



SAVING THE LAST GREAT PLACES ON EARTH

Developing Early Detection Networks To Abate the Invasive Species Threat

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Creating an Early Detection Rapid Response program:

- Local Level**
- Regional Level**
- Plans for EDRR program in Oregon**

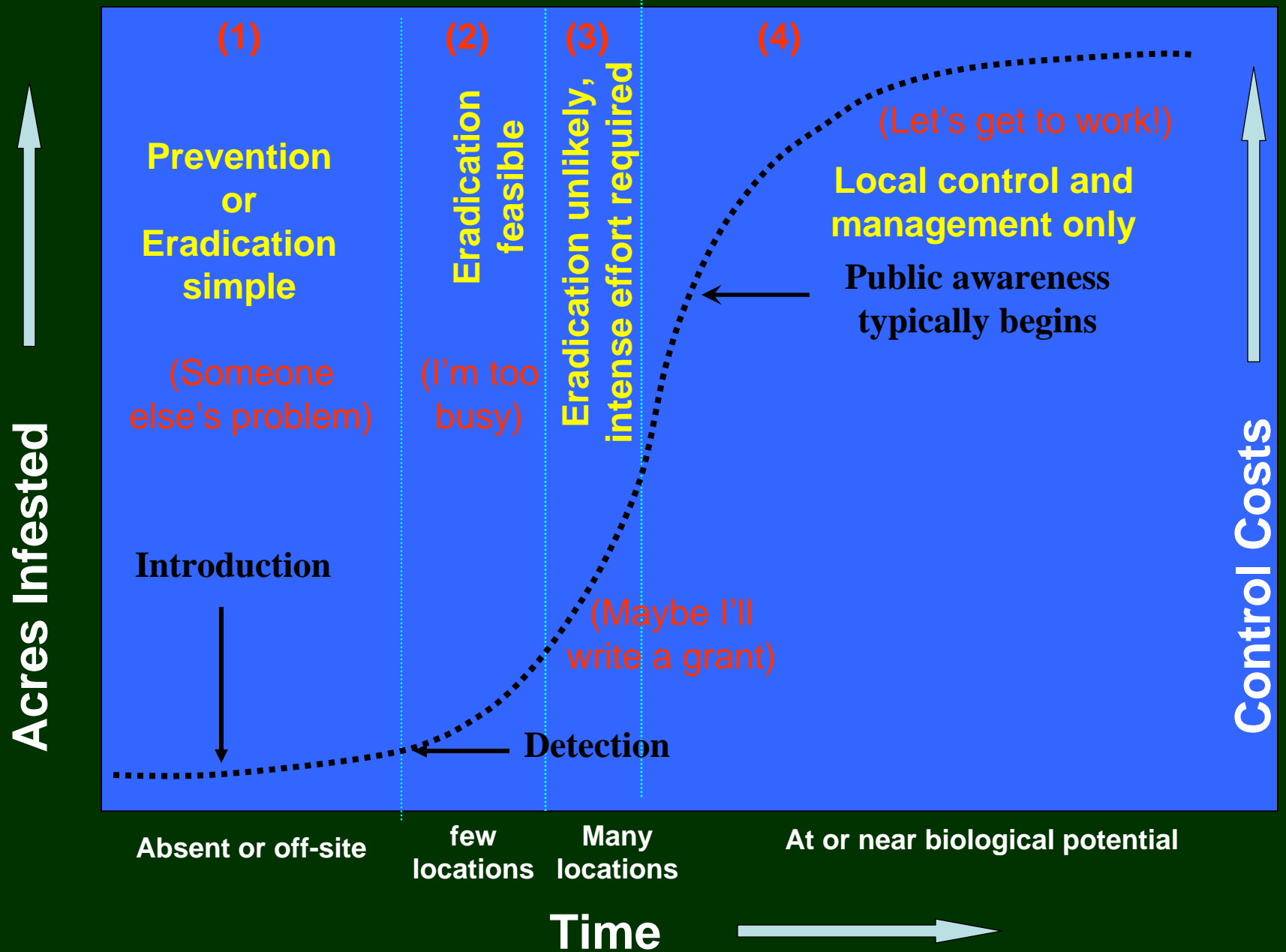
Why is TNC concerned about invasive plants?

Because invasive species directly interfere with our mission:



“To preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.”

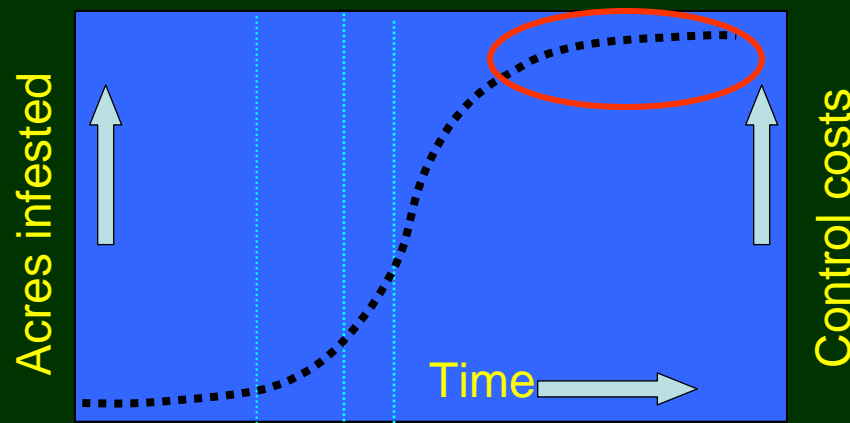
Weed Increase Over Time and Control Potential



What many of us have been doing:

Invasive Plant Control & Management

- Work parties at local preserves
- Raise awareness: education & outreach

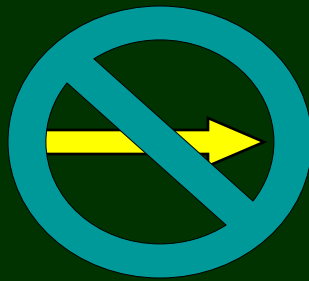
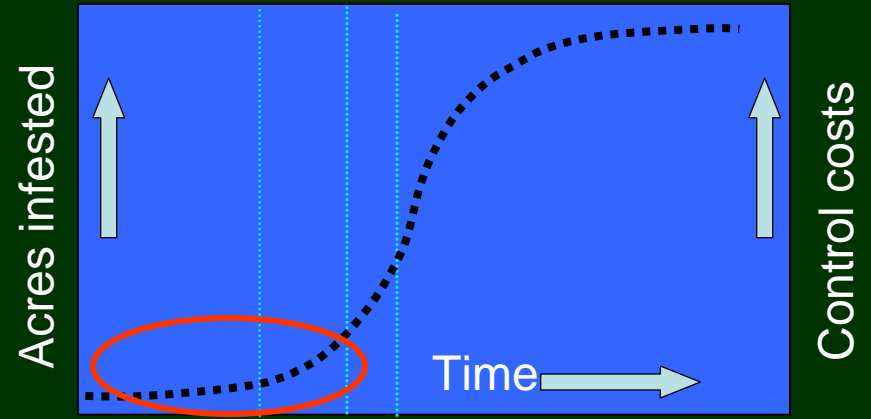


- Beneficial for high quality sites
- Creating “demonstration” sites

BUT...not being effective at scale!

Most Effective:

1. Prevention
2. Early Detection & Rapid Response!

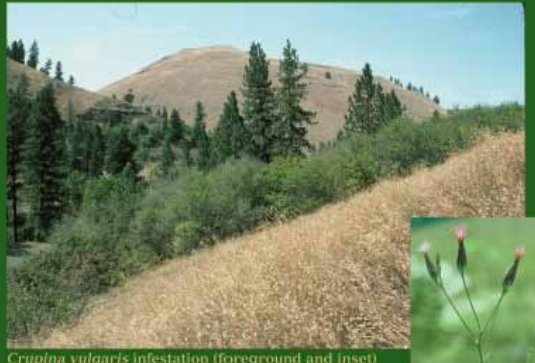


Yellow starthistle
(*Centaurea solstitialis*)

Necessary Steps in a EDRR Network:

A National Early Detection and Rapid Response System for Invasive Plants in the United States

Conceptual Design

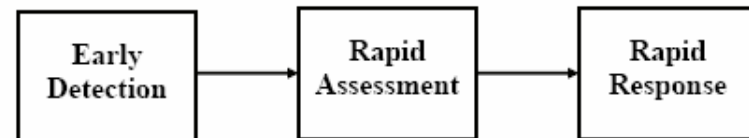


Crapina vulgaris infestation (foreground and inset)
Photos by C. Roché

Federal Interagency
Committee for the Management of
Noxious and Exotic Weeds

Washington, DC
September 2003

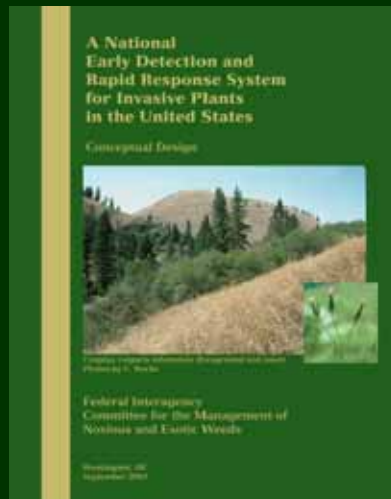
1. Detection and Reporting
2. Identification and Vouchering
3. Rapid Assessment
4. Planning
5. Rapid Response



FICMNEW 2003

<http://www.fws.gov/ficmnew/>

Necessary Steps in a EDRR Network:



1. Detection and Reporting:

A. Establish Early Detection Network

Professionals, amateurs, volunteers, enthusiasts

B. Develop a Volunteer Training Program

C. Create List of Target Species

D. Establish Toll-free Number & Website

Early Detection & Rapid Response!

Two model programs:

1. At the site or multi-site project-level
2. At the statewide or regional-level

Early Detection & Rapid Response!

Two model programs:

- 1. At the site or multi-site project-level*
- 2. At the statewide or regional-level**

The Nature Conservancy - Maryland/DC Chapter ***Weed Watchers/Weed Busters Program***



The Nature Conservancy - Maryland/DC Chapter *Weed Watchers/Weed Busters Program*

Goal:

To locate and manage recently emerged infestations of invasive, exotic plants on high priority sites in Maryland and the District of Columbia with assistance from an extensive network of volunteers.

TNC-Maryland/DC Weed Watchers/Weed Busters:

How it works:

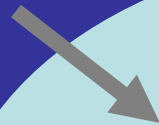
Weed Watchers

Find the infestations
and report them

Weed Busters
Implement the plans
that TNC develops

TNC staff

Prioritize the infestations
and determine
management options



The Hit List

- We determined the most threatening invasive, exotic species to Maryland/D.C. TNC sites and developed a short list on which to focus (13 species)
- The list helped us:
 - Prioritize our management efforts, and
 - Prevent volunteers from feeling overwhelmed by a large number of plants to identify

Volunteers- an essential resource

A cadre of volunteers were:

- Assigned high priority sites to monitor,
- Trained to identify the hit list species and report occurrences to TNC,
- Taught compass and topographical map reading skills, AND
- Accompanied to their site for an orientation visit.



The Results...



We began to manage many infestations...



... on the land we protect!

What have we accomplished?

- In 2001, Weed Watchers and Weed Busters located AND began to control **19** different invasive, exotic species infestations on **5** TNC preserves in Maryland/DC.
- In 2004, **11** brand new weeds were found at 5 sites and rapidly eradicated!
- By 2005, **over 50** volunteers participate annually in **EDRR at 8** TNC preserves; EDRR efforts are now spreading to nearby National Park Service lands!
- Not just local control...but strategic, targeted control!

For more info:

<http://tncweeds.ucdavis.edu/outreach.html>


Early Detection & Rapid Response!

Two model programs:

1. ***At the site or multi-site project-level***
2. *At the statewide or regional-level*


IPANE EDRR Network

»<http://invasives.eeb.uconn.edu/ipane/>

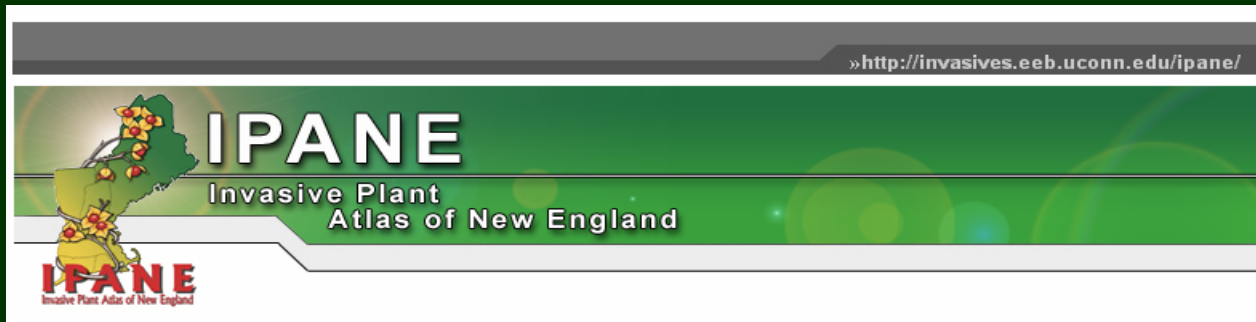


IPANE

Invasive Plant
Atlas of New England



IPANE
Invasive Plant Atlas of New England



Collaborative EDRR network involving 6 NE states! (Professionals, agencies, wildflower enthusiasts, etc.)

- Interactive regional database/website for viewing occurrences, extent of species, and weed id info
- Early Detection (watch) list of new invasives
- Volunteer training
- Reporting new occurrences

http://invasives.sab.uncn.edu/ipane/

IPANE

Invasive Plant Atlas of New England

IPANE
Invasive Plant Atlas of New England

Species List

[Early Detection](#) -> Species List (Scientific Names)

Early Detection List (Alphabetical by Scientific Name)

This is a list of Early Detection Species (EDS) for New England. This list is not meant to imply that all these species are EDS for each state. Rather, the associated table depicts which should be considered as EDS in each state. It is based on the biological potential of the species for widespread invasions into areas where it is not currently known. The list has been generated from a variety of different sources including herbarium specimens, published lists, literature, federal and state early detection efforts and the observations of numerous botanists and naturalists. The list is available in both scientific and [common](#) names. See [Catalog](#) for habitat information. Nomenclature is according to ITIS, the [Integrated Taxonomic Information System](#). This list supersedes all previous lists. **Newly discovered incursions of any of these species in states with fewer than 3 known occurrences should be reported immediately.**

Arthraxon hispidus (Thunb.) Makino	Hairy jointgrass
Butomus umbellatus L.	Flowerino-rush

CONTRIBUTOR LINKS

- Home
- Early Detection
- Catalog of Species
- Data & Maps
- Project Information
- Volunteers
- Related Links
- Noxious Weeds
- Discuss Invasives
- IP Plant Summit

Regional Early Detection List



http://invasives.sab.uncn.edu/ipane/

IPANE

Invasive Plant Atlas of New England

IPANE
Invasive Plant Atlas of New England

Table by States

[Early Detection](#) -> Table by States and Life Forms

EARLY DETECTION SPECIES BY STATE

SPECIES	ME	NH	VT	MA	RI	CT
TREE						
Paulownia tomentosa	0	0	0	?	?	+
SHRUBS						
Lonicera maackii	0	0	0	+	0	+
Rubus phoenicolasias	0	0	0	+	+	+
HERBACEOUS PLANTS						
Butomus umbellatus	1	0	+	0	0	1
Cardamine impatiens	1	2	0	1	0	+
Cirsium palustre	0	H	0	H	0	0
Cynanchum rossicum	1	1	0	+	2	+
Froelichia gracilis	0	1	3	+	0	+
Glucium flavum	0	0	0	+	+	H
Heracleum mantagazzianum	3	+	0	+	?	+
Impatiens glandulifera	+	0	?	+	0	H
Lepidium latifolium	0	0	0	+	0	+
Polygonum perfoliatum	0	0	0	0	1	2
Ranunculus ficaria	1	1	0	+	1	+
Senecio jacobaea	1	0	0	3	0	0
WOODY VINES						
Lonicera japonica	1	?	?	+	+	+
Pueraria montana subsp. lobata	0	0	0	2	0	2

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Early Detection List by State



Records Database of Occurrences/Specimens

Records Database

Species you selected (scientific name): *Butomus umbellatus*

Note: Data may be incomplete.

Scientific name	State	County	Town (county subdivision)	Minor designation	Locality	Collection date	Habitat	Collector
<i>Butomus umbellatus</i>	VT	Chittenden	South Burlington	Queen City Park	Lake Champlain at mouth of Potash Brook	11/9/1963	lake shore	William D. Countryman
<i>Butomus umbellatus</i>	VT	Addison	Ferisburg		South Slang; Little Otter Creek	6/15/1968	unspecified	Frank Conklin Seymour
<i>Butomus umbellatus</i>	ME	Androscoggin	Greene	Little Sabbattus Pond	north end of Sabbattus Pond near Hooper Brook Inlet	6/19/1999	pond	Susan Hayward
<i>Butomus umbellatus</i>	CT	Hartford	Hartford	Riverside Park	along Connecticut River	6/21/1978		Harry E. Ahles
<i>Butomus umbellatus</i>	VT	Franklin	Highgate	Highgate Springs	north on route 7 & Tyler Place over bridge	6/23/1965	unspecified	Roberta G. Poland
<i>Butomus umbellatus</i>	VT	Addison	Ferisburg		South Slang of Little Otter Creek (at Lake Champlain)	6/24/1980	stream	G. E. Crow
<i>Butomus umbellatus</i>	VT	Franklin	Highgate		shore of Missisquoi Bay, Lake Champlain	7/11/1963		William D. Countryman

Records Database

Select the fields in which you are interested from the list below:

- State
- County
- Town (county subdivision)
- Minor designation
- Locality
- Longitude
- Latitude
- Collection date

Note: "Scientific name" will always be the first field

Sort the records ascendingly by:

Genus, Species, and Collection date

Submit Selection

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- Home
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Regional Maps

Select one species from the list below:

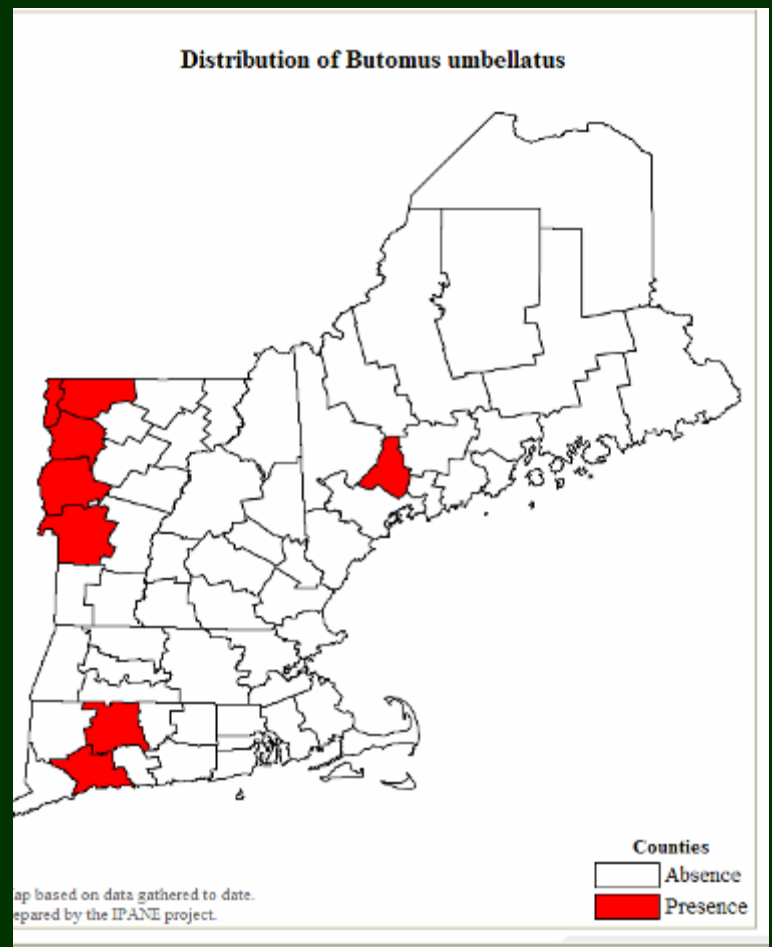
- By scientific name, or
- By common name

Scientific names:

- Barberis vulgaris
- Bromus tectorum
- Butomus umbellatus**
- Cabomba caroliniana
- Callitriche stagnalis
- Cardamine impatiens
- Carex kobomugi
- Celastrus hybrida

Select a study area by clicking the radio button and then click "Submit Selection":

- The whole New England area
- One or more states
- One or more counties
- One or more towns (county sub-divisions)



Distribution Maps... 

http://invasives.sab.cornell.edu/ipane/

IPANE

Invasive Plant Atlas of New England

IPANE
Invasive Plant Atlas of New England

Butomus umbellatus
(Flowering rush)

Common Name(s) | Full Scientific Name | Family Name Common | Family Scientific Name | Images | Synonyms | Description | Similar Species | Reproductive/Dispersal Mechanisms | Distribution | History of Introduction to New England | Habitats in New England | Threats | Early Warning Notes | Management Links | Documentation Needs | Additional Information | References | Data Retrieval | Maps of New England Plant Distribution








COMMON NAME
Flowering rush

FULL SCIENTIFIC NAME
Butomus umbellatus L.

FAMILY NAME COMMON
Flowering rush family

FAMILY SCIENTIFIC NAME
Butomaceae

IMAGES

		
Flowers	Habit	Flowers
		
Fruit	Incursion	Roots
		
Habitat		

NOMENCLATURE/SYNONYMS
Synonyms: *Butomus umbellatus* f. *vallisnerifolius* (Sagorski)

..and Invasive Plant Identification Information

DESCRIPTION

[Botanical Glossary](#)

Butomus umbellatus is perennial, aquatic herb that grows on freshwater shorelines. It can be found in water several meters deep, and its flowering stem can reach up to 1m (3.3ft.) above the surface of the water. The 0.6-0.9m (2-3ft.) long ensiform leaves can be erect or floating on the water's surface. The leaves are three angled, fleshy and have twisted ends. The plants flower from the summer to the fall depending on the depth of the water. The flowers are arranged in a bracted umbel. The bracts are purple-tinged, and numerous flowers are on long, slender ascending pedicels. The flowers and sepals are 3-merous and are 2-2.5cm (0.8-1in.) in diameter. They can be white to deep pink, to purplish brown in color. The submersed form of this plant does not have flowers, and has narrow, long thin leaves. The flowers produce beaked fruits that are dark brown 1cm (0.4in.) long which split at maturity releasing the seeds. Often, the plant does not flower (as is the case with some populations in Connecticut) which makes its identification more difficult.

Page References Bailey 131, Crow & Hellquist 3, Fernald 92, Flora of North America 4, Gleason & Cronquist 632, Holmgren 602, Magee & Ahles 129, Newcomb 118. See reference section below for full citations.

SIMILAR SPECIES

Sparganium spp. (Bur-reeds)

The leaves of *Butomus umbellatus* and *Sparganium* spp. look similar when is not in flower. However, when *Butomus umbellatus* is in flower, they do not look alike.

For VOLUNTEERS: Training and reporting information

http://invasives.eeb.uconn.edu/ipane/



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HOME PAGE MENU

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For Volunteers

[Become a volunteer!](#)

[Online Reporting Form](#)

[Instructions](#) for entering data online

Downloadable Field Forms (Please Print these files, or Save to your Computer.)
 Click here for the terrestrial form in [doc](#) or [pdf](#)
 Click here for the aquatic form in [doc](#) or [pdf](#)

[Calendar of Events](#)

[Report a Sighting](#) Please use this form (**in addition to your field form**) to alert us to the presence of early detection species or new locality for any IPANE species in a county or state (this will allow us to react quickly and look for your field form at this location).

[Discuss invasive species](#)

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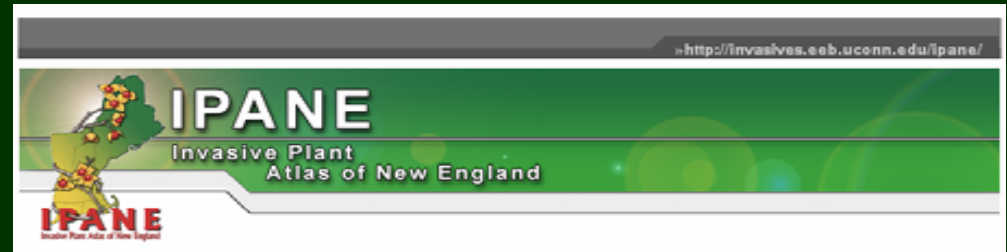
Report Sightings

Use this form to alert us to sightings of invasive species and activate our early detection network, or to ask questions of our experts. This is a communication tool: reports are not entered into our database from this form (a complete field form is necessary for inclusion in the database). Please attach a digital photograph if possible.

We require your name, a note to our staff, and either a e-mail address or a phone number.
 ** indicates a required field

Your Name **	<input style="width: 90%;" type="text"/>
Your E-mail **	<input style="width: 90%;" type="text"/>
Your Phone **	<input style="width: 90%;" type="text"/>
Do you want to send a copy of this message to yourself?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Your note to our staff **	<div style="border: 1px solid #ccc; height: 80px;"></div>
<small>We can also accept pictures as further documentation. They must be either a (.gif, .jpeg, or .png).</small>	<input type="text"/> <input type="button" value="Browse..."/>
<input type="button" value="Send message"/> <input type="button" value="Reset"/>	

IPANE Network:



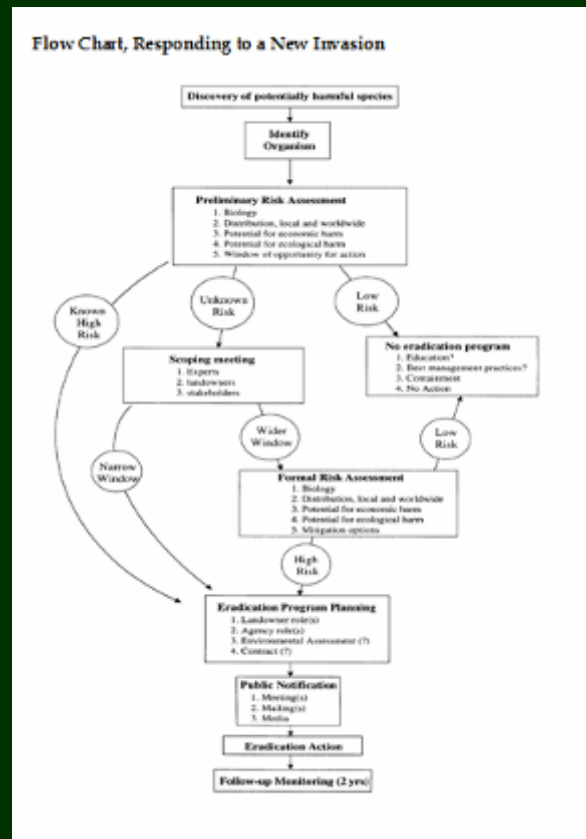
- Really works at a regional-scale!!
- Involves multi-state collaboration & communication
- Trains lots of volunteers, more eyes on ground
- Involves local action

All volunteers who submit 10 field forms will receive the fashionable IPANE T-shirt!



Suggestions for EDRR work:

1. Coordinate efforts amongst all state agencies, stakeholders & partners, and also coordinate with the feds!
Don't forget volunteers!
2. Create a short Watch List
3. Designate a formal pathway for:
 - a. Reporting new invaders (hotline, website, etc.)
 - b. Who will assess the threat, and
 - c. Who will carry out the Rapid Response
4. Create a Statewide Plan for all taxa of invaders



In Conclusion:

Can we prevail against invasive species?

YES!!

- Long-term commitment and dedication!
- Develop a strategic action plan!
- Work with many many many partners!
- Continue doing weed management/control at the site-level, but...
- Put significant resources towards prevention and early detection and rapid response, at both site- and larger-scales!

In Oregon, TNC plans on using some of these approaches when developing our EDRR program which will begin by focusing on:

- The Portland area
- Oregon Coast
- Southwest Oregon

Network with people in these areas including:

- Local CWMA's
- TNC staff
- Agency staff
- Local non-profits
- AmeriCorps members, volunteers,
and other 'on the ground' resources

TNC Oregon's EDRR program

- Starting in October '06
- Coinciding with EDRR website for Oregon that is being developed through the CWMA's (completion expected April '07)
- Ideas? Questions? Let's talk!



SAVING THE LAST GREAT PLACES ON EARTH

EDRR Contacts at The Nature Conservancy

Starting October '06

Tania Siemens
EDRR Coordinator
tsiemens@tnc.org
(541) 914-0701

Mandy Tu
Invasive Species
Ecologist
imtu@tnc.org
(802)802-8100

<http://tncweeds.ucdavis.edu>