

AIS Patrolling Techniques or How to Hunt for Aquatic Invaders

WHEN TO PATROL

- **Late June through September** is generally the best time of the year to survey. That said, climate warming seems to be shifting that timing to earlier than July and holding later into October. Prior to July, many aquatic plants are not fully developed. Emergent flowering structures are sometimes needed for plant ID but the flowers do not typically start to develop until July. Understand that one invasive aquatic plant, Curly Leaf Pondweed is an exception to this rule, usually reaching maturity by late spring to early summer.
- Check the conditions before going out. The best times are when the surface of the lake is calm, when there is minimal glare and reflection, and when the water is clear.
- Going out early AM often offers the best light and lightest winds.
- Check the weather forecast, including wind and wave activity, cloud cover, angle of the sun, and possible change in water clarity.
- Consider the amount of time you have available and how large an area you can cover – the patrol zone maps are a useful aid.
- Build safety in your outing
 - ✓ Best not to go out alone
 - ✓ Wear a PFD
 - ✓ Be prepared for sudden changes of weather
 - ✓ Many eyes make light work!
 - ✓ Go out with a buddy and divide the labor
 - ✓ Observations will be more thorough
 - ✓ Both team members can watch for hazards

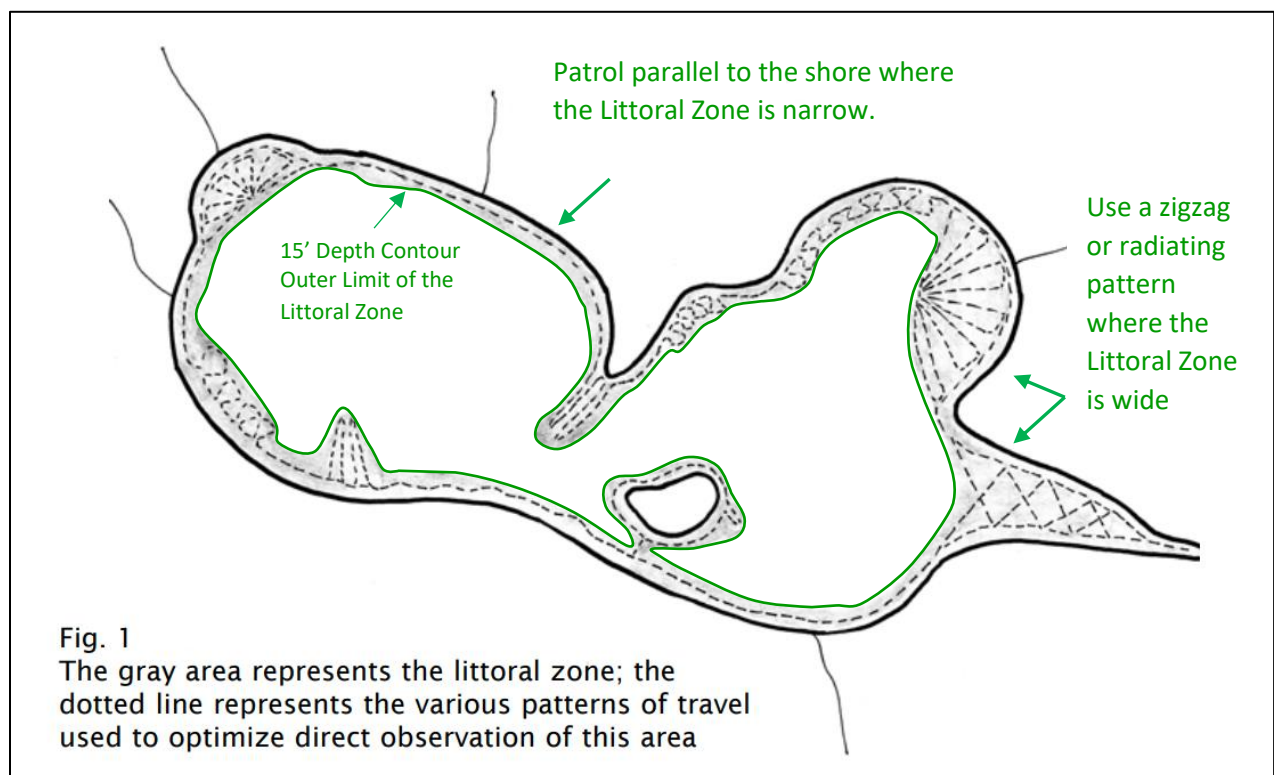
WHAT TO TAKE WITH YOU

- Laminated guides of Native and Invasive species.
- A copy of the Zone map(s) you are patrolling in.
- Grabber to aid reaching into the water for samples.
- Phone in a waterproof bag to photograph samples, and to take coordinates of anything suspicious (we recommend the Solocator app).
- Weighted float to mark the location of anything suspicious.

- Ziplock bags to store samples you collect.
- White sample tray and/or tennis ball container to better examine specimens you collect. Use a coin or something similar as a scale.
- Polaroid sunglasses to reduce glare on the surface of the water.
- Your patrol vest to raise awareness of what we do.

PATROLLING TECHNIQUES

- **Surveys are to be done within the width of the shore's littoral area.** It extends from the shoreline to the depth at which it is no longer possible to see the lake bottom. Very clear sections may support rooted plants at depths of 15-20 ft. Shallow coves may support rooted plants from shore to shore. The outer limit of the littoral zone is marked on each of the Patrol Zone Maps
- The course your survey takes must take into consideration how wide or narrow the littoral section is.
 - ✓ Where the lake margin is steep, a good strategy is to plot a straight course that is roughly parallel to the shore, with the deep drop on one side of the boat. Then scan towards the shore. It might be necessary to double back for a better viewing of that area closest to the shore.
 - ✓ In wide shallow areas then make a perpendicular or zigzag traverse to cover the width and length of the area. Sometimes the pattern might be a cross-weave from shore to shore inside a narrow inlet.



COLLECTING SPECIMENS

Collect specimens when a closer look is needed to distinguish a native plant from an invasive one or if you suspect a Look Alike. All you need is a small segment from the top of the plant in question: reach down into the water and snip it off with your fingernail with a clean cut.

- REMEMBER that many aquatic plants (native and invasive) can spread through fragmentation. Avoid disturbing plants unless a specimen is required. NEVER yank at the entire stalk to break off a piece of it. Avoid disturbing its roots at all costs (should the plant be an invasive!)
- If you can't reach the plant in question with your hand, then use a small lawn rake (even an extendable back scratcher can work) to gently get at it. Please be sure to follow up and use a small net to scoop up the fragments or seeds in case you have just found an invasive plant (!)
- Place your specimen in the white tray with water or even a recycled tennis ball container will work to see how the plant floats out its leaves/branches.
- This is when you can decide whether you want to know what your plant is. Study it right in the boat or take it home and study it there.
- If you leave the site, then be sure to mark your location in several ways to assure its location: GPS image + flagged float + grid location found in your Zone map.

PLANT IDENTIFICATION

Snip off a cross-section of the stem. And study the leaf formation, its edges, and how the leaves/branches are configured.

- **TAKE A SHARP and DETAILED PHOTO of the specimen** - This will help what the naked eye can't see, and it will help others when you post your find on the blog.
- Or use a magnifying lens to see the finer details of the plant
- Use your laminated plant ID sheets
- And/or both the DES book for plant identification and the Maine Field Guide to Invasive Plants. Each of these references complement each other.
- However, if you need further confirmation, please reach out to a patrol leader, or another member of the patrol.
- **CONTACTING AMY SMAGULA NH DES** (Amy.Smagula@des.nh.gov) If all of the above does not seem to help to reach a final ID then send a digital photo to Amy Smagula of NH DES. She is their limnologist/exotic species program coordinator and makes herself immediately available to use as a reference and educator when you have exhausted your own resources. **YOUR PHOTO NEEDS TO INCLUDE:**
 - The plant's stem + branches/ leaves that illustrates their formation on the stem.

- Add fruit or flower, if available.
- A cross section of the stem showing number of leaves/branches.
- Include a coin for size contrast.

POST YOUR RESULTS ON THE BLOG

Be sure to post your results on the AIS Blog. Things to include:

- Where you've been (Zone and Grid Numbers or a good verbal description) so we can track which portions of the lake have been checked.
- Anything of interest that you've seen to share with the rest of the AIS team. Include photos.
- If it is something suspicious be sure to include a detailed description of the item and a location including lat/long coordinates and photos.
- If you are unsure of anything you've seen post a question(s) for feedback from the rest of the team.
- If you need help covering your Zone let us know which areas you need help with.