

US EPA ARCHIVE DOCUMENT



Connecticut's Invasive Aquatic Plant Problem

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Department of Soil and Water

Invasive Aquatic Plants



Before

After



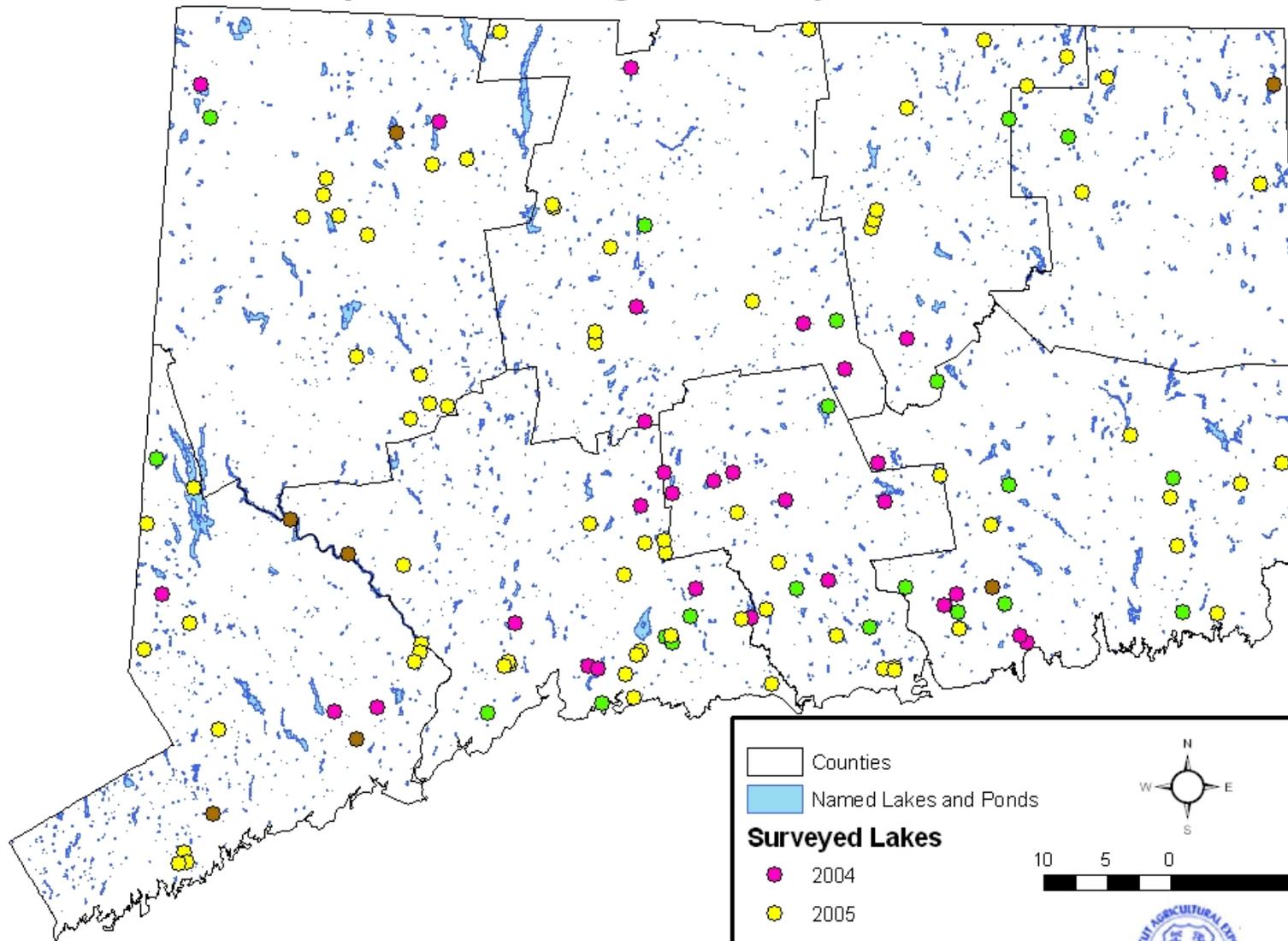
Connecticut Agricultural Experiment Station

Invasive Aquatic Plant Program

(CAES IAPP)

- **Survey lakes and ponds, map vegetation, correlate with water chemistry, use, sediment watershed etc.**
- **133 water bodies surveyed**
 - **11 invasive aquatic plant species found**
 - **62 percent of the water bodies contained one or more invasive species**

Invasive Aquatic Plant Program Surveyed Lakes 2004- 2007

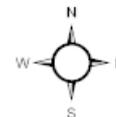


Counties

Named Lakes and Ponds

Surveyed Lakes

- 2004
- 2005
- 2006
- 2007



10 5 0 10 Miles



Found in = 31 water bodies

Eurasian Water Milfoil

Myriophyllum spicatum

Found in = 26 water bodies

Variable Water Milfoil

Myriophyllum heterophyllum

Found in = 1 water body



Parrot feather

Myriophyllum aquaticum

Found in = 13 water bodies

Cabomba (Fanwort)

Cabomba Caroliniana



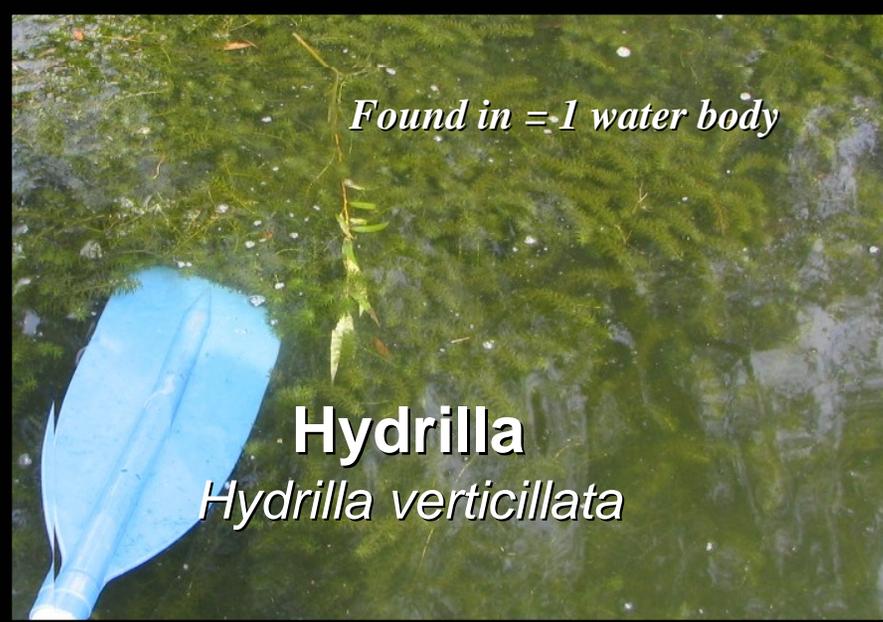
Found in = 23 water bodies

Curly Leaf Pondweed
Potamogeton crispus



Found in, = 23 water bodies

Minor Naiad
Najas minor



Found in = 1 water body

Hydrilla
Hydrilla verticillata



Found in = 2 water bodies

Water Chestnut
Trapa natans

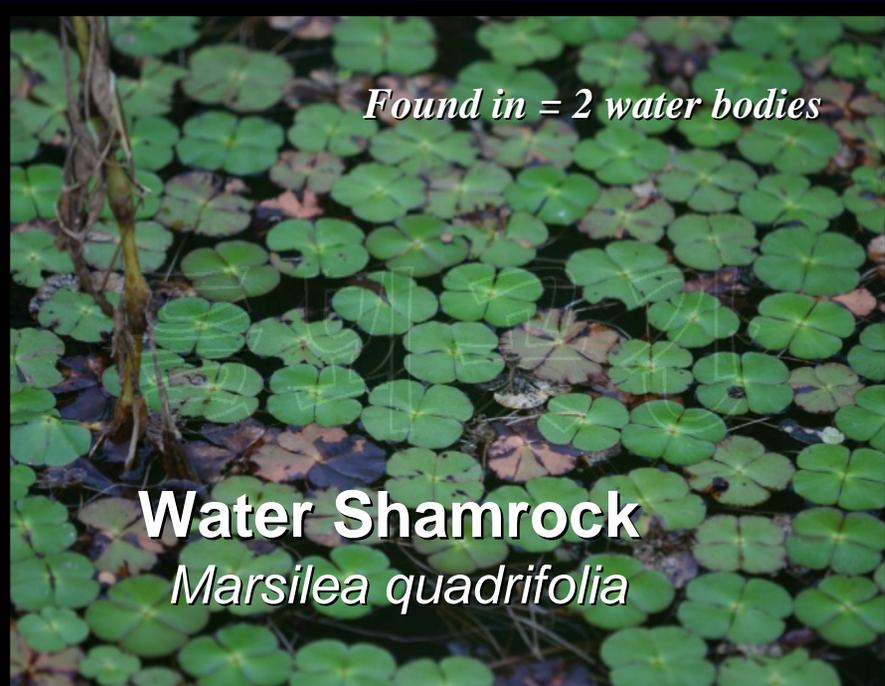


http://biology.usgs.gov/invasive/images/water_hyacinth.jpg

Found in = 1 water body

Water-hyacinth
Eichornia crassipes

http://tropicalplant.air-nitty.com/top/images/eichornia_crassipes4s.jpg



Found in = 2 water bodies

Water Shamrock
Marsilea quadrifolia



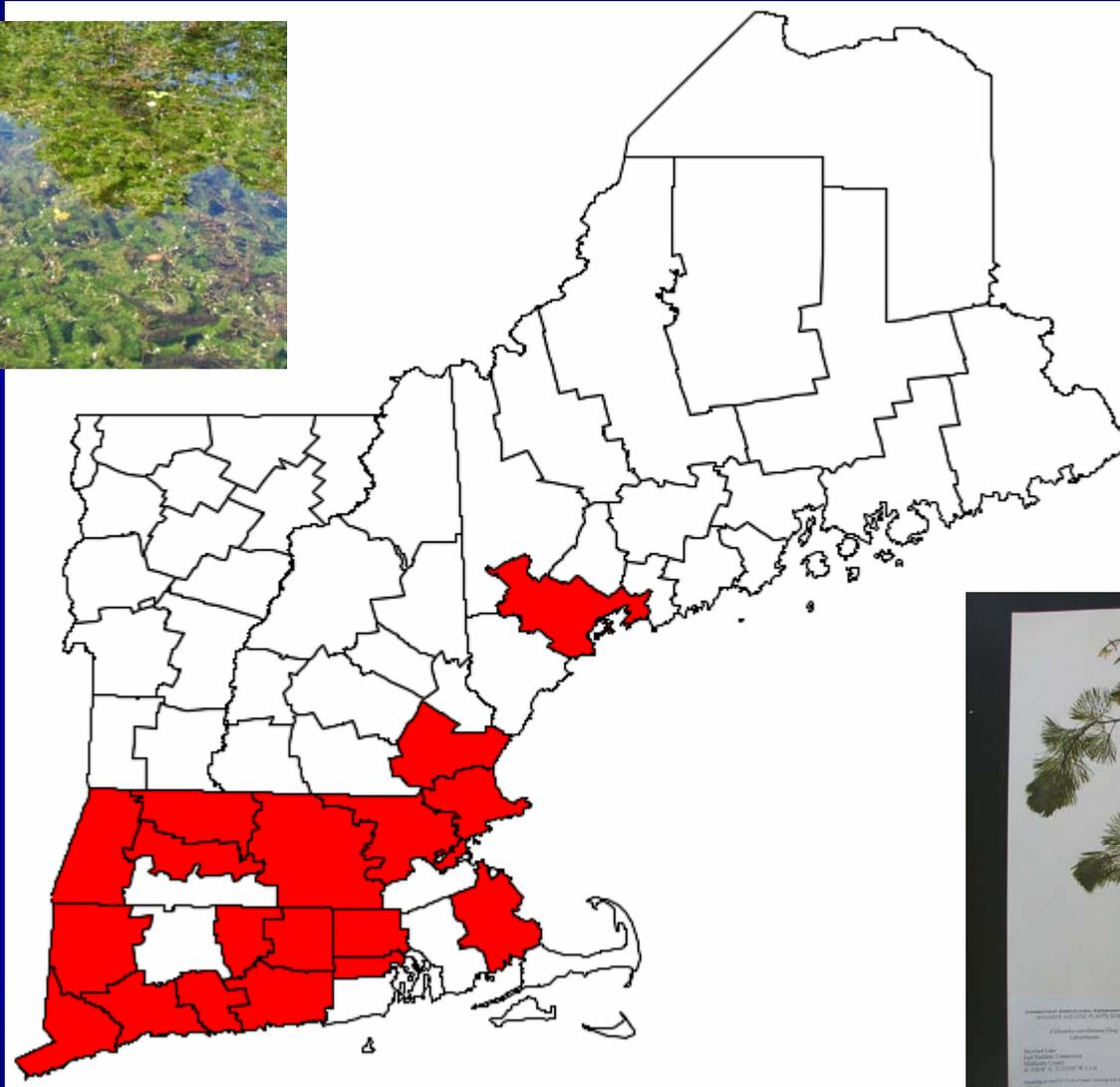
Found in = 5 water bodies

Glossostigma (Mud mat)
Glossostigma cleistanthum

Why Connecticut is Important

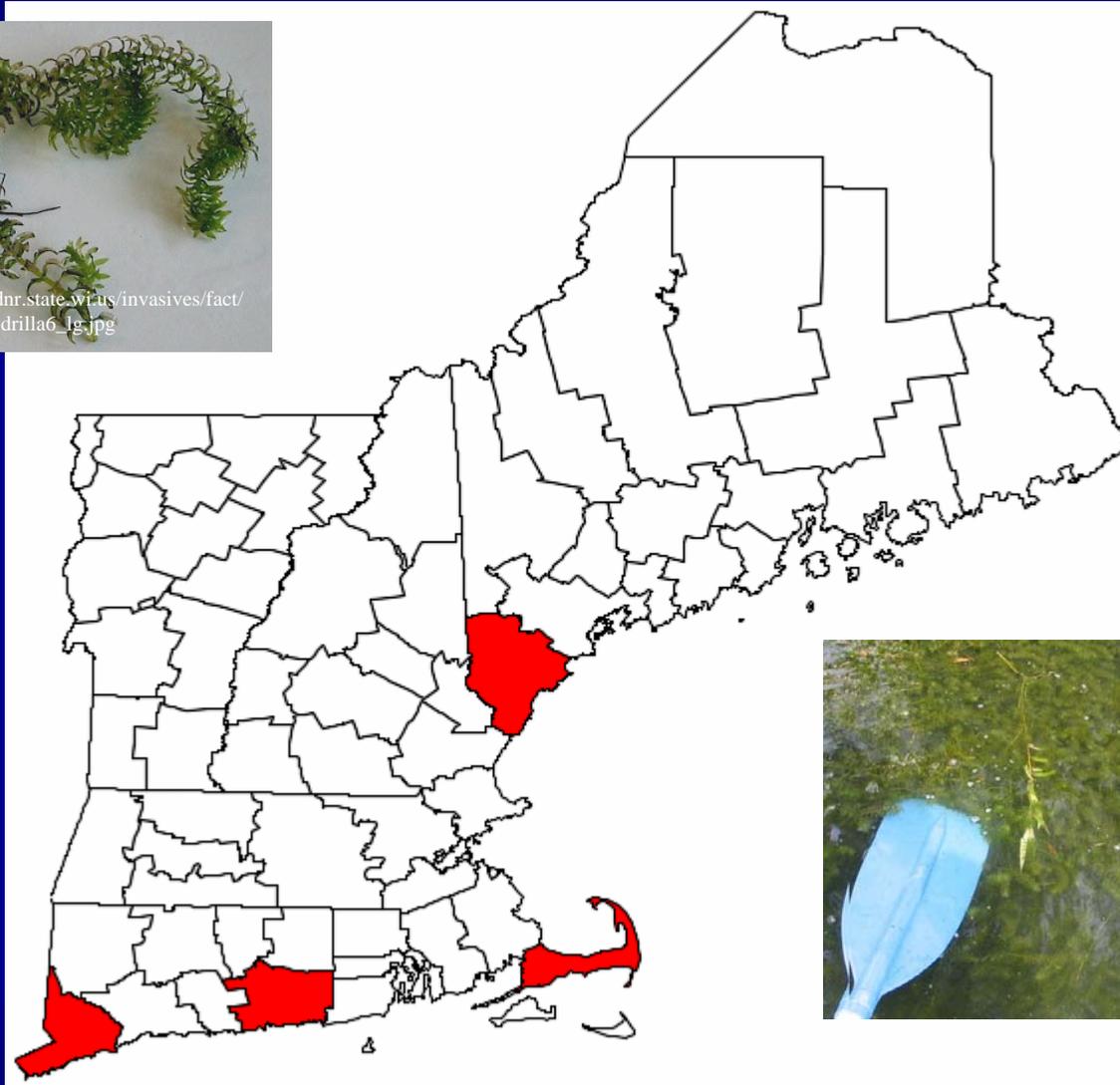
- Southernmost New England state
 - Gateway for species moving northward as a result of climate change
- Highly developed watersheds and shorelines make lakes and ponds prone to human impacts
- State regulatory agencies take a proactive approach to aquatic plant management

Distribution of *Cabomba caroliniana**



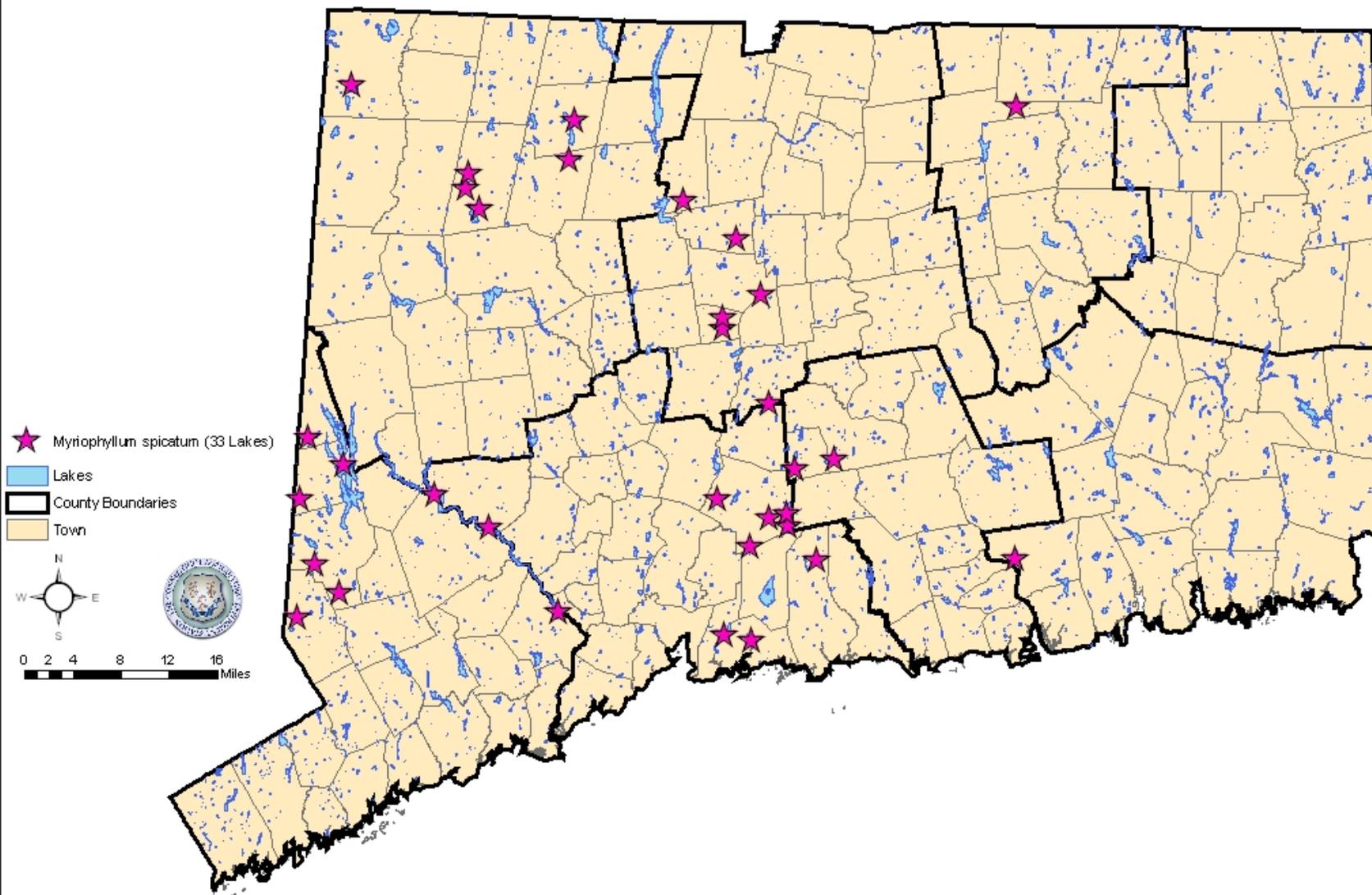
* This map was generated using the IPANE data available on 2008-3-24 (E.T.).
Prepared by the IPANE project.

Distribution of *Hydrilla verticillata**

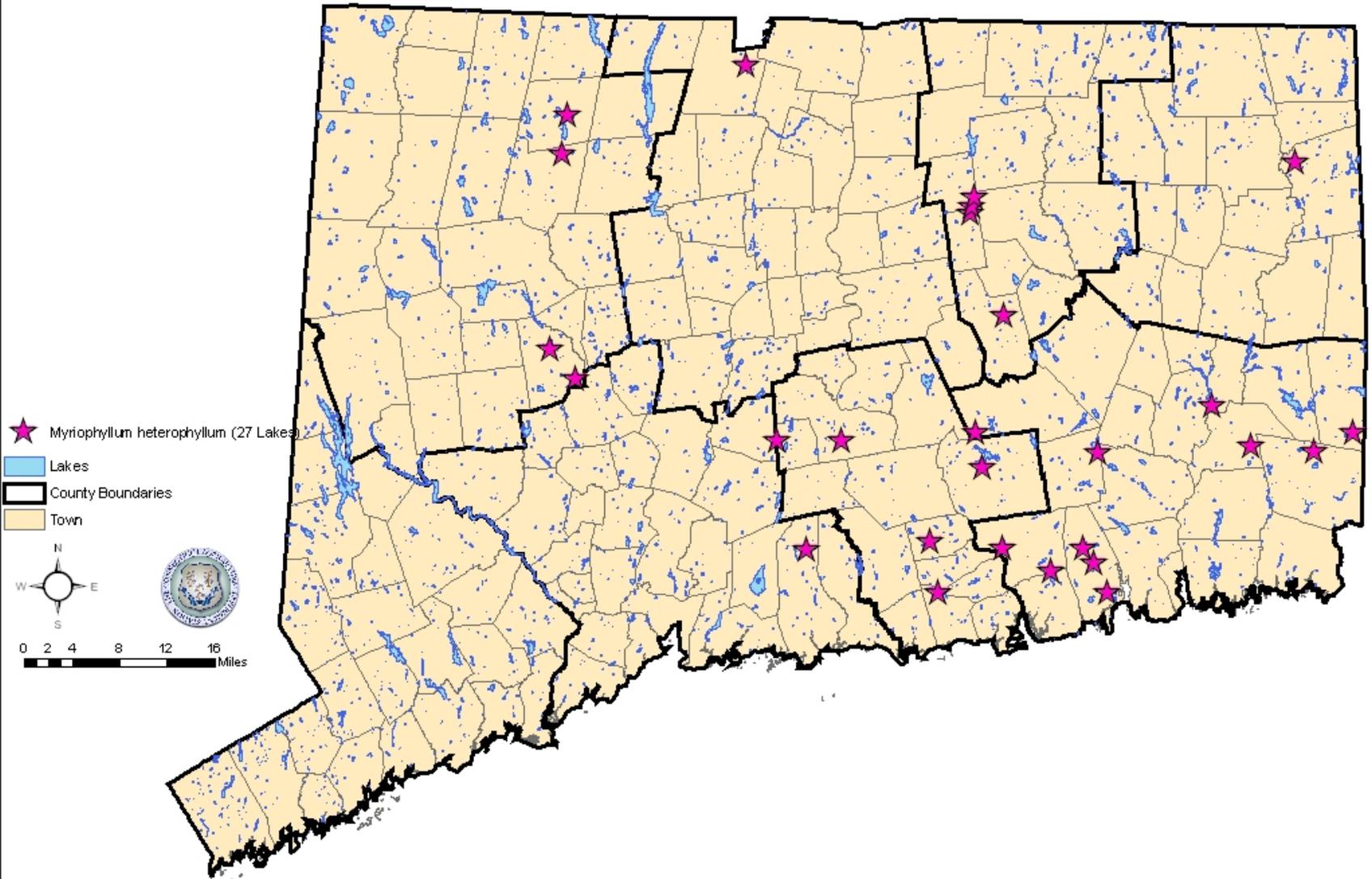


* This map was generated using the IPANE data available on 2008-3-24 (E.T.).
Prepared by the IPANE project.

Myriophyllum spicatum Found in the 2004-2007 CAES IAPP Surveyed Lakes



Myriophyllum heterophyllum Found in the 2004-2007 CAES IAPP Surveyed Lakes



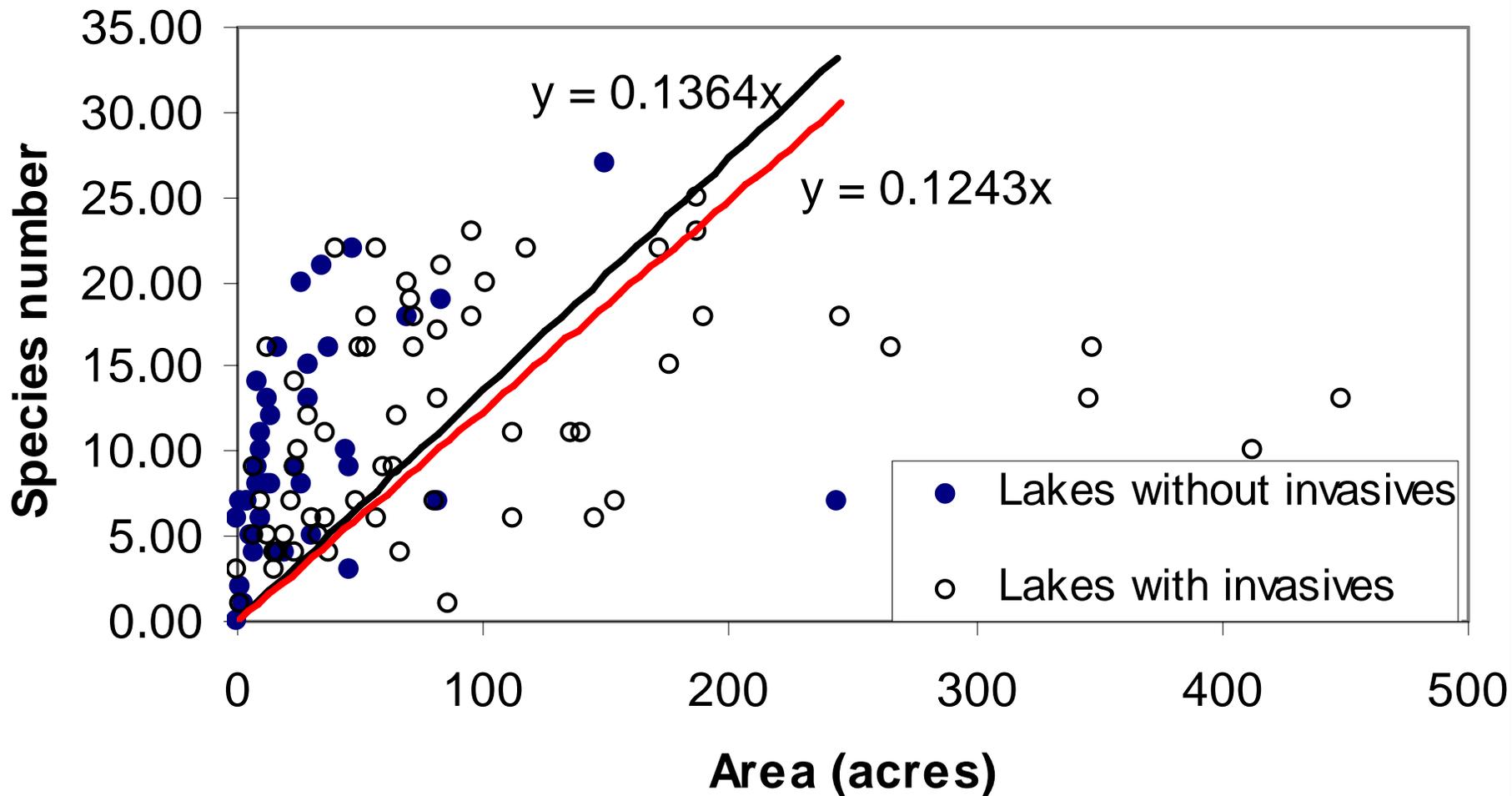
Water Chemistry Preferences of Invasive Aquatic Plants

	With <i>M. heterophyllum</i> (mean)	Without <i>M. heterophyllum</i> (mean)
Transparency (<i>m</i>)	2.7	2.3
pH	6.3	6.6
Alkalinity (<i>mg/L</i>)	16	34
Conductivity (<i>uS/cm</i>)	86	138
Total P (<i>ppb</i>)	37	41

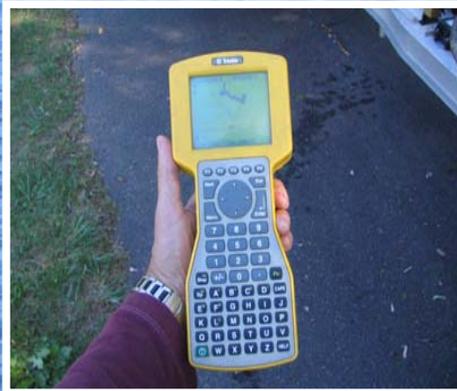
Invasive Aquatic Species in Connecticut Lakes and Ponds

Overall species richness increases with area

Native species richness not yet reduced by invasive species

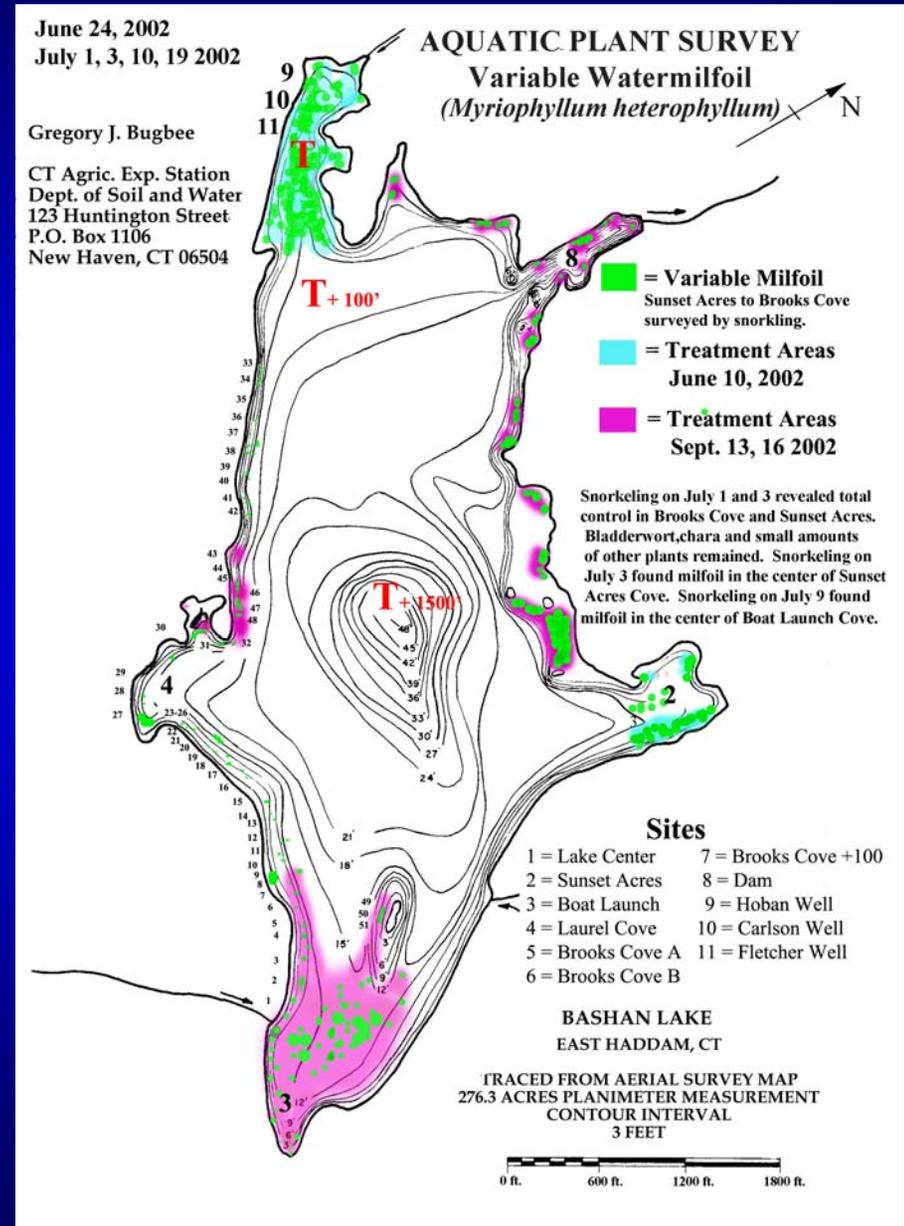
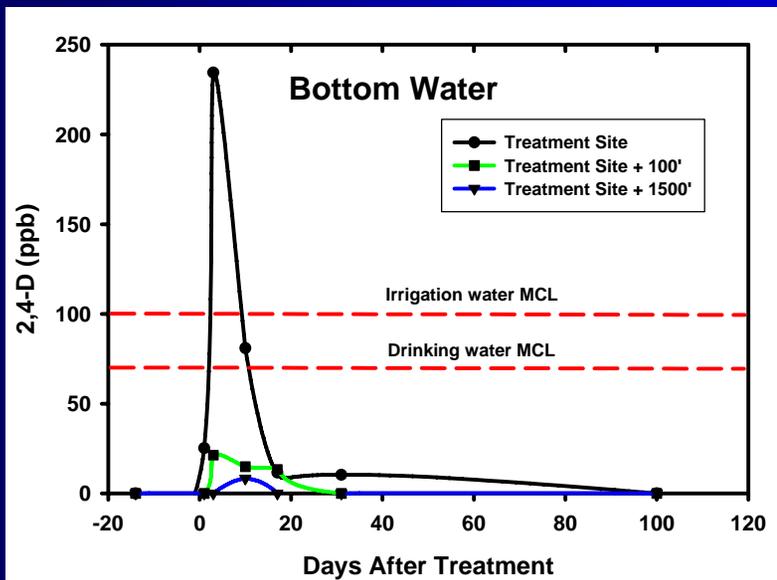
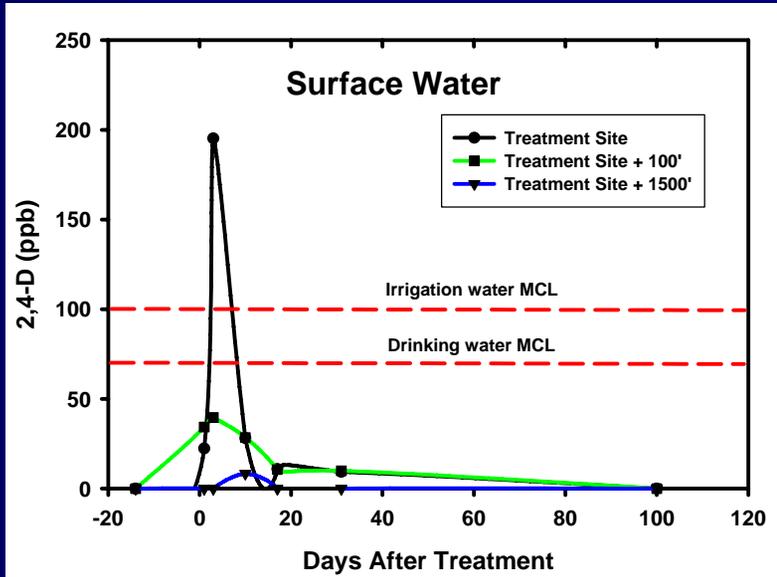


Aquatic Plant Management



**Bashan Lake
East Haddam, CT**

Persistence and Movement of 2,4-D



Control of Invasives Near Boat Launches



Before Fluridone SRP



Lake Quonnipaug
06/14/2001

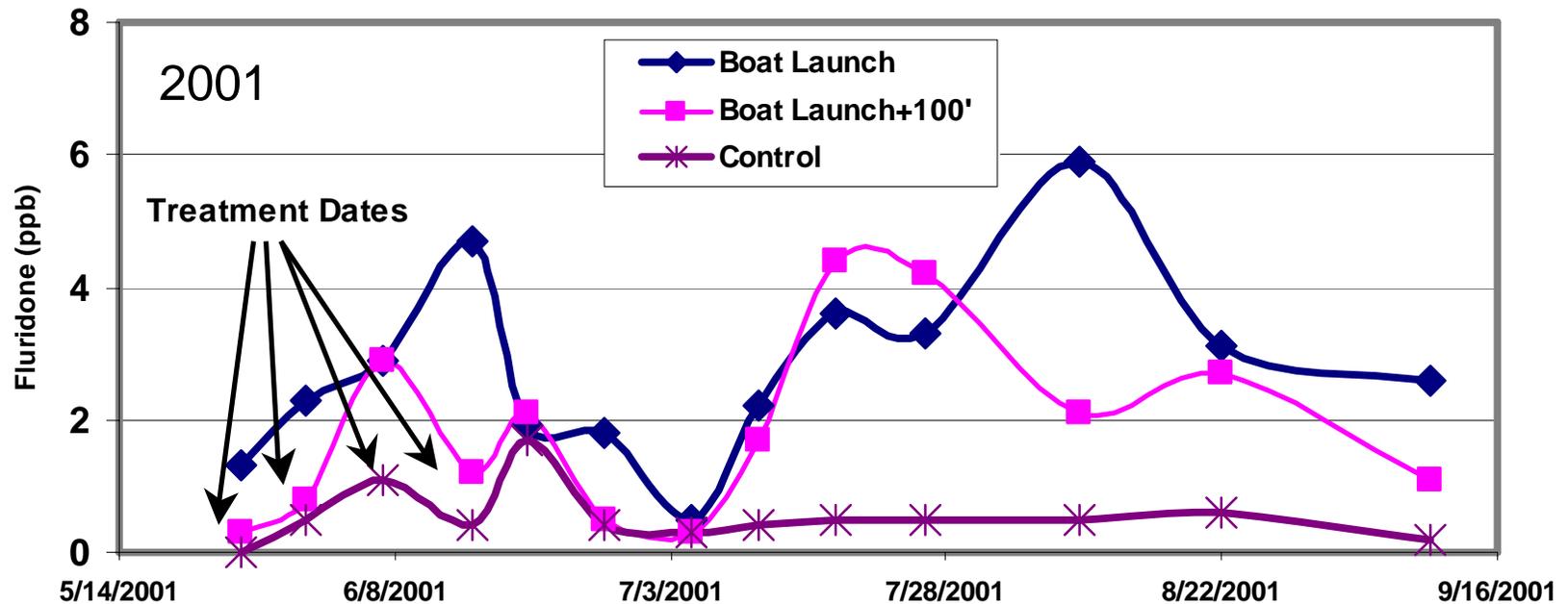
Lake Quonnipaug
Guilford, CT



After Fluridone SRP

Tracking Herbicide Concentrations

Figure 1. Sonar Concentrations Lake Quonnipaug.



Lake Quonnipaug Fall 2002



Lake Quonnipaug Summer 2003



Floating Island



Cabomba

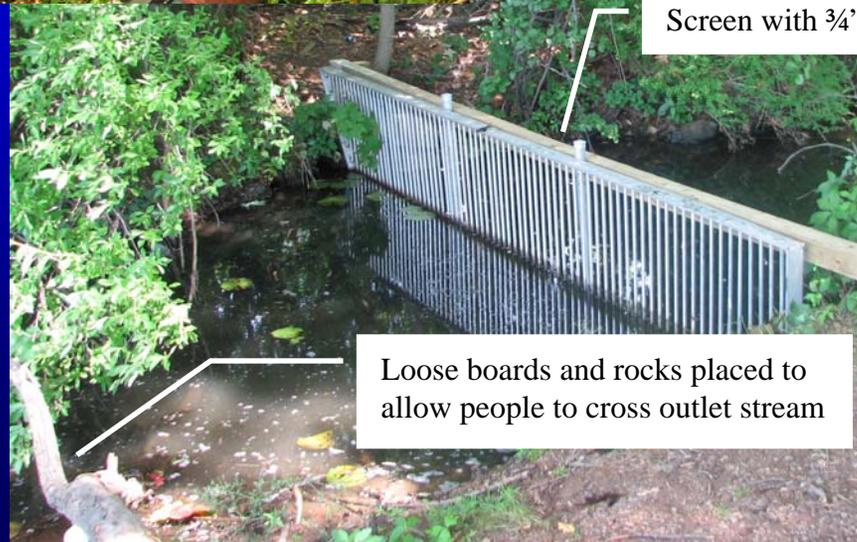
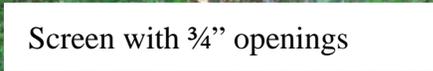
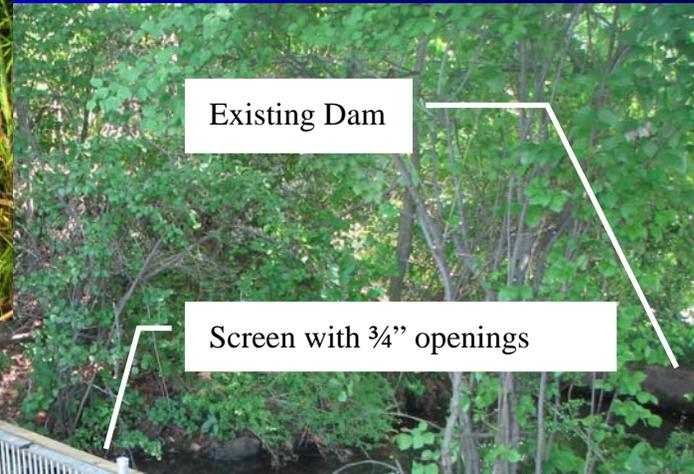


Regrowth

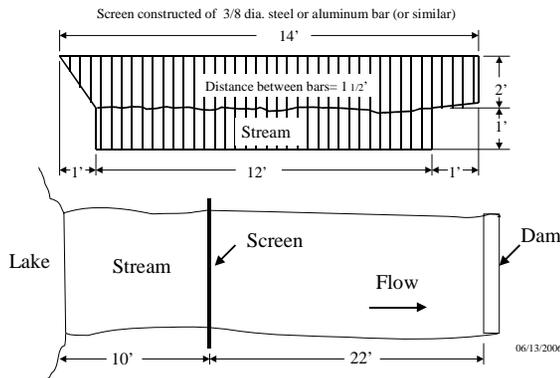
Grass Carp

Ctenopharyngodon idella

Grannis Lake
East Haven CT



Proposed Outlet Screen
Grannis Lake, East Haven, CT
Not to Scale

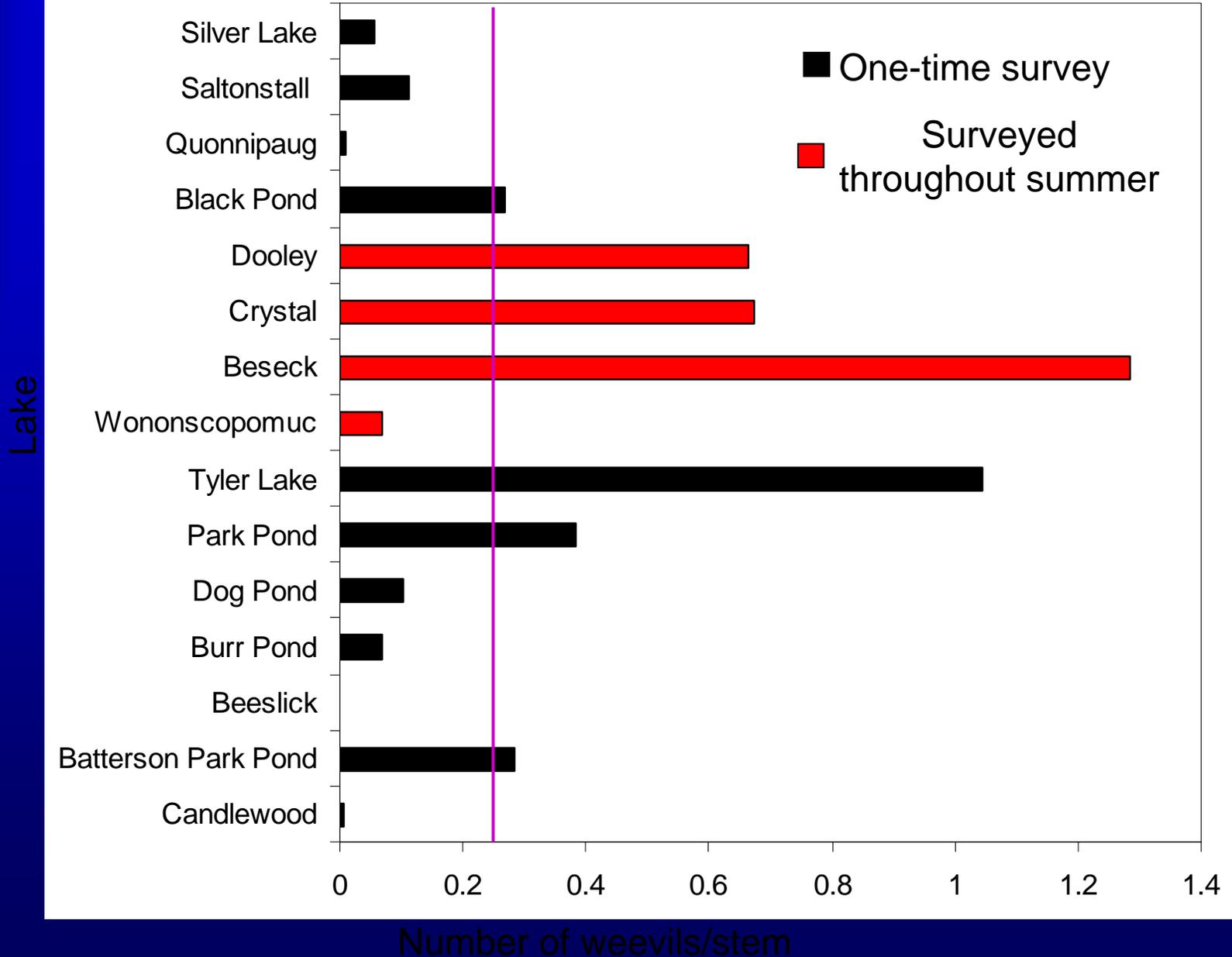


Milfoil weevil, *Euhrychiopsis lecontei*



- Native weevil to North America
- Fully aquatic weevil
- Polyvoltine
 - 3-5 generations/summer
 - overwinter in leaf litter along lake shores
- Specialist on watermilfoils
- Lay 2-4 eggs per day

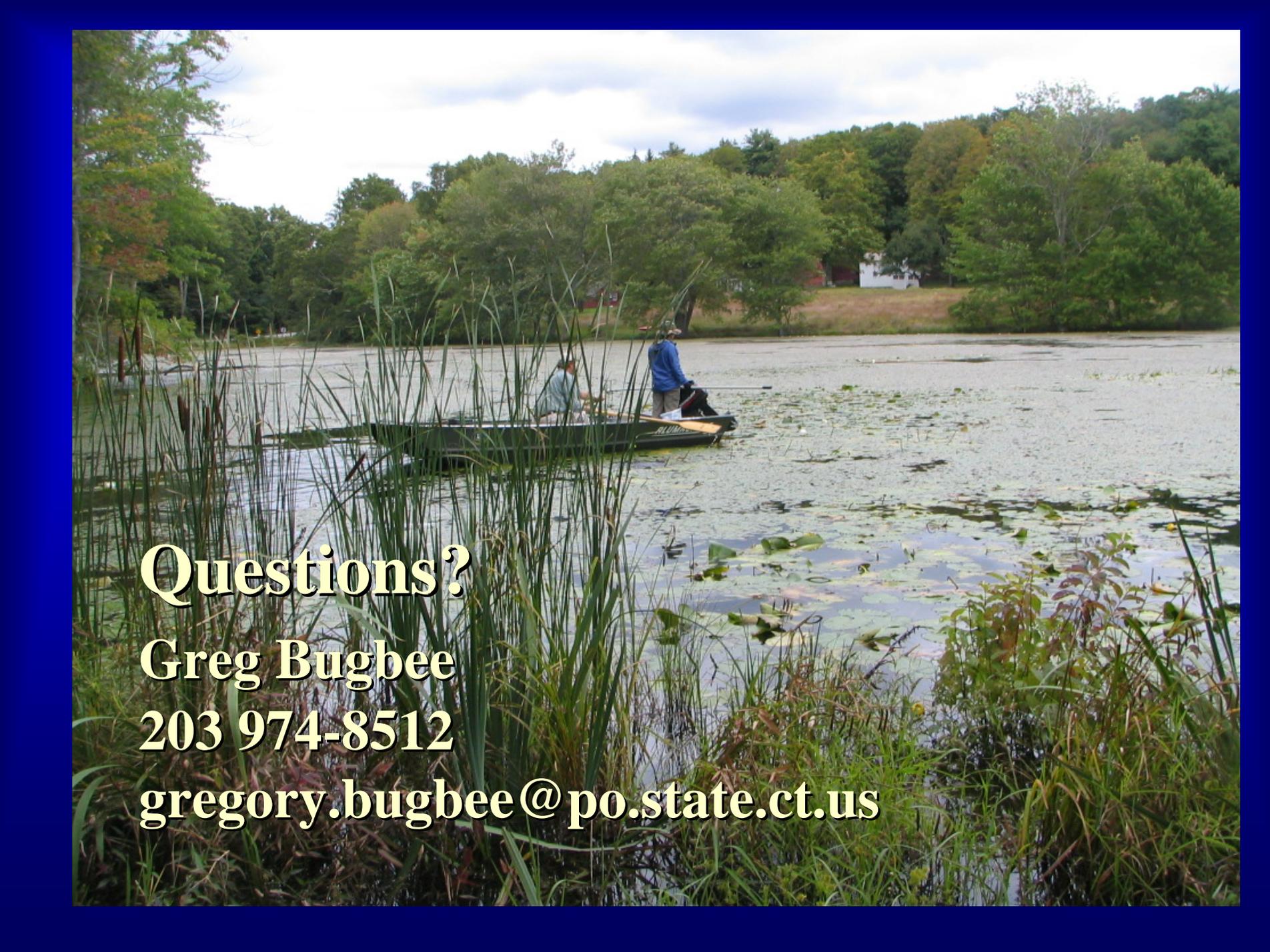
Evidence of Weevils per milfoil stem



CAES IAPP Website

www.ct.gov/caes/iapp

The screenshot shows a web browser window titled "CAES: Aquatic Plant Survey Program for Connecticut Lakes - Windows Internet Explorer". The address bar contains the URL "http://www.ct.gov/caes/cwp/view.asp?a=27998;q=3769728;caesNav_GID=18058;caesNav=". The browser interface includes a menu bar (File, Edit, View, Favorites, Tools, Help) and a toolbar with navigation icons. The website content is displayed on a dark blue background. At the top, it features the "CT.gov" logo and the text "THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION STATE OF CONNECTICUT". A navigation menu includes "ABOUT US", "PROGRAMS AND SERVICES", "PUBLICATIONS", "FORMS", "CONTACT US", and "HOME". A search bar is located on the left side of the page. Below the search bar, there is a "CAES Search:" section with an "GO" button and a link to "Advanced Search". A vertical menu on the left lists various categories: "INVASIVE AQUATIC PLANT INFORMATION", "PROGRAM INFORMATION", "SURVEY RESULTS", "CONTROL STUDIES", "PLANT INFORMATION", "PUBLICATIONS", "LINKS", "CONTACT US", "SITE MAP", and "MAIN MENU". Below this menu, contact information for three locations is provided: "CAES Main Laboratories" (123 Huntington Street, New Haven, CT 06504-1106, (203) 974-8500, Statewide Toll Free: (877) 855-2237), "Valley Laboratory" (153 Cook Hill Road, Windsor, CT 06095-0248, (860) 683-4977), and "Lockwood Farm" (890 Evergreen Ave., Hamden, CT 06518-2361, (203) 974-8618). A "Directions" link is also present. Below the contact information, there is an "E-ALERTS" section with a link to "Subscribe now or update your e-alerts" and a "LOGIN" link. The main content area features a large illustration of a water lily plant. Below the illustration, the text reads: "THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION INVASIVE AQUATIC PLANT PROGRAM (CAES IAPP)". A paragraph of text follows, describing the program's goals and methods. At the bottom of the main content area, there is a link: "Learn how to identify invasive aquatic plants at one of our workshops!". The browser's status bar at the bottom shows the "start" button, several open tabs (CAES: Aquatic Pla..., Microsoft PowerP..., Document1 - Mic...), and the system tray with the time "8:51 AM".



Questions?

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