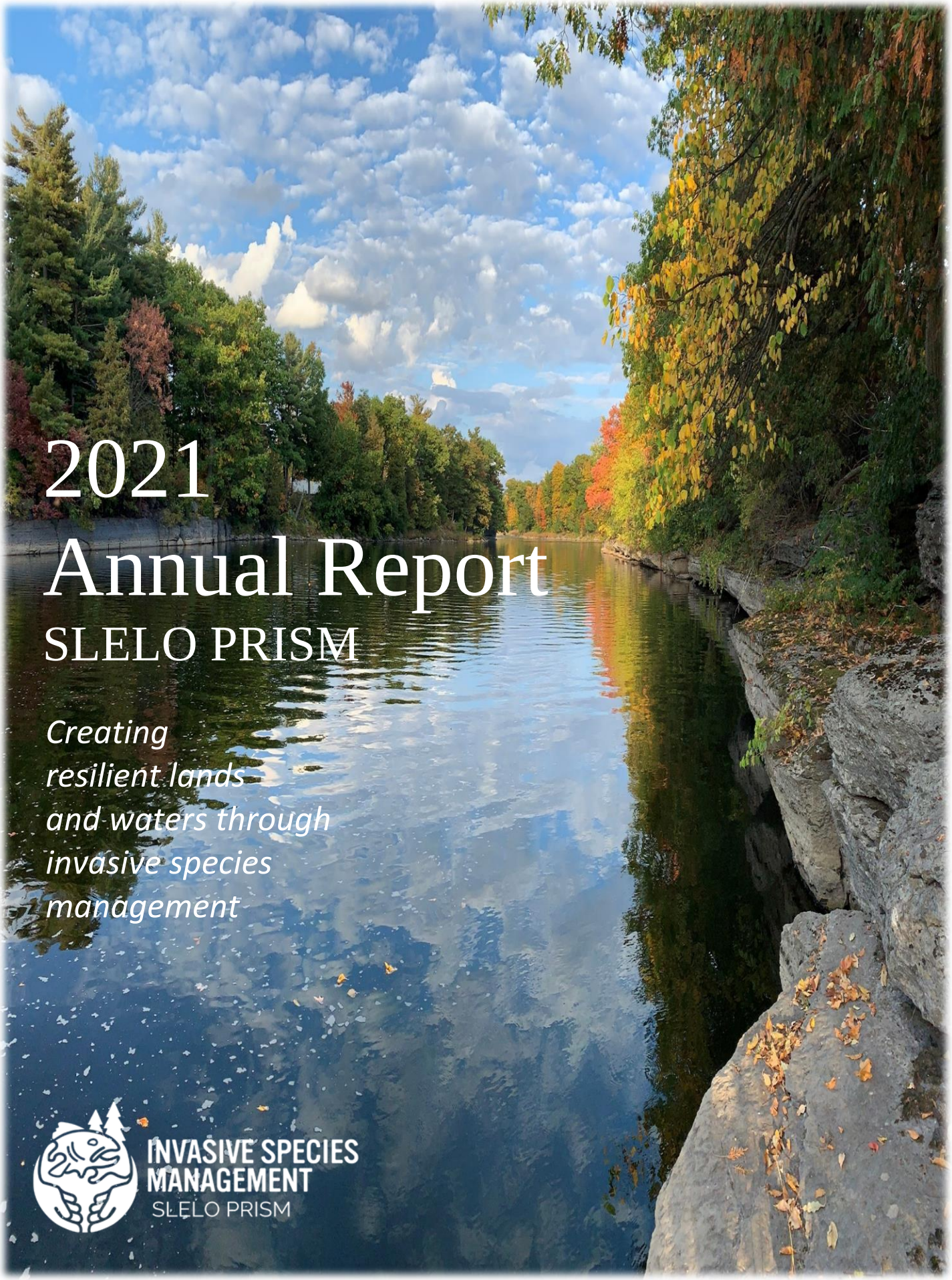

# 2021 Annual Report

## SLELO PRISM

*Creating resilient lands and waters through invasive species management*

INVASIVE SPECIES MANAGEMENT
SLELO PRISM

Copies of this report can be obtained from the SLELO-PRISM website: www.sleloinvasives.org

Cover photo:

Black River, Jefferson County
New York
©TNC/Brittney Rogers



The Nature Conservancy

SLELO PRISM

Printed in USA

# Authors


Rob Williams
Author
Invasive Species Program Manager



Megan Pistolese
Contributor
Education & Outreach Coordinator



Brittney Rogers
Contributor
Aquatic Restoration & Resiliency
Coordinator



Robert Smith
Contributor
Terrestrial Restoration & Resiliency
Coordinator



Zack Simek
Contributor
Conservation and GIS Analyst


# Acknowledgments

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A Special Thanks To:
The New York State Legislature
For supporting this program within the New York State Environmental Protection Fund

The Nature Conservancy as Host Organization

The New York State Department of Environmental Conservation, Invasive Species Coordination Section

The New York State Invasive Species Council and
The New York State Department of Agriculture and Markets

The numerous partner organizations and their representatives who contribute their expertise, time and resources to the development and success of the SLELO PRISM.

# Table of Contents

# 2021 Strategic Accomplishments

Above: Section of South Sandy Creek. Pulaski, NY (Google Earth)

- *Began invasive species suppression and* ***ecological restoration*** *efforts on riparian corridors of Sandy, South Sandy and Deer Creek designed to cool streamside water temperatures and increase resilience to climate changes.*

- *Intercepted aquatic invasive species on* ***436*** *occasions preventing their spread to and from other North American waterbodies.*

- *Finalized a Black River Trail Invasive Species Suppression and Ecological Restoration* ***Feasibility Study***

- *Prepared a (1st ever) Eastern Lake Ontario* ***Barrier Dunes*** *Invasive Species and Ecological Restoration Management Plan.*

- *Successfully launched a Pledge-To-Protect* ***Marketing and Communications*** *Initiative.*

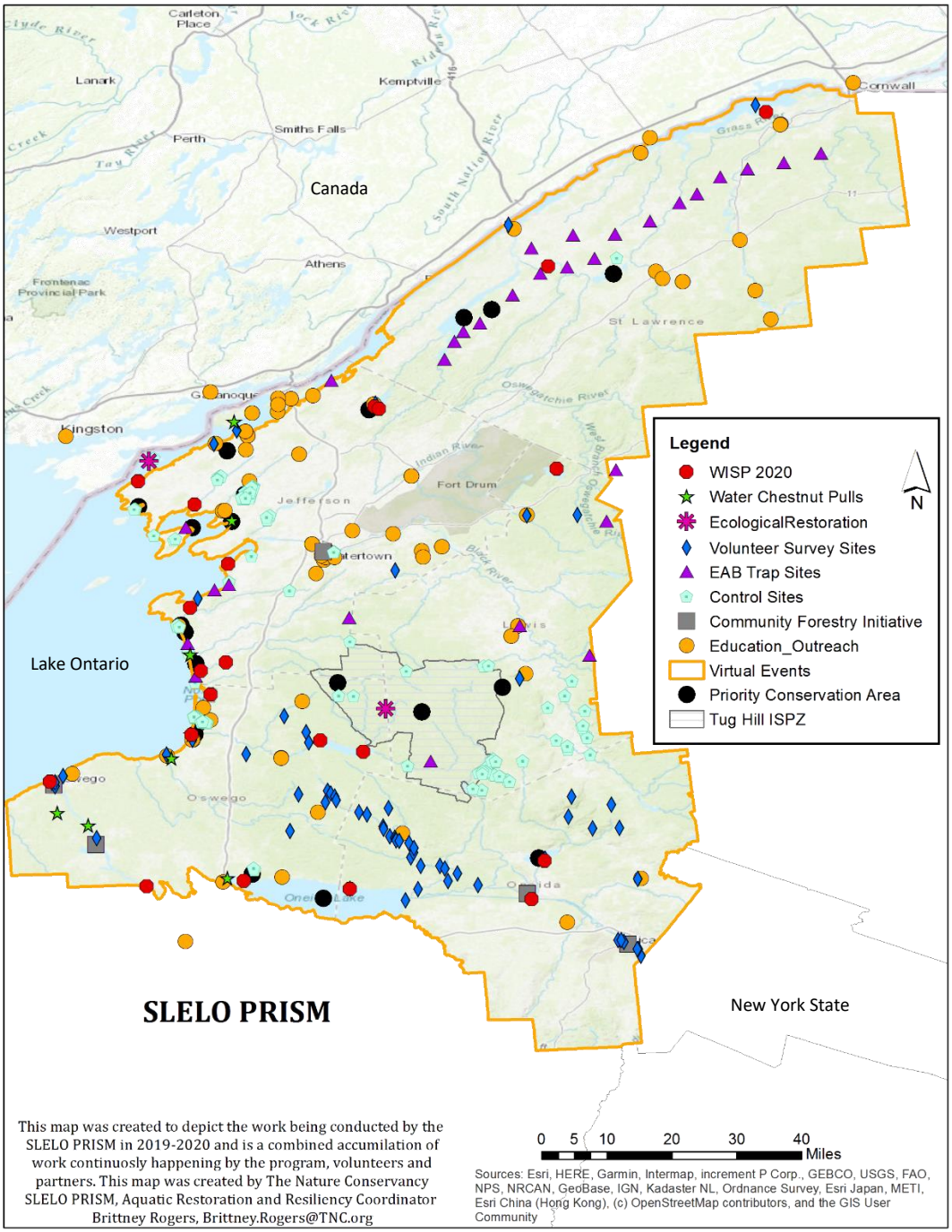
# Conservation Impact
## & Biological Diversity

Invasive species of plants, animals, insects and microorganisms are among the most serious threats to the health of our lands and waters. Invasive species are opportunistic and almost always out-compete, damage, or replace native species resulting in serious disruptions in ecosystem processes and balance. These processes include such things as the interdependency on food and habitat, hydrology, carbon release, nutrient cycling, natural succession, soil erosion and water quality. Invasive species also cause a significant decline in the biodiversity of our lands and waters.

A recent assessment by our PRISM and The Nature Conservancy regarding *connectivity* resulted in metrics that suggests that the 478 acres that our partnership directly manages results in a total landscape protection of nearly 5 million acres. In the context of prevention, what we do in the core forest of Tug Hill, such as preventing the establishment of a forest pest, along with forest restoration, helps to protect the entire 750,000-acre forest. What we do in the Oswego River and the Erie Canal with aquatic invasive species spread prevention serves to protect the Finger Lakes, the Hudson and Mohawk Rivers, Oneida Lake and nearly all connected waterways. In addition, our eDNA and watercraft inspection work in the St. Lawrence River, Thousand Islands and coastal waters serves to protect Lake Ontario and beyond.

Our work has far greater impact than just within our own regional footprint. By protecting and promoting native species we are creating more resilient landscapes. Resilient to changes in climate, stresses by non-native species and stresses by human encroachment.

# The Places We Work



# Special Initiatives I

## Great Lakes Collaboration

Collaborating across teams was the theme when The SLELO PRISM teamed up with multiple partners on a project to detect nascent populations of aquatic invasive plants in Great Lakes Ports. Project partners included The Nature Conservancy's Great Lakes Team, Michigan State University, Western NY, SLELO, and Finger Lakes PRISMs, NYS DEC, and the FLLOWPA program. Work occurred in New York Ports to include Oswego harbor, Irondequoit Bay, Genesee River, Eastern Lake Erie, and the Buffalo River. A nice example of collaboration with multiple partners and organizations on a common effort.

*Above: Great Lakes Team and SLELO Representatives. Photo © TNC-Brittney Rogers*

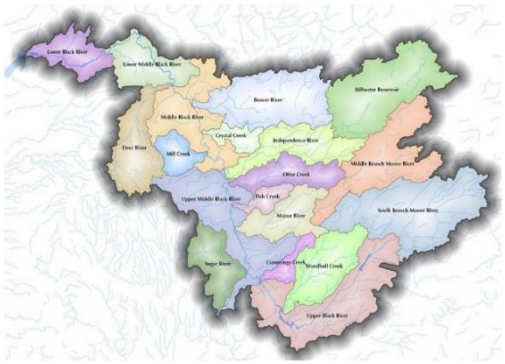
## Eastern Lake Ontario Riparian Restoration Initiative

In 2021, SLELO subcontracted with Cardno® to complete Phase II of a tributary (suppression and restoration) effort on three tributaries along Eastern Lake Ontario to include: Sandy Creek, South Sandy Creek and Deer Creek. This project is designed to alleviate invasive species from the system and to strengthen these riparian areas to their native biology which should increase their resiliency to external stressors such as a changing climate. This season approximately 3.24 acres of knotweed and phragmites were suppressed. Re-seeding with native seed is scheduled for most control sites to include the following species:

River bulrush (*Scirpus fluviatilis*)
Common rush (*Juncus effusus*)
Dark green rush (*Scirpus atrovirens*)
Blue joint grass (*Calamagrostis spp*.)
Virginia wild rye (*Elymus virginicus*)
Fowl manna grass (*Glyceria striata*)
Brown fox sedge (*Carex spp*.)
Spotted Joy-pye weed (*Eutrochium maculatum*)
Sneezeweed (*Helenium*)
Pinkweed (*Persicaria pensylvanica*)
Coneflower (*Rudbeckia laciniata*)

# Special Initiatives II

## Black River Trail Feasibility Study Finalized



*Above: Black River Watershed. Public commons.*

The Black River Trail is a 4.5-mile riparian trail converted from an old railroad bed. It is unique in nature and host to many native flora and fauna. A feasibility study was conducted to determine if invasive species removal and restoration work would be beneficial. Results of this study can be found in the newly completed Black River Feasibility Study Report. It lists over 200 plant species found along the Black River Trail and provides scores for each section of the trail including costs for invasive species management and ecological restoration. We concluded that invasive species management and restoration are feasible if the prioritization system is used.

## Hemlock Woolly Adelgid Survey & Treatment

Early in 2021 SLELO representatives and volunteers conducted a field search of 13 PCA's including several areas in Oswego County which resulted in 3 confirmed observations of hemlock woolly adelgid (HWA). HWA was confirmed at Independence Park, Camp Hollis and a county reforestation parcel. This data was used by Oswego County Soil and Water Conservation District to pursue funding and treatment which resulted in treatments occurring primarily at the Independence Park site. Treatments will continue in 2022.

Above: SWCD representative applying HWA deterrent to hemlock tree.

# Special Initiatives III

## Liberation of Biological Controls *Hypena opulenta*

To augment biodiversity through invasive species suppression, biological controls were released in the region. In partnership with the Thousand Island Land Trust, the New York State Invasive Species Research Institute, SUNY Environmental Science & Forestry, four release cages were established in the Thousand Islands Region of New York. Cages were populated with adult *Hypena opulenta*, a moth native to the Ukraine that defoliates pale swallow-wort plants. Egg and larval development occurred at varying degrees. At the Grenadier Island site nearly 100% and 20% defoliation occurred in the two cages respectively. The Wehle cages had no significant defoliation this season. After ten weeks insects were liberated into the environment.

Photo: ©TNC-Robert Smith

## Liberation of Biological Controls *EAB Parasitoids*

As part of the Cooperative Emerald Ash Borer Project, our partners at the United States Department of Agriculture have released parasitoids at 7 locations throughout the SLELO region. Approximately 9,480 (*Oobius agrili*) parasitoids along with 34,335 (*Tetrastichus planipennis*) have been released in the region. Releases have been made in the following areas:

<u>St. Lawrence County</u>

- St. Regis Mohawk Reservation
- Robert Mosses State Park
- Coles Creek State Park
- Jacque Cartier State Park

<u>Jefferson County</u>

- Southwick Beach State Park

<u>Oneida County</u>

- Delta Lake State Park
- College Hill Road

Photo: *Tetrastichus planipennis*. Invasives.org (5579652)

# Special Initiatives IV

## Urban Forest Sustainability Initiative

In recognition of the importance healthy trees play in our communities, our Terrestrial Restoration and Resiliency Coordinator Robert Smith along with DEC and several partners, continue to help our communities sustain urban forest health by maintaining diverse, climate adaptable and invasive species resistant trees.

To date the communities of Watertown, Massena, Canton and Pulaski have participated. Our Urban Forest Sustainability Guide, enables communities to develop community tree programs that include climate adaptability, carbon storage, tree diversity and invasive species components.

Town of Canton, NY volunteer tree planters.

## Eastern Lake Ontario Dunes Management Initiative

The Eastern Lake Ontario Dunes is a 17-mile (5,800 acres) barrier beach ecosystem designated as a Natural Heritage Area, Audubon Important Bird Area, Significant Coastal Fish and Wildlife Habitat, National Natural Landmark, and proposed National Marine Sanctuary. Threats to the barrier beach include recreational overuse, decreased native plant composition, shoreline development, habitat alteration and invasive species.

In 2021, SLELO Partners in collaboration with the Eastern Lake Ontario Dunes Foundation, embarked on the preparation of an invasive species management and ecological restoration plan for the dunes. This plan benefits natural plant communities by prioritizing invasive species management and ecological restoration areas.

Photo: Dune -Chelsae Cooper, 2021

# Prevention

## Goal Number 1

### Healthy Freshwater

### Watercraft Inspection Steward Program (WISP)

In 2021, SLELO PRISM partnered with the Thousand Islands Land Trust (TILT) to co-administer our Watercraft Inspection Steward Program and to expand our program to 27 high-use boat launches, from as far north as Massena and south to Rome by hiring 10 stewards.

WISP Steward on duty.
©TNC-B. Rogers

2021 Metrics Include:

- 9,648 total inspections
- 436 AIS interceptions
- 20,918 visitor contacts
- 94% compliance rate
- 65% of total reported visiting a different waterbody within the previous two weeks.
- Detailed Launch Profiles have been developed for all sites staffed by SLELO stewards.
- Assisted with updates to the NYS Watercraft Inspection and Survey Manual used by all WISP programs across New York State set to be released in 2022.

**Continuous improvements to this program help to effectively prevent the spread of aquatic invasive species to and from waterbodies across North America.**

# Advisory Boards

## Participation

### New York ISAC

The New York State Invasive Species Advisory Committee (ISAC) was formed to provide information, advice and guidance on invasive species issues to the New York State Invasive Species Council. This includes discussions and recommendations regarding the prevention of invasive species introductions into New York State along with spread prevention across PRISM regions. In 2021, the SLELO PRISM Manager became The Nature Conservancy's representative to ISAC and continued his role to liaison as a PRISM Representative.

### TNC North America ISAC

This year marks the second year of our participation on The Nature Conservancy's North American Invasive Species Advisory Committee. The SLELO PRISM Manager engages with this ISAC for shared representation and to address shared concerns for invasive species issues.

### Erie Canal AIS Advisory Committee

New York State has initiated a "Reimagine the Erie Canal initiative that refocusses the future of the canal as a resource. Through this initiative the New York Canal Corporation and the New York Power Authoruty have taken great steps to address the canals future resiliency to aquatic invasive species. To this end dozens of scientists, lake association representatives, NGOs, research organizations, and academics are participating on a Aquatic Invasive Species Advisory Committee. The SLELO PRISM Manager is active on this committee.

# Early Detection

## Goal Number 2

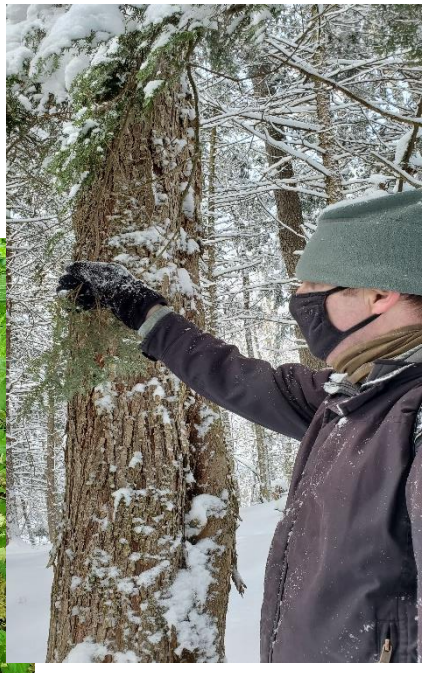
### Priority Conservation Areas

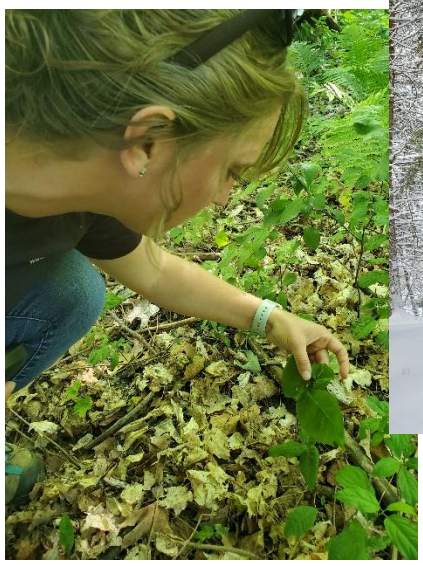
There are currently 25 Priority Conservation Areas or PCA's within the SLELO region. These are areas that have ecological significance, are biologically diverse or that are host to rare native species. To maximize efficiency, each PCA is surveyed on a two-year rotation by our terrestrial and aquatic coordinators. The detailed final report can be found on our website at: SLELO PRISM Field Reports.

In 2021 the following PCA's were searched for Tier 1 and Tier 2 species along with notable native species. **167** terrestrial and aquatic Highly Probable Areas (HPA's) were searched. [1]

Mud Lake (A)
Upper and Lower Lakes WMA (B)
Mud Bay (B)
Lakeview Pond (Lakeview WMA) (A)
Guffin Bay (A)
Fish Creek WMA (B)
Little John WMA (T)
Delta Lake (A)
Tug Hill Invasive Species Prevention Zone (ISPZ) (T)
French Creek (B)
Whetstone Reservoir (A)

*A = Aquatic, T = Terrestrial, B = Both*





## No Tier-1 Species Were Observed in 2021

[1] See Appendix (A) for SLELO Tiered Species List

# Notable Native Species Finds

This year, while conducting early detection searches, our team observed several un-common or rare native species. These observations are important in that they confirm that these species have survived in their natural state despite changes in the environment. Observing these species supports biological diversity and validates our work.

## Pale Jewelweed (*Impatiens pallida*)

Although common in New York State, this plant is geographically rare in the SLELO Region. It is a facultative plant with a history of use among Native American medicine. It is a beneficial wildlife plant.

*Photos by: © Brittney Rogers, The Nature Conservancy*

## Mosquito Fern (*Azolla cristata*)

This aquatic plant is a small, free-floating plant found in inland waterways. It is considered as an exploitable vulnerable species in New York. It provides habitat for micro and macro invertebrates and is a food source for amphibians, reptiles and waterfowl.

## Rock Elm (*Ulmus thomasii*)

Rock elm is a threatened species in New York State and beneficial to nature and wildlife.

Other notables from previous years include:

- Twinleaf (*Jeffersonia diphylla*)
- Green dragon (*Arisaema dracontium*)
- Pirate perch (*Aphredoderus sayanus)*

# Promoting Biological Diversity Through Rapid Response, Control & Management

Goal Number 3

Often, invasive plants create monocultures on the landscape thereby reducing native plant diversity. By suppressing invasive plants and allowing for native plant succession, either naturally or intentionally through restoration, we can increase biodiversity on these sites.

## Summary of 2021 Control Work

**Hemlock Woolly Adelgid**
100 trees treated (SWCD)
1 PCA

**Giant Hogweed:**
40 Sites with no germination
1 Site root cut
6 Sites herbicide treatment
1 Site with no permission to treat

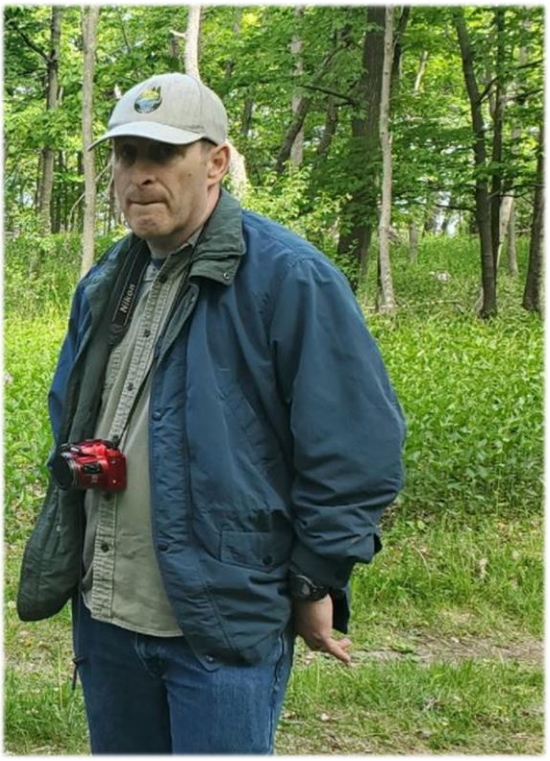
**Swallow-wort:**
64 Sites being managed
13 PCAs
74 Acres under management

**Japanese Knotweed:**
5 Sites being managed
4 PCAs
0.43 Acres under management

**Phragmites:**
5 Sites being managed
3 PCAs
0.72 Acres under management

**Oriental Bittersweet:**
3 Sites being managed
2 PCAs
6.1 Acres under management

**Yellow Iris:**
1 Site being managed
1 PCA
0.001 Acres under management



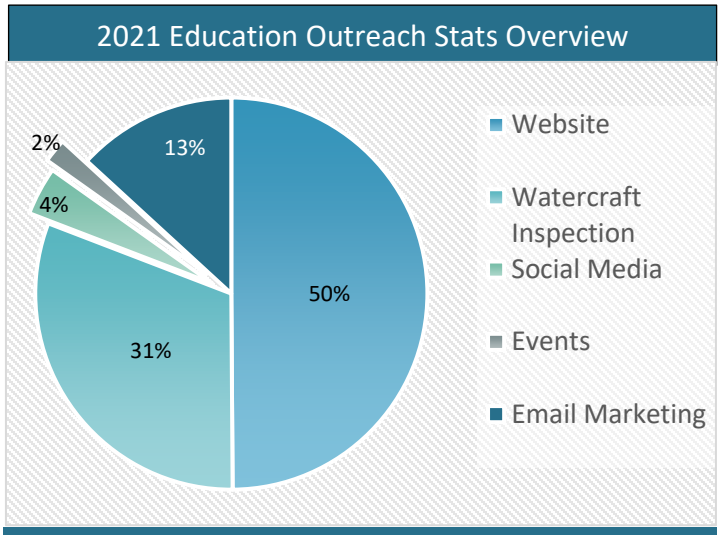
Above: Terrestrial Coordinator Robert Smith inspecting field of swallow-wort: ©TNC-Megan Pistolese

# Education, Outreach, Citizen Science – Goal Number 4

Increasing public awareness and influencing behavior on invasive species issues is a goal of SLELO's educational efforts. Due to this year's global biological pandemic, our outreach efforts were again shifted to virtual engagements through webinars and social media campaigns.

The SLELO Education/Outreach Committee is a group of committed partners who volunteer their time and contribute their expertise to provide support for invasive species outreach initiatives. Participating on this committee are:

- Megan Pistolese, Committee Lead
- Sue Gwise-Jefferson County CCE
- Irene Mazzocchi- DEC Region 6
- Emily Sheridan- DEC Region 6
- Carla Fowler- Tug Hill Commission
- Peter Zimmer- OPRHP
- Maria Cipullo- OPRHP
- Maria Moskalee- DEC Region 7
- Lauren Eggleston - Save the River
- Patricia Shulenburg-Cardno
- Heidi Sourwine- IRLC
- Haley Sylvan, Thompson Park Zoo
- Gabby Padewska- OPRHP




**A Closer Look at the Stats:**

**58,708** people directly engaged in invasive species awareness via social media, website views, events, and watercraft inspections.

**253** Facebook posts were created.

**38** events were held in 2021

Below: Eight billboards were strategically placed throughout the region receiving nearly 4.5 million public impressions.

# Marketing and Communications

This year a major marketing and communications initiative called the **Pledge-To-Protect** or P2P was successfully launched. The P2P complements heathy waters, forests and lands messaging that is broadly used throughout the state, and is designed to deliver a positive, unified message that can be utilized by the PRISM network and our partners. Going beyond information sharing, this initiative incorporates multiple objectives that research has shown to be effective means to encourage behavioral change. People need more than information; they need to understand the issues, be motivated to act, be given the tools to succeed and be shown how their actions make a difference, and that is what the Pledge to Protect program is designed to do.

The Pledge to Protect design engages target audiences (boaters, hikers, gardeners, lake associations, home/landowners, etc.) to take a pledge to protect their favorite hiking trails/lands, forests, waters, garden and community-all of which are a 'pledge category'. Upon taking the pledge, they get the tools and resources necessary to help them fulfil their pledge and receive exclusive monthly emails that demonstrate simple actions to take to prevent the spread of invasive species. Each pledge category has a collectable badge that pledgers can earn and social media graphics that pledgers can share to celebrate their commitment.

Each pledge category has a themed website landing page called a virtual toolbox and a corresponding downloadable PDF. Each toolbox demonstrates simple actions that stop the introduction & spread of invasives, along with, invasive species identification and best management practices, a variety of resources unique to the pledge category, plus opportunities to support regional and state-wide control and detection efforts. The virtual toolboxes also serve as a one stop shop for invasives species outreach resources.

The Pledge to Protect program invites collaboration. PRISMs and those involved in invasive species education and outreach can adopt and customize the program to suit their needs. The entire creative package including the logos, badges, and virtual & printable toolboxes are sharable. Protector Badges include:

***Lands*** ***Forests*** ***Waters*** ***Gardens*** ***Communities***

# Cooperation
## Goal Number 5

Working together towards a common cause is perhaps one of the SLELO Partnership's strongest attributes. Our partners[2] are interested in the subject matter, there is a tremendous amount of expertise within the partnership, we are fully engaged and work extremely well together. Cooperative highlights from 2021 include:

- We participated in the New York Invasive Species Summit in collaboration with state agency sponsors and over 260 conservationists.
- We collaborated with the Eastern Lake Ontario Dunes Foundation and lakeshore partners to develop a Dunes Management Plan.
- We assisted The Nature Conservancy's Great Lakes Team, Michigan State University, Western NY, SLELO, and Finger Lakes PRISMs, DEC, and the FLLOWPA program to conduct a nascent aquatic plant survey in Great Lakes Ports.
- We collaborated on biological control releases of *Hypena opulenta* with multiple partners, the Eastern Lake Ontario Swallowwort Collaborative and local volunteers.
- Our Education and Outreach Committee collaborated to promote virtual education and awareness activities, the development of our Pledge-To-Protect marketing initiative and our Eastern Lake Ontario Invasive Species Symposium.
- Our Volunteer Surveillance Network (**VSN**) continued with searches for tench, fanwort, hemlock woolly adelgid, spotted lanternfly and porcelain berry.
- We responded to multiple invasive species inquiries from the public.

[2] See Appendix B for SLELO's List of Partners

# Information Management

## Goal Number 6

SLELO staff, contractors, and volunteers collect over 10,000 data points annually through the WISP program, PCA surveys, and various citizen science projects. This comprehensive dataset is critical to support our science-driven approach to invasive species management.

## Conservation & GIS Analyst

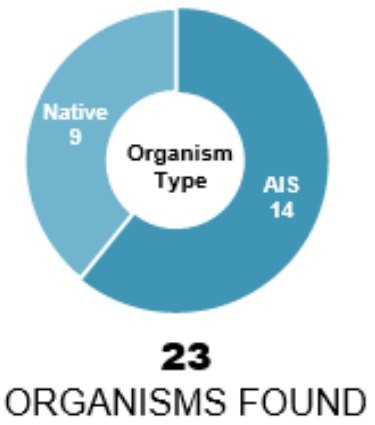
### *Boat Launch Data Analysis & Profile Development*

SLELO's Conservation and GIS Analyst Zack Simek, developed a script using the statistical program R to generate summary reports of SLELO's WISP data. The reproducible script distills and summarizes the robust WISP dataset into a concise list of key insights that can be used by program staff to evaluate steward performance, analyze boat launch use trends, and evaluate program impact. Summary data generated by the script was leveraged to create launch profiles for each steward location provide information on 2021 and year-to-year trends.

### *Black River Trail Compartment Specific Data Summaries*

SLELO's Conservation and GIS Analyst assisted with the development of maps and data for the Black River Trail Feasibility Study. The trail was separated into 29 compartments. Each compartment was 1/8 mile in length with varying degrees of width.

Each compartment was further evaluated for native and non-native plant species distribution and abundance. Combined, these efforts allowed for the ranking and prioritization of each compartment.




*Left: Example of data charts in boat launch profiles*

## SLELO PRISM Organization METRICS 2021

PRISM Staff/Organization Contributors in 2021

| SLELO Staff/Organizational Members Reporting Species in 2021 |
|---|
| Frank Williams |
| Megan Pistolese |
| Brittney Rogers |
| Paul Siskind |

| Records by Data Entry Method* | 2021* | Total* 2010-Present |
|---|---|---|
| Bulk Upload | 0 | 366 |
| Mobile App | 107 | 327 |
| On-line | 6 | 305 |
| Natureserve Survey 123 | 0 | 0 |
| Custom Jurisdiction App | 0 | 83 |
| NYNHP Developed Apps | 3 | 691 |
| *iMMA** | *0* | *469* |
| *SAS Pro* | *0* | *219* |
| *Forest Pest* | *3* | *3* |

| Presence Records by Species Type* | 2021* | Total* 2010-Present |
|---|---|---|
| Animal Insect -Terrestrial | 13 | 144 |
| Animal Other Invertebrate - Aquatic | 0 | 45 |
| Animal Other Invertebrate - Terrestrial | 0 | 0 |
| Animal Vertebrate -Aquatic | 0 | 0 |
| Animal Vertebrate -Terrestrial | 0 | 0 |
| Plant -Aquatic | 42 | 411 |
| Plant -Terrestrial | 61 | 1,006 |
| **TOTAL** | **116** | **1,606** |

| Top 10 Treated Species by the CRP Organization in 2021* | Total 2021* |
|---|---|
| Water Chestnut | 3 |

***Data entry date as of 12/04/2021.** These totals are both unconfirmed and confirmed data. Numbers for 2021 ***do not*** include approximate data.

# Ecological Restoration
## (for Biological Diversity) Goal Number 7

Restoring and protecting the biological diversity of unique habitats from the negative impacts posed by invasive species is a core purpose for our work. Areas that have been treated for invasive species may be considered as disturbed areas and can be restored more effectively with intentional planting of native species augmenting the resiliency of these sites.[3]

### Treatment Sites – General

As a general practice and where appropriate, the SLELO team plants native grass seed to expedite the growth of ground cover to reduce the susceptibility of the site to the reinfestation of a non-native species. Annual ryegrass (*Lolium spp.* ), perennial ryegrass (*Lolium perenne* ) and little bluestem (*Schizachyrium scoparium*) is used as a standard, recovery seed mix. In some instances, native tree seedlings have been planted along with live staking using resident plant material.

### Riparian Corridor Restoration

SLELO PRISM has now completed two significant ecological restoration projects along high value riparian corridors. Both projects include invasive species suppression followed by re-seeding and restoration efforts. In 2015 SLELO partners suppressed 8.68 acres of Japanese knotweed along the **Salmon River Corridor** and successfully restored 1.19 acres to native plants.

In 2021 our partners completed the suppression of phragmites and Japanese knotweed along **Sandy Creek, South Sandy Creek and Deer Creek** and scheduled an estimated 3.24 acres to be re-seeded to native plants in 2022.

[3] Salon P.R. and C. F. Miller. 2012. A Guide to: Conservation Plantings on Critical Areas for the Northeast
USDA, NRCS, Big Flats Plant Materials Center, Corning, NY.

# Innovation

## Goal Number 8

*Above: Jacob Wojcik prepares a DNA sample for analysis. ©TNC-Brittney Rogers*

## Environmental DNA

Partners of the SLELO PRISM along with The Nature Conservancy and the Department of Biology at SUNY Oswego continued to implement early detection efforts using environmental DNA or eDNA which is a highly specialized process for determining the presence of genetic material released by both invasive and native aquatic animals. Using eDNA is an innovative early detection tool at the molecular level.

In 2021, fourteen Eastern Lake Ontario tributaries from Oswego north to Massena along the St. Lawrence River were targeted for sample collection. Enhanced funding for this effort was made available by the Arconic Foundation and will allow for the development of a mobile eDNA sample processing laboratory.

| **Native species sampled for:** | **Invasive species sampled for:** |
|---|---|
| • Cisco (*Coregonus artedi*)<br>• Lake Whitefish (*Coregonus clupeaformis*)<br>• Atlantic Salmon (*Salmo salar*)<br>• American Eel (*Anguilla rostrata*) | • Black carp (*Mylopharyngodon piceus*)<br>• Silver carp (*Hypophthalmichthys molitrix*)<br>• Bighead carp (*Hypophthalmichthys nobilis*)<br>• Grass carp (*Ctenopharyngodon idella*)<br>• Northern Snakehead *(Channa argus)*<br>• Tench *(Tinca tinca)*<br>• Tubenose goby *(Proterorhinus semilunaris)*<br>• Asian Swamp Eel (*Monopterus albus*)<br>• Rusty Crayfish *(Orconectes rusticus)* |

## Submersible ROV

In 2021 a submersible remote operated vehicle was tested for practical use as underwater visual observation medium. These devices will be further tested in 2022.

*Left: Jacob Wojcik and Robert Smith testing the ROV. ©TNC-Brittney Rogers*

*Full project reports are available on our website at: [www.sleloinvasives.org](http://www.sleloinvasives.org)*

# Research Priorities

The New York Invasive Species Research Institute (NYISRI) periodically requests research related items that are evaluated and prioritized. Those deemed most feasible are considered for development. Recent research requests submitted by the SLELO PRISM include:

## Biological Control Rearing Facility

To develop and sustain large-scale biological control rearing facilities as biological controls are approved.

## Carbon Loss Model:

To develop a carbon loss model which estimates the amount of carbon released into the atmosphere as the result of deforestation by invasive forest pests and pathogens. This can be used to determine the potential impacts on climate change as a result of deforestation.

## Invasive Macrophyte Nutrient Analysis

To gain a better understanding of the impact that aquatic invasive plants (AIP) have on internal nutrient loading of lakes and embayment's and the potential of AIP's to facilitate harmful algae blooms and carbon storage. This remains a research priority.

## Pheromone Based Bait

Submitted was a research item for the development of a species-specific pheromone-based bait and netting protocol for confirmation, capture and removal of invasive fish.

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## Appendix A: SLELO PRISM's Current Species Tiers

**Tier 1 - Prevention/Early Detection Species -** Not in PRISM, but within 100-mile buffer or introduction pathway exists. Highest level of early detection survey efforts.

Asian Longhorned Beetle - (*Anoplophora glabripennis*)
Hydrilla - (*Hydrilla verticillata*)
Kudzu - (*Pueraria montana* var. *lobata*)
Mile-A-Minute Vine - (*Persicaria perfoliata*)
Silver, Big Head and Grass Carp
Slender False Brome - (*Brachypodium sylvaticum*)
Spotted Lanternfly - (*Lycorma delicatula*)
Water Lettuce - (*Pistia stratiotes*)
Water Hyacinth - (*Eichhornia crassipes*)
Water Soldier - (*Stratiotes aloides*)

**Tier 2 – Eradication Species -** Present in Prism, but at low abundance with suitable treatment methods available to make eradication feasible within Priority Conservation Areas (PCA's).

Asian Clam – (*Corbicula fluminea*)
Fanwort - (*Cabomba caroliniana*)
Giant Hogweed - (*Heracleum mantegazzianum*)
Hemimysis - (*Hemimysis anomala*)
Hemlock Woolly Adelgid (*Adelges tsugae*)
Porcelain Berry - (*Ampelopsis glandulosa*)
Spiny Water Flea - (*Bythotrephes longimanus*)
Tench - (*Tinca tinca*)

**Tier 3 -Suppression Species -** Too widespread for eradication from PRISM, but some areas remain unaffected. Targeted management to suppress the population within Priority Conservation Areas (PCA's).

Black & Pale Swallow-wort - (*Vincetoxicum* spp.)
Japanese Knotweed - (Reynoutria japonica)
Japanese Stiltgrass - (Microstegium vimineum)
Oriental Bittersweet – (*Celastrus orbiculatus*)
Phragmites/Common Reed – (*Phragmites australis*)
Rusty Crayfish - (*Orconectes rusticus*)
Starry Stonewort - (*Nitellopsis obtusa*)
Tree-of-heaven - (*Ailanthus altissima*)

Water Chestnut - (*Trapa natans*)
Wild Chervil - (*Anthriscus sylvestris*)
Yellow Iris - (*Iris pseudacorus*)

Tier 4 - Local Control Species - Present and widespread throughout PRISM with no chance of eradication. Localized (landowner) management applied to protect high priority resources like rare plant or recreation assets.

Common Buckthorn (*Rhamnus cathartica*)
Curly Leaf Pondweed - (*Potamogeton crispus*)
Emerald Ash Borer - (*Agrilus planipennis*)
Eurasian Water Milfoil - (*Myriophyllum spicatum*)
European Frogbit - (*Hydrocharis morsus-ranae*)
Feral Swine - (*Sus scrofa*)
Glossy Buckthorn (Frangula alnus)
Honeysuckle spp. (*Lonicera spp.)*
Leafy Spurge - (*Euphorbia virgata*)
Purple Loosestrife - (*Lythrum salicaria*)
Round Goby - (*Neogobius melanostomus*)
Spotted Knapweed – (*Centaurea stoebe* ssp. *micranthos*)
Wild Parsnip - (*Pastinaca sativa*)
Zebra/Quagga Mussel - (Dreissena spp.)

Tier 5 – Species - Species that may or may not be in PRISM but are difficult to respond to or that require more knowledge of.

Asian Jumping Worm (*Amynthas spp.)*

**Appendix B:** List of Current PRISM Partners

**Principle Partners:**

- New York State Department of Environmental Conservation
- The Nature Conservancy
- Cornell Cooperative Extension
- New York State Department of Transportation
- New York State Department of Parks Recreation and Historic Preservation
- Sea Grant of New York
- Thousand Islands Land Trust

**At-Large Partners:**

- St. Lawrence County Representative, vacant
- Jefferson County Representative, vacant
- Lewis County Representative, Soil & Water Conservation District
- Oneida County Representative, vacant
- Oswego County Representative, Soil & Water Conservation District

**Cooperating Affiliates**:

- Ducks Unlimited
- Tug Hill Tomorrow Land Trust
- Tug Hill Commission
- Fort Drum Military Installation
- Save The River Organization
- Audubon Central New York
- New York Power Authority
- CNY Regional Planning and Development Board
- United States Coast Guard Auxiliary
- Indian River Lakes Conservancy
- St. Regis Mohawk Tribe at Akwesasne
- Algonquin to Adirondacks Collaborative | A2A
- New York Natural Heritage Program