Exotic Aquatic Plants: A Growing Problem in New Hampshire….

…and Close to Home in Robinson and Otternic Ponds in Hudson

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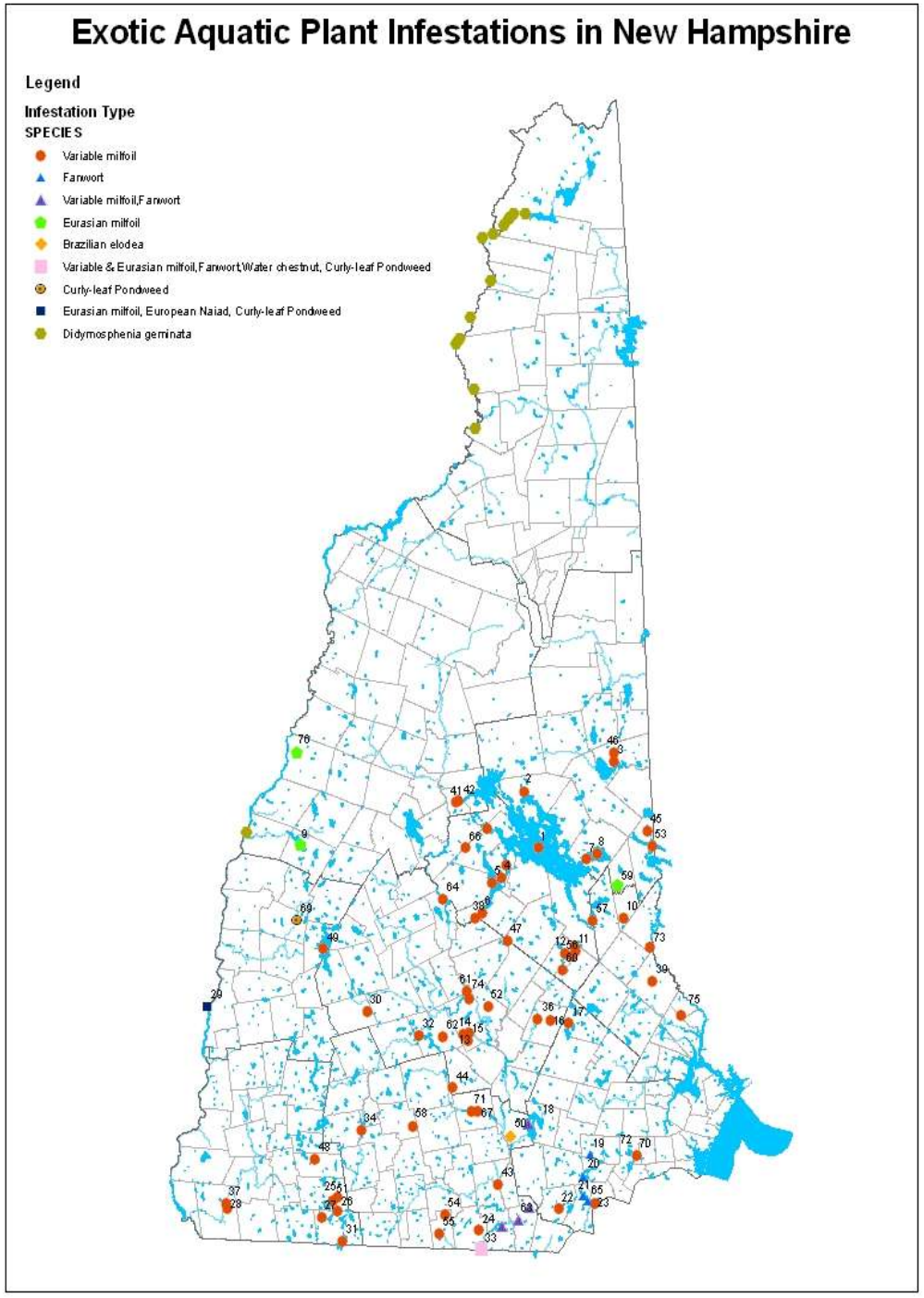
NH DES



The Haves....

- 69 waterbodies with variable milfoil
- 5 waterbodies with Eurasian milfoil
- 9 waterbodies with fanwort
- 1 waterbody with water chestnut
- 1 waterbody with Brazilian elodea

And Have Nots (Yet)

- Zebra Mussels – VT, CT, NY, MA
- Hydrilla – MA, ME, CT, NY, RI(?)

Why are exotic plants bad?

- They grow rapidly and form monocultures
- They reduce and replace native plants
- They alter habitat
- They change water chemistry, temperature
- They cause declines in shorefront property values (and thus can impact the tax base)
- They are expensive to control and difficult to eradicate

Two Invasive Aquatic Plants in Hudson Waterbodies

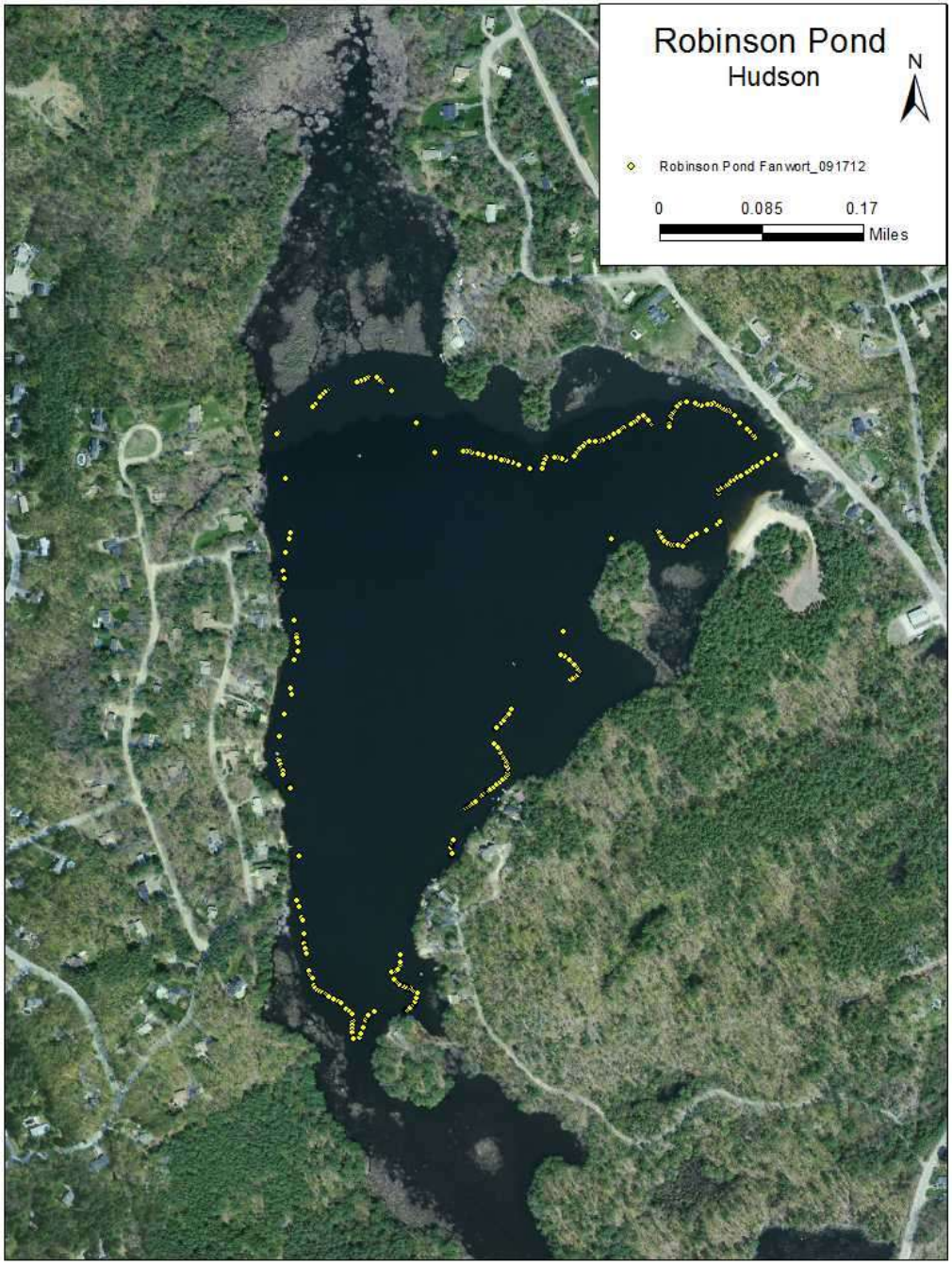
Variable milfoil

Fanwort


MERCURY

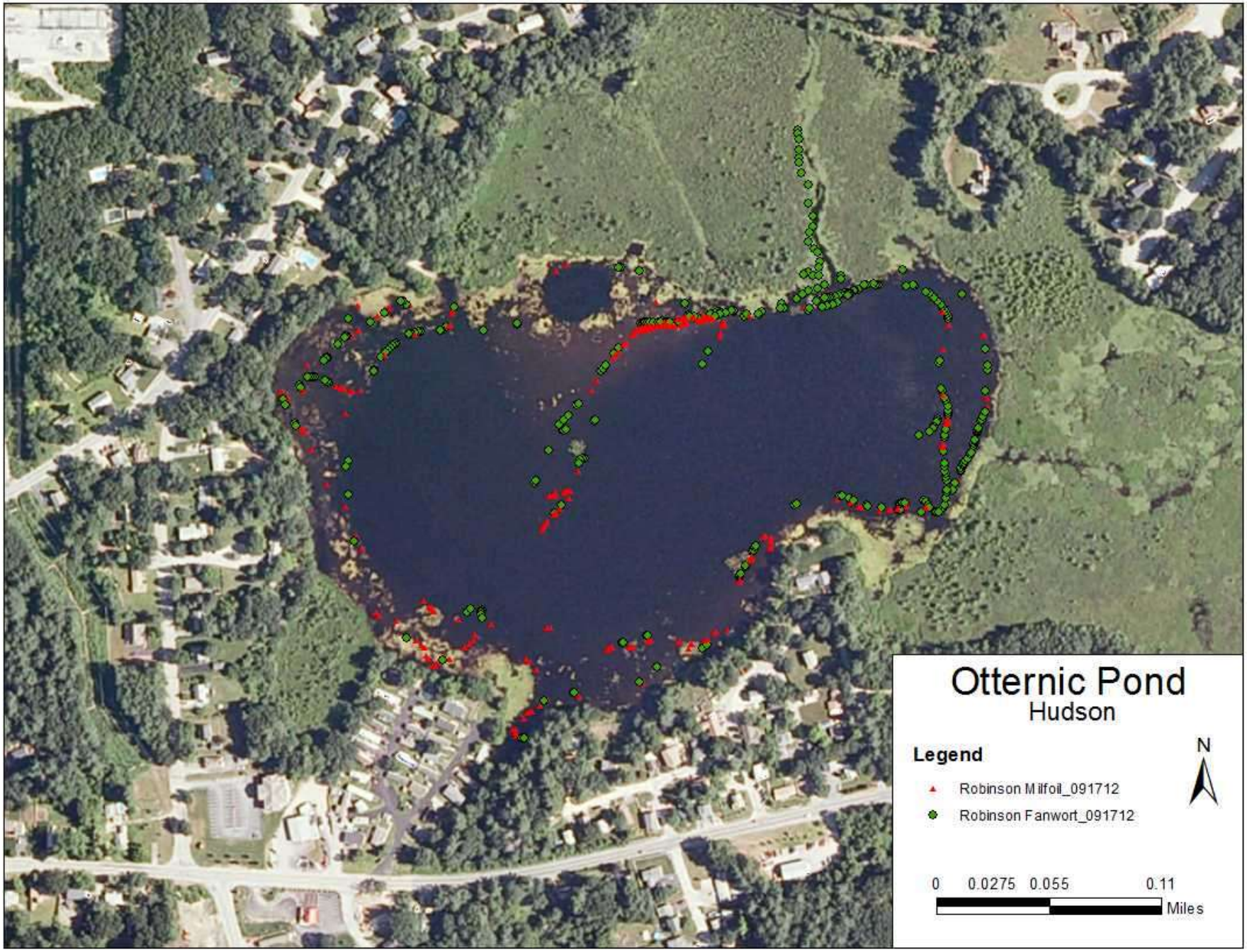
Native Aquatic Plants Are Beneficial and Provide:

- Surfaces on which algae grow
- Refuge for zooplankton, fish
- Shade
- Oxygen
- Nutrient uptake/ recycling
- Erosion control
- Food for critters and people too
- Shelter-building materials
- Bottom sediment stabilization
- Aesthetic value
- Macroinvertebrate habitat


Robinson Pond
Hudson
N
Robinson Pond Fanwort_091712
0
0.085
0.17
Miles

Robinson Control Activities

DATE	ACTION	ACRES	CONTRACTOR/ ENTITY
11-Jun-02	FLURIDONE	97	LYCOTT
18-May-10	FLURIDONE	97	ACT
Summer 2011	DASH	Varied	AB Aquatics
Summer 2012	DASH	Varied	AB Aquatics


Otternic Pond
Hudson
Legend
Robinson Milfoil_091712
Robinson Fanwort_091712
N
0 0.0275 0.055 0.11
Miles

Otternic Control Activities

DATE	ACTION	ACRES	CONTRACTOR/ ENTITY
01-Jun-05	2,4-D	25	ACT
01-Jun-09	FLURIDONE-P	34	ACT
22-Jun-09	FLURIDONE-P	34	ACT
20-Jul-09	FLURIDONE-P&L	34	ACT
Summer 2010	Diving/DASH	Varied	AB Aquatics
Summer 2011	Diving/DASH	Varied	AB Aquatics
Summer 2012	Diving/DASH	Varied	AB Aquatics

Why Are the Invasive Back?

- After long-term and intensive management, why are the invasives creeping back in?

2012 Growing Season

- Mild winter, short ice cover
- Ice out in early to mid-March
- Warm sunny days
- Ideal growing conditions
- Much of state had extensive plant growth
  - Native plants bigger, more expansive
  - Exotic aquatic plants in many areas rebounded significantly even with progress in management in last several years

Variable milfoil from Otternic Pond

Similar Trends in 2012 Among Infested Waterbodies

- Many waterbodies that had infestations in check for a few years, that were relying on diving alone, saw major increases in infestation:
  - Back Bay went from 35 acres of milfoil a few years ago to very little in the last couple of years, to back to 28 acres in 2012
  - Lake Potanipo went from >40 acres of growth down to minimal scattered growth in the last couple years, this year they rebounded back up to nearly 40 acres again.
  - Phillips Pond saw fanwort that was nearly eradicated in a treatment a few years to rebound to a few acres this summer, after no growth for 4 years, and only a few stems in last couple of years

Status of Growth in Both Ponds

- Robinson
  - 75% fanwort coverage in nearshore zone
  - 5% variable milfoil coverage
  - 20% native plants
- Otternic
  - 40% fanwort coverage
  - 40% variable milfoil coverage
  - 20% native plants

Control Options

- Herbicide treatment
  - Fluridone (systemic) or Clipper for fanwort, 2,4-D formulation for variable milfoil
- Physical removal
  - Hand removal and DASH (how much is too much to pull, how many days are needed, etc)
  - Benthic barrier placement (small areas only)
- Biological control
  - No identified pests or pathogens
  - Grass carp- fanwort not preferred food, and illegal in NH

2013 Control Specifics (in an ideal world)

- Robinson
  - Clipper treatment in spring 2013
  - Monitoring and diver follow-up remainder of summer and fall
- Otternic
  - Clipper treatment in spring 2013
  - 2,4-D treatment in fall 2013
  - Monitoring and diver follow-up remainder of season

Weed Watchers

- Weed Watchers provide the benefit of an ‘eye on the lake’ through the growing season
  - They report new or expanding growth
  - They help mark and guide diver work
  - They keep an eye out for any new infestations
- Weed Watcher work is a supplement to lakewide biologist surveys
- *Kudos to the Weed Watchers on both Otternic and Robinson Ponds*

Beyond 2013

- Might need to treat again in 2014 or 2015 in one or both ponds
- An integrated approach is recommended, with both chemical and non-chemical means of control linked to continue to reduce biomass in both ponds
- Move to more 'on call' diver to come a few days a month through the summer for a few years to keep biomass low in both waterbodies, rather than a spring and fall "cleaning"

2013 Grant Funds

- For 2013, DES is able to provide the following:
  - Up to $17,800.00 for exotic plant control activities
    - Diver/DASH- $6,400.00
      - (split between both ponds)
    - Herbicide Treatment- $11,400.00
      - (for one waterbody)

Next Steps

- Grant paperwork has been sent to town, and town:
  - Needs to decide which waterbody will be treated with herbicide in 2013, then
  - Needs to enter into agreements with herbicide and DASH providers for 2013; then
  - Needs to complete and return grant paperwork to DES for processing

Thank you!

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