



# Leveraging iMapInvasives for your Lake

NYSFOLA Annual Conference 2022  
*"Maximizing Your Lake Data"*

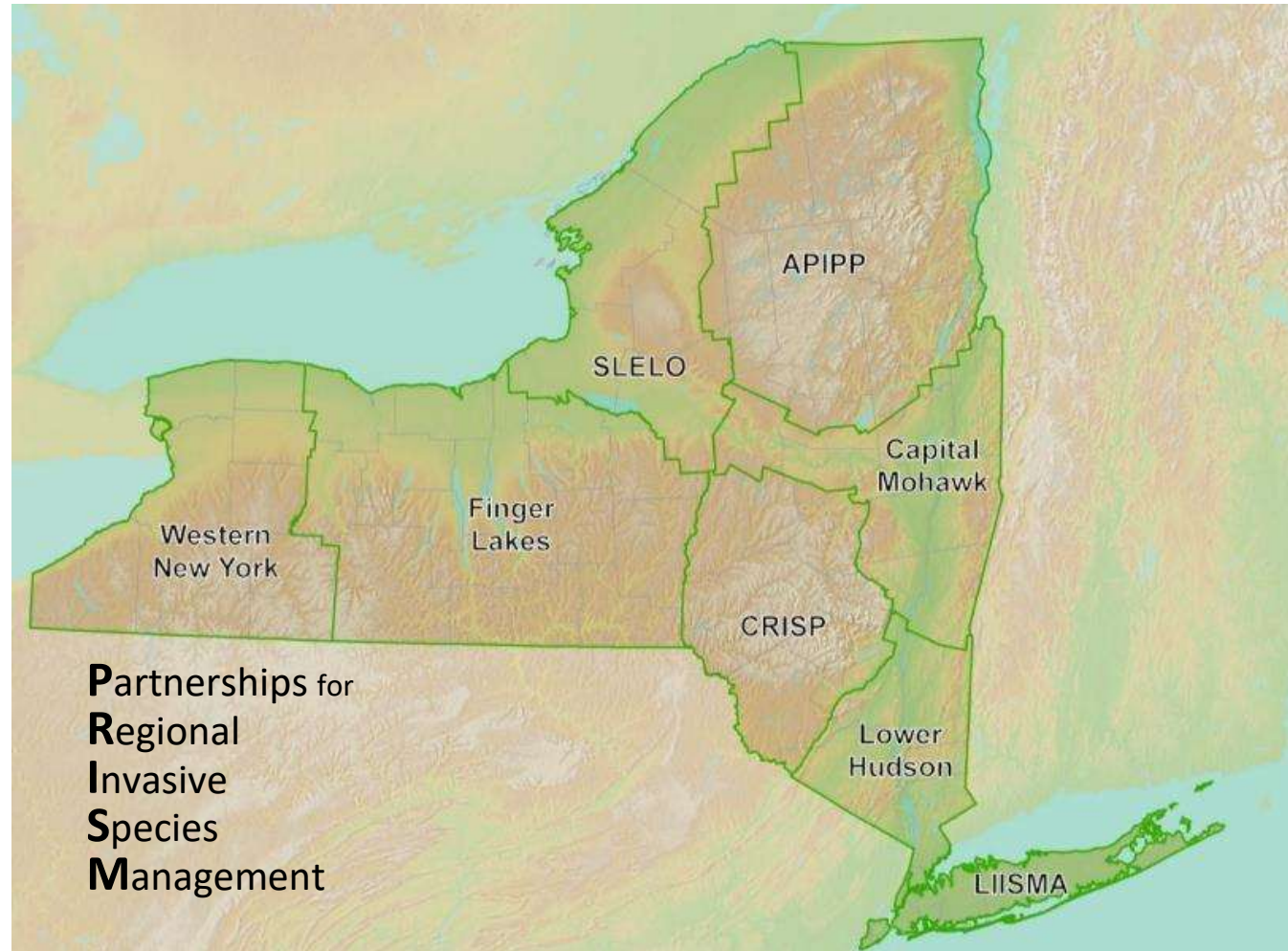


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## Coordinated invasive species efforts across New York

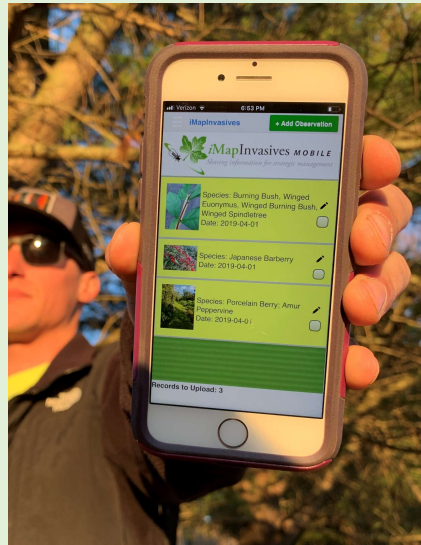
- Invasive species council
  - NYS Agency programs
- Advisory Committee
- Research Institute
- Information sharing
- PRISIMs = Regional hubs





# iMapInvasives as the NYS Invasive Species Database

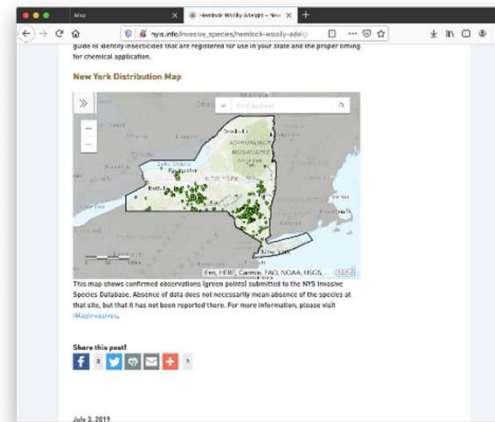
iMapInvasives is an online and mobile, GIS-based data management system used to support state agencies, conservation partners, and the public working on invasive species issues.



Species Distributions and Reports



Early Detection Alerts



Web Map Services



Tracking Control Efforts and Results



# Types of data within iMapInvasives

## Presence

*What did you find?*

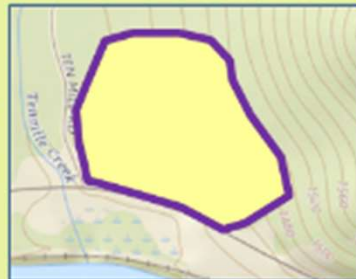
Location(s) (polygon, line, or point) that document one or multiple species present per location



## Not Detected

*What didn't you find?*

One or more species looked for but not found.

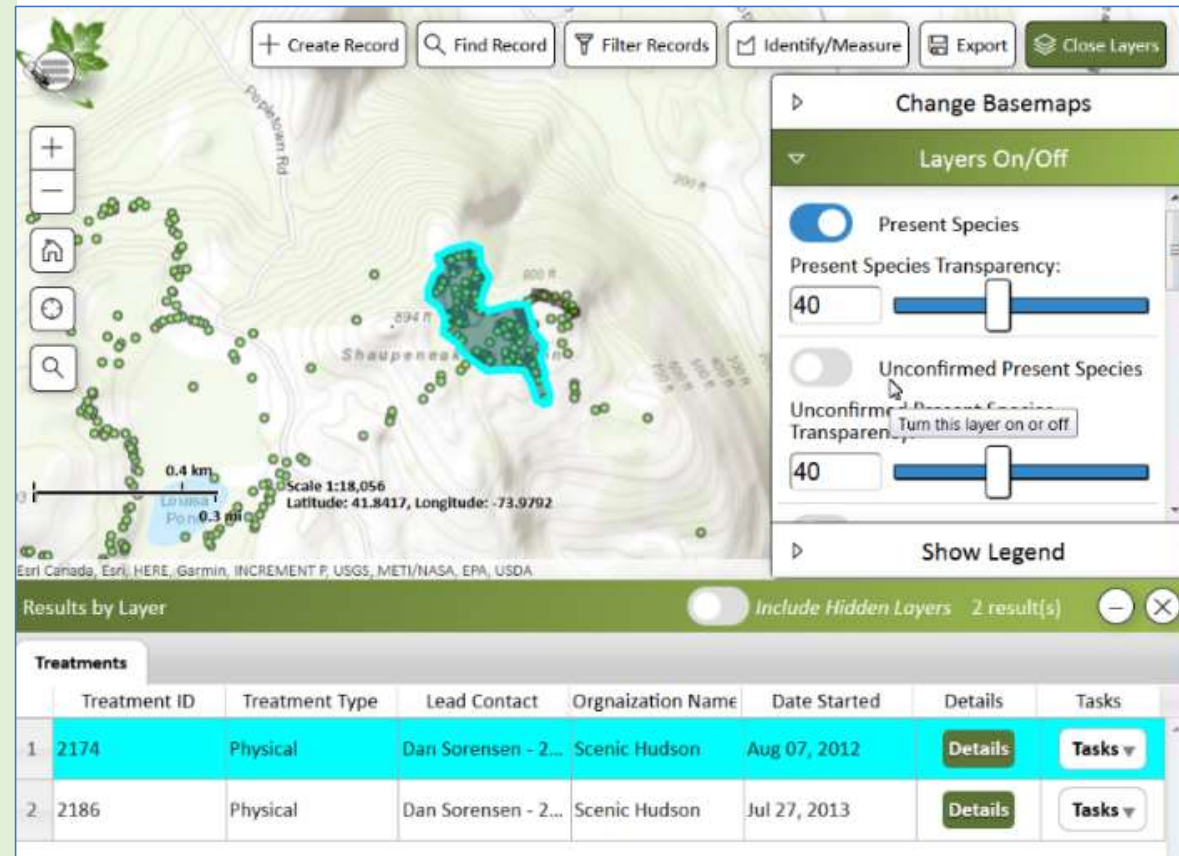


## Treatment

*What did you treat?*

Polygon(s) within, or same area as, the parent Searched Area record

- mechanical, chemical, or biological



# www.NYimapinvasives.org



The screenshot shows the homepage of the NY iMapInvasives website. The header is dark green with a navigation bar containing links: > Blog, Volunteers, Professionals, Certified Trainers, WISPA, Educators, View map (circled in red), and Login (circled in red). Below the navigation bar is a banner with the text "Help us monitor Spotted Lanternfly in New York State!". The main content area has a dark green background on the left with the text "Welcome to NY iMapInvasives" and a description of the platform. On the right, there is a map titled "Confirmed Reports of Tree-of-Heaven in iMapInvasives" showing green dots representing reports across New York State. The map includes a scale bar and the Esri logo.

**NY iMapInvasives**

Welcome to

NY iMapInvasives is an online, collaborative, GIS-based database and mapping tool that serves as the official invasive species database for New York State. [Learn more about iMap.](#)

Featured species:

 **Spotted Lanternfly**

[Create account](#)

[View public map](#)

**Confirmed Reports of Tree-of-Heaven in iMapInvasives**



Esri, HERE, Garmin, FAO, NOAA, etc.

# Create Account/Login

*imapinvasives.natureserve.org*

Log in to iMapInvasives

Email  Password   [Forgot Password?](#)

**Sign Up**

Help us track Invasives - it's free.  
(Users must be at least 13 years old)

First Name:

Last Name:

Email:

Retype Email:

Password:   
(Must be at least 8 characters long, with a number and an uppercase letter)

Retype Password:

Jurisdiction:  **New York**

Login (if you have account)

Create Account

Check email for link ("[click here](#)"),  
click open the User Agreement.

Read User Agreement and accept

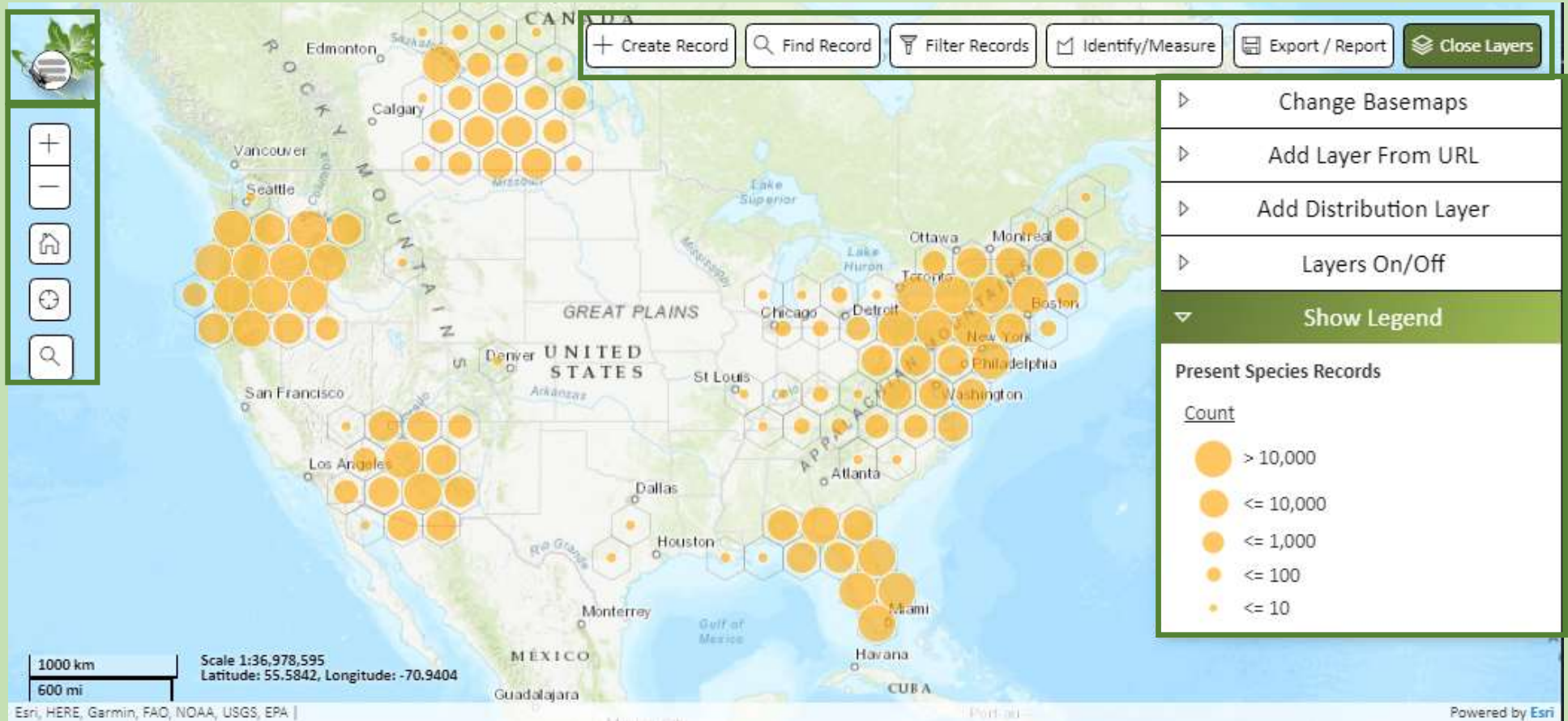


# iMapInvasives Online

Main Menu

Action Tools

Navigation



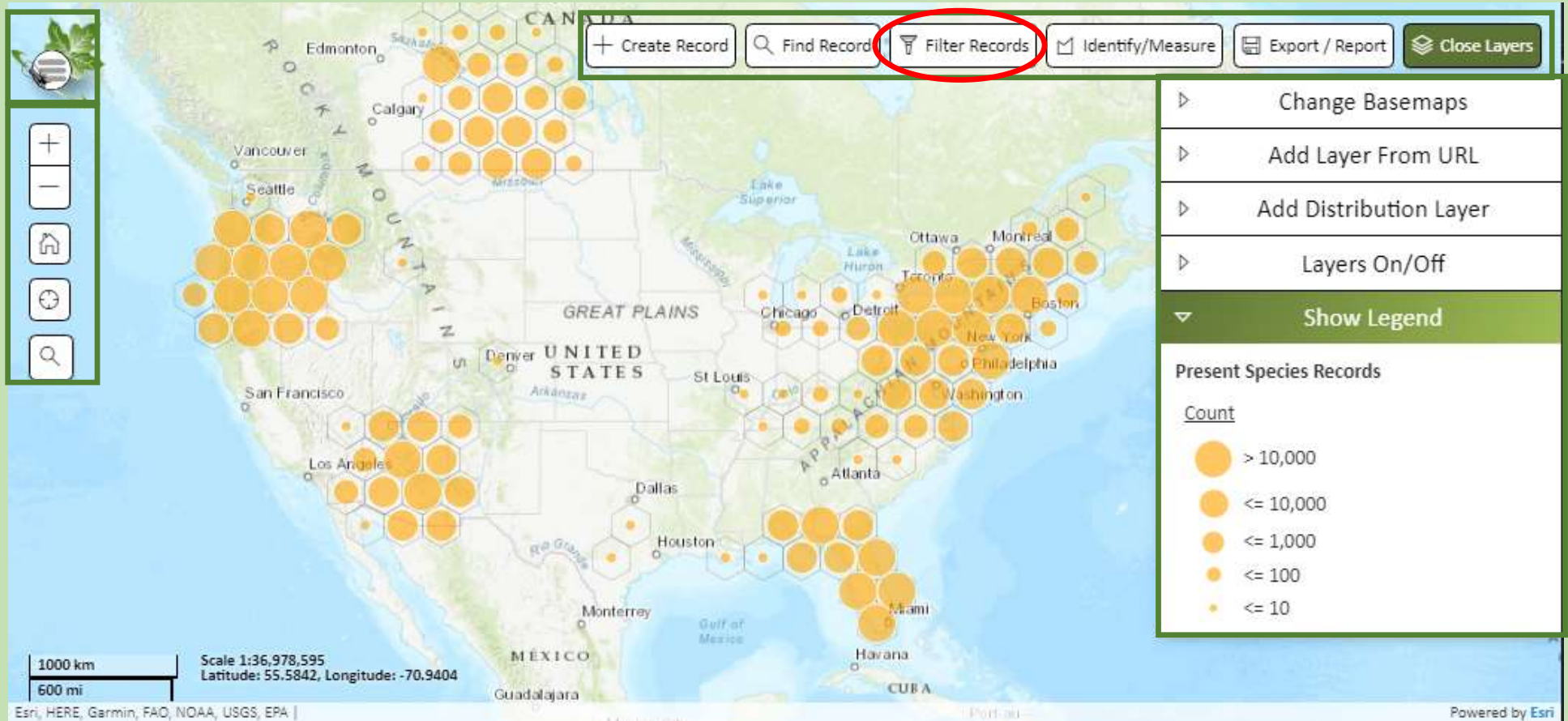
Geographic Layers

# iMapInvasives Online: Viewing Data

Main Menu

Action Tools

Navigation



Geographic Layers



**Filter Records** [Close] [Reset]

☒ General   Presence   Treatment

Not Detected   Record IDs

Geography   Metadata

Species Name: [Select one or more...]

Species List: ☐ (All Network Species)

☒ Species Type: Plant

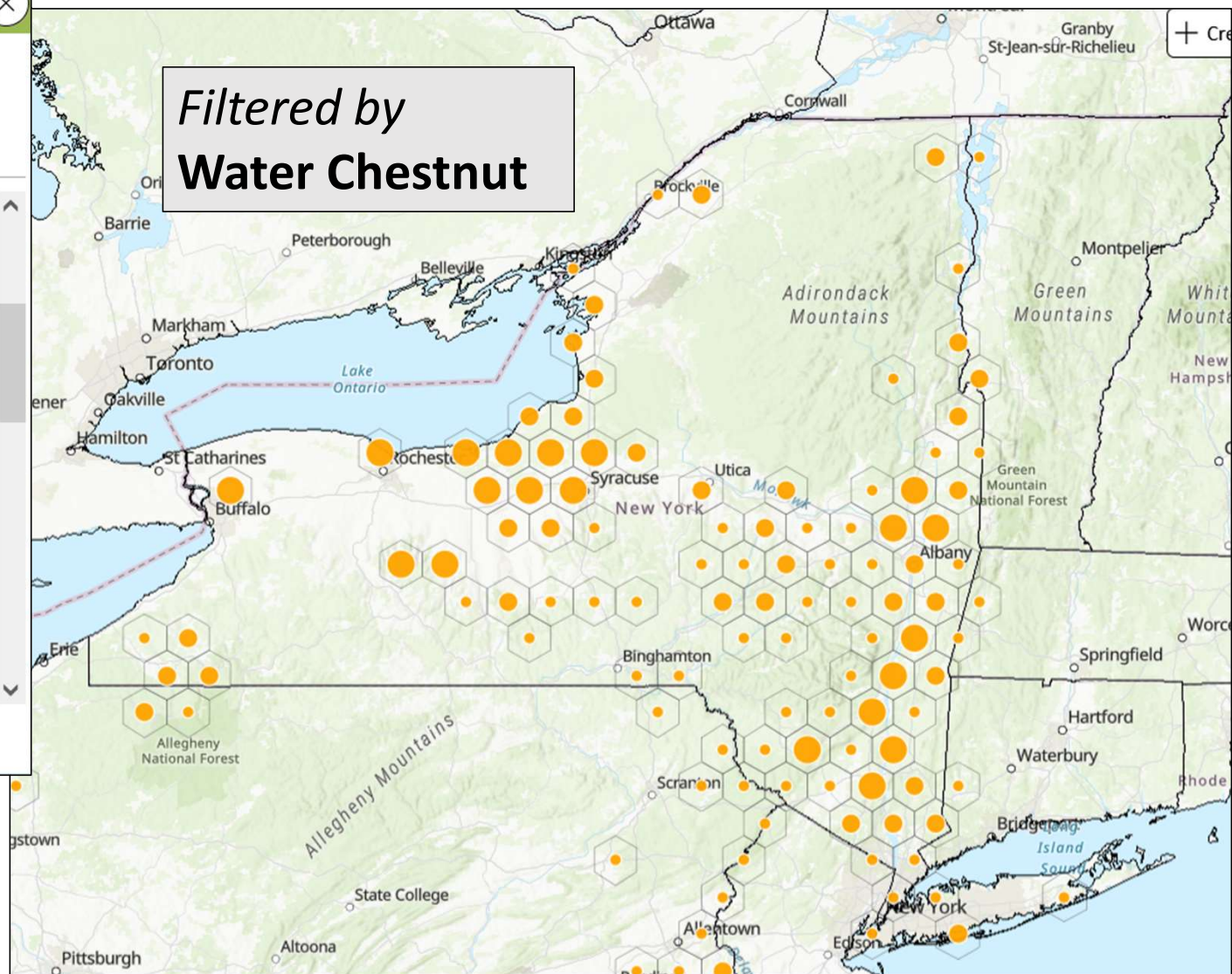
Growth Habit: [Select one or more...]

☒ Habitat Type: Aquatic

Kingdom: [Select one or more...]

Genus: [Select one or more...]

[Apply Filter] [Clear Filter]

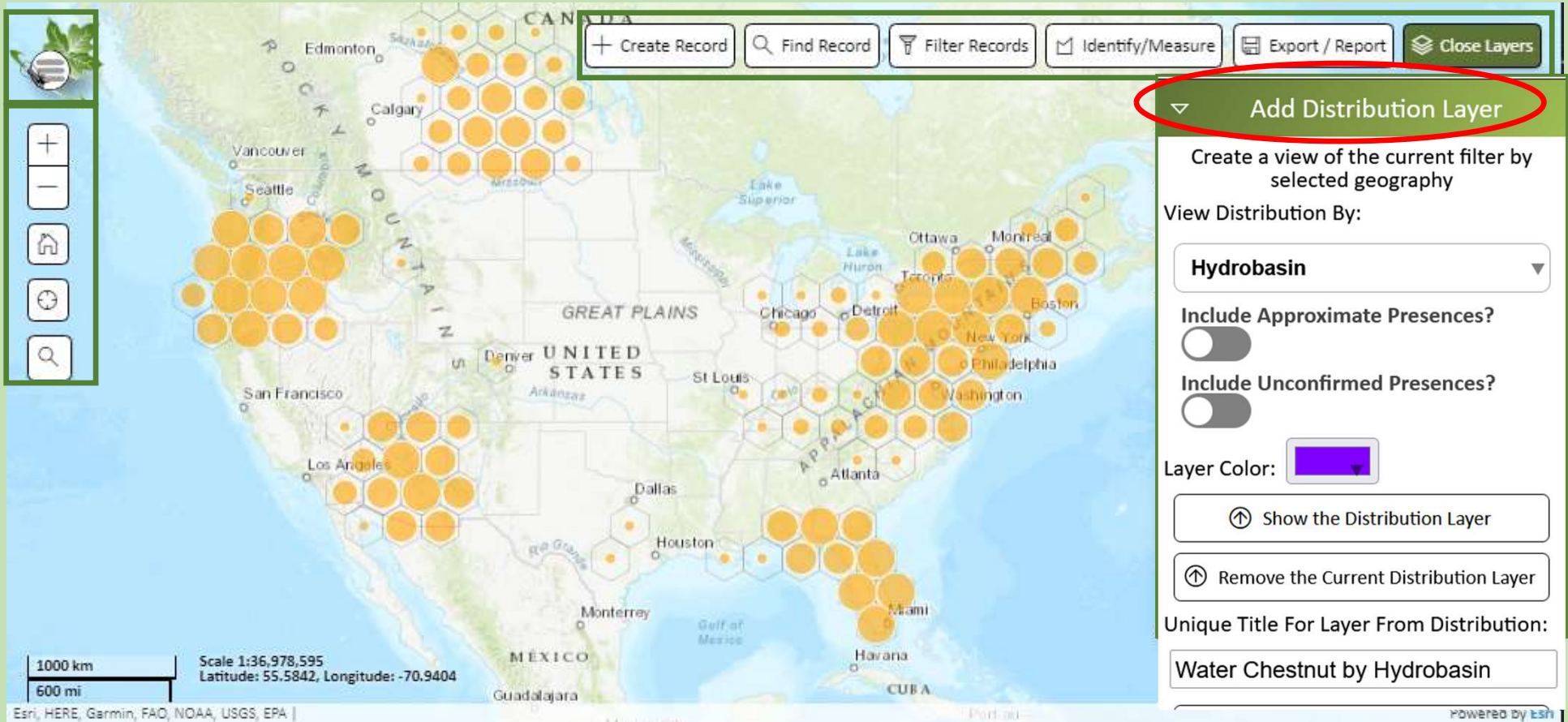


# iMapInvasives Online: Distribution Maps

Main Menu

Action Tools

Navigation

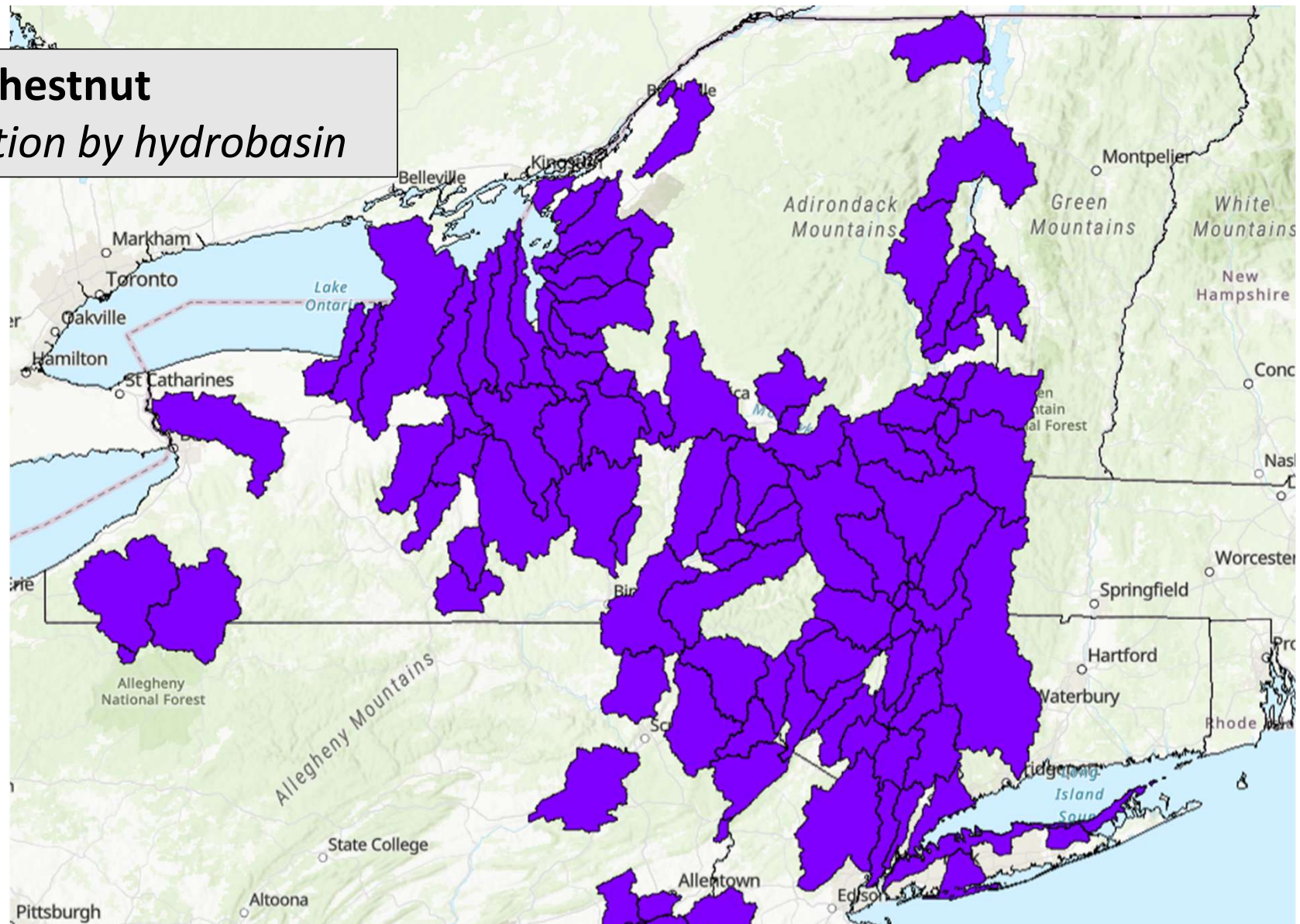


Geographic Layers



# Water Chestnut

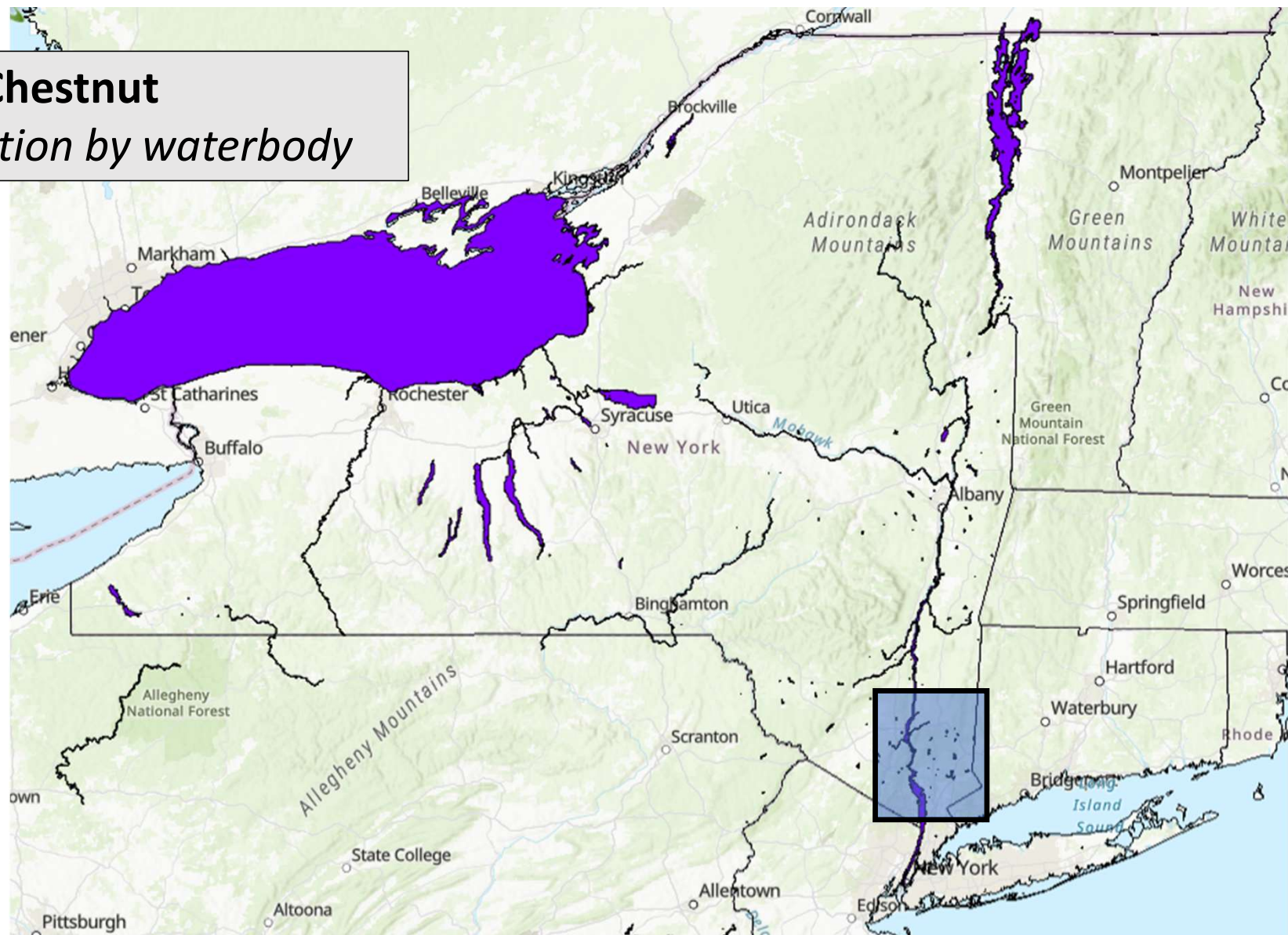
*Distribution by hydrobasin*





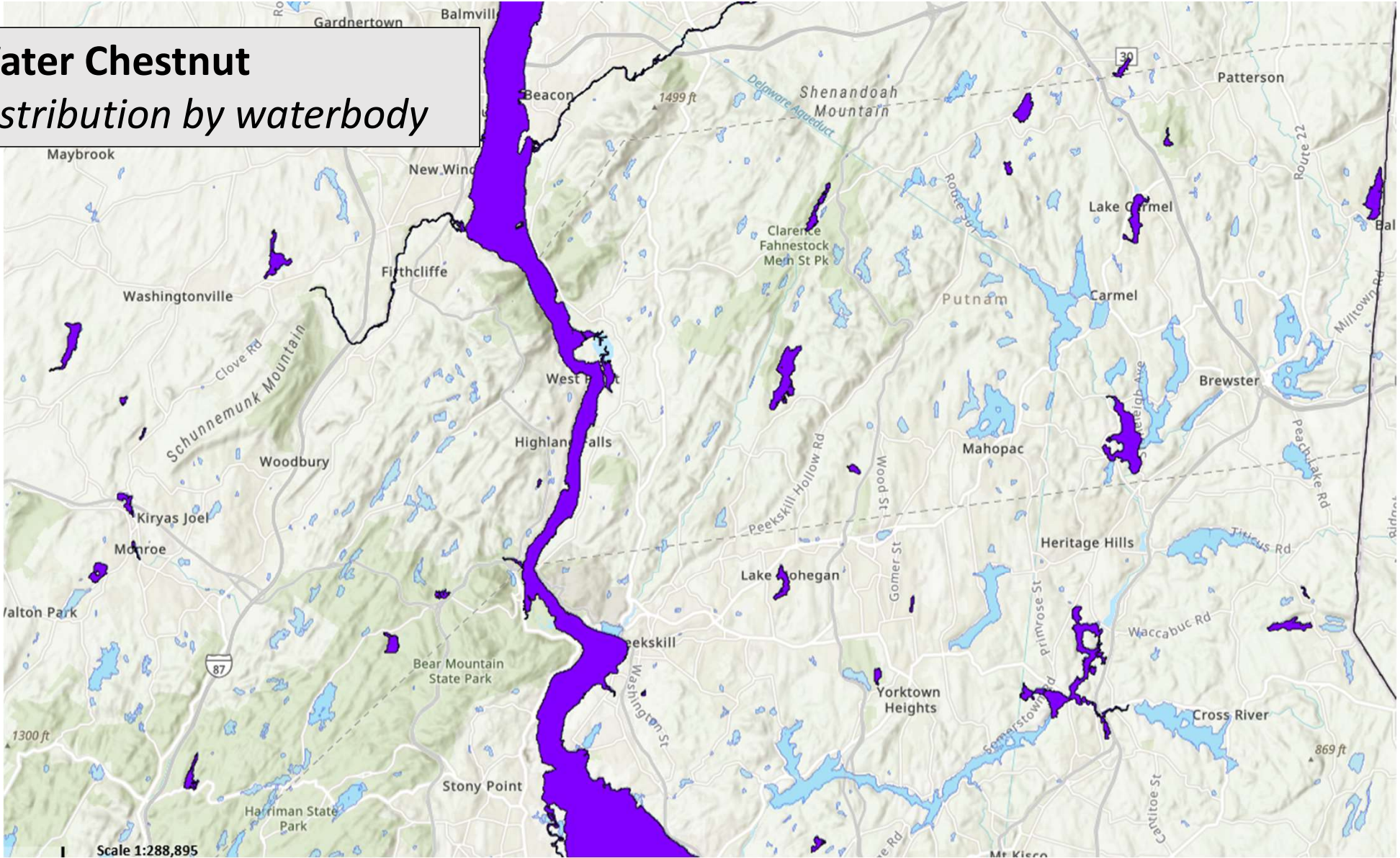
# Water Chestnut

*Distribution by waterbody*





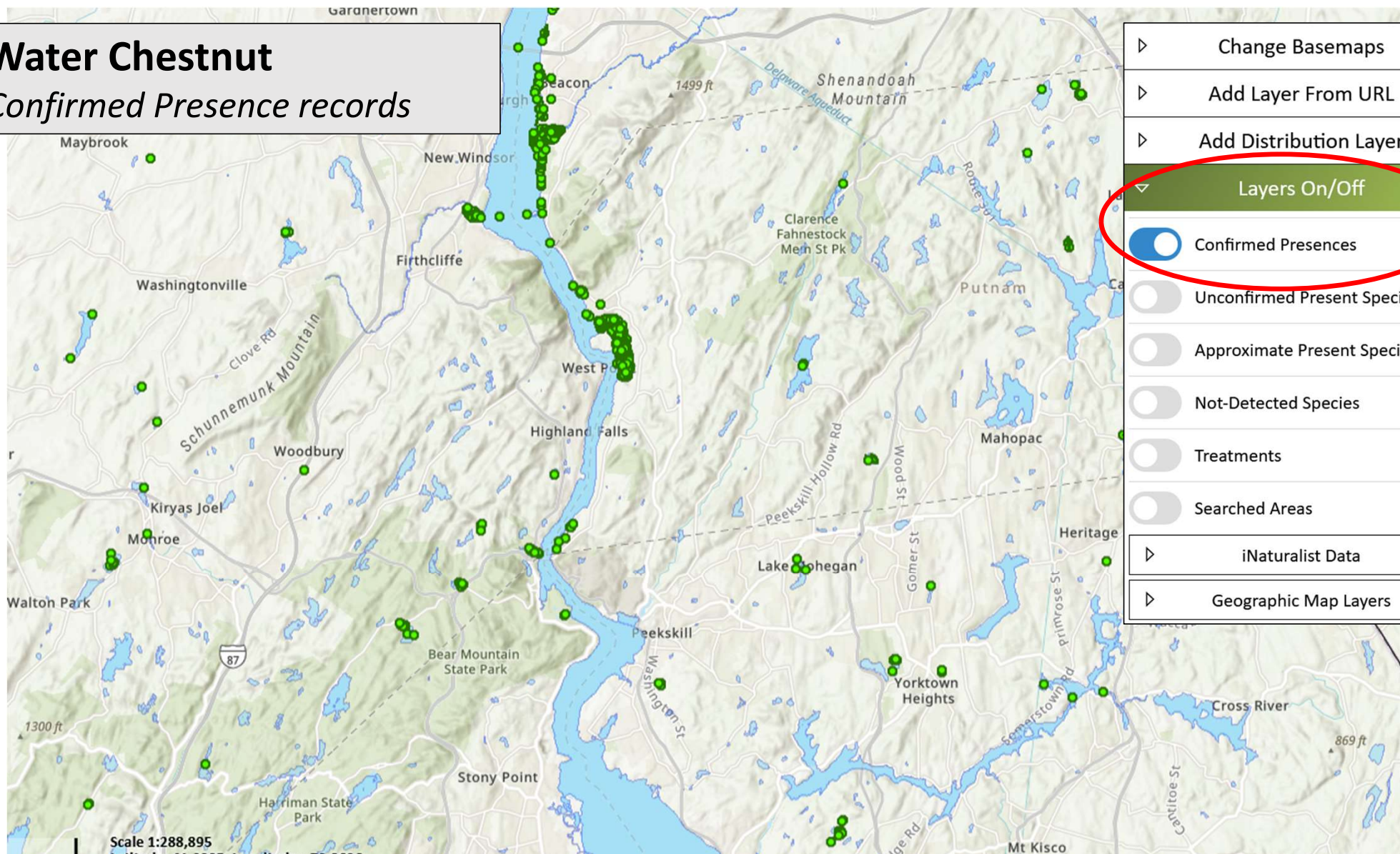
**Water Chestnut**  
*Distribution by waterbody*





# Water Chestnut

*Confirmed Presence records*

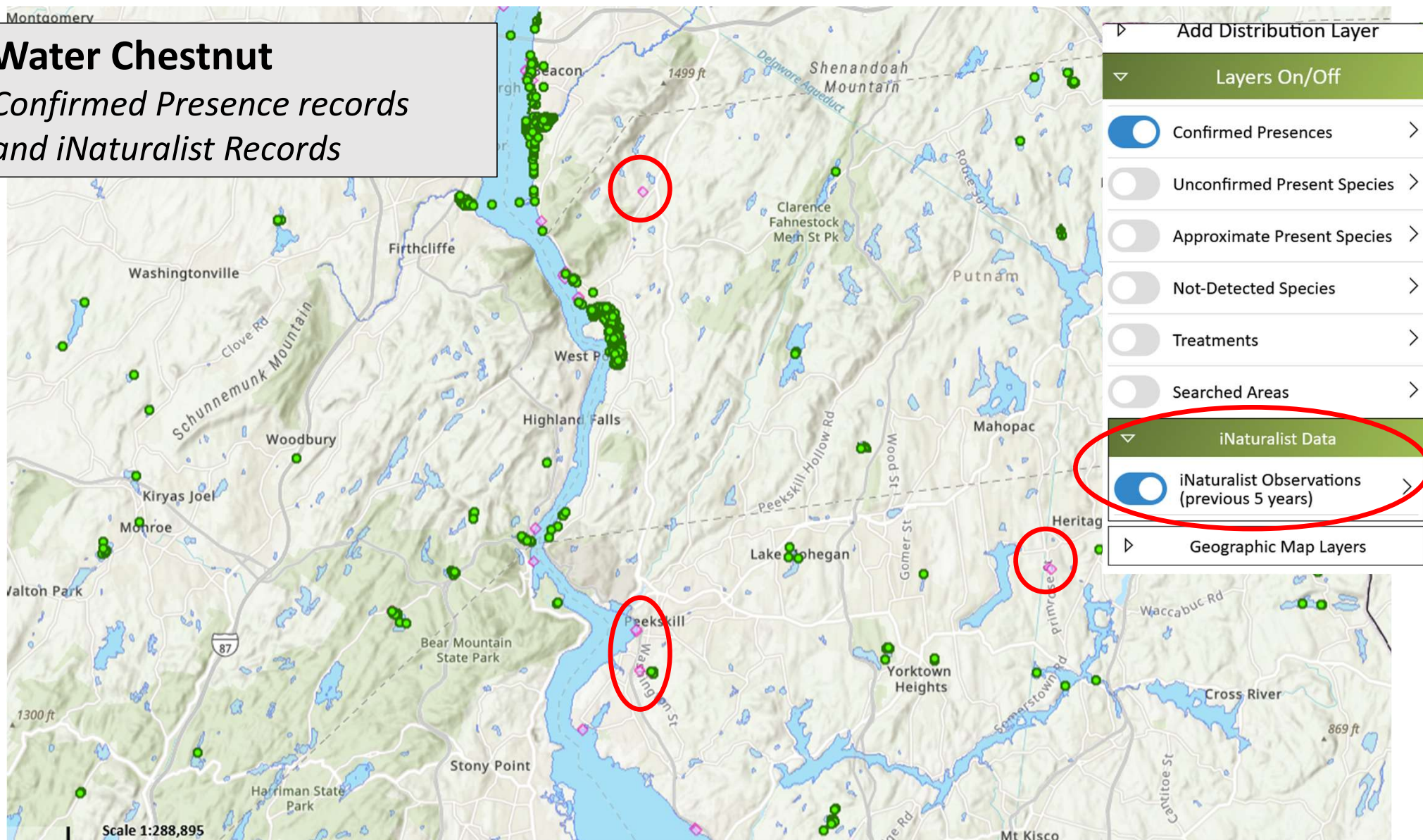


- ▷ Change Basemaps
- ▷ Add Layer From URL
- ▷ Add Distribution Layer
- Layers On/Off
  - ☒ Confirmed Presences >
  - ☐ Unconfirmed Present Species >
  - ☐ Approximate Present Species >
  - ☐ Not-Detected Species >
  - ☐ Treatments >
  - ☐ Searched Areas >
- ▷ iNaturalist Data
- ▷ Geographic Map Layers



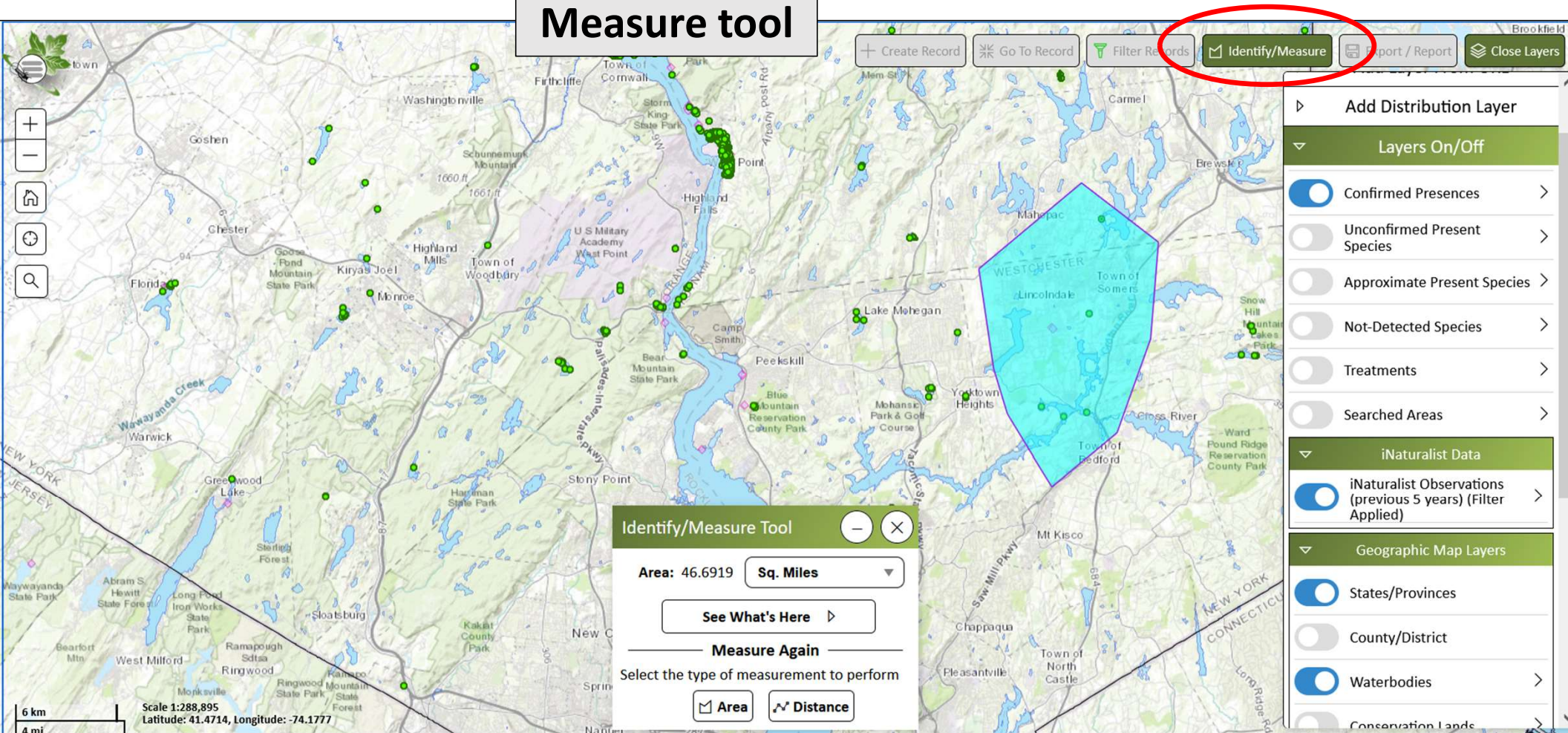
# Water Chestnut

*Confirmed Presence records  
and iNaturalist Records*



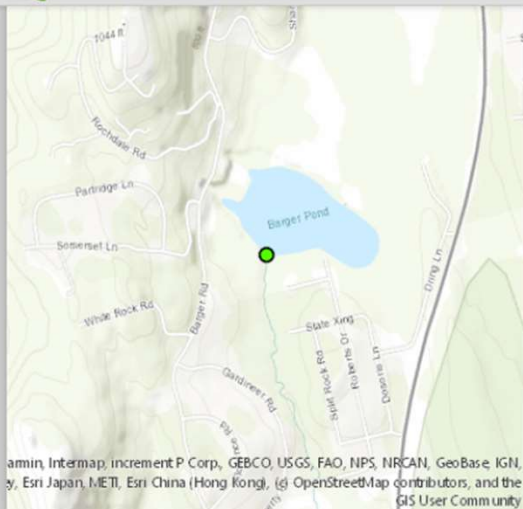


## Identify / Measure tool





## Presence Record

[Edit](#)

Latitude: 41.35873 ° Longitude: -73.81472 °

[Go To Map](#)

### Presence #1139723

**Date:** 6/1/2021  
**Observer:** [Alejandro Reyes - 3777](#)  
**Organization:** Northeast Aquatic Research (NEAR)  
**Time Searched:** 5m  
**Species Found:** Water Chestnut

[Go to Searched Area page to enter/view more information](#)

[Geographical Information](#) ▼

1 Species Present

### Water Chestnut

*Trapa natans*

(Trapaceae Family)

[See Less](#) ^

#### Photos of Present Species:



1/1

✓ Confirmed  
🔒 Not Confidential  
★ Under Treatment

General Reference Info

Reference Photo:

Measure [Export / Report](#) [Close Layers](#)

Change Basemaps  
Add Layer From URL  
Add Distribution Layer

Layers On/Off

- ☒ Confirmed Presences
- ☐ Unconfirmed Present Species
- ☐ Approximate Present Species
- ☐ Not-Detected Species

Show Legend

a max of 1,000 records per tab) - X

on Name	Details	Tasks
artment of Env...	<a href="#">Details</a>	<a href="#">Tasks</a> ▼
artment of Env...	<a href="#">Details</a>	<a href="#">Tasks</a> ▼
ological Survey (...)	<a href="#">Details</a>	<a href="#">Tasks</a> ▼
artment of Env...	<a href="#">Details</a>	<a href="#">Tasks</a> ▼

5 result(s)

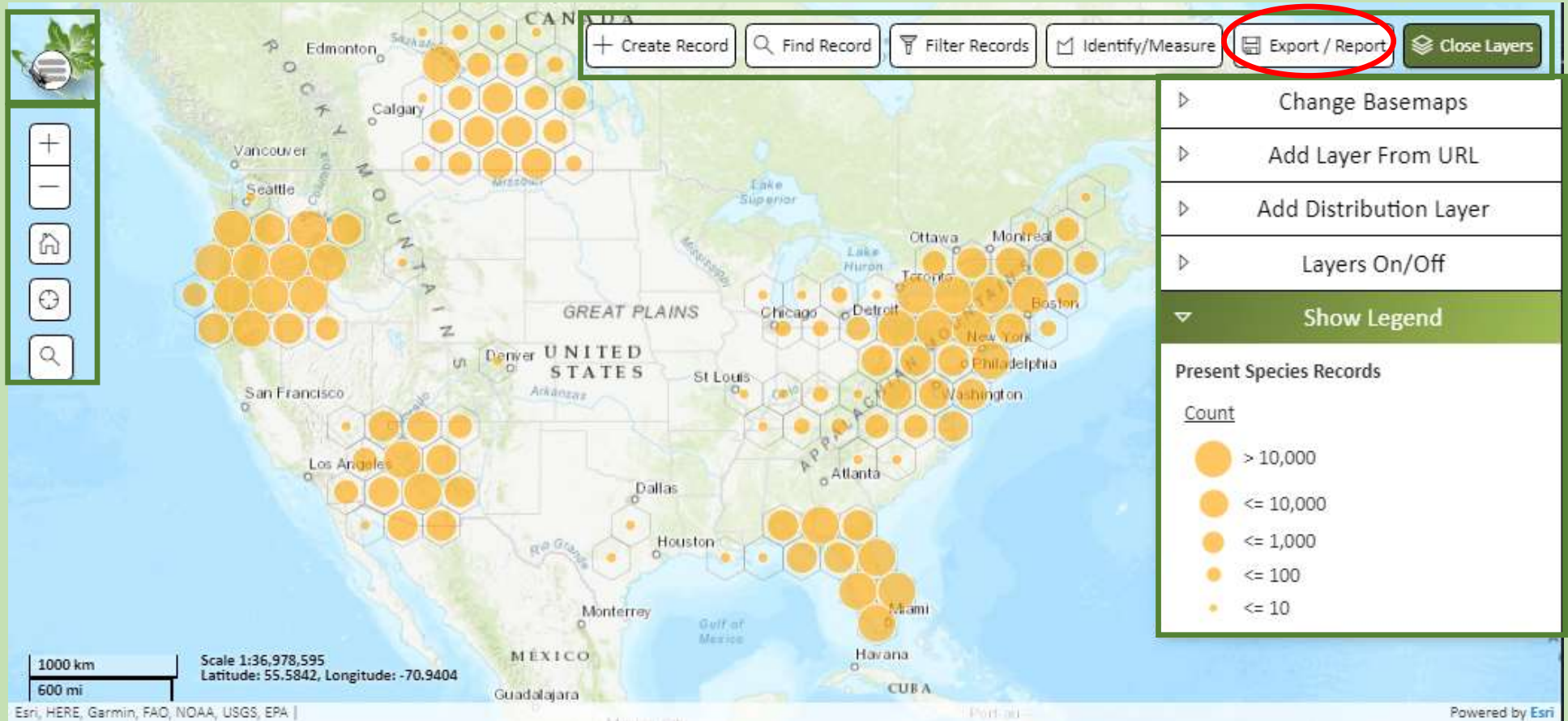


# iMapInvasives: Analysis Reports

Main Menu

Action Tools

Navigation



Geographic Layers

The screenshot displays the iNaturalist web interface. On the left, the 'Export/Report' panel is open, showing options for generating a report. The 'Report Type\*' dropdown menu is set to 'Species List By Geography', which is highlighted with a red circle. Below this, there are checkboxes for 'Approaching Region', 'Area Treated', and 'Infested Area'. A 'Run Report' button is at the bottom of the panel. The main map area shows a geographic distribution of species in the Syracuse, NY region, overlaid with a hexagonal grid. The right sidebar contains various map controls, including 'Change Basemaps', 'Add Layer From URL', 'Add Distribution Layer', and a 'Layers On/Off' section. The 'Switch the hexagon data layer:' section has several toggle switches, with 'Hex Summary: Confirmed' currently selected. Other options include 'Unconfirmed Present Species', 'Approximate Present Species', 'Not-Detected Species', and 'Treatments'. The 'iNaturalist Data' section shows 'iNaturalist Observations (previous 5 years)' is turned off. The 'Geographic Map Layers' section has 'States/Provinces' and 'Waterbodies' turned on, while 'County/District' is turned off. At the bottom left, coordinates are displayed: 'Latitude: 43.4411, Longitude: -76.6981'.

**Export/Report**

Export or Report:  
☐ Run Report

Report Type\*:  
Species List By Geography  
Approaching Region  
Area Treated  
Infested Area  
**Species List By Geography**  
Snapshot Report

Use Current Filter: ☒  
[Learn about Reports](#)

Run Report

**Change Basemaps**

**Add Layer From URL**

**Add Distribution Layer**

**Layers On/Off**

**Switch the hexagon data layer:**

☒ Hex Summary: Confirmed | ▾ >

☐ Unconfirmed Present Species >

☐ Approximate Present Species >

☐ Not-Detected Species >

☐ Treatments >

**iNaturalist Data**

☐ iNaturalist Observations (previous 5 years) >

**Geographic Map Layers**

☒ States/Provinces

☐ County/District

☒ Waterbodies >

**Species List by Geography Report**

Latitude: 43.4411, Longitude: -76.6981





## Cayuga Lake

# Species List by Geography Report

Habitat Type: Aquatic

### Report Results:

#### Presence Records:

Scientific Name	Common Name	Confirmed Count
<i>Alosa pseudoharengus</i>	Alewife	34
<i>Bithynia tentaculata</i>	Mud Bithynia	3
<i>Butomus umbellatus</i>	Flowering rush	1
<i>Cercopagis pengoi</i>	Fishhook Waterflea	3
<i>Corbicula fluminea</i>	Asian Clam	1
<i>Cyprinus carpio</i>	Common Carp	15
<i>Dreissena bugensis</i>	Quagga Mussel	40
<i>Dreissena polymorpha</i>	Zebra Mussel	39
<i>Echinogammarus ischnus</i>	Scud, Euryhaline Amphipod	29
<i>Hemimysis anomala</i>	Bloody-red Shrimp	2
<i>Hydrilla verticillata</i>	Hydrilla	193
<i>Hydrocharis morsus-ranae</i>	European Frogbit: Common Frogbit	1

Report / Report

Close Layers

Change Basemaps

Load Layer From URL

Distribution Layer

Layers On/Off

Hexagon data layer:

Summary: Confirmed | >

Confirmed Present  
es >

Approximate Present Species >

Detected Species >

Comments >

iNaturalist Data

iNaturalist Observations  
(previous 5 years) >

Geographic Map Layers

Countries/Provinces

County/District



Waterbodies



Scale 1:1,155,581  
Latitude: 43.2213, Longitude: -77.1128



# Approaching Region Report

The screenshot displays the iNaturalist web interface. On the left, the 'Export/Report' panel is open, showing the 'Report Type\*' dropdown menu with 'Approaching Region' selected and circled in red. Other options in the dropdown include 'Show Description', 'Name For Report', 'Area\*', 'Use Current Filter', 'Linear Units', and 'Search Distance From Boundary\*'. A 'Run Report' button is at the bottom of the panel. The main map area shows a satellite view of the Adirondack region with numerous yellow hexagonal data points. Labels on the map include 'Franklin', 'St. Lawrence', 'Saranac Lake', 'Lake Placid', and 'Tupper Lake'. At the bottom left, a scale bar indicates 10 km, and coordinates are shown: Latitude: 44.5234, Longitude: -75.5116. On the right, a sidebar contains navigation links like 'Change Basemaps', 'Add Layer From URL', and 'Add Distribution Layer'. Below these are 'Layers On/Off' controls, including 'Switch the hexagon data layer:' with options like 'Hex Summary: Confirmed', 'Unconfirmed Present Species', 'Approximate Present Species', 'Not-Detected Species', and 'Treatments'. Further down are 'iNaturalist Data' and 'Geographic Map Layers' sections with various toggle switches.

**Export/Report**

Export or Report:  
☐ Run Report

Report Type\*:  
Approaching Region

Show Description ▾

Name For Report:

Area\*: Define or Select Boundary Area

Use Current Filter: ☒

Linear Units: Kilometers ▾

Search Distance From Boundary\*:  Kilometers

[Learn about Reports](#)

Run Report

**Layers On/Off**

Switch the hexagon data layer:

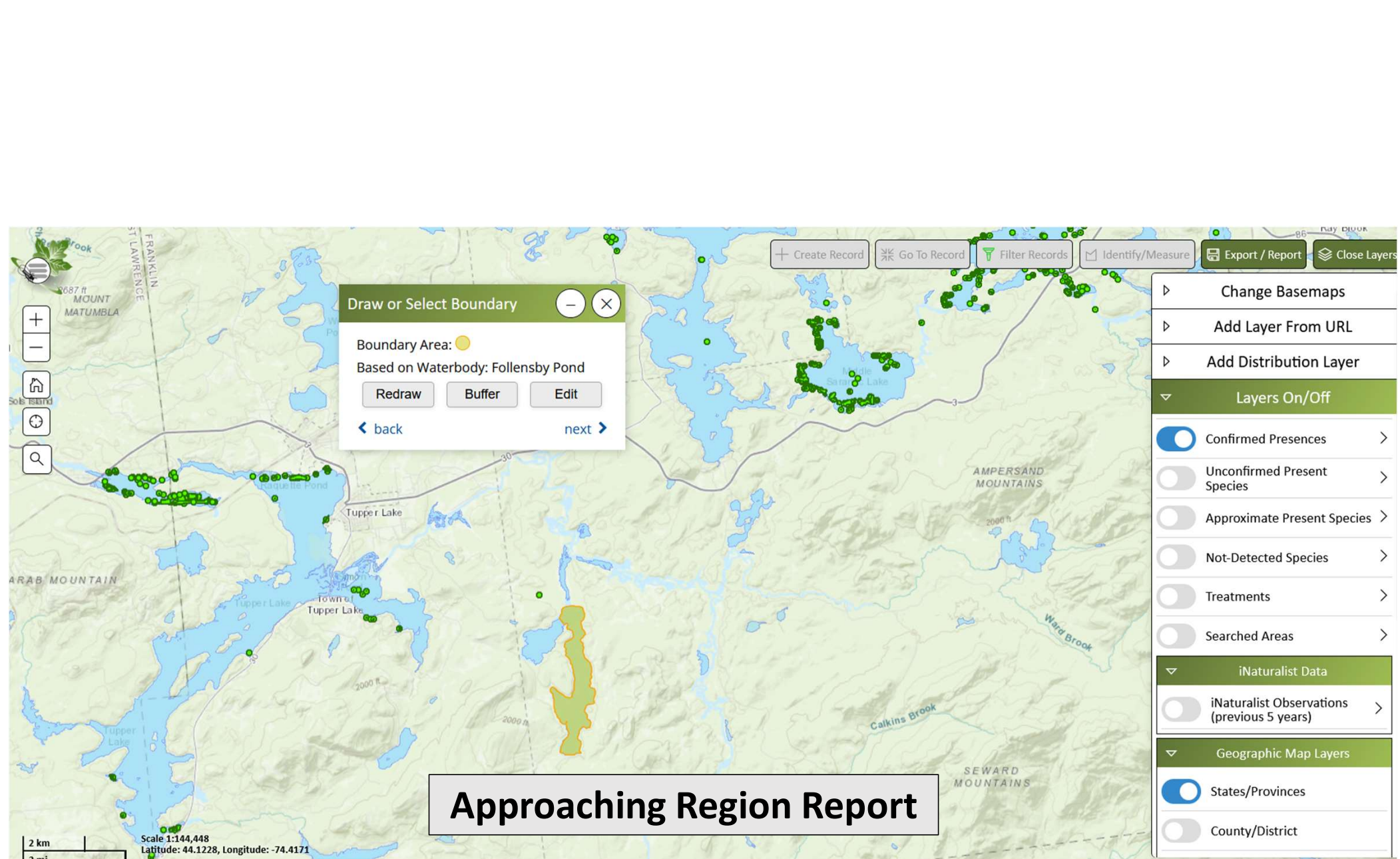
- ☒ Hex Summary: Confirmed ▾
- ☐ Unconfirmed Present Species ▾
- ☐ Approximate Present Species ▾
- ☐ Not-Detected Species ▾
- ☐ Treatments ▾

**iNaturalist Data**

- ☐ iNaturalist Observations (previous 5 years) ▾

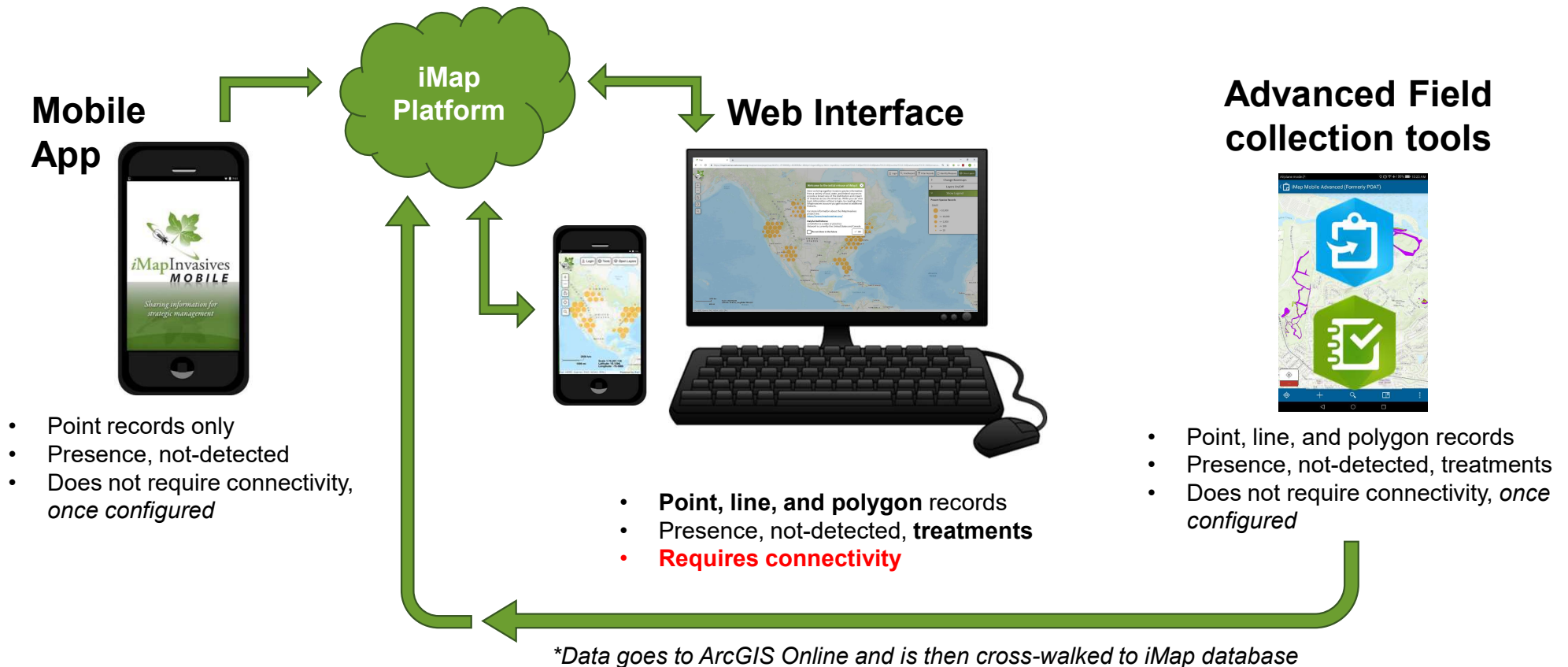
**Geographic Map Layers**

- ☒ States/Provinces
- ☐ County/District
- ☒ Waterbodies ▾

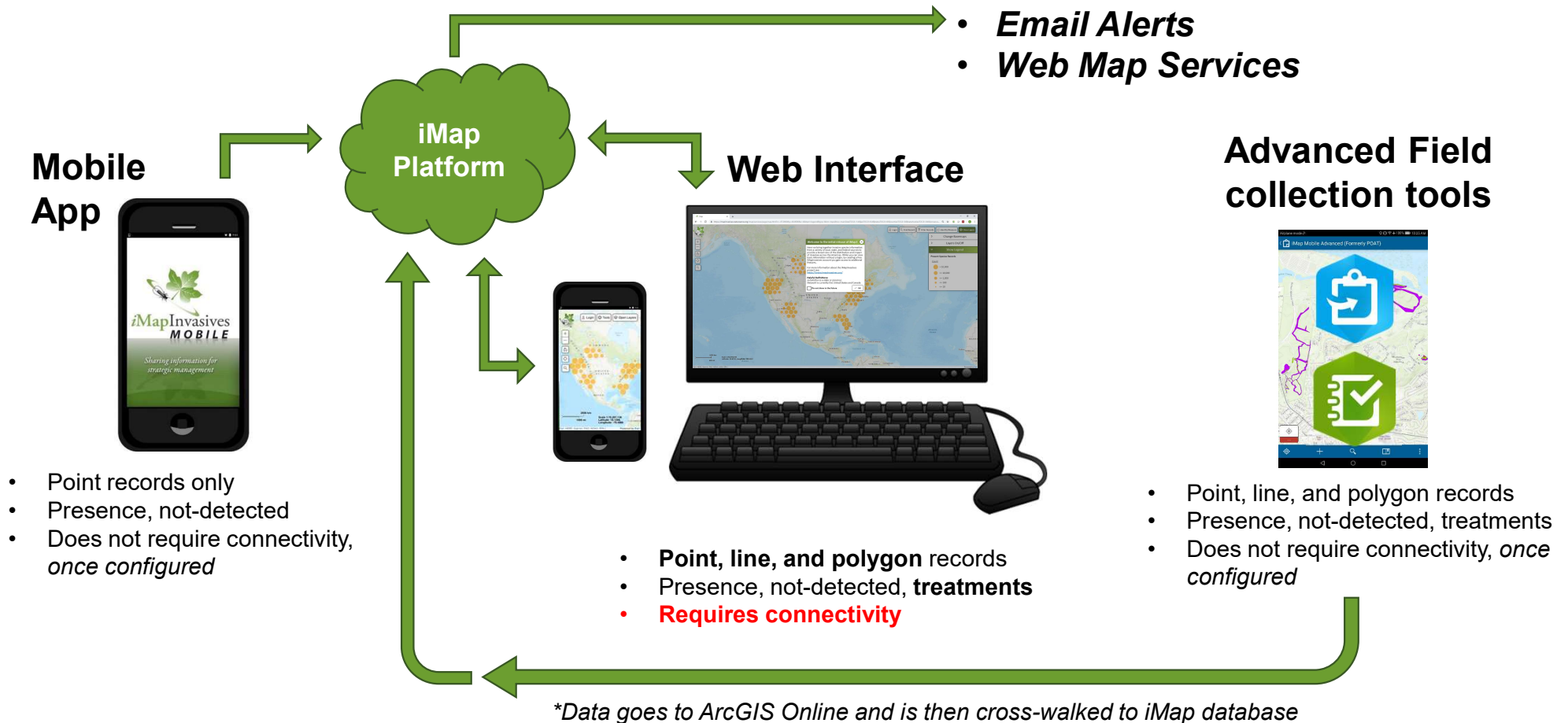




# iMapInvasives: Entering Data



# iMapInvasives: Using the Data





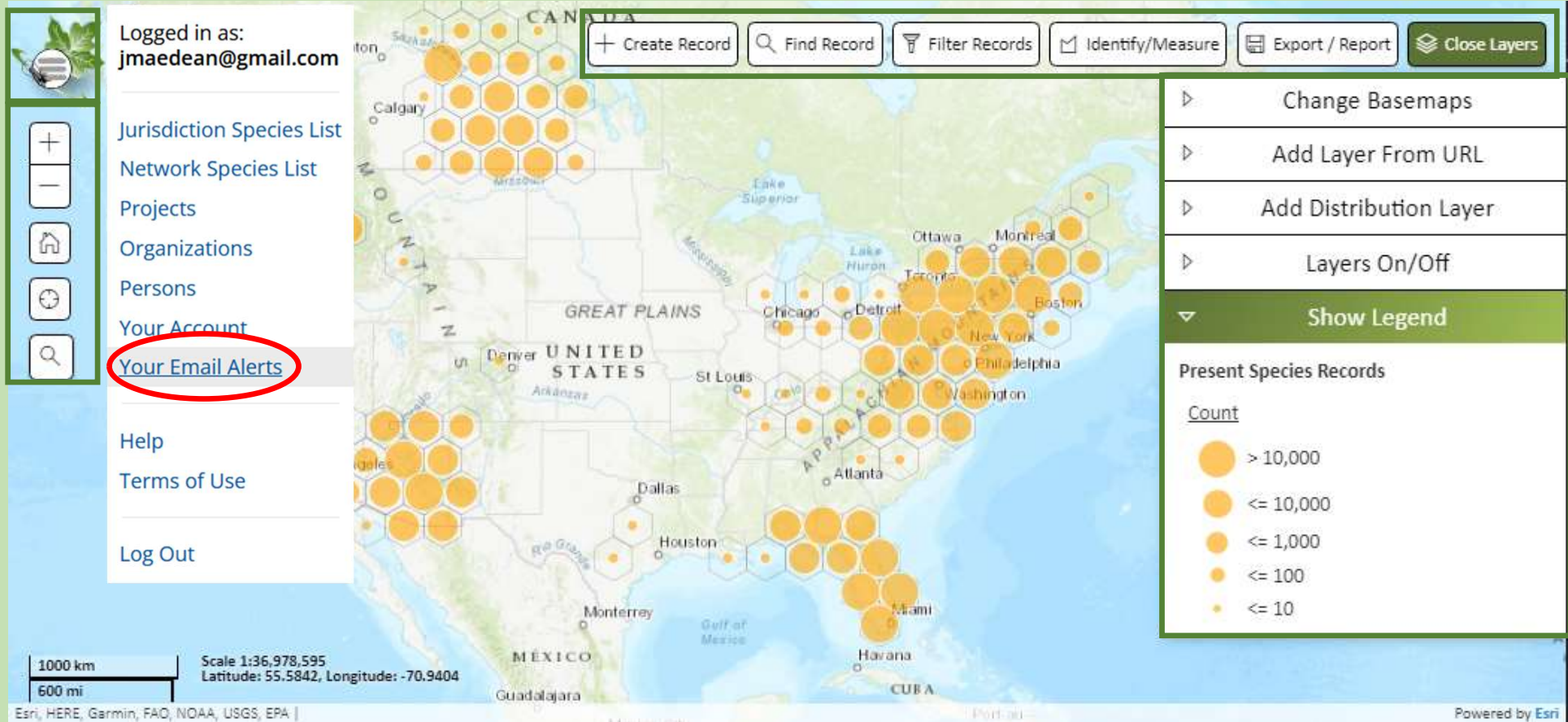
# iMapInvasives: Email Alerts

## Main Menu

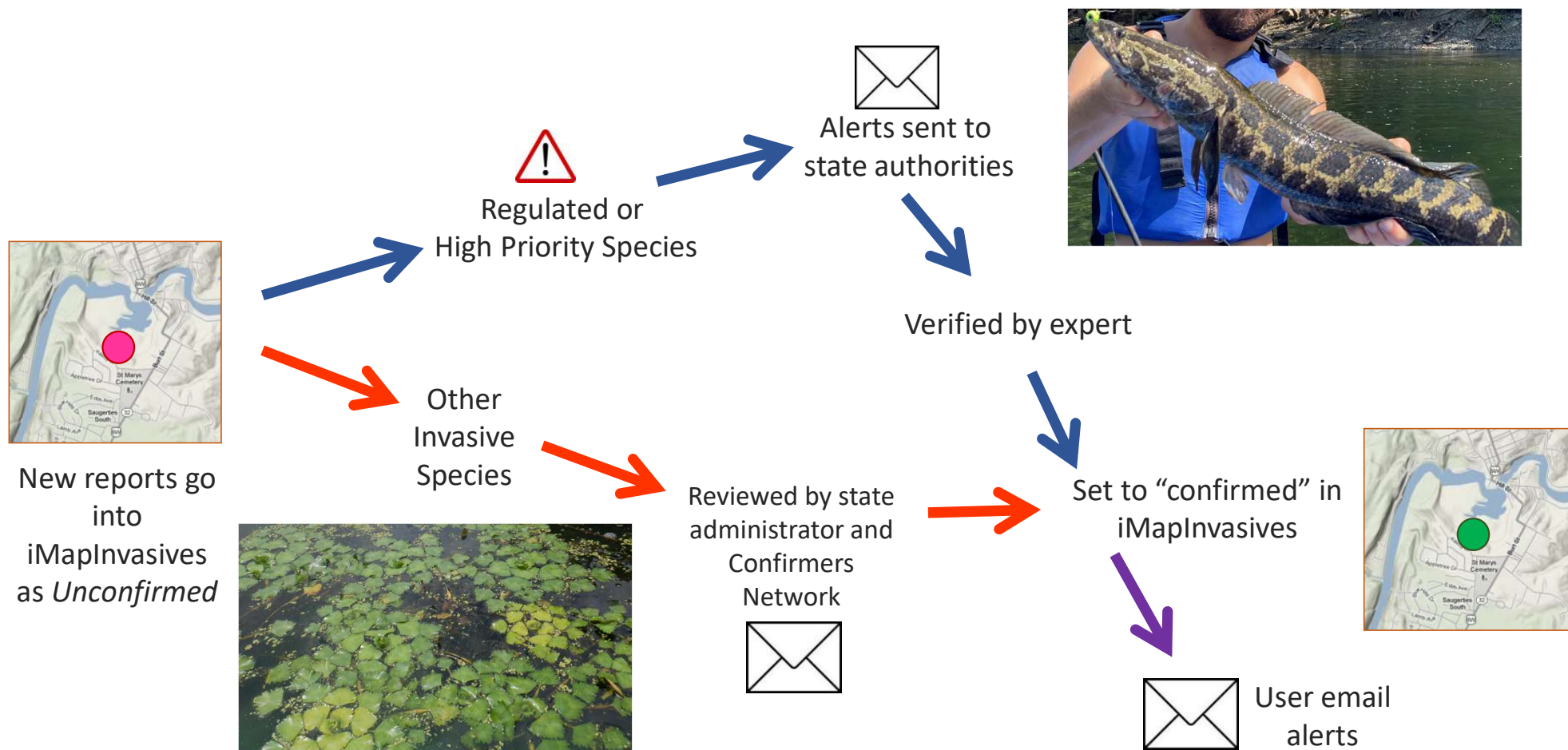
## Action Tools

## Navigation

## Geographic Layers



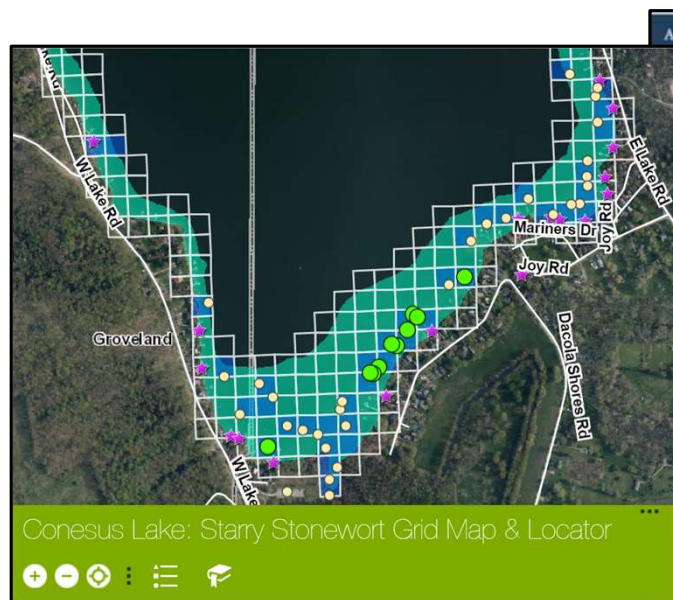
# Email Alerts : *Communicating important findings*





# Web Map Services

Connect to live  
iMapInvasives data  
directly from online and  
desktop GIS software  
using the iMap3 WMS



About Projects Get Involved Invasive Species Resources News Calendar

City Invasives Profiles: All Invasives Agricultural Aquatic Terrestrial enter search terms

Invasive Species -- Quagga Mussel

## Quagga Mussel




Photo by Amy Benson, U.S. Geological Survey, Bugwood.org

**Common Name:** Quagga mussel  
**Scientific Name:** *Dreissena bugensis*  
**Origin:** Eurasia

**Description**

The quagga mussel is a filter-feeding, freshwater, bivalve mollusk. It is pale toward the end of its hinge and about 3/4" wide.

**Habitat**

Quagga mussels inhabit freshwater habitats up to depths of 90 ft., attaching to most surfaces including sand, silt and hard substrates.

**Threat**

Invasive mussels displace native species, attach to and cover many surfaces, have sharp shells and are a nuisance to humans. Although they have some predators, they breed faster than they can be consumed. As filter-feeders, they remove particles from the water, affect the clarity, content and ultimately the food chain of aquatic ecosystems.

**Management**

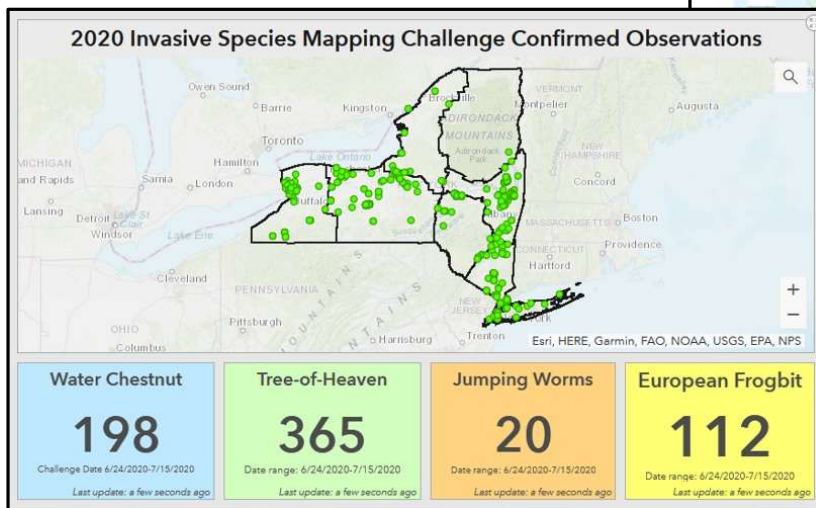
Once established, very little can be done apart from manual removal. In closed human systems such as water treatment plants, chemical, thermal, electrical and biological controls can be used. The best method is prevention through cleaning boats, bait buckets, and gear.

**Regional Distribution**

Widespread

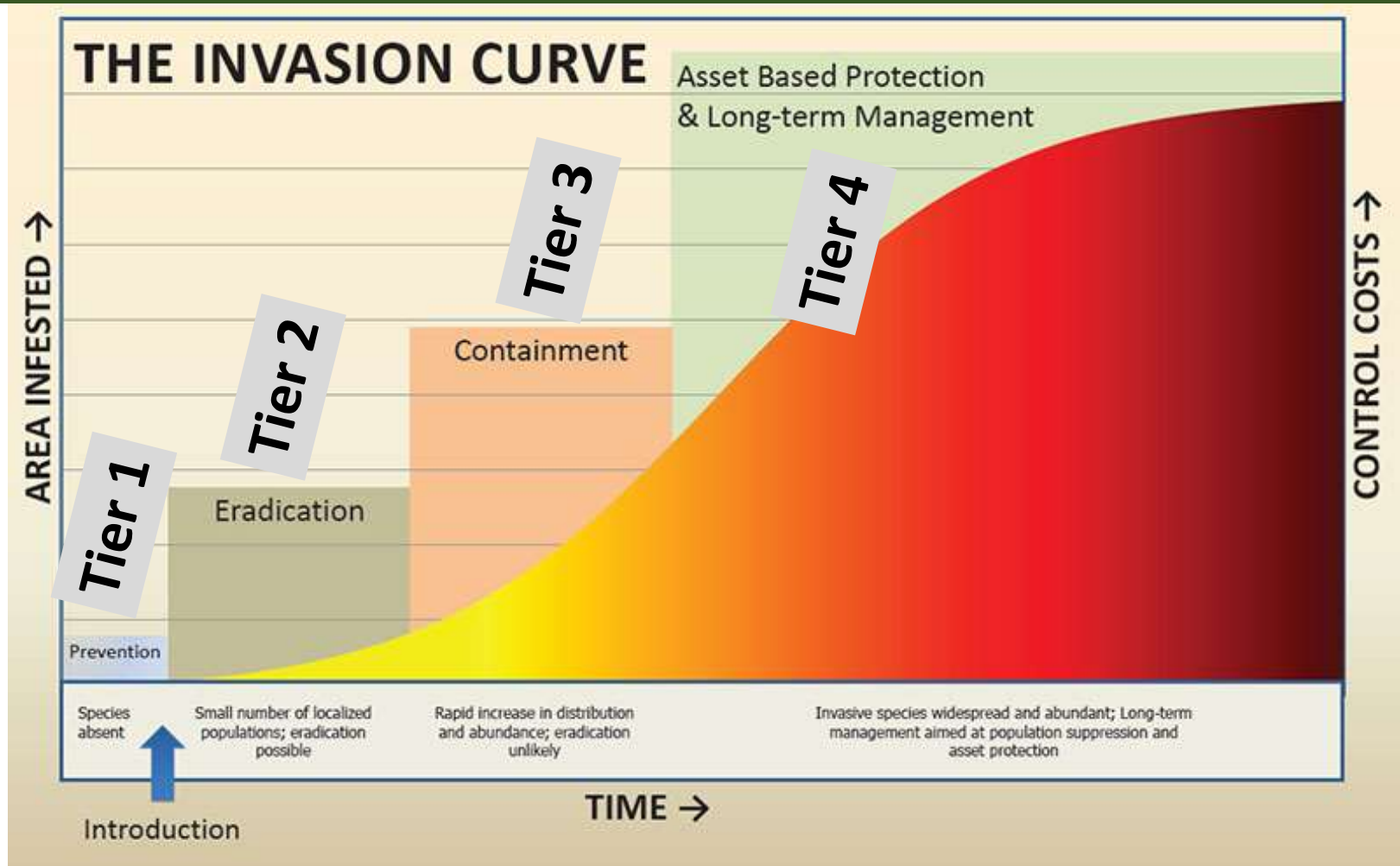
**WHY PRISM Priority**

Tier 4 – Local Control







# Invasive Species Tiers

*A data-driven method for creating invasive species lists*







		Difficulty of Eradication / Cost of Control Abundance (in PRISM plus Buffer)			
		None in PRISM	Low	Medium	High
Impact (current and future)	Very High or High	<b>TIER 1</b> <i>Early Detection/Prevention</i> Highest level of early detection survey efforts. Should conduct delineation surveys and assign to appropriate Tier if detected. 	<b>TIER 2</b> <i>Eradication</i> Eradication / Full containment may be feasible 	<b>TIER 3</b> <i>Containment</i> Strategic management to contain infestations and slow spread in PRISMs 	<b>TIER 4</b> <i>Local Control</i> Established / Widespread in PRISM; only strategic, localized management. 
	Unknown	<b>TIER 5</b> <i>Monitor</i> Species that need more research, mapping, and monitoring to understand their invasiveness.			
		X			

New York State Invasive Species Tiers Table

www.nyimainvasives.org/data-and-maps

Geography

☒ Statewide ☐ APIPP ☐ CRP ☒ CRISP ☒ Finger Lakes ☒ Lower Hudson ☒ LIISMA ☒ SLELO ☒ WNY ☐ Select All Geographies

Taxa Type

☒  Terrestrial Plant ☐  Terrestrial Animal ☐  Aquatic Animal ☒  Aquatic Plant ☒  Microorganism ☐ Select All Taxa Types

Tier Value

☒ ? ☒ 1 ☒ 2 ☒ 3 ☒ 4 ☒ 5 ☒ Untiered ☒ Buffer ☒ (Blank) ☒ Select All Tier Values

Show 

10

 entries

Search Table:

Species Information			Invasiveness Ranks		State Tier	PRISM Tier					
Common Name	Scientific Name	Type	Ecological	Socio-Economic	NYS	CRISP	Finger Lakes	Lower Hudson	LIISMA	SLELO	WNY
Amur maple	Acer ginnala	TP	Moderate	Insignificant Positive	Untiered	Untiered	4	5	5	Buffer	Untiered
Japanese maple	Acer palmatum	TP	Moderate	Moderate Positive	Untiered	Untiered	Untiered	5	5	Untiered	Untiered
Norway maple	Acer platanoides	TP	Very High	Insignificant Positive	4	4	4	4	4	4	4
Sycamore maple	Acer pseudoplatanus	TP	High	Not assessed	4	1a	2	3	4	1	5
Japanese chaff flower	Achyranthes japonica	TP	High	Not assessed	1b						
Hardy kiwi	Actinidia arguta	TP	High	Insignificant Positive	2	1a	1a	2	2	1	2
Silver vine	Actinidia polygama	TP	Unknown	Low Positive	Untiered	Buffer	Buffer	2	1a		



# Aquatic Invasive Species Pond and Lake Vulnerability Prioritization Tool (*coming soon!*)

## Aquatic Invasive Species Pond and Lake Vulnerability Prioritization for New York



- Region
- Risk of Introduction
- Risk of Establishment
- Potential Impact of Invasion

8683

NY Lakes



178

Lakes at Risk of Introduction



164

Lakes Suitable for Establishment



18

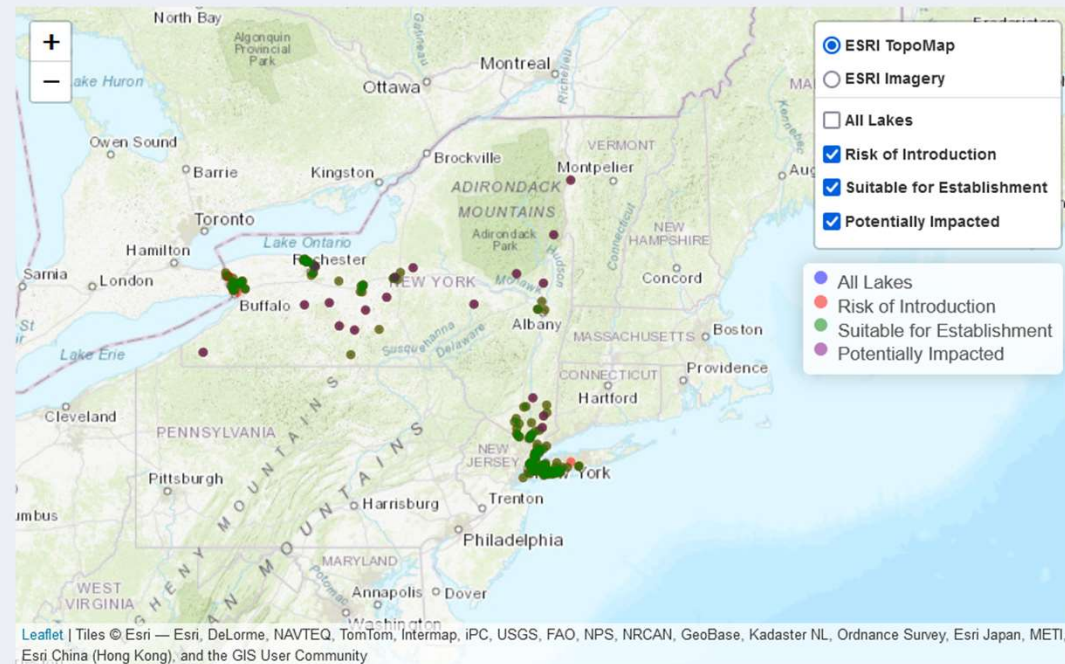
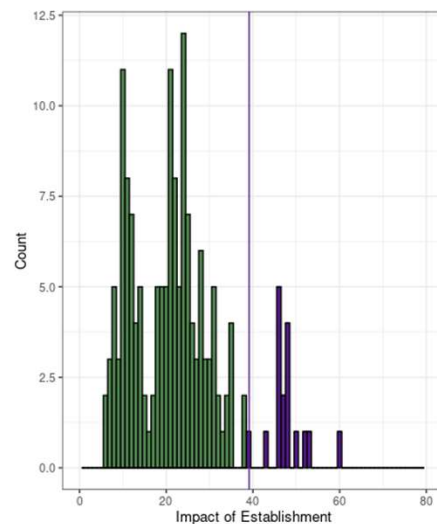
Lakes Potentially Impacted



Risk of Introduction

Impact of Invasion

Histograms



Step Three

**Select potential impact of invasion.** This score is based on the potential impact of a new invasion on the quality of a lake or pond.

Values reflect both ecological condition and recreational value of the lake and include: the presence of rare species and natural communities, native fish richness, water quality, algal blooms, existing degree of anthropogenic stressors, and extent of fishing use.

Potential Impact of invasion:



Hide



Generate report

Download Results



# Thank you!

[www.nyimapinvasives.org](http://www.nyimapinvasives.org)  
[imapinvasives@dec.ny.gov](mailto:imapinvasives@dec.ny.gov)

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NYS Environmental Protection Fund through  
NYS Department of Environmental Conservation

