*i*MapInvasives:
A Collaborative Partnership Working to Develop a Web-Based Solution for Invasive Species Data Aggregation, Mapping, Decision-Making & Action!

Meg Wilkinson
Invasive Species Database Program Coordinator
New York Natural Heritage Program

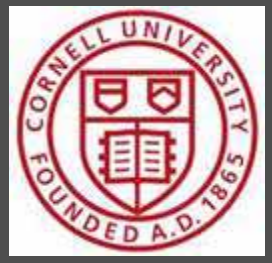
Maryland Invasive Species Council Meeting – January 22, 2009

Most Frequent Threats (2001): TNC NY's Priority Landscapes n=27

- Invasive Species: 20 sites
- Residential Development: 19
- Agricultural Practices: 7
- Non-Point Water Pollution: 7
- Fire Suppression: 7
- Incompatible Forestry: 7
- Hydrologic Alteration / Dams & Barriers: 7
- Incompatible Recreation: 6
- Pests & Pathogens: 6

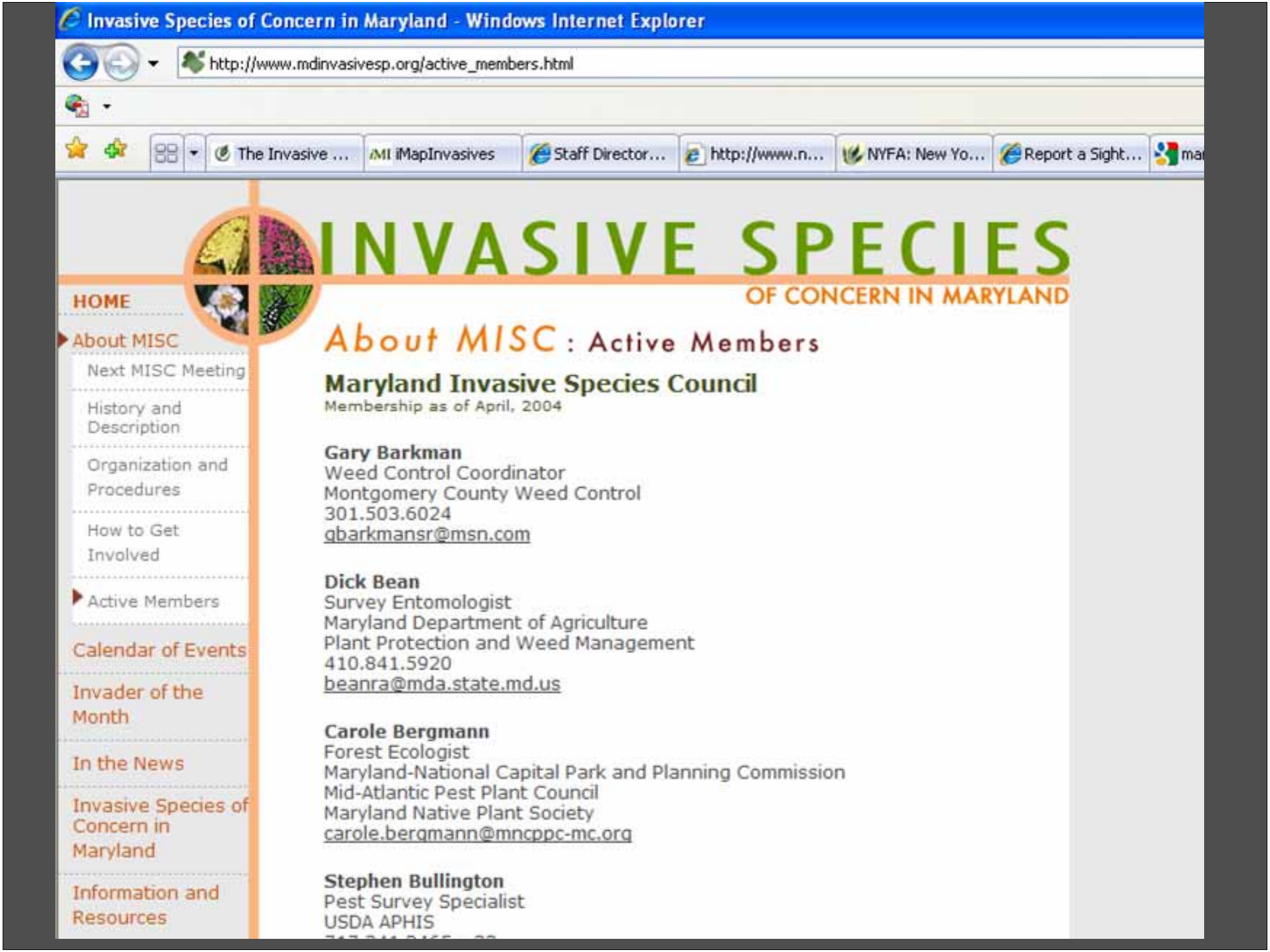
NY ISTF
Convened in 2004
Diverse Stakeholders

- **Government Agencies**
  - Department of Environmental Conservation (DEC)
  - Ag & Markets (DAM)
  - Department of Transportation (DOT)
  - Office of Parks Recreation & Historic Preservation (OPRHP)
  - Thruway and Canal Authority
  - Adirondack Park Agency (APA)
- **Conservation Groups**
  - The Nature Conservancy (TNC)
  - New York Natural Heritage Program (NYNHP)
  - NY Biodiversity Research Institute (BRI)
- **Academia**
  - Cornell University
- **Trade Organizations**
  - NY Nursery & Landscape Assoc.
  - NY Farm Bureau



NYSDOT.GOV

The Nature Conservancy


Invasive Species of Concern in Maryland - Windows Internet Explorer
http://www.mdinvasivesp.org/active_members.html
The Invasive ...
iMapInvasives
Staff Director...
http://www.n...
NYFA: New Yo...
Report a Sight...
INVASIVE SPECIES
OF CONCERN IN MARYLAND
HOME
About MISC
Next MISC Meeting
History and Description
Organization and Procedures
How to Get Involved
Active Members
Calendar of Events
Invader of the Month
In the News
Invasive Species of Concern in Maryland
Information and Resources
About MISC : Active Members
Maryland Invasive Species Council
Membership as of April, 2004
Gary Barkman
Weed Control Coordinator
Montgomery County Weed Control
301.503.6024
gbarkmansr@msn.com
Dick Bean
Survey Entomologist
Maryland Department of Agriculture
Plant Protection and Weed Management
410.841.5920
beanra@mda.state.md.us
Carole Bergmann
Forest Ecologist
Maryland-National Capital Park and Planning Commission
Mid-Atlantic Pest Plant Council
Maryland Native Plant Society
carole.bergmann@mncppc-mc.org
Stephen Bullington
Pest Survey Specialist
USDA APHIS

→NY Invasive Species Council (ISC)
&
NY Invasive Species Advisory Committee

Individuals/Organizations Collecting data – no centralized repository -- No “Big Picture”

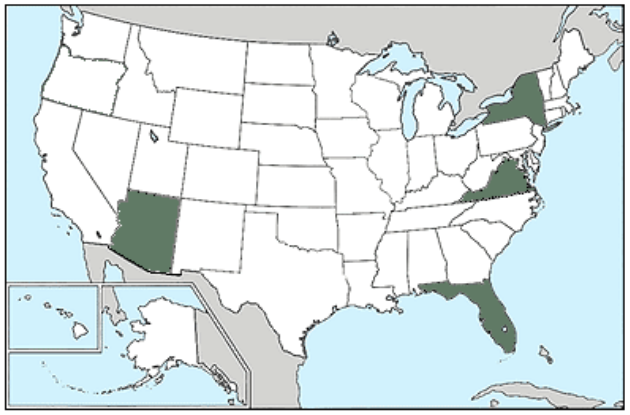
NYSDOT.GOV

Recommendation #5 of ISTF: "New York State should establish a state-wide database clearinghouse for all taxa of invasive species ….."

Trained Volunteers & Field Professionals

Maps & Analysis

New York Natural Heritage Program

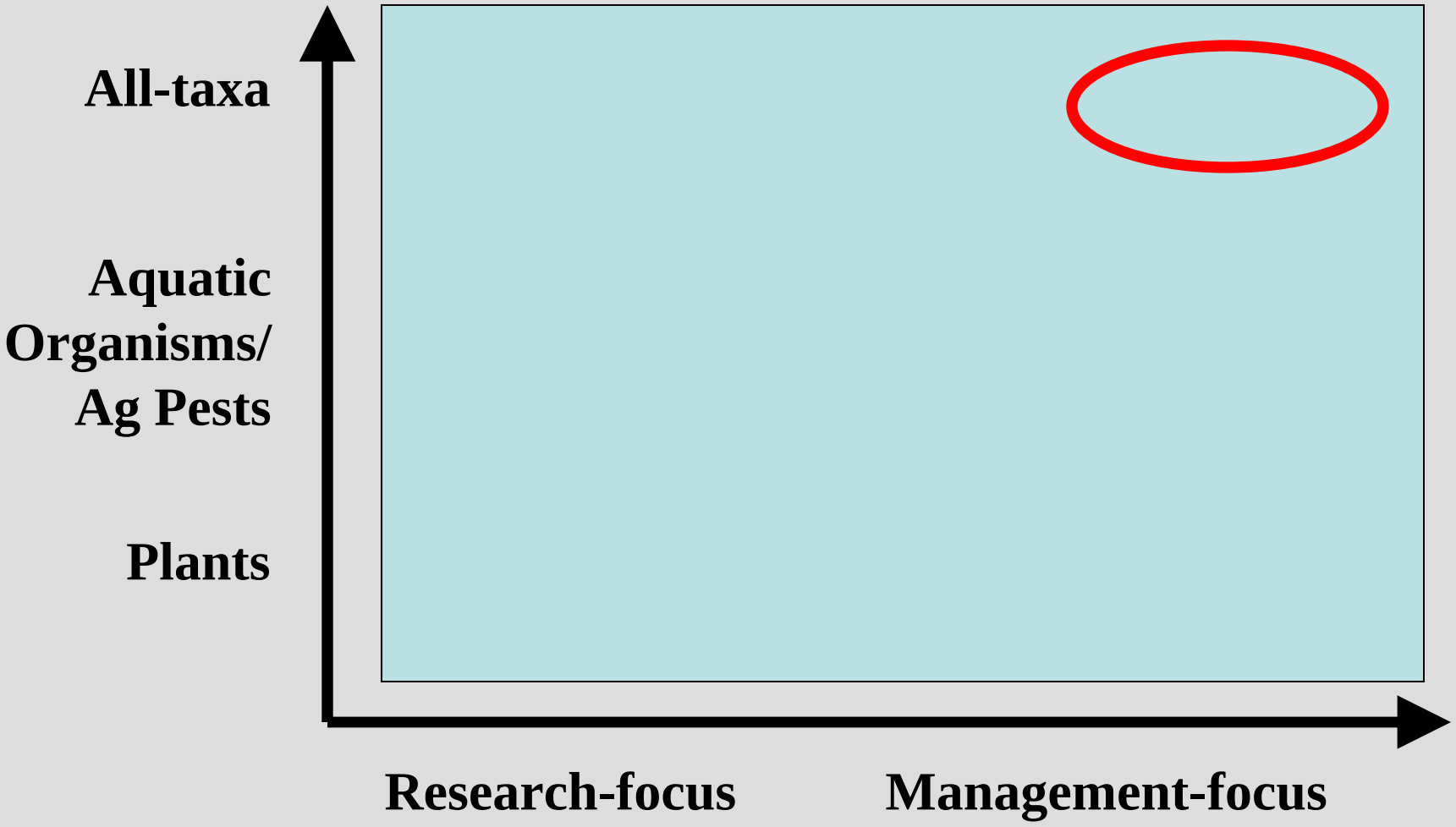


- Invasive Species a primary threat to biodiversity
- FNAI/NYNHP well positioned to address part of the problem
  - Existing data management infrastructure
  - Expertise managing biodiversity data
  - Botanical and ecological expertise
  - Important complementary data
  - Strong connection with regulatory and planning processes

Partnerships for Regional
Invasive Species Management
2008
APIPP
SLELO
Capital-
Mohawk
Finger Lakes
Western NY
CRISP
Lower
Hudson
LIISMA
The eight PRISMs in New York are composed of a diverse base of state agencies, resource managers, industry, non-governmental organizations, resource users and many others. The PRISMs work to plan regional invasive species management, develop early detection and rapid response capabilities and implement eradication projects. They are also a great way for citizens to get involved!

U.S.-Focus

(partial list)



iMapInvasives
geotracking invasive exotic species

Lead Partner Organization

- Natural Heritage Program OR
  Other State Agency/Organization
  - Responsibilities:
    - Coordinate with other agencies/organizations involved with invasive species management
    - Coordinate Quality Control of data
    - Coordinate *i*MapInvasives Training
    - Organize *i*MapInvasives Users Advisory Committee
    - Pay annual *i*MapInvasives Service Fee

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Features of *i*MapInvasives

- **Basic Features**
  - All-taxa, GIS, Occurrence, Treatment, etc.
- **Service Features**
  - For Natural Resource Managers…
  - For Local, Regional, State, Inter-state planners…
- **Beyond the Database**
  - *Intra*-state
  - *Inter*-state
  - Long-term viability

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Basic Features

- 1. Core Fields for data exchange
- 2. Partnership
- 3. All-taxa
- 4. Geographic Information System (GIS)
- 5. Online
- 6. Occurrence, Assessment & Treatment
- 7. Aggregate Data

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1. Core Data Fields

- Core data-fields; compatible; facilitate data exchange…

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2: Partnership

A Collaborative Partnership Working to Develop a Web-Based Solution for Invasive Species Data Aggregation, Mapping, Decision-Making & Action!

FLORIDA Natural Areas INVENTORY

The Nature Conservancy

Protecting nature. Preserving life.™

NatureServe

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3: All-taxa

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4: On-Line

- Available to the public
  - General information *("fuzzy", e.g. county-level)*
  - Submit invasives species observation **reports** *(verified by trained individuals)*
- Allows trained users to login with a password:
  - View more detailed information applicable to their User Level
  - **Enter data**

Preview Site

5: GIS Capabilities!

* Ability to view maps & run data queries
* GIS = Map + Data & Spatial Analysis

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6: Occurrence, Assessment *and Treatment* Data

- Occurrence Data *(who, what, when, where)*
- Assessment Data *(more detail)*
  - Repeat visits…
- Treatment Data *(Phase 3)*

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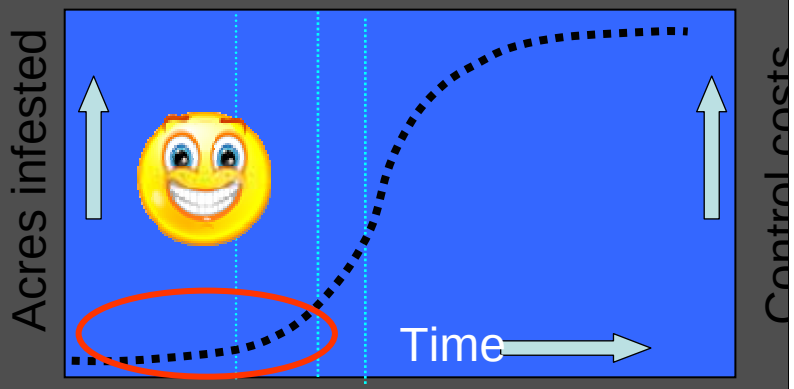
7: Aggregate Data

- WIMS (TNC Access-based application)
- “WIMS-Lite” (ArcPad application)
- CAPS data (Cooperative Agricultural Pest Survey)
- Data from Participating States/Provinces Partner Organizations
- Others…

Service Features *for Natural Resource Managers*



- 1. Tools Provided
- 2. Email Alerts
- 3. Feedback for Future *i*MapInvasives Capabilities

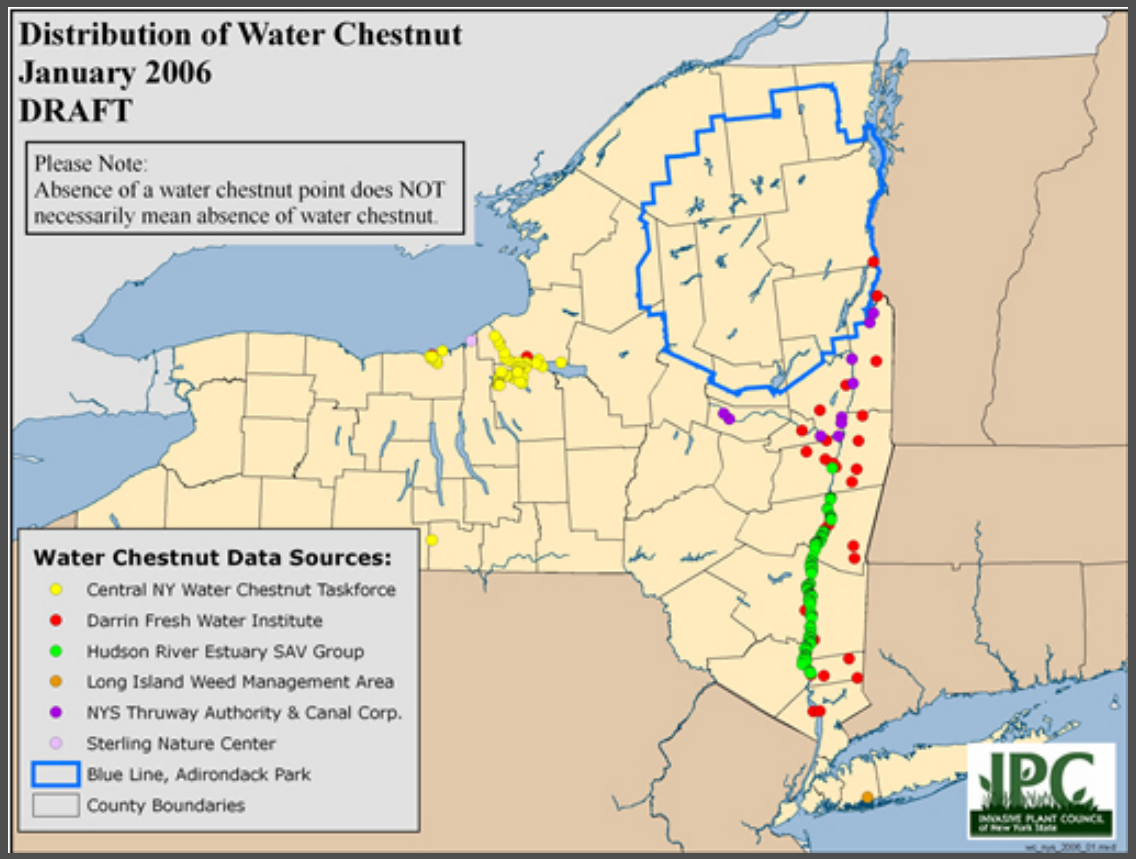
Service Features
for Natural Resource Managers

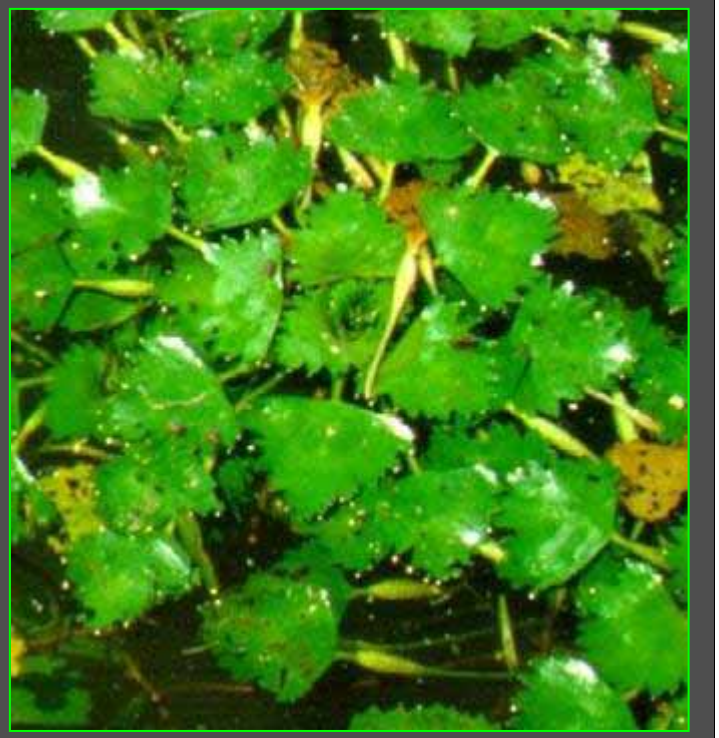
1: Tools Provided

- Site-Level Resolution
- Tracking, monitoring over time
- Quality-Controlled Data *(digital photo or expert-ID)*
- Occurrence, Assessment and Treatment Data

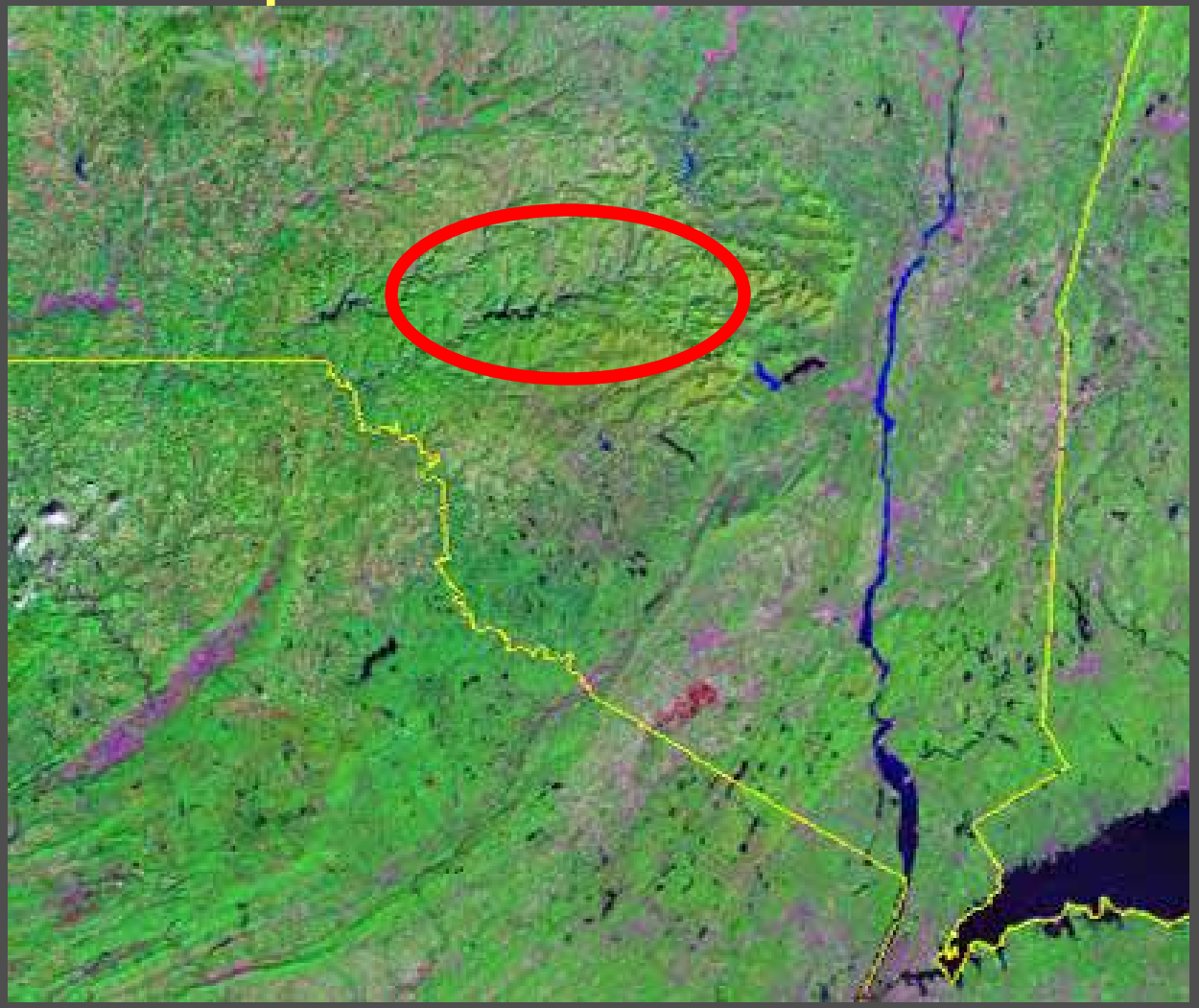
Early Detection/Rapid Response
by species

- Facilitate Quick On-the-ground response to *New Invaders*



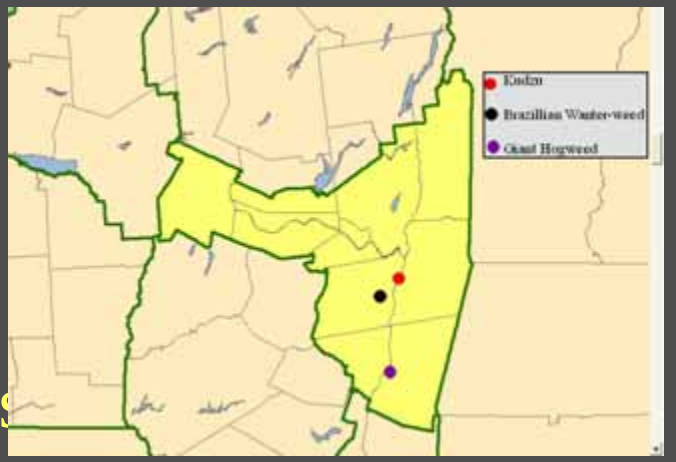


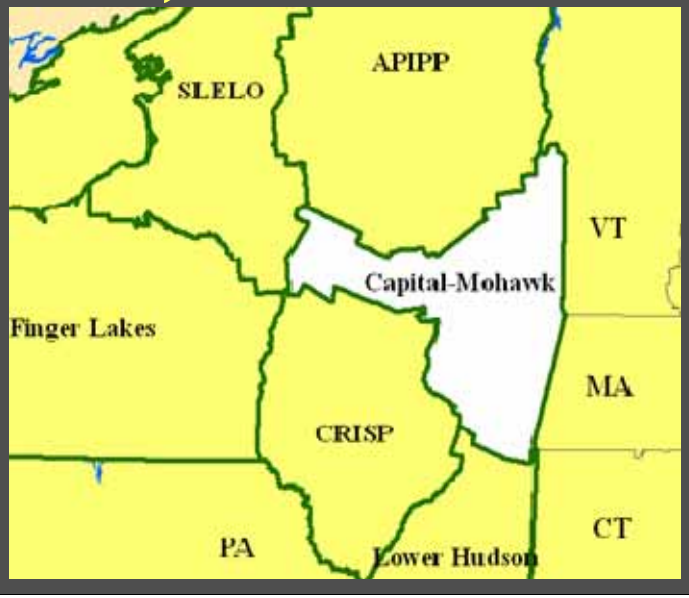
Early Detection/Rapid Response
by Location/Site
Invasive Species Prevention Zones



Tools Provided (*cont'd*)

- Early Detection (ED) Reports
- Approaching Region (AR) Reports
- Maps for meetings
- Reports By: CWMA, PRISM, County, Watershed, Invasive Species Prevention Zone, *i*MapInvasives User, etc.





May, 2007: NY State Early Detection Invasive Plants by Region.
REGION: Capital Region

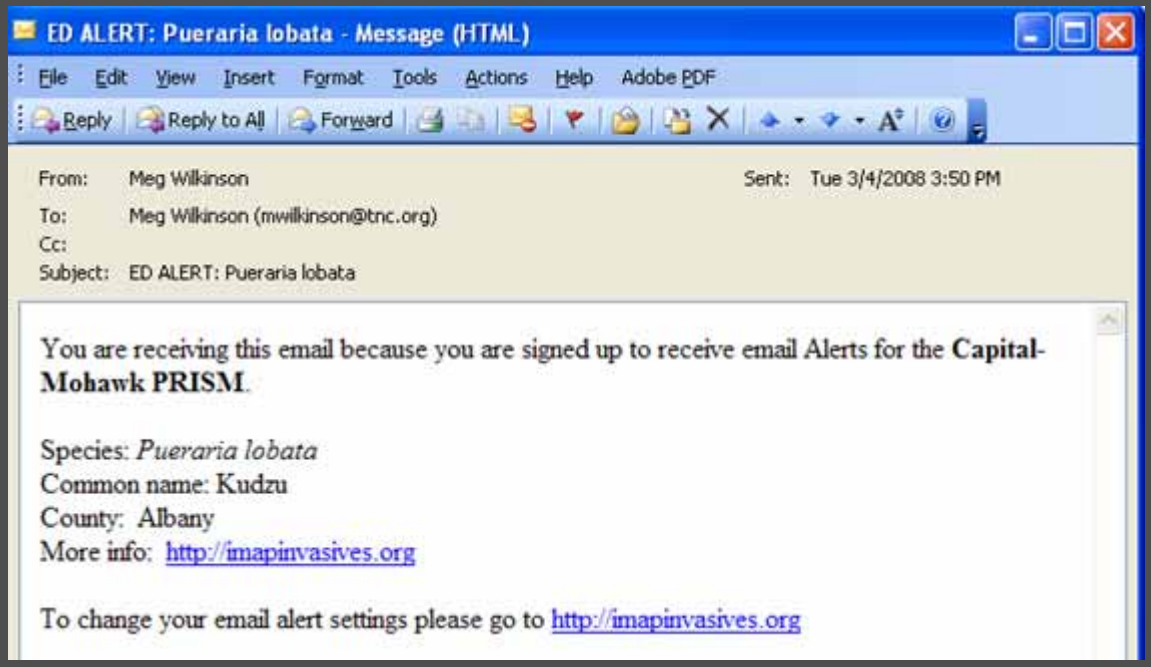
AR: "Approaching Region". *Available data indicate that these plants are not present in this region; however, they are known to occur in adjacent regions or in a state adjacent to this region.*

Scientific Name	*Preferred Common Name (Other Names)*
Actinidia arguta	Hardy Kiwi (Hardy Kiwifruit)
Aira caryophyllea	Silver Hairgrass
Aralia elata	Japanese Angelica Tree
Buddleja davidi	Orange-eye Butterfly-bush
Butomus umbellatus	Flowering-rush
Cabomba caroliniana	Carolina Fanwort
Caragana arborescens	Siberian Peashrub
Cardamine hirsuta	Hairy Bitter-cress
Cardamine impatiens	Narrowleaf Bittercress (Bushy Rock-cress)
Carex kobomugi	Japanese Sedge; Asiatic Sand Sedge
Centaurea solstitialis	Yellow Star-thistle
Cirsium palustre	Marsh Thistle (European Marsh Thistle)
Clematis terniflora	Japanese Virgin's-bower (Sweet Autumn Clematis; Yam-leaf clematis)
Crupina vulgaris	Common Crupina
Cytisus scoparius	Scotch Broom

Service Features
for Natural Resource Managers

2. Email Alerts

- By Taxonomic Group
- By Geographic Region
- Frequency: Immediate or Monthly Summary Email



Service Features
for Natural Resource Managers

3. Contribute Feedback for Future *iMI Capabilities*

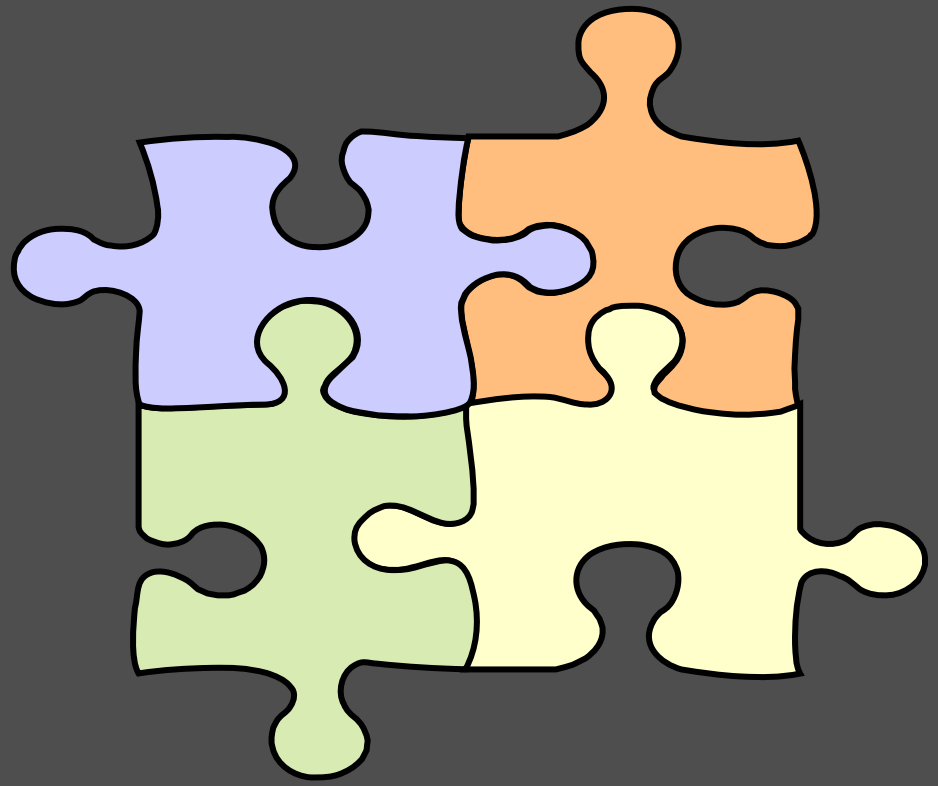
- GOAL: Serve the End-user
  - – *i*MapInvasives Users Advisory Committee
  - – Enhancements/New Features/Capabilities

Service Features
for Local, Regional (intra-state), State and Inter-state Planners

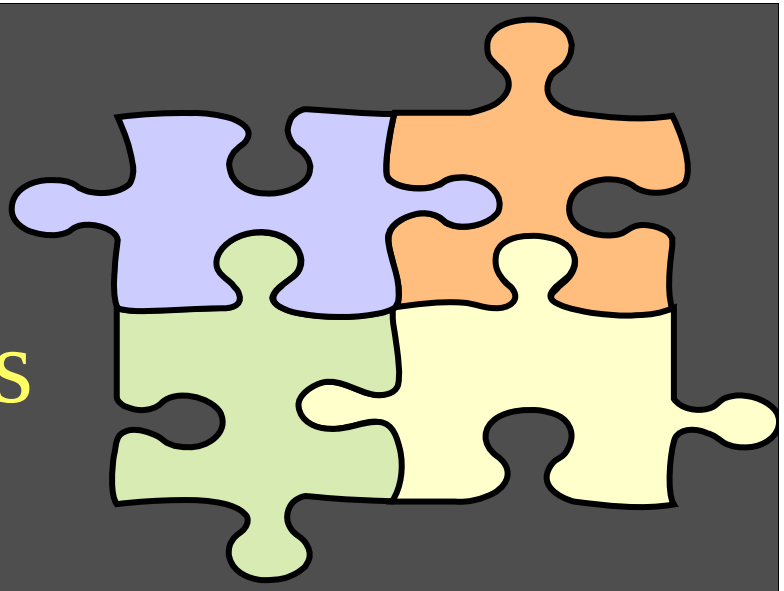
- 1. Networking: *Intra*-State AND *Inter*-State
- 2. Different User Levels (public, trained user, staff)
- 3. Reports by County, Region, State, Species, Taxonomic Group, etc.
- 4. Reasonable Cost for Participating States

Beyond the Database
- Strength of *i*MapInvasives

- ***Intra*-state**: Lead Partner Organization
- ***Inter*-state**: *i*MapInvasives Network
- **Long-term** Viability

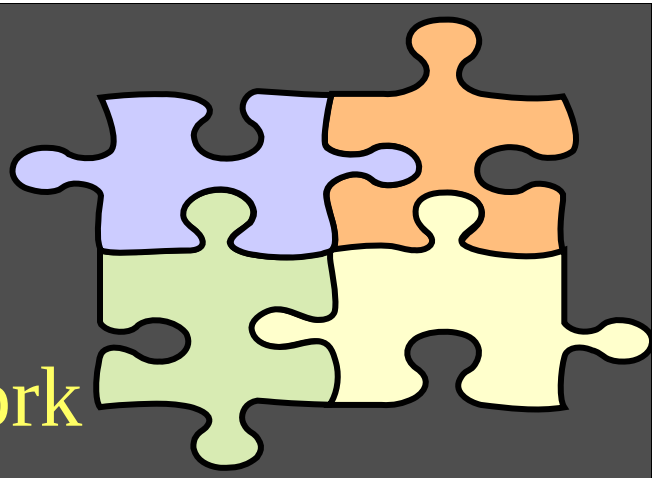


Beyond the Database – Strength of *i*MapInvasives



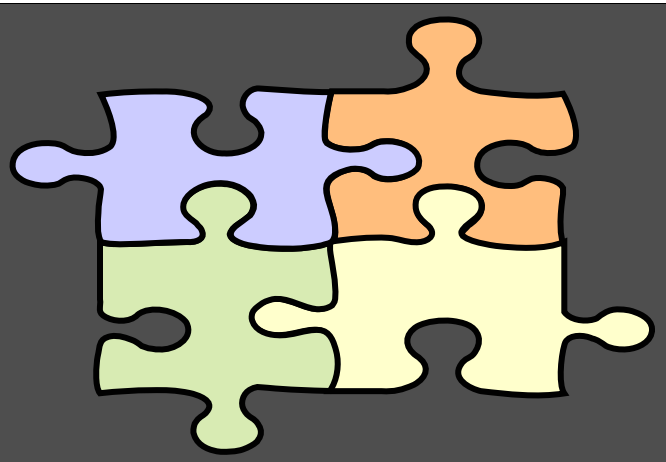
- ***Intra*-state**: Lead Partner Organization
  - Engaging partners within their state
  - Coordinating Training
  - Coordinating Quality-Control (species ID and data entry and import)
  - Organizing *i*MapInvasives Users Advisory Committee & Providing feedback to *i*MapInvasives

Beyond the Database – Strength of *i*MapInvasives



- ***Inter*-state**: *i*MapInvasives Network
  - *i*MapInvasives People
    - Lead Partner Organizations with capability and commitment to the project
    - Network of volunteers and professionals, a resource…
  - *i*MapInvasives Project
    - Benefit of collaboration; efficiency of scale
  - *Invasive Species know no boundaries…*
    - Better use of regional resources
      - Invasive Species Information from other participating states
      - Better prevention/ ED/RR
      - Regional prioritization

Beyond the Database – Strength of *i*MapInvasives

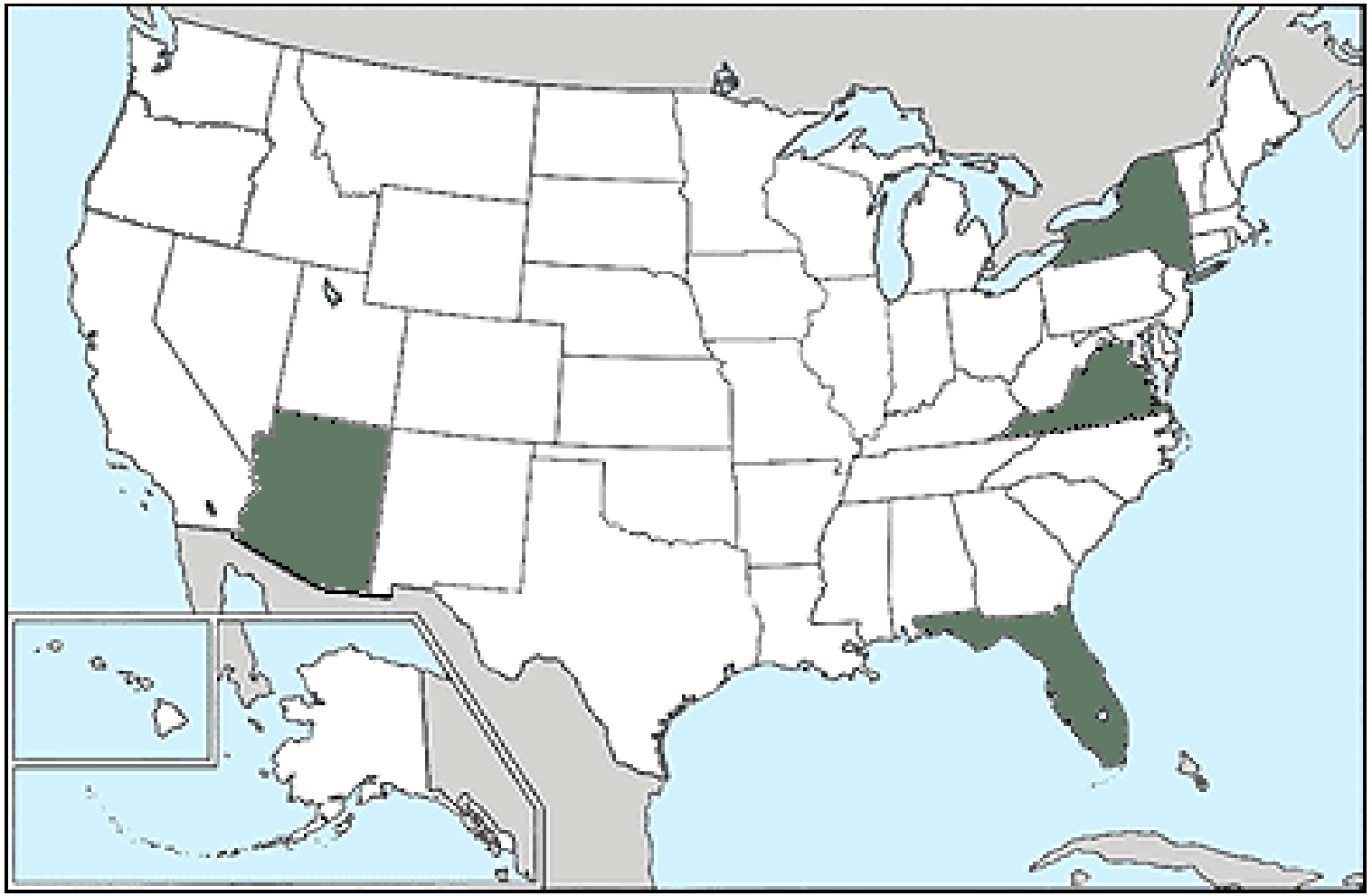


- **Long-term** Viability
  - Development funds: TNC & NY & FL & others
  - Sustainability funds: *i*MapInvasives Service Fees
  - Support of the Lead Partner Organizations
  - Support of The Nature Conservancy & NatureServe

iMapInvasives

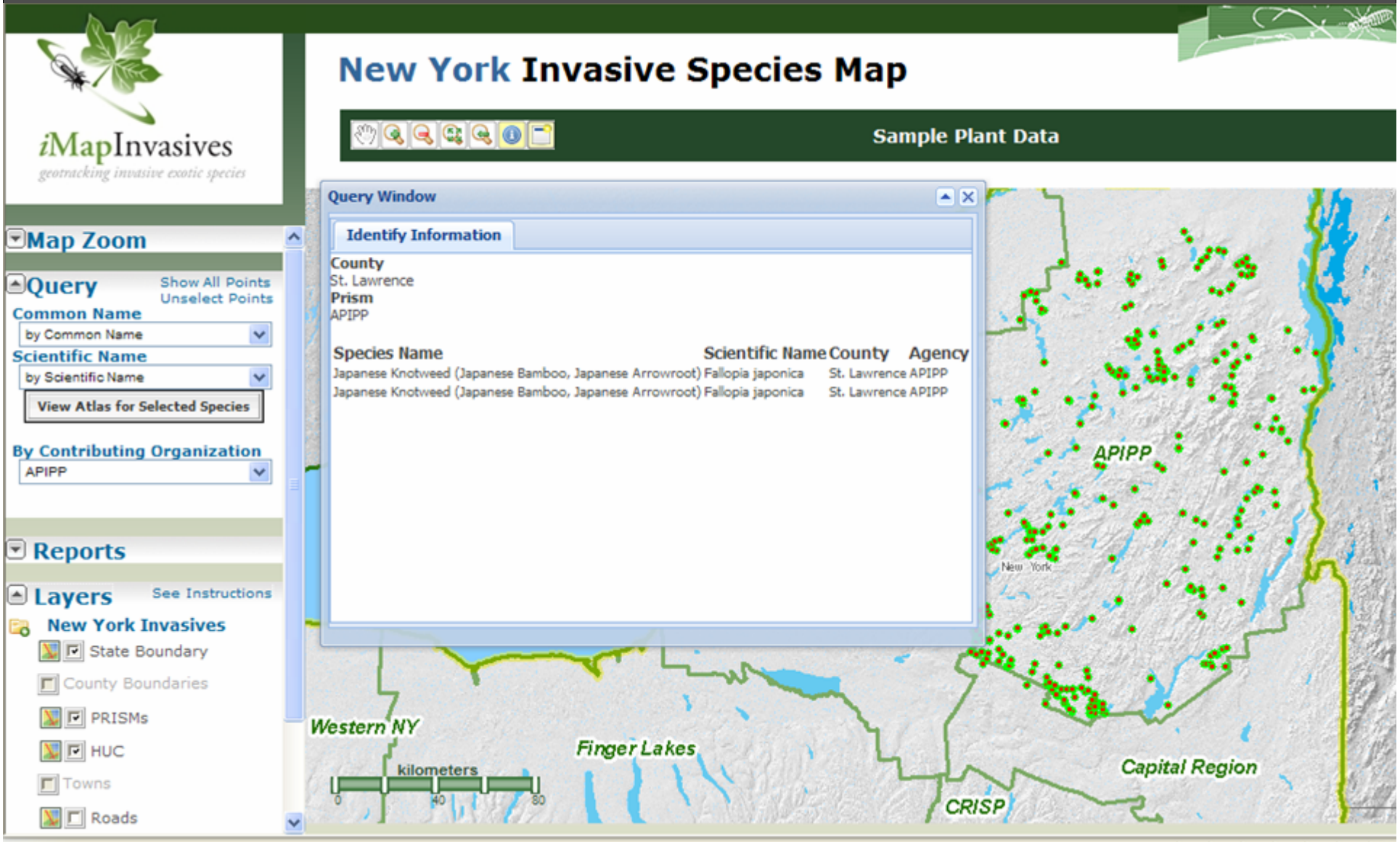
geotracking invasive exotic species

imapinvasives.org

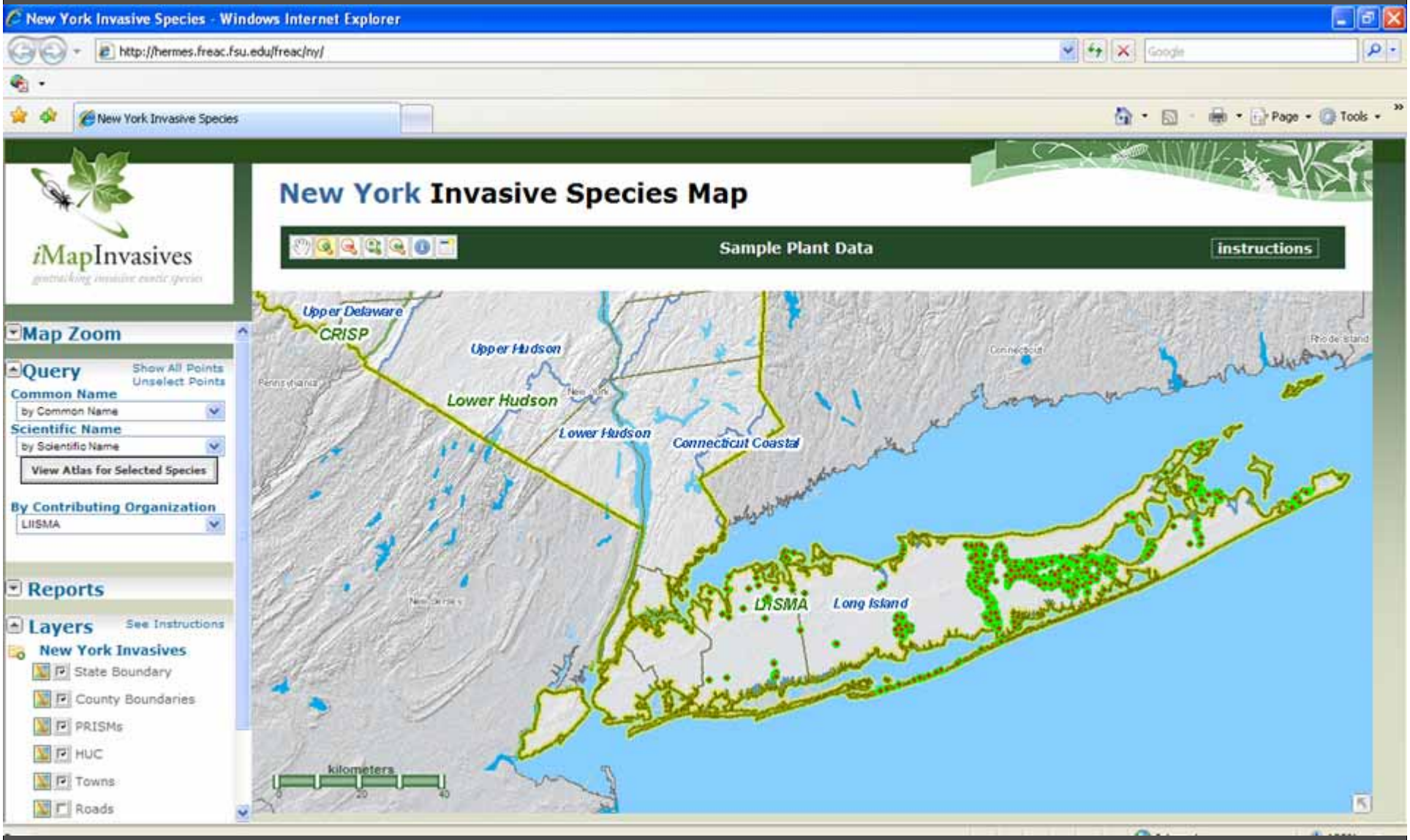


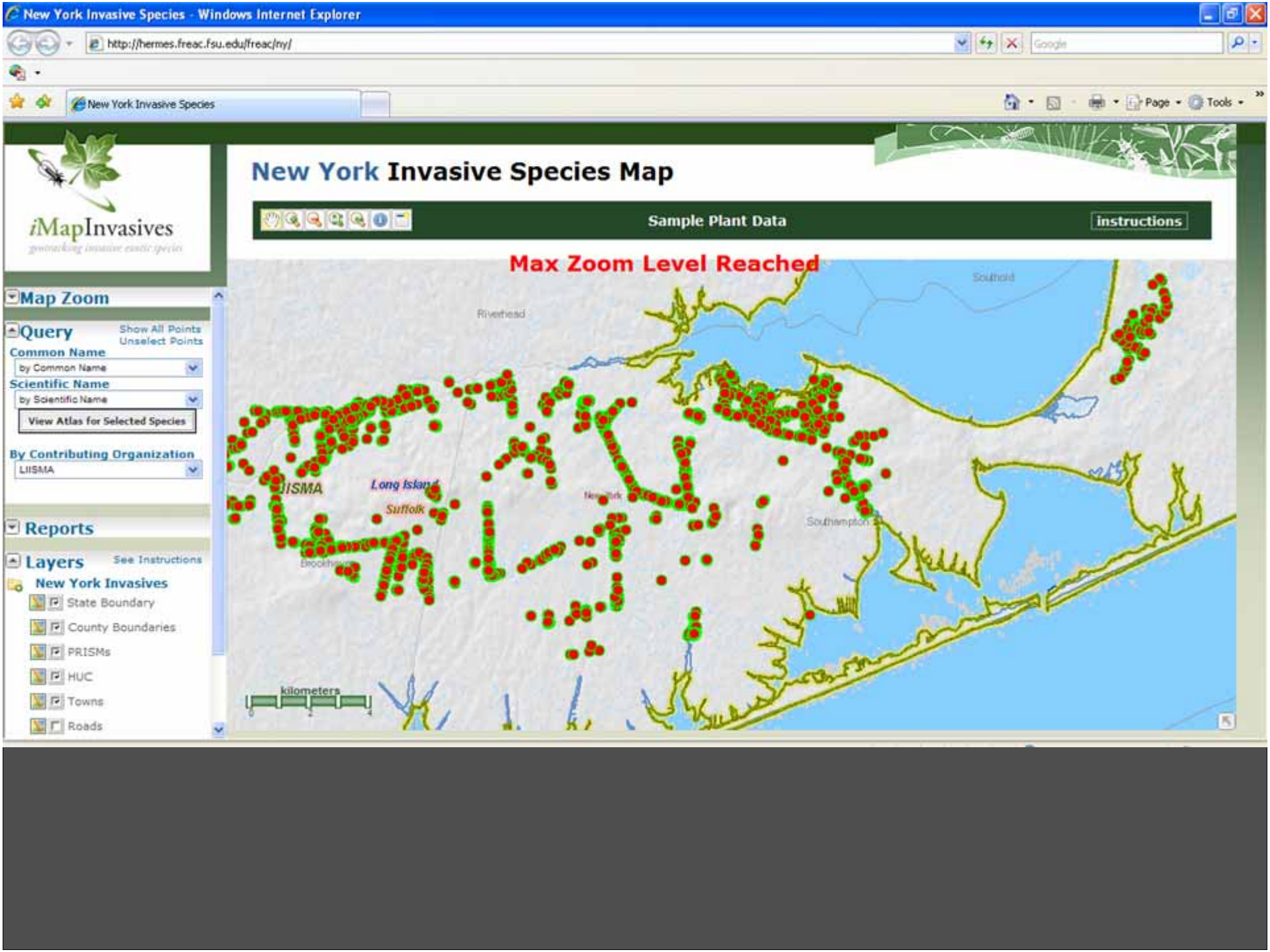
Preview Site: iMapInvasives.org

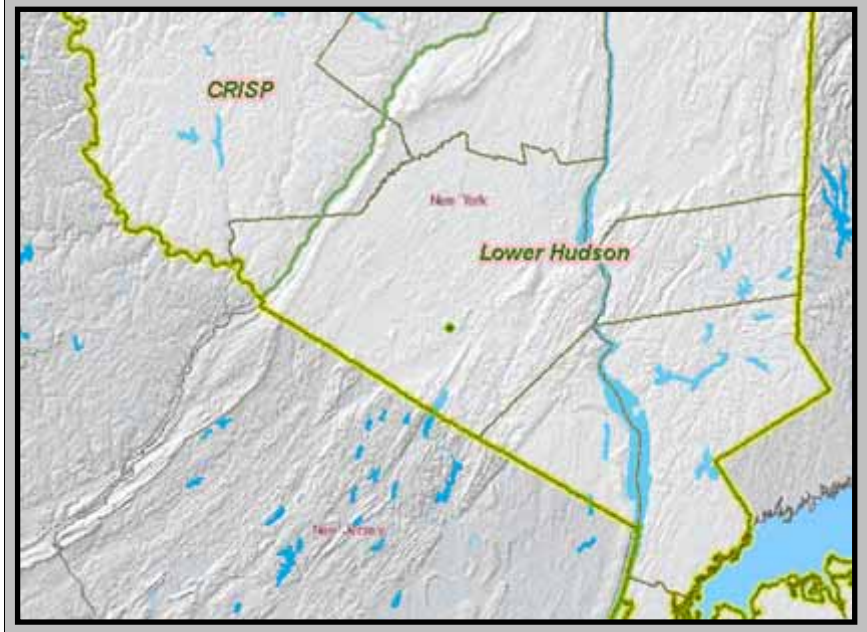
Contributing Organization: APIPP



Contributing Organization: LIISMA

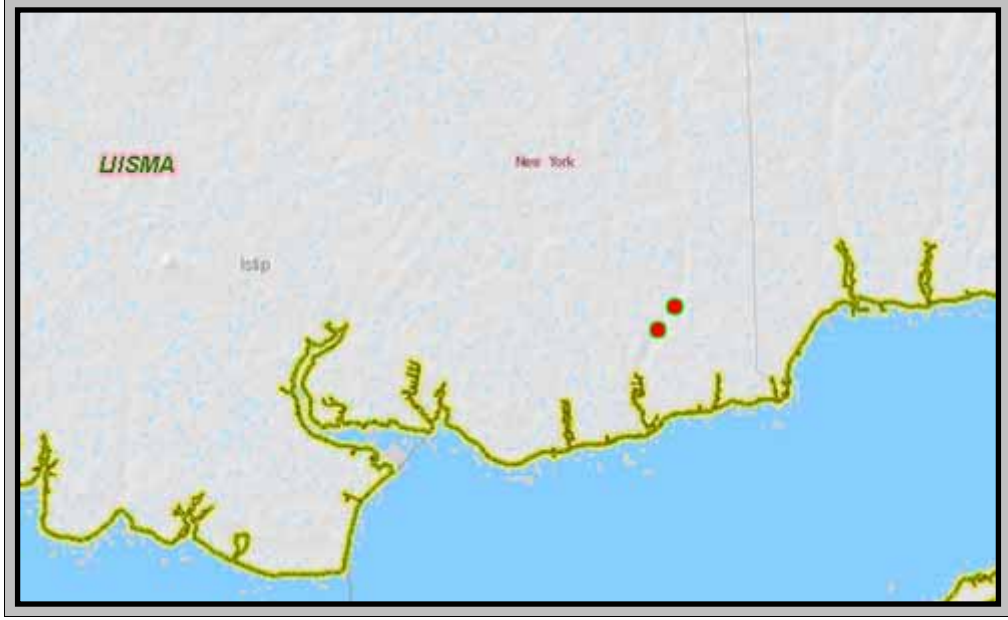



New York Invasive Species - Windows Internet Explorer
http://hermes.freac.fsu.edu/freac/ny/
New York Invasive Species
iMapInvasives
New York Invasive Species Map
Sample Plant Data
instructions
Max Zoom Level Reached
Map Zoom
Query
Show All Points
Unselect Points
Common Name
by Common Name
Scientific Name
by Scientific Name
View Atlas for Selected Species
By Contributing Organization
LIISMA
Reports
Layers
See Instructions
New York Invasives
State Boundary
County Boundaries
PRISMs
HUC
Towns
Roads
Riverhead
Southold
Long Island
Suffolk
Southampton
kilometers



Hydrilla

Orange County:
Creamery Pond (aka Swetlows Pond)
Town of Sugar Loaf (Chester)
9 acre pond.
August, 2008
Scott Kishbaugh, NYSDEC, Division of Water



Long Island:
BlydenburghPond (2008) Town of Smithtown
(not in Preview Site, yet)
Sans Souci Pond (2008) Town of Islip
(a chain of 11 lakes – two infested)
Lotus Lake (2008) Town of Islip
Dan Lewis &Kathy Schwager
& Scott Kishbaugh

iMapInvasives

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*i*MapInvasives:
More than an Online, GIS-based, All-taxa Database

Contact Information

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Thank You & Questions?