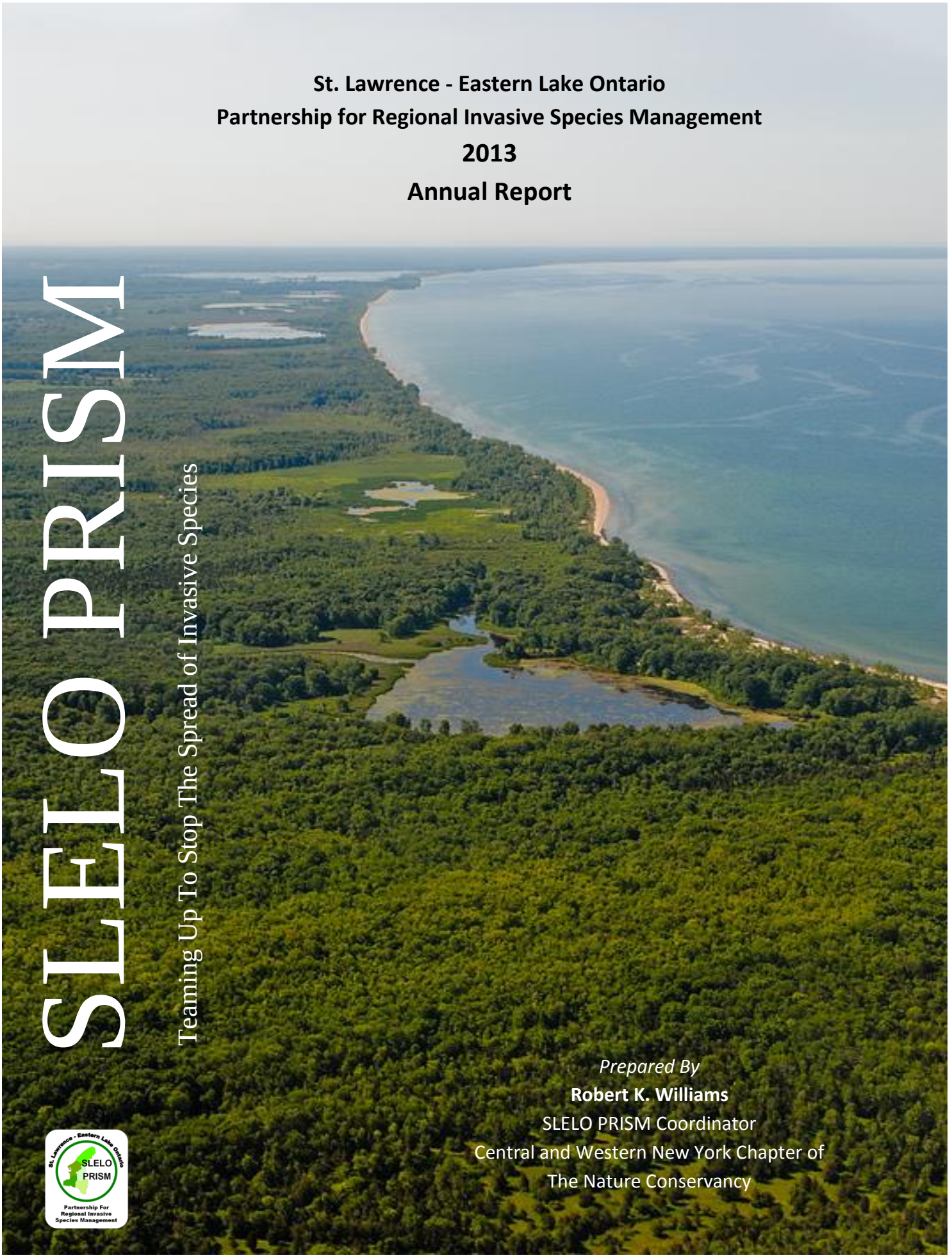
St. Lawrence - Eastern Lake Ontario
Partnership for Regional Invasive Species Management
2013
Annual Report



SLELO PRISM

Teaming Up To Stop The Spread of Invasive Species

Prepared By

Robert K. Williams

SLELO PRISM Coordinator

Central and Western New York Chapter of

The Nature Conservancy

About SLELO – PRISM

The St. Lawrence Eastern Lake Ontario Partnership for Regional Invasive Species Management is one of eight partnerships in New York State, encompassing St. Lawrence, Jefferson, Oneida, Lewis and Oswego counties outside of the Adirondack Park.

Our mission is to protect native habitats, biodiversity, natural areas, parks and refuges, freshwater resources and open space by using a collaborative and integrated approach to invasive species management. The emphasis of these activities are on prevention, early detection, rapid response and education.

Copies of this report can be obtained
from the SLELO-PRISM website at:

www.sleloinvasives.org

Under the menu item:
Resources & Links / Downloads / 2013 Annual Report

Acknowledgements

This report was prepared by

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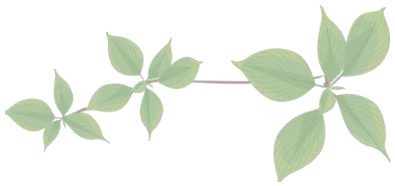
The numerous partner organizations and interested individuals who continue to contribute their expertise, time and resources to the development of this PRISM and to our accomplishments and successes.

2013 Strategic Measures Summary
(Accomplishments)

SLELO Partners strive to protect the ecological integrity of the Eastern Lake Ontario Basin and Northern New York's natural & cultural resources from the threat of invasive species. In 2013 partners of the SLELO PRISM collaborated on making the following accomplishments, a.k.a. strategic measures:



- *Together we initiated efforts to restore portions of the Salmon River and Salmon River Estuary by suppressing 5.49 acres or 86% of Japanese Knotweed populations along the river corridor.*
- *Our partners have significantly reduced the potential human health threats posed by Giant Hogweed by treating 61 Giant Hogweed sites representing a 33% decrease in active sites from 2012.*
- *We successfully completed prevention measures through early detection surveillance of our PRISM's "watch-list" species on 10-priority conservation areas.*
- *We continued work towards restoring over 50 acres of globally rare Alvar communities along the eastern Lake Ontario coastline (both coastal and inland).*
- *Our partners have worked to prevent the spread of aquatic invasive species through various activities to include; Water Chestnut removal, supporting the Boat Launch Steward Program, the Tri-State Hydrilla Project and limited Environmental DNA sampling.*
- *Using multiple techniques, our partners reduced the spread of six highly invasive species from a total of 278 acres on 13 priority conservation sites and 32 sub-sites. Species included: Swallow-wort, Phragmites, Water Chestnuts, Giant Hogweed, Purple Loosestrife and Japanese Knotweed.*
- *Through a collaborative effort we reached a record 1,488 individuals by exhibiting at eight local events, delivering 14 professional presentations to local and international audiences, providing citizen science training events and by distributing materials to 272 individuals.*

Nice Work Partners !

Why we're involved

Invasive species are a factor in the decline of 49 percent of all threatened or endangered species (Pimentel 2004).

❖

Invasive species are the second largest threat to biodiversity after habitat loss.

❖

Invasive species pose a "ground level" threat to whole systems, human health, municipal infrastructures, cultures and economies (Williams 2013).

Table of Contents

Collaboration & Partnerships

In conservation, we realize the benefits of working together to achieve a goal. Establishing a set of goals, objectives and strategies requires expertise. Achieving the same requires collaboration. The SLELO partners have established a strong sense of collaboration and this collaboration is perhaps one of the leading components of our PRISM's success since our formal inception.

As a Partnership, we bring to the table diverse expertise in the fields of conservation, biology, ecology and combinations of each discipline. Our varying fields of expertise combined with a mutual appreciation for our purpose and mission coupled with our sense of collaboration complement our success. Our efforts cannot be realized, however, without the support we receive from the Central and Western New York Chapter of The Nature Conservancy as our "host organization", the support we receive from iMapinvasives, the New York Invasive Species Clearinghouse at Cornell University and from the New York State Office of Invasive Species Coordination.

Strategic Approach

During our strategic planning phase, our partners recognized the importance of linking our specific strategies to our objectives, and subsequently linking our objectives to our goals. More importantly our partners recognized that by following this approach we increase the likelihood of success. **This report reflects our calendar year 2013 accomplishments in direct relation to the seven goals identified by our partners**. Additionally, this report addresses the frequent question "what are our measurables"? I hope you will be as pleased as I am with the partners of the SLELO PRISM.

"I can't speak highly enough about our partners. They are interested in the subject matter, there is a tremendous amount of expertise within the partnership, they are engaged, motivated and work extremely well together. I am impressed by what our partners have accomplished".

Rob Williams
PRISM Coordinator

Goal 1 – PREVENTION *Our Accomplishments*

Prevent the introduction of invasive species into the SLELO PRISM including target conservation and priority areas.

EARLY DETECTION SURVEILLANCE IN PRIORITY CONSERVATION AREAS:

In order to quickly, consistently and effectively monitor large areas for the emergence of invasive species, SLELO-PRISM has developed protocols for identifying Highly Probable Areas (HPAs) - locations where invasive species are most likely to arrive and/or establish themselves. As a prevention measure, this protocol was effectively used to conduct early detection surveillance on 10 priority conservation areas including; Lakeview Wetland Complex, Salmon River Estuary, Delta Lake, Fish Creek Wildlife Management Area, Little John Wildlife Management Area, Upper/Lower Lakes, Eldrett Bird Conservation Area, Pleasant Lake, French Creek Wildlife Management Area and Mud Lake. Since this component overlaps with another goal (Early Detection/Rapid Response), they will be discussed in more detail later in this report.

TUG HILL INVASIVE SPECIES PREVENTION ZONE (I.S.P.Z.)

In 2012, representatives from the Tug Hill Commission, the Tug Hill Tomorrow Land Trust and the SLELO partnership, established an Invasive Species Prevention Zone (I.S.P.Z.) around the perimeter of the 150,000 acre core forest with the intent to prevent new invasive species from entering the area. In 2013, the I.S.P.Z. was recognized by designing 18 interpretive panels (Figure 1) and 100 smaller signs which will be installed in 2014.

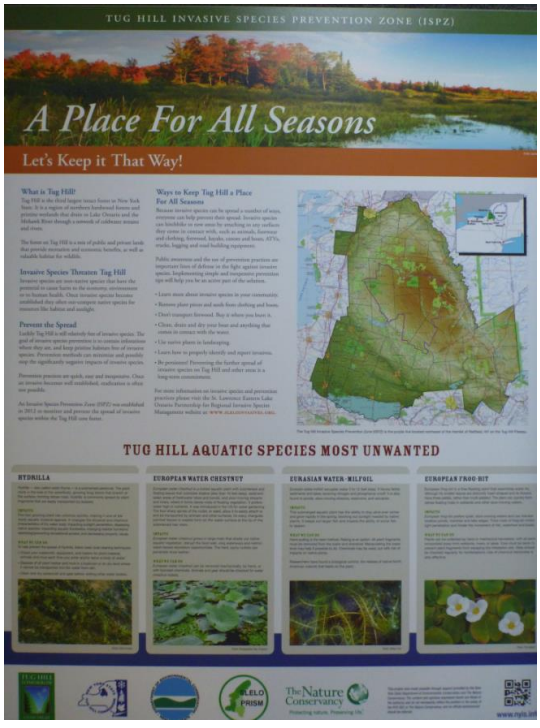


Figure 1: Tug Hill I.S.P.Z. Sign - Aquatic

PATHWAY MITIGATION

In our Strategic Plan, SLELO partners identified 11 pathways in which invasive species enter our region. As a prevention effort, PRISM partners highlighted or "*called out*" one pathway in 2013 to include;

Pathway - Roads and Corridors

Roads and utility corridors that bisect the landscape move invasive species from one location to another. New road construction as well as re-construction can contribute significantly to the spread of invasive species. Maintenance of roadways can also play a critical role in spreading invasives along roadsides and right-of-ways. (Miller, 2011). Mowing and ditching equipment and processes can spread seeds by deflection as well as by the transporting of equipment from one location to another without thorough cleaning. Both the construction and maintenance of utility corridors can be a vector for transporting invasive species. Overhead and subsurface corridors require frequent maintenance, creating disturbed areas and allowing invasives to become established. The movement of equipment supplies the transport mechanism.

In 2013 New York State Department of Transportation, Region II, organized a meeting of County Highway Superintendents including the Commissioner of Public Works for Oneida County. On behalf of the SLELO PRISM, Rebecca Miller, Environmental Specialist with NYS DOT, presented on the topic of invasive species and the proposed New York State invasive species regulations. Additionally, booklets titled "Clean Equipment Protocol for Industry"[1] were distributed.

INCLUSION OF A PREVENTION COMPONENT IN EDUCATION & OUTREACH MATERIALS

In 2013 a seasonal Education/Outreach Coordinator was hired to work in cooperation with SLELO's Education & Outreach Committee to develop materials that would help educate the public on invasive species issues. Our partners recognized the need to include spread prevention measures in most, if not all, of our educational materials.

[1] Halloran, Joe et.al., 2013. Clean Equipment Protocol for Industry. Ontario Invasive Plant Council. Peterbourough, ON. K9J 8L5.

Goal 2 – EARLY DETECTION & RAPID RESPONSE

Rapidly detect new and recent invaders and eliminate all individuals within a specific area. ED/RR is the next highest priority after prevention.

Our Accomplishments

Timing is critical when responding to the initial detection of an emerging invasive species in an area. Early Detection and Rapid Response (ED/RR) – spotting and responding to the invasion of an unwanted plant, animal or other organism before it can gain a foothold – is often the key first step in effectively managing and possibly eradicating a newly-arriving invasive species. Prior to the 2013 field season, SLELO partners developed an ED/RR protocol. This protocol outlined two types of early detection along with three response levels. Copies of this protocol can be obtained by contacting the SLELO-PRISM Coordinator or from the SLELO PRISM website.

In 2013, early detection surveillance was conducted on the following Priority Conservation Areas (Figure 2) with a total of four rapid responses being completed.

Lakeview Wildlife Management Area

Lakeview WMA is part of the largest natural fresh water barrier beach system in New York State. Located in southern Jefferson County, Lakeview WMA is bordered by Southwick Beach State Park to the north and Lake Ontario to the west. This 3,461-acre area is located on state Route 3, 20 miles southwest of Watertown, or 15 miles northwest of Pulaski. This area's diverse habitat includes: open fields, shrub lands, woodlands, wetlands and a natural barrier beach[2].

In cooperation with NYS DEC and the Great Lakes Restoration Initiative, early detection surveillance was conducted on the Lakeview Wetland Complex along the eastern shore of Lake Ontario. This year's surveillance at Lakeview resulted in one rapid response (see highlighted box below).

Rapid Response

A new population of Water Chestnut (*Trapa natans*) plants was detected on a portion of the Lakeview Wetlands. SLELO coordinated a rapid response event in cooperation with the Department of Environmental Conservation that resulted in the hand harvest of 35 bags of Water Chestnut plants.

[2] Taken from http://www.dec.ny.gov/outdoor/9328.html

Salmon River Estuary

The Salmon River Freshwater Estuary is defined as that portion of the lower river that is directly influenced by the lake levels of nearby Lake Ontario. The estuary extends east from the Salmon River's outlet into Lake Ontario to approximately 1200 feet east of the State Route 3 Bridge at Port Ontario. This braided portion of the river is bordered by emergent marsh, riverine wetlands and shrub swamps, and is recognized as important fish spawning habitat as well as a staging area for steelhead and salmon preparing for their annual spawning runs. Additionally, the variety of wetland habitats within the estuary are important habitat for birds and other wildlife, including several threatened bird species.

In June of 2013, SLELO-PRISM field crew members Logan West and Mike McHale conducted early detection surveillance to target aquatic invasive species Hydrilla (*Hydrilla verticillata*), which compliments early detection surveillance for other species completed in previous years. Upon canoeing along the perimeter of the estuary, taking samples and assessing conditions at each HPA, it was determined that Hydrilla was not present in the areas searched. In addition, SLELO partners participated in a Water Chestnut removal effort from the estuary.

Delta Lake

Delta Lake is located in the center of Oneida County, New York, just north of the Town of Rome. The open water surface area is approximately 2,300 acres and includes 19 miles of shoreline with a maximum depth of 60 feet. This man-made reservoir was created following the construction of the Delta Dam on the Mohawk River, which began in 1908, and flooded the area where the original town of Delta once stood.

In preparation for establishing and conducting Early Detection surveillance in 2013, a map of Delta Lake with six original High Probability Areas (HPA's) was created. No aquatic invasive species were detected with the exception of a possible fragment of Hydrilla (*Hydrilla verticillata*) (see highlighted box below).

Rapid Response & Result

To determine the presence of Hydrilla, magnified photographs were taken and submitted to Scott Kishbaugh, NYS DEC and subsequently to Robert Johnson, Cornell University. Although the number of whorls present is deceiving, both scientists determined that this species was likely to be Common Waterweed (*Elodea nutallii*) and not Hydrilla.

Little John Wildlife Management Area

The Little John Wildlife Management Area (WMA) encompasses roughly 8,000 acres of pristine forest and wetland habitats. It is found on the northwest slope of the Tug Hill Plateau between Syracuse and Watertown just east of Highway 81 in northern Oswego and southern Jefferson Counties. This site was surveyed in 2013 using our HPA protocol with no prevention list species observed (Appendix B).

Upper and Lower Lakes Wildlife Management Area

Upper and Lower Lakes Wildlife Management Area is an 8,757- acre area located between the Grasse River and the Oswegatchie River three miles west of the village of Canton in St. Lawrence County, New York. This site was surveyed in 2013 using our HPA protocol with no prevention list species observed (Appendix B).

Eldrett Downybrook Bird Conservation Area

The Eldrett Downybrook Bird Conservation Area is a 184-acre wildlife sanctuary located just east of Lake Ontario in Jefferson County in the small town of Brownville, NY. In preparation for establishing and conducting Early Detection and Rapid Response surveillance at this site, 11 High Probability Areas (HPA's) were identified. This site was surveyed in 2013 with no prevention list species observed; however, it was reported that an earlier observation of a single Swallow-wort (*Cynanchum rossicum*) plant was found and removed.

Rapid Response
It was reported that a single Swallow-wort plant was found at this site and subsequently removed.

French Creek Wildlife Management Area

The French Creek Wildlife Management Area (WMA) is comprised of 2,300 acres and is located in Jefferson County southwest of Clayton, New York. Meadowlands along with oak and hickory hardwood forests are found in the upland areas along with cattail marsh bordering open water areas supplying habitat for waterfowl and fur bearing species. This site was surveyed in 2013 with no prevention list species observed (Appendix B).

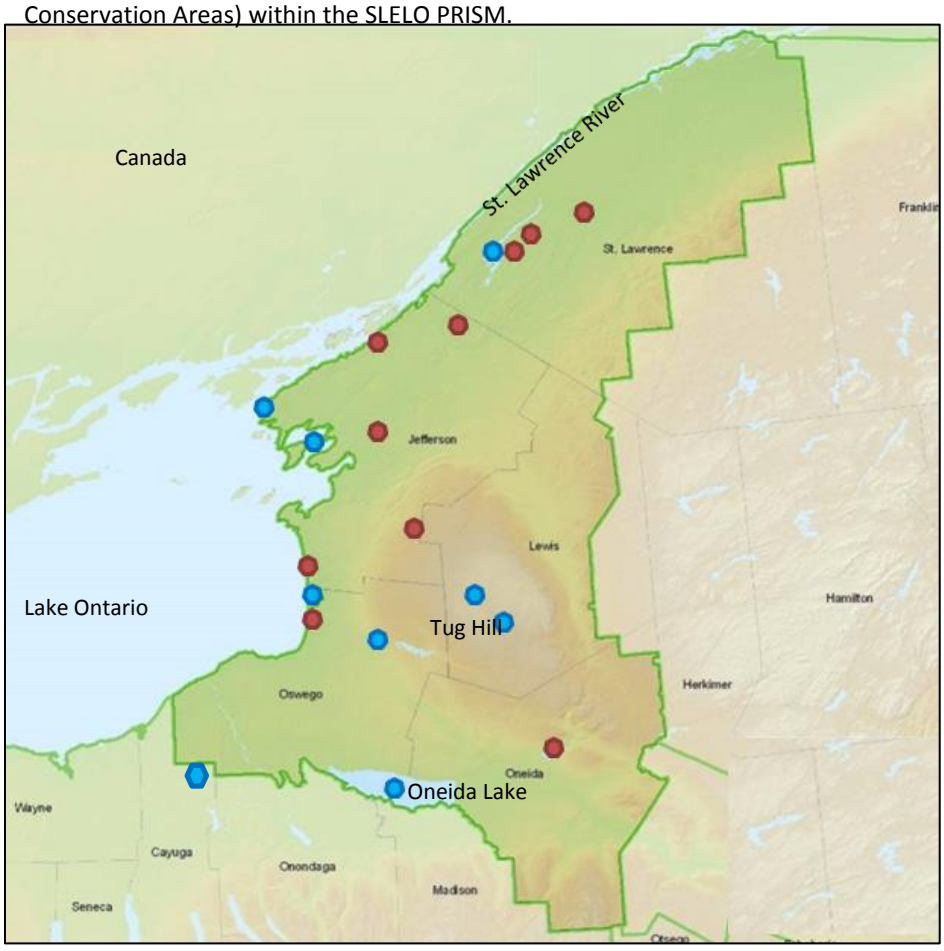
Fish Creek Wildlife Management Area

The Fish Creek Wildlife Management Area (WMA) is a 4,438-acre tract of land located in southwestern St. Lawrence County, New York, eight miles west of the city of Ogdensburg and one mile south of Black Lake. Fish Creek WMA consists of a 2,046 acre natural wetland, which is primarily an emergent marsh whose water level is dependent on the many beaver dams on the Fish Creek drainage, and 2,392 acres of upland, most of which is forested. This site was surveyed in 2013 with no Prevention List Species observed (Appendix B).

Mud Lake

Mud Lake is part of the Indian River lake system located on the St. Lawrence River plain that spans from Jefferson to St. Lawrence County. The lake is located in Jefferson County in the Town of Alexandra, just southwest of the village of Redwood. This site was surveyed in 2013 with no Prevention List Species observed (Appendix B).

Figure 2: Spatial distribution of early detection surveillance sites (Priority Conservation Areas) within the SLELO PRISM.



Key: Special distribution of early detection surveillance sites.

= Sites surveyed in 2012.

= Sites surveyed in 2013.

Goal 3 – CONTROL OF INVASIVE SPECIES *Our Accomplishments*

Control invasives using three basic levels of control; ERADICATION – to eliminate all individuals and the seed bank; CONTAINMENT – contain established infestations to prevent spreading; SUPPRESSION – reduce the density of invasives to promote & restore native growth.

Reduced active Giant Hogweed sites by 34%:

Giant Hogweed (*Heracleum mantegazzianum*) is considered invasive and poses a threat to human health. The sap from this plant can cause severe burns to skin. In 2013, partners of the SLELO-PRISM collaborated to control 61 giant hogweed sites in three counties within the PRISM region. This represents a 34% reduction in active hogweed sites from the previous year (Figure 3). Data does not include DEC sites in Oneida County.

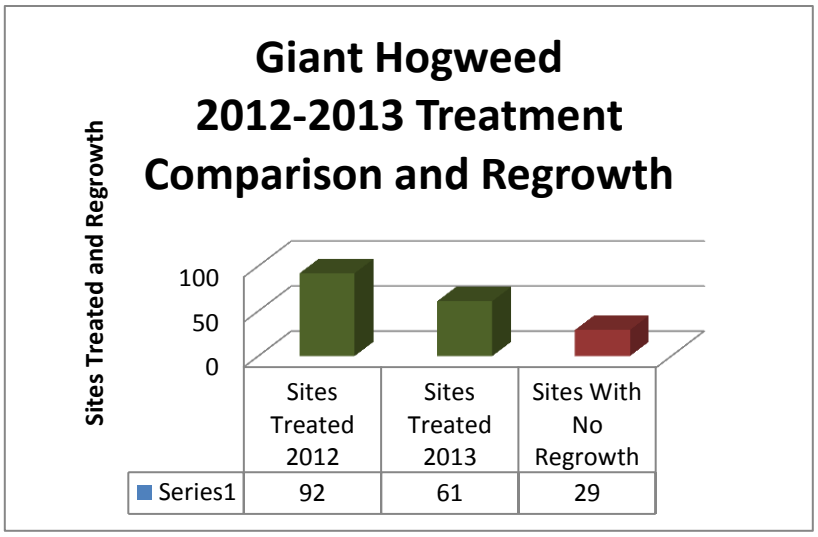


Figure 3: Eradication of Giant Hogweed

Treated 54 Swallow-wort sites in seven priority conservation areas:

Figure 4: Swallow-wort (*Cynanchum spp.*)

Swallow-wort (*Cynanchum spp.*) (Figure 4), are problematic wherever they become established. In 2013, SLELO's licensed pesticide applicator treated 54 four sites in seven priority conservation areas. Areas included: Deer Creek WMA, Eldorado/Black Pond, Black River Trail, Mud Bay Site, OBI Couch Easement, Cooke Road Site and Lakeview WMA.

Assisted with the control of 215+ acres of Water Chestnuts:

Partners of the SLELO PRISM assisted with the control of just over 215 acres of Water Chestnut plants (*Trapa natans* - Figure 5) from multiple sites. Sites included Oneida Lake, the Oswego River, the Salmon River Estuary, Lakeview WMA and Chaumont Bay. In addition, partners at the Oswego County Soil & Water Conservation District contracted with Allied Biological to apply aquatic herbicides to Water Chestnut plants in the Oswego River - partially funded via SLELO Special Projects.

Figure 5: Hand-pulling is one technique used to suppress Water Chestnut plants in the region.

Control of Phragmites from one priority conservation area:

The Little John Wildlife Management Area (WMA) encompasses roughly 8,000 acres of pristine forest and wetland habitats. It is found on the northwest slope of the Tug Hill Plateau between Syracuse and Watertown just east of Highway 81 in northern Oswego and southern Jefferson Counties. Upon completing the HPA, roadside and trail assessments, there were no Prevention List Species observed in 2013. Phragmites (*Phragmites spp*.), which is a 'Target Management Species,' was spotted in several areas by SLELO-PRISM technicians and partners. The SLELO PRISM licensed pesticide applicator Mike Parks collaborated with DEC representatives to treat six 6 sub-sites populated with phragmites totaling 354 square feet.

Rapid Response

New populations of Phragmites totaling 354 square feet were identified and subsequently treated with the herbicide AquaMaster®.

Purple Loosestrife Control – Beaver River:

The Beaver River Watershed, located partially in Lewis County, was inventoried resulting in the observation of 21 sites populated with Purple Loosestrife (*Lythrum salicaria*). As part of a SLELO sponsored special project, partners at the Lewis County Soil & Water Conservation District removed approximately 110 fifty five gallon garbage bags of plants from the 16 sites where loosestrife populations were found. The plants were hand-dug (Figure 6).

In the future, the Lewis County Soil and Water Conservation District plans to continue landowner education as well as conduct yearly visits to all of the sites along the Beaver River in order to ensure that every effort is taken to hinder the spread of this detrimental plant.

Figure 6: Pictured Above: Alexis Lyndaker, Lewis Co. SWCD, digging loosestrife on Route 812 in the Town of Croghan.

Conservation Outcomes from Control Activities

Using multiple techniques, the SLELO partners reduced the spread of six highly invasive species from a total of 278 acres on 13 priority conservation sites and 32 sub-sites. Species included: Swallow-wort, Phragmites, Water Chestnuts, Giant Hogweed, Purple Loosestrife and Japanese Knotweed.

Goal 4 – EDUCTION / OUTREACH / CITIZEN SCIENCE

Increase public awareness and understanding of invasive species issues.

Engaging the general public on various issues related to invasive species is at the forefront of any long-term management effort. Increasing the stakeholders' awareness of invasive species, negative impacts, and strategies for limiting negative impacts is a goal of SLELO's educational efforts. In 2013, we had a record year in our outreach efforts, engaging 1,488 individuals. A summary of this year's educational and outreach events is presented in Table 1:

Table 1: Summary of 2013 Education and Outreach Events.

Event	Participants Reached
Public Information Sessions (x5)	15
International Aquatic Invasive Species Conference (2 sessions)	64
iMap Training	37
Tug Hill Local Government Conference	175+
Oswego County Agricultural Safety Day	276 estimated
Volunteer Monitoring Training	38
SLELO Newsletter (4-issues)	112
B-wet Teacher Training	23
Ash Tree Tagging Event (x3)	80
Derby Hill Bird Festival Exhibit	60
Camp Hollis Event	30
Oneida County Conservation Field Day	68 estimated
14 Professional Presentations to various audiences	160 estimated
Brochure Distribution	350
Total	**1,488**

Digital Short:

Figure 7: Cover of SLELO PRISM Digital Short

The SLELO PRISM Education and Outreach Committee created a digital short video (Figure 7) about the SLELO PRISM. The purposes behind the development of this multimedia tool were to: 1) Increase awareness of the SLELO PRISM and its mission; 2) Discuss invasive species in the region including their ecological impacts and their impact on local economies; 3) Encourage individual involvement in prevention, eradication efforts and volunteerism. Each of these targets helped to meet Education/Outreach Objectives of "Educate various groups to identify priority invasive species, understand their impacts, and management options" as outlined in the Strategic Plan. The video can be viewed on YouTube at; http://www.youtube.com/watch?v=z3EAD1EUw04

WPNR 90.7 FM

Green Local 175 LIVE is a weekly radio broadcast focused on environment and sustainable economic development. It is on every Tuesday evening from 7 to 9 p.m. and Sunday from 9 to 11 a.m. on WPNR 90.7 FM and streaming live audio on the internet. On October 29th the SLELO PRISM Coordinator participated in a dialog with the radio station host to discuss the SLELO PRISM Partners, invasive species and public participation.

Forest Pest Ash Tree Tagging:

In accordance with the program elements outlined on page 34 of the SLELO Strategic Plan, we aim to support our research via citizen science events. To that end, two citizen science Ash Tree Tagging events were held in the summer of 2013. The purposes of these events were to: 1) Create public awareness of the Emerald Ash Borer (*Agrilus planipennis*) and the Asian Longhorned Beetle (*Anoplophora glabripennis*), 2) Promote community preparedness, 3) Encourage individual involvement in prevention and eradication efforts.

Locations: The first Ash Tree Tagging event was held on Fort Drum in Jefferson County (Figure 4) at the Adirondack Community Center on July 2, 2013. The second event was held at Rice Creek Field Station in Oswego County on August 17, 2013.

Target Audience: The general public and other interested participants, Table 2.

Table 2: Participation Information by County.

County	SLELO Partner	No. of Participants	Interest Groups Reached
Jefferson	Fort Drum	13	➢ Fort Drum Military Instillation employees, families ➢ Girl Scouts ➢ Interested Citizens ➢ The Nature Conservancy
Oswego	Oswego Co. SWCD	21	➢ Oswego County Soil and Water Conservation District ➢ The Nature Conservancy ➢ Concerned Citizens ➢ Oswego Tree Stewards ➢ Oswego County Teachers and students

Program/Content: Both SLELO PRISM Ash Tree Tagging events followed the same general format:

1. Brief introduction to the SLELO PRISM (SLELO Educator).
2. Introduction to the Emerald Ash Borer, its impacts and how to look for signs of the Emerald Ash Borer (SLELO Educator).
3. How to Identify an Ash Tree (County Forester).

Summary/Overview:

Over 34 individuals from various interest groups were reached through this program. Awareness tags (Figure 8) remain on Ash Trees until winter months when most are removed for recycling. As a result, the tags provide education and outreach to hundreds of citizens indirectly. Moreover, thousands of individuals have been

Figure 8: Awareness tags as displayed on Ash Trees.

indirectly reached through media avenues. At Fort Drum, two newspaper stories and one digital news story reported on this event. The Ash Tree Tagging at Rice Creek Field Station was the top YNN story for Northern New York on August 17, potentially reaching tens of thousands of individuals within the region.

Volunteer Monitoring:

On Saturday July 13, a volunteer monitoring event was held at Port Ontario in cooperation with our partners at the Oswego County Soil and Water Conservation District (Figure 9). This two-part event was designed to teach volunteers the skills to monitor their favorite water body or landscape followed by an actual community demonstration Water Chestnut hand-pull. The event attracted thirty eight individuals from as far away as Goose Bay in St. Lawrence County.

Figure 9: Volunteer Monitoring & Training Event

Supported Sea Grant's Boat Launch Steward Program:

Partners from New York Sea Grant have developed an effective boat launch steward program within our region. This program is designed to mitigate the transfer of aquatic invasive species from one body of water to another by educating boaters on proper boat and trailer cleaning techniques. In 2013 SLELO partners were supportive of and encouraged this program. PRISM seasonal employees also helped to distribute over 150 "Stop Aquatic Hitchhiker" rack cards throughout the region (Figure 10).

Figure 10: Portion of Stop Aquatic Hitchhiker rack cards.

Goal 5 – COOPERATION *Our Accomplishments*

Facilitate opportunities for sharing resources, including funding, personnel, equipment, information, and expertise.

Working together towards a common cause is perhaps one of the SLELO Partnership's strong points. Our partners are interested in the subject matter, there is a tremendous amount of expertise within the partnership, and we are engaged, motivated and work extremely well together. Highlights from 2013 include:

- Our Steering Committee: developed and recommended a protocol for adding new priority conservation areas to our working list and recommended a protocol for adding new species to our prevention or "watch-list".
- Seasonal employees from various partner organizations collaborated on various activities (Figure 11).
- Our Education and Outreach Committee collaborated to promote education and awareness activities.
- Continued a collaborative approach to strategic planning and annual work-plan development.
- Our partners continue to promote a cooperative forum at monthly meetings.
- Partners are invited to participate - volunteer at events/exhibits & public speaking.
- We created a functional and interactive website for partners.

Figure 11: Seasonal employees from SLELO PRISM, NYS DEC and the GLRI Program team together to remove Water Chestnut plants from the Lakeview wetlands.

Goal 6 – INFORMATION MANAGEMENT *Our Accomplishments*

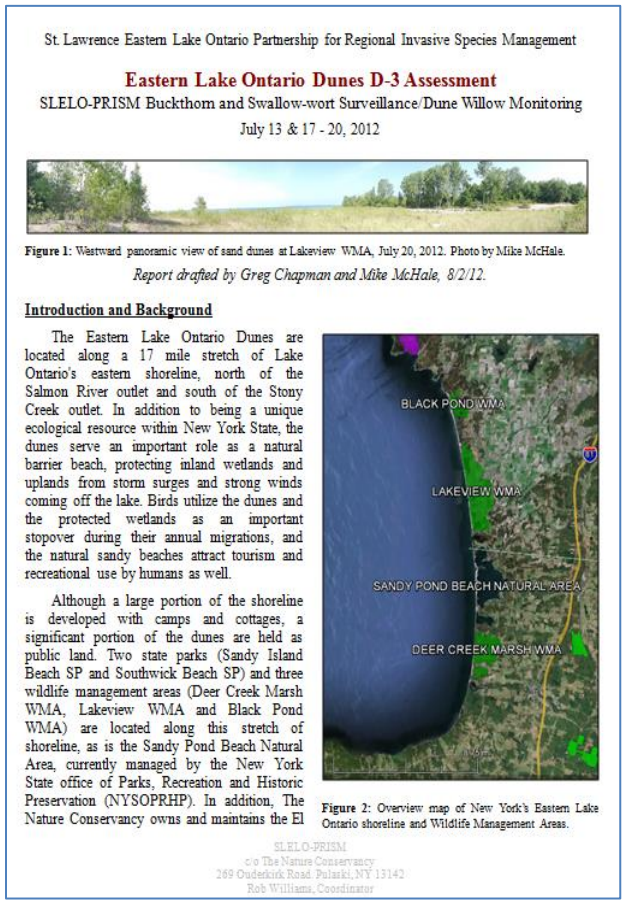
Collect, utilize, and share information regarding surveys, infestations, control methods, monitoring, and research

Providing and sharing information in a way that is informative and easily accessible is an important aspect of regional collaboration. As an effort to manage and share information among SLELO partners and the public, and to maintain continuity in reporting, our partners maintained several initiatives in 2013 including:

1) Creation and posting of standardized Field Reports:

Reports prepared by SLELO field crews, project sponsors and the program coordinator are prepared in such a way as to be *technical* to the extent that accurate, detailed information is included and *functional* in that follow-up work can (if needed) be conducted on all sites. Reports include; locations, descriptions, GPS coordinates, early detections and rapid response information.

Reports are posted to the SLELO website for subsequent viewing, (Figure 12).



St. Lawrence Eastern Lake Ontario Partnership for Regional Invasive Species Management

Eastern Lake Ontario Dunes D-3 Assessment

SLELO-PRISM Buckthorn and Swallow-wort Surveillance/Dune Willow Monitoring

July 13 & 17 - 20, 2012

Figure 1: Westward panoramic view of sand dunes at Lakeview WMA, July 20, 2012. Photo by Mike McHale.

Report drafted by Greg Chapman and Mike McHale, 8/2/12.

Introduction and Background

The Eastern Lake Ontario Dunes are located along a 17 mile stretch of Lake Ontario's eastern shoreline, north of the Salmon River outlet and south of the Stony Creek outlet. In addition to being a unique ecological resource within New York State, the dunes serve an important role as a natural barrier beach, protecting inland wetlands and uplands from storm surges and strong winds coming off the lake. Birds utilize the dunes and the protected wetlands as an important stopover during their annual migrations, and the natural sandy beaches attract tourism and recreational use by humans as well.

Although a large portion of the shoreline is developed with camps and cottages, a significant portion of the dunes are held as public land. Two state parks (Sandy Island Beach SP and Southwick Beach SP) and three wildlife management areas (Deer Creek Marsh WMA, Lakeview WMA and Black Pond WMA) are located along this stretch of shoreline, as is the Sandy Pond Beach Natural Area, currently managed by the New York State office of Parks, Recreation and Historic Preservation (NYSOPRHP). In addition, The Nature Conservancy owns and maintains the El

Figure 2: Overview map of New York's Eastern Lake Ontario shoreline and Wildlife Management Areas.

SLELO-PRISM
c/o The Nature Conservancy
269 Ouderkirk Road, Pulaski, NY 13142
Rob Williams, Coordinator

Figure 12: Sample cover of standardized field report.

In 2013, seventeen (17) technical field reports were developed and posted to the SLELO website. Included are reports prepared by the SLELO field crew, the program coordinator and partner representatives reporting on special initiatives.

2) iMapinvasives:

iMapinvasives is an effective database used for collecting invasives species information. In 2013 training was provided to 37 SLELO partners and guests. In addition, 103 invasive species observations were confirmed and reported into iMap. (Figure 13) shows confirmed observations by SLELO county.

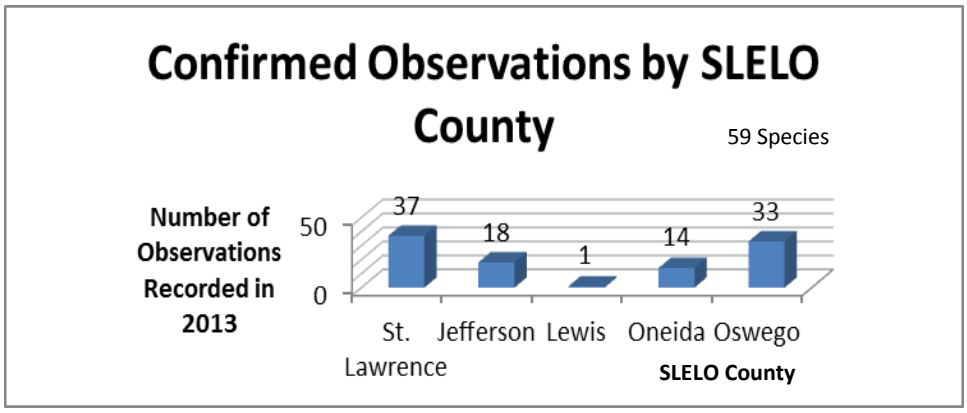


Figure 13: iMap observations in the SLELO PRISM Region during 2013

3) SLELO Website & Resource Directory:

The SLELO website has become an important medium for managing and sharing information. The site is used to: announce partner meetings, display field reports, share information on invasive species management and has many other informational benefits.

4) IPMDAT:

In the spring of 2013, training was provided to SLELO partners and guests on the use of the Invasive Plant Management, Decision Analysis Tool (IPMDAT) developed by The Nature Conservancy. The purpose of the Invasive Plant Management Decision Analysis Tool is to assist partner agencies and organizations in deciding if an invasive plant management project is likely to be successful. A successful invasive plant management project should not only control an invasive plant, it should also achieve conservation goals such as maintaining or restoring the viability/health/resilience of desired species, natural communities, and/or ecosystem processes (Zimmerman et.al. 2011).

In 2013 the PRISM partners encouraged the use of the IPMDAT for all control projects occurring within the boundaries of the SLELO region.

Goal 7 – SITE RESTORATION (a.k.a. Strategic Measures)

Develop and implement effective restoration methods by reducing the impact of invasive species on ecosystem processes and in areas that have been degraded by invasive species. ***Our Accomplishments***

Restoring and protecting the biodiversity of unique habitats and cultural resources from the negative impacts posed by invasive species is the core purpose for our work. This, in addition to sustaining habitat which supports rare, threatened or endangered species, is at the forefront of what we do. A variety of invasive species are problematic for many reasons including ecosystem impacts on both natural systems and managed systems such as forests, our food supply, including not only agriculture but also harvested wildlife, fish and shellfish and our man made environments, including landscaping, infrastructure, industry, gardens, and pets. Invasive species have implications, too, for recreation and for human health. In the SLELO region, invasive species are having a negative effect on sensitive ecosystems (lands and waters) and are causing economic harm and public health concerns. [3]

Salmon River Initiative:

In 2013, SLELO partners began implementation of a special project known as the Salmon River Initiative. The purpose of this initiative is to restore the stream corridor to a more natural state similar to that prior to the invasion of Japanese Knotweed (*Polygonum cuspidatum*) (Figure 14). The objectives of this initiative include: 1) Suppression of Japanese Knotweed over the course of a minimum of three years using stem injection and foliar application of herbicides. 2) Native plant restoration, which includes promoting natural regrowth and intentional plantings and 3) Education and outreach to occur as an on-going and important project component.

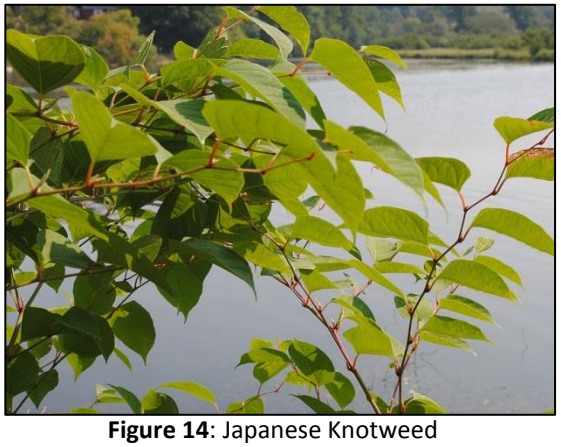


Figure 14: Japanese Knotweed

After receiving an Article 24 Permit from partners at the New York State Department of Environmental Conservation, Region 7, on August 9 treatment of knotweed began within four days. 2013 was the first of a

[3] Taken from SLELO Strategic Plan 2012.

three year effort resulting in approximately 239, 450.00 square feet (5.49 acres) of knotweed being treated. This represents 86% of the 6.37 acre knotweed estimate reported in the Feasibility Study

Salmon River Native Plant Assessment:

The purpose of this native plant assessment is to establish a list of desired species to be used to naturally or intentionally reclaim the areas along the Salmon River corridor that are treated for Japanese Knotweed as a result of our Salmon River Initiative.

Since many non-native species tend to establish themselves in disturbed areas, and since knotweed dieback has the potential to create such areas, partners of the SLELO PRISM realized the need to determine a list of desirable native species that will reestablish themselves in the treated areas. Both natural reestablishment and intentional planting of native seed will be considered at these sites.

SLELO PRISM seasonal employees (Figure 15) utilized several resources to create a plant inventory list. In situ observations were conducted along the river corridor combined with a literature review that describe the natural plant communities that occur along the Salmon River, primarily the New York Natural Heritage Program.

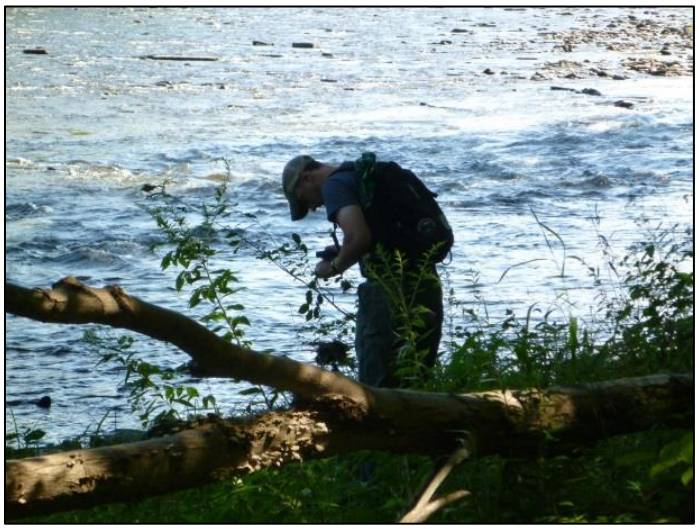


Figure 15: Seasonal employee Mike McHale inventorying native plants along the Salmon River

ADDITIONAL ACCOMPLISHMENTS and PARTNER INITIATIVES

Deliverables that help us to meet our contractual obligations and deliver invasive species management.

Fort Drum Cataloging and Control:

In the spring and summer of 2013, Fort Drum personnel started a new inventory to better locate and catalog invasive plants on the installation. Recently developed Army Quality Assurance Plans (QAP) were used as guidelines for collecting spatial and tabular data across many different natural resource disciplines. The QAP allowed for an easy roadmap towards database development. Customized data dictionaries were used within GIS software for simple data collection. While GPS points are collected the individual can easily and quickly fill out all necessary attributes to satisfy the QAP standards. Where possible, small patches of invasive species were treated for eradication by hand pulling. Other larger areas were identified and submitted through the appropriate review process for chemical applications. The need for a natural resource employee(s) to become certified in herbicide application was also identified as a result of the effort. Plans and procedures are already in place to achieve this goal.

-Travis Ganter
Soil Conservationist. Directorate of Public Works Fort Drum

Alvar Enhancement – Robert G. Wehle State Park:

In 2012, NYS Parks began implementing lessons learned from the pale swallow-wort mechanical control test plots initiated in 2010. Based on our findings that swallow-wort could be removed relatively easily in open field habitats but that the work results in the removal of significant quantities of soil, the decision was made to apply the same techniques to an Alvar opening at the park. It was felt that the open nature of the site would yield effective and efficient removal of swallow-wort, while the removal of soils would create a thin-soiled area typical of Alvar communities.

The chosen site, a roughly 2-acre Alvar opening along the popular Bobolink Trail, is being invaded by swallow-wort, which has grown in the thicker soils surrounding the opening as well as in many of the cracks and fissures in the bedrock in the center of the opening. The entire area was mapped with a high resolution GPS unit to identify areas of open pavement and cryptobiotic soils that were to be avoided as well as dense patches of swallow-wort that were ideal for mechanical removal. A contractor was hired to use a small

excavator to remove the dense areas of swallow-wort, while crews including Parks staff used shovels to remove it in low-density areas so as to leave as much high-quality Alvar grassland habitat intact.

A follow-up effort is planned that will use herbicide applications to treat swallow-wort in areas where the density was too low to warrant mechanical control and almost complete soil loss, but where hand removal would prove ineffective. And while the mechanical work initially left the site in a less than natural looking state, monitoring of the site a year later revealed an Alvar opening with new expanses of exposed bedrock and cryptobiotic soils and far less swallow-wort.

- Casey Holzworth,
Natural Resource Steward - NYS Office of Parks Recreation and Historic Preservation

Ducks Unlimited - Point Peninsula Grassland Enhancement Project:

Point Peninsula is a 1,045-acre grassland area is located on Lake Ontario in Jefferson County 8.5 miles southwest of the village of Three Mile Bay. It is located in a bird migration corridor and provides important stopover and feeding habitats (Figure 16) for a wide diversity of migratory bird species. In addition, Point Peninsula may be one of the most critical wintering areas in the Northeastern U.S. for arctic-breeding raptors, including the short-eared owl, rough-legged hawk, snowy owl, northern shrike and the northern harrier[4].

Figure 16: Point Peninsula grassland area.

In 2013, Ducks Unlimited, Inc. (DU) and our partners, NY State Department of Environmental Conservation (NYSDEC), Thousand Island Land Trust (TILT), and a private landowner, received funding through Great Lakes Restoration Initiative and USFWS Atlantic Coast Joint Venture to support protection and grassland enhancement efforts in the St. Lawrence Valley. One of the grant goals was to enhance wildlife habitat through invasive species control of Swallow-wort at Point Peninsula near Pine Woods Road. SLELO PRISM and NYSDEC previously identified 1.5 acres at Perch River and 1.0 acre at Point Peninsula dominated by pale swallow-wort. Ducks Unlimited hired a licensed herbicide applicator that treated 1.5 acres at Point Peninsula in July 2013.

-Sarah Fleming
Regional Biologist, Ducks Unlimited

[4] Taken from NYS Dept. of Environmental Conservation - http://www.dec.ny.gov/outdoor/49643.html

The Nature Conservancy – Great Lakes Restoration Initiative – Invasive Species

In 2013, The Nature Conservancy (TNC) continued a multi-year project to manage invasive species and restore wetlands in the Eastern Lake Ontario Barrier Beach and Coastal Wetland Complex. With assistance from Great Lakes Restoration Initiative funds, TNC helped to prevent the establishment of target ED/RR invasive species through monitoring and quick implementation of on-the-ground control techniques. Towards this end conservationists monitored over 90 miles of waterways for invasive species and conducted over 79 assessments within the project area.

TNC also worked to reduce the impact of established invasive species on native plants and animals within the project area by conducting management strategies on water chestnut populations at 16 locations and by releasing biological control agents (*Gallarucella spp*.) to suppress purple loosestrife densities (Figure 17). Glossy Buckthorn was also treated within a 25 acre portion of the project area. To compliment control work and reduce the wetland's susceptibility to aquatic/riparian invasive species and improve viability of native species including the Bog Buckmoth, natural hydrologic flows to coastal wetlands were restored including the treatment of 25 acres of Glossy Buckthorn in the Selkirk Fen.

Figure 17. Monitoring *Gallarucella spp.*

Gregg Sargis, Mat Levine

Ecologists The Nature Conservancy CWNY

Environmental DNA Sampling– Erie Canal:

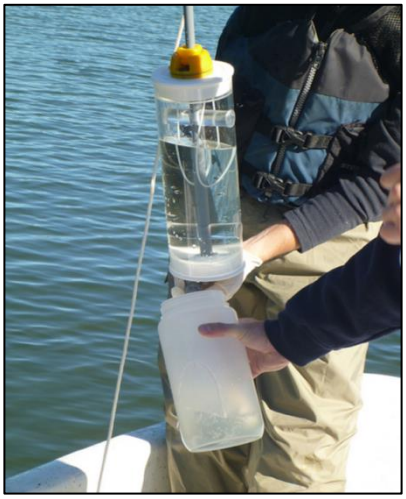


Figure 18: eDNA sampling.

Environmental DNA or (eDNA) is a genetic tool currently being developed that indicates the presence or absence of species-specific DNA in the aquatic environment. Based on the premise that fishes and other aquatic organisms release cells containing DNA into the environment from mucus, feces, urine and decomposition, this technique is showing promise as an accurate and valuable tool used for early detection of invasive species. In 2013, SLELO representative Rob Williams assisted researchers from The Nature Conservancy with sampling of sections of the Erie Canal and the Oswego River (Figure 18).

2013 Special Projects - SLELO

As part of our agreement with NYSDEC, The SLELO PRISM utilizes funding for work that will allow projects to be completed that would not otherwise be possible. The overall intent of this effort is to supplement the great work that is already being done by our partners and seasonal staff. In 2013, the following "Special Projects" were implemented:

Beaver River Purple Loosestrife Control:

As part of a SLELO sponsored special project, partners at the Lewis County Soil & Water Conservation District removed approximately 110 fifty- five gallon garbage bags full of plants from the 16 sites where loosestrife populations were found. The plants were hand-dug.

Salmon River Initiative:

In 2013, SLELO partners began implementation of a special project known as the Salmon River Initiative. The purpose of this initiative is to restore the stream corridor to a more natural state similar to that prior to the invasion of Japanese Knotweed.

Water Chestnut Control on the Oswego River:

The target species for this project is Water Chestnut which has been found in several areas along the Oswego River. Over 215 acres of Water Chestnut plants have been the focus of efforts to reduce this plant population which currently impedes recreation, aesthetics and water resource integrity. The suppression of these populations will remove a potential seed source which could spread throughout Lake Ontario from this source. In 2013 Water Chestnut plants were treated using a combination of chemical treatments and hand removal. Project sponsor – Oswego County Soil & Water Conservation District.

Tug Hill I.S.P.Z. Interpretive Panels:

In 2013, representatives from the Tug Hill Commission, the Tug Hill Tomorrow Land Trust and the SLELO partnership designated an Invasive Species Prevention Zone (I.S.P.Z.) around the perimeter of the 150,000 acre core forest of Tug Hill by designing eighteen interpretive panels (aquatic and terrestrial) to be placed at or near Highly Probable Areas (HPA's).

RESEARCH PRIORITIES

As requested by the New York State DEC Invasive Species Coordination Unit and the NYS Invasive Species Council.

Biological Control – Water Chestnut

Water Chestnut (*Trapa natans*) continues to pose a significant threat to the ecology of our waterways resulting in an ongoing strain to economic, recreational and human resources. In New York State alone, 32 counties representing nearly 60% of the state now have chestnut populations. Populations are found in 9-states in the northeastern United States including at least two Canadian provinces. Tremendous monetary and human resources have gone into the control of *Trapa natans* for many years. In the Oswego River alone nearly $500,000.00 has been spent on mechanical harvesting, an equal that amount on chemical treatments and that's just for one site! Lake Champlain has spent much more than that. Estimates suggest that millions of dollars are directed annually to suppressing water chestnuts. These costs are not subsiding – but increasing as are the continued impacts to the ecological integrity of our freshwater resources, tourism and recreation.

Researchers at Cornell University have completed some initial studies indicating that (*Galerucella. Birmanica)* is a prime candidate for the biological control of *Trapa natans*. To continue the work on this biological control agent for Water Chestnut, additional research is needed over an estimated three year period to realize this biological control. It is understood that researchers from China are ready and willing to collaborate.

Program Expenses by Function:

In 2013 program expenses based on functional category are as follows (Figure 19);

- Coordination 34%
- General Support 04%
- Early Detection 08%
- Prevention, Education/Outreach 17%
- Rapid Response & Control 37%

100%

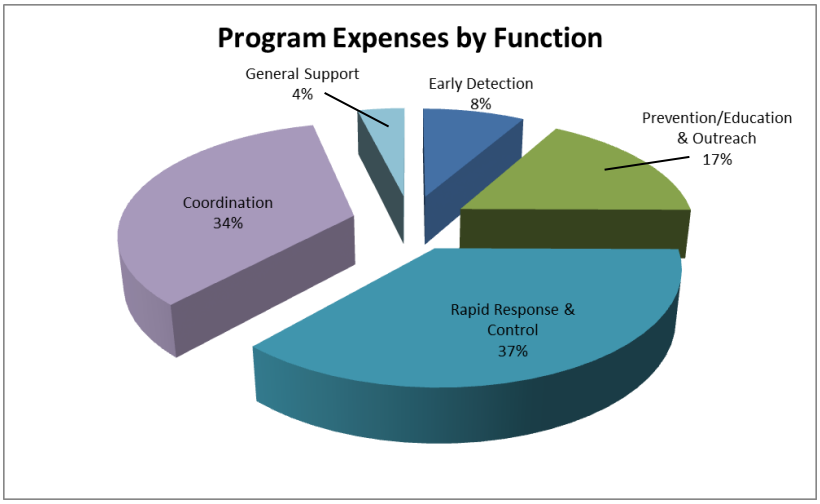


Figure 19: Program expenses by function.

Expenses are based on 2013 third quarter financial report. Year- end percentages are not expected to vary substantially.

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Figures with accompanying photo credits:

Cover: Eastern Lake Ontario and Shoreline. Mat Levine, 2013.
Figure 1: Tug Hill I.S.P.Z. Sign. Photo by Rob Williams, 2013
Figure 2: Spatial Map of Priority Conservation Areas.
Figure 3: Giant Hogweed Chart. Rob Williams, 2013.
Figure 4: Swallow-wort. Mike Parks, 2013
Figure 5: Water Chestnut plant. Shelby Delgado 2013.
Figure 6: Purple Loosestrife. Nichelle Billhardt, 2013.
Figure 7: Digital Short Video Cover. Photographer unknown.
Figure 8: Ash Tree Tag. Shelby Delgado, 2013.
Figure 9: Volunteer Monitoring at Port Ontario. Logan West 2013.
Figure 10: Clean Boats Diagram. APIPP, Date unknown.
Figure 11: Seasonal Employees on Beach. Photographer unknown, 2013.
Figure 12: Example Field Report. Image generated by Rob Williams, 2012.
Figure 13: iMap Observations Chart created by Rob Williams using data from iMapinvasives.org, 2013.
Figure 14: Japanese Knotweed. Rob Williams, 2013.
Figure 15: Photo of Mike McHale by Rob Williams, 2013.
Figure 16: Point Peninsula Grassland. Taken from, http://www.dec.ny.gov/outdoor/49643.html.
Figure 17: Monitoring Gallarucella Release. Mat Levine 2013.
Figure 18: eDNA Sampling. Rob Williams, 2013.
Figure 19: Program Expenses by Function. Created by Rob Williams.

Appendix A: List of Current PRISM Participants (P=Principal Partner, A=active, I=interested)

Beck, Lynette Lundy	(I)	Seaway Trail
Billhardt, Nichelle	(A)	Lewis Co. SWCD
Bonanno, Sandy	(A)	Oswego Co. EMC & Dune Pjct.
Breheny, Kate	(A)	Save The River Org
Brown, Matt	(I)	St. Lawrence County SWCD
Caddik, Jennifer	(A)	St. Lawrence Save the River Org.
Chairvolotti, Joe	(A)	Oswego SWCD
Covey, Julie	(I)	Ontario Bays Initiative, Consultant
Dehollander, John	(A)	Oswego County Soil and Water
Drosse, Richard	(A)	Oswego Co. Env. Mgnt.Council
Durant, Michael	(I)	Lewis County SWCD
Farquhar, James	(**P**)	NYS DEC Region 6
Freese, Robert	(A)	DEC Pesticides Unit
Ganter, Travis	(A)	Fort Drum Military Installation
Garret, Linda	(A)	Tug Hill Tomorrow Land Trust
Gwise, Sue	(**P**)	Jefferson Co. Cooperative Extension
Harvill, Jennifer	(A)	Tug Hill Commission
Hetzler , Paul	(A)	St. Lawrence Coop. Extension.
Holzworth, Casey	(I)	NYS Parks, Req. & Historic Pres.
Hughes, Tom	(I)	NYS Parks, Req. & Historic Pres.
Jeffery, James	(**P**)	NYS Parks, Req. & Historic Pres.
Levine, Mat	(**P**)	The Nature Conservancy
Malinowski, Kate	(A)	Tug Hill Commission
Malitz, Christina	(I)	Fort Drum Military Installation
Mazzochi, Irene	(A)	NYS DEC Region 6
Merrell, Amber	(I)	Extension NYS - I.S. Clearing house
Miller, Rebecca	(**P**)	NYS DOT Region II
O'Neill, Chuck	(I,A)	Extension NYS - I.S. Clearing house
Parton, Bonnie	(A)	NYS DEC Region 7
Penney, Mary	(P,A)	NYS Sea Grant
Ripka, Mary	(A)	The Nature Conservancy
Schell, J.J.	(A)	Oswego Co. Extension
Sherwood, Christopher	(I)	Forester, New York Power Authority
Shupe, Scott	(I)	Oneida Lake Association
Smith, Gerry	(I,A)	Audobon, CNY Chapter
Smolka , Bob	(**P**)	NYS Parks & Req.
Surprenaunt, Leslie	(I)	DEC Invasive Pgm. Coord.
Tibbles, Jake	(I)	Thousand Islands Land Trust
Tibbetts, Nic	(I,A)	Jefferson Co. SWCD
Williams, Rob	(A)	The Nature Conservancy
Willbanks, Lee	(A)	Save The River

Appendix B: SLELO PRISM's Current Species Lists

PREVENTION SPECIES

- ✓ Mile-A-Minute Vine (*Polygonum perfoliatum*)
- ✓ Didymo (*Didymosphenia geminate*)
- ✓ Hydrilla (*Hydrilla verticillata*)
- ✓ Asian Long horned Beetle (*Anoplophora glabripennis)*
- ✓ Hemlock Wooly Adelgid (*Adelges tsugae*)
- ✓ Silver, Big Head and Grass Carp (*Ctenopharyngodon spp*.)
- ✓ New Zealand Mud Snail (*Potamopyrgus antipodarum*)
- ✓ Hemimysis (*Hemimysis anomala*)
- ✓ Asian Clam (*Corbicula fluminea*)
- ✓ Kudzu (*Pueraria lobata*)
- ✓ Feral swine (*Sus scrofa* Linnaeus)
- ✓ Porcelain Berry (*Ampelopsis spp.)*

TARGET MANAGEMENT SPECIES

- ✓ Black & Pale Swallow-wort (*Cynanchum spp*.)
- ✓ Water Chestnut (*Trapa natans*)
- ✓ Giant Hogweed (*Heracleum mantegazziamum*)
- ✓ Asian Longhorned Beetle (*Anoplophora glabripennis)*
- ✓ Emerald Ash Borer (*Agrilus planipennis*)
- ✓ Eurasian Water Milfoil (*Myriophyllum spicatum*)
- ✓ Phragmites (*Phragmites australis*)
- ✓ Purple Loosestrife (*Lythrum salicaria*)
- ✓ Japanese Knotweed (*Polygonum cuspidatum*)
- ✓ Glossy Buckthorn (*Rhamnus spp*.)
- ✓ Japanese Stiltgrass (*Microstegium vimineum*)