Conducting a Weed Watcher Survey

Thank you for taking an interest in the Volunteer Weed Watching Program! Your efforts to monitor a lake, pond or river and report any new or suspicious species to the Department of Environmental Services (DES) are greatly appreciated. The information that you gather on a regular basis will provide a long running history of the aquatic plants and other organisms in your waterbody. Your efforts will also ensure that if an aquatic invasive species enters your waterbody, actions can be taken immediately by DES to address the infestation.

While the program is referred to as the "Weed Watcher Program," it's actually intended to be a monitoring program for any type of aquatic invasive species, plant, animal or algae (or any others that may come along).

To prove how important volunteer Weed Watchers are, several new infestations of aquatic invasive species that have been identified early on have allowed biologists and managers to control the plants or organisms before they spread to large areas of the waterbody. The term eradication is not often applicable to aquatic invasive species, but if early detection occurs eradication can still be feasible.

Following is a list of resources that you will need on the waterbody during a survey, as well as some recommendations on how to conduct a survey. You will, over time, develop your own strategy that works for you and your group, but these recommendations may help you in getting started.

Things that you will need:

- Small boat with a short-shaft motor, canoe, kayak, or row boat
- One person to drive the boat, and one or more Weed Watchers
- Plant and animal identification books, sheets, or cards
- Outline map of the lake or pond and pens/pencils
- Small rake with a long handle
- Zip-lock bags
- Polarized glasses or view scope (optional)
- GPS Unit (optional)
- Marker buoy system (as simple as a brick or rock connected by rope to an empty bottle or buoy).

Recommendations:

1. Depending on the size of your waterbody and the number of volunteers you have, it is recommended to use a map of your waterbody to break the shoreline up into segments, and to assign these segments to teams of monitors. It is easier to become familiar with smaller segments, and it also breaks up the work for everyone, so that one person does not feel as if they have the whole lake as their sole responsibility. Segments can usually be assigned to an individual or team that lives along that segment. One person should be assigned as the lake 'Captain', and should be the person that all other teams report to if there are any suspicious

findings. The Captain should also check to make sure that each segment is monitored on the schedule developed by the team.

2. Once you begin monitoring, move slowly around the perimeter of the waterbody, as close to shore as possible. A weaving or zigzag pattern away from the shoreline will enable you to cover a larger area, including slightly deeper waters (15 feet deep and less, but out to at least as far as sunlight penetrates to the bottom, where you can see bottom). If your waterbody is a shallow basin (maximum depth of less than 15-20 feet) aquatic life may extend beyond the near shore area, and a more intensive search will be necessary to cover more area.

3. Plan for days (or time periods) with calm winds. Surveys are best conducted on a calm day as ripples and small waves may prevent you from seeing below the surface of the water. It is also a good idea to survey when the sun is higher in the sky, so sunlight penetrates deeper into the water, for maximum visibility.

4. Observe the plants and animals as you travel along the edge of the waterbody, and out to where you can no longer see bottom. Be sure to scan the surface of the water and look below the surface for submersed species. Also, scan the shoreline to see what plants have washed up, as this can also be telling of an infestation (generally lakes with infestations have pieces of the invasive plants washing up on shore).

For the submersed species, carefully pull up a small piece of the plant with a rake if necessary to aid in identification (being careful not to disturb the lake bottom, or to create fragments of the plant). Make notes of what you find so that you can keep records of plant species and abundance.

Using a numeric or alphabetic system where each plant is given a code letter or number is often an effective way to map the plants (see example enclosed). You may find it helpful to use an outline map of your waterbody to make notes on as you move around the perimeter. There is no need to document every plant or animal, but if an area of plants is particularly dense, you may like to indicate that by placing letters closer together.

This is an excellent way to document the location and abundance of a plant, both for current use, and for historical reference in the future.

You also do not have to map native plants. You can simply search for anything that is suspicious or obviously invasive.

5. Pay extra attention to boat launch areas and swampy protected coves of the lake or pond, and areas where the wind usually pushes things that drift in the lake. These are areas that may provide good habitat for exotic plants due to high use or higher nutrients, respectively. Aquatic invasive species in particular usually take root near boat launch sites first.

6. **BEWARE OF THE LOOK-ALIKES!** A number of plants may resemble invasive species. Bladderwort, waterweed (Elodea), coontail, water marigold, and others can easily be confused with exotic species like milfoil and fanwort. The look-alikes have distinctive variations, however. Use your laminated plant identification sheets to help distinguish between similar types of plants, and when in doubt, ask DES for help.

7. Be aware of what washes up on the shore during high winds and storms. Aquatic Invasive Species of plants often fragment, or break apart during disturbances to the water. These pieces wash up on shore in mats of intertwined plant material.

8. Keep an eye out for aquatic invasive animals, like zebra mussels or Asian clam. These and other aquatic invasive animals are spreading through the region, and are literally only a boat ride away.

Animals are often found on the bottom of the waterbody, on or in sediment (for clams, mussels and snails), or on hard surfaces underwater (for zebra mussels). Some species, like spiny water flea, are usually mobile in the water column. Animals can be had to see though, since many have microscopic life phases, particularly the larvae.

9. If you find a plant or mussel species that looks suspicious, please contact the Department of Environmental Services **immediately**. Quick identification and reactive techniques can usually aid in the successful management of new infestations.

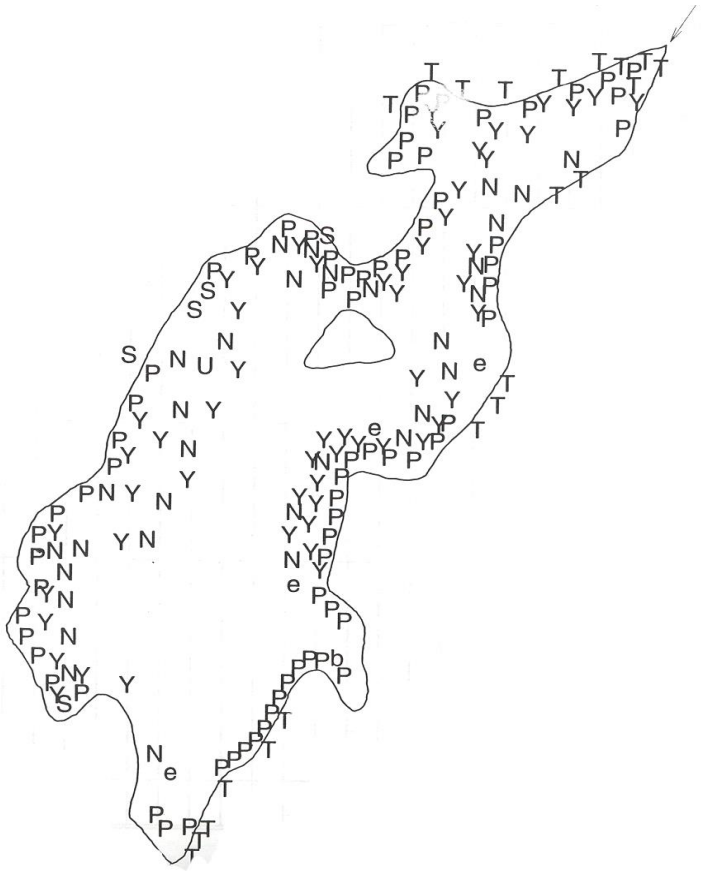
We *do* encourage voucher specimens, with representative specimens (collected carefully so as not to spread them) either dropped off, mailed, or emailed to DES for verification. Details are included in the following pages regarding voucher specimen collection and submittal.

10. We recommend that Weed Watching be done from May through September, once per month during this timeframe is recommended. At a minimum, a survey in June and another in early September should be conducted. It is important to know that *many exotic plants can grow up to an inch per day* or more under optimum summer temperature, light, and nutrient conditions, and animals can replicate themselves quickly, within hours or days, and growth is exponential.

And finally, remember that native aquatic plants are important in the ecological balance of your lake or pond. Plants provide shade, food, fish and invertebrate habitat, and diversity in the aquatic environment. It is a natural progression for lakes to gradually become more nutrient rich over time and to have a greater abundance of plants. This process is taking place in lakes and ponds all over the world, and may occur faster in some lakes than in others.

Establishing a Weed Watcher program on your lake or pond is one way to document these changes and find problems early- it's also a great way to get out and enjoy nature! And remember, it involves more than just plants---please keep an eye out for anything new, fast growing, and unfamiliar.

Example of Lake Outline Map With Plant Symbols



Where:

P=	*Pickerelweed*
Y=	*Yellow water lily*
N=	*White water lily*
T-	*Cattail*
e=	*Waterweed*
S=	*Bur reed*
U=	*Bladderwort*
b=	*Bulrush*

What To Do If You Think You've Spotted An Aquatic Invasive Species

1. Note the location of the species in the waterbody (find reference points on shore or a nearby island). Throw your marker buoy into the waterbody to mark the exact spot of the specimen that is in question.
2. Collect a representative specimen of the plant or animal you think is invasive (a piece of the stem with leaves is necessary, as well as any flowers or fruits if they are present, or a single example of the animal).
3. Wrap the collected specimen in a moist (not dripping) paper towel, place it in a resealable plastic bag, put that in an envelope, and mail to the Exotic Species Coordinator at:

Amy P. Smagula
NHDES
29 Hazen Drive
Concord, NH 03301

4. Be sure to include your name and phone number, e-mail, and the name of the waterbody and the town in which it is located.
5. We will identify the specimen and notify you of its identification. We will then take any appropriate management strategies if it is an invasive species.
6. BE SURE TO MAIL YOUR SPECIMEN EARLY IN THE WEEK SO THAT IT DOES NOT OVER-WEEKEND BEFORE IT IS IDENTIFIED.

-OR-

1. Take a digital image (using a smartphone or digital camera) of the specimen that you've collected. Be sure to use a representative specimen of the plant, with fruit or flowers, if available, or animal. Place a pen or coin next to the specimen to provide some sense of scale.
2. E-mail it as an attachment to Amy Smagula at **Amy.Smagula@des.nh.gov** for identification. Be sure to include a message with your name, phone number, and waterbody name in the e-mail.