



Weed Watchin'

An Annual Newsletter for Volunteer Weed Watchers

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Number of Exotic Species Up

Amy P. Smagula, DES Exotic Species Program Coordinator

Hello Weed Watchers, Lake Hosts and others interested in exotic aquatic plants! I apologize for not getting a newsletter out last year, but with the early ice out in April 2010 and then long hot sunny days starting early, the invasive plants kept me too busy for office projects. A lot has happened with exotic plants though!

Grant Funds - For the 2011 season, DES had approximately \$80,000 to award for control projects. To spread the money further, the usual 50% match grants were reduced down to only 30% grants, which allowed us to fund more projects overall, though at a reduced rate. A total of 22 grants were awarded to groups around the state for exotic plant control projects this summer, out of a total of 32 requests.

Milfoil Summit - During the fall/winter of 2010 a Milfoil Summit was convened by the legislatively enacted Milfoil Study Committee. The purpose of the summit was to report out on the current status of exotic plants, program elements, funding, and to solicit input on new ideas for funding, outreach and other critical program elements. At this time, the Milfoil Study Committee is working on following up on items that were generated from the summit, and subcommittees were formed to tackle some of the key issues.

Infestations - There are a total of 85 infestations on 76 waterbodies in New Hampshire, with variable milfoil still taking the lead for infesting the largest number of waterbodies.

Didymo (a.k.a., rock snot) - Didymo continues to be a problem in the Connecticut River, infesting about 54 miles of river from just north of Lake Francis in Pittsburg through Northumberland. In 2009, rock snot was found in Indian Stream, Mohawk Brook and Halls Stream as well. No new didym infestations were docu-

mented in 2010 in New Hampshire, which is good news. We continue to work with the NH Rivers Council, Trout Unlimited and other key groups to get the word out about didymo, disinfection of gear, and prevention activities.

Bi-Annual Program Report - I am hard at work on finishing up the 2009-2010 Exotic Species Program Report. The report summarizes just about every aspect of the Exotic Species Program including funding, control, status of infestations, and much more. Past program reports can be found on the Exotic Species webpage at www.des.nh.gov.

Many more updates and articles are included in this edition of *Weed Watchin'*. If there is something special you'd like to see in future editions, please let us know!

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Help Us Help You!

Please let us know how the Exotic Species Program can better serve you. If there are materials, pieces of information or other items that we can provide to make your job as a Weed Watcher and Lake Steward easier just send an e-mail with your ideas to Amy.Smagula@des.nh.gov.

Thank you for your continued efforts at early detection!



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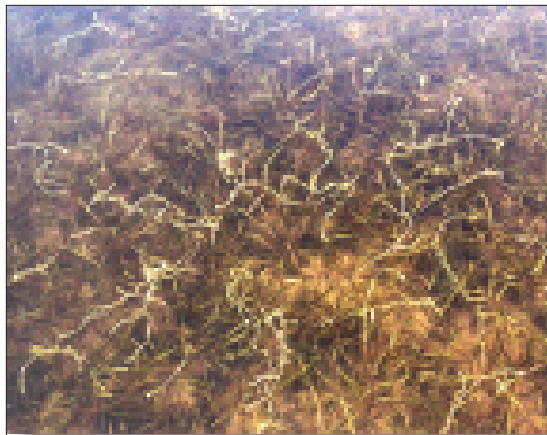
Native Plant Focus

Tapegrass (*Vallisneria americana*)

By Emily Ramlow, DES Exotic Species Program Intern

A native plant that you may find beneath your lake and pond waters or in slow moving streams is tape grass (*Vallisneria americana*). This submerged plant is also sometimes known as water-celery and can be identified by its long ribbon-like leaves. The ideal habitat for tape grass is in the shallows of a waterbody (4-6 foot deep range) where they can grow from 1-3 feet in length. Their long leaves are broad and ribbon-like with larger air-filled cells (lacunae band)

plant is female and another plant is male. The female plant will form a flower at the end of its stem which floats on the surface of the water. The male tape grass plant forms its flower on a short stem which is submerged under water. During the flowering period from July to October, the male flower breaks off and floats to the surface for pollination, where they drift around until they bump into each other (botanists refer to this as "bumper boat reproduction").



Typical growth habit of tapegrass.

One of the great values that tape grass provides is as a food source for ducks and other waterfowl. The waterfowl and sometimes muskrats are able to eat all parts of the plant from the leaves to the fruit. Underwater, the leaves create cool and shady environment for fish. The fish are also able to use the tape grass beds for shelter and food.

Another benefit which comes from this native plant lies in what they are able to absorb. Many submerged plant species like tape grass are able to take in dissolved nitrogen and phosphorus which they use to grow, and in doing so they reduce the amount of available nutrients that may otherwise be used to fuel algal growth in the system.

down the middle of the leaf. Tape grass is often confused with a similar looking plant species called bur-reed. The submerged bur-reed leaves are very similar to tape grass until you look more closely. The way to tell the difference between the two is by looking at the middle length of the leaf. Tape grass has the larger vertically veined cells down the middle and is surrounded by lightly veined edges. The bur-reed on the other hand has a rib on the back of the leaf that bumps up like a ridge and travels vertically down the leaf.

Tape grass is unisexual meaning one

Want to pass this along to a friend? The Weed Watchin' Newsletter can be found online at www.des.nh.gov. Simply go to the Exotic Species page and look under publications.

Tools of the Trade

How To Make A Weed Watcher Buoy

By Emily Ramlow, DES Exotic Species Program Intern

One of the ways that Weed Watching can become more efficient and effective is by establishing a marking system for if or when you spot an invasive plant in your lake. These buoys make it easier for the biologists or divers to find where the invasive plants are located. For water bodies with little to no invasive plants, it is a good idea to have three or four buoys on hand. Those water bodies with many different or large areas of invasive plants should have around eight to a dozen buoys (or more) available to place out in the water to mark active growths of invasives. Here is how to make a Weed Watcher buoy in seven easy steps.

Materials Needed

- Foam pool noodle
- Floating braided poly-rope
- ¾ inch hex nut, coarse thread, zinc plated or similar (2 per buoy unless in areas of deep water invasive plants or strong winds/currents then using 3 per buoy is best)
- Razor blade, small saw or kitchen knife (any sharp cutting device)
- Scissors
- Sharpie

Assembly Instructions

Step 1: Using the razor blade, cut the foam noodle into sections 7 or 8 inches long.

Step 2: Using the scissors, cut the rope into lengths of 12 feet (this length may need to be adjusted based on the mean depth of your lake/pond).

Step 3: Take one end of a rope section and thread it through 2 (or 3) nuts. Use a handful of boat knots or

simple double knots to tie the nuts together at the end of the rope. This is going to be the weight on the buoy so make sure the knots stay.

Step 4: Take the other end of the rope and thread it straight up through the center of the noodle. Once it emerges on the other end of the noodle, bring the rope down on the outside of the noodle to meet at the point where it first entered.

Step 5: Where the ropes meet up is where you will make more boat knots or many double knots to attach the noodle to the rope. Make sure enough rope is allowed to make many knots to secure the noodle with the rope.

Step 6: Take a sharpie or any other permanent marker and write “EXOTIC SPECIES” on either side of the noodle so that the buoy is identifiable as a Weed Watcher buoy.

Step 7: The buoy is almost complete. The last step is to prepare it for storage and plant marking by taking the rope and wrapping it up around the middle of the noodle (the short way) until all of the rope is around the noodle.

How to Use

This is when it is important to make sure the rope has been wrapped around the center of the buoy. The idea is that when an invasive aquatic plant is found, the buoy is simply dropped over the spot and the nuts at the end will weight down the rope which will unravel on its own until it hits bottom. If some rope is still wrapped around the buoy that is perfectly fine and helps keep the buoy much closer to the plant and easier for us to find.



Weed watcher buoy.



Plant Grants,

Continued from page 8

of higher learning (academia) for a technical and scientific evaluation of a key idea that was developed between the scientists and DES. A lot of good information has recently come out of state-funded research projects, including reduction in herbicide use and better information on the selection of aquatic herbicides for key species. Other work has included an evaluation of suction harvesting and the mechanical harvesting of exotic plants.

If you have a project that you'd like to have considered for funding please contact Amy Smagula at amy.smagula@des.nh.gov or 603-271-2248.

EXOTIC PLANT ALERT!

Curly-leaf pondweed (*Potamogeton crispus*)

By Emily Ramlow, DES Exotic Species Program Intern

An invasive plant that has already become established in parts of New England, including New Hampshire, is curly-leaf pondweed (*Potamogeton crispus*). This submerged plant is originally from Europe and has the ability to survive in both freshwater and slightly brackish (slightly salty) water. The ideal habitat for the curly-leaf pondweed is a lake, pond or the backwater areas of rivers and streams with lots of nutrients. It also has the capacity to live in areas with low light and low temperatures.

One of the species-specific characteristics the curly-leaf pondweed has is the ability to continue to photosynthesize under clear ice. This allows it to survive through the cold winters that our New England region has and gives the species a great advantage in the spring since the curly-leaf pondweed can have a head start in growth and production before the native plants.

Beyond the competitive growth advantage, the curly-leaf pondweed can cause other problems for native plants and those who use the water body for recreation. Curly-leaf pondweed can create very dense mats of vegetation which cover the surface of the water. These mats can become wrapped around boat propellers or other recreational gear, and inhibit other water-based recreation activities.

Curly-leaf pondweed also has an interesting life his-



Curly-leaf pondweed stem and turion (upper right).

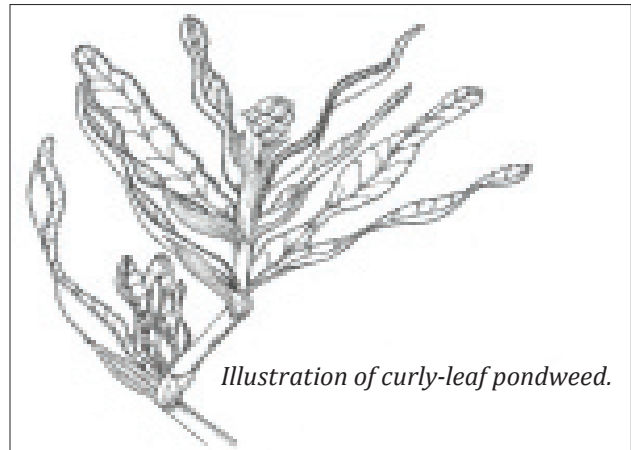


Illustration of curly-leaf pondweed.

tory. The plant will flower and fruit in the late spring and into the early summer before dying and leaving the fruits and turions (overwintering buds) for the rest of the summer. In the late summer and fall the turions create small curly-leaf pondweed plants which are then able to survive through the winter. The die out of the adult plants in early summer could result in nutrients being released into the water column, reductions in oxygen, and potential algal blooms in some systems.

Curly-leaf pondweed is currently found in just a few waterbodies in New Hampshire, including Rockybound Pond in Croydon, the Nashua River in Nashua and in portions of the Connecticut River.

For identification, curly-leaf pondweed has leaves which are oblong with very curly edges (like lasagna noodles!), ¼ inch wide, and 4 inches long with teeth along the margins. It is a perennial plant with a thick, hard, fruiting body at the top of the plant. It can be confused with some native pondweeds, including clasping-leaf pondweed (*Potamogeton perfoliatus*), but the way to tell the difference is that the native clasping-leaf pondweed does not have teeth on the margins of the leaves. So, if the plant species does have teeth on the margins and it has the above listed characteristics, then it is the invasive pondweed and should be reported.

Weed Watchers in Action

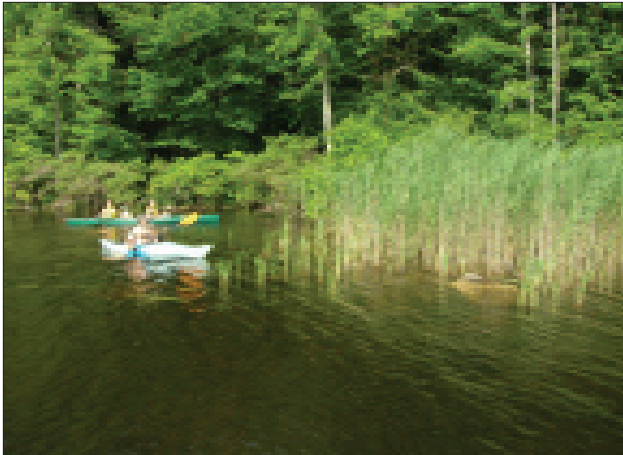
The Weed Watchers of Pawtuckaway Lake: A History and Lessons Learned

By Stephen Soreff, Lake Pawtuckaway Weed Watchers

Beginnings

Our rebirth as a Weed Watch force commenced in June 2007, at the Pawtuckaway Lake Improvement Association's (PLIA) annual meeting. PLIA President Tom Duffy, in presenting the work of the Lake Host program, noted the recent absence of Weed Watcher activity. I along with my partner Peggy Tucker volunteered to rejuvenate it. At that meeting we all naively believed that our wonderful lake was free of any exotic weeds.

Our mission then and now is to back up the Lake Host program. The inspection of vessels coming into our water represents the first line of defense. They are the gate keepers. If you can stop milfoil and other exotic aquatic plants before they enter the lake, you have won



Weed Watchers on Pawtuckaway Lake in Nottingham

the battle for that day. But what if you missed an exotic weed or it enters the lake by a different route, what then? Here is where we the Weed Watchers come in: to patrol the shoreline in order to detect any exotic weed. Like many forms of cancer sooner is much better than later in terms of detection. Little did we know that our work would soon expand to eradication.

Recruitment

There were three groups who initially joined our ranks. First, there were the volunteer Lake Hosts living on the lake who wanted to get more involved. These



Weed Watchers on Pawtuckaway Lake sporting Weed Watcher T-shirts.

represented a great asset since they had already been through Lake Host training in Concord which included information about plant identification. The next group which has provided the backbone of the team were those individuals who lived on the lake and had an interest in protecting it but had no exotic weed training. Finally, there was a small number of folk who simply frequented the lake for recreation and wanted to be part of the effort. We had the troops but most lacked elemental knowledge of exotic aquatic weeds.

Training and First Year's Adventures: The Summer of 2007

At this key moment in our development, we needed training. A biologist from the Department of Environmental Services came and ran a training at our home on the lake. We had a number of attendees from the lake for the training. We gained from the training the ability to be able to better identify the exotic weeds, and the knowledge that our lake, because of its shallow depth and long shoreline, was a prime environment for exotic aquatic weed infestation.

At the training one of our lake residents provided his pontoon boat as a floating classroom. As we toured the lake the DES biologist raked up aquatic plants, discussed what she found, and gave plenty of time for "hands on" identification and questions. Our lake is long and dendritic, and we migrated into some of the deeper coves and bays in search of plants. One couple on the lake was

continued on next page

Pawtuckaway Lake's Story, cont.

concerned with some new growth they noticed in one particular area of the lake. We went to investigate. The DES biologist identified and confirmed we had a large area of growth of common reed (*Phragmites australis*), an invasive plant. So went our notion we were free of any weed danger!

The DES biologist indicated that it would take several years to eradicate that infestation. First, by pulling and cutting the weeds and then later returning when the lake was down to attack their roots. Indeed, it did take us several years to gain the upper hand.

This discovery led to a summer and fall campaign against this plant. First, the team scoured the lake for other infestations. They found a total of seven locations including the original site. They then commenced throughout the summer and into the fall cutting, pulling and removing the reed from those locations. It was a wrestling match to get these plants out. We did see evidence of its strong ability to rejuvenate as we revisited some of our earlier efforts, but the new growth was less dense. In the fall, with the water down, we attacked their extensive, protracted and lengthy rhizome (root) systems with some success. The only way to permanently eradicate the *Phragmites* is to not only cut them off but also to pursue their rhizomes all the way into the mud.

Lessons

In the process of discovering and then beginning to eradicate the seven infestations of *Phragmites*, we learned many things. First, to paraphrase a famous idea, it takes a village to protect a lake (see the pictures of the team effort). We mounted many assaults on these infestations- with a number of vessels: several battle-ships, aka, pontoon boats and many destroyers, aka, kayaks and canoes. Numerous folk participated in the water and on the vessels-young and old, lake residents and visitors.

Second, wear thick gloves. When attacked, the broken *Phragmites* fight back and cut. Several received painful hand gashes.

Third, wear thick soled water shoes. The *Phragmites* lives in rocky bottom areas so standing in the water while pulling or cutting them can be difficult and precarious.

Fourth, find and use the right tools. There are two phases of the assault process. In the summer, the initial efforts involve pulling and cutting them. Moments of triumphs occur here when team members can firmly extract the *Phragmites* with the longest rhizomes. Garden tools work well such as clippers. In the fall, to pursue the extensive rhizome networks, use garden rakes, hand-



Waging war on *Phragmites*.



hold three pronged tools pitchforks, claw-like implements and hoes. Tracing the rhizomes to their points requires kneeling, so wear knee pads.

Fifth, have an exit strategy. Namely, what are you going to do with the vast amount of *Phragmites* you have 'harvested.' We employed several methods. We used an empty canoe to contain and then carry the pulled weeds to shore (see canoe photo). If we had only one pontoon boat, we would bag the weeds in industrial black plastic bags. In either case we kept the weeds for months in those bags or brought them to landfill areas far from any body of water. We discovered that our town dump/recycling center was less than enthusiastic about receiving our weed harvest.

Sixth, is a public relationship piece. Although when we pulled weeds, we were in the lake, we were also in front of homes. The dwellers watched us with concern and curiosity. Each time we carefully explained to them what we were doing and why. Only one person has objected to our efforts. In that case, we had the backing of DES that these invasive weeds are in the lake, which is under state jurisdiction, and therefore, they had to be removed.

Pawtuckaway Lake's Story, cont.

Finally, seventh, it is team effort and actually fun. We involved many folk in the adventures and enjoyed working together.

The Big Picture

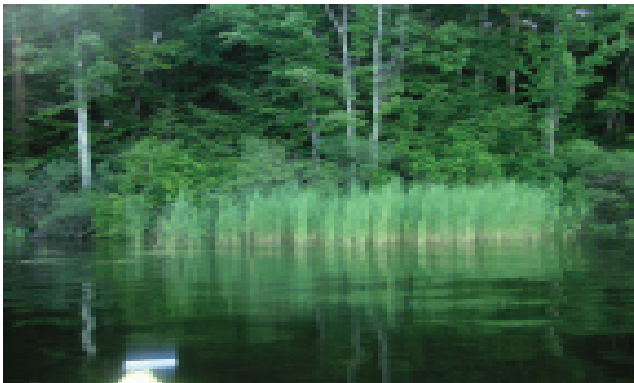
Although our first years seemed focused on the seven areas of Phragmites on the lake, the overall mission was to protect the entire lake. To that end, we began at the initial training with the state biologist to divide the lake's shoreline in sectors. The Weed Watchers either volunteered for or were assigned to one of these sections to patrol at least once a month during the growing season. In the beginning, we encouraged folk simply to get used to their area and become familiar with the normal growths there. Then, later, they would be better able to spot any new and potentially exotic weeds.

Rapid Response

Although regular surveillance of the lake is the key, once someone finds a 'weed' it is important to react swiftly. Here is an example of a situation last summer 2010. A purple loosestrife infestation was spotted on Horse Island.

The call came in on Friday July 9, 2010 at 6 PM from Lilia Guerra from Sachs Road. She reported a sighting of purple loosestrife on the Eastern edge of Horse Island where it opens to the South Channel. We agreed to meet Saturday morning weather permitting to see the site. We met in a downpour and I pulled one of the suspicious plants.

Peggy Tucker then took the plant sample to Therese Thompson on Sunday morning. They both were checking boats at the Fundy at 4 AM for a fishing tournament Sunday. Therese confirmed our concerns and recommended pulling the plants and removing of their flower/seed heads (the pinkish purple flower on top of it). At 5 PM on Sunday, Gary St. Pierre, Peggy Tucker and Steve Soreff returned to the Horse Island site. First, we cut



Summary of PLIA's Efforts in Summer 2010	
Month	Patrol Hours
June	46
July	53
August	40
September	18
Total Hours	157

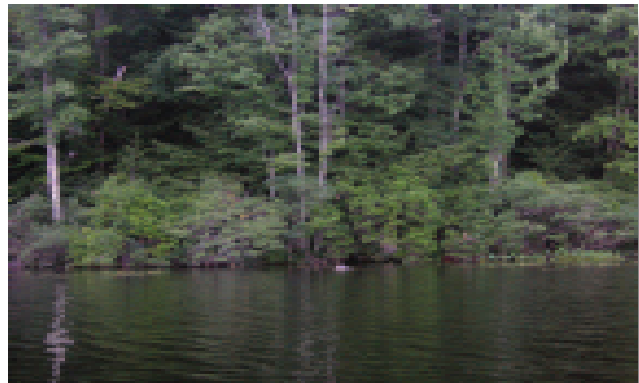
and bagged all the heads off the now flowering plants, then pulled all of them out. It proved to be a localized but extensive number of purple loosestrife plants. In checks throughout the rest of the season none were detected.

Vigilance, Persistence and Success

Vigilance and persistence led to the success of the Lake Pawtuckaway Weed Watch Warriors. We remain continuously on patrol whether in our assigned sections or when just out for fun. Indeed, it is hard to not be looking out for Phragmites wherever we travel. We see them in Raymond near its center and on the bike path. I even spotted some huge Phragmites while traveling in Israel. But once found, the persistence comes in. As the state biologist indicated when she labeled our first discovered Phragmites infestation between the Twin Island: it will take time to eradicate it. And it did. We attacked that and six other locations on the lake summer and fall, rain or shine and day after day. But that determination has led to our success. When we go back, we see that the original infestation is gone. We see normal lake plants and a healthy shoreline.

Acknowledgements

Our achievements have been facilitated by the support and training by Department of Environmental Services, the Lake Associations, Lake Hosts and the PLIA. And thanks to all the now nearly 100 people who have patrolled the lake, pulled the weeds, followed the rhizomes, transported the Phragmites from the lake, and supported our efforts. It takes a community to have an exotic weed free lake.



Phragmites on Pawtuckaway Lake before (left) and after (right).



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Exotic Plant Grants for Prevention, Research and Control

By Amy Smagula, Exotic Species Program Coordinator

The DES Exotic Species Program provides grants for control activities, prevention activities and research activities related to exotic aquatic plants in the state.

Control Grants

Many of you on infested waterbodies may have benefited by one or many grants over the years for control of exotic plants in your waterbodies. Control grants can be used to supplement local funds for herbicide treatments, simple dive work, Diver-Assisted Suction Harvesting (DASH) work, or other appropriate control techniques for exotic aquatic plants. Requests for grant funds are due by September 15th of each year, for work to be performed the following summer. This deadline allows time for DES to perform a field survey of your waterbody so that an updated map of the infestation can be used to obtain bids, which are due by October 15th of each year. The grant cycle for the control funds is as follows:

Control Grant Cycle Calendar:

September 15 of each year – Completed application form or letter of request for grant funds due

October 15 of each year - Bids/quotes due to DES for re-

view (based on maps provided by DES)

November 30 of each year - Announcement of Grant Recipients

Prevention Grants

Prevention grants are available for projects aimed at somehow preventing exotic plant infestations in New Hampshire waterbodies. Much of this funding is allocated to the Lake Host Program coordinated by the NH Lakes Association. NH Lakes uses state prevention grants funds, along with other funds, to implement a program on each waterbody to educate boaters and conduct courtesy boat inspections so as to prevent new infestations of exotic aquatic plants. To date, there have been no new infestations in waterbodies that have an active Lake Host Program in place.

Research Grants

Also, to learn more about the biology, ecology and control of exotic aquatic plants, DES implements a Research Grant Program. Funding for this program is a little more exclusive and is often awarded to institutions

Plant Grants, *continued on page 2*