NY *i*MapInvasives

Sharing Information for Strategic Management— Issue 3

*i*MapInvasives is New York's online mapping system designed to assist professionals and the public in protecting our state's resources from the threat of invasive species. This centralized invasive species database, managed by the NY Natural Heritage Program, is used to share information on infestations and management efforts through easy reporting tools and email alerts and reports.

Inside this issue...

Imagine you are ready to explore a new park, and as you sign the registry, a plant at the trailhead catches your eye. You haven't seen this one before. Your mind spins back to an Early Detection workshop you attended in the spring. This kind of looks like one of the new species the PRISM asked everyone to watch for... You instinctively pull out your phone to record the observation in the iMap mobile app, then hesitate... there are also native look-alikes...

What if I'm wrong!?

Submitted by Jennifer Dean, Invasive Species Biologist, NYNHP

All reports initially go into *i*MapInvasives as **unconfirmed** and are not publicly available until **confirmed.** Photos submitted with the observation are reviewed for accuracy by the iMap staff and other taxonomic confirmers across the state. If a report is incorrect, we delete it, or change the species if it is a different invasive species. While there is a backlog of reports to be reviewed (over 3,000 reports have already been submitted so far this year!), we prioritize based on the species, with ones deemed high priority for the state getting looked at sooner than other species that are more common.

For instances when you are uncertain of the species, these extra steps will help:

Take a lot of photos— Although you can only submit one photo per observation in the mobile app, go ahead and take more photos of the suspect invasive with your phone's camera. You can upload up to five photos to the record later once you are back online. Take photos of the area surrounding the suspect, take some up close of the identifying or key features. Even look around to see if there are other organisms in the same area.

Add comments — include additional information that you think will be helpful to the reviewer later. Are there traits that caught your eye that are difficult to capture in a photo? Is it an insect or animal displaying an unusual behavior? Is there a host plant being affected?

Collect a specimen — if you have a gut feeling this could be an important early detection species, collect some identifying parts, and securely seal in a plastic bag to not spread anything.

Once your report is uploaded to *i*MapInvasives, contact us to have an expert review the photos sooner rather than later. Response time could be very important depending on the species you may have found.

As someone who regularly reviews records in iMap, my favorite ones are the mis-identifications. It shows that people have been informed about invasive species and care enough to be out there looking and reporting suspicious things, but the invasive is not actually there. It's a win-win!

There are many resources that can help you to identify native species and their invasive counterparts. Visit www.iMapInvasives.org or your local PRISM website to view these resources.

Go Ahead and Report It!

For Example...

    *i*MapInvasives has recently received multiple reports of adult Asian Longhorn Beetles. As an early detection species, this report sent an alert to the *i*MapInvasives team to review quickly, unlike some of the more common invasive species that are reported more often.

    Luckily this was a mistaken identity! The native white spotted pine sawyer beetle (pictured right) is commonly mis-reported as the invasive Asian longhorned beetle. They are closely related (both in the longhorned beetle family, *Cerambycidae)*, the white spot right behind the head on the native beetle is the main distinguishing characteristic. Notice the lack of a white spot at the base of the head where the wings meet on the Asian longhorned beetle (pictured right).

    If you see a suspicious beetle, go ahead and report it even if you are not 100% sure of the identification. We would rather see mistaken identities than risk missing a real sighting!

Top: Photo of native white pine sawyer beetle submitted to iMapInvasives by Shawn Martella.

Bottom: Photo of invasive Asian longhorned beetle downloaded from ALB image galleries on Flickr
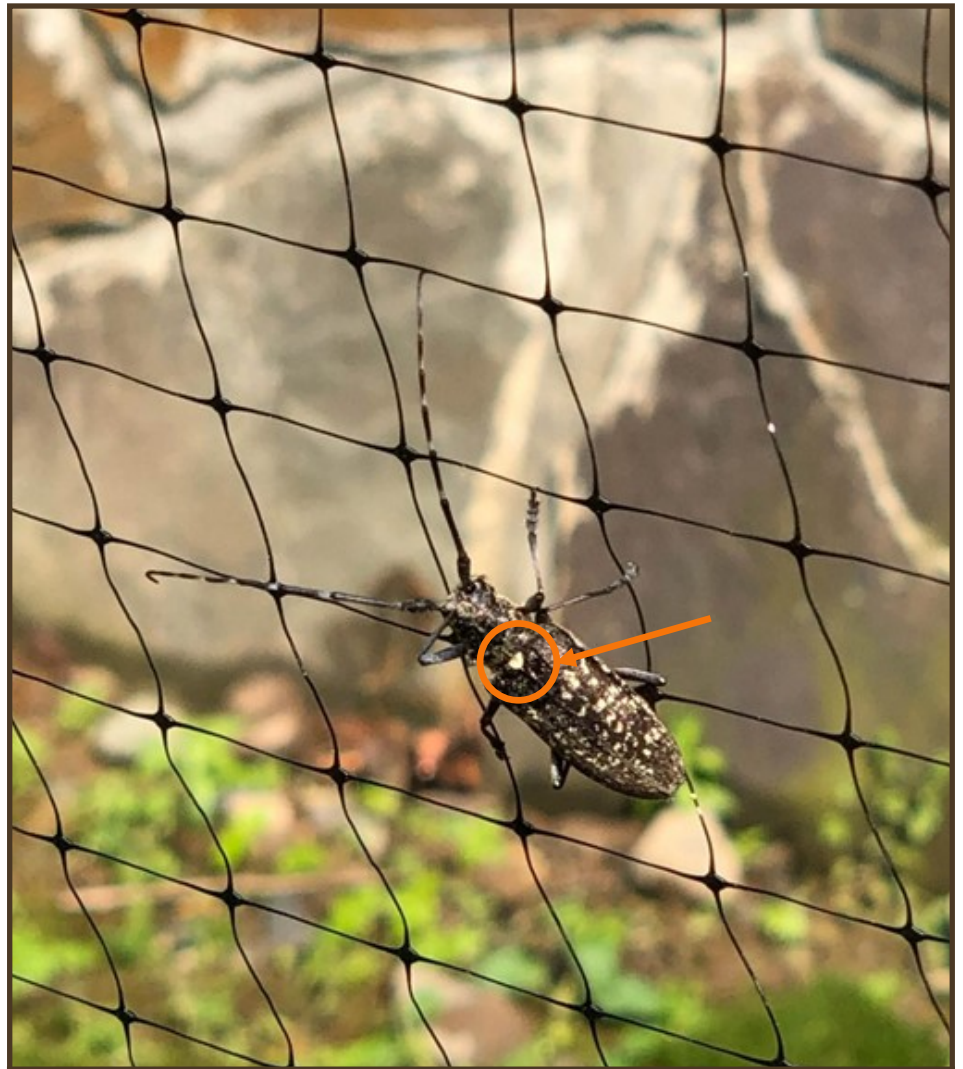
New iMap3 Feature – Identify/Measure Tool

Submitted by Gabriela Wemple, GIS and Technical Assistant, NYNHP

You may remember the beloved lasso tool from the iMap2 online database, that helped you round up observations you were interested in… right? Well, guess what!? The lasso tool has been upgraded!

Figure 1

Figure 1: The Identify/Measure tool can be used to make point-busy map screens more manageable. To use this feature, click the Identify/Measure button located at the upper right-hand corner along with the other tools.

Once selected, a user may choose between two different measurement options, Area or Distance.

Let's take you through a step-by-step tutorial on how to use the different features of the Identify/Measure tool.
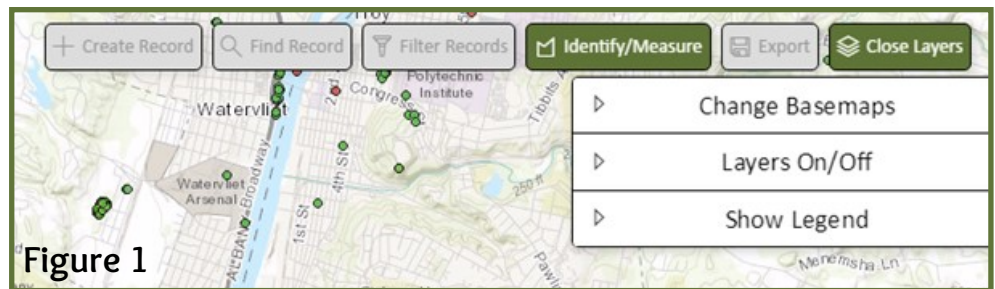
The 'Area' selection is used to see records that exist in a user-drawn polygon. The 'Distance' selection is used to find a linear distance in miles between user-designated points on the map.
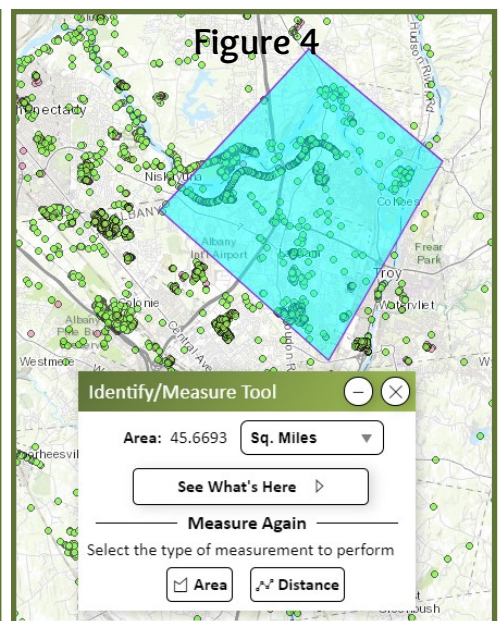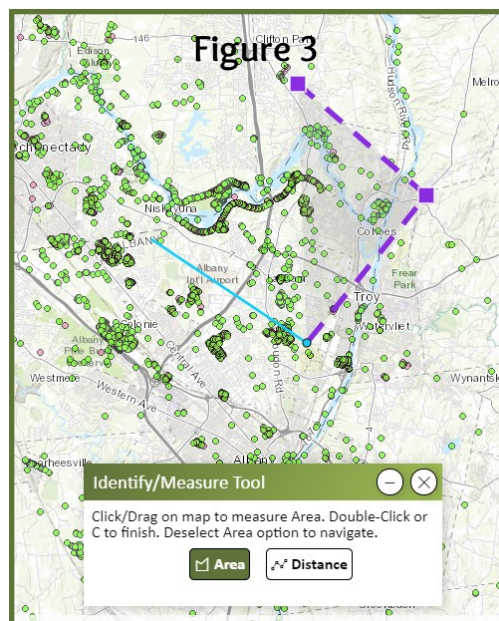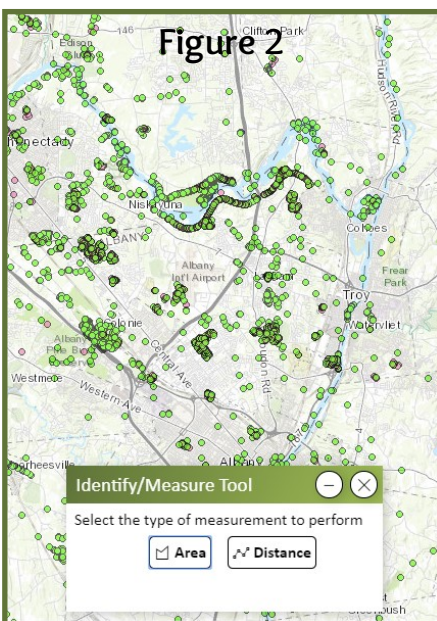
Figure 2: The pop-up dialog box when 'Area' is selected provides useful information on how a user can use their cursor and keyboard to draw a polygon.

Figure 3: You begin with drawing the polygon surrounding the area they are interested in. This can be done by single-clicking vertices of the polygon or by clicking and holding to drag a line around the area of study. Purple squares represent vertices of the polygon.

Figure 4: To finish a polygon, double-click or press 'C' on the keyboard. The polygon should now be closed and the area highlighted in blue as shown below in the image.

The pop-up dialog box provides the user with the area of the polygon. Units of measurement can be changed

Figure 2

Figure 3

Figure 4

Figure 5

|	Presence ID	Scientific Name	Common Name	Observation Date	Observer Name	Details	Tasks
1	421122	Acer platanoides	Norway Maple	Oct 10, 2014	John Slyer - 5430	Details	Tasks ▾
2	421190	Acer platanoides	Norway Maple	Oct 13, 2014	Mr. Slyer Classes Slyer Science Classes - 5447	Details	Tasks ▾
3	421611	Acer platanoides	Norway Maple	Oct 25, 2014	Alysha Brizzell - 5338	Details	Tasks ▾
4		Acer platanoides	Norway Maple	Nov 03, 2014	Mr. Slyer Classes Slyer Science Classes - 5447	Details	Tasks ▾

in the drop-down box, the options are feet, yards, acres, miles, meters, hectares, kilometers. Simply click the 'Area' button again to redraw your polygon if needed.

Figure 5: Now, let's view what records this polygon contains by clicking the 'See What's Here' button. There are several tabs representing the different types of records included in the polygon such as present, unconfirmed, approximate, and not-detected species as well as searched areas. Fields may be different depending on your role in projects and organizations. The user may navigate through the tabs and click on 'Details' to view the record page if a certain record is of special interest.

Figure 6: The 'Distance' feature of the tool is similar in navigation. The user must simply click the 'Distance' button and click or drag to draw vertices of the line(s) of what they want to measure. End the line(s) by double-clicking or pressing 'C' on the keyboard.

Figure 7: The resulting line(s) will be highlighted in blue on the map. The distance is displayed in miles but can easily be changed through use of the drop-down box.
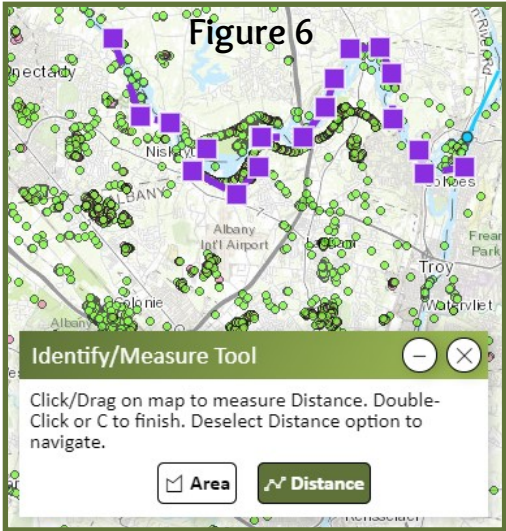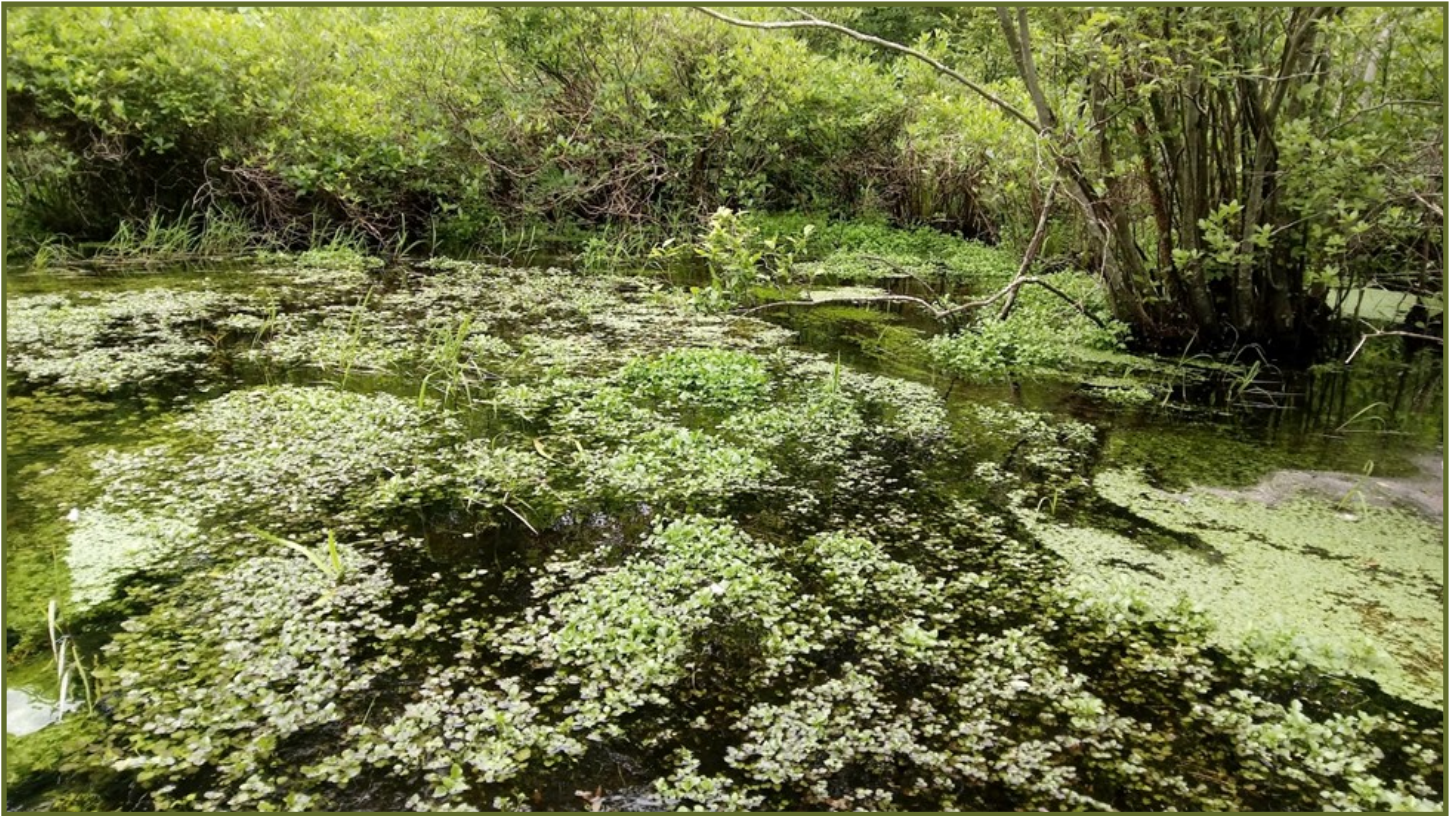

Figure 6
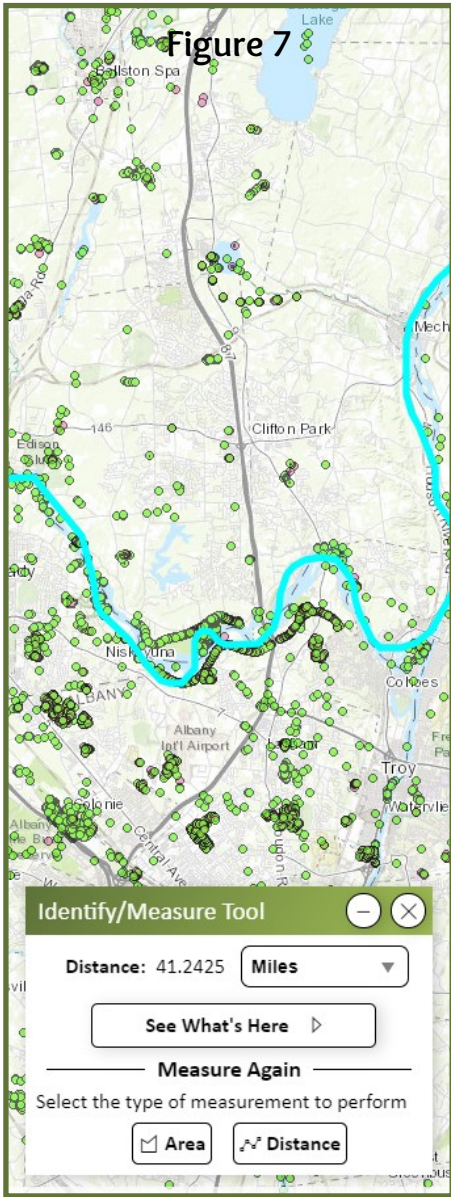
Figure 7

Documenting and Monitoring Watercress via *i*MapInvasives
Early Detection Species in NYS
Submitted by Luke Gervase, Long Island Invasive Species Management Area

As I continued to swat mosquitoes away and stroll down what can only be described as a beautiful but itch-inducing river, I kept counting my blessings that I knew exactly where to go to find our target invasive species, watercress (*Nasturtium officinale*).

Watercress is an aquatic invasive species distributed throughout North America but listed as noxious or invasive in most states. However, this plant is not well distributed throughout New York making it an early detection species in most of the state.

Now... you might be wondering... how did I know the exact locations to go and monitor for this nuisance species...? *i*MapInvasives!

Through using iMap, I can see exact dates and locations of observations of this plant made in the past; some dating back to 1914! Since this plant can grow vegetatively and through fragmentation very quickly, it is critical to be aware of previous observations. This can lead to a decrease in beneficial native aquatic

plants and can limit water flow within aquatic systems. The plant is an emergent, meaning that it has leaves that break the water's surface. It also has spreading stems that often root to the bottom at several points and can be up to several feet long. Watercress prefers shallow habitat with cold water and even has the chance to remain evergreen if given the right conditions! They develop a gorgeous white flower at the ends of shoots that has 4 petals. Watercress has subdivided leaves often with the largest leaf residing at the tip, or terminal end.

The fact that I can now upload new observations seamlessly into the iMap database is beneficial for not only myself but other natural resource managers as well. If you are interested in learning how to use *i*MapInvasives or learn some of the advanced tools it can offer, please attend an upcoming training within the LIISMA area!

www.liisma.org

If you suspect you have found watercress, or any other invasive species, please upload it into iMap so that PRISM staff and other natural resource managers can utilize that data to reduce the threat of invasive species!

Page 6; Top: Watercress population found while conducting field work. Photo by: Luke Gervase, LIISMA PRISM. Bottom: Large watercress population. Photo by iMapInvasives user Charlies Bier.

Page 7: Watercress flowering. Image by NYS OPRHP Strike Team.

Watercraft Inspection Steward Program App

Submitted by Forest Swaciak and John Marino, *i*MapInvasives

Summer's warm weather draws many to waterbodies across New York with boats, kayaks, personal watercraft, and other vessels in tow. Unfortunately, sometimes watercraft unintentionally carry aquatic invasive species (AIS), which have the potential to cause new infestations if introduced into a new waterbody.

Watercraft inspection stewards positioned throughout the state work to intercept these AIS by checking boats, trailers, and gear, sometimes providing decontaminations to further reduce the risk of aquatic AIS spread. Stewards also engage boaters to take the proper AIS spread prevention methods, like **"Clean, Drain, and Dry"** before launching and after retrieving watercraft (for more information, see the NYSDEC website). Most of these stewards record data about their inspections into WISPA, a statewide platform for watercraft inspection data maintained by the NY *i*MapInvasives Team.

The 2019 data collection season for WISPA is underway with boat launch stewards across the state conducting surveys and inspecting watercraft for aquatic organisms. WISPA data collection relies on NYS PRISMs, State Agencies and Lake Organizations to hire both paid and volunteer boat-launch stewards to collect and manage data, with 17 partner organizations participating. Stewards are located at approximately 150 launches covering 70 waterbodies and collected over 150,000 data records in 2018, detecting and removing thousands of invasive species from watercraft in the process. These stewards are already on track to surpass the previous season's survey count, having already collected nearly 40,000 records within 3 weeks after Memorial Day weekend.

Data collected can be viewed live by organization leaders on an ArcGIS Online "dashboard." This dashboard provides real-time statistics on chosen attributes to give a simple overview of the current data, data can even be filtered to view records collected by their own stewards.

WISPA collected data records are collected separately from *i*MapInvasives but can be used to compare and support data from both applications. For example, one analysis that
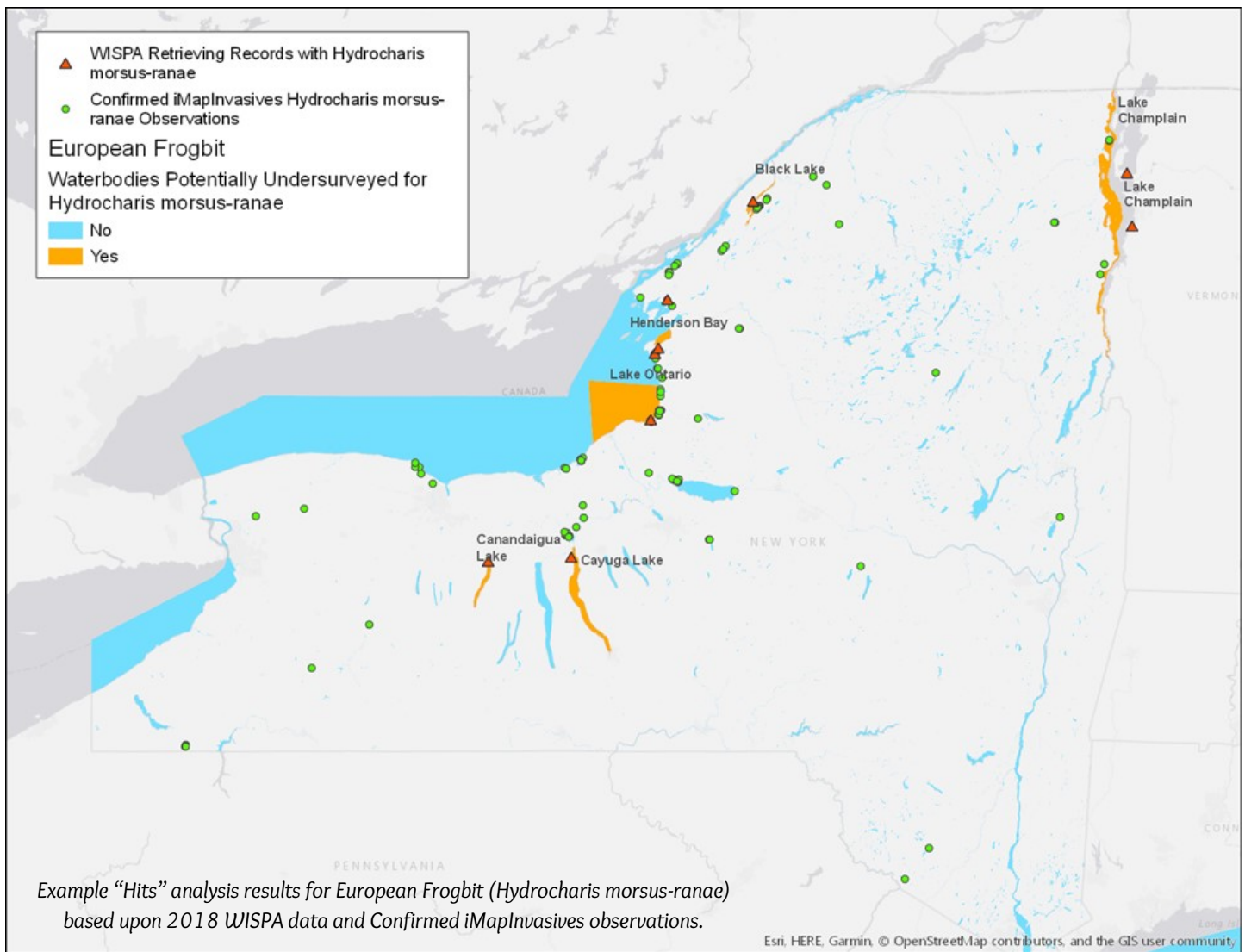
Example "Hits" analysis results for European Frogbit (Hydrocharis morsus-ranae) based upon 2018 WISPA data and Confirmed iMapInvasives observations.

integrates WISPA and iMap data is being referred to as the "Hits" Analysis. This involves focusing on higher priority invasive species collected in WISPA from boats exiting a waterbody and cross-referencing them with iMap observations. Waterbodies without those species previously reported in iMap will be highlighted and considered "Leads-in-need-of-follow-up". This analysis can be used to focus data collection and aquatic invasive species prevention measures.

This collaborative approach to data collection highlights just one example of the potential for other invasive species data collection tools, which the iMap team plans to continue to develop to support those collecting invasive species data in the field. For more information, visit the iMapInvasives WISPA webpage.

Right: Screenshot of the first few questions of the WISPA survey being conducted at launches across NYS.

June 27—July 17, 2019
TAKE THE INVASIVE SPECIES MAPPING CHALLENGE

The 2019 Invasive Species Mapping Challenge kicked off on June 27, 2019 and will run through July 17th, 2019. This year, we challenge you to look for three species; jumping worms, tree-of-heaven, and water chestnut. These species have the capacity to alter the landscape of our region. Check out pages 13, 14, and 15 for a snapshot of each invader, complete with some of their biology and environmental impacts.

Jumping worm
Susan Day, UW Madison Arboretum

Tree-of-heaven
Ansel Oommen, bugwood.org

Water chestnut
Alfred Cofrancesco, US Army Corps, bugwood.org

How You Can Help!

The NYS DEC and NYNHP kicked off the Invasive Species Mapping Challenge on June 26, 2019 with an informational webinar.

Recording: https://youtu.be/XUbJKksYZ90

Prizes will be awarded to the user with the highest number of observations or not-detected records, as well as the PRISM with the highest number of records submitted.

New this Year!

Now you can view the top leaders for each category... Individual leaders by reports of each species detected or not-detected and PRISMs with the most observations in each category! You can also view maps of species distributions and data entered during the challenge to stay up to date on the challenge.

www.nyimapinvasives.org/invasive-species-mapping-challenge

Happy Mapping!

Jumping Worms
MAPPING CHALLENGE SPECIES
Submitted by Colleen Lutz, *iMapInvasives Assistant Biologist, NYNHP*

Amynthas spp.— Metaphire spp.

Most earthworms in the Northeast are non-native and are responsible for altering the soil composition and chemistry of the forest, resulting in changes in the species of plants that exist in forested landscapes. They consume the layer of the forest floor that contains the critical nutrients for plant growth, food and protection for wildlife. Of the non-native worm species, one of the most devastating species is the jumping worm. Jumping worms are extremely efficient in consuming this soil layer and areas infested with this species have much higher soil turnover rates than areas with traditional non-native worms.

Areas heavily infested with jumping worms may develop a soil signature that resembles the appearance of coffee grounds. This grainy appearance is the result of the castings, or excrement, produced by the worms as they consume leaf litter. You can submit images of this distinct grainy soil composition for your iMapInvasives observations.

Another distinctive characteristic of the jumping worm is the dark gray/brown tissue color and smooth or milky while clitellum. Unlike the raised clitellum on other species of worms, jumping worms have a smooth, non-raised band.

Be sure to examine potted plants and gardening and landscaping materials for jumping worms to help prevent their spread to your yard!

Left; Audrey Bowe, Cornell University, NYISRI
Top Right; Joyce Tomaselli, CCEDC
Bottom Right; Paula Gherardi, CCEDC

Dark gray/brown tissue color

Clitellum

Ailanthus altissima

This deciduous tree, native to China and Taiwan, was first introduced to the United States in the Philadelphia area around 1750. Due to its rapid growth, it was used as a street tree but has become an invasive plant in urban, agricultural, and forested ecosystems. It has characterizable smooth, green bark when young that eventually turns a light brown or grey and resembles the skin of a cantaloupe or reptile.

The leaflets of the tree have two bumps called glandular teeth, protruding at the bottom near the central stem. Once crushed, the leaves and other parts of the plant give off a very unpleasant odor. These glandular teeth and odor are much different than the native look-a-like, staghorn sumac, which has serrated leaves while tree-of-heaven are smooth (entire).

Tree-of-heaven is one of the preferred hosts of another devastating invader, the spotted lanternfly (*Lycorma delicaltula*). This agricultural pest presents a threat to our state's grape, fruit, nursery, and hardwood industries. The adult spotted lanternfly is known to deposit eggs on the bark of tree-of-heaven and feed on the tree sap by piercing the bark. While feeding, the spotted lanternfly excretes a sugary, sticky substance referred to as "honeydew". The honeydew encourages the grow of black sooty mold, capable of harming plants and impacting outdoor recreation.

Left; Malcolm Kaletsch, CRISP PRISM
Middle; Meg Wilkinson, iMapInvasives
Right; Brittney Rogers, iMapInvasives

Water Chestnut
MAPPING CHALLENGE SPECIES
Submitted by Colleen Lutz, *i*MapInvasives Assistant Biologist, NYNHP

Trapa natans

Native to Western Europe, Africa, and Asia, water chestnut was first introduced to the Northeast in the 1880's possibly as an intentional planting. The plant escaped cultivation and traveled to Great Lakes, Mohawk and Hudson River drainage basins. It produces extremely hardy nutlets or seeds which have the capacity to remain dormant and viable for up to 12 years in the bottom sediment of lakes and rivers. Water chestnut has significant ecological and recreational impacts in the waterbodies it invades. It forms dense mats of floating vegetation, making recreational use of the water extremely difficult. Swimming, boating and fishing become nearly impossible.

These dense mats formed by water chestnut also effectively shade out sunlight to the water column, reducing the dissolved oxygen. Reductions in oxygen levels can negatively impact the species of invertebrates and fish that live in infested areas; reducing the available prey and causing devastating fish kills.

Top Right; Frank Williams, iMap Certified Trainers Network, SLELO volunteer.
Bottom Right; Daniel Langer, Kinderhook Lake Corporation.
Bottom Left; Ashleigh Grosso, SUNY ESF
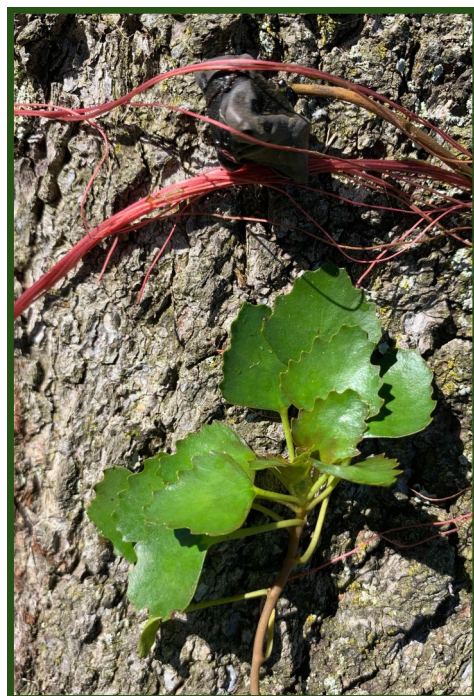
An iMapInvasives Power Users "How-to"

Submitted by Spencer Barret, Capital Mohawk PRISM

I never thought I'd work with invasive species growing up. I would visit the zoo most weeks, go canoeing in southern Missouri, and spend most of my time outdoors, but I always thought I would be working with wildlife or as a park ranger. I couldn't really tell you what an invasive species was, or how it affected the places that I already knew that I cared deeply about.

When I developed a more nuanced understanding of how much wildlife depends on good, stable habitat, I started to really dig into invasive species. There are so many huge threats to our ecosystems globally, from climate change and rampant development, as well as local threats from activities as banal as off-roading or mowing at the wrong time of year. Invasive species is where I decided to put my focus. Though it has some of the same impacts and implications of those vast world-breaking forces like climate change, I felt that this was an area of ecology that I could make everyday positive impacts on.

iMapInvasives helps me do just that.

Photos of Spencer B. conducting field work, by Capital-Mohawk PRISM

Here are a few of my personal uses for iMapInvasives, as well as a few tips on ways you can submit more observations and ID new organisms.

Learn a species a day: When I first started working with plants in general, I tried to be able to learn at least one new species every day, either native or invasive.

Track your travels: By submitting observations when I'm travelling, I can essentially see everywhere I've been in NY. It's satisfying to look at my uploads and see the outlier points far off the beaten track.

Work with the best: Every chance I get, I try to work with people who know much more than I. Local naturalist groups and professionals in the field have been great resources for me to learn from. Attend as many events hosted by your local PRISM as you can!

You never know when this data will come in handy for research or management, so don't just think of adding records into iMapInvasives as putting dots on the map. This is essentially the Svalbard Seed Vault in reverse- when we have the means to deal with infestations, we will know exactly where they are found. Invasive species management is still relatively young in terms of the entire environmental field, and we are getting better at it.

Certified Trainers Network & Opportunities

Brittney Rogers, *i*MapInvasives Communications

With all the information being shared about invasive species in NYS, it can become a bit overwhelming to know what to look for and how to report it. At iMapInvasives, we would like to relieve you of those worries and help you to stay up to date on *i*MapInvasives trainings that include species ID, priority species, native look-a-likes and more. We have many events and resources on our website

for your use and if you have questions, we are here to help.

In 2017, we decided it was time to expand our training opportunities and give our power users and strongest supporters an opportunity to participate in the next level of *i*MapInvasives. The Certified Trainers Network was initiated in the beginning of 2018 and has now expanded to most regions of NYS. The map below depicts locations the Certified

Trainers Network hosted trainings in 2018 and they already have many more planned for the summer!

If you're interested in joining the Certified Trainers Network, please contact us and we will get you trained and help you plan your first training to share *i*MapInvasives. If you're interested in attending an in-person training in your area, for your organization or club, let us know!

www.nyimapinvasives.org/certifiedtrainersnetwork
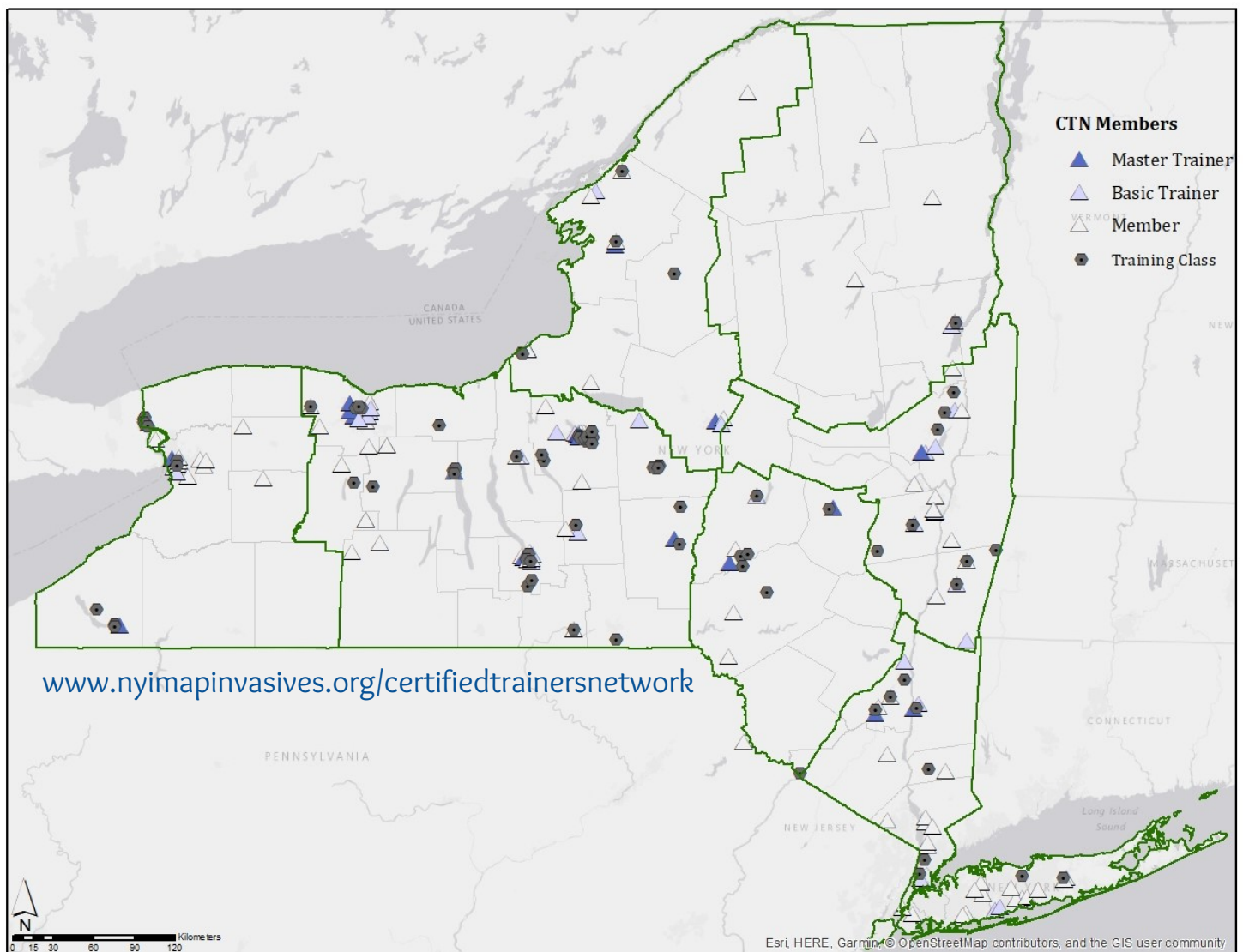
*i*MapInvasives 2019 Photo Contest

Photos by Brittney Rogers

Three Categories:
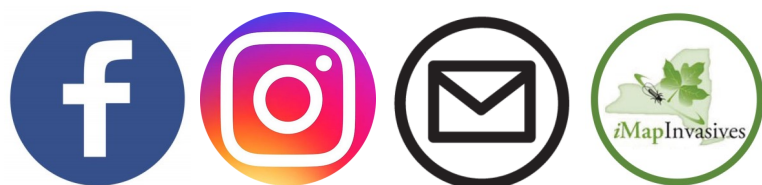Aquatic Species
Terrestrial Plant
Terrestrial Animal

Email us your photos through July 17, 2019
Win an original piece of invasive species artwork!

*Clockwise; Photo Contest entries...
Japanese Knotweed by Jonathan
Jimenez, Giant Hogweed by Rich Apa,
Black Swallow-wort Kris Garnier*

<— Snapshot of one of the prizes for the photo contest!

Connect with us...

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