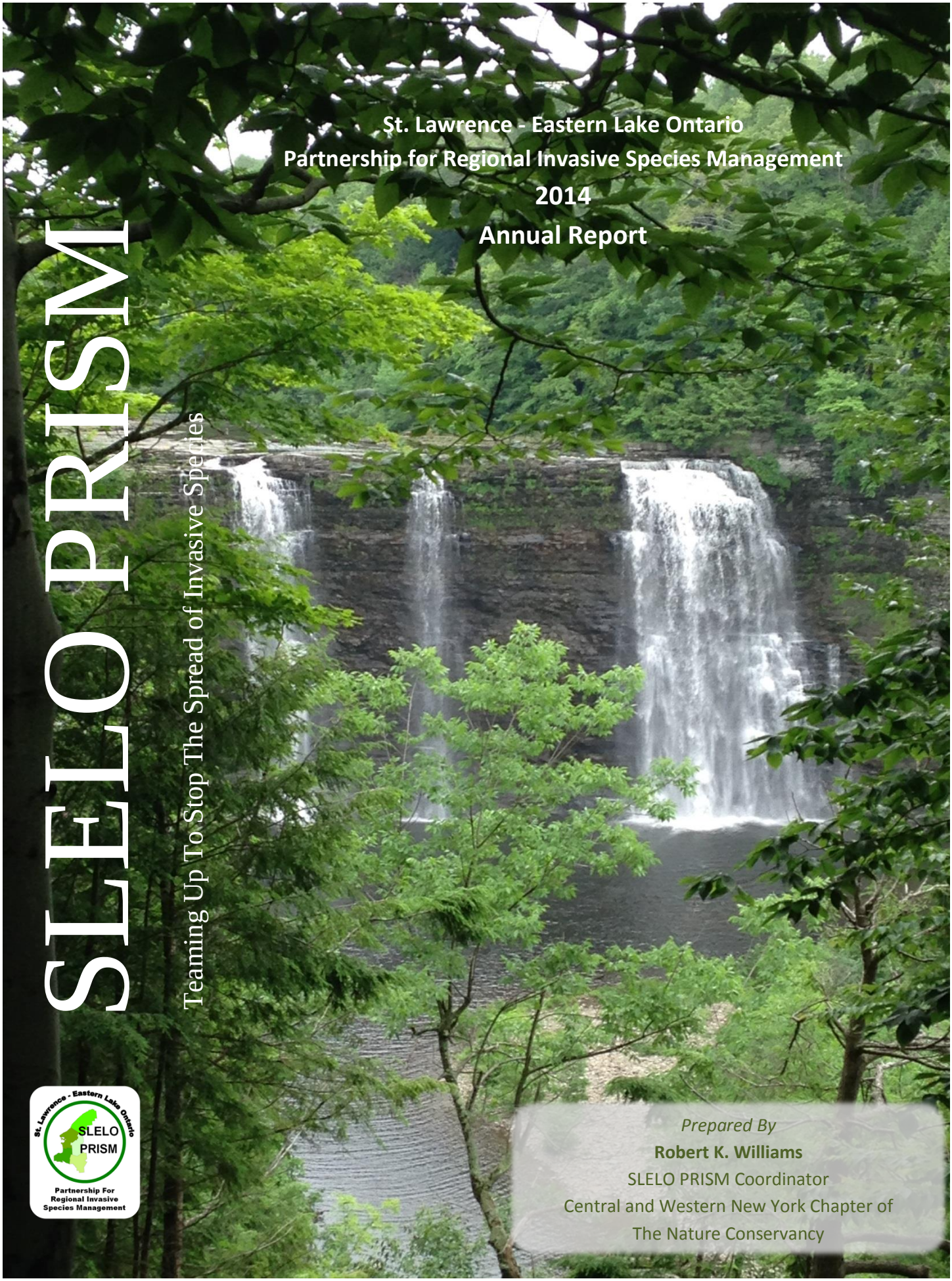

SLELO PRISM

Teaming Up To Stop The Spread of Invasive Species

St. Lawrence - Eastern Lake Ontario
Partnership for Regional Invasive Species Management
2014
Annual Report

Prepared By

Robert K. Williams

SLELO PRISM Coordinator

Central and Western New York Chapter of

The Nature Conservancy

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This report was prepared by:

Robert K. Williams
Invasive Species Program Coordinator, SLELO-PRISM
*
Peer review provided by:
Gregg Sargis
Gretchen Holtz
*
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The numerous partner organizations and their representatives who contribute their expertise, time and resources to the development and success of the SLELO PRISM.

About SLELO – PRISM

The St. Lawrence Eastern Lake Ontario Partnership for Regional Invasive Species Management (collectively SLELO PRISM) is one of eight partnerships in New York State. It encompasses 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 using a collaborative and integrated approach to invasive species management. The emphases of these activities are prevention, early detection, rapid response and education.

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

www.sleloinvasives.org

Under the menu item:
Resources & Links / Downloads / 2014 Annual Report

Cover Photo:
Salmon River Falls Unique Natural Area, R. Williams 2014 ©

2014 Strategic Measures Summary

Accomplishments

SLELO PRISM Partners strive to protect the ecological integrity of the Eastern Lake Ontario region and Northern New York's natural & cultural resources from the threat of invasive species. In 2014 partners collaborated on making the following accomplishments, a.k.a. strategic measures:

- *Continued efforts to restore the Salmon River and Estuary by suppressing 86% of Japanese knotweed populations and planting native grasses within the disturbed areas along the river corridor.*

- *Significantly reduced human health threats posed by giant hogweed. 61 sites were treated of which 14 are now considered eradicated.*

- *We continued to restore 50 acres of globally rare alvar communities along the Eastern Lake Ontario coastline by suppressing 70 acres of pale Swallow-wort and promoting native plant succession in the areas treated.*

- *We have teamed up to protect our freshwater resources, wetlands and fens by supporting hands-on citizen science based control efforts, pathway mitigation and environmental DNA sampling. This included hand-harvesting 85.5 cubic yards of water chestnut plants and treating an additional 215 acres on the Oswego River.*

- *Encouraged the development of biological controls for water chestnut (Trapa natans) and pale swallow-wort (Cynanchum rossicum and assisted with the release of a biological control (Galarucella spp.) to suppress purple loosestrife and maintain the native plant composition of the Lakeview Wetland complex.*

- *Completed early detection surveillance on ten priority conservation areas along with one rapid response to pale swallow-wort on the Limerick Cedars preserve.*

- *Reached over 550 individuals through a combination of educational and outreach initiatives designed to increase awareness of invasive species that affect the region's forests, lands and waters.*

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. (Pimentel 2004).

❖

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

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Collaboration & Partnerships

Conservationists, in particular, realize the benefits of working together to achieve an environmental goal; establishing a set of goals, objectives and strategies requires expertise and collaboration. 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.

The members of the Partnership have 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 Invasive Species Coordination Unit and Invasive Species Council.

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 2014 accomplishments in direct relation to the seven goals identified by our partners**.

"Many of our accomplishments are achieved not by default, but through commitment and robust collaboration within our partners. The numbers tell a great story, but it's how we as a partnership set up our strategic plan and since everything is directly linked to this plan, it's safe to say were on a roll. I hope you will be as pleased as I am with the progress that the partners of the SLELO PRISM have made in 2014. "

Rob Williams
PRISM Coordinator

Goal 1 – PREVENTION

Prevent the introduction of invasive species into the SLELO PRISM's Priority Conservation Areas.

EARLY DETECTION SURVEILLANCE IN PRIORITY CONSERVATION AREAS:

One dynamic of prevention is to assure that invasive species do not become established particularly in priority conservation areas. The SLELO PRISM partners have identified 24 priority conservation areas within the region which, based on current capacity, are on a two year rotation for early detection surveillance. In order to quickly, consistently and effectively monitor large areas for the emergence of invasive species, our partners developed protocols for identifying Highly Probable Areas (HPAs) locations where invasive species are most likely to arrive and establish themselves. As a prevention measure, this protocol was effectively used to conduct early detection surveillance on nine priority conservation areas including; Whetstone Reservoir, Black Lake, Oneida Lake/Three Mile Bay Wildlife Management Area, Salmon River Estuary, Chaumont Bay, shoreline dunes, Tug Hill I.S.P.Z. and Mud Bay. Since this component overlaps with another goal (Early Detection/Rapid Response, they will be discussed in more detail later in this report.

INVASIVE SPECIES LEGISLATION:

In 2014, New York State adopted three noteworthy pieces of legislation which aim to prevent the introduction and spread of invasive species. The first is generally referred to as Part 575 Prohibited and Regulated Invasive Species (http://www.dec.ny.gov/regulations/93900.html) and second, the Aquatic Invasive Species Transport (http://www.dec.ny.gov/press/97442.html). These articles are a significant step towards preventing the introduction and spread of invasive species throughout New York State and the Northeast United States. Another regulation adopted on April 23 , 2014, prohibits the hunting or trapping of free-ranging Eurasian boar in New York. This regulation compliments previous legislation which made importation, breeding, release, possession, sale, distribution, trade or transport of Eurasian boars in New York State illegal. For more information, visit http://www.dec.ny.gov/animals/70843.html.

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.

Timing is critical when responding to the initial detection of an emerging invasive species in any 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 become established – is the first step in eradicating or effectively managing a newly-arriving invasive species. Our partnership developed an ED/RR protocol which outlines 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, www.sleloinvasives.org. In 2014, early detection surveillance was conducted on eight Priority Conservation Areas (Figure 1, Table 1).

Whetstone Reservoir

Whetstone Reservoir is a 161-acre freshwater artificial water body located within Whetstone Gulf State Park and the Lesser Wilderness State Forest in the eastern Tug Hill region of New York State. Water supplied by the Whetstone Creek inlet at the western end of the reservoir is retained by a small concrete dam at the northeastern end of the water body. 33 survey points were observed in 2014 using our HPA protocol. No prevention list species (see Appendix B) were found.

Oswego River

Environmental DNA (eDNA) is a genetic tool currently being developed to confirm 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 shows promise as an accurate and valuable tool used for early detection of invasive species. In 2014, SLELO representative Rob Williams assisted researchers from The Nature Conservancy with the sampling of sections of the Erie Canal and the Oswego River (Figure 2). No prevention list species were observed.

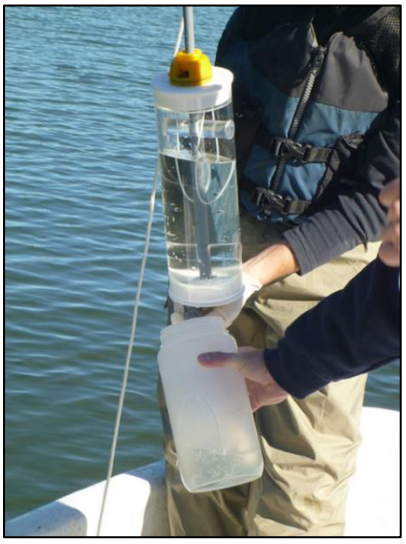

Figure 2: eDNA sampling.

Black Lake

Black Lake is a 4,593-acre freshwater lake located in St. Lawrence County, New York. The lake is regularly used for fishing and as a vacation destination, and large portions of its shoreline are developed with cottages and camps. 10 rake tosses were performed at five locations using our HPA protocol. No prevention list species were observed (Appendix B).

Oneida Lake/Three Mile Bay Wildlife Management Area

Oneida Lake is a large freshwater lake located in Oneida, Onondaga and Madison counties, New York. With a surface area of 50,894 acres, it is the largest lake located completely within the state. A large portion of the northwestern shore of Oneida Lake remains undeveloped as part of the 3,939-acre Three Mile Bay Wildlife Management Area. 52 sample points at 26 locations using HPA protocol resulted in no new species observations and no prevention list species were documented. There is an unconfirmed report of rusty crayfish along the south side of the lake that will be investigated in 2015.

Management Response

In 2014 approximately two cubic yards of water chestnuts were harvested from three areas around Oneida Lake, a significant decrease from previous years. In addition, volunteers also picked up miscellaneous trash and debris from the water and shoreline.

Salmon River Estuary

The Salmon River Freshwater Estuary is defined as that portion of the lower Salmon River that is directly influenced by the water levels of nearby Lake Ontario. In 2012 populations of Japanese knotweed, a target management species (see Appendix B) were detected and mapped which lead to our Salmon River Initiative. In 2014, 12 sample points at six locations using our HPA protocol resulted in no prevention list species (Appendix B) being detected.

Management Response

The SLELO PRISM in cooperation with partners from the Oswego County Soil and Water Conservation District and the New York Sea Grant sponsored a two part citizen science and volunteer monitoring event on July 12, which resulted in the harvest of 11 cubic yards of water chestnut plants.

Chaumont Bay

Chaumont Bay is a large bay on the northeastern shore of Lake Ontario, west of the village of Chaumont and east of Point Peninsula in Jefferson County, New York. The large, sheltered bay is a popular fishing, sailing and vacationing destination, and much of the shoreline is developed with camps, cottages and several marinas. In 2014, 23 terrestrial and aquatic HPA's were surveyed with no prevention list species (Appendix B) observed.

Tug Hill

A visual survey of the Tug Hill Invasive Species Prevention Zone (I.S.P.Z.) perimeter was conducted in 2014 by SLELO-PRISM field crew members. The survey of 27 HPA's aimed to detect any occurrences of SLELO-PRISM prevention species, specifically emerald ash borer (EAB) (*Agrilus planipennis*), hemlock wooly adelgid (HWA) (*Adelges tsugae*), Asian long-horned beetle (*Anoplophora glabripennis*), mile-a-minute vine (*Persicaria perfoliata*) and kudzu (*Pueraria montana* var. *lobata*), none of which were detected.

Mud Bay

Mud Bay is an approximately 200-acre bay on the northeastern shore of Lake Ontario, south of the village of Cape Vincent in Jefferson County, New York. In 2014 a survey targeting water chestnut (*Trapa natans*), hydrilla (*Hydrilla verticillata*), rusty crayfish (*Orconectes rusticus*) and Asian clam (*Corbicula fluminea*) was conducted. No prevention list species were observed.

Management Response

In 2014, 0.19 acres of pale swallow-wort was controlled at a site along the shoreline of Mud Bay.

Figure 1: General distribution map of 2014 surveillance sites and treatment sites.

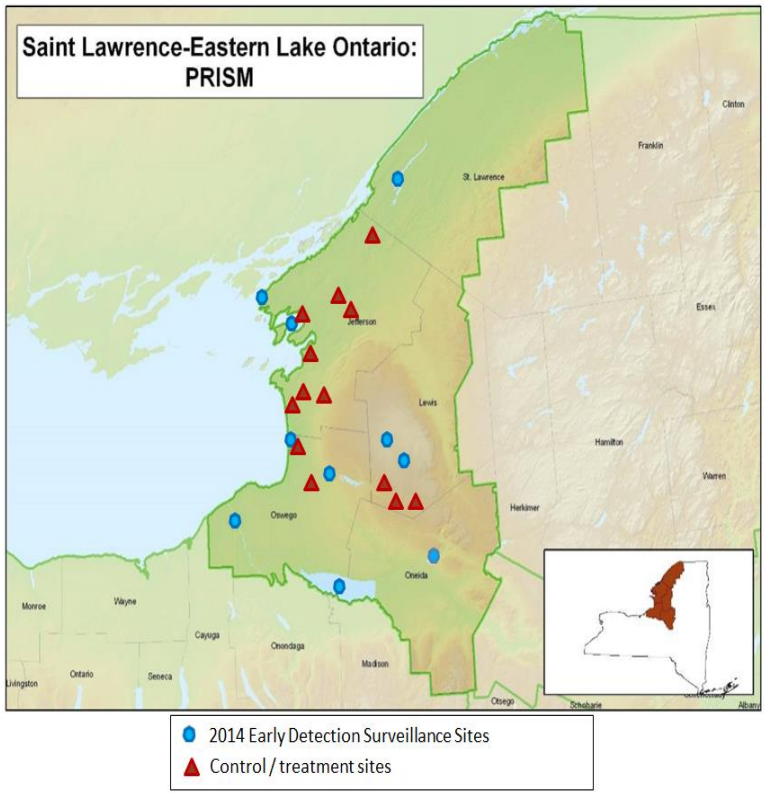

Table 1: Summary of Priority Conservation Areas and 2014 Treatment Areas.

Priority Conservation Areas Surveyed in 2014	Sites treated in 2014
Whetstone Reservoir	Giant Hogweed sites
Black Lake	Black River Trail
Oneida Lake (Three Mile Bay)	Cooke Road (D.U.)
Salmon River Estuary	Chaumont Barrens
Chaumont Bay	Deer Creek WMA
Tug Hill I.S.P.Z.	Eldorado/Black Pond
Mud Bay	Little John WMA
Oswego River	Lakeview Wetland Area
	Mud Bay
	Salmon River Area
	OBI Couch Easement
	Limerick Cedars Preserve
	Three Mile Creek
	Oneida Lake

Goal 3 – CONTROL OF INVASIVE SPECIES

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.

Eradicated 14 Giant Hogweed sites:

Giant hogweed (*Heracleum mantegazzianum),* (Figure 3), is considered invasive and poses a real threat to human health. Sap from this plant can cause severe burns to skin. In 2014, partners of the SLELO-PRISM collaborated to control 53 giant hogweed sites in three counties within the PRISM region. Of the sites treated over the past five years (including sites previously treated by DEC), 14 sites have shown no regrowth in the past three years and are considered eradicated.

Figure 3: Close up of *(Heracleum mantegazzianum)* stem.

Treated 79 Swallow-wort sites in 10 Priority Conservation Areas:

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

Swallow-wort (*Cynanchum spp.*) (Figure 4), are problematic wherever they become established. In 2014, SLELO's licensed pesticide applicator Mike Parks along with Field Technician Ed Miller treated 79 sites in 10 priority conservation areas. Areas included: Deer Creek WMA, Eldorado/Black Pond, Black River Trail, Mud Bay Site, OBI Couch Easement, Cooke Road Site, Chaumont Barrens Preserve, Three Mile Creek, Lakeview WMA and Limerick Cedars Preserve.

Rapid Response

A new population of swallow-wort was discovered and treated at the Limerick Cedars Preserve totaling 0.56 acres

Water Chestnut Control:

Partners of the SLELO PRISM assisted with the harvest of just over 85.5 cubic yards of water chestnut plants (*Trapa natans)* – (Figure 5) by hand-pulling from multiple sites (Table 2). 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: Water Chestnut plant.

Table 2: summary of water chestnut control sites and harvested amounts.

Location	Cubic Yards Harvested (estimated)
Oswego River Upstream	12.50 cubic yards
Oswego River (chemical treatement)	Cubic yard estimate not available. 209 acres treated
Lakeview/Floodwood (GLRI, LEAF, DEC)	21.75
Pine Grove Citizen Science Event	6.25
Sage Creek (Onondaga Audubon)	17.25
Oneida Lake Volunteer Event	13.25
Utica Marsh (DEC)	30.00
Guffin Bay (Jefferson County SWCD)	2.0
Total	**85.5 cubic yards**

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. Of the seven sites visited in 2014, five were found eradicated from previous year's treatments and two new sites were treated totaling 0.56 acres. The SLELO PRISM collaborated with DEC representatives on this project.

Purple Loosestrife Control – Lakeview Wetlands:

In 2014, SLELO PRISM representatives assisted with the release of a biological control (*Galarucella spp*.) to suppress purple loosestrife and to maintain the native plant composition of the Lakeview Wetland complex. This was done in cooperation with NYS DEC Region 6, The Nature Conservancy and the Great Lakes Restoration Team (Figure 6).

Figure 6: *Gallarucella Spp*. being released at Lakeview. Photo credit – Mat Levine©

Japanese Knotweed Control - Salmon River:

As part of a three year effort to restore the Salmon River corridor, the SLELO PRISM Rapid Response Team members, Mike Parks and Ed Miller (Figure 7), along with contractors from Millers Turf Inc., treated 317,988 square feet (7.3 acres) of Japanese knotweed which represents 100% of the original knotweed estimate[1] plus an additional 1.81 acres.

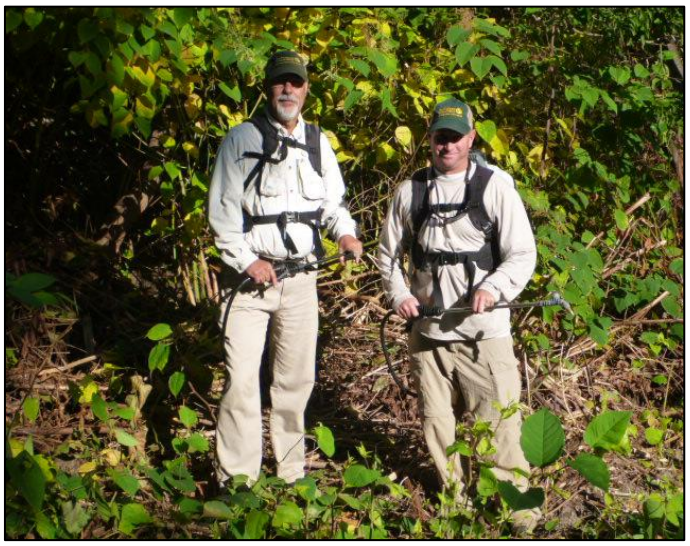

Figure 7: Mike Parks (L) Licensed Applicator and Ed Miller (R) apprentice treating Japanese Knotweed .

Conservation Outcomes from Control Activities

Using multiple techniques, the SLELO partners reduced the spread of six highly invasive species from over 300 acres on 14 priority conservation sites and 97 sub sites. Species included: swallow-wort, Phragmites, water chestnuts, giant hogweed, purple loosestrife and Japanese knotweed.

[1] As reported in the Salmon River Feasibility Study. Chapman and Williams, 2012

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 our long-term management effort. Increasing stakeholder and public awareness of invasive species and accompanying negative impacts along with management options is a goal of SLELO's educational efforts. Accomplishments in 2014 included:

- Hiring a full time Education/Outreach Coordinator.
- Conducting our first Eastern Lake Ontario Invasive Species Symposium[2] (Figure 8).
- Presenting at the National Invasive Species Learning Network in New Orleans.
- Presenting to the NYS Association of Highway Superintendents.
- Exhibiting at the Salmon River Fish Hatchery as part of the National Hunting and Fishing Day.
- Exhibiting at the Tug Hill Commission's Local Government Conference.
- Distributing over 300 informational brochures.
- Participated in New York State's Invasive Species Awareness Week.

Figure 8: ELO Symposium attracted 95 participants.

Citizen Science / Volunteer Monitoring:

On Saturday July 12, 2014, a two part 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. 29 individuals from as far away as the Thousand Islands Region participated. An estimated 145 volunteer hours were contributed towards this event.

Figure 9: 2014 Volunteer Monitoring & Training Event at Port Ontario.

[2] Co-sponsored by the Robert G. Wehle Charitable Trust

Goal 5 – COOPERATION

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 strongest 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 2014 include:

- Seasonal employees from various partner organizations collaborated on various activities such as water chestnut hand pulls at multiple locations (Figure 10).
- Partners designed and implemented our first Eastern Lake Ontario Invasive Species Symposium.
- Many of our partners volunteered to take part in an interim review of our Strategic Plan.
- Our Education and Outreach Committee collaborated to promote education and awareness activities.
- We implemented special projects through our partners to extend the work that is needed.
- Partners continued to promote a cooperative forum at monthly meetings.
- Partners were invited to participate and/or volunteer at events/exhibits & public speaking.

Figure 10: Volunteers and seasonal employees from partner organizations work together to remove water chestnut plants from the Salmon River Estuary, Oswego River, Lakeview WMA and other sites.

Goal 6 – INFORMATION MANAGEMENT

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

Providing and sharing information in a way that is easily accessible is an important aspect of regional collaboration. To manage and share information among SLELO partners and the public, and to maintain continuity in reporting, our partners maintained several initiatives in 2014 including:

- **Field Reports**: Standardized field reports were developed for all field activities. These reports are sent directly to partners and posted on the SLELO website.

- **iMapinvasives**: iMapinvasives is an effective database used for collecting invasives species information. In 2014 training was provided to 28 SLELO partners and guests. In addition, 87 new observations of six species were confirmed and entered into iMap.

- **SLELO PRISM Website**: The SLELO PRISM website has become an important medium for managing and sharing information. The popular site is used to: announce partner meetings, display field reports, share information on invasive species management and post relevant information. In 2014 our site had just over 10,000 page views with the most popular pages being the "Species" page and the "Field Reports" page. The majority of visits occur between July and October.

- **Quarterly Newsletter**: Four issues of the SLELO PRISM newsletter were published in 2014. This was accomplished with volunteer commitment from several of our partners along with our education and outreach coordinator.

- **Partner Roundtable Reports**: All partner meetings begin with a roundtable opportunity for partners to share information regarding invasive species. Meetings end with an open dialog.

Goal 7 – SITE RESTORATION

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

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, and sustaining the habitat which supports rare, threatened or endangered species, is at the forefront of our mission. 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 and gardens. Areas that have been treated for the suppression of invasive species may be considered as disturbed areas and can be restored more effectively with intentional planting of native species.[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*). Objectives of this initiative include: 1) Suppression of Japanese knotweed. 2) Native plant restoration and 3) Education and outreach.

Figure 11: Rob Williams conducting field monitoring of Salmon River restoration sites.

After two years of knotweed suppression, limited site restoration began in 2014 on three monitoring sites along the Salmon River corridor. These three sites, each of different substrate, were planted with a mix of native grasses to include; little bluestem (*Schizachyrium scoparium*) pure live seed (PLS) and annual Ryegrass. All three sites will be monitored for several years (Figure 11) using the Murphy & Wilcox method.

[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.

SPECIAL PROJECTS and PARTNER INITIATIVES

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

Ducks Unlimited Perch River and Point Peninsula Project:

Ducks Unlimited, Inc. (DU) received funding from the St. Lawrence – Eastern Lake Ontario Partnership for Regional Invasive Species Management in August 2014 to support grassland enhancement efforts in the St. Lawrence Valley (SLV). DU partnered with NY State Department of Environmental Conservation (NYSDEC) to advance enhancement of three acres of grassland through invasive species control of pale swallow-wort (*Cynanchum rossicum*).

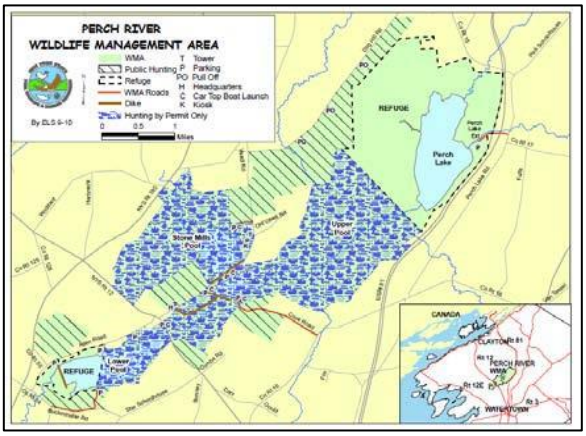

Figure 12: Perch River area.

The project goal was to eradicate occurrences of Pale Swallow-wort at Perch River (Figure 12) and Point Peninsula (Figure 13) Wildlife Management Areas (WMA). Perch River WMA is considered a priority site for Invasive species eradication due to its high diversity of plants and animals including threatened and endangered species, such as Bald Eagle (*Haliaeetus leucocephalus),* Black Tern (*Chlidonias niger*), Least Bittern (*Ixobrychus exilis*), Pied-billed Grebe (*Podilymbus podiceps*), Northern Harrier (*Circus cyaneus*), Upland Sandpiper (*Bartramia longicauda*), Sedge Wren (*Cistothorus platensis*) and Henslow's Sparrow (*Ammodramus henslowii*). Grassland fields at Perch River are known to support nesting Henslow's Sparrows in 2013. Point Peninsula WMA provides important grassland bird habitat and is also home to threatened and endangered species, such as the Short-Eared Owl (*Asio flammeus*) and Northern Harrier. The applicator treated all live swallow-wort plants with Garlon 4 Ultra (active ingredient Triclopyr) in and along the pre-identified location at Cooke Road and Dog Hill Road, Perch

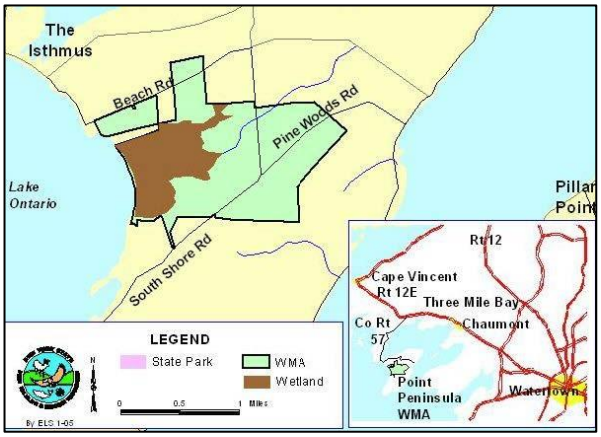

Figure 13: Point Peninsula Pine Woods Road.

River WMA, and Pine Woods Road, Point Peninsula WMA. The total area treated was approximately three acres.

~ Sarah Fleming
Regional Biologist, Ducks Unlimited

Lewis County Invasive Species Drop Box Project:

With funds provided by the SLELO PRISM Special Projects Initiative, the Lewis County Soil and Water Conservation District provided invasive species public awareness signage and drop boxes for public boat launches, county forest land access sites, Chamber of Commerce public kiosks and recreational trailheads. These drop boxes were intended for the disposal of invasive plants that accumulate in or on boats as well as bait bucket contents. The NYS DEC Bureau of Fisheries Management provided signage for these disposal stations and a standard design drawing for these drop boxes (Figure 14).

Figure 14: Drop box near Tug Hill

~ Nichelle Billhardt
District Manager, Lewis County SWCD

Oswego River Water Chestnut Control:

In 2014, with partial funding through the SLELO PRISM special projects initiative, a contractor (Figure 15) was hired to treat 100 acres of dense water chestnut plants**.** The chemical treatment utilizing Clearcast® began on August 6th and ended on August 8th. The amount of treatment was significantly lower in 2014 as related to previous years. This was due to reduced population size of water chestnut plants with the cause yet to be determined.

Figure 15: Contractors applying aquatic herbicides to water chestnut plants on the Oswego River.

~John DeHollander and Joe Chairvolotti
Oswego County SWCD

NY State Parks Invasive Species Activities:

On August 7, 2014, volunteers assisted Robert G. Wehle State Parks Biologists and their Invasive Species Strike Team with pale swallow-wort removal in an alvar community. The 1.5 acre site had been mechanically controlled two years ago and some shovel assisted manual removal was needed to remove the remaining, sparsely distributed vines. Seven volunteers arrived to assist with the project for 2.5 hours and learned more about Parks' mechanical removals in Robert G. Wehle State Park (Figure 16).

Figure 16: Aerial view of Wehle State Park main campus.

Over the course of the summer, NY State Parks hired a strike team of four seasonal employees. Together, the group spent the summer doing surveys and removals of invasive species throughout two State Parks regions, the Saratoga-Capital District Region and the Thousand Islands Region. Within the SLELO PRISM area, the group spent a total of two weeks doing backcountry invasive species survey transects at Wellesley Island and Whetstone Gulf State Parks (including forest insect pest surveillance) and performed various invasive plant removals at Wellesley Island, Westcott Beach, and Southwick Beach State Parks as well as Sackets Harbor Battlefield State Historic Site. The team also spent a day and half at Robert G. Wehle State Park manually removing pale swallow-wort with shovels in the rare alvar habitat.

To compliment prior manual/mechanical control efforts, State Parks hired a private contractor to treat Pale Swallow-wort with a triclopyr-based herbicide on approximately 1/10th of an acre of the archeologically sensitive grounds of Sackets Harbor Battlefield State Historic Site and 2/10th of an acre within an alvar restoration site at Robert G. Wehle State Park. At Sackets Harbor, the use of chemical treatments allowed for control without disturbing sensitive battlefield history. While at R.G. Wehle, chemical control was used to manage moderately dense swallow-wort patches.

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

The Thousand Islands Land Trust:

The Thousand Islands Land Trust (TILT) has enrolled 330 acres on Grenadier Island into a 5 year Landowner Incentive Program (LIP) with the New York State Department of Environmental Conservation. The general objectives for this land management project are to combat the dense infestation of pale swallow-wort which is found on 100 to 150 acres of the 390 acre preserve, while maintaining an early successional grassland habitat for a variety of grassland bird species. In an attempt to manage the Pale Swallow-wort, TILT will be implementing both mechanical and chemical methods of control in the hopes of significantly reducing the presence of this invasive species on this ecologically sensitive Island Preserve. Grenadier Island is located at the mouth of the St. Lawrence River making it a potential stepping stone for Pale Swallow-wort to reach other nearby islands if conservation efforts are not put into place. TILT hopes its efforts and commitment to stopping the spread of this aggressive invasive species will play a key role in the overall health of the natural Communities of the Thousand Islands Region.

Figure 17: Volunteers on a TILT Trail during an invasive species training session.

TILT is also working with the Carleton Island swallow-wort group to control 35 acres of pale swallow-wort found in the open fields and forested areas of Carleton Island. TILT holds a conservation easement on the island and has helped facilitate the group in the necessary steps needed to ensure the highest rate of success possible. Over the past two years there has been a reduction in the overall sizes of the patches and a significant decrease in the amount of new growth the following spring.

Additionally, TILT started the Preserve Stewardship Volunteer Program in 2014. 52 volunteers were recruited to monitor TILT Preserves (Figure 17), looking for hazards on the trail as well as surveying for new invasive species infestations.

~ Brandon Hollis, Stewardship Assistant
Thousand Islands Land Trust

RESEARCH PRIORITIES

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

Biological Control – Water Chestnut *(Previously submitted to the NYS Invasive Species Council)*

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. For example, 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! Much more has been spent on efforts in Lake Champlain. 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 water chestnut *(Trapa natans).* To continue the work on this biological control agent for water chestnut, additional research over an estimated three year period will be needed to confirm this biological control as being effective and safe. It is understood that researchers from China are ready and willing to collaborate.

Program Expenses by Function:

In 2014 program expenses were grouped together based on functional/programmatic categories. This allows for a general understanding of the current program focus and does not reflect a financial report.

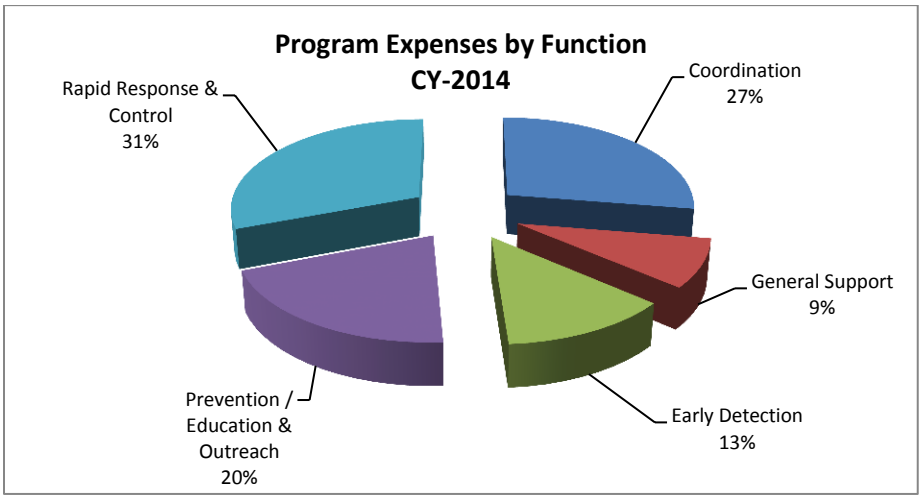

Figure 18: Program expenses grouped by function.

Rapid Response & Control	31%
Coordination	27%
Prevention, Education & Outreach	20%
Early Detection	13%
General Support	09%
	100%

Rapid Response and Control includes: Licensed seasonal pesticide applicator and field technician, three control related sub-contracts.

Coordination includes: Activities and expenses related to administering the program and the Program Director.

Prevention Education & Outreach includes: Supplies and materials, contracted special project x1, full time Educator.

Early Detection includes: Seasonal employees x2 to conduct early detection surveillance.

General Support includes: Travel, communications, etc.,

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Figures with accompanying photo credits:

Figure 1: SLELO PRISM Priority Conservation Areas. Rob Williams, 2014
Figure 2: Environmental DNA sampling on the Oswego River. Rob Williams, 2014.
Figure 3: Giant hogweed stem. Rob Williams, 2014.
Figure 4: Pale Swallow-wort. Mike Parks, 2013
Figure 5: Water chestnut plant. Shelby Alavekios 2013.
Figure 6: Gallarucella spp. release at Lakeview. Mat Levine, 2014.
Figure 7: Mike Parks, Ed Miller treating Japanese knotweed. Rob Williams, 2014.
Figure 8: Eastern Lake Ontario Invasive Species Symposium. Sue Gwise, 2014.
Figure 9: Citizen Science Event Port Ontario. John DeHollander 2014.
Figure 10: Citizen Science Event Port Ontario. Rob Williams 2014.
Figure 11: Field Monitoring along the Salmon River. Elizabeth Macewen 2014.
Figure 12: Plot map of Perch River treatment site. Created by Sarah Fleming 2014.
Figure 13: Plot map of Point Peninsula treatment site. Created by Sarah Fleming 2014.
Figure 14: Aquatic invasive species drop box. Nichelle Billhardt 2014.
Figure 15: Allied Biological air boat. John DeHollander 2014.
Figure 16: Aerial view Wehle State Park. Google Earth 2014.
Figure 17: TILT volunteers. Brandon Hollis 2014.
Figure 18: Program expenses by function. Created by Rob Williams, Elizabeth Marr and Kim Doherty.

Tables:

Table 1: Summary of Priority Conservation Areas and 2014 treatment areas. Rob Williams
Table 2: Summary of water chestnut control sites. 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. Environmental Management Council / Independent Contractor
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 County Environmental Management Council
Durant, Michael	(I)	Lewis County SWCD
Farquhar, James	(**PA**)	New York State Department of Environmental Conservation, 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	(**PA**)	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	(**PA**)	NYS Parks, Req. & Historic Pres.
Malinowski, Kate	(A)	Tug Hill Commission
Malitz, Christina	(I)	Fort Drum Military Installation
Mazzochi, Irene	(A)	New York State Department of Environmental Conservation, Region 6
Merrell, Amber	(I)	Extension NYS - I.S. Clearing house
Miller, Rebecca	(**PA**)	New York State Department of Transportation
O'Neill, Chuck	(I,A)	Extension NYS - I.S. Clearing house
Parton, Bonnie	(A)	New York State Department of Environmental Conservation, Region 7
Payette Joshua	(**P**)	New York State Department of Parks, recreation and Historic Preservation
David MacNeill	(**PA**)	Sea Grant New York
Ripka, Mary	(A)	The Nature Conservancy
Roet, Brian	(**PA**)	The Nature Conservancy
Schell, J.J.	(I)	Oswego Co. Extension
Sherwood, Christopher	(I)	Forester, New York Power Authority
Shupe, Scott	(I)	Oneida Lake Association
Smith, Gerry	(I)	Audobon, CNY Chapter
Surprenaunt, Leslie	(I)	DEC Invasive Pgm. Coord.
Tibbles, Jake	(**P**)	Thousand Islands Land Trust
Jacob Ambrose	(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.)*
- ✓ Water Soldier *(Stratiotes aloides)*
- ✓ Rusty Crayfish *(Orconectes rusticus)*

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*)