

An aerial photograph of a large, multi-lobed lake system, likely in New Hampshire. The lake is surrounded by dense green forests and rolling hills. In the background, there are blue mountains under a sky with scattered white clouds. The water is a deep blue, and several small islands and peninsulas are visible, each covered in lush green trees.

Aquatic Invasive Species (AIS): A Serious Threat to New Hampshire

**Presentation to NH House and Senate Committees by the
Exotic Aquatic Weeds and Species Committee**

2020

Agenda

1. The nature and scope of the aquatic invasive species threat
2. Ongoing actions to prevent and mitigate the risks
3. Future outlook – are we doing enough?



Definition of Invasive Species

An invasive species is defined as a species that is:
















1. Non-native (or alien) to the ecosystem under consideration and,
2. Whose introduction causes or is likely to cause economic or environmental harm or harm to human health.



Legend

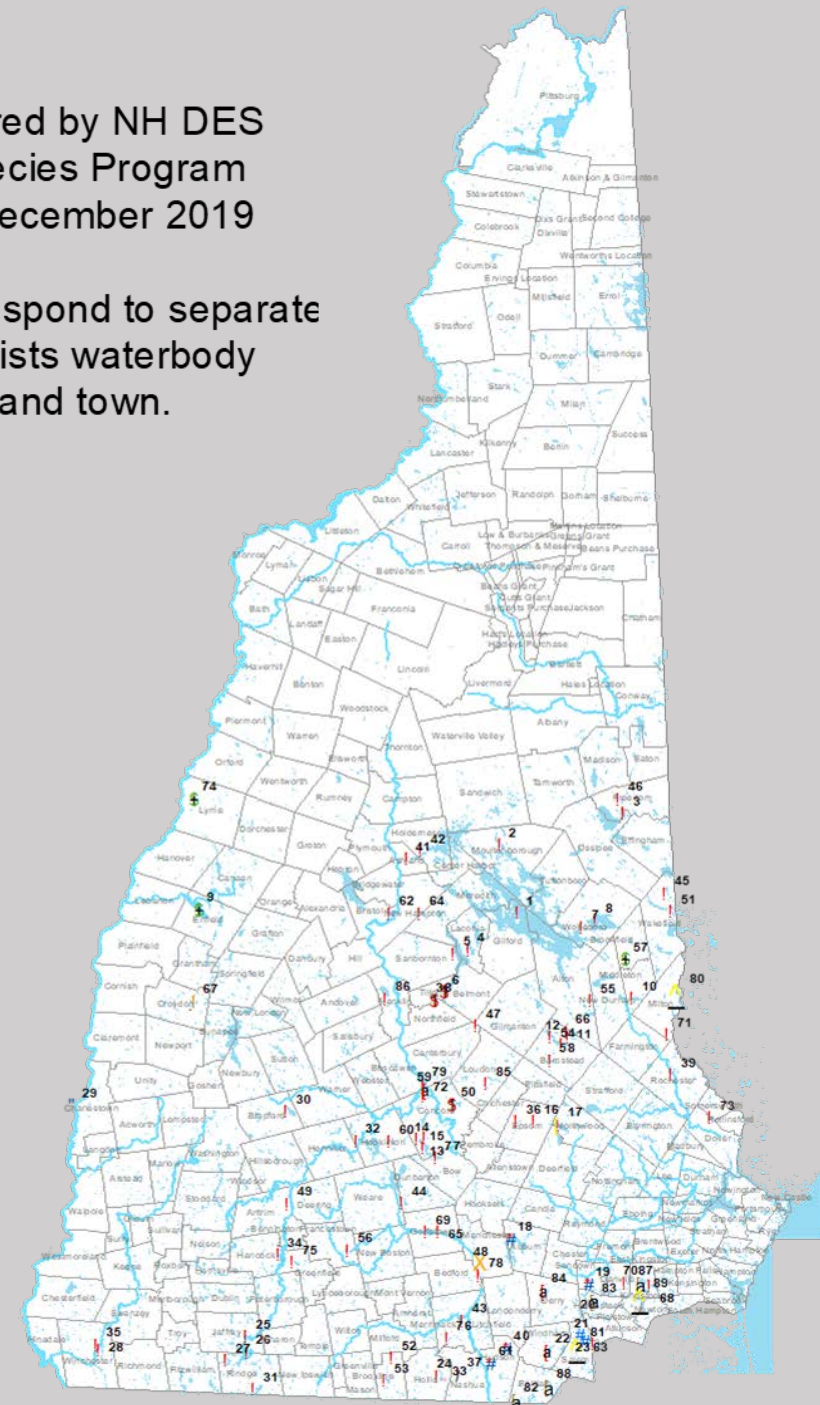
AIS Infestations

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

Map prepared by NH DES
Exotic Species Program
Updated December 2019

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



Known AIS-Infested Waterbodies in New Hampshire

Invasive Species	Number of Infested Lakes	Number of Infested Rivers
Variable milfoil	73	11
Fanwort	8	1
Eurasian milfoil	4	2
European/brittle naiad	7	2
Curly leaf pondweed	4	3
Asian clam	6	1
Water chestnut	--	2

Most Threatening AIS to New Hampshire



Variable Milfoil in Squam Lake – Asquam Cove

Most Threatening AIS to New Hampshire



Fanwort – Robinson Pond, Hudson

Most Threatening AIS to New Hampshire



Water Chestnut – Nashua River

Most Threatening AIS to New Hampshire



European/Brittle Naiad – Present in 6 NH waterbodies.

Most Threatening AIS to New Hampshire



Asian Clams – Merrimack River (Bow)

Economic Sectors Impacted



Recreation, tourism and boating

Economic Impact – What's our Water Worth?

- Property taxes
 - Infestations can reduce property values by 10-20%
 - In Meredith, NH, only 25% of properties are on the waterfront. Waterfront properties make up over 50% of the town's total assessed property value.
- Tourism
 - ~\$5 billion a year



Economic Impact – What's our Water Worth?

- Recreational fishing
 - ~\$215 million per year
- Visitors to freshwater state parks
 - ~\$40 million per year
- Out of state, transient boaters
 - ~\$100 million per boating season



Potential Future Economic Sector Impacts



Dam Intake Tower



Marine Tripod



Clogged Water Pipe



Agricultural Irrigation System



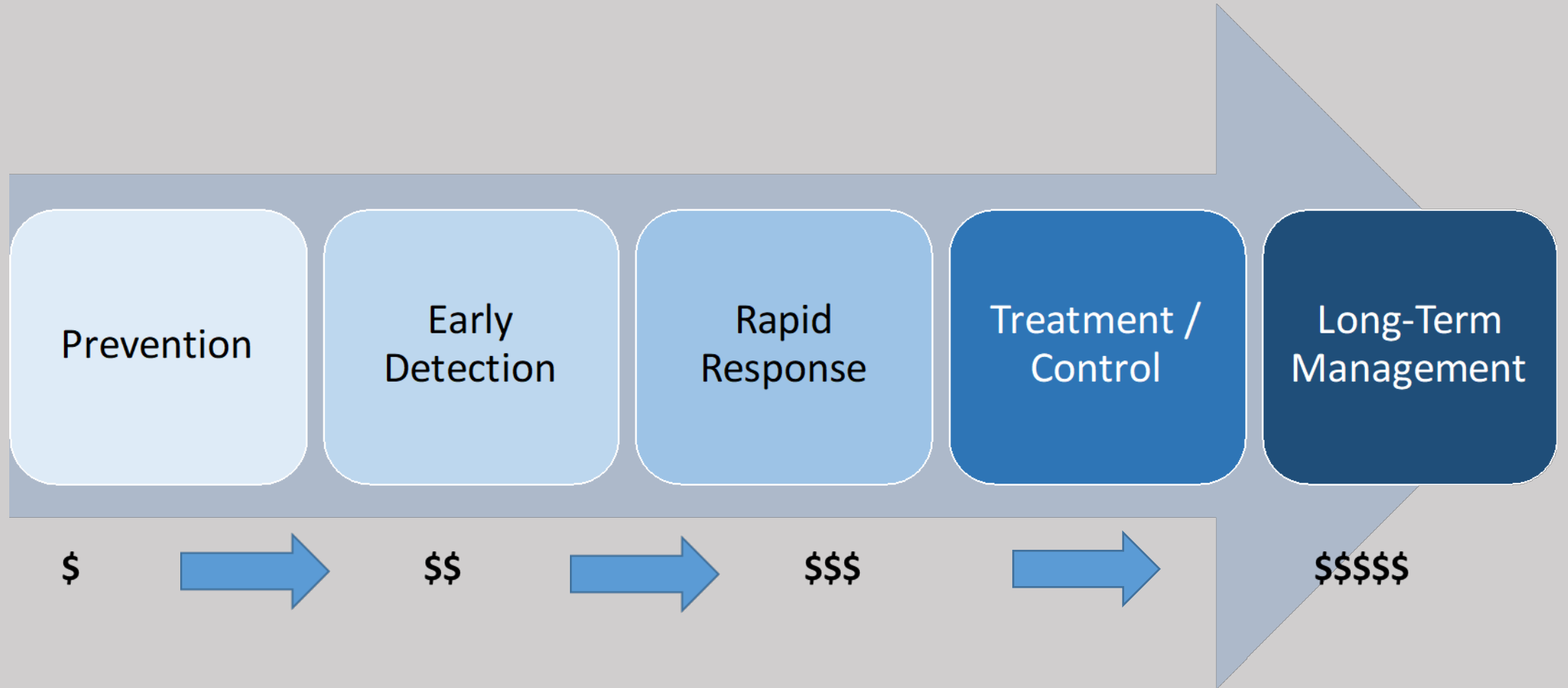
Power Plant Water Intake



Water Treatment Plant

Aquatic invasive species are moving east. These photos were taken in the Great Lakes area.

New Hampshire's AIS Threat Mitigation Process



Prevention and Early Detection

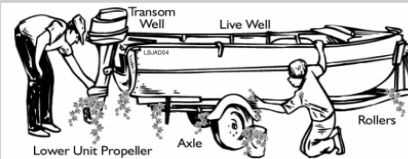
CLEAN

DRAIN

DRY

Please perform a self-inspection of your boat, trailer and gear.

Remove tag-along plants, animals and algae before launching and after leaving a waterbody.



Original illustration courtesy permission from Washington Department of Fish and Wildlife.

It is **ILLEGAL** to transport and introduce aquatic invasive species in New Hampshire.

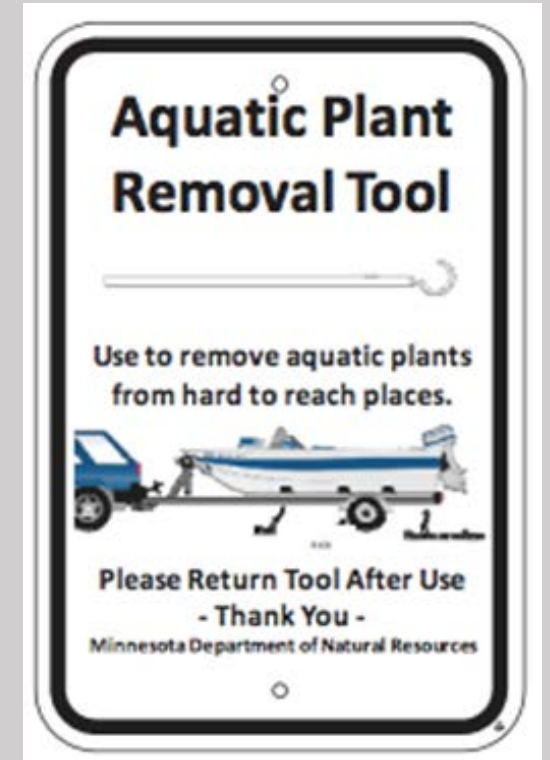
Violators are subject to fines.

Legislation



Lake Hosts, Weed Watchers, River Runners, Outreach

Best Available Technologies to Prevent AIS



Rapid Response, Treatment & Control

Rapid Response



DES Divers & DASH Unit

Treatment & Control



Hand-Pulling by Certified Diver



Diver Assisted Suction Harvest (DASH) Unit



Benthic Barrier



Herbicide Application



Long-term Management

5-Year, long-term management plans:

- Developed for 65 NH waterbodies
- Integrate management techniques
- Utilize public-private partnerships



State Agencies

NHDES Exotic Species Program

- Responsible for aquatic invasive plant species
- One full-time employee
- One seasonal intern
- Funded from boat registration fees, general fund and AIS decal



State Agencies

Department of Agriculture, Division of Pesticide Control

- Manages applications for herbicide treatments
- One partial full-time equivalent



State Agencies

New Hampshire Fish and Game Department

- Responsible for aquatic invasive animal species (clams, mussels, insects, etc.)
- No dedicated staff or funding
- No monitoring or rapid response plan



Exotic Aquatic Weeds and Species Committee

- Established in 2004 by RSA 487:30
- Members include legislators, state agencies, non-profit organizations, and public members
- Responsible for:
 - Studying the spread and control of AIS
 - Studying best management practices used in other states
 - Assisting NHDES
 - Recommending a program to NH Fish and Game for aquatic invasive animals

Funding for AIS Activities

NH DES Exotic Species Program funding comes primarily from dedicated boat registration fees. This funding covers prevention and control grants, research, salaries, administration, and supplies & materials.

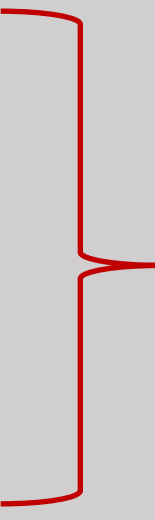
1981: \$0.50 per boat registration

1998: \$1.50 per boat registration

2003: \$4.50 per boat registration

2009: \$7.50 per boat registration

2015: \$9.50 per boat registration

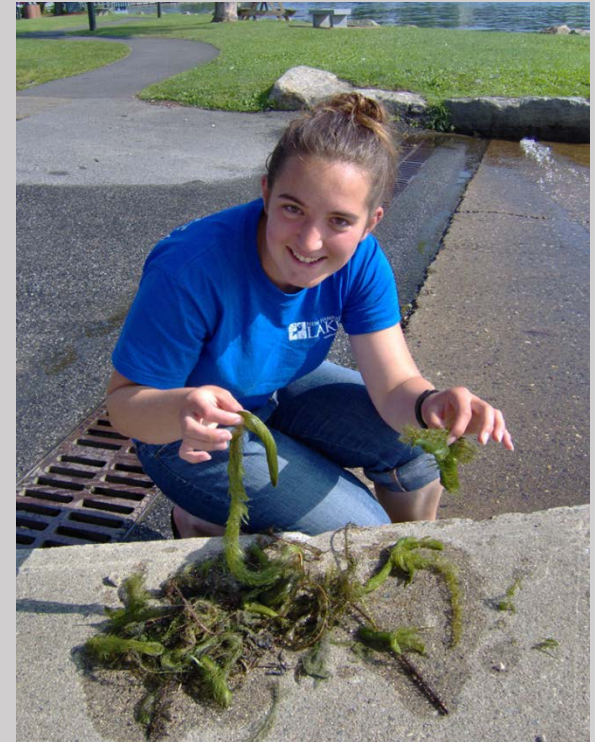


Annual average of 92,500 boats registered during past 5 years

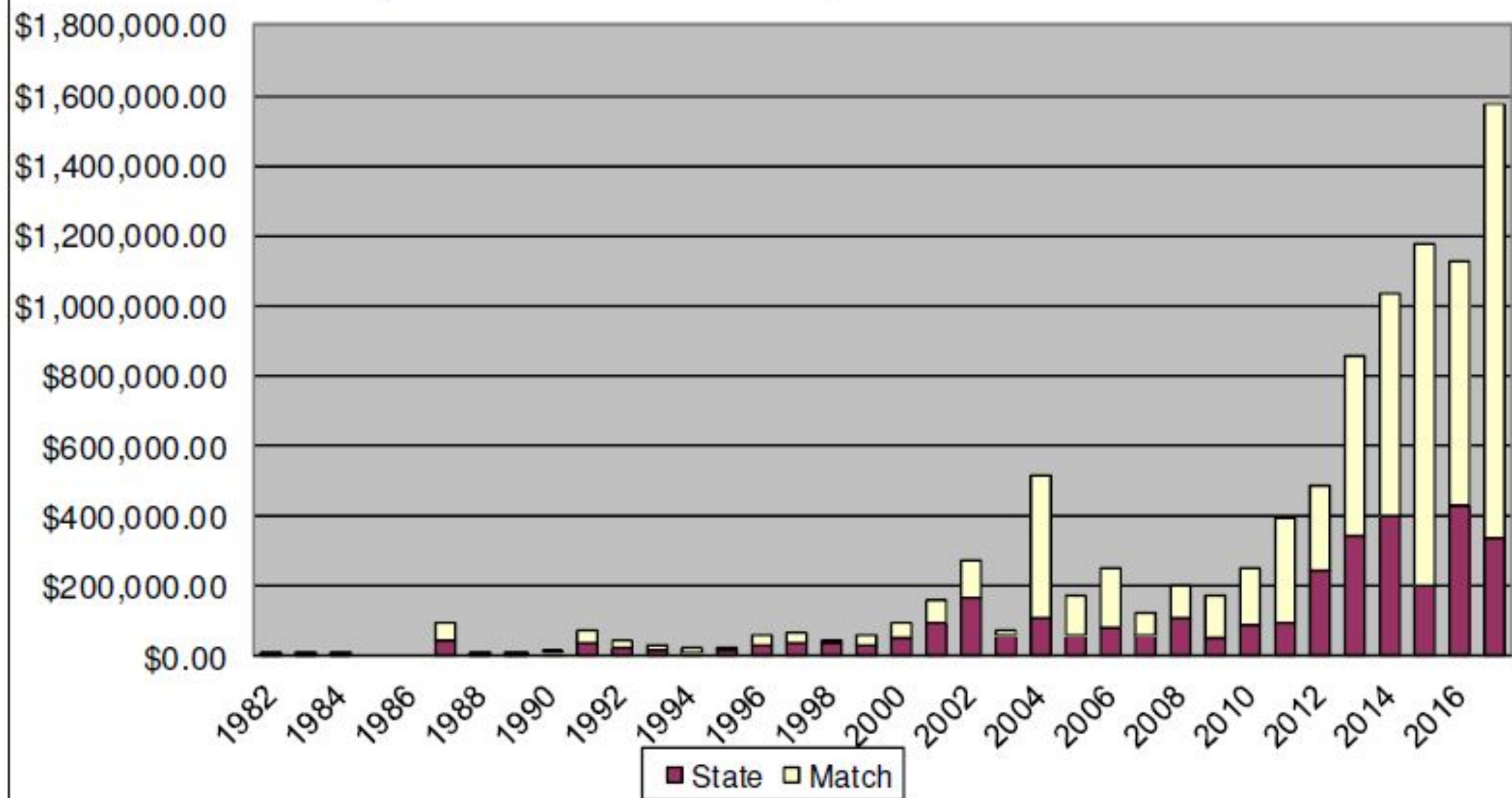
Funding for AIS Activities

Other sources of funding include:

- General funds – new as of 2020
 - ~\$400,000 over the biennium
- Decals – new as of 2020
 - ~\$150,000 per calendar year
- Private donations
- Municipal funds



Annual Expenditures for Exotic Aquatic Plant Control Activities



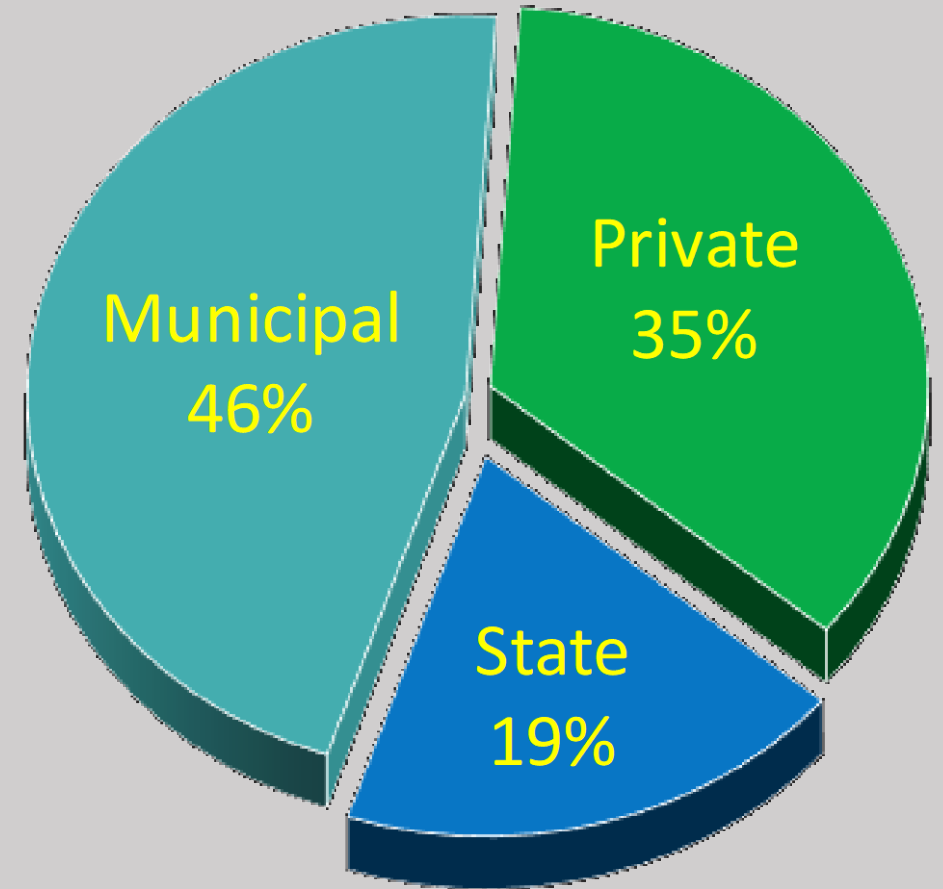
Control Grant Requests and Actual Available Grant Funds

Year	Requests for Grants	Cumulative Cost of Projects	Available to Grant	Grants Awarded
2005	22	\$175,673.00	\$50,000.00	16
2006	23	\$256,322.00	\$70,000.00	22
2007	14	\$140,000.00	\$70,000.00	14
2008	33	\$370,000.00	\$110,000.00	18
2009	34	\$575,000.00	\$60,000.00	13
2010	32	\$471,000.00	\$88,500.00	17
2011	32	\$362,000.00	\$93,000.00	22
2012	40	\$487,648.00	\$243,824.00	28
2013	40	\$343,799.00	\$343,799.00	40
2014	44	\$764,064.00	\$398,762.00	44
2015	45	\$1,173,725.00	\$198,553.00	45
2016	45	\$1,009,850.00	\$432,158.00	45
2017	41	\$1,129,422.00	\$338,789.00	41

Funding for AIS Activities

- Ossipee Lake Alliance study
 - Variable milfoil is, by far, the most prolific AIS in NH, infesting 74 waterbodies
 - More than \$1 million is spent each year on milfoil control projects
 - Surveyed annual costs and revenue sources for milfoil control projects in all infested waterbodies in 2009-2012
 - All “State” revenues come from dedicated boat registration fees – none from general funds

*Milfoil Control Funding
2009-2012*



The Threat is Serious and Will Increase

- AIS are currently causing significant economic and environmental impacts.
- The threats and impacts will continue to grow.
- Uncontrolled AIS could devastate NH tourism revenues.
- Currently, most AIS activities are paid for by boaters, municipal governments, and donations from businesses and private citizens.



What We CAN Accomplish

Asquam Cove, Squam Lake – before and after milfoil management



2019-2020 EAWSC Membership

- Rep. Suzanne Smith
- Rep. Jane Beaulieu
- Rep. Karen Ebel
- Rep. John Klose
- Rep. Rosemary Rung
- Sen. Melanie Levesque
- Glenn Normandeau (NH Fish & Game)
- Amy Smagula (NH DES)
- Matthew Bosiak (NHDAMF Pesticide Control)
- Kelly Buchanan (NH LAKES)
- June Fichter (public member)
- Robert Reynolds (public member)
- Will Stevenson (New England Aquatic Plant Management Society)
- Michele Tremblay (New Hampshire Rivers Council)
- Kathy Urffer (Connecticut River Watershed Council)
- Vacant (NH Marine Trades Assoc.)