Preventing the Spread of Aquatic Invasive Species in New Hampshire's Lakes

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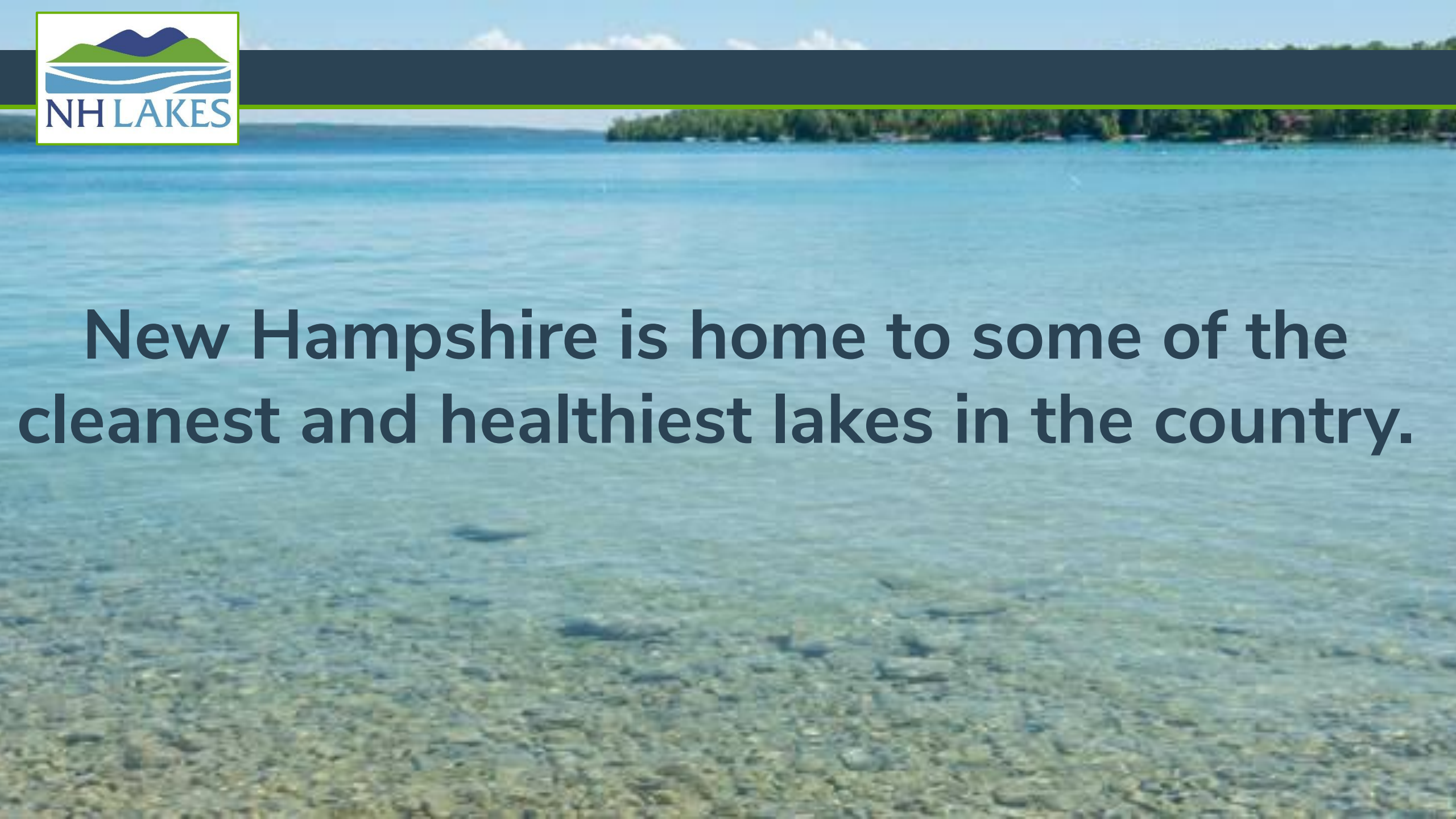
Preventing the Spread of Invasive Species in Our Lakes

- Introduction to Invasive Species
- The State of Our Lakes
- Prevention
- Rapid Response
- Management of Infestations
- What You Can Do to Help



New Hampshire is home to some of the cleanest and healthiest lakes in the country.

But our lakes are threatened...

Aquatic invasive plants and animals hitchhike between waterbodies on boats, trailers, and recreational gear that has not been properly cleaned, drained, and dried.

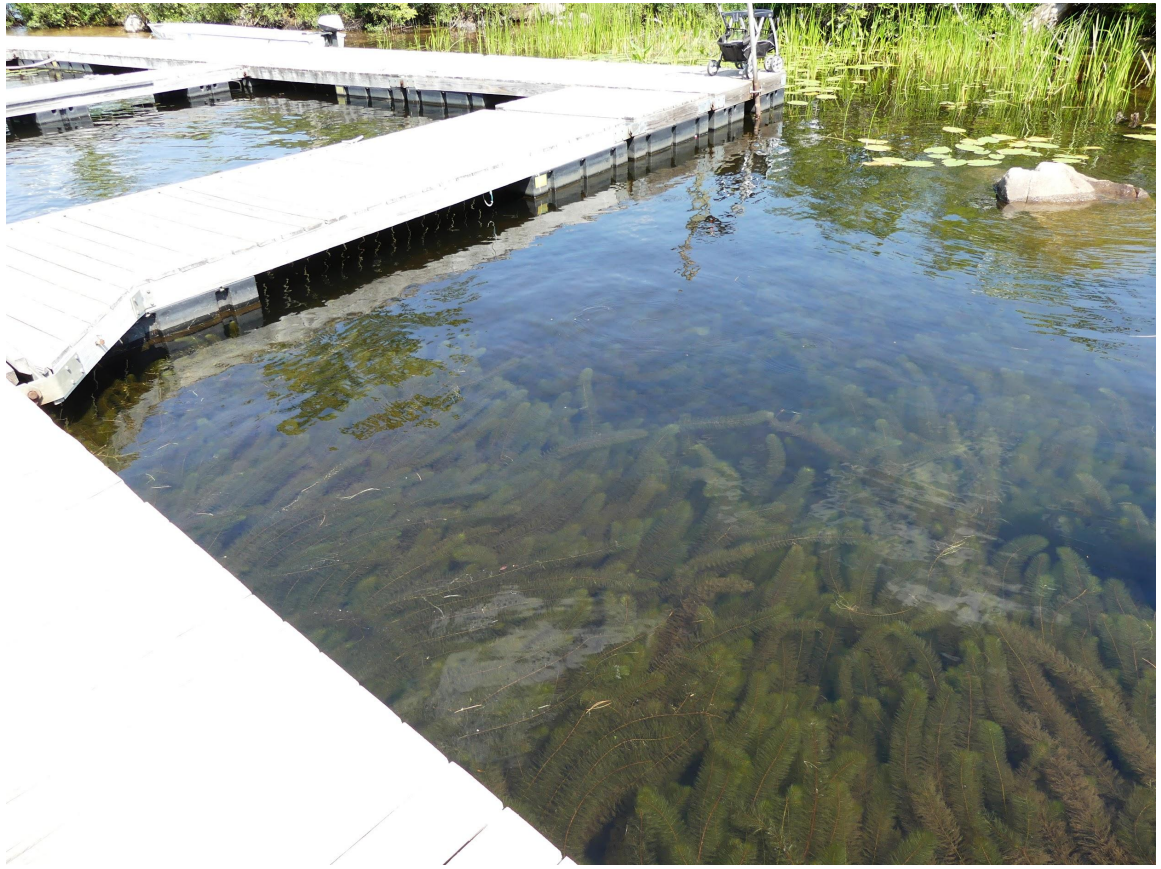
Just a few inches of a plant, and in some cases just one animal can cause a huge problem.

Aquatic Invasive Plants and Animals…

- Once established, make recreation dangerous and unpleasant.
- Overgrowth disrupts the ecological balance of waterbodies.

Aquatic Invasive Plants and Animals…

- Infestations reduce shoreline property values.
- Control of infestations can be difficult and expensive.
- Eradication is often infeasible.
- Infestations can result in water quality impairments



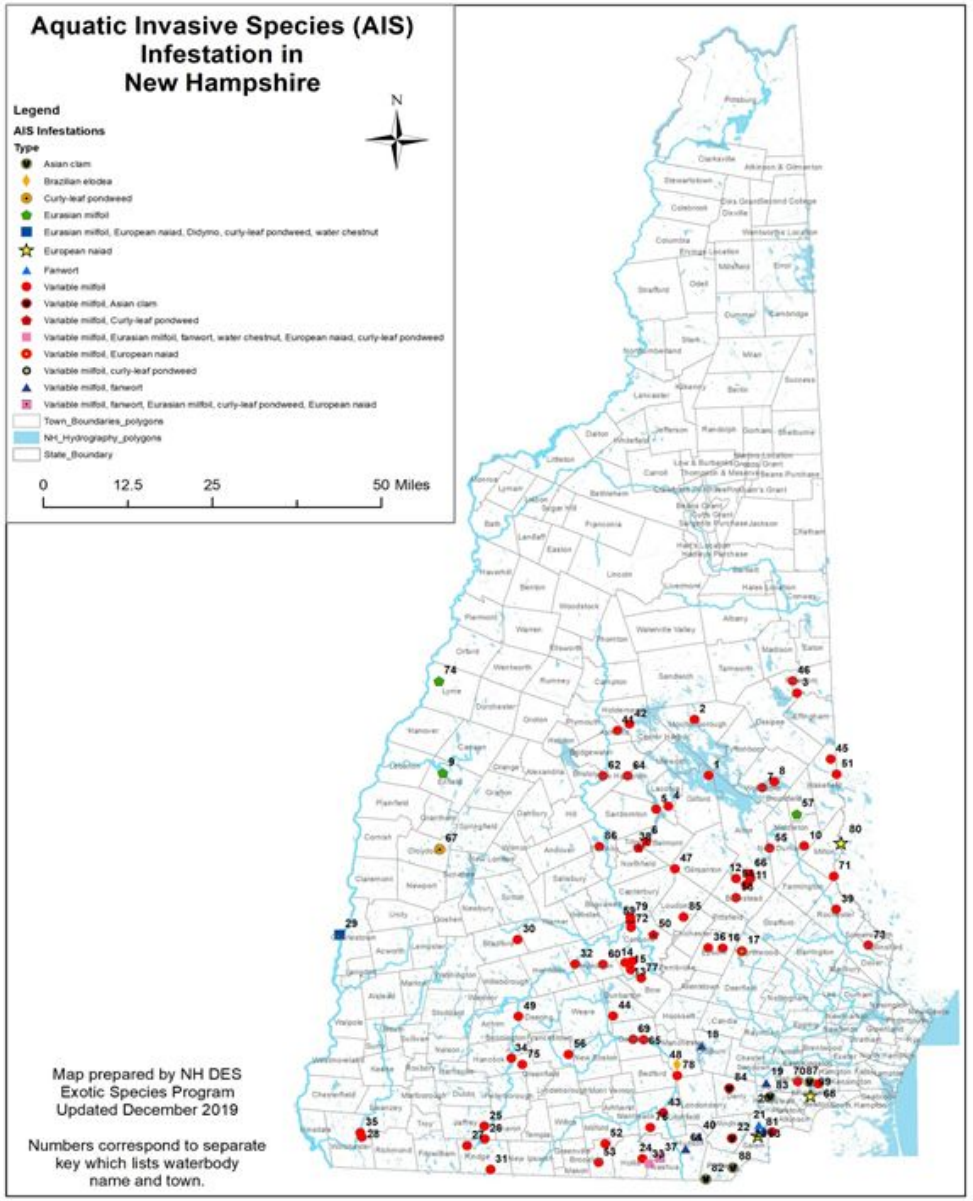
State of Our Lakes

90 Infested Waterbodies

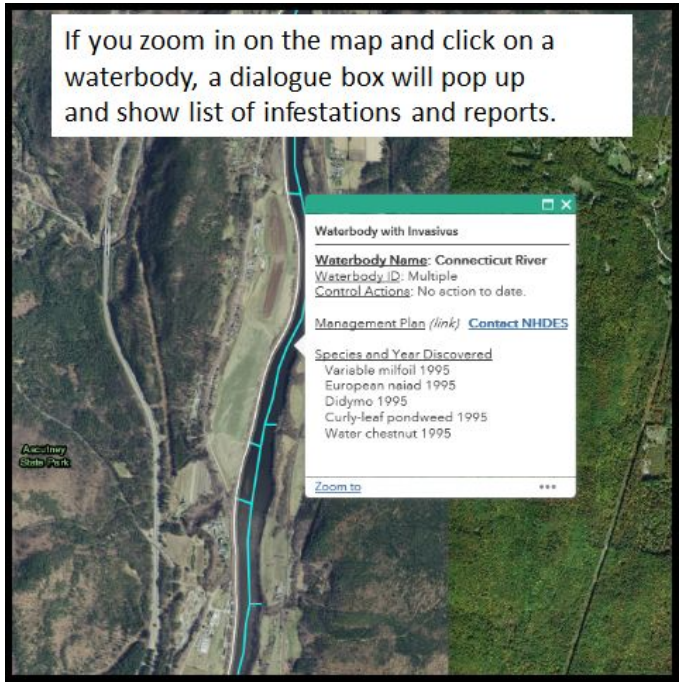
- 11 Rivers
- 79 Lakes and Ponds

116 Infestations

Some waterbodies have more than one species, a few have as many as 7 different invasives

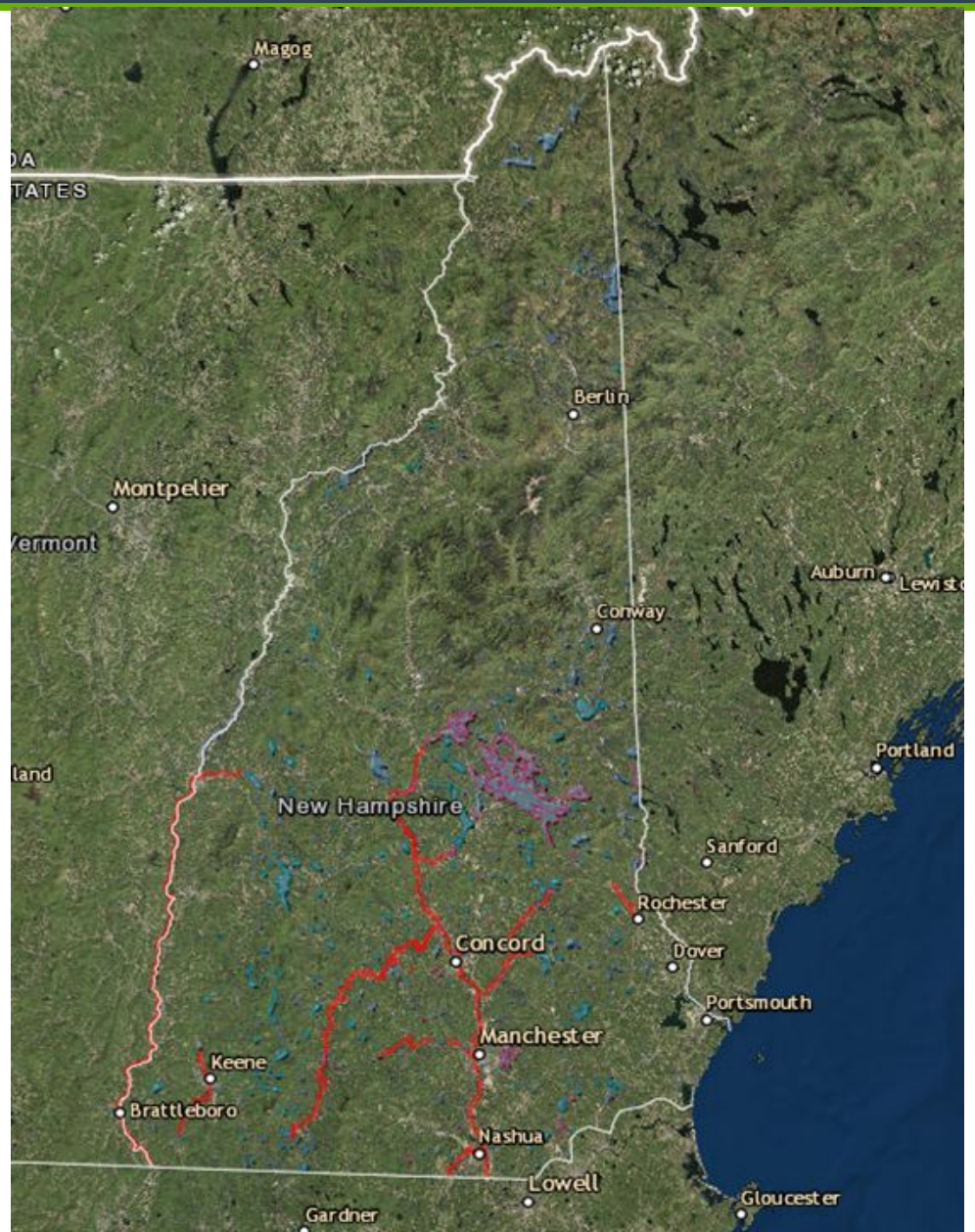


Interactive Map and Information



NHDES Lake Mapper App:
http://nhdes.maps.arcgis.com/apps/webappviewer/index.html?id=1f45dc20877b4b959239b8a4a60ef540

or simply Google NHDES Lake Mapper



New infestations this year so far:

- Fanwort in Long Pond in Danville, already infested with variable milfoil.
  - Patch of fanwort was small, hand removed by diver.
- Flowering rush in Connecticut River (NH side)
  - Now up to 7 invasives in that system.

Flowering rush recently documented on shoreline of Connecticut River in Charlestown

Review of key species of concern

- The following slides show images of common species of concern….
- Always check in with NHDES on something you think is suspicious that comes out of a NH freshwater system.

Emergent Invasives:

- Those that are near shore or in shallows, that root in the substrate.
- Most of their growth is above the surface of the water, or on the banks.

Floating Leaved Invasives:

- These plants are found growing in water that is 2-12 feet deep.
- Most are rooted to the bottom, with leaves that float on the top of the water.

NH LAKES

Submergent Invasives:

These plants are rooted or free-floating & are fully underwater

Other Plants

- These were just a few examples of aquatic plant species of concern

- **New Hampshire actually prohibits the sale, introduction, transport, propagation, and distribution of 29 aquatic plant species.** A full list can be found at des.nh.gov

- There ARE native plant species that play an important role in the lake ecology.

Common Aquatic Invasive Animals:

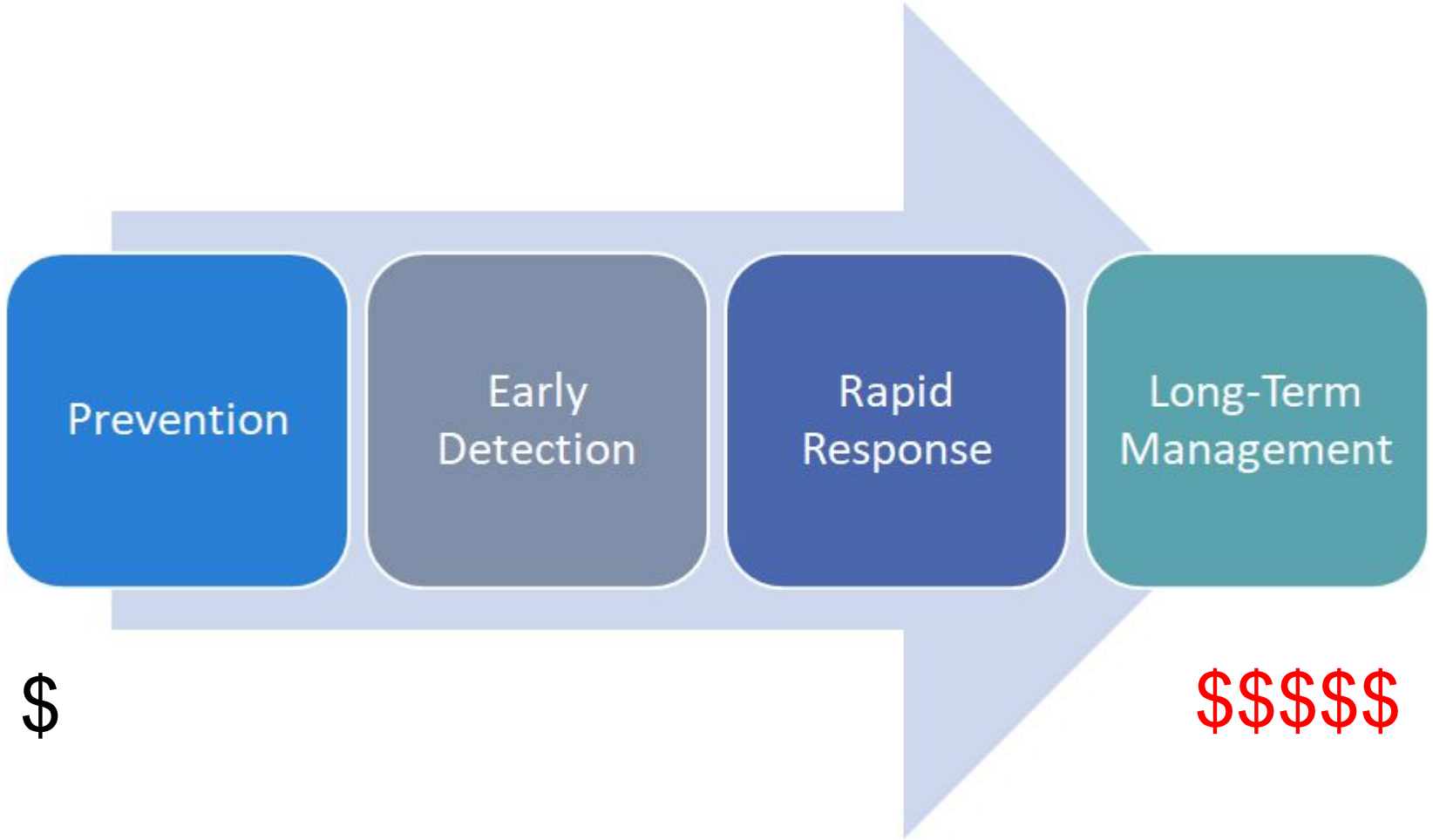
State Level Program Implementation

- Department of Environmental Services implements the Exotic Species Program for invasive aquatic plants.
  - Amy Smagula at amy.smagula@des.nh.gov
- Department of Agriculture implements the Invasive Species Committee to address terrestrial invasive plants and insects
  - Doug Cygan at douglas.cygan@agr.nh.gov
- Fish & Game Department implements programs & activities related to invasive animals on land and in water
  - Scott Decker at scott.decker@wildlife.nh.gov

Key Elements of New Hampshire's AIS Approach:

1. Prevention of new infestations through education and outreach
2. Monitoring for early detection of new infestations
3. Control of new and established infestations
4. Research towards new control methods
5. Regional/national cooperation with other exotic species programs.

Addressing the Problem of Invasives

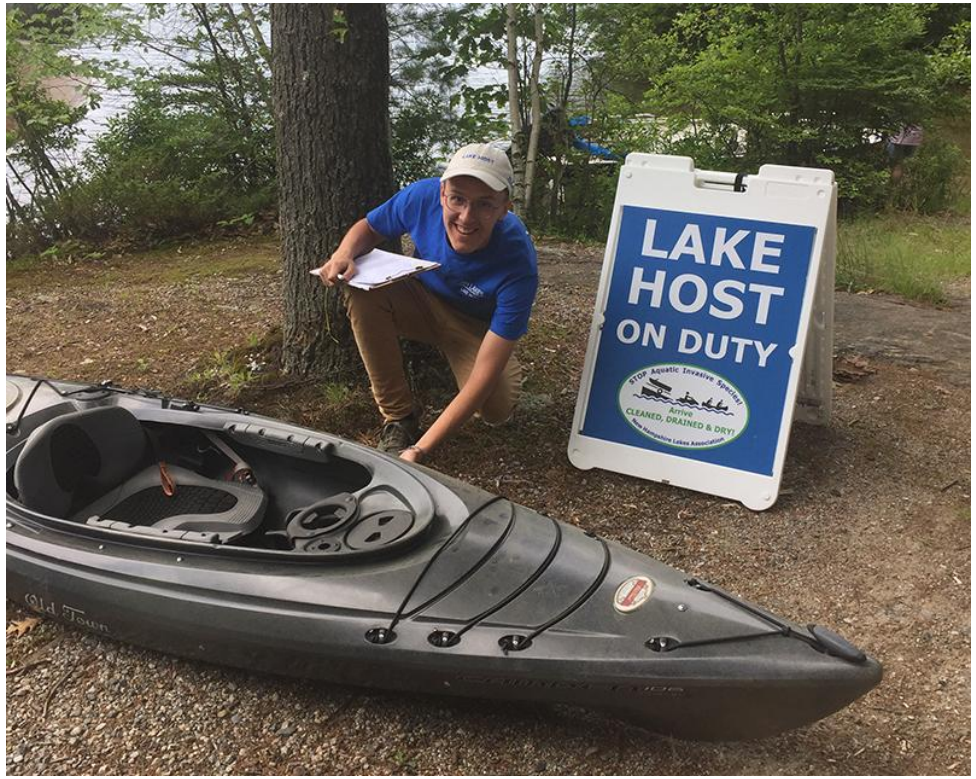


The NH LAKES Lake Host Program is the first line of defense in keeping our lakes free of invasive plants and animals.

Role in Preventing the Spread

- Lake Hosts inspect boats, trailers, and recreational gear for hitchhiking plants and animals.

- And, they teach boaters the importance of the “Clean, Drain, and Dry” method.



Lake Host Program Impact

- Lake Hosts conducted 96,000+ courtesy boat inspections last year!
- Over one million boats have been inspected to date.
- 1,600+ invasive species removed before entering or leaving a waterbody.

Three simple steps prevent the spread:

- **Clean** off all plants, animals, and debris from boats, trailer, and recreational gear. Cleaning is the law in NH.
- **Drain** all water and open drain plugs. Draining is the law in NH.
- Allow to **dry** for five days in the sun.

Despite prevention, outreach, and applicable state laws:

Boats that are not cleaned, drained, and dry continue to arrive.

Boaters with low awareness continue to arrive.

Early Detection

- State biologists conduct assessments of state surface waters, so some infestations are found that way

- Volunteer water quality monitors also keep an eye out for anything new or suspicious

Photo Credit: squamlakes.org

Early Detection

Weed Watchers are volunteers who are trained to monitor their waterbody for (originally) invasive aquatic plants

That has been expanded in recent years to include animals and more!

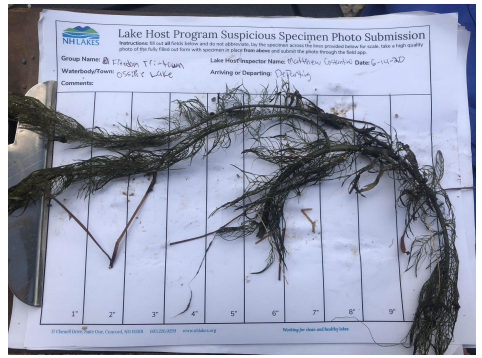
Weed Watchers and Early Detection

- The second line of defense after prevention with Lake Hosts
- Proactive approach to catch infestations early
- Volunteers survey their waterbody once a month from May to September and report suspicious species to NHDES
- This helps to facilitate a rapid response action and prevent further spread

Lakes that have an active Lake Host Program AND a Weed Watcher Program have the best chance of fighting off an introduced invasive species!

Rapid Response

- Most agencies will ask for physical specimens or photographs, based on what is appropriate/easiest
- Upon verification, staff biologists will conduct site inspections to map the extent of growth
- Immediate and appropriate control actions will resume, with the goal of containment and eradication where feasible
- Photos can be emailed to Amy.Smagula@des.nh.gov



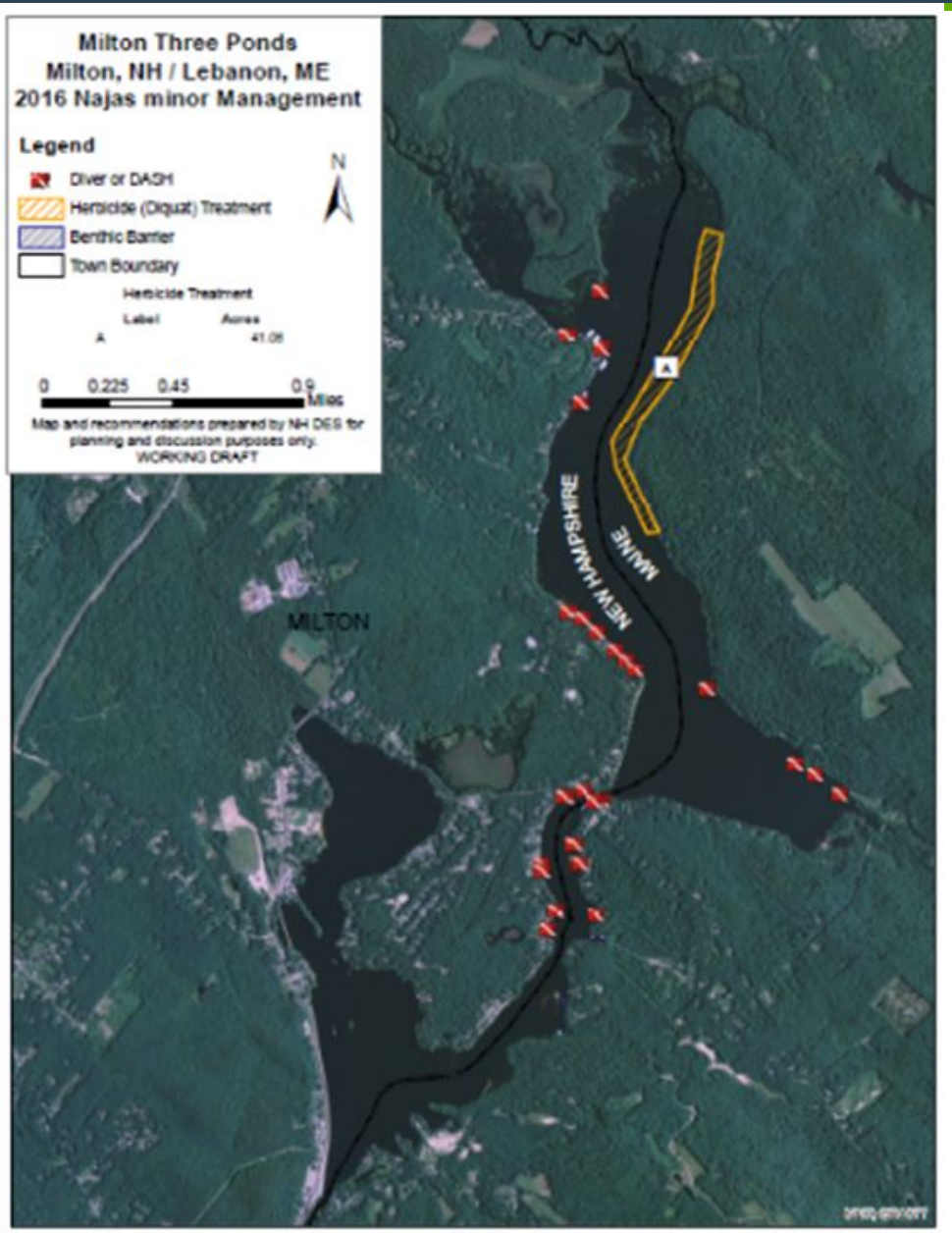
Management

- Aquatic invasive **plant** management is underway at just over half of the infested sites in NH
  - State grant funds are available

- There is no active management for aquatic invasive **animals**
  - Technology is not yet available to safely and reliably manage invasive animals in most cases
  - There is no funding yet available for animals

If an infestation is verified by NHDES:

- Thorough survey work and mapping (GPS/GIS)
- Maps are created to guide management
- The state surveys state waterbodies at no cost



AIS Manager's "Tool Box"

- Containment/Quarantine: Prevent further spread
- Physical control: Physically removing by hand, picking, capturing, benthic barriers, etc.
- Mechanical control: Cutting, digging
- Chemical control: Herbicides, pesticides, insecticides, fungicides, molluscicides
- Biological control: Introducing a species to control another species

Elements of a Management Program

- All infested waterbodies in NH have a long-term management plan tailored to them
- **Integrated Pest Management Strategies** are employed
- Emphasis on “adaptive management”
  - Dealing with an invasive species that is adaptable
  - The best laid plans don’t always work due to too many variables working with natural systems that are infested/invaded

Funding

- NHDES pays 100% of new infestation management
- Follow-up management requires local match dollars
  - Best to establish a trust fund or non-lapsing and continually appropriate fund on the town level
  - Line item budgeting
  - Warrant articles

How can you help?

Do you know what lives in your favorite lake?

Helpful resources to become more familiar with what lives in your favorite lake!

- Common Aquatic Plants of New Hampshire
- NHDES Weed Watcher Training

Report suspicious specimens to the NH Department of Environmental Services (NHDES).

BEST: Send a photo to Amy.Smagula@des.nh.gov

ALTERNATE: Put the specimen in a damp paper towel, put it inside of a fully-filled out specimen bag (or clean ziplock bag) and keep on ice until you can get it to NHDES.

Spread the Word!

- Educate visitors friends about…
  - The importance of cleaning, draining, and drying all boats, trailers, and recreational gear.
  - The environmental and economic impact of aquatic invasive species.
  - How to join in on the fun and volunteer!

January 2020: AIS spread prevention law went into effect!

Boaters must use AIS prevention technologies at public boat access facilities, if they are available to use.

Tools & technology can be provided by access site owners to empower boaters to take action to prevent the spread!

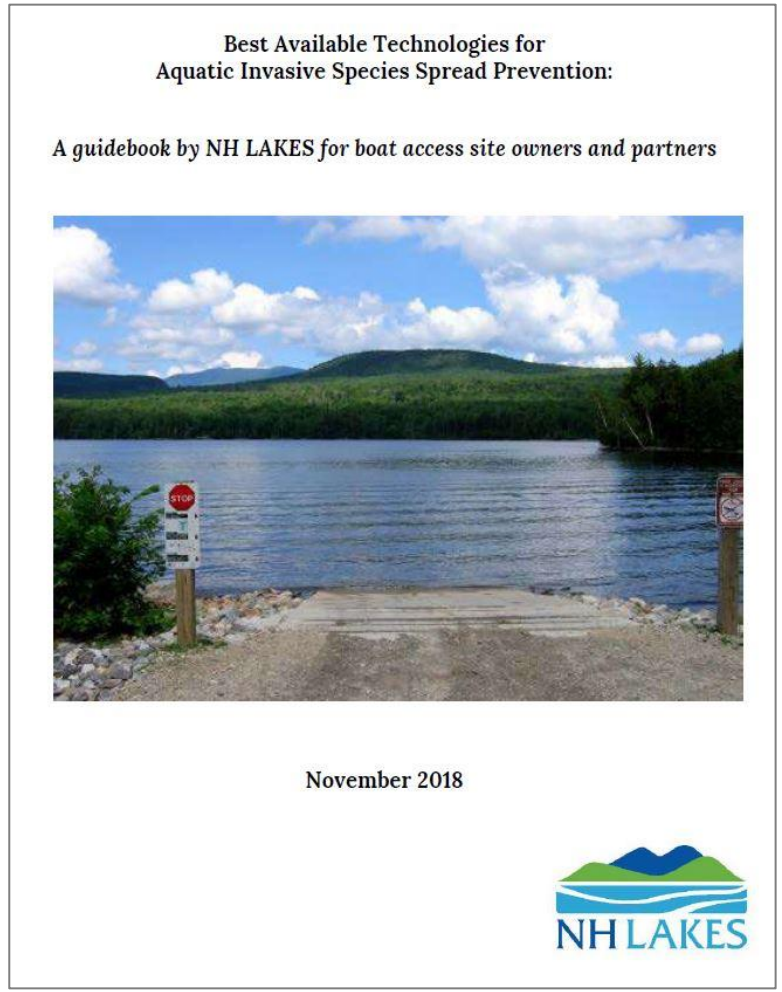
Clean & Drain Areas

Solar-powered waterless cleaning station

Decontamination Stations

Take the next step in AIS prevention with NH LAKES!

- Guidebook available for FREE download at nhlakes.org
- Invite us to your local ramp to identify opportunities!



- Start a conversation in your town about AIS prevention and how boat cleaning/wash stations help protect waterbodies
- Educate municipal officials about the benefits of boat cleaning/wash stations and the cost of AIS
- Gather support for a town ordinance to require boat cleaning or washing at high priority (or all) town-owned boat access sites
- Work with your town to set aside funding for prevention and management actions

It all starts with prevention

More must be done to prevent the spread.

Ready to dive a little deeper?