SLELO PRISM

St. Lawrence Eastern Lake Ontario Partnership for Invasive Species Management

"Teaming Up to Stop the Spread of Invasive Species"

2022 Autumn Newsletter

8,500 Approved Biological Control Agents Have Been Released in the SLELO Region.

Sara Learned-Oswego SWCD
Dr. Kamal I. Mohamed– Rice Creek Field Station

About the Cover

SLELO PRISM – by Rob Williams & Robert Smith

SLELO PRISM has implemented a biological control program that may offer long-term suppression of target invasive species. By introducing approved biocontrols (a.k.a. native predators) we can lessen the labor and cost of other management techniques. This enhances our goal of managing lands and forests for resiliency by reducing the impacts of invasive species.

Resiliency, Biodiversity and Carbon

In the St. Lawrence Eastern Lake Ontario Region, 24 Priority Conservation Areas or PCAs have been identified. These are areas that have ecological importance or may be host to rare, threatened or endangered species. These same sites may host biodiversity and carbon components. Suppressing priority invasives using multiple techniques at 18 of these PCA's helps sustain the resiliency of these PCA's to external stressors such as a changing climate.

Biological Controls

By suppressing monocultures of invasive plants and forest pests, we can preserve the native composition and biological integrity of priority conservation areas through the liberation of approved biological controls. This year (2022) we released close to 6,000 parasitoids (of 3-different species) for the long- term protection of ash trees from the invasive emerald ash borer. Parasitoids released include:

- *Oobius agrili*
- *Spathius galinae*
- *Tetrastichus planipennisi*

Brittney Rogers and Robert Smith releasing biocontrol agents for EAB. ©TNC/SLELO

We have also released over 500 (*hypena opulenta*) insects to suppress swallowwort and encourage forest regeneration along with 2,000 (*Laricobius nigrinus*) a biocontrol to suppress hemlock woolly adelgid affecting hemlock trees.

Monitoring

Release sites will be monitored annually to determine both the potential establishment of biocontrols liberated and to assess the impact to the target plants.

Anticipated Outcomes

This project is designed to alleviate the impact that invasive species have on the system and to strengthen these land and forest resources towards their native composition making the sites more resilient to external stressors.

Protector's Activity

SLELO PRISM-Megan Pistolese-Shaw

SLELO PRISM will hold our annual Virtual Hike Challenge (VHC) again this winter. The challenge, happening November 1, 2022, through March 31, 2023, pairs winter hiking with simple instructions to help keep an eye out for hemlock woolly adelgid (HWA). HWA is an invasive forest pest that is confirmed to be present in Oswego County and is spreading along the Eastern Lake Ontario shoreline.

Hemlock Woolly Adelgid (HWA) damages hemlock trees by injecting their mouth parts in the woody tissue of hemlock branches to feed on the tree's sap. Over time, their feeding weakens the host tree causing mortality within 2-5 years if not treated. Infested trees will display signs of distress such as needle loss and discoloration, limb damage or loss, or lack of regrowth in the spring. The easiest time to spot an infestation of HWA is during late fall and winter months, when the insects form a white, woolly mass around their bodies that can be seen along hemlock branches where the needles connect to the branch.

The annual Virtual Hike Challenge (VHC) encourages people to check hemlock trees for signs of HWA as they go on hikes in the SLELO region this winter. Any trail in the SLELO region can be visited as part of the challenge. A map on the VHC webpage showcases public trails in the St. Lawrence Eastern Lake Ontario Region that have easy to find hemlocks along the path.

Rules of the Virtual Hike challenge:

1. Participants need to fill out the form found on the **VHC webpage** to register & to be entered to win prizes.
2. Take a hike! Choose from any trail located in the counties of Oneida, Oswego, Jefferson, Lewis and St. Lawrence or view the map on the webpage linked above for suggested trails.

3. Check hemlock trees you encounter on the trail for the white woolly masses of hemlock woolly adelgid.
4. Help raise awareness by sharing a photo of the hiking experience on Facebook and add the hashtag #VirtualHikeChallenge.

How to search for Hemlock Woolly Adelgid

Check the underside of low-lying branches for white woolly masses. The presence of white masses may vary from a single or many masses on a branch. Check several branches from each side of the tree. A hiking pole can help pull down high branches for easier viewing (**survey tips**). Whether or not hikers find signs of HWA, it is important that they record their observations. Both positive and negative findings are helpful in monitoring the pest population and can be recorded by using the **iMapInvasives.org**.

Visit iPledgeToProtect.org
and Join the Protectors!

Species Spotlight: Box Tree Moth and Elm Zigzag Sawfly

Dorothea Duell– NYS AGM, and Megan Pistolese-Shaw-SLELO

There are two new invasive species that are encroaching on the SLELO region, the elm zigzag sawfly (EZZ Sawfly) and the box tree moth (BTM).

Feeding exclusively on elm, the elm zigzag sawfly, *Aproceros leucopoda,* is named after the distinctive zigzag feeding pattern left in leaves by feeding larvae. Feeding can cause significant defoliation, branch dieback, and crown thinning on infested elm trees. Competition between native sawfly species and native elm foliage-feeding species may also become a concern; plus infested trees are more vulnerable to other tree pests and pathogens causing a cascading impact on forest ecology, the economy and societal values (2)(3)(4) .

The New York State Department of Environmental Conservation and USDA APHIS have recently confirmed the presence of EZZ-sawfly in St. Lawrence County. Three specimens were collected at the Wildland in Brasher Falls and evidence of EZZ-sawfly feeding patterns were found at the Brasher State Forest, Wilson Hill WMA, and the St. Lawrence State Park. At this time, sawfly populations appear to be at low levels and causing only minor damage.

The Box tree moth (BTM), *Cydalima perspectalis*, feeds primarily on boxwood (*Buxus* spp.). While New York and North America do not have native boxwood, the genus is an important commodity in the U.S. nursery industry and is frequently used in landscaping. Heavy feeding by BTM larvae on boxwood foliage and bark causes defoliation of the evergreen shrub, with plant death occurring in many cases. BTM is a strong flier, and with at least two generations each year, populations can grow quickly.

In 2018, BTM was found in Ontario, Canada, and in 2021 it was confirmed in Niagara County, NY, the first known occurrence in the United States. In response to positive trap finds, the New York State Department of Agriculture and Markets (NYSAGM) established a quarantine in December 2021 encompassing all of Erie, Niagara, and Orleans counties in western New York. The United States Department of Agriculture (USDA) followed up with additional regulations in early 2022. Per the regulations, boxwood is allowed into the quarantine zone from other areas but cannot be taken outside of it. An extensive nursery trapping program is also in place to monitor and respond to the potential spread of the pest.

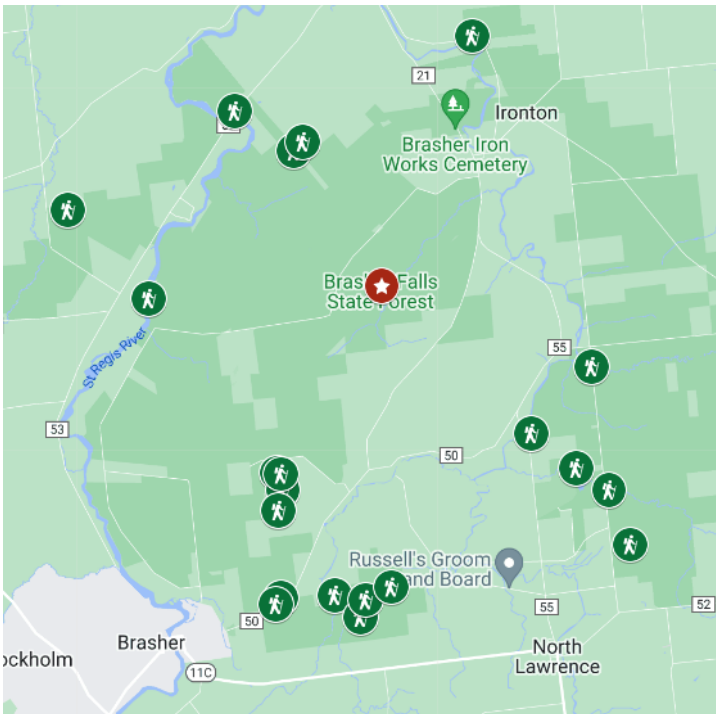
The public is encouraged to keep an eye out for the elm zigzag sawfly and the box tree moth. Sightings can be reported to **iMapInvasives.org** or for BTM directly to the New York State Agriculture and Markets **Box Tree Moth online reporting form**.

Early Detection Effort for Elm Zigzag Sawfly

SLELO PRISM– Megan Pistolese-Shaw

In response to the confirmed presence of elm zigzag sawfly (EZZS) in St. Lawrence County, SLELO PRISM is collaborating with partners to implement an outreach and early detection strategy. We've developed a species page that is available on our **website** which includes identification, resources, and a sign-up form to join an early detection effort (or scan QR code in article image). We've also created an **interactive map** featuring suggested survey sites. The survey sites were provided by regional DEC managers and include public hiking trails in St. Lawrence County that have elm stands and are near the sites in which EZZ-sawfly has been confirmed to be present. As there is concern about the impact EZZ-sawfly will have on urban street trees, survey sites will be expanded to include urban elm trees once we receive information from regional tree managers.

Clip from EZZ-sawfly Suggested Survey Site Map.



An informative webinar was held on Monday, October 25th with representatives from the NYS Department of Agriculture and Markets, NYS Department of Environmental Conservation, the Canada Forest Service and SLELO staff. The webinar shared an overview of the EZZ-sawfly, survey efforts in the U.S. and Canada and invited attendees to join the early detection effort and gave a tour of the map featuring suggested survey sites mentioned earlier. The webinar recording can be viewed on our **YouTube channel**.

If you know of elm tree stands in urban and forested areas, please email GPS coordinates and locations to **megan.pistolese@tnc.org** and **robert.l.smith@tnc.org**.

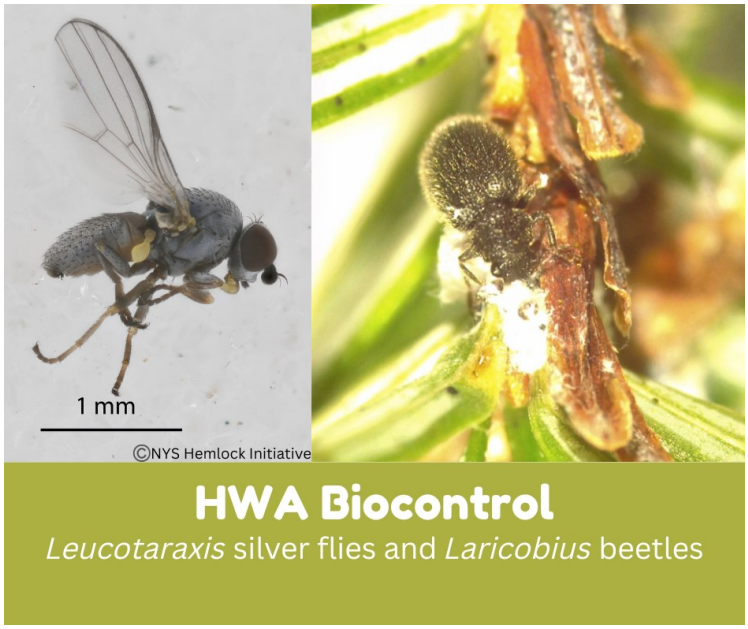
Hope For Hemlocks: Biocontrol for HWA

Caroline Marschner– NYS Hemlock Initiative/Cornell University

Finding effective biological control options is a critical piece of the long-term solution to eastern hemlock conservation in the face of hemlock woolly adelgid (HWA), an invasive insect that is killing hemlock on the East Coast. Cornell University's NYS Hemlock Initiative is researching two different kinds of insects that are HWA eating machines: *Laricobius* beetles and *Leucotaraxis* silver flies. HWA has two generations per year; *Laricobius* feed on the overwintering generation, while the silver flies are found feeding on both generations. These three HWA specialists we are working with come from the Pacific Northwest, where HWA is native and kept from reaching outbreak populations by a suite of predators. Each spring we go out to the Pacific Northwest to collect western hemlock foliage with HWA and their predators. We bring the foliage back to the Cornell quarantine facility, and collect the HWA predators as they emerge.

Laricobius nigrinus is a tiny black beetle that spends all fall and winter as an adult, feeding on developing HWA. They lay their eggs in the early spring, and freshly hatch larvae feed on HWA eggs. When they are ready to pupate, they drop to the ground and burrow into the soil, where they stay until emerging as adults in the fall.

The larvae of silver flies feed on the eggs of both generations of HWA. After that they become inactive (diapause) until they emerge as adults, usually the following spring, to lay their eggs near HWA so their larvae will have a nearby food source.



Silver fly larvae are so small you need a microscope to find them, but they are voracious egg eaters. We are still studying silver flies to learn more about their life cycles, both in the Pacific Northwest and where they are being released on the East Coast.

Once the HWA predators are ready to release, we work with partners all over the state to find promising release sites for them. It has been our pleasure to work with SLELO PRISM, Oswego County, NYS Parks (NYS Office of Parks, Recreation, and Historic Places), and the NYS Department of Conservation to plan the first biocontrol release in SLELO PRISM this fall. A lot of work goes into surveying for HWA, finding good biocontrol sites, securing all the permits for releases, and treating hemlocks; many thanks to all of these partners as we've worked together to make this fall's SLELO biocontrol releases a reality.

Priority Conservation Area 'Score Card'

SLELO/APIPP: Zack Simek/Rob Williams

Is the health of our Priority Conservation Areas (PCAs) getting better, worsening, or maintained as a result of our invasive species protection & management strategies? Answering this important question first requires a benchmark. To achieve this, the SLELO PRISM has been developing a scorecard for each PCA based on current analysis.

The Process: The first step is to describe the PCA and become oriented with the natural characteristics of the PCA. We describe the acreage, habitat types, terrestrial and aquatic, we map it and if available we mark the boundary and describe the Highly Probable Areas or HPA's where invasives are most likely to occur.

We then use The Nature Conservancy's resilient and connected network (or RCN) database that identifies where plants and animals have the best chance to adapt to a changing climate. This compares a site's resilience, connectedness, and landscape diversity.

We also look at the sources and quantities of carbon stored at the PCA. For example, in one of our PCAs (Lakeview WMA), we estimate over 155 metric tons of stored carbon which is equivalent to CO2 emissions from 64 million gallons of gasoline consumed or 629 million pounds of coal burned.

Next using multiple sources including work by New York's Natural Heritage Program, we look at native species communities and their state ranking which reflects their rarity. We then insert our invasive species abundance and management knowledge and we do this for both aquatic and terrestrial invasive species.

By comparing resiliency, connectedness, and diversity with invasive species extent or density the total score is the average (RCD+IS).

Example:

- Lakeview Wildlife Management Area PCA
- RCD Score (1.18 + 1.08 + 1.35) = 1.20 = A (95)
- IS Density Score (s) – A (95)
- Yellow Iris – A (95)
- Swallow-wort – A (95)

Total Score= (95 + 95)/2 =95=A

Ecological Restoration Factor: An ecological restoration factor may be included based on the success or failure of native plant recovery and can be accounted for either by natural succession or intentional restoration. If the observer notices the recovery to natives, the individual can add a (+) to the score. If the observer notices the return to non-natives, the individual can add a (-) to the score. This now becomes a Discretionary Restoration Adjustment or DRA .

95=A + DRA=A^{+}

Outputs: If target invasives are being reduced then forest health, carbon and biodiversity are presumably sustained. If a new IS such as an insect enters the system or if the abundance of an invasive plant increases, then the site might be "regressing". If IS are reducing, there are no new introductions and native species continue to thrive, then the PCA is likely to be improving. So, this becomes our (Health Profile or Benchmark Score). At Lakeview PCA we are now seeing after 11 years of treatment – a 33% reduction in the extent of sites managed for swallow-wort, which indicates we are progressing in a favorable direction.

Managing for Resilience (M_4R)

M4R requires the suppression of terrestrial invasive plants. This year's control work has resulted in the following metrics.

Giant Hogweed:
(*Heracleum mantegazziamum*)
•44 Total Sites Monitored
•27 Sites with no germination
•4 Retired
•4 Site root cut
•11 Sites herbicide treatment
•2 Site with no permission to treat

Swallow-wort: (*Cynanchum spp.*)
•56 Sites managed on 13 PCAs
•97.69 Acres under management (HPA)
•25.14 Acres of Presence Area

Japanese Knotweed: (*Fallopia japonica*)
•9 Sites being managed on 3 PCAs
•10.49 Acres under management (HPA)
•2.31 Acres of Presence Area

Phragmites: (*Phragmites australis*)
•12 Sites managed on 7 PCAs
•12.55 Acres under management
•1.43 Acres of Presence Area

Oriental Bittersweet:
(*Celastrus orbiculatus*)
10 Sites managed on 2 PCAs
•10.97 Acres under management
•6.93 Acres of Presence Area

Yellow Iris: (*Iris pseudacorus*)
•2 Sites managed on 2 PCAs
•1.3 Acres under management
•0.21 Acres of Presence Area

Early Detection Efforts

No Tier 1 or New Tier 2 Species Found

Continuing on a two-year rotation, this year (2022) early detection efforts were completed in the following Priority Conservation Areas.

- Black Pond WMA (B)
- Chaumont Barrens Preserve (T)
- Chaumont Bay (A)
- Deer Creek WMA (B)
- El Dorada Preserve (T)
- Lakeview WMA (B)
- Oneida Lake and Three Mile Bay WMA (B)
- Salmon River Estuary (A)

(A = Aquatic, T = Terrestrial, B = Both)

Restoration Sites - Terrestrial

To increase the resiliency of select post treatment sites we often plant seed at these sites to expedite native re-growth. We select seeds that match the ecological community and are present in the region. Data such as % grasses, sedges/rushes, forbs, shrubs, and trees are then recorded in randomly selected *1m2* vegetation plots. These sites along with additional sites that we select in future years will be monitored and surveyed pre-seeding and post-seeding annually. Sites restored this year include: El Dorado Preserve, Black Pond WMA, Deer Creek WMA, and Three Mile Bay WMA.

Hypena opulenta Release

This year, we completed another biocontrol release of *Hypena opulenta* moths at Wehle State Park and Grenadier Island. These moths are native to Ukraine and feed exclusively on pale and black swallow-wort in their larval form. On June 6, we placed 20 adults in each of four cages (2 at Wehle State Park, and 2 at Grenadier Island). Like last year, the first generation produced few larvae, so we waited for this generation to pupate, emerge as adults and lay eggs. We had modest success with the second generation with the best results occurring at Cage 2 on Grenadier Island (60% defoliation) and the second best at Cage 1 at Robert Wehle State Park (40% defoliation). To further our efforts in establishing this biocontrol, we purchased an additional 440 larvae and 76 pupae from the Phillip Alampi Beneficial Insects Laboratory. On August 4, we released 110 larvae 10 feet from each cage and placed 19 pupae in each cage.

In addition, we have engaged residents of Grenadier Island and the New York State Office of Parks, Recreation, and Historic Preservation (NYS OPRHP) to improve our overwintering surveys. A *Hypena opulenta* moth identification video has been made to help the residents of Grenadier Island that plan to look for signs of the establishment. We are also working with NYS OPRHP to organize an overwintering trail survey at Robert Wehle State Park. Our hope is that more people looking for evidence of *Hypena opulenta* moth presence will increase the chance that we find establishing populations.

Sarra Learned (OCSWCD) releasing EAB biocontrols ©TNC/SLELO

Biological Control of Emerald Ash Borer: This year, we were approved by the USDA to release EAB biocontrol insects at Rice Creek Field Station at SUNY Oswego. As part of this USDA program, the releases will occur for two years. This year, we had 8 releases from June-August, and will be releasing a similar number next year. The type of biocontrol being released is parasitoid wasps and the USDA provided us with 3 species.

The total number of each is as follows:

***Spathius glainae*: 1137**

***Tetrastichus planipennisi*: 3352**

***Oobius galinae*: 1200**

Grand Total: 5689

Release sites will be followed-up on by an establishment survey a year after the second release.

For more information on these or other terrestrial restoration and resiliency projects please reach out to Robert Smith at robert.l.smith@tnc.org .

SLELO- Robert Smith

Notable Natives

During our early detection surveys, we see many native plant species when we are looking for invasive species. These are the species that we are protecting, and we have been recording these native species to get a better understanding of what species are adjacent to the invasive species that we are looking for. Sometimes, these native plant species are rare, and sometimes they are just species that we didn't expect to find. Here are two of these species we observed this year.

Sassafras (*Sassafras albidum*):

While not a state rare species, it is rare to the SLELO Region and only found in one of our PCAs (Three Mile Bay WMA). This is because the southern end of SLELO PRISM is located at the northern limit of the range of this tree. It is unique in that it has three distinct leaf shapes (unilobed—bilobed and trilobed). The fall foliage ranges from yellow/orange to scarlet/purple. The fruit of this tree is dark blue and is eaten by deer, bears, and many different birds. Sassafras oil/roots have also been used to perfume some soaps and make a tea that tastes like root beer.

Sassafras ©Robert Smith-TNC

Prairie Smoke (*Geum triflorum*):

This plant is a state-threatened species and can only be found in Jefferson County. The only PCA that we have found it in is Chaumont Barrens. It flowers early from April to June. The flowers are red and initially nod down and are bud like until they are pollinated by bumblebees. After pollination, the flower opens and becomes erect. The fruit is a seed with a 2-inch long plume. This plume gives it a smoky appearance and is the source of its common name. The roots of this plant can be made into a tea that tastes like Sassafras.

Prairie smoke © Gala Smith

For more information on these or other terrestrial restoration and resiliency projects please reach out to Robert Smith at robert.l.smith@tnc.org .

Aquatic Restoration and Resiliency Initiatives

SLELO PRISM – Brittney Rogers

Our 2022 Watercraft Inspection Steward Program co-administered with TILT, concluded on October 16, and could very well be our most successful season yet. This was the first year we were able to keep four stewards on into the fall, and during that time we were able to reach over 3,000 additional people and intercept aquatic hitchhikers 150 times. During the extension into the fall, we reached new audiences working along the salmon river with fisherman who traveled to the area from all over the globe.

Preliminary results of the 2022 WISP data:

- 13,250 Surveys
- 16% boats considered “dirty”
- 1,100 AIS Interceptions
- 29,900 People Reached
- 95% Participation Rate
- 18% no previous steward interactions
- Average group size 2-4 people
- Launch visitors from over 43 states

One important encounter was a dead spotted lanternfly found on a boat trailer. This was immediately reported to NYS Agriculture and Markets. Throughout the summer stewards had been sharing information on SLF with boaters and we will continue to ramp up these efforts next season.

For more information on these projects or any other aquatic invasive species focused project, contact the Aquatic Restoration and Resiliency Coordinator, Brittney Rogers at **Brittney.Rogers@tnc.org**

A Snapshot of Accomplishments to Date
January-October, 2022

123 +

AREAS SURVEYED FOR
PRIORITY INVASIVE SPECIES AT PRIORITY CONSERVATION AREAS

133

ACRES OF LAND
PROTECTED THROUGH INVASIVE SPECIES MANAGEMENT

337, 808

POUNDS OF WATERCHESTNUT
REMOVED MANUALLY & MECHANICALLY IN THE SLELO REGION

33,864

PEOPLE ENGAGED
IN INVASIVES SPECIES OUTREACH VIA SOCIAL MEDIA, EVENTS, EMAIL, AND WEBSITES

8,500

BIOCONTROL AGENTS
RELEASED IN THE SLELO REGION

$12,000

REIMBURSED
TO COMMUNITIES TO PLANT NON-INVASIVE STREET TREES

13,250

WATERCRAFT INSPECTIONS
CONDUCTED IN THE SLELO REGION

13,250

SURVEYS GIVEN
BY WATERCRAFT INSPECTION STEWARDS IN THE SLELO REGION

A Special Thank You To Our Partners and Volunteers

- 3 volunteers, 4 SCA members
- 3 sites
- 815 plants removed
- Target Species: yellow iris and pale swallow-wort

Terrestrial Invasive Plant Removal Efforts

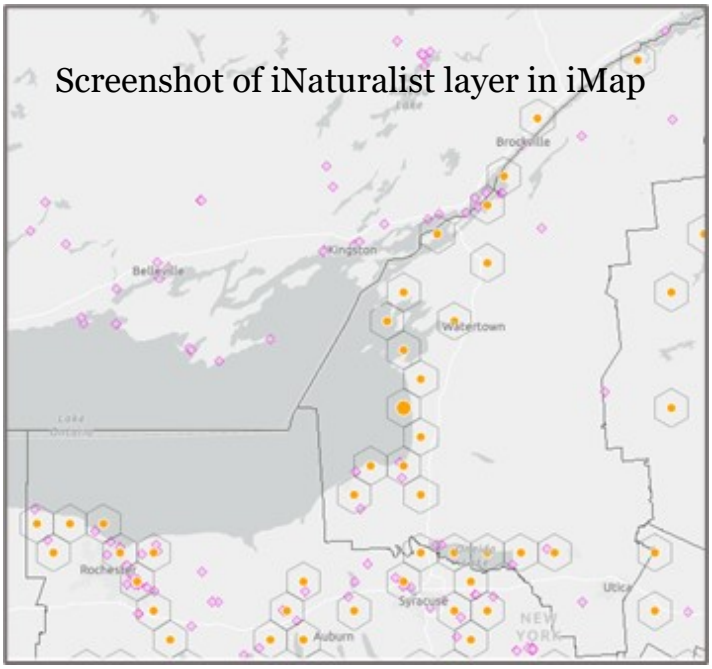
Partner Spotlight: What's New with iMapInvasives

Mitch O'Neil– End User Support Specialist
New York Natural Heritage Program/iMapInvasives

A lot has changed in **iMapInvasives** this year! Read about some of the new features in New York's official invasive species database below:

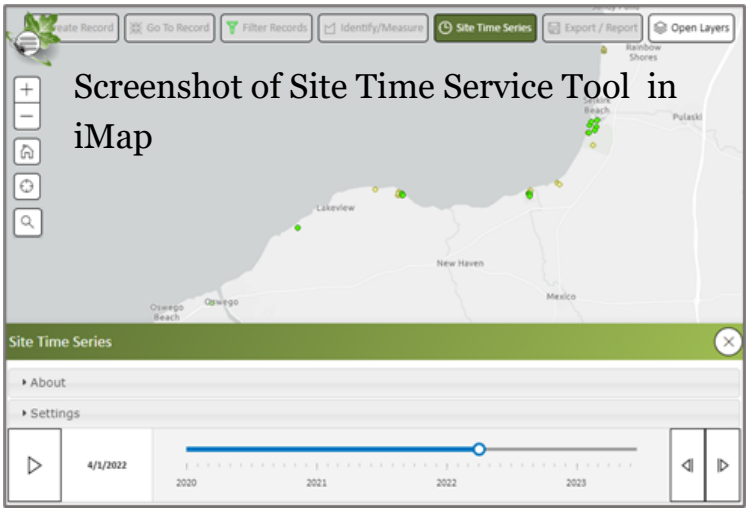
Filter Tool **new options**: There are many new options to filter the data that you see on the map, including whether the record has a photo attached. Learn more at **imapinvasives.org/filter**.

iNaturalist: A new layer has been added to iMap, displaying research-grade iNaturalist records from the last 5 years . You turn this layer on in the Layers On/Off panel when zoomed in or filtered on one or more species. Learn more at imapinvasives.org/inaturalist.



Screenshot of iNaturalist layer in iMap

Site Time Series: A new tool is now available to visualize change over time, particularly when zoomed in past the county level. The tool allows you to play an animation of the data through the time frame you specify, and will respond to the filter parameters you set. Learn more at **imapinvasives.org/timeline**.



Screenshot of Site Time Service Tool in iMap

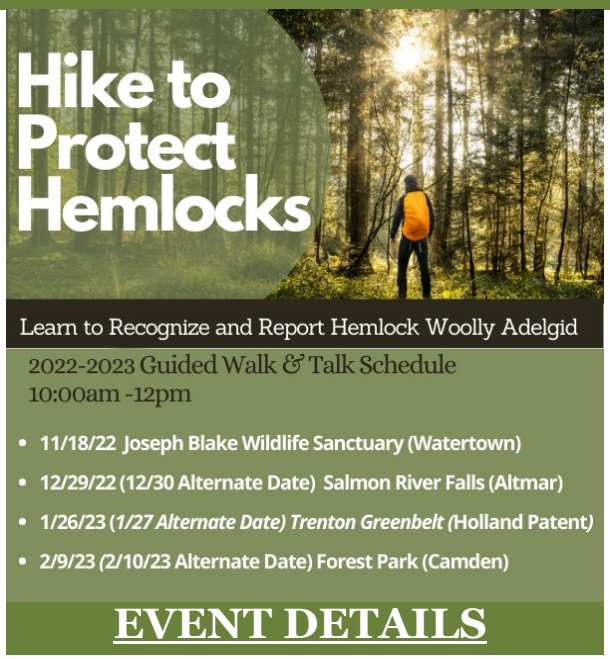
Help Information: Throughout the interface, we have added helpful definitions and links to more information – keep an eye out for "Learn more" links, the (i) icon, and text descriptions for more information on a particular aspect of iMapInvasives.

Confirming: We now have the ability to grant volunteers the ability to confirm common species – email us at **imapinvasives@dec.ny.gov** if you are interested.

New data: The most important update to iMapInvasives each year comes from you! Thank you to all report observations to iMapInvasives. Your efforts help us keep track of the ever-changing distributions of invasive species, the submitted distribution data informs management strategies across the state. Learn how to report at nyimapinvasives.org/report.

To stay up-to-date on iMapInvasives, visit us at www.NYiMapInvasives.org and follow us **@NYiMapInvasives** on **Facebook** or **Instagram**.

EVENTS & ANNOUNCEMENTS



EVENT DETAILS

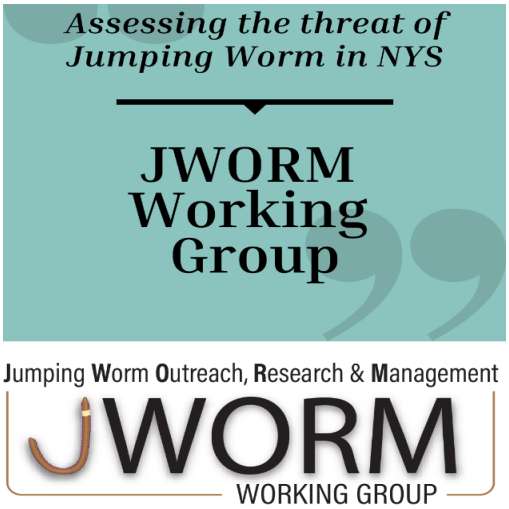
EVENT DETAILS

- November 1st, 2022 —March 31st, 2023 **Virtual Hike Challenge**
- November—March **Hike to Protect Hemlocks Guided Walk and Talks**
- November 2nd, 3rd and 9th, **Understanding and Managing Floodplains for Healthy Watersheds and Resilient Communities**
- November 7th—10th **North America Invasive Species Management Association 30th Annual Conference**
- November 15th– 17th **Agriculture, Food and Environmental Systems In-Service**
- November 16th **Penn State Extension– SLF and the Potential Impacts on the Maple Syrup Industry Webinar**
- February 24th & 25th **New York Farm Owner Association Farm Show** *(SLELO presenting at 10 AM on 2/24/23)*
- **SLELO Partner Meetings** 1/19/23; 4/20/23; 7/19/23;10/19/23

<<Notable Announcements>>

TAKE THE PLEDGE

VIEW THE STORIES



LEARN MORE

From Our Director

Milestones

For many of our programs it takes several seasons and a lot of teamwork to plan, develop, and reach an impactful threshold, it just doesn't happen overnight. This year the SLELO PRISM has reached several milestones each of which increases our overall impact on our ability to suppress invasives and recover/maintain ecosystem resilience.

Our ecological restoration and rehabilitation efforts have been maximized through the addition of large-scale projects and the inclusion of smaller restoration sites. This year our South Sandy Creek restoration work along with our Eastern Lake Ontario Dunes work has reduced riparian invasives and restored diverse assemblages of native plants. Our biological control program has expanded to include the liberation of biocontrols for additional target species such as emerald ash borer and the hemlock woolly adelgid reaching an all-time high of released agents. Our Watercraft Inspection Steward Program (WISP) program has seen the most successful season to date with dedicated stewards and an extended season. Our communications and media efforts have been scaled up reaching a high point of inclusion in statewide primetime news. Lastly, the development of a scorecard that helps us to measure conservation success in many of our Priority Conservation Areas. The key to these milestones is teamwork, commitment, and a strong desire to make a difference in our great outdoors.

~ Rob Williams

SLELO PRISM Partner List

- NYS Department of Environmental Conservation
- The Nature Conservancy in New York
- Cornell Cooperative Extension Offices
- NYS Office of Parks, Recreation & Historic Preservation
- NYS Department of Transportation
- NY Natural Heritage Program
- Soil & Water Conservation Districts
- Fort Drum Military Installation
- CNY Regional Planning & Development Board
- NY Power Authority
- Tug Hill Commission
- Tug Hill Tomorrow Land Trust
- Thousand Islands Land Trust
- Indian River Lakes Conservancy
- Save The River
- NY Sea Grant
- Ducks Unlimited
- Onondaga Audubon
- US Coast Guard Auxiliary
- St. Regis Mohawk Tribe-Environmental Unit
- Algonquin to Adirondack Collaborative

Acknowledgements:

NYS Invasive Species Council
NYS Department of Environmental Conservation
The NYS Environmental Protection Fund

Edits completed by SLELO PRISM Staff
Articles contributed by SLELO partners

SLELO PRISM

The Nature Conservancy — *SLELO PRISM Host Organization*

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Eastern Lake Ontario Swallow-wort collaborative