NARRAGANSETT BAY WATERSHED COUNTS
ECONOMY · ENVIRONMENT · EQUITY

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Invasive Species

When plants or animals are released into areas outside their native range, without their natural predators, they can grow and reproduce out of control, destabilizing the environment and harming native species and human activities. They become "invasive species."

In Rhode Island we know of freshwater aquatic invasives that are already a scourge in over 70 lakes and ponds. They can affect the ecological balance, impair boating, fishing, and swimming, and reduce lakeside property values.

Freshwater and Terrestrial Invasive Species: 2011 Assessment

Status and Trends: Many invasive species are already here, and only a few of them are being tackled adequately to limit or reverse their damage. Non-native species will continue to make their way to Rhode Island, with the potential for them to become invasive.

Management: Rhode Island needs to keep informed, be vigilant and have plans ready to respond when needed. Successful public and private efforts to date could be even more effective with consistent state funding of key capacities, particularly coordination and communication, training, and early detection and rapid response.

In Rhode Island, freshwater invasives have been found in over 70 lakes and ponds. This map shows the lakes in Rhode Island that have been surveyed and which ones have been found to contain invasive species.

Any habitat type may be vulnerable to invasive species and in our region catastrophic damage can be caused by terrestrial species, too. Efforts in Massachusetts, to prevent Asian Longhorned Beetle from spreading of into the wild forests of New England have cost $62 million dollars in less than three years. Terrestrial environments in Rhode Island are already affected by invasive species, including bittersweet and barberry plants, gypsy moths, and hemlock wooly adelgids. They choke out native species, ruin pasture, damage valuable timber, and alter the look of our classic Rhode Island landscape.

Workshop Documents (in Adobe Acrobat format)

Agenda

Summary Report

Presentations

- Invasives indicators used by other programs by Lesley Lambert (NBEP)
- Definition of invasive species by Hope Leeson (RINHS)
- Examples of invasive species: Japanese stiltgrass, Kudzu by Hope Leeson (RINHS)
- Forest Health Works Project and Japanese barberry by James Barnes (FHWP)
- Emerald Ash Borer by Lisa Tewksbury (URI Bio Control Lab)
- Aquatic Invasive Species by Evan Ross (RIDEM OWR)

Learn More!

- RI DEM Introduction to Aquatic Invasive Species
- RI Marine & Estuarine Invasives Species website

Data Sources:

- RI DEM Aquatic Invasive Species
- MA DCR Aquatic Invasive Species
- RI Invasive Species Council
- USDA Map for RI
- USDA Map for Ma

Poster:

- 2011 Assessment Poster (Adobe Acrobat format)

Photo Credit: Kenneth R. Law, USDA APHIS PPQ

Photo Credit: Kenneth R. Law, USDA APHIS PPQ

The two photos above show before and after views of Granville Avenue in Worcester, where a beetle infestation meant that all the street trees had to be removed. Massachusetts has spent $62 million in less than three years on Asian longhorn Beetle management

Photo Credit: RI Natural History Survey

Removing water chestnuts in Chapman Pond.

http://www.watershedcounts.org/invasives.html

Volunteer Monitor Training for Freshwater Aquatic Invasives

University of Rhode Island Watershed Watch
Rhode Island Natural History Survey
Rhode Island Department of Environmental Management
Wood-Pawcatuck Watershed Association

Two-part volunteer training workshop for identification and reporting on the presence of aquatic invasive species

Information from the volunteer surveys will be added to the AIS database maintained by RIDEM

Guide to Non-Native Invasive Freshwater Aquatic Plants Found in Rhode Island and Neighboring States

The University of Rhode Island
Watershed Watch Program;
Rhode Island Natural History Survey;
Rhode Island Department of
Environmental Management;
Wood Pawcatuck Association
July, 2011 3rd edition

Floating Leaved Species

Water Chestnut
Trapa natans

Water chestnut Family (*Trapaceae)*


H.D. Leeson_2009

Invasive


H.D. Leeson_2009


H.D. Leeson_2009

***Water chestnut is an aquatic plant with both floating and submerged leaves.**
***Floating leaves are triangular in shape, with sharply toothed leaf margins.**
***The leaf petiole (stem) is spongy and inflated.**
***Submerged leaf-like roots, arranged in pairs and whorls along the stem.**
*** The flowers are white and about 1/3 of an inch across, and float on the surface.**
***The fruit is a hard nut, with four spines.**

Submergent Species with Flat Leaves

Invasive

Hydrilla

Hydrilla verticillata

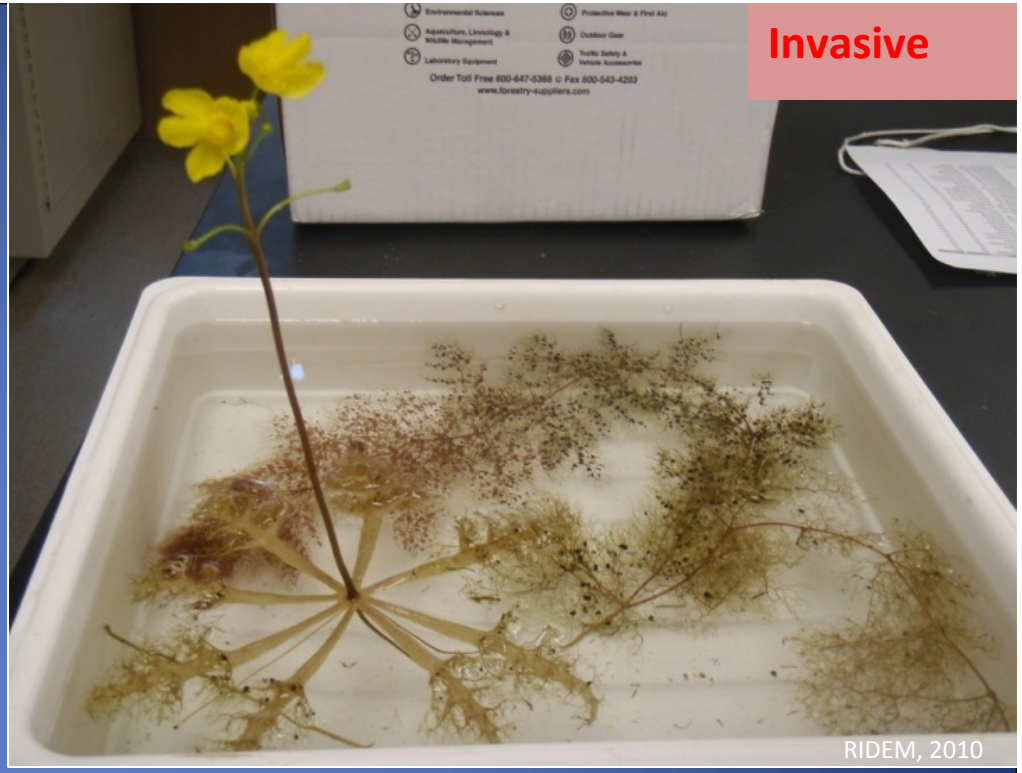
Frog's-bit family *(Hydrocharitaceae)*

***Grows beneath the surface of the water, on long flexible stems.**
***Flowers white, at water surface.**
***Leaves are in whorls of 4 – 6, and are visibly toothed along the margins.**
***Roots form small tubers that over-winter in bottom substrate.**
***Looks similar to Elodea and Egeria**

Submergent Species with Forked Stems and Bladders

Inflated Bladderwort
Utricularia inflata

Bladderwort family (*Lentibulariaceae*)



Characteristic	U. inflata	U. radiata
Shape of spokes	Tapers at both ends	Thick and cylindrical
Number of spokes	6-8	4-7
Length of spokes	3-8 cm	1-4 cm
Number of flowers	5-15 (usually 9-12)	3-4

***Plant has finely dissected leaf-like branches, with bladders.**
***Submergent branches alternate along the main stem. Branches are closely packed, giving the plant a bushy appearance under water.**
***Inflated branches in a whorl of 4 to 10 leaves, hold the flowering stalk above the water.**
***The floating leaves are widest toward the tip, measuring 3 to 8 (commonly 5) centimeters long.**
***Finely dissected branches are located along the outer margins of the floating leaves.**
***3 to 14 flowers are borne above each inflated spoke. They are yellow and irregularly shaped. The lower lip measuring 10 to 15 millimeters and being unlobed (rounded).**

Submergent Species with Forked Stems and Bladders

Native look-alike

Floating Bladderwort

Utricularia radiata

Bladderwort family (*Lentibulariaceae)*

H.D. Leeson_2008

H.D. Leeson_2008

***Plant has finely dissected leaf-like branches, with bladders.**
***Submergent branches alternate along the main stem, with branches becoming finely dissected toward the tips.**
***Inflated branches in a whorl of 4 to 7 leaves, hold the flowering stalk above the water.**
***The floating leaves are widest at the middle, measuring 1 to 4 centimeters long.**
***Finely dissected branches are located along the outer margins of the floating leaves.**
***1 to 4 flowers are borne above each inflated spoke. They are yellow and irregularly shaped. The lower lip measures 8 to 10 millimeters and is shallowly, 3-lobed.**

Emergent Species

Flowering rush
Butomus umbellatus

Flowering rush family (*Butomaceae)*


M.J. James-Pirri, 2009


M.J. James-Pirri, 2009

***A flowering grass-like plant, with long, thin basal leaves. Leaves and flowering stalk as tall as 1 meter.**
***Numerous flowers arising from a single point on a flowering scape 1 – 1.5+ meters tall.**
***Flowers are pink, with 6 petals; each measuring 2 – 2.5 cm across**

2011 Volunteer Monitor Training Results

30 Attended Classroom Workshop

20 Attended the field training

14 Surveys Completed for 3 Rivers and 2 Ponds

2 Invasive Species Found in 6 locations along the 3 Rivers

2 Invasive Species Found in each of the 2 Ponds

Invasive Species Found: *Myriophyllum heterophyllum* and *Cabomba caroliniana*

Water Chestnut Management Actions 2009 – 2011

Local Land Trusts and Volunteers
Rhode Island Natural History Survey
Rhode Island Department of Environmental Management
Municipal Staff and Resources

Belleville Pond, N. Kingstown
2009 – 2011
2 Dozen Rosettes/Visit in
2010 and 2011

Chapman Pond, Westerly

2009 – 2010, Single Pulling Efforts

2010, 1 Ton pulled

2011, Two Pulling Efforts

2011, 2 Tons pulled each pull

Tracey Bewlay, 2010

David Gregg, 2011

Private Pond, Foster

Herbicide Application 2011

Turner Reservoir, East Providence/Seekonk

Discussions, but no action as of yet