

# NH LAKES vs. Aquatic Invasive Species!



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**New Hampshire Lakes Association**  
**Presented to: Granite Lake Association**  
**July 15, 2017**



# ***NH LAKES: Who, What & Why?***

- **New Hampshire Lakes Association (NH LAKES)**
- **Established in 1992**
  - Merger between 2 existing groups:
    - education group from Lake Winnepesaukee area
    - advocacy group from Lake Sunapee area
- **Statewide, 501(c)(3) non-profit, member-supported organization representing approximately:**
  - 1,000 individuals, families, and businesses
  - 130 lake associations and other conservation groups
- **We are not a state agency.**



# ***NH LAKES: Who, What & Why?***

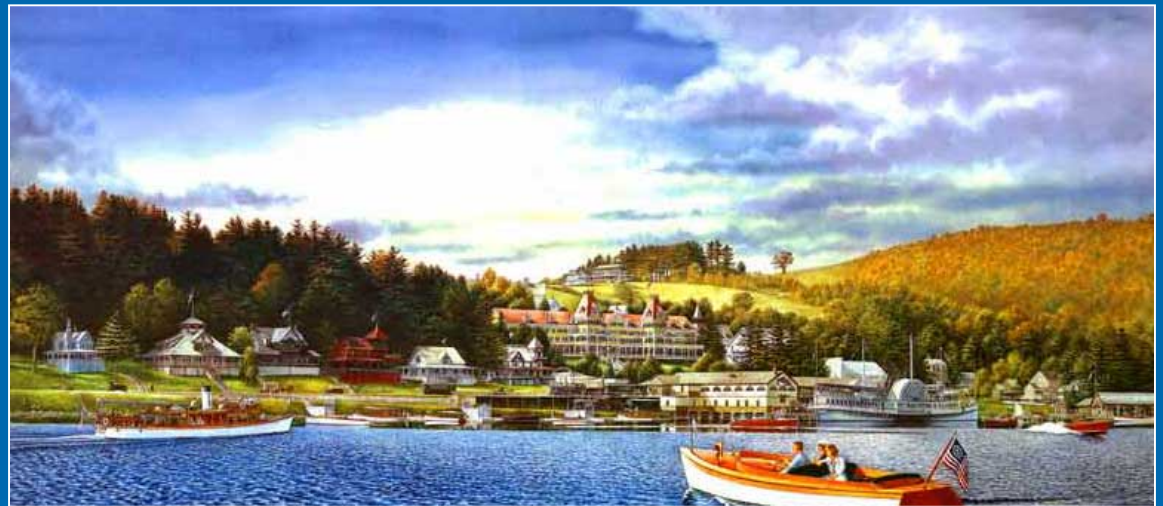


- **Our mission is to inspire responsible care and use of NH's lakes to keep them healthy for the benefit of current and future generations.**
- **How many lakes and ponds are there in NH?**

# ***NH LAKES: Who, What & Why?***

➤ **NH's lakes & ponds are important for many reasons:**

- Ecological values
- Aesthetic values
- Recreational values
- Economic values



**Lakes and ponds contribute to the quality of life  
AND to New Hampshire's economy.**



# Why we do what we do:

## ➤ New Hampshire lakes are threatened.

- Invasive species



- Heavy usage in some areas



- Polluted water runoff



- Changing weather patterns



# How we do what we do:

## ➤ We achieve our mission by:

- Taking Action



- Partnering & Networking



- Learning & Teaching



- Influencing



# *Thank You!*

- We're grateful for the long-time support and partnership of the Granite Lake Association!
- Thank you all NH LAKES individual members, too!
- Please consider joining NH LAKES as an individual member.





*Would you enjoy...*



(Courtesy of the NIDES Exotic Species Program)

Stopping many times to clean off your boat motor while boating or fishing in this invasive plant-infested lake?



*Would you enjoy...*



(Courtesy of the NHDES Exotic Species Program)

Paddling through this invasive plant-infested lake?

*Would you enjoy...*



Getting tangled up and possibly drowning while trying to swim in this invasive plant-infested lake?



*Would you enjoy...*



(Photo source: [www.inforum.com](http://www.inforum.com))

Getting your foot cut by a razor-sharp invasive animal shell  
while wading in the lake?

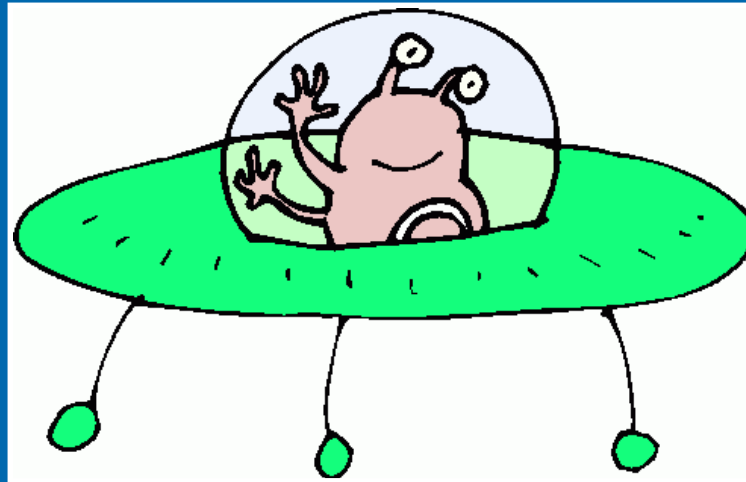


# *If “No” then...*

- Learn more about aquatic invasive species and what is being done to prevent their spread and what you can do to help!
- Learn what to do if your favorite waterbody becomes infested!
- Join the battle against invading aquatic invasive species!



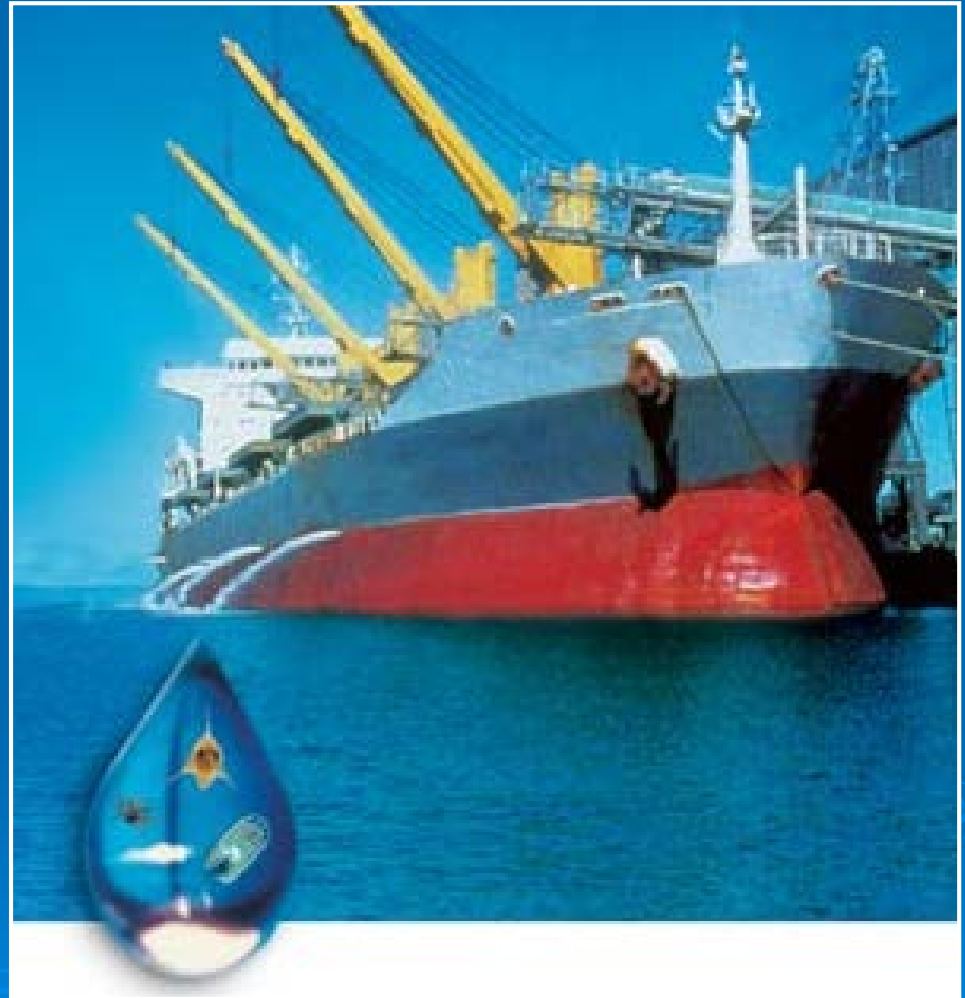
# *What are Aquatic Invasive Species?*



- Plants and animals that are not natural (not native) to our waters in NH *and* that cause environmental or economic harm or harm to human health.
- They came from somewhere else (usually another country) and invaded our waterbodies.
- They didn't bring their predators with them. They outcompete our native species for food and habitat.

# *How did invasive species get here?*

- Many hitchhiked their way from other countries to the United States in ballast water used to weigh down large ships crossing the ocean.
- Ballast water (and everything in it) is dumped out into the local waterbody when the ship reaches its destination.





# How do *invasive species spread?*



Some spread by hitching a ride in the gut or on the feathers or fur of birds and animals.



Some are spread by people dumping aquariums or leftover bait into lakes and streams.



**MOST** hitchhike their way from waterbody to waterbody on boats, trailers, and gear that has not been properly **CLEANED, DRAINED & DRY.**



# *Aquatic Invasive Species Infestations*



(Courtesy of the NHDES  
Exotic Species Program)

- Make recreation in/on waterbodies dangerous and unpleasant.

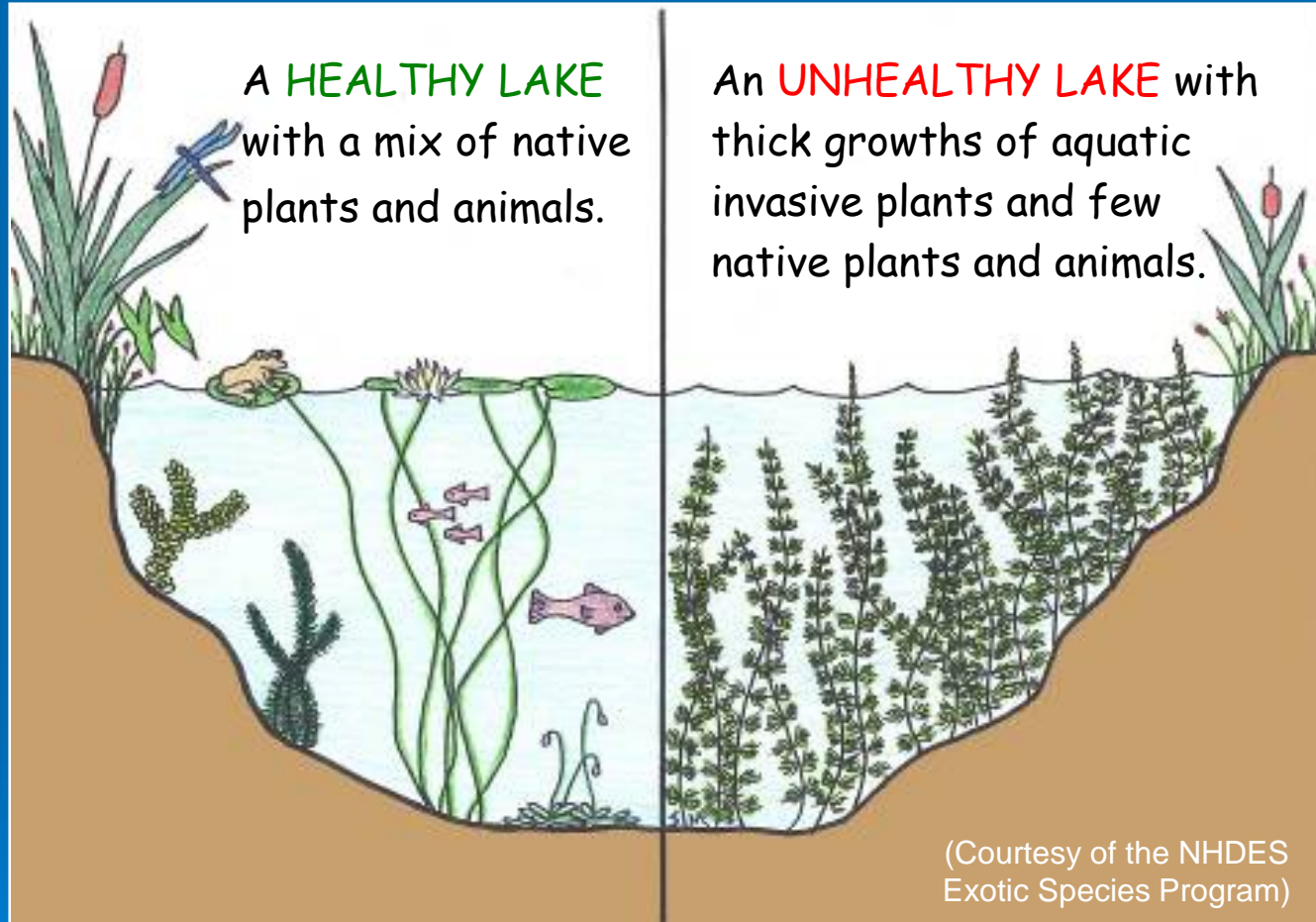
# *Aquatic Invasive Species Infestations*



- Reduce shoreline property values through the reduction of aesthetic and recreational uses of the waterbody.
- The presence of invasive milfoil on an average-sized NH lake of 2,036 acres would reduce property values of an average house by approximately 16%. (Source: NHDES funded UNH study.)

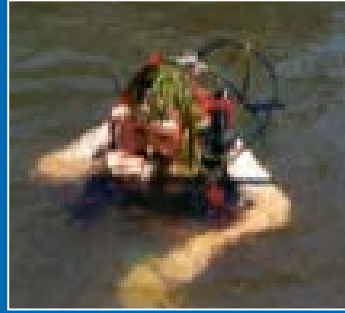


# Aquatic Invasive Species Infestations



- Disrupt the ecological balance of lakes and ponds.

# *Aquatic Invasive Species Infestations*



- Cause serious problems.
- Are labor-intensive, expensive, and difficult to control.
- Are nearly impossible to get rid of once well-established in a waterbody.

## Aquatic Invasive Species (AIS) Infestation in New Hampshire

### Legend

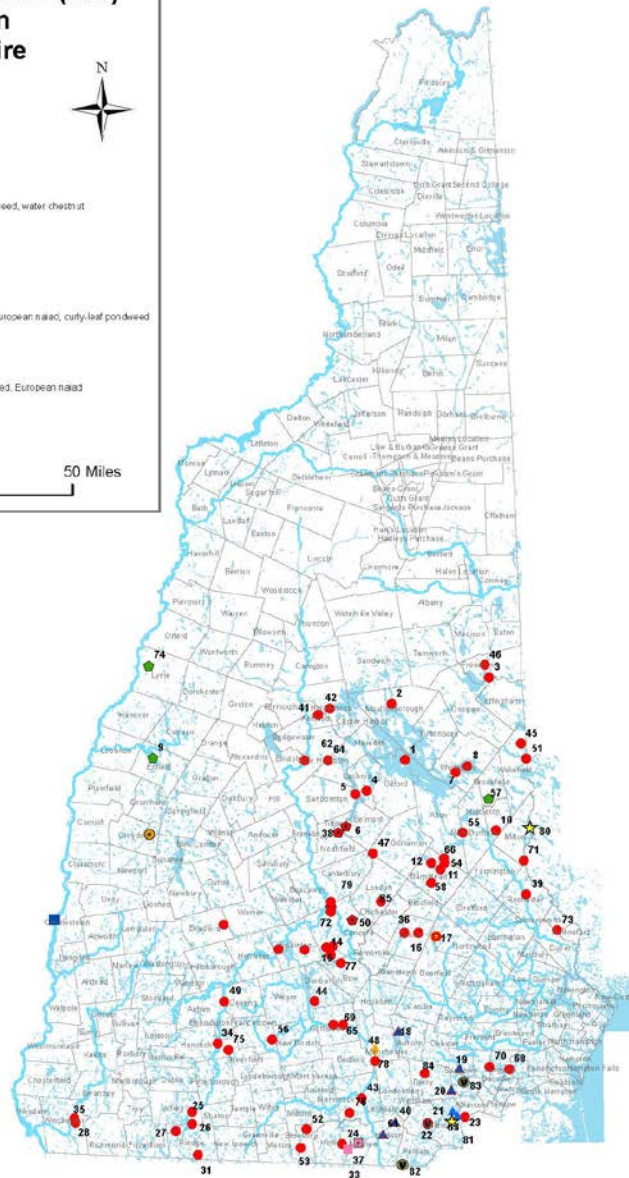
#### AIS Infestations

#### Type

- Asian clam
- Brazilian elodea
- Curly-leaf pondweed
- Eurasian milfoil
- Eurasian milfoil, European naiad, Didymo, curly-leaf pondweed, water chestnut
- ★ European naiad
- ▲ Fanwort
- Variable milfoil
- Variable milfoil, Asian clam
- Variable milfoil, Curly-leaf pondweed
- Variable milfoil, Eurasian milfoil, fanwort, water chestnut, European naiad, curly-leaf pondweed
- Variable milfoil, European naiad
- Variable milfoil, curly-leaf pondweed
- Variable milfoil, fanwort
- Variable milfoil, fanwort, Eurasian milfoil, curly-leaf pondweed, European naiad
- Town\_Boundaries\_polygons
- NH\_Hydrography\_polygons
- State\_Boundary



0 12.5 25 50 Miles



Map prepared by NH DES  
Exotic Species Program  
Updated October 2016

Numbers correspond to separate  
key which lists waterbody  
name and town.

# Tally

## 85 Infested Waterbodies:

- 72 variable milfoil
- 6 Eurasian milfoil
- 9 Fanwort
- 5 European naiad
- 2 Water chestnut
- 5 Curly-leaf pondweed
- 1 Brazilian elodea
- 4 Asian clam
- Many, many Chinese mystery snails (not shown on map)



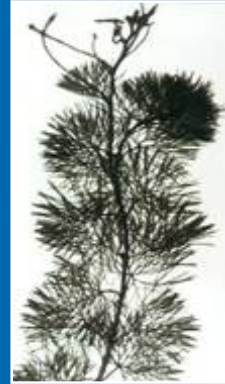
# ***Aquatic Invasive Plants of Concern in NH***



**Variable Milfoil**  
(from Southern & Midwestern US)



**Eurasian Milfoil**  
(from Europe & Asia)



**Fanwort**  
(from Southern US & Latin America)



**Water Chestnut**  
(from Europe & Asia)



**Curly Leaf Pondweed**  
(from Asia, Africa, Middle East, Australia, Europe)



**Hydrilla**  
(from Asia, Africa, Middle East, Australia, Europe)

(Photos courtesy of NH DES Exotic Species Program)

# *Aquatic Invasive Animals of Concern in NH*



**Asian Clam**  
(from Asia)



**Chinese Mystery Snail**  
(from Asia)



**Quagga Mussel**  
(from Ukraine)



**Spiny waterflea**  
(multiple on fishing line –  
from Europe and Asia)



**Zebra Mussel**  
(from Caspian Sea in Europe)

***What is being done to protect our lakes, ponds, rivers & streams from aquatic invasive species?***



# *Preventing the Spread: Laws*

- NH Department of Environmental services regulates 37 aquatic plants.
- NH Fish and Game Dept. regulates the movement of listed aquatic invasive animals.
- Activities that are regulated:
  - Sale
  - Distribution
  - Importation
  - Purchase
  - Propagation
  - Transportation
  - Introduction





# Preventing the Spread: Laws

- New “Clean & Drain Law” effective January 2017!
- Requirements:
  - Boaters to remove ALL hitchhiking aquatic plant fragments — *invasive AND native* — from the outside of boat, trailer, and gear
  - Boaters to OPEN ALL drain plugs before leaving the launch area and keep OPEN between waterbodies
    - Boaters are encouraged to pull plugs in the launch vicinity where the water will not flow back into the lake.



**Mandatory CLEAN**



**Mandatory DRAIN**

# Preventing the Spread: Planning Ahead

## ➤ Local Aquatic Invasive Species Committees

- Committee for local coordination
- Should be comprised of local officials, volunteers, residents, etc.
- Planning for prevention, early detection, managing existing infestations, fund raising, etc.

**Freedom**  
NEW HAMPSHIRE

DepartmentsBoards/CommitteesNewsCalendar

**FREEDOM AQUATIC INVASIVE SPECIES COMMITTEE**

NOTICE OF MEETINGS 2016

The Freedom Aquatic Invasive Species Committee will meet on the second Thursday of each month commencing at 7:00 at the Freedom Town Hall.

MEETING DATES FOR THE YEAR 2016

January 14  
March 10  
May 12  
June 9  
July 14  
August 11  
September 8  
October 13  
November 10

MEETING MINUTES

2016 Minutes

2015 Minutes

2014 Minutes

AGENDA

≡ AQUATIC INVASIVE SPECIES COMMITTEE

FREEDOM AQUATIC INVASIVE SPECIES COMMITTEE

PO Box 227

Freedom, NH 03836

AGENDA

# *Preventing the Spread: Educating Boaters*

- NH LAKES Association Lake Host Program
- First line of Aquatic Invasive Species **PREVENTION.**
- Initiated in 2002.
- Volunteer and payroll grant program implemented by NH LAKES in cooperation with local groups.
- Funded in part by
  - NH Dept. of Environmental Services (boat registration fees)
  - NH LAKES
  - Federal government (2002 – 2009)
  - Lake associations
  - Foundations
  - Municipalities
  - Individuals



# NH LAKES Lake Host Program

- Volunteer and hired “Lake Hosts” staff public motorized ramps to:
  - Educate visiting boaters about aquatic invasive species – both plants and animals – and how to prevent their spread.
  - Conduct courtesy boat and trailer inspections to remove all plant fragments and other debris.
  - Show boaters where to look for “hitchhikers” and encourage them to “self inspect.”
  - Encourage boaters to “Clean, Drain, & Dry!”
  - Send suspicious specimens to the NH Dept. of Environmental Services for identification.



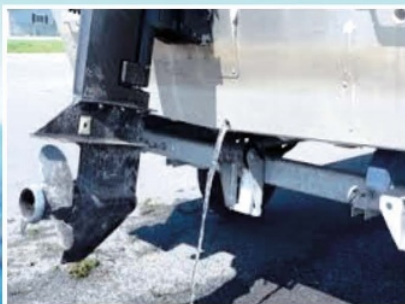


**Invasive plants and animals can degrade the health of our lakes and make them dangerous to recreate in.**  
**Invasive species are difficult and expensive to manage and almost impossible to get rid of.**  
**YOU CAN HELP PULL THE PLUG ON THE SPREAD OF AQUATIC INVASIVE SPECIES!**

**BEFORE** leaving any launch area:



**CLEAN** off all mud, plants, animals, and debris from your boat, trailer, and equipment. Clean off anchors and anchor lines, water intake grates on jet-powered craft, kayak and canoe cockpits, storage compartments, and paddles, too! Dispose of all material away from the waterbody where it won't wash back into the water.



**DRAIN** the motor, bilge, live wells, ballast tanks, storage compartments, and gear where the water won't flow back into the lake—*avoid draining while on the ramp incline*. Blow out water in jet-powered craft and tip paddle craft and motors to let out water. **OPEN/REMOVE** all drain plugs and keep them out/open while trailering. *You may need a wrench to remove drain plugs.*



**DRY** off anything that came in contact with the water to remove invasive species not easily seen. If launching your boat again within 5 days, thoroughly rinse with clean water away from waterbodies and towel dry—*rinsing with high pressure, high temperature water is best.*

**\*NEW STATE LAW EFFECTIVE JANUARY 1, 2017\***

When transporting boats between waterbodies:

- ALL fragments of vegetation & animals must be removed before leaving the launch area.
- ALL drain plugs must be REMOVED or in the OPEN position. (NH RSA 487:16-d)





# LAKE HOST

2002 - 2016

NEW HAMPSHIRE LAKES ASSOCIATION

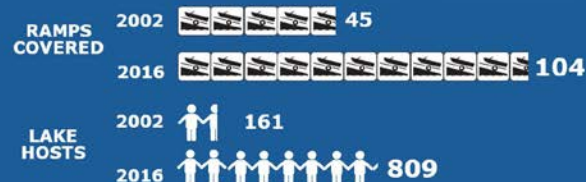


*Celebrating 15 years of working together to prevent the spread of aquatic invasive species in New Hampshire waters!*

## COURTESY BOAT INSPECTIONS



## PARTICIPATION



## FUNDING



## INVASIVE SPECIES REMOVED

1,550 'SAVES' at 53 lakes!

FANWORT

809

VARIABLE MILFOIL

600

EURASIAN MILFOIL

83

EUROPEAN NAIAD

19

CURLY LEAF PONDWEED

15

WATER CHESTNUT

12

CHINESE MYSTERY SNAIL

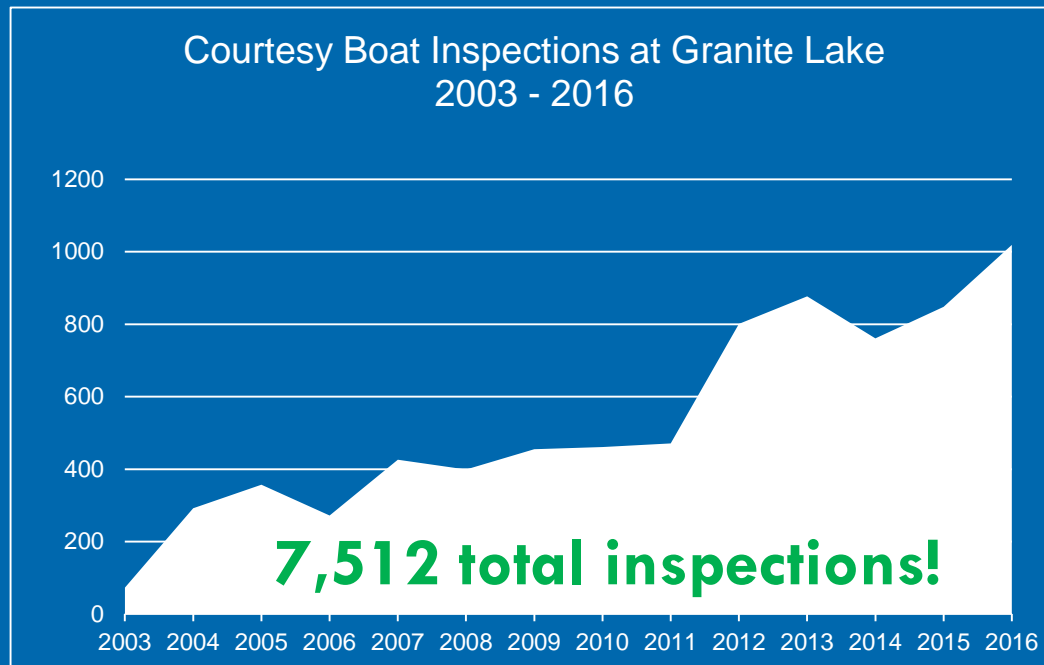
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COMMON REED

1



# Lake Host Program at Granite Lake



## ➤ 3 'SAVES'

- Curly Leaf pondweed



- Eurasian watermilfoil (2)





# Weed Watchers Program

## ➤ Second line of defense – EARLY DETECTION

- Volunteers are trained to conduct a shoreline survey, what to look for, who to contact if there is something suspicious.
- Shorelines should be surveyed at least once per month from May – October.
- If an invasive plant infestation is found earlier enough, it may be able to be eliminated.
- Program coordinated by the New Hampshire Department of Environmental Services





***What if a waterbody becomes  
infested with an  
aquatic invasive species?***



# *What if a lake becomes infested?*

- There is no way to effectively eliminate well-established infestations.
- Top 5 things to do when a waterbody becomes infested:
  - NOTIFY
  - PLAN (THEN MANAGE)
  - SURVEY
  - PREVENT
  - FUNDRAISE



**Help! There's a monster  
growing in our lake!**

(Skaneateles Lake, NY,  
Milfoil Eradication Project)



# *What if a lake becomes infested?*

## ➤ NOTIFY

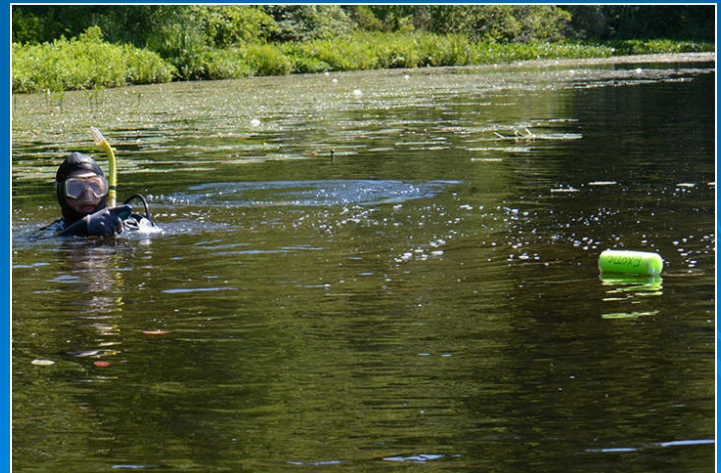
- Let the community & lake using public know
  - Watershed residents, town officials, boat ramp users, fishing clubs, rowing groups, campgrounds, etc.
- Provide information about invasive species
  - Where in the lake it is
  - What it looks like
  - How they can help prevent the spread
  - How they can help monitor the spread
  - What to do if they see it in the lake
  - What to do if it floats up on the beach



# *What if a lake becomes infested?*

## ➤ SURVEY

- Biologists from the NH Department of Environmental Services will survey the waterbody to determine extent of infestation.
- Local groups to establish or refresh the local Weed Watchers Program.
- Weed Watchers provide DES and lake users with buoys to mark new infestation areas.



# *What if a lake becomes infested?*

## ➤ PLAN (THEN MANAGE)

- The local group with NH Dept. of Environmental Services to develop a Long-Term Management Plan (required by law)
  - Outlines the problem, management goals, techniques
  - Provides for a strategic, well-organized process tailored the waterbody
  - Once a plan is developed, contractors can be hired to do management
  - Management cost & frequency depends on infestation size and waterbody



# Long-Term Management Program

## ➤ Management Options:

### ➤ Physical control

- Hand removal
- Diver-Assisted Suction Harvesting (DASH)
- Benthic barrier
- Drawdown



### ➤ Mechanical control

- Dredging
- Hydro-raking
- Mowing/harvesting



### ➤ Biological control

- Using an introduced species to control the milfoil (insect, fish, etc.)

### ➤ Chemical control

- Aquatic herbicide



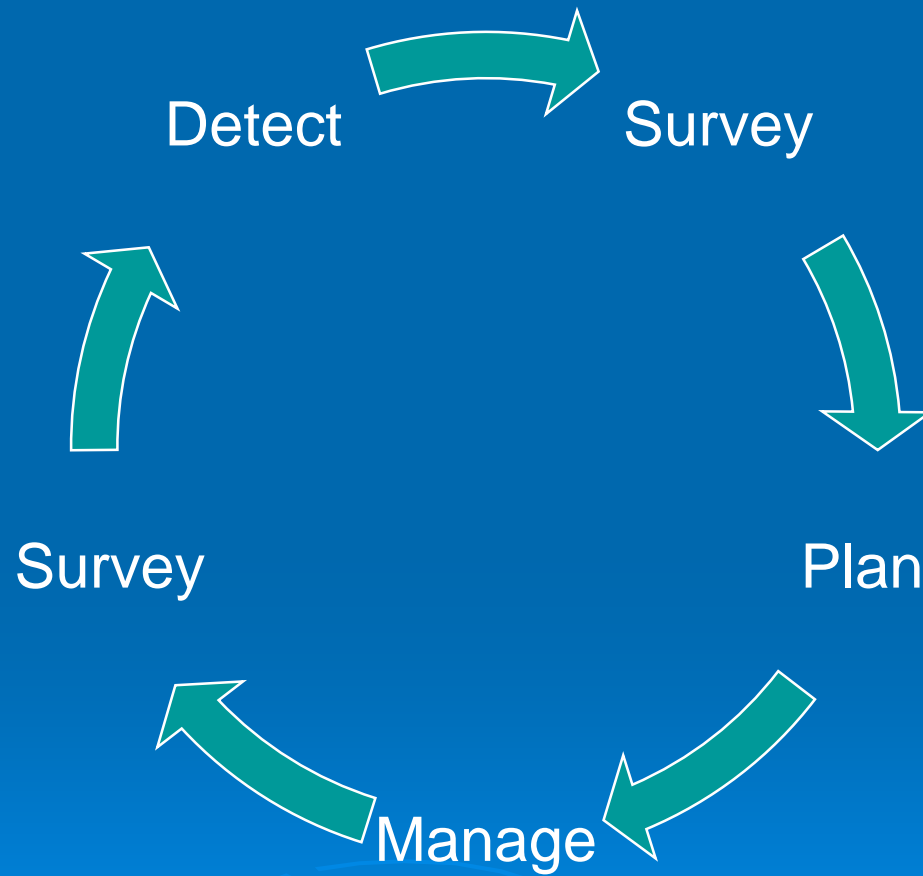


# Typical Management Actions & Costs

Management Activity	Cost
Hand Pulling, Diver Assisted Suction Harvesting ( <i>Must be done by a certified Weed Control Diver</i> )	Labor costs depend on contractor costs or staff time \$500 - \$1,500 per day
Mechanical Harvesting	\$350 - \$1,500/acre
Hydro-Raking	\$350 - \$2,500/acre
Bottom Barrier	\$0.61 - \$1.22 per square ft. or \$25,000 - \$50,000/acre
Chemical Treatment	\$200 - \$1,000/acre
Dredging	\$16,000 - \$32,000/acre

(Source NH Dept. of Environmental Services Exotic Species Program)

# Long-Term Management Program



# *What if a lake becomes infested?*

## ➤ PREVENT

- There's no sense in spending time or money managing an invasive species if nothing is doing to prevent the same (or worse!) species from hitchhiking into the waterbody.
- Establish or enhance local Lake Host Program
- Protects other lakes by preventing the invasive species from hitchhiking out of the waterbody



# *What if a lake becomes infested?*



## ➤ FUNDRAISE

- NH Department of Environmental awards grants to local lake associations and municipalities for the control and treatment of aquatic invasive species.
- Grants typically pays 100% of control for 1<sup>st</sup> year of new infestations.
- Grants pay UP TO 50% of control per year after 1<sup>st</sup> year.
- Grant funding requests typically exceed what is available from the State.
- Cost of control QUICKLY becomes a local challenge & burden.



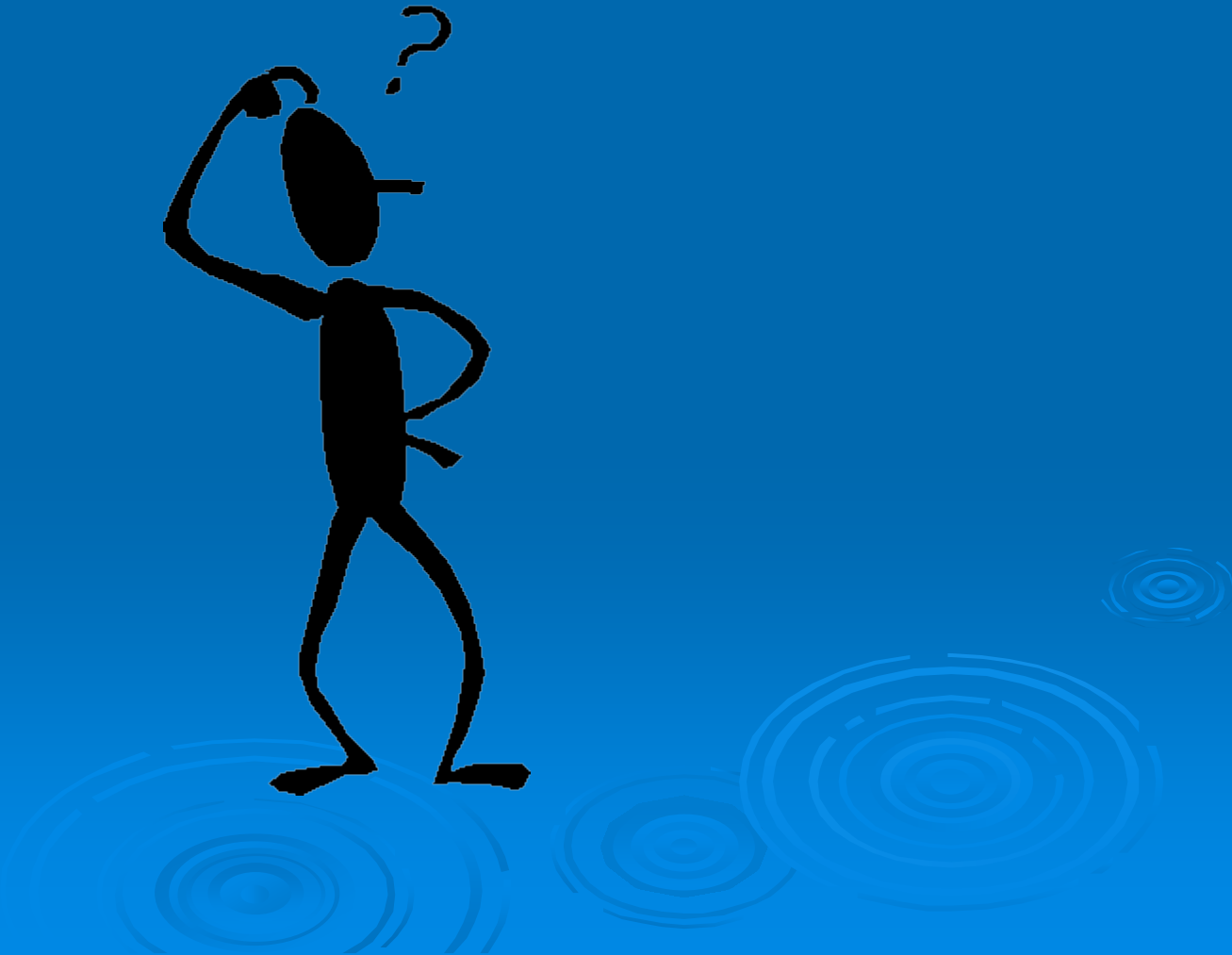
# *What if a lake becomes infested?*

## ➤ FUNDRAISE (continued)



- Set up a “Lake Management Fund”
  - Don’t limit it to aquatic invasive species management activities
  - Consider including prevention activities too
  - Consider including management of other lake problems too – like stormwater runoff!
  - Other unknown future threats?
- Better yet, set up the fund before the lake is infested or has some other problem!

***What can you do to help prevent the spread of aquatic invasive species?***



# Join the battle – defend our lakes!

**Do you boat?:** Always clean, drain & dry boats, trailers & gear before & after boating!



**Become a Lake Host:** Teach boaters how to prevent invasive species from hitchhiking from waterbody to waterbody.



**Become a Weed Watcher:** Survey waterbodies for unusual growths of plants & animals.



**Become a certified Weed Control Diver:** Get trained to remove invasive plants properly and safely.



**Do you fish?** Dispose of unused bait in the trash, not in waterbodies or the drain.



**Have an aquarium?:** Dispose of unwanted aquarium pets in the trash, not in waterbodies, or down the drain in your home.





*Thank you for helping keep  
NH's lakes invasive free & enjoyable!*