **Granite Lake** (Nelson/Stoddard): Curly leaf pondweed (2009)
- **Great East Lake** (Wakefield/Acton, Maine): Eurasian milfoil (2006, 2008), Fanwort (2010), Variable milfoil (2007, 2008, 2009, 2010)
- **Highland Lake** (Stoddard): Eurasian milfoil (2005)
- **Jeness Pond** (Northwood): Variable milfoil (2005)
- **Lovell Lake** (Wakefield): Variable milfoil (2006, 2007)
- **Lake Monomonac** (Rindge): Eurasian milfoil (2004); Curly leaf pondweed (2004), Variable milfoil (2004, 2005, 2007, 2008)
- **Lake Ossipee** (Ossipee): Eurasian milfoil (2010), Variable milfoil (2009)
- **Lake Potanipo** (Brookline): Fanwort (2010), Variable milfoil (2010)
- **Lake Sunapee** (Sunapee): milfoil (2005), Eurasian milfoil (2006, 2007, 2008, 2009), variable milfoil (2007)
- **Lake Waukegan** (Meredith): Eurasian milfoil (2003), Variable milfoil (2007, 2008)
- **Lake Wentworth** (Wolfeboro): Variable milfoil (2008)
- **Lake Wicwas** (Meredith): Variable milfoil (2010)
- **Lake Winnepesaukee** (Meredith, Alton, Gilford, Moultonborough, Tuftonboro, Wolfeboro): Fanwort (2003, 2007); Variable milfoil (2004, 2007, 2008, 2009, 2010)
- **Lake Winnisquam** (Laconia): Variable milfoil (2008)
- **Merrymeeting Lake** (New Durham): Variable milfoil (2007, 2010)
- **Newfound Lake** (Bristol): Eurasian milfoil (2006, 2009, 2010), Fanwort (2003, 2006), Variable milfoil (2002, 2006, 2007, 2008, 2009), Water Chestnut (2009, 2010)
- **Northwood Lake** (Northwood): Curly leafed pondweed (2007), Eurasian milfoil (2007), Variable milfoil (2008, 2010)
- **Nubanusit Lake** (Nelson): Curly leaf pondweed (2009), Eurasian milfoil (2002, 2004), Variable milfoil (2007, 2008)
- **Ottarnic Pond** (Hudson): Fanwort (2005, 2006, 2007, 2008), Variable milfoil (2006, 2007, 2010)
- **Pawtuckaway Lake** (Nottingham): Common reed (2007), Curly leaf pondweed (2010), Eurasian milfoil (2009, 2010), Fanwort (2009), Variable milfoil (2007, 2008, 2009, 2010), Water chestnut (2008)
- **Pleasant Lake** (Deerfield): Variable milfoil (2004, 2007)
- **Pleasant Pond** (Francestown): Curly leaf pondweed (2009), Eurasian milfoil (2006)
- **Robinson Pond** (Hudson): Fanwort (2004, 2006, 2007, 2008, 2009, 2010); Variable milfoil (2004, 2005, 2006, 2007, 2008, 2009, 2010)
- **Silver Lake** (Madison): Variable milfoil (2002, 2004, 2006)
- **Lake Skatutakee** (Harrisville): Eurasian milfoil (2005)
- **Spofford Lake** (Chesterfield): Eurasian milfoil (2002, 2005, 2008)
- **Squam Lake** (Holderness): Curly leaf pondweed (2009), Eurasian milfoil (2007)
- **Suncook Lake** (Barnstead): Variable milfoil (2009)
- **Webster Lake** (Franklin): Fanwort (2010), Variable milfoil (2009)

For More Information: To participate in the Lake Host program, or to become a program sponsor, contact NH LAKES at (603) 226-0299, or info@nhlakes.org. More information can also be found at www.nhlakes.org.

Main Points about Exotic Aquatic Plants*

1. What are exotic aquatic plants?

Exotic aquatic plants are those species of water-loving plants that are not native to New Hampshire, and that have certain characteristics that allow them to grow more rapidly than native vegetation, thereby taking over a water body. Native aquatic plants, on the other hand, are vital to a healthy lake or pond; they are kept in check through natural controls (predators and other environmental factors).

2. Why are exotic aquatic plants a problem?

Exotic aquatic plants are problematic as they can clog waterbodies, impede recreational activities like swimming, fishing and boating, and they can be economically and ecologically harmful as well. In some cases milfoil and other exotic aquatic plants can pose human health hazards through incidents of drowning.

3. What is the extent of the problem?

Exotic aquatic plants are now found in 76 waterbodies in New Hampshire. Sixty-five waterbodies have variable milfoil, four have Eurasian milfoil, nine have fanwort, three have curly-leaf Pondweed, one has Brazilian elodea, a couple have European Naiad, and one has water chestnut. Some waterbodies have multiple infestations of plants. Exotics are spreading to new lakes and ponds at the rate of one to two new infestations annually.

4. What is the law that pertains to exotic aquatic plants in New Hampshire?

RSA 487:16-a prohibits the sale, introduction, propagation, purchase, importation and transportation of 27 listed prohibited species in New Hampshire. Chapter Env-Wq 1300 is where Administrative Rules on the program are found.

5. How are exotic aquatic species spread?

New exotic species are brought into the country and state via the pet and nursery industry. Occasionally these species escape into the wild. Once in our lakes and ponds, the transient boater is the prime mechanism of spread from waterbody to waterbody. While birds are often thought to be a vector, it is unlikely that they are the cause of very many infestations.

6. What control measures are being used in New Hampshire?

Various management practices are being used, including hand-pulling, benthic barriers, and herbicide applications. Once entrenched, invasive plants cannot be eradicated – only controlled, usually through herbicide applications every year or two. Such practices cost hundreds of thousands of dollars annually.

7. What education activities are being used?

Numerous education strategies are used to spread the word about invasive species. The use of Volunteer Weed Watchers, Lake Hosts, and other interested parties helps to spread the word. The Department of Environmental Services' (DES) staff, along with NH LAKES and other organizations, include the topic of exotic species in various public presentations throughout the state. Additionally, fact sheets, pamphlets, and other educational materials are distributed on a wide basis throughout the state. Signs are also posted at access sites to inform the lake user whether or not a particular waterbody is infested with an exotic plant, and what they should do to protect the lake.

8. What about research to solve the problem of controlling and/or eventually eradicating exotics?

DES continues to coordinate and fund projects associated with exotic aquatic plant research. Recent projects include an evaluation of seed viability of variable milfoil to determine if regrowth is common from milfoil seeds in bottom sediments. DES is also conducting research to try to limit the dosing and number of treatments when herbicide treatments are required to reduce an infestation. We have been partnering with various entities to evaluate treatment dose, timing, and formulations of 2,4-D to further fine tune treatments.

*By Amy Smagula, NH Dept. of Environmental Services (DES) Clean Lakes & Exotic Species Coordinator.

What are New Hampshire's Exotic Aquatic Plant Laws?



As of January 1, 1998, the **sale, distribution, importation, purchase, propagation, transportation, or introduction** of exotic aquatic weeds in the state is **prohibited** (RSA 487:16-a). This law was designed to act as a tool for lake managers to help prevent the spread of nuisance aquatic weeds. It is hoped that by preventing their transport over land, their spread between lakes will be stopped.

What are exotic aquatic weeds?

Exotic aquatic weeds include only those species of vascular aquatic plants which were not part of New Hampshire's native aquatic flora before 1950. This list contains 27 exotic plants:

Latin Name	Common Name(s)
All <i>Myriophyllum</i> species	Milfoils or feather-foils
All <i>Cabomba</i> species	Fanworts
<i>Hydrilla verticillata</i>	Hydrilla or Anacharis
All <i>Trapa</i> species	Water chestnut
<i>Potamogeton crispus</i>	Curly-leaf pondweed
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Phragmites australis</i> or <i>P. communis</i>	Common reed
<i>Egeria densa</i>	Brazilian elodea
<i>Hydrocharis morsus-ranae</i>	European frogbit
<i>Butomus umbellatus</i>	Flowering rush
<i>Najas minor</i>	European naiad
<i>Nymphoides peltata</i>	Yellow floating heart
<i>Crassula helmsii</i>	Swamp stonecrop
<i>Epilobium hirsutum</i>	Great willow herb or hairy willow herb
<i>Glyceria maxima</i>	Reed sweet grass or manna grass
<i>Hygrophila polysperma</i>	East Indian Hygrophila
<i>Ipomoea aquatica</i>	Water spinach
<i>Iris pseudocarus</i>	Yellow iris or yellow flag iris
<i>Lagarosiphon major</i>	African oxygen weed
<i>Limnophila sessiliflora</i>	Ambulia
<i>Marsilea quadrifolia</i>	Water fern
<i>Myosotis scorpiodes</i>	Water forget-me-not
<i>Sagittaria japonica</i>	Double flowering arrowhead, Japanese arrowhead, or old world arrowhead
<i>Sagittaria sagittifolia</i>	Giant sagittaria
<i>Typha gracilis</i>	Slender cattail
<i>Typha laxmanii</i>	Dwarf cattail or Laxman's cattail
<i>Typha minima</i>	Miniature cattail or micro-mini cattail

What are the penalties for spreading exotic aquatic plants?

It shall be unlawful to knowingly, recklessly, or purposely offer for sale, distribute, sell, import, purchase, propagate, or introduce exotic aquatic weeds into New Hampshire waterbodies (487:16-b). Any person engaging in such an activity shall be guilty of a violation and may be subject to an **administrative fine of up to \$2000**.

Variable milfoil

Myriophyllum heterophyllum (Michx)



Species Description/General Information

Milfoil is a submerged aquatic plant with fine densely packed, feather-like leaves whorled around a main stem. It can grow up to 15 feet and may exhibit a three- to six-inch green spike-like flower above the waterline in late June or in July. A cross-section of the stem will reveal “pie-shaped” air chambers.

This exotic species of milfoil has been in the state since the late 1960s, and can currently be found in over 64 waterbodies in New Hampshire. There are six native milfoil species present in the state that do not cause problems, as they are low growing and do not form monocultures, unlike variable milfoil. Eurasian milfoil is another non-native milfoil found in New Hampshire, but it is less of a threat than variable milfoil due to our water chemistry (Eurasian milfoil tends to be found in waters with higher pH ranges than those found in NH).



Why is Milfoil Considered a Nuisance Species?

This species is not native to our state and is very difficult to control once it becomes fully established. Milfoil reproduces through fragmentation whereby plant fragments break off from the parent plant through wind or boat action, grow roots, and settle in a new location. Seeds are also a means of spread within an infested waterbody. Milfoil spreads rapidly and displaces beneficial native plant life, often forming monoculture of growth around the shallows of a waterbody. It makes swimming difficult and can devalue waterfront property. Where this species grows in its native environment, insects and fish may feed on this plant at such a rate as to control its growth. In New Hampshire, variable milfoil has no abundance of natural predators to keep its population in check. Under optimum temperature, light and nutrient conditions, milfoil may grow up to an inch per day.

How Did Exotic Milfoil Become Established in This State?

It was most likely a “stowaway” fragment attached to a boat or trailer that came to this region. Milfoil can live out of water for many hours if it remains moist, like when it’s wound around a wet carpeted bunk on a boat trailer or in a live well. Milfoil is usually first found near boat launch sites when it infests a new waterbody, a sure sign that transient boaters are the leading means of spread.

Another theory is that milfoil was introduced to a New Hampshire waterbody through the dumping of a home aquarium. This plant is sometimes used as an ornamental plant in fish aquariums.

Once Established, How Does Milfoil Infest Other Areas of a Waterbody?

Boat propellers chop milfoil plants into small fragments. These fragments float on the surface and are at the mercy of the wind and lake currents. In a short time, roots form on these fragments. If washed ashore, these plants eventually take hold creating a new colony of milfoil. The cycle goes on until every suitable area is filled in with these weeds. An alternative form of the plants develops during low water. This vegetation type is more succulent than the submersed form and can persist for moderate periods of low water.

DES has recently collaborated in a study to evaluate the viability of milfoil seeds and the research showed that milfoil seeds are very viable and have a high regeneration rate, though survival of the seedlings is thought to be relatively low. Regardless, seed production in a dense milfoil bed is high, and seeds are thought to be a probable source of new plants, even following extensive control measures (seeds are resistant to herbicides). Data suggest that long-term monitoring and appropriate follow-up activities are needed to truly reduce or potentially eradicate infestations. Regular surveys by DES biologists or volunteer Weed Watchers is needed to find new growth early, so that small scale control measures can address the problem before it spreads.

It is unlikely that seeds are responsible for lake to lake spread, though, and fragments are still the big cause of that problem.

What Methods Are Currently Being Used to Control Milfoil?

DES implements an integrated plant management (IPM) approach for control. Each infestation is assessed and a long-term management plan is prepared to guide control activities for a number of years. Waterbody-specific goals range from reduction of the infestation, to control, to possible eradication depending on the status of the infestation and characteristics of the waterbody. All available control options are considered, and actions are chosen that best suit the size, density, and character of the infestation. Hand-pulling, diver-assisted suction harvesting, benthic barrier placement, herbicide treatment, and other strategies are evaluated for each infestation, including a review of a 'no control' option, and often a combination of approaches are recommended.

Have Chemicals Been Used to Effectively Control Exotic Milfoil?

Yes. DES has collaborated on a number of research projects focusing on chemical control of milfoil. Through that research we evaluated 11 aquatic herbicides on the market and have learned that 2,4-D is the best herbicide available for control of this plant. Used at lower concentrations to target milfoil, native aquatic plants and other aquatic life are not impacted by the herbicide.

Herbicide treatment is a science, and therefore should be conducted by trained professionals. It is illegal to apply chemical herbicides to any New Hampshire waters unless you contract with a licensed applicator. The use of chemicals by an untrained person could jeopardize the health and welfare of the lake and its ecology. Inappropriate or inaccurate use of chemicals is life-threatening to people, mainly due to over-dosing as a result of the unwise 'more is better' approach. It should be noted that the state has been conducting herbicide applications under permit and through licensed applicators for several years, and no negative impacts to non-target plants, animals, or humans have been observed.

For more information on milfoil or other Exotic Species, please contact the Exotic Species Coordinator at 603-271-2248 or Amy.Smagula@des.nh.gov. Also, visit the DES website for more information about exotic species at www.des.nh.gov.

WANTED!

Information on the location of the exotic plant: EURASIAN MILFOIL

Species Description

Eurasian milfoil is a submerged aquatic plant with whorled feather-like leaves that appear to have been clipped on the end. Eurasian milfoil can grow 12-15 feet tall, and exhibits a reddish shoot near the surface. It forms dense mats of tangled plants in lakes and ponds. Leaves have 12 or more pairs of leaflets which is an identifying factor to aid in species level identification.



General Information

Eurasian milfoil, which originally came to this country from Europe and Asia, is a serious nuisance to many lake residents. Once introduced to a lake (usually by transient boats) it grows and spreads very quickly, ultimately impairing the ecology of the system, and value of shorefront property.

There are now five waterbodies with Eurasian milfoil in New Hampshire today. For a long time Mountain Pond in Brookfield, the Connecticut River south of Hanover, and Mascoma Lake in Enfield were the only three with this plant, but during the summer of 2010 two new populations of Eurasian milfoil were found, one in the Nashua River in Nashua, and one in Post Pond in Lyme.

Eurasian Milfoil
(Myriophyllum spicatum)

This species can also be found in nearby Vermont and Massachusetts, and is considered a national problem in lakes and other freshwater systems.

Please inform DES at (603)271-2248 if you see this plant in a waterbody other than one of those mentioned above.

ENVIRONMENTAL Fact Sheet



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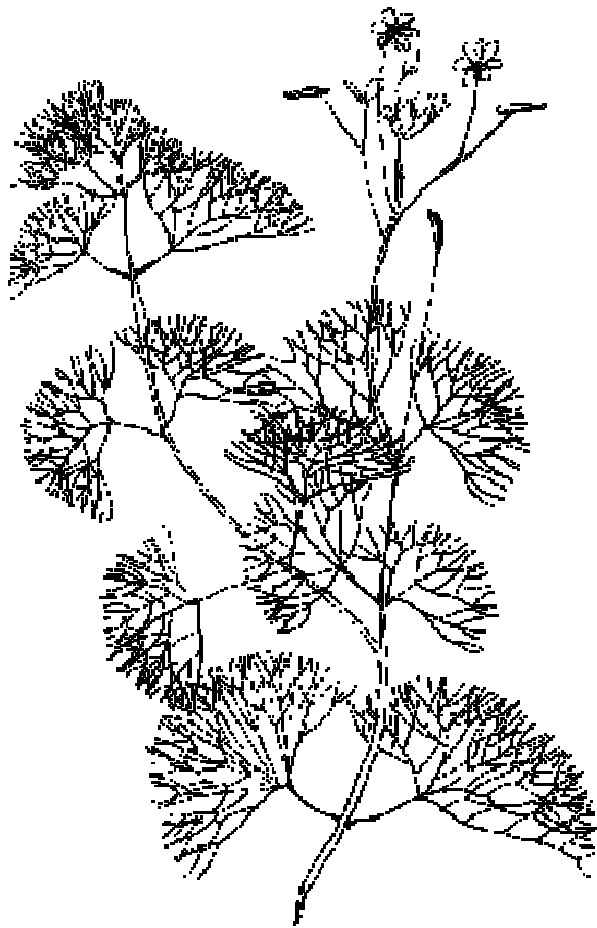
Information on the location of the exotic plant: FANWORT

Species Description

Fanwort is a submerged bright green aquatic plant with leaves arranged in a fan shape manner that are distinctly oppositely arranged on a long and narrow stem. Floating lily-like leaves are found on the water's surface during flower production. Flowers are small, white and emergent. The plant stands approximately 1-10 feet tall. Fanwort flowers from July through September.

General Information

Fanwort is a native plant of the southern United States, Latin and South America. It is currently in nine waterbodies in southern New Hampshire. This exotic plant was discovered in New Hampshire in the late 1960s and entered the state via a transient boat trailer, or was dumped from a tropical fish aquarium. Recently, this plant had been spreading at the rate of one new lake each year. Characteristic of many exotic plants introduced to a new environment, Fanwort quickly invades shoreline areas of waterbodies, ultimately impairing recreational activities and aquatic ecology. Please contact the Department of Environmental Services at (603)271-2248 if you have seen this plant. Visit our website for more information: www.des.nh.gov/wmb/exoticspecies.

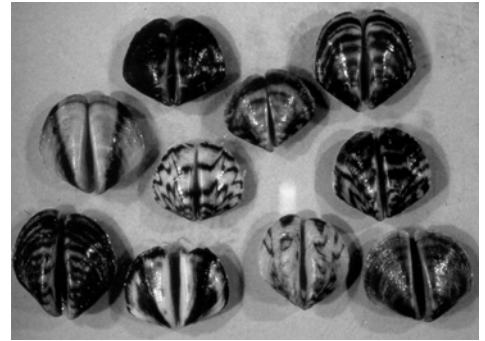


Fanwort
(*Cabomba caroliniana*)

Zebra Mussels

What are Zebra Mussels and Where Do They Come From?

Zebra mussels are small shellfish marked by alternating light and dark bands. They are typically 2 inches or less (roughly the size of a pistachio nut) in size and have a life span of 4-8 years. Zebra mussels have an extremely high reproductive rate of 30,000-1,000,000 new mussels per year and are able to reproduce at one year of age.



Zebra Mussel
(*Dreissena polymorpha*)

Zebra mussels are native to the drainage basins of the Black, Caspian, and Aral Seas of Eastern Europe. It is believed that ships originating from European ports carried the mussel in freshwater ballast which was discharged into Great Lake ports. The first North American zebra mussel discovery was in Lake St. Clair, Michigan in June of 1988. By September, 1991, the mussel was found in all five of the Great Lakes, the St. Lawrence River, the Finger Lakes region of New York, and throughout the Mississippi River basin. The mussel is expected to infest most areas of North America within the next few years. During the summer of 1993 the zebra mussel was discovered in Lake Champlain, Vermont. In 1998, the mussel was found in East Twin Lake, Connecticut. During the summer of 2009 the zebra mussel was identified in a pond in the Berkshire region of Massachusetts. With infestations to the south and west, it is anticipated that their arrival in New Hampshire is just a matter of time.

Adult and juvenile mussels (referred to as veligers) are transported by waterfowl and by attachment to boat hulls, crayfish and turtles. Larval stage mussels (veligers) can be transported in anglers bait bucket water and boat engine cooling water. Similar to other introduced non-native species such as milfoil, these exotic mussels can reproduce rapidly because natural predators are not present to keep the population in check.

Why are Zebra Mussels a Concern in North America?

Zebra mussels are not native to the United States. They disrupt aquatic ecology via the food web and cause problems to humans wherever they have appeared. Zebra mussels are the only freshwater mussel that can secrete durable elastic strands, called byssal fibers, by which they can use to securely attach to nearly any surface, forming barnacle-like crusts several feet thick. Through this mechanism zebra mussels can attach to stone, wood, concrete, iron, steel, aluminum, plastic, fiberglass, PVC, and even crayfish or other mussels. They have also recently been found growing on softer substrates like plants and even mud.

What Problems Do Zebra Mussels Cause?

The zebra mussel's ability to rapidly propagate and physically attach to objects creates several problems:

- Zebra mussels filter small particles such as phytoplankton (microscopic plants), small zooplankton (microscopic animals), and detritus (pieces of organic debris) from water. Mussels are capable of filtering up to 1 liter of water within a 24 hour period. Large populations of zebra mussels can severely alter the lake or riverine food web by competing with existing species such as salmon and walleye.
- Raw water intakes such as those at drinking water, electric generation, and industrial facilities can become infested with zebra mussels. A water supply system serving 50,000 people in a Michigan city had to shut down due to pump failure by zebra mussels in its intake system.
- Beaches in infested areas may be impacted by the washing up of sharp shells in shallow areas, which can cut bathers and litter beaches. Decomposition of mussels can also create obnoxious odors.

Impacts on boating and navigation include:

- Organisms attached to hulls increase drag, reduce speed, thus increasing fuel consumption.
- Growth of larval mussels drawn into a boat engine cooling water intakes may occlude the cooling system, leading to overheating and possible damage to the engine.
- If shells are drawn into the engine, abrasion of cooling system parts, especially impellers, could result.
- Marker buoys can sink under the weight of mussel encrustation.
- Docks can be destabilized or sunk by mussel colonization.

What Kind of Habitat Do Zebra Mussels Prefer?

Zebra mussels can tolerate fairly wide ranges of environmental conditions. They prefer water temperatures between 68 and 77 degrees F and water currents 0.15 to 0.5 meters per second for proper growth. The mussels prefer spawning in water temperatures in the mid 50 °F range. While normally a freshwater species, the zebra mussel can adapt to and inhabit brackish waters ranging from 0.2 to 2.5 parts per thousand total salinity in estuarine locations. Zebra mussels are found in lakes that are not overly enriched but which have a higher calcium content. Only a few of NH's waterbodies are at a risk for infestation, especially waterbodies with calcium levels greater than 12 ppm, like the Connecticut and Merrimack Rivers and lakes and ponds along the western border of New Hampshire.

How Can Zebra Mussels Be Controlled?

An effective way to permanently eliminate infestations has not been found, therefore, emphasis must be placed on controlling impacts on ecosystems and water users. For drinking water, electrical generation and industrial facilities, screen mesh can exclude adult and juvenile mussels from water intake systems. This method is only effective in excluding those mussels which originate upstream of the screens or filters. Veligers can pass through the screens and infest downstream areas. Other controls for water intakes include increasing intake and distribution flows to rates exceeding those at which zebra mussels can attach, and physically scraping the mussels where access for personnel and equipment is available. Oxygen deprivation, thermal controls (exposing mussels to water temperatures greater than 140 °F), and chemical controls can be used to kill the mussels. However, these methods will likely affect other aquatic organisms.

What Can Citizens Do To Help?

Tell your lake, river or watershed association, your local marina, your municipal officials, or anyone with an interest in aquatic resource protection about the zebra mussel. If you are in the power generation industry, plan now for the mussel's invasion to your facility. Call the UNH Cooperative Extension Services or NH Sea Grant, both in Durham, to learn about their zebra mussel public education program, or the NH Fish and Game Department to learn about their initiatives with the zebra mussel. You can also contact the DES, as the state agency with the primary responsibility of protecting and managing the state's lakes and rivers. DES intends to take an active role in zebra mussel prevention and control.

When boating in infested waters, be sure to clean and de-mussel your boat before you leave the area. De-musseling includes performing the following activities **AWAY FROM ANY SURFACE WATER**:

- Draining the bilge, live wells and engine cooling system.
- Dumping any bait buckets.
- Inspecting the boat by checking the hull, trim plates, anchors, and the trailer.
- Washing down the boat with hot water (140 °F), if mussels are found, and allowing the boat and trailer to sit for 2-5 days dry and/or spraying down gear with a 10% bleach solution and letting the solution stand for a few minutes before rinsing clean.

The best defense is to prevent the zebra mussel from entering the waters of New Hampshire. However, when they arrive, we all need to implement the proper controls to prevent these undesirable invaders from spreading.

New Hampshire Lakes Association

2011 POINT PERSON/MANAGING LAKE HOST POSITION DESCRIPTION

OVERVIEW:

Each organization that is accepted to participate in the Lake Host™ Program must provide a **Point Person** or a **Managing Lake Host** who serves as the local “administrator” of the program. A Point Person serves as a volunteer to help count toward the match. A paid Managing Lake Host is an employee of New Hampshire Lakes Association (NH LAKES). Managing Lake Hosts can be paid through the grant; however, they cannot be paid more than **5 hours per week for administrative work**. **Managing Lake Hosts do not need to volunteer one hour for every two hours worked, provided that your group will meet the minimum 100% match requirement.**



The Point Person/Managing Lake Host functions as the liaison between the local paid and volunteer Lake Hosts and NH LAKES. As **THE** local point of contact for the program over the summer months, the Point Person/Managing Lake Host is someone who is available all summer, can devote 3 or more hours per week to the program - creating weekly ramp coverage schedules, dropping in at the ramp to check on the Lake Hosts and volunteers several times per week, and attending to the administrative duties described below. **The Point Person/Managing Lake Host must attend one formal NH LAKES training session in 2011, even if he/she has done so in past years** (preferably as early in the season as possible).

SPECIFIC DUTIES OF THE POINT PERSON/MANAGING LAKE HOST:

1. Advertise for, and then interview, potential paid Lake Hosts; recommend to NH LAKES up to four paid Lake Hosts to be hired per ramp. **NEW IN 2011: Minimum age: 18** (exceptional 16- and 17- year olds will be considered, but it is recommended that they work in pairs or with older Lake Hosts.)
2. Provide NH LAKES with the required completed forms for each Lake Host you recommend be hired (forms can be downloaded from the NH LAKES website): W-4 form and the Employment Eligibility Verification Form (I-9), and the youth permission form for 16- and 17-year olds and notify NH LAKES of hourly pay rate. **NOTE: Lake Hosts must provide a physical address on their W-4 forms (in addition to a post office box number, if applicable). If paychecks are to be mailed to a different address, include that address on the form as well, with a note to that effect. All paid Lake Hosts in 2011, whether new or returning, need to submit an I-9 employment verification form.**
3. Ensure that **ALL** paid Lake Hosts, whether new or returning, sign and return their Letters of Employment with NH LAKES **before** they start working at the ramp.
4. Ensure that all **NEW** paid Lake Hosts attend a NH LAKES/DES training workshop as early in the season as possible. **New paid Lake Hosts cannot work until they have attended a formal NH LAKES/DES training.**
5. Conduct a local training workshop for all returning paid Lake Hosts (since returning paid hosts are not required to attend a formal NH LAKES/DES training) and all new or returning volunteer Lake Hosts (since volunteers are not required to attend a formal NH LAKES/DES training). It is recommended that the local training be conducted as early possible, and that part of the local training occur at the actual local boat ramp. **Returning paid Lake Hosts cannot work until they have attended a local training. Returning new or returning volunteer Lake Host can not volunteer at the ramp until they have attended a local training.**
6. Determine the weekly schedule and share it with your Lake Hosts and volunteers **in advance**, as well as the procedures to be followed in case of inclement weather.

7. Forward your weekly schedule to NH LAKES and notify NH LAKES if there are changes. **(NH LAKES will make unannounced site visits to ramps during summer 2011.)**
8. Ensure that all volunteer Lake Hosts (and you as the Point Person/Managing Lake Host) are keeping track of their hours on the Volunteer Match Documentation sheet/spreadsheet provided. **This documentation is required if it is being applied to the match.**
9. Prior to the start of your paid Lake Hosts staffing the ramp, make sure your group has submitted 100% of hard cash match for ramp extension to NH LAKES (as indicated on payroll grant application). **(NH LAKES will not be able to upfront ramp extension funds for paid Lake Hosts in 2011.)**
10. Before your group spends your entire payroll award and any previously submitted hard cash, make sure your group has submitted an adequate amount of hard cash to NH LAKES if your group intends to continue to pay Lake Hosts to staff the ramp after the payroll award has been used. **NH LAKES is unable to process timesheets for paid Lake Hosts if your group has used up your payroll award and has not sent NH LAKES an adequate amount of hard cash prior to payroll processing to cover additional paid Lake Host salary and statutory benefits.**
11. **Bi-weekly**, on the **Sunday** immediately at the end of the pay period (pay period is Monday through Sunday, two weeks later), collect, verify, and then sign each paid Lake Host's timesheet and then **fax or email the timesheets to NH LAKES on Monday, no later than 4 p.m. (603/224-9442)**. Timesheets received **AFTER 4:00 p.m.** on "Payroll Monday" will **NOT** be processed until the next pay cycle. **Also fax or email the Volunteer Match Documentation Sheets for that time period. Both of these items, properly executed, must be received in order for your Lake Hosts to be paid.** (The cost of faxing can be applied to the match at a rate of \$1 per page.)
12. Also **bi-weekly**, collect from your paid Lake Hosts and volunteers their completed Boater Survey sheets and Daily Summary sheets. Check these over to ensure that they are completely, and accurately, filled out, and then forward them to NH LAKES (postage cost can be applied to your match).
13. Supervise the work of the Lake Hosts and the volunteers on a regular basis to ensure quality performance. If necessary, contact NH LAKES to discuss Lake Host discipline problems and/or to recommend termination of Lake Host employment or volunteer commitment.
14. Contact NH LAKES when supplies of brochures, specimen bags, and stickers are running low.
15. Make more copies of timesheets and surveys, as needed (cost can be applied to the match at the rate of \$0.10 per copied page).
16. Provide plastic trash bags for any vegetation removed by your Lake Hosts (counts toward the match); properly dispose of all vegetation well away from the water body.
17. Send suspicious plants to DES in the prescribed manner (you will receive a form and instructions at the training workshop).
18. Publicize the program in your newsletter and local papers.
19. By October 1, 2011, send NH LAKES a Final Report in the format specified.

NEW HAMPSHIRE LAKES ASSOCIATION

2011 LAKE HOST POSITION DESCRIPTION

OVERVIEW:

The Lake Host is the first “official” friendly face that visitors see as they enter and/or leave the boat launch area. The Lake Host is an ambassador of the New Hampshire Lakes Association (NH LAKES) and of the local organization that is participating in this program, and as such, his/her job is always to greet and treat people in a friendly, non-threatening and courteous manner. The visitor recognizes the Lake Host as someone “official” because of the “uniform”— Lake Host shirt, cap or visor, name badge (optional) and a big smile.

Lake Hosts are responsible for greeting every visitor in the process of launching a vessel or removing one from the water; educating that person about what he/she can do to prevent the spread of milfoil and other invasive plant species; completing a brief Boater Survey, and conducting a courtesy boat and trailer inspection (if invited to do so by the boat owner), removing all vegetation found and disposing of it in the prescribed manner.



DUTIES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO:

1. Greeting visitors both entering and leaving the boat launch area in the prescribed manner;
2. Asking questions and completing other information on the Boater Survey;
3. Distributing brochures and other required materials;
4. Conducting a courtesy boat and trailer inspection in the prescribed manner, after asking the boat owner’s permission and inviting him/her to join you as you do the inspection;
5. Thanking the boat owner when finished, and asking him/her to conduct his/her own inspection every time upon entering or leaving a water body;
6. Removing all vegetation found;
7. Properly disposing of all vegetation in the prescribed manner, ensuring that plant matter does not re-enter the water body;
8. Attempting to identify vegetation removed from boats and trailers during slow or “down times”;
9. Calling your supervisor’s attention to “suspicious” plants, so that he/she can send a sample to the Dept. of Environmental Services (your supervisor is the Point Person/Managing Lake Host for the agency administering the program in your area);
10. Completing the Boater Survey and, if applicable, Daily Summary Sheets each day you work, and providing these and a timesheet to your supervisor in a manner to be specified;
11. Other related duties as assigned by your supervisor, who is the Point Person/Managing Lake Host of the local participating organization.

EDUCATION/SKILLS/ATTITUDES REQUIRED:

A “people-person” – comfortable interacting with strangers; friendly; sense of humor; flexible (able to deal with “down time” at the ramp site); cooperative; task-oriented; self-motivated; lake-lover; knowledgeable about the issue of exotic milfoil preferred (but not required) since we will train you. Minimum age: 18 (we will consider hiring exceptional 16- and 17-year olds, but recommend that 16- and 17- year olds work in pairs or with older Lake Hosts).

WORKING RELATIONSHIPS/ACCOUNTABILITY:

The Lake Host is an employee of the New Hampshire Lakes Association (NH LAKES). Locally, the Lake Host is directed by, and accountable to, the **Point Person/Managing Lake Host** for the organization participating in this program. The Point Person/Managing Lake Host sets the weekly schedule and communicates this information to the Lake Host, including what happens in case of inclement weather. The Lake Host will turn in Boater Surveys, Daily Summary Sheets, timesheets, and plant specimens to the Point Person/Managing Lake Host in the manner indicated. In case of questions or problems, the first person to contact is the Point Person/Managing Lake Host. It is expected that the Point Person /Managing Lake Host will check in with the Lake Host on a regular basis and provide feedback on performance. While the Lake Host is directly supervised by the Point Person/Managing Lake Host, he/she is ultimately accountable to the NH LAKES.

Lake Host Job Expectations and Tips

The Lake Host is the first official, friendly face that the visitor sees. The visitor recognizes you as someone “official” because you are wearing your Lake Host shirt, and possibly a hat and name badge. Your smile is your welcoming greeting! Always approach a boater confidently and with a positive attitude, as MOST BOATERS will be cooperative and want to do what is right for the lake.

Overview:

The first thing to do, as a vehicle with a boat drives in, is to write down the boat registration number on the form, before approaching the boater. Then approach the boater before he/she is backing down the ramp, if possible, to prevent delays and a backup of boaters wanting to launch. (If the ramp becomes very busy, give priority to out-of-state boaters.) Introduce yourself and explain why you are at the ramp. Ask the boater if you can do a courtesy inspection for plants, **and invite him/her to do the boat and trailer inspection with you.** If the boater is reluctant to take the time, conduct the inspection yourself and simply offer him/her the materials (brochure, sticker, donation envelope.) Try to get answers to all the questions on the survey form; if the boater is in a big hurry, make a note to approach this same boater again as he/she is leaving the launch – to conduct a complete survey and inspection at that time. For all vessels, ideally you will inspect each boat and trailer TWICE - once upon entering, and then upon leaving, the water.

Sample Script:

“Good Morning/Afternoon. I am __(name)__ from __(local lake association/host agency)__ who is working in cooperation with the New Hampshire Lakes Association. Are you aware that invasive species are a problem in NH’s lakes?”

- Wait for an answer.

*“We are working with the New Hampshire Lakes Association, state agencies and local groups to survey boaters about invasive plants and conduct courtesy boat and trailer inspections to remove any vegetation to prevent plants from spreading. Plants such as milfoil, once introduced to a lake, grow uncontrollably and form dense mats making boating, fishing and swimming difficult if not impossible. This is a serious problem! We are trying to prevent the spread of these plants into the State. The plants are spread from lake to lake when they become lodged on boats, gear, and trailers. **This will only take a few minutes. May I ask you a few questions?”***

- Ask the survey questions.

“I’d like to show you how to inspect your boat and trailer. Boaters can help prevent the spread of invasive species by inspecting their boats EVERY TIME upon entering, AND LEAVING, the water.”

- Invite the boat owner to join you in a courtesy inspection of boat and trailer for any attached plants. If the boat owner does not want to join you, but is agreeable to your doing it alone, be sure to talk aloud as you inspect so they know what areas you are checking.
- Check the license plate area, trailer lights and wheels, around the boat motor and prop, along the anchor and line, and all fishing gear and live wells (if appropriate).
- Explain that **all plants/vegetation should be removed**, whether or not it is an invasive (since it’s hard to tell), and properly disposed of (composted or put in the trash).
- Explain to the boater that care should be taken to ensure that plants and fragments do not wash back into the water body.
- To help boaters remember to inspect their vessels every time (entering and leaving), offer the boater a “**clean boat**” **decal** (even if they have the old yellow sticker) and suggest that he/she place it on the left side of the windshield, not blocking the view from the steering wheel. (**DO NOT affix the decal yourself**, as this is purely voluntary on the part of the boater). Explain that boats WITH decals will undergo a streamlined process next time they launch at a ramp with a Lake Host, because it will be assumed that they are already aware of invasive plants and why the Lake Hosts are there.
- Let the boater know that by inspecting his/her boat, trailer and recreational gear, and by donating to the Lake Host™ Program, he/she can help your association and the New Hampshire Lakes Association expand the program to better prevent the spread of invasive species.

- **THANK the boat owner for his/her time.**
- **Wish them a pleasant day on the lake**, and indicate that you will see them when they bring their boat back out of the water for **another, very brief inspection** for any plants they may have picked up while cruising on the lake.
- **If you have not already done so**, record the data from that boat on the survey form – before you forget, and before you approach another boater.

For Boats Leaving the Water:

If you conducted the written survey when the boat first arrived, then all you need to do with boats pulling out of the water is to invite the boater to inspect his/her boat and trailer with you again, to remove any vegetation they might have picked up during their activity on the lake (and prevent it from being carried to another water body). Be sure to look carefully to remove any clinging plants. **Regarding jet powered craft:** after their vessels are out of the water, ask jet ski/PWC/jet boat owners to run their motors for a few seconds to expel water (and any plant fragments) from the tank. Collect all fragments and dispose of them well away from the water body.

Tell the boat owner that THEY can make a difference by performing this inspection themselves, every time they ENTER and LEAVE a water body. **Thank them! Say goodbye, and wish them a nice day.**

Plants Found on Boats or Trailers:

If you remove any plants from boats or trailers, make a note on the survey form. Then put the vegetation in the plastic trash bag provided for that purpose – to be identified later, if you have time. **DO NOT make the boat owner wait while you identify any plant material.** If you remove vegetation from more than one vessel during your “watch,” you will need to keep the plants separate, in case you decide that one sample is “suspicious” and should be sent to the State for positive identification.

Plant Identification:

When/if you have time during a “lull”, try to identify any vegetation you have removed from a boat or trailer. If you suspect that a plant is an invasive, place it in the official sample bag, label the sample with the bow number of the boat from which it came (from your survey). Include your name, the date, and launch site where it was discovered. Give the sample to your Point Person/Managing Lake Host, who will send it to the NH Dept. of Environmental Services in the prescribed manner.

Anticipated Lake Host Behaviors:

1. Wear the Lake Host shirt (name tags and hats are optional).
2. Wait for boaters in a visible location. **Waiting in an automobile is not appropriate, unless the weather is rainy.** Bring a lawn chair and an umbrella (if shade is not available at your ramp).
3. **Napping, sleeping, or appearing to be napping or sleeping, sunbathing (lying on the ground) or swimming are not acceptable behaviors.**
4. Lake Hosts should always introduce themselves and mention which organization they are working for and why they are at the launch site. **While interacting with the boater, take off iPod, sunglasses, do not answer/talk on the phone, and refrain from smoking.**
5. Always ask the boater if they would answer a few questions. Stress that the data will be helpful in identifying potentially vulnerable lakes, etc., so they realize the survey is a worthwhile endeavor and **is confidential** – they are not asked to identify themselves.
6. Remember that you the Lake Host are at the boat launch site to raise public awareness through **EDUCATION**. Our greatest hope for preventing the transport of invasives is a boater who is aware of the problem, and what he/she can do about it.
7. Do not emphasize that fines are involved, as this can make people hostile or defensive. It’s OK to mention that the transport of prohibited plant species is illegal and to give them the information if they are curious.
8. Lake Hosts must always be **polite** to all boaters (again, this includes removing sunglasses, iPod, and refraining from smoking or answering/talking on the phone while talking with a boater).
9. Remember, Lake Hosts are ‘courtesy inspectors’, and not enforcers. If a boater does not wish to speak with you, then you should offer a brochure and wish them a ‘good day’.
10. **Listen** to a boater’s concern(s). Although you may be in a hurry to move on to another boat, remember that we want boaters to display interest in the program and by asking questions, they will develop their own knowledge base, and perhaps offer you valuable insight as well.

General Safety Precautions:

1. NH LAKES recommends that Lake Hosts working at remote ramps work in pairs.
2. NH LAKES recommends that 16 and 17-year old Lake Hosts work in pairs or with an older Lake Host.
3. If you have a cell phone, bring it with you to the boat launch site. It is to be used for contacting your Point Person/Managing Lake Host, or in case of an emergency.
4. Always back away from an uncomfortable, or potentially dangerous, situation. *Lake Hosts are not enforcers of rules and should never jeopardize their own safety.*
5. If you are ever suspicious of someone (i.e., a loiterer or someone who is not intending on boating, someone who keeps driving by the launch, someone who asks if you have a cell phone or other odd question), **leave** the launch.
6. If possible, bring a car to your shift so that you can leave the ramp immediately if needed.
7. **If you feel that a boat launch site is unsafe in any way**, please notify the organization you are working for. Your Point Person/Managing Lake Host can request that the town send a police patrol car around periodically to the ramp, to check on things. If it's too dangerous to staff the ramp, the Point Person/Managing Lake Host should report the condition to NH LAKES and the local or state police and cease operations.
8. Never confront an angry or uncooperative boater.
9. If a boater asks you not to record their bow number or any other information, comply with the boater's request.
10. Do not help boaters launch or take their boats out of the water and do not direct traffic at the ramp.

Spotting and Handling a Possible Violation:

1. Twenty-seven aquatic plant species are prohibited by law from being introduced into any state water body (see list in your packet, penalties, etc.). If you spot what you think may be a prohibited species, simply inform the boat owner about it and ask if you can remove it from the boat/trailer. If they say "no," you might mention that there is a fine should the plant NOT be removed. That is the extent of your power; if the boater insists on launching, get out of the way. Do NOT throw yourself in front of their car or trailer!
2. Handling a possible violation needs to be done very carefully to avoid hostility. Simply note information on the boater survey, especially the boat registration number, and turn in the plant sample in the manner prescribed. **Lake Hosts are EDUCATORS, not enforcers!**

At the end of your day (these procedures may vary – check with your Point Person/Managing Lake Host):

1. Use your 2011 Boater Survey sheet(s) to **completely** fill in the 2011 Daily Summary Sheet.
2. Fill in your timesheet or volunteer match sheet for that day.
3. Once every two weeks, on the day specified by your Point Person/Managing Lake Host, give him/her all Boater Surveys, Daily Summary Sheets, timesheets and volunteer match sheets.

Potential Scenarios/Questions: Below are some possible questions you may encounter from the boater, and some suggested responses.

“Why are you out here wasting resources when the milfoil (or other exotic) is going to get into the lake anyway?”

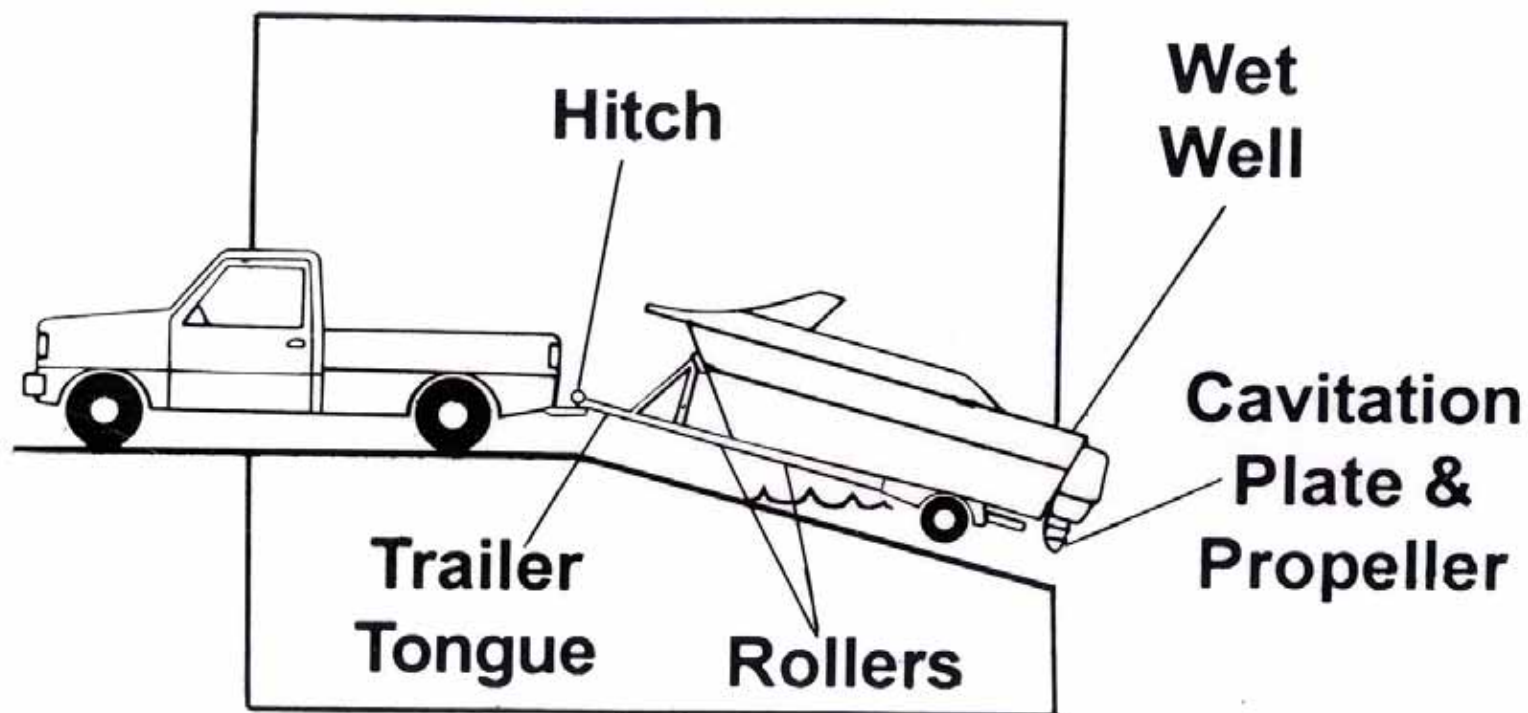
Possible response: Even if we cannot keep the invasive plants out completely, we can prevent or slow down their spread. Since the Lake Host program began in 2002, the rate of new infestations has decreased from three to four per year, to none or one water body annually. Prevention also gives us time to adopt new control methods as they are developed in the future. The longer we keep invasives out of a lake (through programs like this), the longer we put off the enormous costs of management and property devaluation.

“I understand that this program is partially funded through a increase in our boat registration fees. I don't think this increase is fair because we boaters spend enough money as it is...” NH passed a bill in 2002 that created a milfoil prevention and research grant program. It funds prevention activities such as staffing public boat launch sites. It also funds much-needed research to better understand the exotic plants and how to control them. Because boats are the main vector in the spread of exotic aquatic plants, it makes sense that boaters should help bear the cost.

“I don't have time for this... I know all about it already!” If the boater does not wish to help you with the survey, respect their rights and let them be. In this situation, the suggested action is to offer a brochure and wish them a nice day.

“How has New Hampshire's strategy in controlling exotic plants changed over time?” New Hampshire has always been a leading state when it comes to controlling exotic aquatic plants. Originally our emphasis was more on management of existing infestations, but in the past several years, we have moved to strengthening our efforts at prevention and early detection, which are showing good success. Our rate of infestation over the years has really slowed, showing that prevention and early detection efforts are the way to go. No water body participating in the Lake Host program has experienced a new infestation!

WEED OUT AQUATIC STOWAWAYS!



Aquatic Plants are often found attached at the above locations.

Please Remove and Dispose of these plants away from the waterbody.

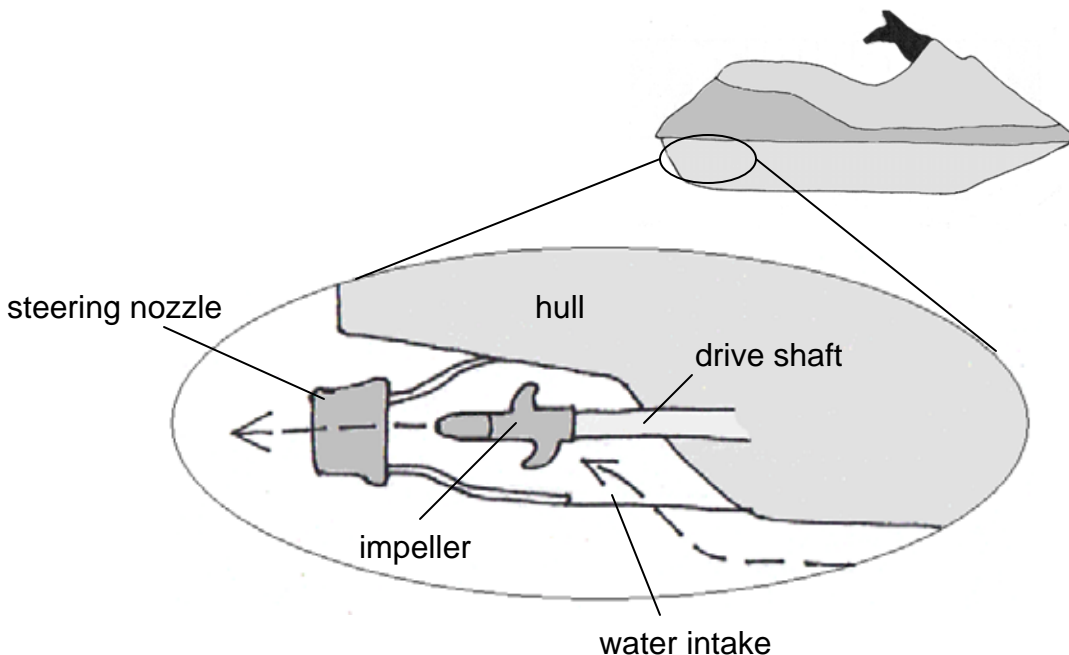
Thank You!

How to Inspect Personal Watercraft

Personal watercraft have a jet drive system which requires some extra precautions to avoid spreading harmful aquatic species.

A pump pulls water in through an opening under the craft, and the impeller (an internal propeller) forces water out, moving the craft forward. Exotic species can easily get lodged in the jet drive system and get transported from one waterbody to another. A small piece of milfoil, or other harmful exotic aquatic species, caught on the impeller can infest a new lake or river. Didymo (“rock snot”) or zebra mussels could live in excess water in the jet drive and spread to another waterbody.

The Jet Drive System



Inspecting and Cleaning Personal Watercraft

1. After the watercraft has come out of the water, ask the owner of the craft to start and run the engine for a few seconds, to blow out any excess water and vegetation. (Make sure no one is standing directly behind the watercraft!) Explain that the dark, damp enclosed area of the impeller provides an ideal environment for exotic plants to survive and increases their potential to spread to other waterbodies.
2. After the engine has stopped, pull out any plants that are still in the steering nozzle.
3. Don't forget to inspect the trailer and any other sporting equipment for plant fragments.

Lake Host Position: Boater Interaction

REQUIRED materials to offer to boaters the first time you see them each day:

- Attention Boaters! Brochure
- Green “CLEAN YOUR BOAT” sticker



OPTIONAL materials to offer to boaters the first time you see them each day (your Point Person/Managing Lake Host will let you know which ones to hand out):

- UNWANTED: The Frightful Fourteen
- The Boater’s Guide of NH
- Local group brochure



Infested Waterbodies in New Hampshire (as of 1/3/11)

Waterbody (TOWN)	Species
Arlington Mill Reservoir (SALEM)	Fanwort
Ashuelot River (WINCHESTER)	Variable milfoil
Balch Lake (WAKEFIELD)	Variable milfoil
Barnstead Parade Pond/Suncook (BARNSTEAD/ PITTSFIELD)	Variable milfoil
Belleau Lake (WAKEFIELD)	Variable milfoil
Big Island Pond (DERRY)	Variable milfoil, Fanwort
Big Turkey Pond (CONCORD)	Variable milfoil
Bixby Pond (EPSOM)	Variable milfoil
Brindle Pond (BARNSTEAD)	Variable milfoil
Captain Pond (SALEM)	Variable milfoil
Cheshire Pond (JAFFREY)	Variable milfoil
Cobbetts Pond (WINDHAM)	Variable milfoil
Cocheco River (ROCHESTER)	Variable milfoil
Connecticut River (CHARLESTOWN)	Eurasian milfoil European Naiad Didymo (rock snot) Curly-leaf Pondweed
Contoocook Lake (JAFFREY)	Variable milfoil
Contoocook River (VARIOUS LOCATIONS)	Variable milfoil
Crescent Lake (WOLFEBORO)	Variable milfoil
Danforth Pond (FREEDOM)	Variable milfoil
Dublin Lake (DUBLIN)	Variable milfoil
Flints Pond (HOLLIS)	Variable milfoil
Forest Lake (WINCHESTER)	Variable milfoil
Glen Lake (GOFFSTOWN)	Variable milfoil
Gorham Pond (DUNBARTON)	Variable milfoil
Halfmoon Pond (BARNSTEAD)	Variable milfoil
Hopkinton Lake/Dam (HOPKINTON)	Variable milfoil
Horseshoe Pond (MERRIMACK)	Variable milfoil
Jones Pond (Stumpfield Pond) (NEW DURHAM)	Variable milfoil
Kimball Pond (HOPKINTON)	Variable milfoil
Lake Pemigewasset (MEREDITH)	Variable milfoil
Lees Pond (MOULTONBOROUGH)	Variable milfoil
Little Suncook River (EPSOM/NORTHWOOD)	Variable milfoil
Little Turkey Pond (CONCORD)	Variable milfoil
Locke Lake (BARNSTEAD)	Variable milfoil
Long Pond (DANVILLE)	Variable milfoil
Mascoma Lake (ENFIELD)	Eurasian milfoil Variable milfoil, Fanwort
Massabesic Lake (AUBURN)	Variable milfoil, Fanwort
Massasecum Lake (BRADFORD)	Variable milfoil
Melendy Pond (BROOKLINE)	Variable milfoil
Merrimack River (BOSCAWEN/ CANTEBURY/CONCORD)	Variable milfoil
Mine Falls Pond (NASHUA)	Variable milfoil, Fanwort

Waterbody (TOWN)	Species
Monomonac Lake (RINDGE)	Variable Milfoil
Mountain Pond (BROOKFIELD)	Eurasian milfoil
Nashua River (NASHUA)	Variable milfoil Eurasian milfoil Fanwort
Northwood Lake (NORTHWOOD)	Variable milfoil
Nutts Pond (MANCHESTER)	Brazilian elodea
Opechee Lake (LACONIA)	Variable milfoil
Ossipee Lake (Broad Bay) (FREEDOM)	Variable milfoil
Ottarnic Pond (HUDSON)	Variable milfoil, Fanwort
Paugus Bay (LACONIA)	Variable milfoil
Pearly Pond (RINDGE)	Variable milfoil
Pemigewasset Lake (NEW HAMPTON)	Variable milfoil
Pemigewasset River (SANBORNTON)	Variable milfoil
Phillips Pond (SANDOWN)	Fanwort
Piscataquog River (GOFFSTOWN)	Variable milfoil
Post Pond (LYME)	Eurasian milfoil
Potanipo Lake (BROOKLINE)	Variable milfoil
Powder Mill Pond (HANCOCK)	Variable milfoil
Powwow Pond (KINGSTON)	Variable milfoil
Robinson Pond (HUDSON)	Variable milfoil, Fanwort
Rocky Pond (GILMANTON)	Variable milfoil
Rockybound Pond (CROYDON)	Curly-leaf Pondweed
Scobie Pond/Haunted Lake (FRANCESTOWN)	Variable milfoil
Silver Lake (TILTON)	Variable milfoil
Spaulding Pond (MILTON)	Variable milfoil
Squam Lakes (HOLDERNESS/ASHLAND)	Variable milfoil
Squam River (ASHLAND)	Variable milfoil
St Paul's School Pond (CONCORD)	Variable milfoil
Sunapee Lake (SUNAPEE)	Variable milfoil
Suncook Lakes (BARNSTEAD)	Variable milfoil
Sunrise Lake (MIDDLETON)	Variable milfoil
Turtle Pond (CONCORD)	Variable milfoil
Upper Goodwin Pond (CONCORD)	Variable milfoil
Wentworth Lake (WOLFEBORO)	Variable milfoil
Willand Pond (DOVER)	Variable milfoil
Wilson Lake (SALEM)	Fanwort
Winnepesaukee Lake (GILFORD)	Variable milfoil
Winnepesaukee River (TILTON)	Variable milfoil
Winnisquam Lake (MEREDITH/BELMONT)	Variable milfoil

2011 Boater Survey

Instructions: Lake Hosts, complete one row for each boat inspected. *Please write legibly!* Include non-motorized vessels such as canoes and kayaks, as well. For multiple Hosts during one day, give your sheet to the next person. The last person gives all Boater Surveys for the day to the Point Person, or as directed. **Point Persons: MAIL** all Boater Surveys for each 2-week payroll period on "payroll Monday Afternoon," along with the Daily Summary Sheets for that period. **MAIL to: NH LAKES, 14 Horseshoe Pond Lane, Concord, NH 03301.**

PLEASE DO NOT FAX.

Lake Name _____ Town _____ Launch Name/Location _____

Lake Host Name _____ Lake Assn./Cons. Comm., etc _____ Date _____ Time _____

1	Time (when surveyed A=arrive at ramp, D=departed lake)	Bow # and State (if applicable)	Type of boat	Boater's awareness of problem?	Had Decal?	Last water body visited?	Toilets (if applicable)	Plants found A=arriving D=departing	To DES?
					Y = Yes N = No				Y = Yes N = No
1	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N
2	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N
3	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N
4	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N
5	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N
6	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N
7	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N
8	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N
9	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N
10	A		<input type="checkbox"/> inboard/outboard/inboard-outboard <input type="checkbox"/> PWC/jet ski/jet boat <input type="checkbox"/> sail <input type="checkbox"/> canoe/kayak <input type="checkbox"/> other	High Medium Low	Y		<input type="checkbox"/> fixed <input type="checkbox"/> portable	A D	Y
	D				N				N

SUBTOTALS	____ # NH	____ # VT	____ # NY	____ # inboard/outboard/inboard-outboard	____ # High	Decal	____ # fixed	____ # arriving	____ # sent
____ # unique boats	____ # MA (MS)	____ # CT	____ # Other	____ # PWC/jet ski/jet boat ____ # sail	____ # Medium	____ # Yes	____ # portable	____ # departing	
____ # inspections	____ # ME	____ # RI		____ # canoe/kayak ____ # other	____ # Low	____ # No			
PAGE								OF	

2011 Daily Summary Sheet

Instructions: Lake Hosts OR Point Persons, complete ONE sheet EVERY DAY a ramp is staffed by paid and/or volunteer Lake Hosts. Enter the subtotal in each category from ALL Boater Survey sheets per ramp for the day and total the information below. **Point Persons:** *Ensure accuracy of the completed form*, and **MAIL** all Daily Summary Sheets, along with the Boater Surveys, for each 2-week payroll period on "Payroll Monday Afternoon."

MAIL TO: NH LAKES, 14 Horseshoe Pond Road, Concord, NH 03301. **PLEASE DO NOT FAX.**

LAKE ASSN./CONS. COMM. _____ **PERSON COMPLETING FORM** _____

LAKE HOST NAME(S) _____

DATE _____ **TIME: FROM** _____ **TO** _____

LAKE _____ **RAMP SITE** _____

Page	# unique boats	# inspected	Motorized Boat Registration (if applicable)								Number by Boat Type					Boater's awareness of problem			Already had decal?		Toilet if applicable	
			NH	MA (MS)	ME	VT	CT	RI	NY	Other	Inboard outboard I/O	PWC jetski jetboat	Sail	Canoe kayak	Other	High	Med	Low	Yes	No	Portable	Fixed
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
TOTAL																						

If plants were found: _____ # of boats with plants arriving

_____ # of plants departing

of samples sent to DES: _____

NOTES/COMMENTS:

2011 Instructions for Payment of Lake Hosts and Submission of Volunteer Match Sheets

Instructions - Point Persons: Timesheets and Volunteer Match Documentation Sheets for EACH Lake Host and each volunteer (including the Point Person) must be faxed (or emailed) to NH LAKES office **by 4 PM Monday Afternoon** immediately following the end of each pay period (“payroll Monday Afternoon”). **Fax number is 603/224-9442.** The machine is on at all times. Or email to lakehost@nhlakes.org.

Original signed timesheets and volunteer match sheets must be mailed to NH LAKES every two weeks.

NH LAKES cannot pay your Lake Host(s) unless we receive by email or fax your (1) completed and properly SIGNED Timesheet for each Lake Host and (2) completed and SIGNED Volunteer Match Documentation Sheet for each volunteer, including the Point Person, for that period.

NH LAKES cannot pay your Lake Hosts if your group has spent its grant award and has not submitted adequate hard cash for ramp extension to cover additional Lake Host salary and statutory benefits. To avoid Lake Hosts not being paid for work, your group must submit sufficient funding at least one payroll ahead of time.

The Pay Period runs from a Monday through a Sunday, two weeks later.

Below are the Pay Periods through Labor Day, and the dates when Timesheets and Volunteer Match Documentation Sheets are due.

	Pay Period	Documents Due (by 4 PM)
#1	Monday, May 16 – Sunday, May 29	FAX/email: Monday, May 30, by 4PM
#2	Monday, May 30 – Sunday, June 12	FAX/email: Monday, June 13, by 4PM
#3	Monday, June 13 – Sunday, June 26	FAX/email: Monday, June 27, by 4PM
#4	Monday, June 27 – Sunday, July 10	FAX/email: Monday, July 11, by 4PM
#5	Monday, July 11 – Sunday, July 24	FAX/email: Monday, July 25, by 4PM
#6	Monday, July 25 – Sunday, Aug. 7	FAX/email: Monday, Aug. 8, by 4PM
#7	Monday, Aug. 8 – Sunday, Aug. 21	FAX/email: Monday, Aug. 22, by 4PM
#8	Monday, Aug. 22 – Sunday, Sept. 4	FAX/email: Monday, Sept. 5, by 4PM
#9	Monday, Sept. 5 – Sunday, Sept. 18	FAX/email: Monday, Sept. 19, by 4PM

Please note: If you would like your Lake Hosts to work after Labor Day (September 5) you will need NH LAKES approval **in advance**.

Please contact the NH LAKES office at (603/226-0299) or lakehost@nhlakes.org if you have any questions.

2011 Volunteer Match Documentation Sheet (FAX Version)

Instructions: Point Persons and other volunteers, as you volunteer for the Lake Host™ Program, keep track of your time and/or any out-of-pocket expenses by filling in one row for each time you volunteer or incur an expense. (Use another sheet if you volunteer more than 10 times in a 2-week period.) Give your sheet(s) to your Point Person/Managing Lake Host at the end of the payroll period every two weeks. *Be sure to sign your sheet.* **Point Persons/Managing Lake Hosts:** By "Payroll Monday Afternoon (4 PM)," FAX or email each volunteer's sheet (including your own), along with your Lake Host(s) timesheets, to NH LAKES (FAX # is 224-9442. Email is lakehost@nhlakes.org). **Be sure to certify (SIGN) each sheet, prior to faxing or scanning and emailing it.** OR, use the electronic version of this sheet and email to lakehost@nhlakes.org. After faxing or emailing each pay period, **original signed volunteer match sheets must mailed to NH LAKES.**

Payroll Monday Afternoons (4 PM): May 30, June 13, June 27, July 11, July 25, Aug. 8, Aug. 22, Sept. 5, and Sept. 19.

Name of Volunteer _____

Name of Organization _____

Period: from (date) _____ to _____

(1) Date	(2) ITEM (training time; travel time to & from training or ramp; administration time, ramp coverage time, etc.) Indicate which of the above.	(3) Number of Hours (for the item in #2)	(4) Cash Equivalent (Col. #3 x \$20.85/hr. = \$_____)	(5) OUT-OF-POCKET EXPENSES (postage; copies; mileage @ \$0.51/mile) Indicate kind of expense and \$ amt.	(6) Total \$ Amount (column 4 + col. 5)
TOTALS		_____ hrs.	\$ _____	\$ _____	\$ _____

Also, from column #3, please indicate: **Total RAMP Hours:** _____ **Total OTHER Hours:** _____

I hereby certify that the above is correct: _____ Date _____
(signature of volunteer)

Certified by _____ Title _____ Date _____
(must be signed and dated by the Point Person/Managing Lake Host in order to count toward your match)