

Exotic Aquatic Plant Control in NH: What's the Bottom Line?



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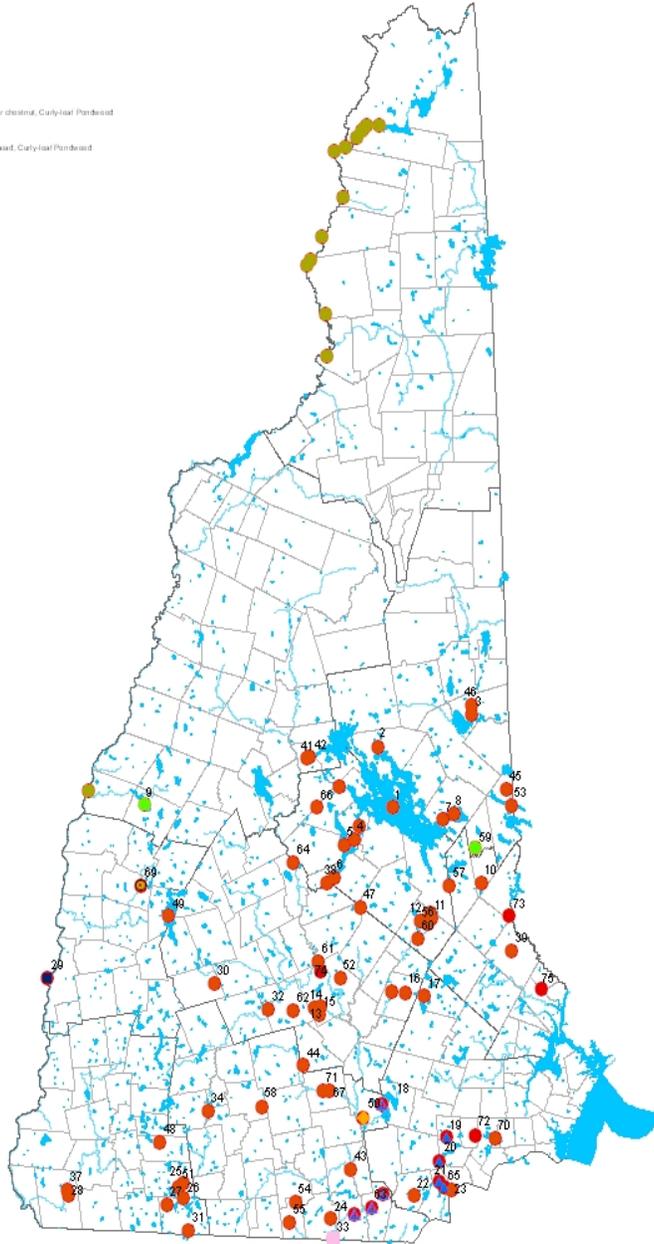


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NH DES

Exotic Aquatic Plant Infestations in New Hampshire

Infestation Type

- SPECIES**
- Variable milfoil
 - Fanwort
 - Variable milfoil/Fanwort
 - Eurasian milfoil
 - Brazilian elodea
 - Variable milfoil/Fanwort/Water chestnut, Curly-leaf Pondweed
 - Curly-leaf Pondweed
 - Eurasian milfoil, European Naiad, Curly-leaf Pondweed
 - Didymosphenia geminata*



Updated July 2010

Right now there
are 85
infestations on
76 waterbodies.

- 67 variable milfoil
- 5 Eurasian milfoil
- 9 fanwort
- 1 water chestnut
- 1 Brazilian elodea
- 3 European naiad
- 2 Curly-leaf pondweed
- 4 Didymo

Why We Care

- Exotic aquatic plants pose a threat to the ecological, biological, chemical, functional, recreational, aesthetic and economical values of our lakes and ponds: *each of these has some type of cost tied to it!*
- DES is charged with protecting and enhancing the natural resources of the State
 - Enforces state WQ standards
 - Reports to EPA every 2 years on impaired waters
 - Exotic aquatic plants in a waterbody are viewed as a water quality impairment

A Quick Program History

- Activities associated with the control of exotic aquatic plants formally began in 1981 with the passage of an exotic plant control law, RSA 487:15.
- In 1998, RSA 487:16-a was adopted, establishing the current legislative basis for the Exotic Aquatic Plant Program.
- In September of 1999, Chapter Env-Ws 1300 was adopted, further defining the provisions of the exotic aquatic

RSA 487:17, II

The department is directed to prevent the introduction and further dispersal of exotic aquatic weeds and to manage or control exotic aquatic weed infestations in the surface waters of the state.

It's the Law!



RSA 487:16-a prohibits certain activities associated with listed exotic aquatic plants, including:

- Sale
- Distribution
- Importation
- Purchase
- Propagation
- Transportation
- Introduction

Program Funding

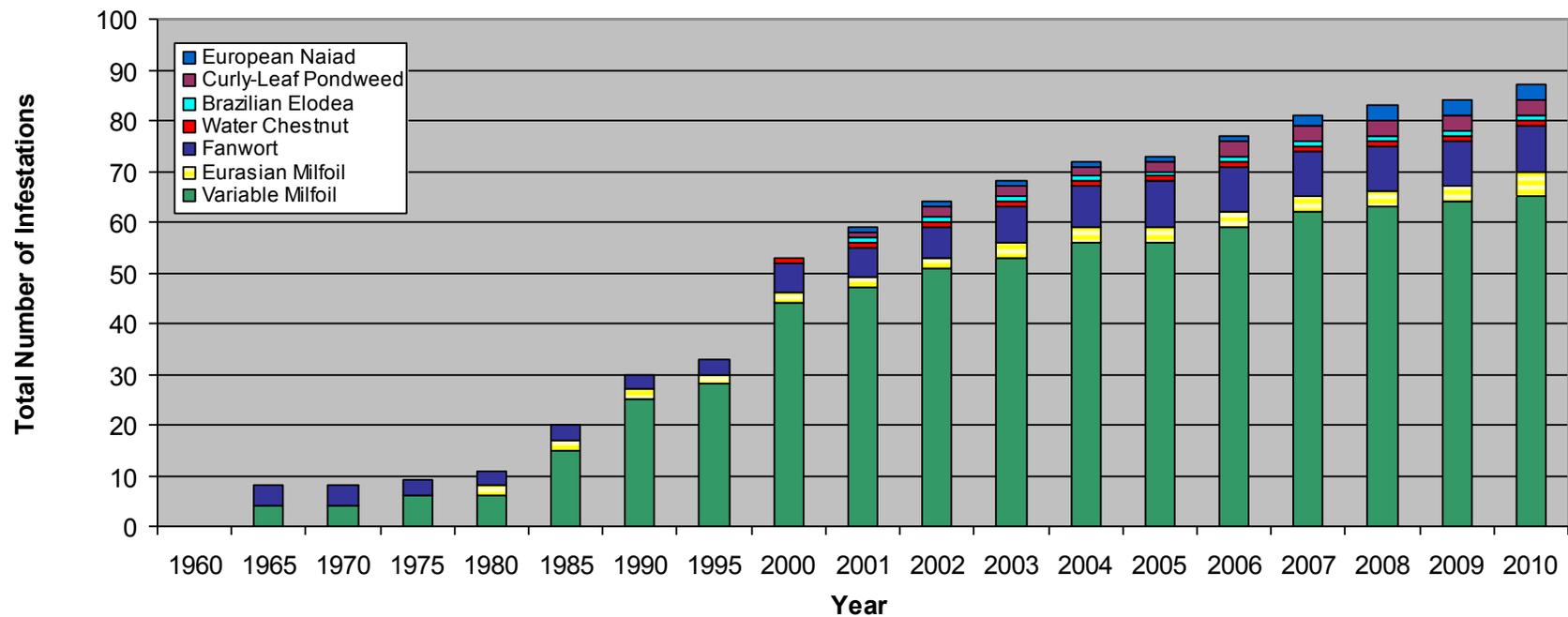
- The Lake Restoration Fund receives \$7.50 per boat registration:
 - \$2.50 goes to exotics
 - Control (eradication) projects
 - Supplies/materials
 - Administrative
 - \$4.00 goes to prevention and research grants
 - 2/3 to prevention
 - 1/3 to research
 - A percentage goes to staff time for implementing the program
 - \$0.50 goes to Clean Lakes Program
 - Staffing to perform studies and implementation projects

Exotic Species Program Staff

- 1 program coordinator (Amy Smagula)
 - 1 summer intern
- 2 biologists (under other funding) that dive 1 day/week in summer

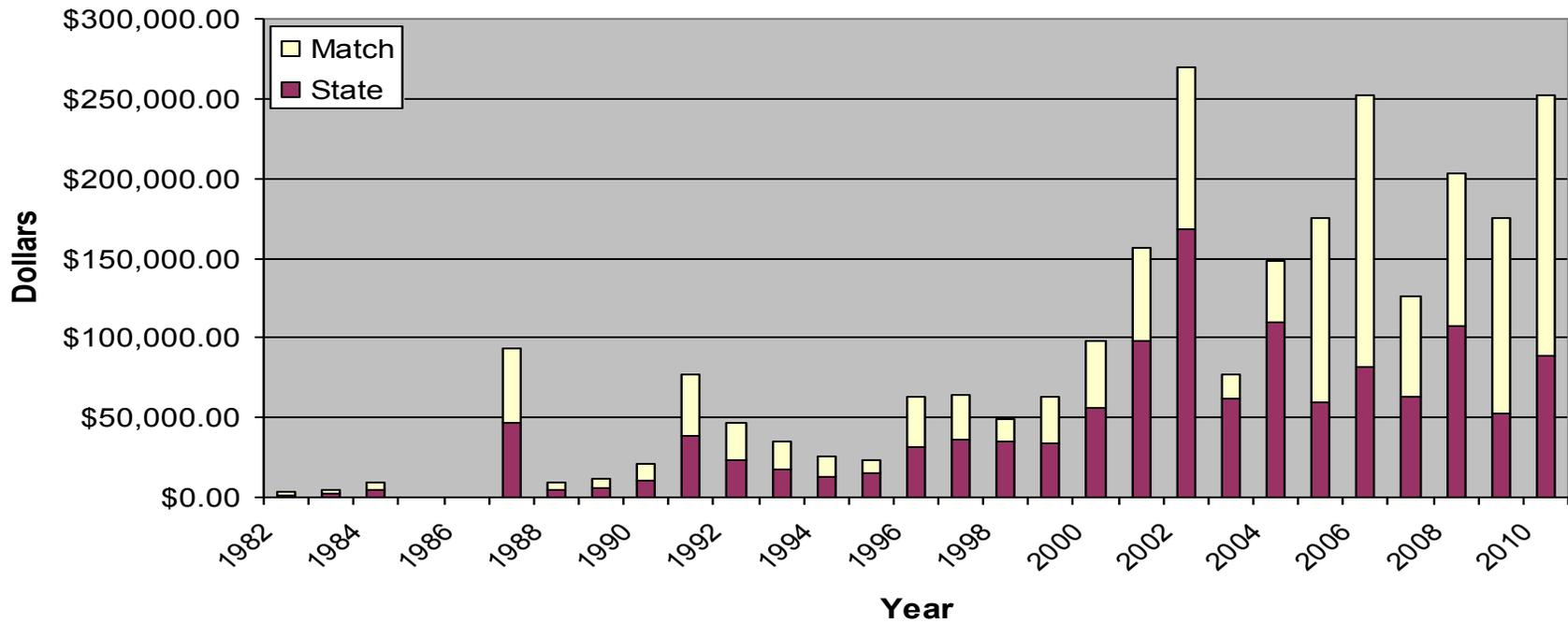
Extent and Trends of Exotic Aquatic Plants

Exotic Aquatic Plant Infestations Over Time



Matching Funds

Annual Expenditures for Exotic Aquatic Plant Control Activities



Control

- Control strategies use a scaled approach and are determined based on the type, size, density, and distribution of an infestation
- We strive to implement an integrated approach at control (Integrated Pest Management or IPM)

In the Past

- We were more reactive to problems
 - Control would take place when the problem got very bad
 - Control would be conducted and then there would be a lag until the problem got very bad again
 - Appropriate methods and herbicide products were not selected for or optimized
 - We were not making any headway

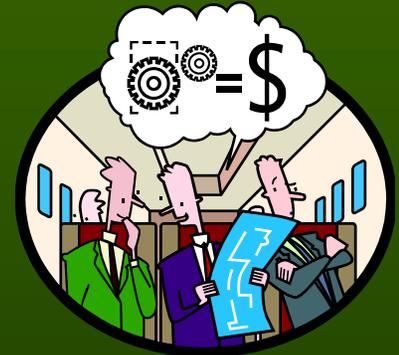
What is In a Management Plan?

IT' S STRATEGY!

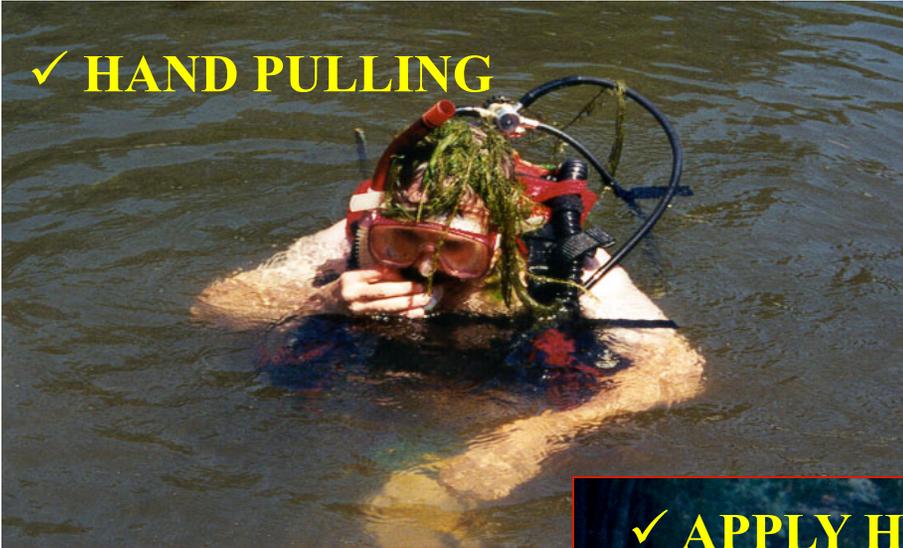
- Problem Statement
- Statement of Goals
- Designated Uses of Waterbody
- Historical Management Practices
- Evaluation of Available Strategies
- Preparation of a 5-year plan for control

Benefits of Management Plan

- Uses Integrated Pest Management Approach
- More coordinated and strategic approach
- Helps better earmark funding
- Allows for better tracking of progress
- Allows for follow up and use of alternative strategies
- Cooperation, collaboration



✓ HAND PULLING



✓ BOTTOM MATS



✓ APPLY HERBICIDES



✓ SUCTION
HARVESTING



✓ DRAIN THE LAKE



Cost Ranges

Control Type	Cost Range
Hand-pulling	\$25-\$150/diver/hour or more
Diver-Assisted Suction Harvesting	\$500-\$10,000/acre
Herbicides	\$400-\$1000/acre
Benthic Barriers	\$1.25/sq ft for material
Mechanical Harvesting	\$2,000-\$3,000/acre or more
Biological Control	Indeterminate
Drawdown	Free, but not effective in most cases

A 5-Year Approach to Controlling It All

Five-Year Plan Elements	Cost
Herbicide treatments (each infested waterbody, two treatments each, if needed)	\$2,622,650.00
Contracted Services for Diver-Assisted Suction Harvesting	\$3,933,200.00
Staffing (8 full-time seasonal certified divers each year for five years to operate state-owned suction harvesters, plus tenders to assist the divers)	\$500,000.00
Equipment/Materials/Supplies	\$114,000.00
Total	\$7,169,850.00

NH' s Exotic Species Mantra

- Prevention
- Early Detection
- Rapid Response
- Containment
- Control

**High Control Costs Make
Prevention and Early Detection
Critical Elements!**

Prevention: Outreach, Education, and The Lake Host Program



Early Detection: Weed Watchers



Our Approach in NH is Good

Our Methods in NH are Good

Our Funding is Not Sufficient

Questions?

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