



**Invasive Species – Map Them and Zap Them!**



# NEW JERSEY INVASIVE SPECIES STRIKE TEAM

Our Mission: Prevent the spread  
of emerging invasive species  
across New Jersey

- New Jersey's first Cooperative Invasive Species Management Area (CISMA)
- Formed in 2008 as Central Jersey Invasive Species Strike Team
- Expanded statewide in 2011 & incorporated as 501(c)(3) organization
  - [www.njisst.org](http://www.njisst.org)



# Invasive Species

- Non-native
- Negatively impact other species
  - Reduce biodiversity
- Interrupt the natural functions of an ecosystem



## **Invasive Species**

### **can be:**

Plants  
Birds  
Insects  
Pathogens  
Amphibians  
Crustaceans  
Mammals  
Mollusk  
Reptile  
Fish

# Characteristics

- Tolerate a variety of habitat conditions
- Grow and reproduce rapidly
- Compete aggressively for resources (food, water, nesting sites)
- Lack natural enemies or pests in the new ecosystem



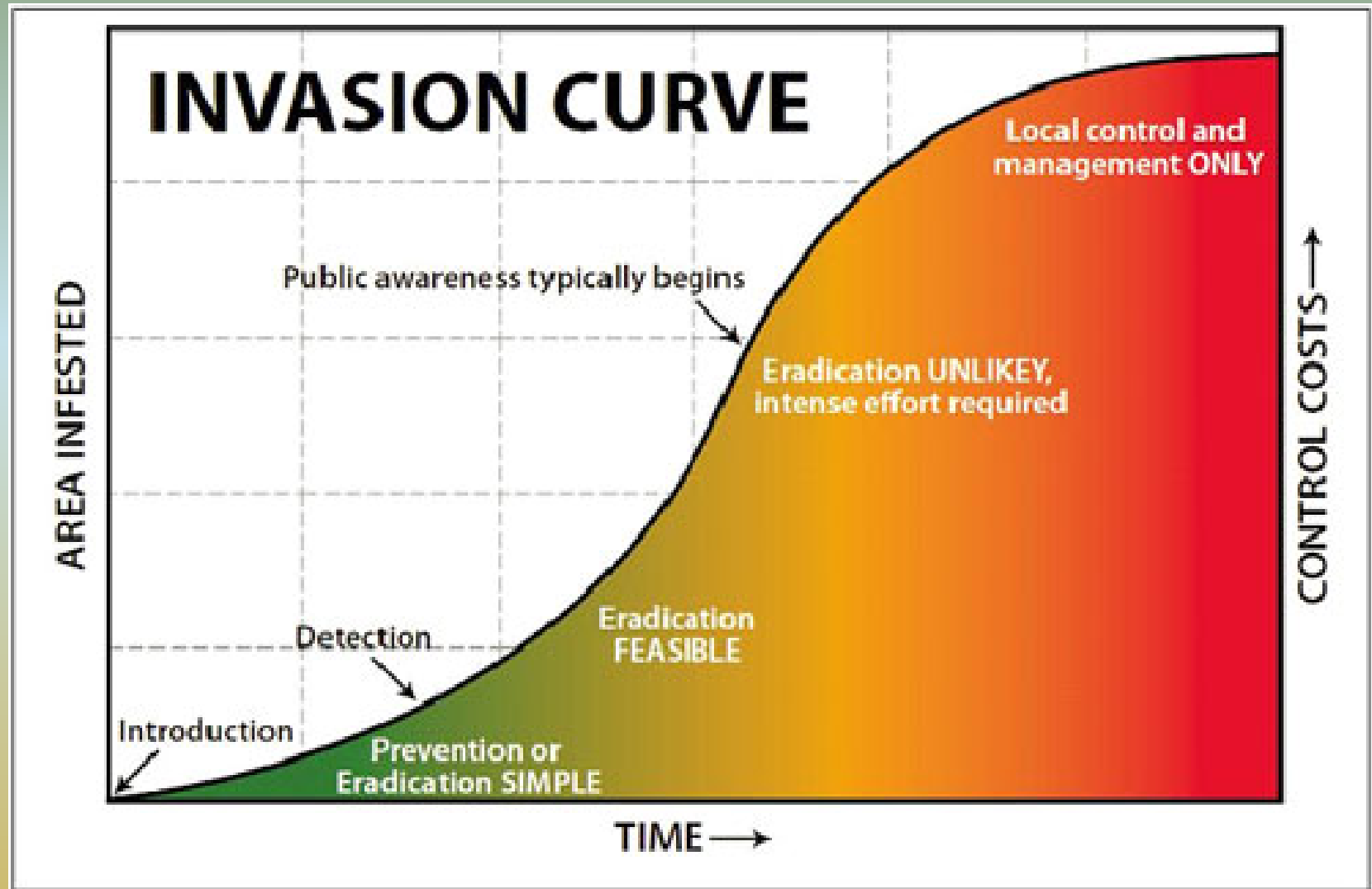
# Impacts

- Prey on native species  
Example... Northern snakehead
- Wreak havoc when they become entangled in machinery  
Example... Kudzu
- Inhibit the growth of crops & native forest species  
Example... Garlic mustard
- Change soil chemistry & reduce its stability & productivity  
Example... Autumn olive
- Form dense mats on ponds, clog slow-moving irrigation channels & reduce sunlight in the water column  
Example... Water chestnut
- Destroy plants from the roots up  
Example... Phytophthora root rot





# New Jersey Invasive Species Strike Team: Our Role in Invasive Species Control





# Our Methods

## Mapping, Data Analysis & Reporting

Data is mapped, analyzed & shared through our web site  
Continually assess distribution & densities of target species  
Identify sources & trends of emerging infestations

Provide alerts about species found in the mid-Atlantic & New England



## Outreach

Volunteer Ambassadors attend community events  
Programs for property managers, elected officials, garden clubs & civic associations  
Invasive plant buy-backs

## Training

Classroom & Field Sessions teach participants to:  
Identify targeted species  
Properly record data about populations they detect  
Safely initiate control/eradication efforts



## Searching (Early Detection) & Eradication (Rapid Response)

Public & private land stewards search for emerging invasives  
Eradication efforts take into consideration the best management practices in place for each target species  
When eradication is not fully possible, we work to contain the populations of each target species



# Collaboration is Key

## Our Team

### Over 200 Partners Representing

- all levels of government
- non-profit conservation groups
- consulting foresters and related businesses
- private individuals



### Staff

Susan Brookman, Executive Director

### Contractors

Mike Van Clef, Science Director  
Tanya Rohrbach, GIS Consultant  
Friends of Hopewell Valley Open Space, Technical Specialists  
New Jersey Audubon, Project Coordinators

### Board of Directors

Jon Wagar, Director of Operations for Duke Farms  
Ken Klipstein, Director of Watershed Protection, New Jersey Water Supply Authority  
Alda Krinsman, Attorney (Retired)  
Keri Benscoter, Resource Management Specialist, Highlands Water Protection and Planning Council  
Randy Santoro, Principal Member of Technical Staff, AT&T

### Technical Advisory Committee

Thom Almendinger, Duke Farms  
Bruce Barbour, Rutgers Cooperative Extension  
Kerry Barringer, Board Member – Flora of North America Association  
Jeanette Bowers-Altman, NJ Division of Fish & Wildlife  
Chris Doyle, Allied Biological

Art Gover, The Pennsylvania State University  
Larry Herrighty, NJ Division of Fish & Wildlife  
Mark Mayer, NJ Department of Agriculture  
Christopher Smith, NJ Division of Fish & Wildlife  
Robert Somes, NJ Division of Fish & Wildlife







# Garden State Invaders

doublefile viburnum - 0



autumn olive - ws



hardy kiwi - 0



wintercreeper - 2



# Species on the Move



Northern Snakehead  
Stage 0 → Stage 1



Amur Corktree  
Stage 0 → Stage 1



# Beefsteakplant (*Perilla frutescens*)



Stage 1 – Shaded roadsides,  
riparian areas, forests,  
gardens



# Japanese & Chinese wisteria (*Wisteria floribunda* & *sinensis*)



Stage 2 and 3 -  
Roadsides, forest edges, open woods, stream edges, meadows



# Flathead catfish (*Pylodictis olivaris*)



Stage 3 - Deep, slow moving water ways

# Spotted lanternfly (*Lycorma delicatula*)



Stage 0 - Stonefruit trees, pines, oaks, walnuts, poplars, tree of heaven, grapes  
Detected in Berks County Pennsylvania in September 2014



# Water hyacinth (*Eichhornia crassipes*)



Stage 0 – Nearest site is Washington DC

Lakes, ponds, slow moving waterways, ditches, and backwater areas

# Nutria (*Myriophyllum aquaticum*)



Stage 0 - Wetlands, semi-aquatic environments  
with emergent vegetation  
Nearest site in Delaware



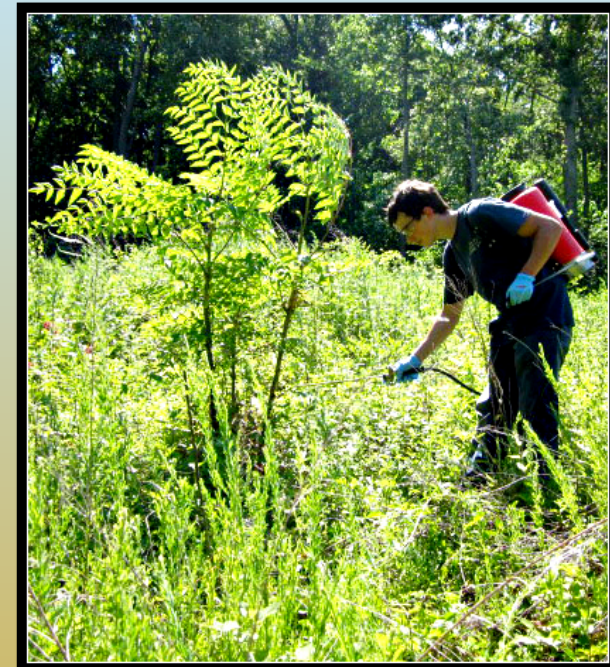
And the list goes on and on...

Forewarned is forearmed!

Learn to identify ALL the species that may threaten your property.

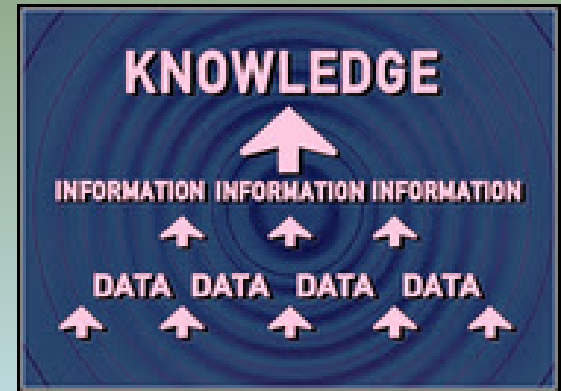
When you find invasive species, **report** them and **treat** them...

**Map Them and Zap Them!**



# Uses of Data

- More complete distribution data
- Early detection of new invaders
- Identification of leading edges
- Refinement of lists and priorities
- Clearer picture of invasive species
- Justification of need for management and resources



***Finding & containing invaders early, while populations are small & concentrated, is essential to protecting our natural resources & our economy.***





Search



# EDDMapS

Early Detection & Distribution Mapping System

Home

Report Sightings

Distribution Maps

Species Information

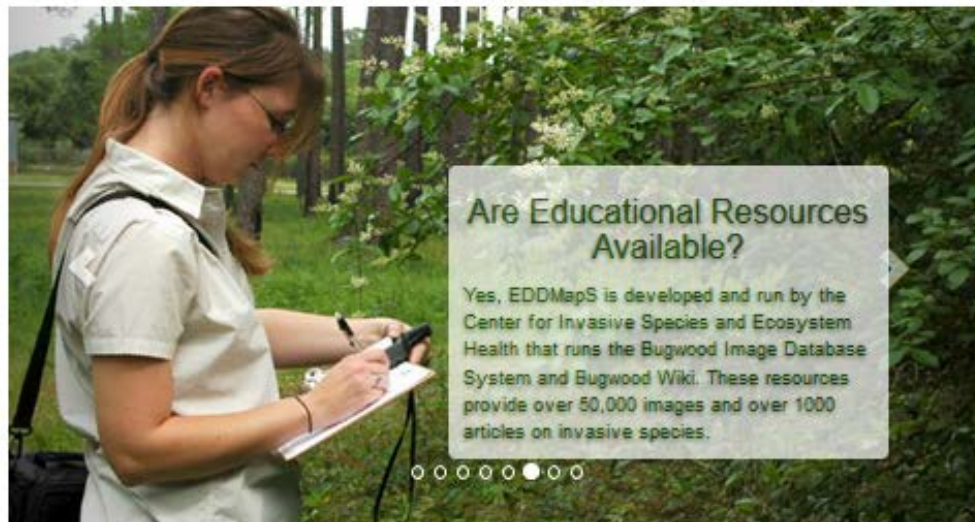
Tools & Training

My EDDMapS

About

Login

Register



## Are Educational Resources Available?

Yes, EDDMapS is developed and run by the Center for Invasive Species and Ecosystem Health that runs the Bugwood Image Database System and Bugwood Wiki. These resources provide over 50,000 images and over 1000 articles on invasive species.



## Projects

- ✓ Southeast Early Detection Network
- ✓ EDDMapS West
- ✓ Mid-Atlantic Early Detection Network
- ✓ Invasive Plant Atlas of New England
- ✓ Florida Invasive Species Partnership
- ✓ EDDMapS First Detector Programs
- ✓ EDDMapS Alberta - Alberta Invasive Plants Council
- ✓ EDDMapS Ontario
- ✓ EDDMapS Prairie Region - Manitoba and Saskatchewan
- ✓ Biological Control Agents of Weeds
- ✓ What's Invasive
- ✓ National Wildlife Refuge Early Detection Network for New England
- ✓ Appalachian Trail Conservancy
- ✓ Invaders of Texas
- ✓ Alaska Exotic Plant Information Clearinghouse
- ✓ New Invaders Watch Program
- ✓ Outsmart Invasive Species
- ✓ ReportIN - Indiana



## BRING THE POWER OF EDDMAPS TO YOUR SMARTPHONE

Introducing BugwoodApps - comprehensive mobile applications that engage users with invasive species, forest health, natural resource and agricultural management

iPhone | iPad | Android

## Specific Pest Programs

- ✓ Kudzu Bug
- ✓ Brown Marmorated Stink Bug - New York
- ✓ Spotted Wing Drosophila Monitoring Network
- ✓ Crapemyrtle Bark Scale

## Educational Resources

- ✓ EDDMapS: Invasive Plant Mapping Handbook
- ✓ EDDMapS Florida Training Video
- ✓ EDDMapS Florida Animals Training Video

## Recent Reports



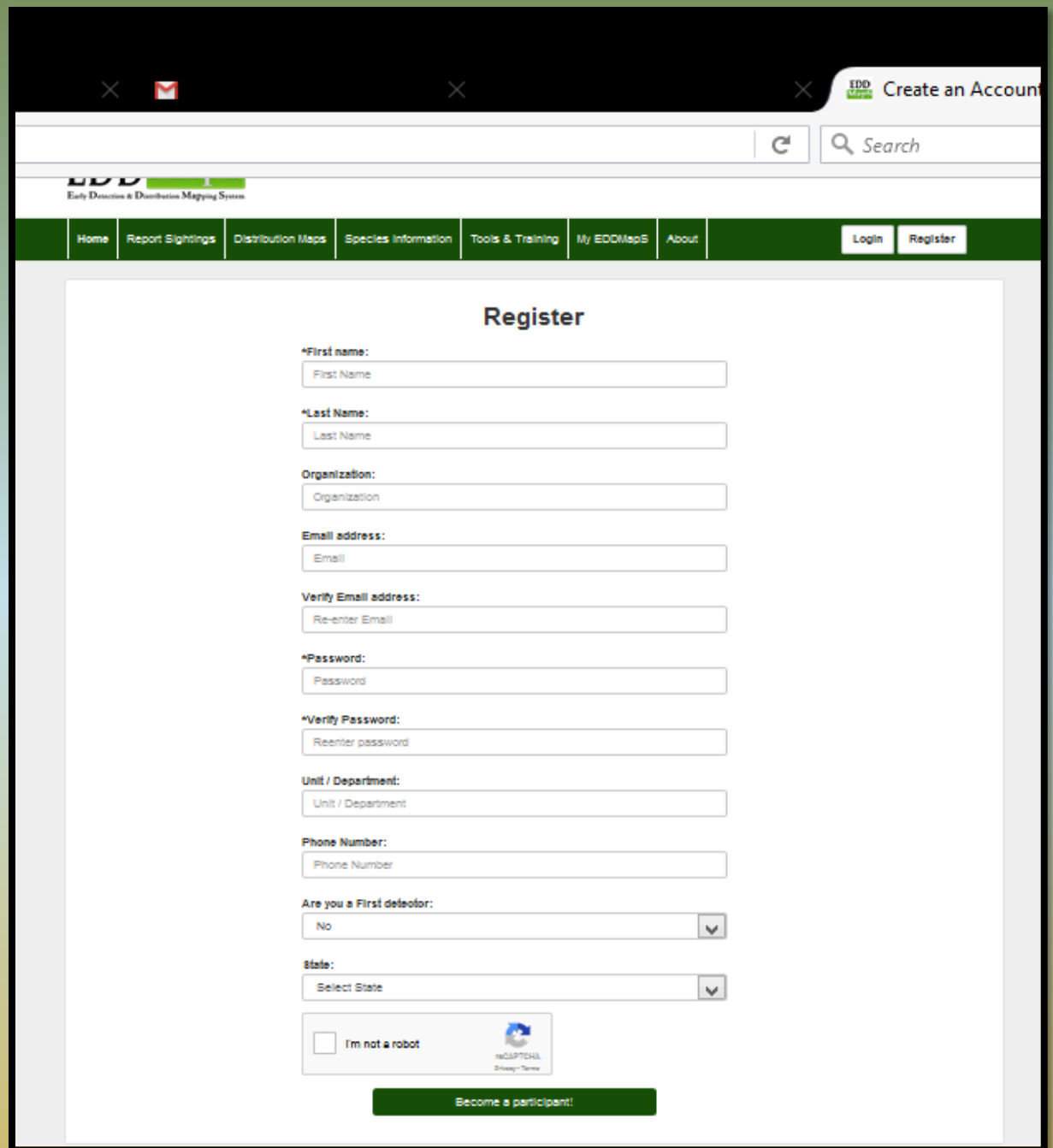
- ✓ hoary cress by Melanie Razor in Humboldt County, Nevada
- ✓ hoary cress by Melanie Razor in Humboldt

## Statistics

2,859,021 County Reports  
1,799,792 Point Reports  
4,819 Species / 30,240 Users

eddmaps.org

Register  
with  
EDDMapS  
and  
Become a  
Participant



The image shows a screenshot of the EDDMapS website's registration page. The browser's address bar shows the URL "eddmaps.org" and the page title "Create an Account". The website's header includes the EDDMapS logo and a navigation menu with links for Home, Report Sightings, Distribution Maps, Species Information, Tools & Training, My EDDMapS, and About. There are also "Login" and "Register" buttons in the top right corner. The main content area is titled "Register" and contains a form with the following fields:

- \*First name: First Name
- \*Last Name: Last Name
- Organization: Organization
- Email address: Email
- Verify Email address: Re-enter Email
- \*Password: Password
- \*Verify Password: Reenter password
- Unit / Department: Unit / Department
- Phone Number: Phone Number
- Are you a First detector: No (dropdown menu)
- State: Select State (dropdown menu)

At the bottom of the form, there is a checkbox for "I'm not a robot" and a reCAPTCHA logo. A green button labeled "Become a participant!" is located at the bottom center of the page.



×
×
×
EDD Maps EDDMapS

↻

**EDD Maps**  
Early Detection & Distribution Mapping System

Home
Report Sightings
Distribution Maps
Species Information
Tools & Training
My EDDMapS
About

Login Register

### Projects

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- ✓ EDDMapS Missouri River Watershed Coalition Training Video
- ✓ Mid-Atlantic Early Detection Network Training Video
- ✓ EDDMapS for Forest Pests Reporting?
- ✓ EDDMapS - National Plant Board

### Recent Reports

- ✓ hoary cress by Melanie Rasor in Humboldt County, Nevada
- ✓ hoary cress by Melanie Rasor in Humboldt County, Nevada
- ✓ hoary cress by Melanie Rasor in Humboldt County, Nevada
- ✓ bull thistle by Melanie Rasor in Humboldt County, Nevada
- ✓ hoary cress by Melanie Rasor in Humboldt County, Nevada

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4,819 Species / 30,240 Users

### Supporters

## Report an Invasive Plant Occurrence

**Species**

Full:

**Identification**

Photo:

Clear field Photo (Y):

Clear Area (Y):

County Choice (Y):

Plant Specimen:

Property Type:

Plant Specimen:

**Location**

State:  County:

Site Name:

Latitude (Y):  Longitude (Y):

Must be expressed in Decimal Degrees (30.00000) and DATUM NAD83(2011) (Easting)

Drawn Map:

\* If reporting observation on private land, be sure to have landowner's permission.

**Images**

Image 1:

URL:

Caption:

Photo (y):

Image 2:

URL:

Caption:

Photo (y):

Image 3:

URL:

Caption:

Photo (y):

Image 4:

URL:

Caption:

Photo (y):

Image 5:

URL:

Caption:

Photo (y):

Overview

Reports

Download

Alerts

Projects

Edit Profile

View Profile

My Uploads

My Surveys

Review Records

# My EDDMapS - Michael Van Clef

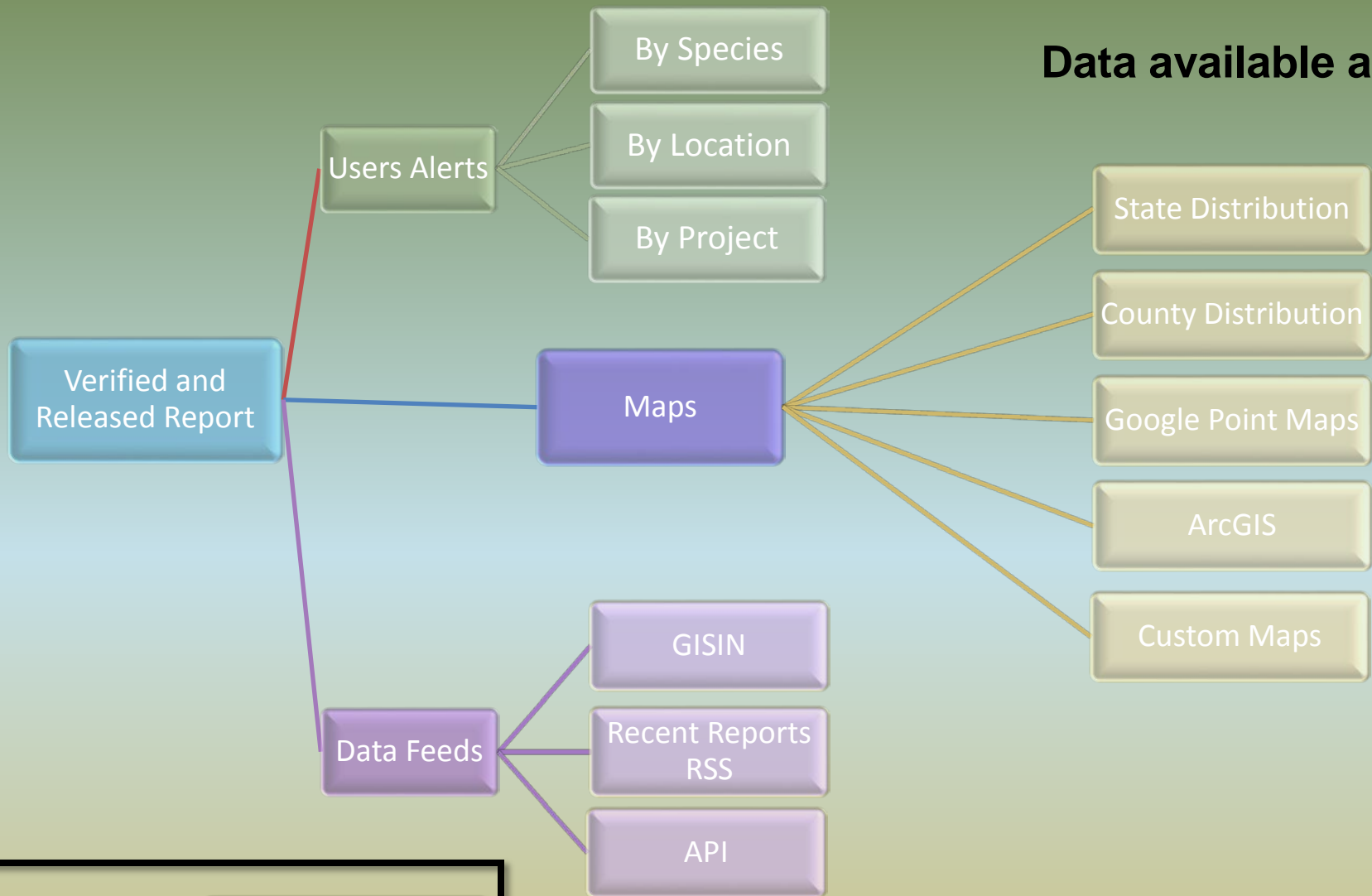
## User Statistics

	Overall	This Year	This Month
Reports	1025	1	0
Species	118	1	0
States	1	1	0
Counties	14	1	0

## Recent Reports

ID	Subject	Location	Date	Manage
<input type="text" value="x"/>	<input type="text" value="x"/>	<input type="text" value="x"/>		
4455335	Oriental photinia	Mercer County, New Jersey	Oct-14-2015	View Edit Revisit Delete
4425599	Siebold's arrowwood	Somerset County, New Jersey	Oct-08-2015	View Edit Revisit Delete
4425598	Amur corktree	Somerset County, New Jersey	Oct-07-2015	View Edit Revisit Delete





## Data available as:



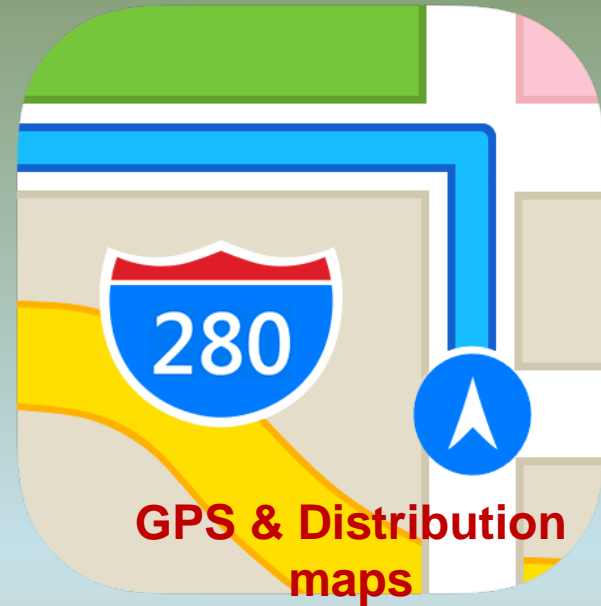
Do away with paper field guides, clipboards,  
pens & pencils, gps units, cameras...

Download *NJ Invasives* today!





# The *NJ Invasives* smartphone app includes:



# NJ Invasives – It's FREE!

File Edit View History Bookmarks Tools Help

https://play.google.com/store/apps/details?id=com.bugwood.njinvasives

Google Play Search Susan

Apps Categories Home Top Charts New Releases

My apps Shop Games Family Editors' Choice

My account My Play activity My wishlist Redeem Send gift Add credit Parent Guide

## NJ Invasives

Bugwood Tools

★★★★★ 6

Everyone

This app is compatible with your device.

Installed

Similar See more

Outsmart Invasiv Bugwood  
Outsmart Invasive Species  
★★★★★ FREE

SEEDN Bugwood  
Identify and Report Invasive Species in the Southeastern United  
★★★★★ FREE

EDDMapS Ontar Bugwood

NJ Invasive Species Strike Team

- Species Categories Report and view species by category
- All Species Full list of all species available for reporting
- My Species List Short list of your selected species
- Upload Queue View, add, or replace your reports
- EDDMapS Login Login or register with EDDMapS
- Manage Sites Refocus from server or delete locally

Species Categories

- Aquatics
- Birds
- Grasses
- Herbs/Forbs
- Insects





5452640



iPad 5:44 PM

### NJ Invasive Species Strike Team

-  Species Categories  
Report and View Species by Category >
-  All Species  
Report and View All Species >
-  My Species List  
Short List of Your Selected Species >
-  Upload Queue  
View, Edit or Upload Your Reports >
-  EDDMapS Login  
Login or Register with EDDMapS >
-  Manage Sites  
Refresh from Server or Delete Locally >
-  News Feed  
Recent Invasive Species News Articles >
-  About  
The App, EDDMapS and Strike Team >
-  Feedback  
Email Us Comments on the App >

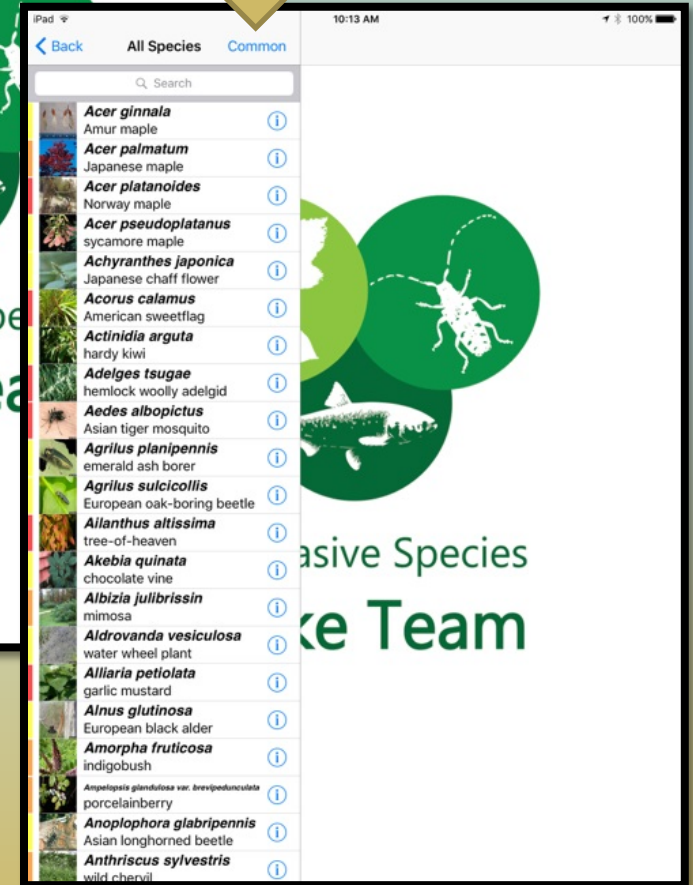


# Invasive Species Strike Team





Search by Scientific or Common Name



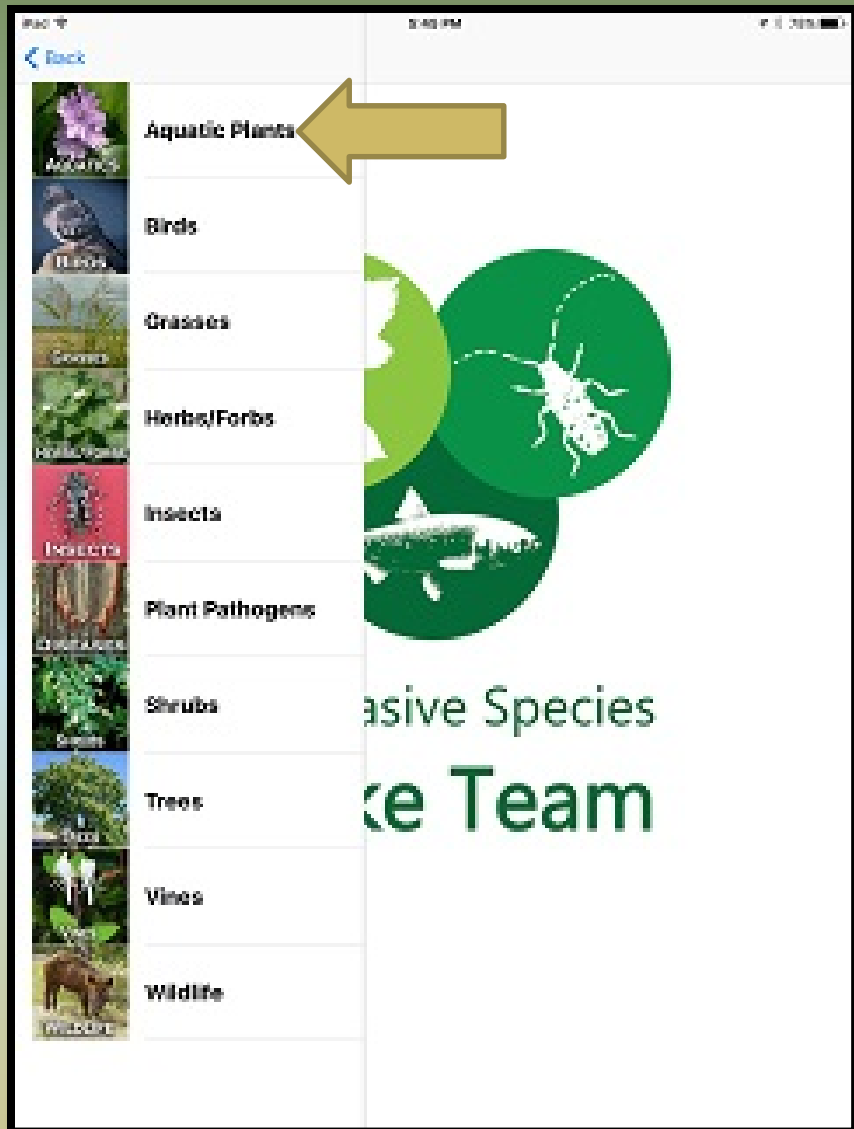






Photo By: Leslie J. Mehrhoff, University of Connecticut

Common Name: water chestnut
Family Name: Trapaceae - Water chestnut family
Native Range: Eurasia
NJ Status: Emerging Stage 3 – Common (may be regionally abundant). It is highly threatening native communities.

General Description

- Rooted aquatic
•Annual—after frost plants die
•Mat-forming
•Easily hand-pulled
•Displays explosive growth

Leaves

- Floating rosette of triangular, sharply toothed leaves, 0.75"-1.5" long
•Stems up to 6" long with swollen portions that give buoyancy
•Prominently veined with short, stiff hairs below
•Feathery submerged leaves up to 6" long, opposite or nearly so

Flowers

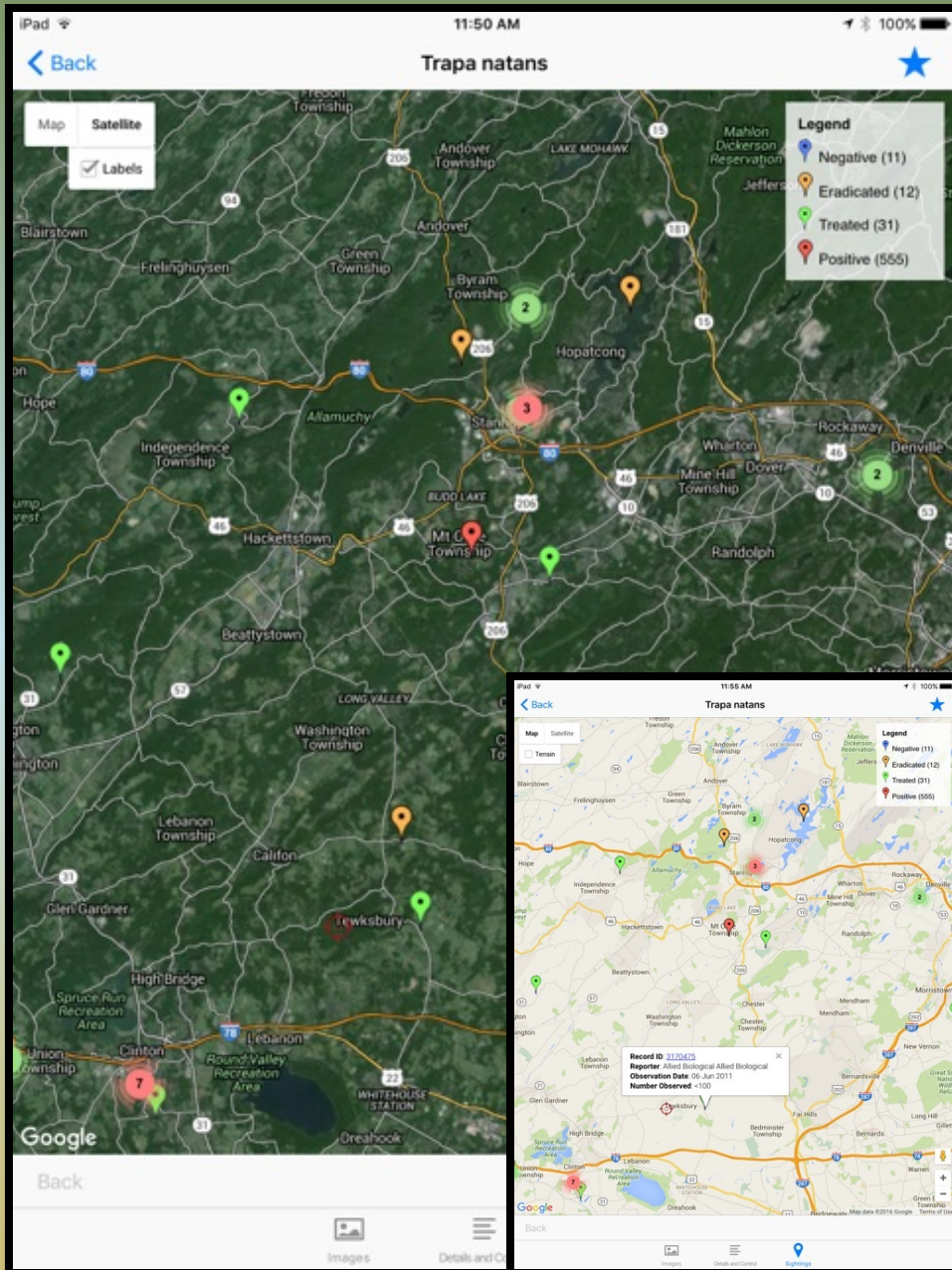
- Tiny, white, 4 petals
•Appear in center of the rosette
•Blooms from July until a killing frost

Fruit

- Submerged, 1" wide nut-like structures with 4 barbed spines
•Ripening in August until a killing frost
•Viable for up to 12 years
•Spines can pierce paws of pets and wildlife, as well as the feet of swimmers

Control

AQUATIC SPECIES; Requires special permitting for herbicide application; Use wetland appropriate herbicide applied by professional lake managers; ANNUAL SPECIES - Must treat before fruit/seed maturation (See phenology guidelines); Treatment options may incl



11:55 AM 100%

Back Trapa natans

**EDDMapS**  
Early Detection & Distribution Mapping System

USDA PLANTS Symbol:TRNA  
Invasive Plant Atlas  
Species Information

States Counties Points List

Download Record (pdf)

**Record ID** 3170475

**Reporter Information**

Reporter Allied Biological Allied Biological

Observation Date 06 June 2011

Date Entered 06 May 2014

Date Updated 12 February 2016

Source Type Joint Federal/State/County

**Species Information**

Common Name European water chestnut

Scientific Name *Trapa natans*

**Verification and Review**

Reviewed Verified

**Infestation Information**

Population Size <100

Infestation Status Treated

**Location Information**

Habitat Freshwater

Location Hunterdon County, New Jersey, United States

Coordinates 40.6883,-74.7541

**Survey Information**

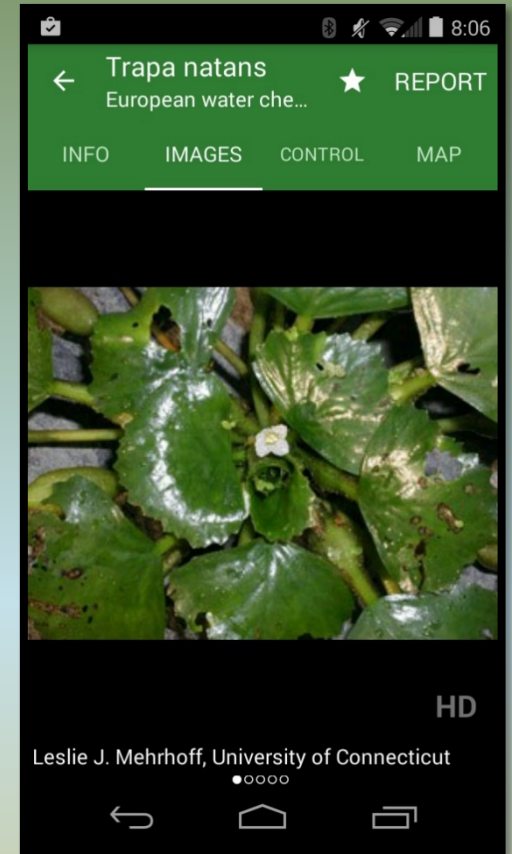
Back

Images Details and Control Sightings



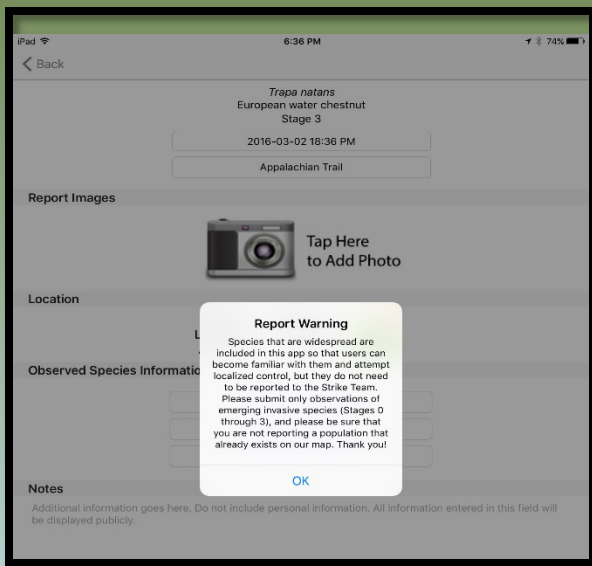


To report on an Apple device, swipe from the left to pull the screen with the species list back into view, then click on the name of the species



To report on an Android device, click "Report"





- Check current NJ status
- Check the map to make sure it is not already reported
- Camera - take picture(s)
- Pin - drag to exact location
- Site name
- Required: property type, population size, habitat
- Strike Team will verify

6:37 PM 73%

Back

*Trapa natans*  
European water chestnut  
Stage 3

2016-03-02 18:36 PM

Appalachian Trail

Report Images

Tap Here to Add Photo

Location

Latitude: 40.68287  
Longitude: -74.80066  
Accuracy: 10.0 m

Observed Species Information

Property Type (required)

Habitat (required)

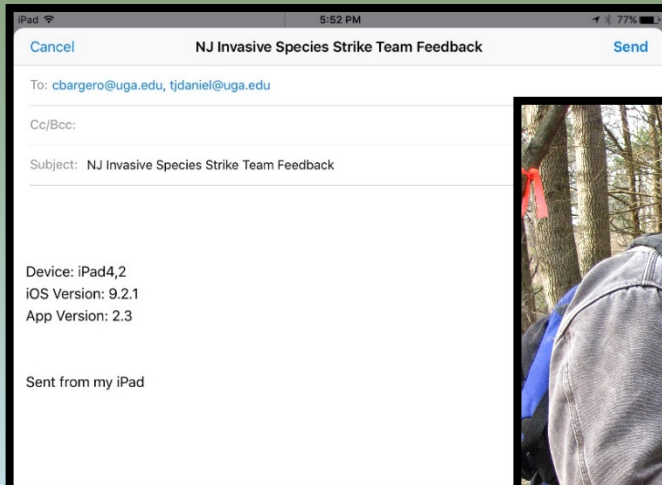
Population Size (required)

Notes

Additional information goes here. Do not include personal information. All information entered in this field will be displayed publicly.

Save

# FEEDBACK



# INVASIVE SPECIES – What Should We Be Doing?

## Prevent the spread of new (emerging) invasive species

- Learn which species *are present in small numbers* in your community
  - Learn which species *are likely* to invade your community



Protect the natives

## The Keys

- Monitoring
- Early Detection
- Rapid Response
- More Monitoring

## The Tools

- *New Jersey Invasives*
- [ipconnect.org/newjersey](http://ipconnect.org/newjersey)
  - [njisst.org](http://njisst.org)
  - [eddmaps.org](http://eddmaps.org)
  - [info@njisst.org](mailto:info@njisst.org)
- 2016 New Jersey Invasive Species Conference – April 6th





# New Jersey Invasive Species Strike Team

P.O. Box 5752, Hillsborough, NJ 08844

[www.njisst.org](http://www.njisst.org)



Together, We Can Nip New Invaders in the Bud