FINGER LAKES

# PRISM

Partnership for Regional
Invasive Species Management

# Invasive Species Strategic Plan 2016-2021

HOBART AND WILLIAM SMITH COLLEGES

FINGER LAKES
INSTITUTE

fingerlakesinvasives.org

*Panoramic view of Otisco Lake, Photo credit: Jessi Lyons*

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## Executive Summary

Invasive Species (IS) are one of the leading threats to biodiversity and contribute to the decline of imperiled species within the United States (US). The estimated cost to control invasives is $120B to $137B annually within the US (Pimentel *et al*. 2005, Runyon *et al*. 2012) with the annual loss to the environment and economy from aquatic IS in the Great Lakes alone totaling $5.7B (http://www.habitat.noaa.gov/pdf/best_management_practices/fact_sheets/Aquatic%20Invasive%20Species%20Facts.pdf).

Within the Finger Lakes (FL), the economic impact of controlling IS is also high. For example, the cost to control *Hydrilla verticillata* in Tompkins County is $400,000 annually; the City of Syracuse will spend $350,000 to remove nearly 40,000 ash trees due to decimation by the emerald ash borer (EAB); and the cost to control water chestnut along the Salmon River and in Otisco Lake is $80,000 annually.

Federal programs such as the Great Lakes Restoration Initiative (GLRI) have provided funding to our partners for IS projects. The Genesee Land Trust received nearly $60,000 in funding in 2015 from the United States Forest Service (USFS) through GLRI funds to mitigate the effects of EAB on their Island Cottage Woods property. Similarly, the Onondaga County Soil and Water Conservation, in concert with the Town of Dewitt, received $100,000 from the USFS GLRI for tree replanting as a response to canopy lost by EAB.

The FL region, with its multitude of waterbodies, miles of hiking, and state and local parks, is a likely candidate for the continued assault by IS through multiple pathways. To meet this challenge, a strong, coordinated effort to address the negative impact of IS statewide was warranted and acknowledged by NYS. Subsequently, eight Partnerships for Regional Invasive Species Management (PRISMs) were established across NYS as a strategy to increase IS prevention and management programming.

In 2013, the Finger Lakes Institute (FLI) at Hobart and William Smith Colleges secured funding through the NYS Environmental Protection Fund (EPF) via contract with the New York State Department of Environmental Conservation (NYS DEC) to host the Finger Lakes Partnership for Regional Invasive Species Management (FL-PRISM). The FLI having a history of coordinated research, education, and outreach programming, exemplified by the FLI Watercraft Steward program in existence since 2012, is an ideal host for the FL-PRISM. The FLI provides the capacity, expertise, and infrastructure to tackle tough IS issues across the 17 counties of the FL-PRISM. The FL-PRISM allows for sharing, supporting, and leveraging of limited resources within the partnership, while representing a highly-visible program that builds community awareness and participation.

In order to effectively manage an IS program, the FL-PRISM set out to create a strategic plan to lay the foundation for on-the-ground IS programming within the region. The strategic plan to address IS within the FL incorporates goals, objectives, outcomes, and outputs while also recognizing the importance of reporting and tracking successes and impediments to successful outcomes. With an eye to the future, the FL-PRISM Steering Committee, facilitated by Sharon Anderson (CCE Tompkins County), developed a strategic plan and vision for five years of programming. Seven high priority goals were identified and these actions are summarized under the Goals, Objectives, and Strategy section of this document and again under the implementation table (Table 2). The goals of the Strategic Plan include:

1. Prevention;
2. Coordination/Partnerships;
3. Early Detection/Rapid Response Assessment;
4. Education and Outreach;
5. Information Management and Communication;
6. Invasive Species Control Measures and Restoration; and
7. Legislation and Support: Federal, State, and Local Governments Support.

This Strategic Plan describes the seven high priority goals, objectives, strategies, outcomes, and outputs that the FL-PRISM and its partners will further over the next five years. An annual work plan will be published and used as a benchmark to gauge the progress towards meeting the objectives of this plan.

# Introduction

## Background

In response to the 2005 report to the New York (NY) State Invasive Species Task Force (ISTF), eight Partnerships for Regional Invasive Species Management (PRISMs) were formed statewide to address the economic, ecological, and human health impacts of IS within New York (Figure 1). Developed based on the Cooperative Weed Management Areas (CWMA) from the western United States, the PRISMs represent a unified strategy in dealing with IS.

Prior to securing funding, the FL-PRISM consisted of a volunteer group dedicated to forwarding the mission of IS management. This first meeting of the FL-PRISM was held on March 22, 2007 at the Montezuma Audubon Center in Savannah, NY, and was facilitated by John Dickerson. Key questions and concerns over boundaries of the FL-PRISM, mission, vision, and naming were topics for this opening meeting, which had nearly 70 people in attendance. In September 2007, the first press release was distributed asking for commitment from key partners who were interested in learning more about IS and partnership opportunities. Gregg Sargis (The Nature Conservancy (TNC)) was the acting-chair of the interim steering committee which consisted of members from the Finger Lakes Institute (FLI), TNC, New York State Department of Environmental Conservation (NYS DEC) Region 8, Sea Grant, Invasive Species Task Force (ISTF), Cornell Cooperative Extension (CCE) of Monroe County, NYS Department of Transportation (DOT), Finger Lakes-Lake Ontario Watershed Protection Alliance (FLLOWPA), New York State Federation of Lake Associations (NYSFOLA), NYS Department of Agriculture & Markets (NYS DAM), and Maple Hill.

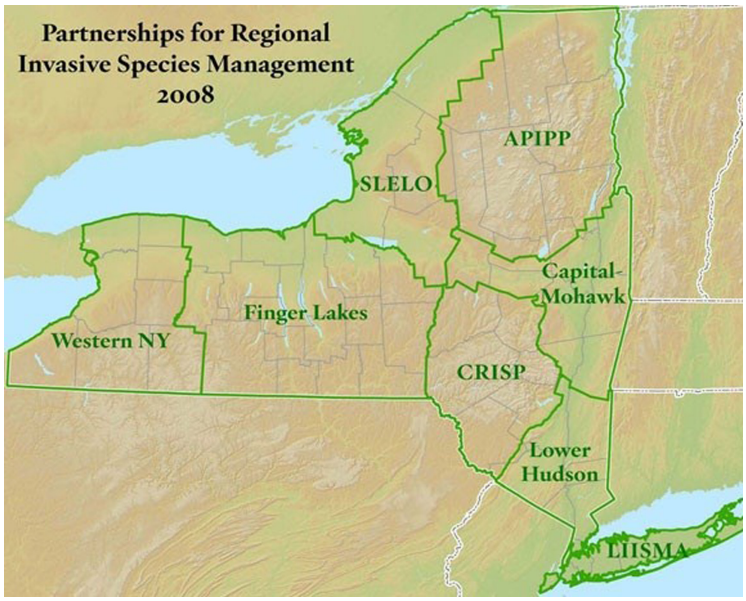



*Figure 1. Partnerships for Regional Invasive Species Management (PRISMs) in New York State*


*Water quality sampling on Skaneateles Lake. Photo credit: Roxanne Razavi*

The FL-PRISM launched terrestrial, aquatic, and education & outreach working groups. The working groups developed a 2008 work plan with five major objectives including: strengthen partnership, identify funding sources, education and outreach, eradication and control, and monitoring and inventory. The last recorded meeting minutes were from a meeting that took place on March 8, 2008. Without funding and a structure to support the FL-PRISM, the group stopped convening as a unit.

In late 2013, the FL-PRISM contract was awarded to the Finger Lakes Institute at Hobart and William Smith Colleges. On March 3, 2014, Hilary Mosher began part time as the FL-PRISM Coordinator. On May 19, 2014, Mosher started full time in the role.

## Finger Lakes Region

With breathtaking vistas and a wealth of historical perspectives, the Finger Lakes host travelers, recreationists, and avid enthusiasts from across the world who visit the beautiful land and lakes. Native American legend explains that the Creator looked upon this land with special favor and when reaching out to bless it, left an imprint of a hand on the landscape. Hence, the Finger Lakes were created, per legend.

Of course, geological history has a different, more scarring tale to tell about its origin. During the Pleistocene, a glacial sheet over a mile thick in locations gorged out the land and created enormous holes that filled in to become lakes as the glaciers retreated across the landscape. The incredible gorges, waterfalls, and natural panoramas of the area were born from this incredible geological process. Notably, the Finger Lakes region offers state parks such as Letchworth and Watkins Glen, ranked numbers one and three respectively in the 2015 USA Today's Reader's Choice Award for Best State Park (Appendix D), as well as the Finger Lakes National Forest, the gorges of Ithaca, among others (Figure 2).
Some other prominent natural, historical, and cultural features of the Finger Lakes region include:

- Harriet Tubman Home in Auburn, NY,
- Waterloo, the birthplace of Memorial Day,
- the home of aviation pioneer Glenn Curtiss, in Hammondsport,
- Elmira, home to Mark Twain in his later years,
- Corning Museum of Glass,
- Hornell, a major railroad center,

*Fog clearing from Skaneateles Lake. Photo credit: Jessi Lyons*

- Conesus, the oldest producer of pure grape sacramental wine in the Western hemisphere,
- Seward House of Auburn, a National Historic Landmark,
- Women's Rights National Historic Park (National Park Service), Seneca Falls,
- Hemlock-Canadice State Forest covering two lakes across 6,684 acres,
- Hemlock is also home to the state's oldest pair of nesting bald eagles dating back to the 1960s,
- Montezuma Audubon Center and Montezuma Wildlife Refuge with over 10,000 acres in Seneca, Wayne, and Cayuga Counties,
- Institutions of higher education (Appendix E).

The FL-PRISM region encompasses over 7.3 million acres with the City of Rochester to the west, the City of Syracuse to the east, and Elmira-Corning to the south. According to census data from 2010, 2,351,253 people live in the Finger Lakes region which encompasses Broome, Cayuga, Chemung, Chenango, Tompkins, Tioga, Steuben, Wayne, Yates, Cortland, Livingston, Madison, Monroe, Onondaga, Ontario, Schuyler, and Seneca counties (Table 1). The mean household income of the region is $63,978 and the average individual percent poverty rate is 13.39% (Census Data, 2010). Given the unique features, aesthetic value, and ease of access to major cities, the Finger Lakes region* is reported to be the largest tourism area in New York State, north of the Hudson Valley (Finger Lakes Tourism Alliance, 2014). In fact, in 2014, travelers to the Finger Lakes region added $2.9B in traveler spending and supported 59,238 jobs, equating to 5% of the total traveler spending within NYS. The amount of traveler spending to the Finger Lakes then is more than any other region outside of the New York City, Long Island, and Hudson Valley tourist locations, which collectively, made up nearly 80% of traveler spending (Finger Lakes Tourism, 2014).

*Tourism data excludes the financial impact of Madison, Broome, and Chenango counties, which were included in the Central New York tourism data, and equates to an additional 3.8M dollars in traveler spending and increases the contribution of the region by 0.6 % (Central New York Focus Data, 2014).


*Figure 2. Map of the Finger Lakes.*

Fishing also has a major impact in the Finger Lakes region. According to the Economic Contributions of Recreational Fishing per U.S. Congressional Districts report produced by Southwick Associations for the American Sportfishing Association (October 2015), NY anglers contributed nearly $4B to the NY economy of which the Finger Lakes region accounted for over 25% of the total angler contributions ($1.032B).

**Table 1. Demographics of the 17-counties in the FL-PRISM region**

| | Population | Un-employment* | Mean House. Income* | % Indiv. Below Poverty* | % High school* | % Some College* | % Associate Degree* | % Bachelor Degree* | % Graduate Degree* |
|---|---|---|---|---|---|---|---|---|---|
| Broome | 200,600 | 5.1 | 60,319 | 16.5 | 32.8 | 18.6 | 12 | 14 | 11.9 |
| Cayuga | 80,026 | 5.1 | 61,144 | 12.2 | 35.6 | 18.9 | 12.5 | 11 | 7.6 |
| Chemung | 88,830 | 4.3 | 71,287 | 16 | 36.1 | 20 | 11.6 | 11.6 | 9.1 |
| Chenango | 50,477 | 5.2 | 56,918 | 14.6 | 39.4 | 18.5 | 10.7 | 9.7 | 7.1 |
| Cortland | 49,336 | 4.7 | 59,844 | 15 | 35.1 | 19.1 | 12 | 13.9 | 9.8 |
| Livingston | 65,393 | 3.4 | 63,205 | 11.6 | 34.0 | 17.4 | 12.9 | 13.9 | 10.8 |
| Madison | 73,442 | 3.6 | 64,644 | 10.8 | 35 | 17.4 | 13.3 | 14.1 | 10.3 |
| Monroe | 744,344 | 5.1 | 69,478 | 14.6 | 25 | 17.5 | 11.1 | 20.1 | 15.4 |
| Onondaga | 467,026 | 4.6 | 70,000 | 14.3 | 26.8 | 18.3 | 11.5 | 18.6 | 14.3 |
| Ontario | 107,931 | 4.3 | 71,972 | 9.6 | 28 | 19.3 | 13.1 | 17.9 | 13.4 |
| Schuyler | 18,343 | 3.7 | 57,703 | 9.4 | 37.9 | 21.1 | 12.6 | 8.6 | 7.8 |
| Seneca | 35,251 | 3.3 | 58,646 | 11.9 | 35 | 18.6 | 11.4 | 11.4 | 7.2 |
| Steuben | 98,990 | 5.5 | 59,271 | 15.1 | 36 | 18.1 | 13.2 | 10.7 | 9.4 |
| Tioga | 51,125 | 5.2 | 67,082 | 8.8 | 38 | 17.7 | 12.3 | 13.2 | 10.4 |
| Tompkins | 101,564 | 3.6 | 69,520 | 20 | 20.1 | 14.8 | 8.3 | 20.8 | 29 |
| Wayne | 93,227 | 4.9 | 63,737 | 11.3 | 35.9 | 19.2 | 12.7 | 12.5 | 7.8 |
| Yates | 25,348 | 3.4 | 62,848 | 16 | 37.2 | 15.3 | 9.5 | 11.9 | 11.2 |

* 2008-2012 ACS 5-Year Estimate (all else 2010 Demographic Profile)

There are over 40 State Parks and Historic Sites within the region ranging geographically from Hamlin Beach State Park in Monroe County to Chittenango Falls State Park. Additionally, the Finger Lakes boast Zurich Bog, a National Natural Landmark with its unique wetland preserve that is home to several threatened and endangered species on 650 acres in the town of Arcadia. The FL is also home to the Finger Lakes National Forest in Hector, NY, a beautiful 16,212-acre area that encompasses the Hector Grazing areas, multi-modal recreation, Finger Lakes Trail access, and camping, in the watersheds of Seneca and Cayuga Lakes. The FL also boasts federally threatened organisms such as American hart's tongue fern, bog turtle, Chittenango ovate amber snail, and Leedy's roseroot.

## Invasive Species Challenges

Each year, however, new IS are being discovered in the FL that threaten to supplant natives. In 2015, a new infestation of Hydrilla was found in a small pond in Monroe County; water chestnut was found in the Genesee River, Cayuga Lake (north), Canandaigua inlet, and Little Sodus Bay. Previous water chestnut infestations are actively managed in Sodus Bay, Braddock Bay, Oneida Lake, and Otisco Lake. In addition, the presence of hemlock woolly adelgid has the potential to impact gullies and water quality as hemlocks decline. New infestations of other insects, invertebrates, fish, and plants are threatening to spread due to direct hydrologic connections between the Great Lakes and FL watersheds.

Invasive species, as defined by the NYS DEC, pose a significant threat to the FL region given the multitude of pathways for transmission, including the canalways, FL trails, and the multitude of recreational pathways. It is imperative that we protect our ecosystems and safeguard our picturesque region from additional outbreaks of new or invading species. The FL-PRISM is dedicated to collaboration, coordination, and control of IS before they cost our region millions of dollars more and degrade our fragile ecosystems.

## Introduction to the Strategic Plan

This strategic plan was developed by the Steering Committee (SC) of the FL-PRISM to set the path for the FL-PRISM and provide goals and objectives that will drive IS priority setting, projects and activities. This Strategic Plan is the culmination of many hours of data gathering and brainstorming, facilitated by Sharon Anderson (CCE Tompkins County), who aided the group in thinking critically about the direction of the FL-PRISM, partners, roles, outputs, and outcomes. It is with gratitude that I offer the following plan so that it may guide the FL-PRISM to great results and achievable goals within the region. I am indebted to the Steering Committee and Sharon Anderson for their work and support of this plan.

**Vision**
The FL-PRISM is recognized as the primary organization for IS detection, prevention, control, and education and outreach within the 17-county region of the Finger Lakes. The FL-PRISM will work collaboratively with its partners and the public to provide education and mitigate the impacts of IS within our region.

**Mission**
The mission of the FL-PRISM is to reduce the introduction, spread, and impact of IS within the Finger Lakes PRISM region through coordinated education, detection, prevention, and control measures (adopted by the SC, June 2014).

## FL-PRISM Steering Committee, Working Groups, and Staff

The FL-PRISM consists of multiple partners working to help stop the invasion of plants, animals, diseases, and pathways of transmission for IS. The staff includes Dr. Lisa Cleckner, Director of the Finger Lakes Institute, and Hilary R. Mosher, FL-PRISM Coordinator.

The partnership committees are divided among five working groups and encourage on-the-ground education & outreach, prevention, and control of IS through public forums, trainings, outreach, presentations, and IS surveys throughout the region. The FL-PRISM has a Steering Committee (SC), Agricultural Working Group (AgWG), Aquatic Working Group (AWG), Education & Outreach Working Group (E&OWG), and a Terrestrial Working Group (TWG). The purpose of each working group along with the priorities of each group is described below.

*Picturesque Cayuga Lake. Photo credit: Lisa Cleckner*

## 1. Steering Committee (SC)

**Purpose:**

To guide the five-year strategic planning process, plan, and set overall direction for priority areas and priority IS and ensure that major goals and timeline are achieved. The SC will set the annual work plan and monitor progress, which may include tracking timelines and evaluation procedures. The SC will provide strategic direction and coordination for the four working groups through the varied expertise and connections of the SC.

**Structural Statement:**

The steering committee is made up of representatives from the Finger Lakes with an interest in the governance of the FL-PRISM. The structure of the PRISM, the steering committee, and working groups is designed to ensure consistency in decision-making for the Finger Lakes region.

**Strategies to accomplish this include:**

- Establish a good working relationship with partners and working groups;
- Work in partnership with the working groups to develop priorities such as identifying key IS to monitor and control, and key target locations in the FL region;
- Adopt a monitoring strategy for IS in the FL-region based on the outcomes from the WGs;
- Adopt an Early Detection Rapid Response (ED/RR) plan that will help communities detect and respond to IS introductions based on outcomes from the WGs;
- Develop the specifics of the annual work plan that brings together various stakeholders to enhance synergy among experts to tackle IS within the community through clear and concise strategies for prevention, control and remediation;
- Help communicate the priority list of IS and methods of introduction, which will include information about pathways of transmission and information about where IS are coming from, and where they are moving to, which will be disseminated via FL-PRISM website; and
- Develop a marketing and communication strategy, including a robust and all-inclusive website, to enable the community to recognize and consider the FL-PRISM website first for information, management ideas, ED/RR, and all things invasive in the region.

*Canandaigua Lake as seen from the Finger Lakes Institute research pontoon boat. Photo credit: Roxanne Razavi.*

## 2. Agricultural Working Group (AgWG)

**Purpose:**

To create agriculture-specific priorities for IS management and prevention, determine highly probable locations and conditions appropriate for invasion, and develop agricultural IS management plan. This working group will develop an agriculture-focused work plan, support best management practices intended to reduce or control IS, and support the steering committee as needed.

**Strategies to accomplish purpose:**

- Establish good working relationships with partners and NYS agencies such as farmers, USDA Natural Resources Conservation Service, County Soil and Water Conservation Districts, Cornell, DEC, Ag and Markets, and others;
- Working in concert with the E&OWG and the SC, determine target audiences in order to provide Ag IS-specific toolbox with items to effectively and efficiently educate people about the impact of Ag IS and how to detect, prevent, mitigate, and report Ag IS;
- Develop or identify a monitoring strategy, including monitoring protocols, for Ag IS in the FL-region;
- Create an ED/RR plan that will help communities detect and respond to Ag IS coming into the region;
- Develop or identify a mitigation strategy with best management practices to reduce impacts and help farmers deal with impacts;
- Develop or identify a prevention, management, and work plan that brings together various stakeholders to enhance the synergy necessary to tackle Ag IS within the community through clear and concise strategies for prevention, control, and remediation;
- Develop or identify a protocol for the FL-region to deal with Ag IS issues at locations such as hedgerows, fallow fields, etc. to provide consistent and clear messaging;
- Develop or identify a priority list and methods of introduction, which will include information about pathways of transmission, information about where Ag IS are coming from and where they may go, and how to prevent them to be disseminated via FL-PRISM website;
- Synthesize and disseminate data to the public via the FL-PRISM website;
- Create material on priority Ag IS for the FL-region (fliers, handbooks, datasheets, etc.);
- Establish the FL-PRISM website as the key location for information on IS in the FL PRISM region; and
- Develop a decision tree to use for determining priority organisms and locations for IS management

**Priority invasives of concern:**

*Plants*

- Autumn and Russian olive, *Elaeagnus umbellate, Elaeagnus angustifolia*
- Canada thistle, *Cirsium arvense*
- Field bindweed, *Convolvulus arvensis*
- Japanese knotweed, *Polygonum cuspidatum* Siebold & Zucc.
- Johnson grass, *Sorghum halepense*
- Spotted knapweed. *Centaurea maculos*
- Swallow-wort, *Cynanchum spp.*
- Velvetleaf, *Abutilon theophrasti Medic.*
- Wild parsnip, *Pastinaca sativa*

*Diseases*

- Basil downy mildew, *Peronospora belbahrii*
- Grape crown gall, *Agrobacterium tumefaciens*
- Late blight, *Phytophthora infestans*
- Phytophthora blight, *Phytophthora capsici*
- Plum pox virus, *Potyvirus*

*Otisco Lake. Photo credit: Jessi Lyons*

*Insects/Invertebrates*

- Brown marmorated stink bug (BMSB) (*Halyomorpha halys*)
- Garlic bloat nematode (*Ditylenchus dipsaci).*
- Golden nematode (*Globodera rostochiensis) - not an insect but should be included*
- Spotted wing drosophila (*Drosophila suzukii*)
- Swede Midge (*Contarinia nasturtii*)

## 3. Aquatic Working Group (AWG)

**Purpose:**

- To develop aquatic- specific IS priorities, determine highly probable areas, create an aquatic IS management strategy, and create a work plan;
- To help in the prevention of new IS introductions into the region, focus on ED/RR of AIS, and support the steering committee as needed;
- To serve as the direct point of reference for AIS and establish a simple and effective means for preventing, detecting, reporting, controlling, and managing priority AIS of concern;
- To develop a robust website that serves as a clearinghouse for AIS issues (prevention, detection, response, management, control) in the FL region; and

**Secondary Focus:**

- To focus on containment and management of established invaders within the region
- To focus on providing information about conferences, workshops, and literature to the SC and E&O WG

**Strategies to accomplish purpose:**

- Establish good working relationships with partners such as NYS OPRHP, DEC, NYS Federation of Lake Associations (NYSFOLA), and others;
- Develop IS prevention protocols for lakes without stewards;
- Working in concert with the E&OWG and the SC, determine the FL-PRISM target audiences and how to provide an AIS-specific toolbox to effectively and efficiently educate people about the impact of AIS and how to detect, prevent, mitigate and report AIS;
- Develop a monitoring strategy including monitoring protocols for AIS in the FL-region;
- Create an ED/RR plan that will help communities detect and respond to AIS coming into the region;
- Develop a mitigation strategy with best management practices to mitigate impacts and help communities deal with impacts;
- Develop a prevention, management, and work plan that brings together various stakeholders to establish the synergy necessary to tackle AIS within the community through clear and concise strategies for prevention, control, and funding of projects;
- Develop a protocol for the FL-region to deal with AIS issues at locations such as boat launches, marinas, etc. at all the waterbodies in the region to provide consistent and clear messaging (Lake Ontario, Sodus Bay, Finger Lakes, Oneida Lake, Erie Canal, small glacial lakes, etc.);

*Volunteers on the Cayuga Lake Floating Classroom - learning together as they survey the lake for Hydrilla verticillata and other aquatic invasives.*
*Photo credit: Bill Foster*

- Develop a priority list and methods of introduction, which will include information about pathways of transmission, information about where AIS are coming from and where they could potentially spread to, and AIS prevention to be disseminated via FL-PRISM website;
- Synthesize and disseminate watercraft steward/boat steward information to the public via the FL-PRISM website;
- Develop a consistent marketing strategy to convey the importance of watercraft stewards to the public (i.e., Clean, Drain, Dry!, Stop Aquatic Hitchhikers!);
- Create material on priority AIS for the FL-region (fliers, handbooks, datasheets, etc.);
- Establish the FL-PRISM website as the primary location for all information on AIS in the FL-PRISM region; and
- Develop a decision tree to use when determining priority organisms and locations for AIS invasion and management and create information about regional AIS and then lake-specific AIS

**Invasive Species Protection Zones:**
- Boat launches
- Primary inlets and tributaries
- Marinas and bait shops
- Highly Probable Areas of Invasion (HPA) as defined by the AWG

**Priority invasives of concern:**
- Macrophytes
- *Hydrilla verticillata**
- Water chestnut, *Trapa natans* *
- Water lettuce, *Pistia stratiotes*

**Macroalgae:**
- Starry stonewort, *Nitellopsis obtusa*

**Invertebrates:**
- Bloody red shrimp, *Hemimysis anomala*

**Fish and Fish Diseases :**
- Round goby, *Neogobius melanostomus*
- Oriental weatherfish, *Misgurnus anguillicaudatus* (Cantor, 1842)

**Connection to Harmful Algal Blooms (HABs):**
- Asian clam, *Corbicula fluminea*
- *Dreissenids* (Zebra and Quagga mussels)

*Hydrilla verticillata located in Tinker Nature Park, Henrietta, NY. Photo credit: Hilary Mosher*


*Community Education and lake sampling aboard the Cayuga Lake Floating Classroom. Photo credit: Bill Foster*

*Also listed on the Great Lakes Governors and Premiers List of Least Wanted Species in the Great Lakes

## 4. Education and Outreach Working Group (E&OWG)

**Purpose:**

- To establish a strong connection between FL-PRISM and the general public, volunteers, institutions of higher education, NGOs, agencies, and other stakeholders;
- To promote FL-PRISM to foster awareness of our mission, generate interest in being a partner, and enhance visibility within agencies and the Finger Lakes region to increase general knowledge (detection, prevention, control) of IS;
- The E&OWG will educate the Finger Lakes community on IS issues and provide the tools necessary to make sound management decisions;
- The E&OWG will determine appropriate means for education and outreach based on resources available; and
- The E&OWG will seek to demonstrate to the general public and others the mutual benefit of investing human and economic resources in the FL-PRISM

**Strategies to accomplish purpose:**

- Generate and increase IS awareness and education within the FL-PRISM;
- Create a network of information sharing for marketing collateral and resource sharing across the FL-PRISM;
- Create a strong web-presence for the FL-PRISM to include necessary resources for managers, general public, lake associations, etc. on dealing with IS;
- Create fact sheets and information for professionals and educators;
- Develop a list of venues/events to offer opportunities to raise awareness about the FL-PRISM and IS;
- Sponsor education and outreach conferences, symposia and public forums to increase IS awareness across the region;
- Offer technical training on IS identification and management options for professionals and educators in the region;
- Create a list of experts in the field to draw upon for a speaker series, and a list of who is doing what; and
- Support the Agricultural, Aquatic, and Terrestrial WGs to ensure that their priorities and products are delivered to the general public and the FL-PRISM

## 5. Terrestrial Working Group (TWG)

**Purpose:**

- To guide terrestrial-specific IS priorities, determine highly probable areas for invasion and engage in IS detection, control, and restoration;
- The TWG will develop a terrestrial-focused work plan and IS management plan;
- The TWG will assist in the prevention of new IS into the region, focus on ED/RR of IS, and support the steering committee as needed;

*Participant mapping a patch of invasive species during a teacher training. Photo credit: Nadia Harvieux*

*Japanese knotweed taking over the riparian zone of Seneca Lake. Photo credit: Hilary Mosher*

- A secondary focus of the TWG will be to contain and manage established invaders within the region and provide information on terrestrial IS of concern, conferences, workshops, and literature to the E&O committee;
- TWG will Engage in regional monitoring on terrestrial IS (TIS); and
- TWG will Promote the FL-PRISM as a central clearinghouse for TIS in the FL-PRISM region

**Strategies to accomplish purpose:**

- Prevent new invasions through rapid detection and remediation of new invasions of plants;
- Manage invaded areas;
- Promote native planting (i.e., as landscaping) thereby decreasing potential for invasion;
- Collaborate and network with regional IS educational institutions;
- Inventory, survey, and map populations of invasive plants;
- Restore sites where weed management and control have occurred; and
- Monitor changes and evaluate management results

**Invasive Species Protection Zones:**

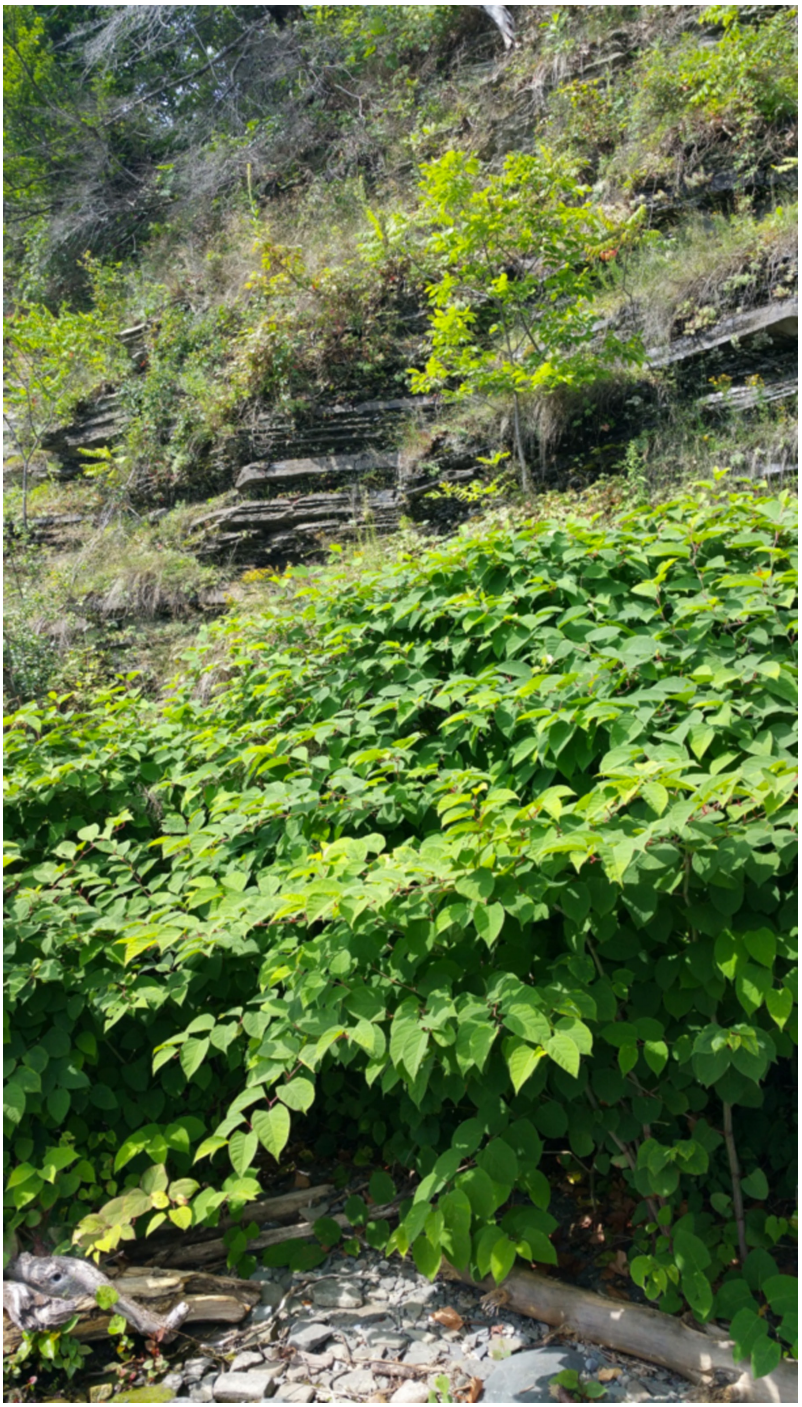
- Areas where the infestation is low on the invasion curve and efforts can make a difference—i.e., Japanese knotweed in the Finger Lakes National Forest is in very low abundance;
- Easily accessible areas for recreation where plants can be spread—highly probable areas (HPAs) for invasion;
- Edge of ecological important communities;
- Transportation corridors/right-of-ways;

**Priority invasives of concern:**

1. Emerald ash borer, *Agrilus planipennis*
2. Giant hogweed, *Heracleum mantegazzianum*
3. Hemlock woolly adelgid, *Adelges tsugae*
4. Japanese knotweed, *Fallopia japonica* (Houtt.)
5. Oriental bittersweet, *Celastrus orbiculatus*
6. Swallow-wort (pale and black), *Cynanchum spp.*

**High priority early detection invasive species:**

1. Japanese stiltgrass, *Microstegium vimineum*
2. Mile-a-minute vine, *Persicaria perfoliata*
3. Slender falsebrome, B*rachypodium sylvaticum*



*A patch of Japanese knotweed dominating the shoreline of Seneca Lake. Photo credit: Hilary Mosher*

## Strategic Plan Priorities

The FL-PRISM strategic plan was developed by the Steering Committee through facilitated brainstorming and working group sessions. The results were seven goals with associated objectives and strategies, outputs, and outcomes to accomplish the mission and contribute to the vision of the FL-PRISM to reduce the spread and impact of IS within the Finger Lakes region and beyond. The goals are a set of priorities that the FL-PRISM Steering Committee recognize as being the key to a successful program to prevent the spread and impact of invasive species. Goal #1 is prevention, which the Steering Committee recognized as the most important way to reduce cost and ecological and human health impacts from IS. The remaining six goals are in no particular order recognizing that the first line of defense is prevention. The implementation table (Table 2) lists the roles for implementation of the strategic plan goals, objectives, strategies, outputs, and outcomes.

## Goals, Objectives, and Strategies

### Goal 1. Prevention

The Finger Lakes Partnership for Regional Invasive Species Management (FL-PRISM) successfully prevents the introduction and spread of IS to new areas within the region through targeted prevention efforts for vectors and pathways of transmission.

**Objectives:**

1. The community is knowledgeable about priority organisms, the pathways of invasion, and the likeliness of invasion, and acts in a manner that prevents the spread of IS.
2. The FL-PRISM partnership shares resources and information regarding prevention management and control methods.

**Strategies:**

- Identify and provide outreach to target audiences including, but not limited to: anglers, boaters, recreationists, and hikers, with information tailored to the various pathways of IS movement.
- Develop, promote, and evaluate volunteer programs that effectively monitor areas and create awareness.
- Establish, facilitate, and support a platform for sharing of surveillance data/ED data.
- Help create or support easy to use identification (ID) tools for public reference and use.
- Utilize communication networks to publicize prevention techniques for IS that have the potential for great economic, human health, and ecosystem harm to other localities.
- Identify IS Prevention Zones (ISPZ) that are at a great risk for a large negative impact from IS.
- Communicate with other PRISM leaders and regional and statewide experts.
- Support existing state, federal, and local prevention programs.

**Outputs:**

- Provide three targeted outreach programs per year to boaters/anglers, recreationists, hikers, and other human-induced pathways of introduction.
- Provide at least one training and outreach workshop on iMapInvasives per year.
- Create or support updated ID tools for partner use.
- Create and maintain an easy to use website for the FL-PRISM and the public, which is up to date and utilized by the community.
- Provide at least three training workshops for IS identification, prevention, and/or control techniques.
- Identify at least one ISPZ in the FL per year.

**Outcomes:**

- The public has increased awareness of the importance of IS prevention and control in the FL region.
- The community is trained and has the appropriate tools to help prevent IS and acts to reduce the spread of IS into and out of the FL region.
- The public has increased access to valuable information about IS within the region via the website, social media, and outreach programs.
- New invasions to the region are prevented.

## Goal 2. Coordination/Partnership

The FL-PRISM strategically identifies stakeholders, forms networks, and facilitates sharing of information, resources, and expertise.

**Objectives:**

1. FL-PRISM partners represent key stakeholders in the FL region.
2. Partners share strengths to reach common goals.
3. Partners share resources such as information, data, and materials to reduce costs and eliminate duplication of efforts.

**Strategies:**

- Recruit key partners not already engaged in the FL-PRISM to become part of the partnership (i.e., Department of Agriculture and Markets, USDA NRCS, NYS Nursery and Landscape Association, etc.).
- Maintain communication and relationship with partners through listserve, social media and other forms of communication to encourage participation in IS activities (NYS IS Awareness Week), meetings, and reporting.
- Facilitate networking through full partnership meetings, working groups, email listserves, and other appropriate communication avenues.
- Identify partner contributions and capacity for the different strategies identified in the strategic plan and to host educational activities, exhibits, and creation of materials.
- Create and maintain a database of current resources and research on specific organisms of concern to help with education, outreach, management, and prevention.

**Outputs:**

- FL-PRISM creates a database of partners and stakeholders with contact information and role in IS outreach, education, management, restoration, control and resources available for use by the FL-PRISM.
- The FL-PRISM listserve is utilized consistently for information sharing.
- The FL-PRISM support events throughout the region and hosts or works with partners to co-sponsor at least two events each year within the FL.
- The FL-PRISM website is utilized by the partnership to share information and events.

**Outcomes:**

- Partners understand the expectations of the partnership and purpose of the FL-PRISM.
- Partners utilize the network for opportunities to collaborate and leverage resources thus eliminating duplication of efforts.
- Partners utilize the website as a go-to for all IS information and event sharing within the region.
- Partners cooperate and share resources and events within the FL-PRISM.
- Partners are clear of what is occurring within the FL region.
- Partners use the listserve and social media to stay abreast of current IS issues.

## Goal 3. Early Detection (ED)/Rapid Response (RR) Assessment

The FL-PRISM will identify new IS to the area and respond to mitigate the effects.

**Objectives:**

1. FL-PRISM  partners use an effective ED/RR process.
2. FL-PRISM supports the continuous monitoring of priority areas for highly IS, species that are approaching region, or those that are considered early detection.
3. The community is knowledgeable about priority early detection organisms and those regulated by the nursery trade, the likeliness of invasion, and the pathways of transmission.

**Strategies:**
- Develop a protocol for reporting, confirming, and identifying a new population or new invasive.
- Utilize the FL-PRISM website as a platform for sharing of surveillance data and ED data.
- Identify costs associated with an ED/RR program and potential funding opportunities.
- Work with permitting agencies to streamline the permitting process to ensure rapid response to potential invasion.
- Develop list of known distribution of priority invasives within the region and identify survey needs.
- Utilize students or interns to survey and monitor for high priority species.
- Create easy to use ED identification tools for public reference.
- Train volunteers/public (e.g., Master Gardeners) in ED invasives.
- Utilize communication networks to advertise new infestations that have the potential for great economic, human health, and ecosystem harm to other localities.

**Outputs:**
- Information on ED species is easily accessed on the FL-PRISM website.
- The FL-PRISM has a coordinated response plan for ED of IS, and capitalizes on resource-sharing and leveraging.
- New or ED species are recorded.
- Early detection surveys or response activities are recorded.
- Species distribution and occurrence data are available within iMapInvasives and accessible via the FL-PRISM website.

**Outcomes:**
- Community is knowledgeable about early detection species and how to prevent an invasion.
- Partners increase their participation and collaboration in monitoring and early detection of IS.
- High priority conservation targets are protected from invasion.
- FL-PRISM increases its capacity to respond to an early detection invasion in the region.

## Goal 4. Education and Outreach

Increase public awareness of IS and provide tools for public to engage in IS prevention and management.

**Objectives:**
1. FL-PRISM and partners create consistent messaging that uses the best available materials and methods regarding the FL-PRISM and IS prevention, impacts, and management options is created and maintained.
2. The public makes choices that prevent IS introduction and spread.
3. The public knows about the FL-PRISM.

**Strategies:**
- Identify existing educational materials and messaging of IS within the Finger Lakes region and nationwide.
- Utilize the best available materials and existing state and national public education campaigns (Don't Move Firewood, Stop Aquatic hitchhikers, PlayCleanGo).
- Identify gaps in education and outreach materials and work with partners to create and leverage diversified tools for outreach such as social media, train the trainer programs, and a list of guest speakers with an expertise in IS.
- Provide workshops or forums for stakeholders to ensure knowledge and resources are shared and consistent.
- Support state, federal, and local education and outreach programs.
- Use selected materials to reach stakeholders, venues, and events that are prioritized in management plans and strategies from other goals.
- Use the train the trainer model of outreach to increase the reach of the FL-PRISM.
- Work with school districts to incorporate IS awareness in curriculum.

*Summer Academy for Geneva High School Students. Photo credit: Hilary Mosher*

- Use evaluation techniques such as surveys to access effectiveness of educational campaigns on behavior change.
- Create and promote FL-PRISM branding/marketing initiative.
- Encourage partners and stakeholders to link to FL-PRISM website.
- Promote FL-PRISM as a partner for all education and outreach on IS in the Finger Lakes region.
- Create and utilize an educational toolbox to provide public with appropriate IS response tools.
- Create a list of IS experts to draw on as speakers and sources of information /resources.
- Utilize social media to disseminate information about IS and pathways of transmission to the greater public.
- Use community presentations (i.e., annual meetings, garden clubs, hunting and angler associations, etc.) to disseminate information to general audiences.
- Leverage academic institutions for community presentations/resource to disseminate IS information.

**Outputs:**

- Have a FL-PRISM presence at three major community outreach events per year based on recommendations of the E&OWG.
- Provide at least three trainings, seminars, or workshops opportunities per year.
- Have a FL-PRISM presence at selected partner events.
- Website is fully functioning and utilized by the community for information on regionally-specific IS issues.
- Create IS education and outreach materials for dissemination to a larger audience.
- Create and keep a record of metrics to include number of programs, participants, targeted audience, press coverage, and materials produced.

**Outcomes:**

- Community is knowledgeable about IS, how to prevent an invasion, and control methods.
- Partners increase their participation and collaboration in ED/RR, prevention, and control of IS.
- Public involvement in the FL-PRISM increases.
- The FL-PRISM has a consistent, branded message to the community.

## Goal 5: Information Management and Communication

FL-PRISM will increase its capacity and partnership through information sharing and effective communication strategies.

**Objectives:**

1. The FL-PRISM will have a fully-utilized and robust web presence.
2. The FL-PRISM and partners will develop and promote use of IS materials, protocols and fact sheets.
3. The FL-PRISM will encourage IS reporting and information sharing.
4. The FL-PRISM will create opportunities for partners to share information and resources.

**Strategies:**

- Partners utilize the FL-PRISM website for information on IS within the FL region and beyond and provide updates on IS content and events.
- Develop a marketing and communication strategy including a robust and all-inclusive website to enable the community to recognize and consider FL-PRISM as the entity for information, management ideas, ED/RR, and all things invasive in the region.
- Synthesize and disseminate IS education and surveillance data such as watercraft steward/boat steward data to the public via the FL-PRISM website.
- Develop a consistent marketing strategy to convey the importance of IS prevention to the public (i.e., Clean, Drain, Dry!, Stop Aquatic Hitchikers!).
- Develop a prevention, management, and work plan that brings together various stakeholders to establish the synergy necessary to tackle IS within the community through clear and concise strategies for prevention, control, and remediation.
- Develop a FL-PRISM resource guide for partners to include resources, capacity, and partner capabilities within the region.
- Develop a matrix to use when determining priority organisms and locations for AIS invasion and management.

**Outputs:**

- FL-PRISM website is utilized by the public and partners for IS information.
- Information about regional IS and location-specific IS is created and maintained based on partner input.
- Finger Lakes regionally-specific database for point of contacts for IS reports and information is created and maintained.
- Increase in number of FL-PRISM listserve subscribers per year.

**Outcomes:**

- The FL-PRISM is used as the resource in the area for information about biology, distribution, control measures, etc. of IS within the FL and the region.
- Partners recognize and utilize the FL-PRISM website as a source for information on IS.
- Partners share information and leverage resources.

## Goal 6. Invasive Species Control Measures and Restoration

Control IS through four approaches: eradication, containment, suppression, and restoration in targeted high priority conservation areas.

**Objectives:**

1. The FL-PRISM prioritizes resources to address high impact IS projects.
2. Invasive species are stopped from spreading along predictable pathways.
3. Isolated outbreaks of IS are restricted from spreading.
4. Guidelines for working with private landowners in targeted high priority areas are developed.

**Strategies:**
- Develop a priority species and areas list for the FL region.
- Create a management plan and annual work plan to be carried out by FL-PRISM partners.
- Identify and obtain needed resources for eradication, containment, suppression, and restoration.
- FL-PRISM subcontract awards are prioritized to provide resources to high impact and demonstration projects in the region.
- Develop list of potential funding opportunities and disseminate on the FL-PRISM website.
- Secure funding to implement control and restoration projects within the FL.
- Isolated outbreaks of highly IS are prioritized for control and restoration.
- Identify site and species-specific best management practices.
- Develop a management plan to include restoration of areas where invasives have been removed.
- Coordinate projects with partners to eliminate duplication of efforts and leverage support.
- Identify likely transportation corridors for prioritized projects.

**Outputs:**
- Resources are identified to aid in the control and restoration of priority habitat in the Finger Lakes.
- Priority areas of control and restoration are identified.
- An annual work plan is developed each year with specific outcomes for IS control.
- Management plans will be created with species-specific BMPs .
- Number and impact of control and restoration projects will be recorded and disseminated on the FL-PRISM website.
- Number and impact of post-control and restoration efforts will be recorded and disseminated on the FL-PRISM website.

**Outcomes:**
- Partners will utilize Best Management Practices to control and restore habitat in the Finger Lakes region.
- The community is knowledgeable about effective means of controlling IS and restoring habitat within the Finger Lakes.
- The rate of spread of IS within the Finger Lakes will be reduced.
- An increased number of acres of habitat will be restored in the Finger Lakes.

## Goal 7. Legislation and Support: Federal, state, and local governments support

FL-PRISM has adequate support from federal, state, and local governments and secures funding to support the mission of the FL-PRISM.

**Objectives:**
1. FL-PRISM members have relationships with key governmental entities with IS ties.
2. FL-PRISM is educated about and provides education for elected officials about IS.
3. Adequate funding to support the mission of the FL-PRISM is secured.

**Strategies:**
- Identify and learn about entities with regulatory, enforcement, or funding influence, including knowing key contacts and people of influence.
- Develop and maintain a line of communication with stakeholders.
- Invite state/county/local highway departments to partner with FL-PRISM.
- Provide information on IS management to governmental agencies including the importance of long-term, consistent funding.

- Communicate with stakeholders on legislative initiatives and proposed regulations.
- Actively review and provide comments as appropriate on proposed and existing regulations that affect IS.
- Actively support stakeholders in contacting appropriate government agencies/representatives.
- Work with partners to identify and pursue funding resources.
- Stay current on opportunities of federal and state funding resources.
- Disseminate funding opportunity information to FL-PRISM listserve.
- Identify "shovel ready" projects for funding applications.
- Explore various fundraising opportunities such as special events.
- Seek external funding sources for IS research, control, and prevention within the FL region.

**Outputs:**
- FL-PRISM will sponsor educational events and invite local, state, and county governmental officials to participate.
- FL-PRISM will host educational events for governmental agencies (DOT, DEC, DOS) to increase IS awareness and support.
- The number and amount of secured funding across the FL-PRISM is recorded.
- The number and amount of secured funding increases per year.
- Informational regarding funding programs are facilitated across the region each year.

**Outcomes:**
- The FL-PRISM will have a strong working relationship with key governmental agencies to support IS funding and education.
- Legislators are aware of the mission and capacity of the FL-PRISM.
- The FL-PRISM has adequate funding to stay consistent with the mission.
- Partners have adequate funding to complete control and restoration work within the region.
- State and federal agencies are aware of the funding needs of the region.
- Partners are aware of elected officials at the local, regional, state, and national levels.

**Table 2. Strategic Plan Implementation Table Including Roles and Responsibilities**

| IMPLEMENTATION TABLE 2016-2020 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GOAL #1. Prevention** | | | | | | | |
| **GOAL #1 Prevention** | | **Percent complete per year (%) and cumulative % completed per year (cum.)** | | | | | |
| | | **Yr. 1 % (cum.)** | **Yr. 2 % (cum.)** | **Yr. 3 % (cum.)** | **Yr. 4 % (cum.)** | **Yr. 5 % (cum.)** | **TOTAL (cum.)** |
| **Objective 1** | The community is knowledgeable about priority organisms, the pathways of invasion, and the likeliness of invasion, and acts in a manner that prevents the spread of IS. | 5 (5) | 10 (15) | 25 (40) | 30 (70) | 30 (100) | 100 |
| **Objective 2** | The FL-PRISM partnership shares resources and information regarding prevention management and control methods. | 10 (10) | 15 (25) | 20 (45) | 25 (70) | 30 (100) | 100 |
| **Strategy to complete goal** | Identify and provide outreach to target audiences including, but not limited to: anglers boaters, recreationists, and hikers, with information tailored to the various pathways of transmission of IS | | | **Support** | **LEAD** | | |
| | | | | | E&OWG, CCE, OPRHP, DEC, FL-PRISM staff | | |
| **Strategy to complete goal** | Develop, promote, and evaluate volunteer programs that effectively monitor areas and create awareness | | | **Support** | E&OWG, LA, NYSFOLA, NYFOA, CCE, FL-PRISM staff | | |
| **Strategy to complete goal** | Establish, facilitate, and support a platform for sharing of surveillance data/ ED data | | | **Support** | iMapInvasives, FL-PRISM website, FL-PRISM staff | | |
| **Strategy to complete goal** | Help create or support easy to use identification (ID) tools for public reference and use | | | **Support** | WGs, DOT, NYS DEC | | |
| **Strategy to complete goal** | Utilize communication networks to publicize prevention techniques for highly IS that have the potential for great economic, human health, and ecosystem harm to other localities | | | **Support** | social media, E&OWG, | | |
| **Strategy to complete goal** | Create IS Prevention Zones (ISPZ) that are at a great risk for a large negative impact from IS | | | **Support** | AqWG, TWG | | |
| **Strategy to complete goal** | Communicate with other PRISM leaders and regional and statewide experts | | | **Support** | Coordinator | | |
| **Strategy to complete goal** | Support existing state, federal, and local prevention and prevention programs | | | **Support** | Coordinator | | |

| GOAL # 2. Coordination/Partnership | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GOAL #2 Coordination/Partnership** | | **Percent complete per year (%) and cumulative % completed per year (cum.)** | | | | | |
| | | **Yr. 1 % (cum.)** | **Yr. 2 % (cum.)** | **Yr. 3 % (cum.)** | **Yr. 4 % (cum.)** | **Yr. 5 % (cum.)** | **TOTAL (cum.)** |
| **Objective 1** | FL-PRISM partners represent key stakeholders in the FL region | 1 (1) | 10 (11) | 25 (36) | 30 (66) | 34 (100) | 100 |
| **Objective 2** | Partners share strengths to reach common goals | 1 (1) | 10 (11) | 25 (36) | 30 (66) | 34 (100) | 100 |
| **Objective 3** | Partners share resources such as information, data, and materials to reduce costs and eliminate duplication of efforts | 1 (1) | 10 (11) | 20 (31) | 30 (61) | 34 (100) | 95 |

| | | | |
|---|---|---|---|
| **Strategy to complete goal** | Recruit key partners not already engaged in the FL-PRISM to become part of the partnership | **Support** | **LEAD**<br>Coordinator, SC, WGs, Partners |
| **Strategy to complete goal** | Maintain communication and relationship with partners through listserve, social media and other forms of communication to encourage participation in IS activities (NYS ISAW), meetings, and reporting | **Support** | Coordinator, CCE, listserves, social media, media outlets |
| **Strategy to complete goal** | Facilitate networking through full partnership meetings, working groups, email listserves, and other appropriate communication avenues | **Support** | Coordinator, FL-PRISM staff |
| **Strategy to complete goal** | Identify partner contributions and capacity for the different strategies identified in the strategic plan and to host educational activities, exhibits, and creation of materials | **Support** | Coordinator, SC |
| **Strategy to complete goal** | Create and maintain a database of current resources and research on specific organisms of concern to help with education, outreach, management, and prevention | **Support** | WGs, partners |

| GOAL # 3. Early Detection/Rapid Response Assessment | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GOAL #3 Early Detection/Rapid Response Assessment** | | **Percent complete per year (%) and cumulative % completed per year (cum.)** | | | | | |
| | | **Yr. 1 % (cum.)** | **Yr. 2 % (cum.)** | **Yr. 3 % (cum.)** | **Yr. 4 % (cum.)** | **Yr. 5 % (cum.)** | **TOTAL (cum.)** |
| **Objective 1** | FL-PRISM partners use an effective ED/RR process | 1 (1) | 10 (11) | 19 (30) | 30 (60) | 40 (100) | 100 |
| **Objective 2** | FL-PRISM support the continuous monitoring of priority areas for highly IS, species that are approaching the region, or those that are considered early detection species | 1 (1) | 10 (11) | 19 (30) | 20 (50) | 20 (70) | 70 |
| **Objective 3** | The community is knowledgeable about priority early detection organisms and those regulated by the nursery trade, the likeliness of invasion, and the pathways of transmission | 0 (0) | 20 (20) | 20 (40) | 30 (70) | 30 (100) | 100 |

| | | | |
|---|---|---|---|
| **Strategy to complete goal** | Develop a protocol for reporting, confirming, and identifying a new population or new invasive | **Support** | Coordinator with support from WG |
| **Strategy to complete goal** | Utilize the FL-PRISM website as a platform for sharing of surveillance data and ED data | **Support** | LA, NYSFOLA, NYSFOA, ADK, CCE, SWCD |
| **Strategy to complete goal** | Identify costs associated with an ED/RR program and potential funding opportunities | **Support** | All, Coordinator |
| **Strategy to complete goal** | Work with permitting agencies to streamline the permitting process to ensure rapid response to potential invasion | **Support** | WGs, NYS DEC, SWCD |
| **Strategy to complete goal** | Develop list of known distribution of priority invasives within region and identify survey needs | **Support** | WGs, WQCC, SWCD |
| **Strategy to complete goal** | Utilize students or interns to survey and monitor for high priority species | **Support** | WGs |
| **Strategy to complete goal** | Create easy to use early detection identification tools for public reference | **Support** | Coordinator, WGs, CCE, |
| **Strategy to complete goal** | Train volunteers/public (e.g., Master Gardeners) in ED invasives | **Support** | Coordinator, E&OWG, CCE |
| **Strategy to complete goal** | Utilize communication networks to advertise new infestations that have the potential for great economic, human health, and ecosystem harm to other localities | **Support** | Coordinator |

| GOAL # 4. Education and Outreach | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GOAL #4 Education and Outreach** | | **Percent complete per year (%) and cumulative % completed per year (cum.)** | | | | | |
| | | **Yr. 1 % (cum.)** | **Yr. 2 % (cum.)** | **Yr. 3 % (cum.)** | **Yr. 4 % (cum.)** | **Yr. 5 % (cum.)** | **TOTAL (cum.)** |
| **Objective 1** | FL-PRISM and partners create and maintain consistent messaging that uses the best available materials and methods regarding the FL-PRISM and IS prevention, impacts, and management options | 1 (1) | 10 (11) | 19 (30) | 30 (60) | 40 (100) | 100 |
| **Objective 2** | The public makes choices that prevent IS introduction and spread | 1 (1) | 10 (11) | 19 (30) | 30 (60) | 40 (100) | 100 |
| **Objective 3** | The public knows about the FL-PRISM | 1 (1) | 19 (20) | 25 (45) | 25 (70) | 30 (100) | 100 |

| | | | |
|---|---|---|---|
| **Strategy to complete goal** | Identify existing educational materials and messaging of IS within the Finger Lakes region and nationwide | **Support** | E&OWG, LA, NYSFOLA, NYFOA, CCE |
| **Strategy to complete goal** | Utilize the best available materials and existing state and national public education campaigns (Don't Move Firewood, Stop Aquatic hitchhikers, PlayCleanGo) | **Support** | E&OWG, LA, NYSFOLA, NYFOA, CCE |
| **Strategy to complete goal** | Identify gaps in education and outreach materials and work with partners to create and leverage diversified tools for outreach such as social media, train the trainer programs, and a list of guest speakers with an expertise in IS | **Support** | E&OWG, Coordinator |
| **Strategy to complete goal** | Provide workshops or forums for stakeholders to ensure knowledge and resources are shared and consistent | **Support** | WGs, Coordinator, CCE, NYSFOLA, NYSFOA |
| **Strategy to complete goal** | Support state, federal, and local education and outreach programs | **Support** | Coordinator, WGs, CCE |
| **Strategy to complete goal** | Use selected materials to reach stakeholders, venues and events that are prioritized in management plans and strategies from other goals | **Support** | Coordinator, WGs, CCE |
| **Strategy to complete goal** | Use train the trainer model of outreach to increase the reach of the FL-PRISM | **Support** | Coordinator, CCE, NYSFOLA, NYSFOA |
| **Strategy to complete goal** | Work with school districts to incorporate IS awareness in curriculum | **Support** | E&OWG, NYS DEC, Environmental Educators |
| **Strategy to complete goal** | Use evaluation techniques such as surveys, to access effectiveness of educational campaigns on behavior change | **Support** | Coordinator |
| **Strategy to complete goal** | Create and promote FL-PRISM branding/ marketing initiative | **Support** | All, Coordinator |
| **Strategy to complete goal** | Encourage partners and stakeholders to link to FL-PRISM website | **Support** | All |
| **Strategy to complete goal** | Promote FL-PRISM as a partner for all education and outreach on IS in the FL region | **Support** | All |

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| | | | |
|---|---|---|---|
| **Strategy to complete goal** | Create and utilize an educational toolbox to provide public with appropriate IS response tools | **Support** | Coordinator, WGs, CCE |
| **Strategy to complete goal** | Create a list of experts to draw on as speakers and sources of information / resources | **Support** | Coordinator, SC, WG, Partners |
| **Strategy to complete goal** | Utilize social media to disseminate information about IS and pathways of transmission to the greater public | **Support** | All |
| **Strategy to complete goal** | Use community presentations (i.e., annual meetings, garden clubs, hunting and angler associations, etc.) to disseminate information to general audiences; | **Support** | All |
| **Strategy to complete goal** | Leverage academic institutions for community presentations/resource to disseminate information | **Support** | All |

| **GOAL #5. Information Management and Communication** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GOAL #5 Information Management and Communication** | | **Percent complete per year (%) and cumulative % completed per year (cum.)** | | | | | |
| | | **Yr. 1 % (cum.)** | **Yr. 2 % (cum.)** | **Yr. 3 % (cum.)** | **Yr. 4 % (cum.)** | **Yr. 5 % (cum.)** | **TOTAL (cum.)** |
| **Objective 1** | The FL-PRISM will have a fully-utilized and robust web presence | 1 (1) | 10 (11) | 20 (31) | 29 (60) | 40 (100) | 100 |
| **Objective 2** | The FL-PRISM and partners will develop and promote use of IS materials, protocols and fact sheets | 1 (1) | 10 (11) | 24 (35) | 33 (68) | 32 (100) | 100 |
| **Objective 3** | The FL-PRISM will encourage IS reporting and information sharing | 20 (20) | 20 (40) | 20 (60) | 20 (80) | 20 (100) | 100 |
| **Objective 4** | The FL-PRISM will create opportunities for partners to share information and resources | 20 (20) | 20 (40) | 20 (60) | 20 (80) | 20 (100) | 100 |
| **Strategy to complete goal** | Partners utilize the FL-PRISM website for all information on IS within the FL region and beyond and provide updates on IS content and events | | | **Support** | All | | |
| **Strategy to complete goal** | Develop a marketing and communication strategy, including a robust and all-inclusive website, to enable the community to recognize and consider FL-PRISM as the entity for information, management ideas, ED/RR, and all things invasive in the region | | | **Support** | Coordinator, WGs, CCE | | |
| **Strategy to complete goal** | Synthesize and disseminate IS education and surveillance data such as watercraft steward/boat steward data to the public via the FL-PRISM website | | | **Support** | NYSFOLA, FLI, LA, WCS programs | | |
| **Strategy to complete goal** | Develop a consistent marketing strategy to convey the importance of IS prevention to the public (i.e., Clean, Drain, Dry!, Stop Aquatic Hitchikers!) | | | **Support** | Coordinator, SC, WG, Partners | | |

| | | | |
|---|---|---|---|
| **Strategy to complete goal** | Develop a prevention, management, and work plan that brings together various stakeholders to establish the synergy necessary to tackle IS within the community through a clear and concise strategies for prevention, control, and remediation. | **Support** | Coordinator, SC, WG, Partners |
| **Strategy to complete goal** | Develop a FL-PRISM resource guide for partners to include resources, capacity, and partner capabilities within the region | **Support** | Coordinator |
| **Strategy to complete goal** | Develop a matrix to use when determining priority organisms and locations for AIS invasion and management | **Support** | Coordinator, WGs, CCE |

| **GOAL #6. Invasive Species Control Measures and Restoration** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GOAL #6 Invasive Species Control Measures and Restoration** | | **Percent complete per year (%) and cumulative % completed per year (cum.)** | | | | | |
| | | **Yr. 1 % (cum.)** | **Yr. 2 % (cum.)** | **Yr. 3 % (cum.)** | **Yr. 4 % (cum.)** | **Yr. 5 % (cum.)** | **TOTAL (cum.)** |
| **Objective 1** | The FL-PRISM prioritizes resources to address high impact IS projects | 1 (1) | 19 (20) | 20 (40) | 30 (70) | 30 (100) | 100 |
| **Objective 2** | Invasive Species are stopped from spreading along predictable pathways | 1 (1) | 19 (20) | 20 (40) | 30 (70) | 30 (100) | 100 |
| **Objective 3** | Isolated outbreaks of IS are restricted from spreading | 1 (1) | 19 (20) | 20 (40) | 30 (70) | 30 (100) | 100 |
| **Objective 3** | Guidelines for working with private landowners in targeted high priority areas are created | 1 (1) | 19 (20) | 20 (40) | 30 (70) | 30 (100) | 100 |
| **Strategy to complete goal** | Develop a priority species and areas list for the FL region | **Support** | Coordinator, WGs, CCE | | | | |
| **Strategy to complete goal** | Create a management plan and annual work plan to be carried out by FL-PRISM partners | **Support** | Coordinator, SC | | | | |
| **Strategy to complete goal** | Identify and obtain needed resources for eradication, containment, suppression, and restoration | **Support** | Coordinator, SC, WG, Partners | | | | |
| **Strategy to complete goal** | FL-PRISM subcontract awards are prioritized to provide resources to high impact and demonstration projects in the region | **Support** | Coordinator, SC | | | | |
| **Strategy to complete goal** | Develop list of potential funding opportunities and disseminate on the FL-PRISM website | **Support** | Coordinator, SC, WG, Partners | | | | |
| **Strategy to complete goal** | Secure funding to implement control and restoration projects within the FL | **Support** | Coordinator, SC, WG, Partners | | | | |

*(continued next page)*

| | | | |
|---|---|---|---|
| **Strategy to complete goal** | Isolated outbreaks of highly IS are prioritized for control and restoration | **Support** | Coordinator, WGs, CCE |
| **Strategy to complete goal** | Identify site and species-specific best management practices | **Support** | Coordinator, WGs, CCE, |
| **Strategy to complete goal** | Develop a management plan to include restoration of areas where invasives have been removed | **Support** | Coordinator, SC, WG, Partners |
| **Strategy to complete goal** | Coordinate projects with partners to eliminate duplication of efforts and leverage support | **Support** | Coordinator, SC, WG, Partners |
| **Strategy to complete goal** | Identify likely transportation corridors for prioritized projects | **Support** | Coordinator, WGs |

| **GOAL # 7. Legislation and Support: Federal, state, and local governments support** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GOAL #7 Legislation and Support: Federal, state, and local governments support** | | **Percent complete per year (%) and cumulative % completed per year (cum.)** | | | | | |
| | | **Yr. 1 % (cum.)** | **Yr. 2 % (cum.)** | **Yr. 3 % (cum.)** | **Yr. 4 % (cum.)** | **Yr. 5 % (cum.)** | **TOTAL (cum.)** |
| **Objective 1** | FL-PRISM members have relationships with key governmental entities with IS ties | 1 (1) | 10 (11) | 10 (21) | 30 (51) | 49 (100) | 100 |
| **Objective 2** | FL-PRISM is educated about and provides education for elected officials about IS | 1 (1) | 10 (11) | 20 (31) | 30 (61) | 39 (100) | 100 |
| **Objective 3** | Adequate funding to support the mission of the FL-PRISM is secured | 1 (1) | 20 (21) | 20 (41) | 20 (61) | 39 (100) | 100 |
| **Strategy to complete goal** | Identify and learn about entities with regulatory, enforcement, or funding influence, including knowing key contacts and people of influence | **Support** | Coordinator, SC, WG, Partners | | | | |
| **Strategy to complete goal** | Develop and maintain a line of communication to stakeholders | **Support** | Coordinator | | | | |
| **Strategy to complete goal** | Invite state/county/local highway departments to partner with FL-PRISM | **Support** | Coordinator, SC, WG, Partners | | | | |
| **Strategy to complete goal** | Provide information on IS management to governmental agencies including the importance of long-term, consistent funding | **Support** | Coordinator, SC, WG, Partners | | | | |

| | | | |
|---|---|---|---|
| **Strategy to complete goal** | Communicate with stakeholders on legislative initiatives and proposed regulations | **Support** | Coordinator, NYS DEC |
| **Strategy to complete goal** | Actively review and provide comments as appropriate on proposed and existing regulations that affect IS | **Support** | Coordinator, Partners |
| **Strategy to complete goal** | Actively support stakeholders in contacting appropriate government agencies/representatives | **Support** | Coordinator |
| **Strategy to complete goal** | Work with partners to identify and pursue funding resources | **Support** | Coordinator |
| **Strategy to complete goal** | Stay current on opportunities of federal and state funding resources | **Support** | Coordinator, listserve |
| **Strategy to complete goal** | Disseminate funding opportunity information to FL-PRISM listserve | **Support** | Coordinator, WGs, listserve |
| **Strategy to complete goal** | Identify "shovel ready" projects for funding applications | **Support** | Coordinator, WGs |
| **Strategy to complete goal** | Explore various fundraising opportunities such as special events | **Support** | Coordinator, SC |
| **Strategy to complete goal** | Seek external funding sources for IS research, control, and prevention within the FL-region | **Support** | Coordinator, SC, WGs, Partners |

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# Appendices

## Appendix A. List of Abbreviations and Acronyms

| | |
|---|---|
| ADK | Adirondack Hiking Club |
| Advisory Committee | New York Invasive Species Advisory Committee |
| AIS | Aquatic invasive species |
| BMP | Best management practices |
| CCE | Cornell Cooperative Extension |
| EAB | Emerald ash borer |
| EDRR | Early detection/rapid response |
| EPF | Environmental protection fund |
| E&O | Education and Outreach |
| E&OWG | Education and Outreach Working Group |
| FLI | Finger Lakes Institute |
| FY | Fiscal year |
| GIS | Geographical information systems |
| GLRI | Great Lakes Restoration Initiative |
| HWA | Hemlock woolly adelgid |
| IS | Invasive species |
| LA | Lake Associations |
| NYS | New York State |
| NYSDAM | New York State Department of Agriculture and Markets |
| NYSDEC | New York State Department of Environmental Conservation |
| NYSDOT | New York State Department of Transportation |
| NYSFOA | New York State Forest Owners Association |
| NYSFOLA | New York State Federation of Lake Associations |
| OISC | Office of Invasive Species Coordination |
| OPRHP | Office of Parks, Recreation, and Historic Preservation |
| PRISM | Partnership for Regional Invasive Species Management |
| SC | Steering Committee of the FL-PRISM |
| SWCD | Soil and Water Conservation Districts |
| TNC | The Nature Conservancy |
| USACE | United States Army Corps of Engineers |
| USDA | United States Department of Agriculture |
| WCS | Watercraft Steward |
| WG | Working Groups |
| WQCC | Water Quality Coordinating Committee |

## Appendix B. List of Participating Members of Steering Committee and Working Groups

### Partners

### Steering Committee

- Chris Anderson, Environmental Specialist, NYSDOT Region 3, Syracuse, NY
- Kathy Bertuch, Program Manager, Central New York Regional Planning Development Board
- Pauline Burnes, Landscape Architect, NYSDOT Region 6, Hornell, NY (on email list for SC for news and updates)
- Lisa Cleckner, Director, Finger Lakes Institute
- Don Cook, Finger Lakes Regional Watershed Alliance, New York State Federation of Lake Associations
- Bruce Gilman, Professor, Finger Lakes Community College
- Dorothy Gronwall, Honeoye Valley Lake Association
- Terry Gronwall, Honeoye Valley Lake Associate
- Web Pearsall, NYS DEC, Region 8, Fisheries
- Miranda Reid, Conesus Lake Watershed Manager, Livingston County Planning Department
- Gregg Sargis, Director of Ecological Management, The Nature Conservancy, (on email list for SC news and updates)
- Emily Sheridan, Great Lakes Watershed Program, NYS DEC (on email list for SC for news and updates)
- Emily Staychock, Cornell Cooperative Extension Yates County
- Richard Steele, NYS DOT Region 3, Syracuse, NY

### Agriculture WG

- Marion Zuefle, IPM Experimental Station, Geneva, NY
- Elaine Dalrymple, Schuyler County Soil, and Water Conservation District

### Aquatic WG

- James Balyszak, Hydrilla Program Manager
- Kathy Bertuch, Program Manager, Central New York Regional Planning Development Board (on email list for AWG for news and updates)
- Fred Blom, President, NYS B.A.S.S. Nation
- Lisa Cleckner, Director, Finger Lakes Institute (on email list for AWG for news and updates)
- Don Cook, Finger Lakes Regional Watershed Alliance, New York State Federation of Lake Associations
- Sarah Fleming, Ducks Unlimited (on email list for AWG for news and updates)
- Bill Foster, Cayuga Lake Floating Classroom
- Bruce Gilman, Professor, Finger Lakes Community College
- Dorothy Gronwall, Honeoye Lake Watershed Improvement Alliance
- Terry Gronwall, Honeoye Lake Watershed Improvement Alliance
- Angel Hinickle, Tompkins County Soil, and Water Conservation District (on email list for AWG for news and updates)
- Roxanne Johnston, City of Ithaca (on email list for AWG for news and updates)
- Kristy LaManche, Finger Lakes-Lake Ontario Watershed Protection Alliance, Coordinator
- Gene Little, Coast Guard Auxiliary, Boys Scouts, Sea Scouts
- Dave MacDonald, Save Our Sodus (on email list for AWG for news and updates)
- Russ Nemecek, Onondaga County, Soil, and Water Conservation District, (on email list for AWG for news and updates)
- Mike Parker, Conesus Lake Association
- Web Pearsall, NYS DEC Region 8, Fisheries
- Miranda Reid, Conesus Lake Watershed Manager, Livingston County Planning
- Marcus Riehl, NYS Parks, (on email list for AWG for news and updates)
- Dave Scudder, Save Our Sodus
- Emily Sheridan, NYS DEC, Great Lakes Watershed Program (on email list for AWG for news and updates)
- Emily Staychock, Cornell Cooperative Extension Yates County
- Roy Widrig, Cornell Cooperative Extension, Onondaga County
- Michele Wunderlich, Associate Planner, Cayuga County Planning and Economic Development

**Education & Outreach WG**

- Fred Blom, President, NYS B.A.S.S. Nation
- Kristina Farrare, Team Coordinator, **Forestry, Agriculture & 4-H Youth Development,** Cornell Cooperative Extension, Onondaga County
- Bill Foster, Cayuga Lake Floating Classroom
- John Gibbs, NYS DEC Region 8, Regional Supervisor of Natural Resources
- Bruce Gilman, Professor, Finger Lakes Community College
- Deb Grantham, IS Education Program, Cornell Cooperative Extension
- Rebecca Hargrave, Assistant Professor, SUNY Morrisville
- Nathan Hayes, Director, Cummings Nature Center, Rochester Museum and Science Center, Naples, NY
- Hilary Lambert, Executive Director, Cayuga Lake Watershed Network, (on email list for EOWG for news and updates)
- Jessi Lyons, Natural Resources Team Coordinator, Cornell Cooperative Extension, Onondaga County
- Carri Marschner, Hemlock Initiative, Cornell University
- Emily Sheridan, NYS DEC, Great Lakes Watershed Program, (on email list for EOWG for news and updates)
- Anna Stalter, Associate Curator and Extension Botanist, CALS School of Integrative Plant Science, (on email list for EOWG for news and updates)
- Emily Staychock, Cornell Cooperative Extension Yates County
- Kristy Sullivan, Cornell Cooperative Extension, (on email list for EOWG for news and updates)
- Russ Welser, Cornell Cooperative Extension, Ontario County
- Michele Wunderlich, Associate Planner, Cayuga County Planning and Economic Development
- Betsy Ukeritis, NYS DEC Environmental Educator, Syracuse, NY

**Terrestrial WG**

- Sylvia Albrecht, Citizen Advocate
- Kathryn Amatangelo, Assistant Professor, SUNY Brockport
- Mary Beth Deller, Botanist and Non-native Invasive Plant Program Coordinator, US Forest Service
- Kristina Ferrare, Team Coordinator, **Forestry, Agriculture & 4-H Youth Development,** Cornell Cooperative Extension, Onondaga County
- Mark Gooding, NYS DEC, Region 8, Forester 3
- Bruce Gilman, Professor, Finger Lakes Community College
- Jules Ginenthal, Cornell Plantations, Natural Areas Stewardship Coordinator, (on email list for TWG news and updates)
- Jason Gorman, Finger Lakes Land Trust, (on email list for TWG news and updates)
- Jon Harman, Landscape Architect, NYS DOT, Region 4
- Rebecca Hargrave, Assistant Professor, SUNY Morrisville
- Gary Koplun, NYS DEC, Region 8
- Jessi Lyons, Natural Resources Team Coordinator, Cornell Cooperative Extension, Onondaga County
- Carri Marschner, Hemlock Initiative, Cornell University
- Bruce Natale, Cayuga County Planning
- Walt Nelson, Horticulture Program Leader, Cornell Cooperative Extension Monroe County
- Chris Olney, Finger Lakes Land Trust, (on email list for TWG news and updates)
- Juliana Quant, Post-doc candidate, SUNY ESF
- Marcus Riehl, NYS Parks, (on email list for TWG news and updates)
- Emily Sheridan, NYS DEC, Great Lakes Watershed Program, (on email list for TWG news and updates)
- Anna Stalter, Associate Curator and Extension Botanist, CALS School of Integrative Plant Science, (on email list for TWG news and updates)
- Zeb Strickland, Cornell Plantations, (on email list for TWG news and updates)
- Emily Staychock, Cornell Cooperative Extension, Yates County
- Kristy Sullivan, Cornell Cooperative Extension, (on email list for TWG news and updates)
- Mark Whitmore, Cornell University, (on email list for TWG news and updates)

## Appendix C. Existing Authorities, Legislation and Management in New York State

- **6 NYCRR NYS DEC Part 575 Prohibited and Regulated Invasive Species Express Terms**
  The purpose is to help control IS, a form of biological pollution, by reducing the introduction of new and spread of existing populations, thereby having a positive impact on the environment. The purpose of this regulation is to establish procedures to identify and classify IS and to establish a permit system to restrict the sale, purchase, possession, propagation, introduction, importation, and transport of IS in New York, as part of the Department of Environmental Conservation's statewide IS management program, as required by ECL sections 9-1709 and 71-0703.

- **6 NYCRR NYS DEC Part 576 Aquatic Invasive Species Spread Prevention Express Terms**
  The purpose of this part is to establish reasonable precautions such as removing visible plant or animal matter, washing, draining, or drying that must be taken by persons launching watercraft or floating docks into public waterbodies to prevent the spread of aquatic IS.

- **6 NYCRR NYS DEC Part 192 Section 192.7 Emerald Ash Borer Quarantine**
  The purpose of this part is to establish quarantines to protection New York's ash trees, forests, communities, homeowners, forest owners and forest industries from economic, environmental, and social harm due to the death of ash trees caused by the invasive, exotic insect, emerald ash borer (*Agrilus planipennis*). The quarantine restrict the movement of emerald ash borer by regulating movement of host materials to slow the spread of this destructive pest into areas of New York where it is currently not present, as part of the Department of Environmental Conservation's Forest Insect and Disease Control responsibilities under section 9-1303.

- **New York State Aquatic Invasive Species Management Plan (NYS AIS)**
  The NYS AIS Management Plan supplants the 'Nonindigenous Aquatic Species Management Plan' from 1993. This action-based strategic plan outlines more than 50 actions designed to address prevention, detection, and response to AIS in New York. Ten high priority actions were identified and include expanding the watercraft steward program, implementing an AIS public awareness campaign, and expanding the use of AUS disposal stations across the region. NYS AIS Management plan available here: http://www.dec.ny.gov/animals/99053.html

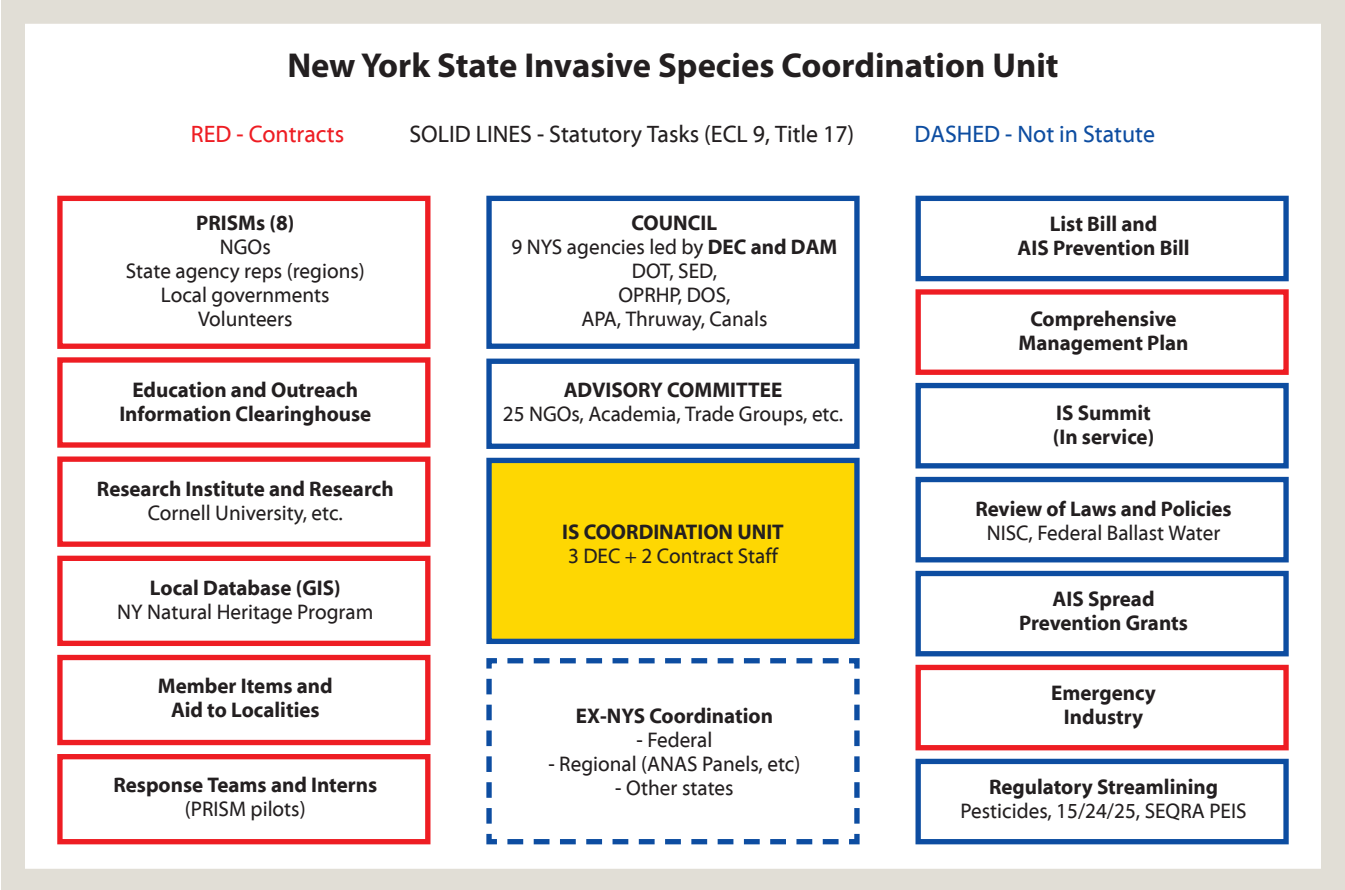


*Figure 3. New York State Invasive Species Coordination Unit*

## Appendix D. List of NYS Parks within the Finger Lakes Region

| COUNTY | NYS OPRHP | Address | City |
|---|---|---|---|
| **Broome** | Chenango Valley State Park | 153 State Park Rd | Chenango Forks |
| | Oquaga Creek State Park | 5995 County Route 20 | Bainbridge |
| **Cayuga** | Fair Haven Beach State Park | 14985 State Park Rd PO Box 16 | Fair Haven |
| | Filmore Glen State Park | 1686 State Route 38 | Moravia |
| | Long Point State Park | 2063 Lake Rd | Aurora |
| **Chemung** | Mark Twain State Park | 201 Middle Rd | Horseheads |
| | Newtown Battlefield State Park | 2346 County Route 60 | Elmira |
| **Chenango** | Bowman Lake State Park | 745 Bliven Sherman Rd | Oxford |
| **Livingston** | Conesus Lake State Marine Park | 1 Letchworth State Park | Castile |
| | Letchworth State Park | 1 Letchworth State Park | Castile |
| | Genesee Valley Greenway | 1 Letchworth State Park | Castile |
| **Madison** | Chittenango Falls State Park | 7900 Green Lakes Rd | Fayetteville |
| | Old Erie Canal State Historic Park | | |
| **Monroe** | Hamlin Beach State Park | 1 Camp Rd | Hamlin |
| | Irondequoit Bay State Marine Park | 1 Camp Rd | Hamlin |
| **Onondaga** | Green Lakes State Park | 7900 Green Lakes Rd | Fayetteville |
| | Clark Reservation State Park | 6105 East Seneca Turnpike | Jamesville |
| | Old Erie Canal State Historic Park | | |
| **Ontario** | Canandaigua Lake State Marine Park | 620 South Main St | Canandaigua |
| | Harriet Hollister Spencer Reservation Area | 1082 Route 36 South | Dansville |
| | Honeoye Marine Park | 6150 East Lake Rd | Honeoye |
| | Sonnenberg Gardens & Mansion State Historic Park | 151 Charlotte St | Canandaigua |
| | Ganondagan State Historic Site | State Route 444 | Victor |
| **Schuyler** | Watkins Glen State Park | Route 14 | Watkins Glen |
| | Catharine Valley trail | PO Box 304 | Watkins Glen |
| **Seneca** | Bonavista State Park Golf Course | 7194 County Rd 132 | Ovid |
| | Cayuga Lake State Park | 2678 Lower Lake Rd | Seneca Falls |
| | Deans Cove Boat Launch | 2678 Lower Lake Rd | Seneca Falls |
| | Sampson State Park | 6096 Route 96A | Romulus |
| | Lodi Point State Park | 6096 Route 96A | Romulus |
| | Seneca Lake State Park | 1 Lakefront Dr | Geneva |
| **Steuben** | Stony Brook State Park | 1082 Route 36 South | Dansville |
| | Pinnacle State Park and Golf Course | 1904 Pinnacle Road | Addison |
| **Tioga** | Two Rivers State Park Recreation Area | 105 Enfield Falls Rd | Ithaca |
| **Tompkins** | Allan H. Treman State Marine Park | 105 Enfield Falls Rd | Ithaca |
| | Buttermilk Falls State Park | 105 Enfield Falls Rd | Ithaca |
| | Robert H. Treman State Park | 105 Enfield Falls Rd | Ithaca |
| | Taughannock Falls State Park | 2221 Taughannock Rd | Trumansburg |
| **Wayne** | Chimney Bluffs State Park | 7700 Garner Rd | Wolcott |
| **Yates** | Keuka Lake State Park | 3560 Pepper Rd | Bluff Point |

## Appendix E. List of the Institutions of Higher Education in the Finger Lakes region

| | Institute of Higher Learning | Student Population |
|---|---|---|
| **Broome** | SUNY Binghamton | 14,800 |
| | Broome Community College | 6,697 |
| | Davis College | 270 |
| | Ridley-Lowell Business and Technical Institute | |
| **Cayuga** | Wells College | 500 |
| | Cayuga Community College | 4,749 |
| **Chemung** | Elmira College | 1,200 |
| | Elmira Business Institute | 200 |
| **Chenango** | | |
| **Cortland** | SUNY Cortland | 7,110 |
| **Livingston** | Genesee Community College at Lima | 6,965 |
| | Genesee Community College at Dansville | |
| | SUNY Geneseo | 5,445 |
| **Madison** | SUNY Morrisville | 3,028 |
| | Colgate University | 2,927 |
| | Cazenovia College | 1,000 |
| **Monroe** | Monroe Community College | 16,458 |
| | Nazareth College | 2,823 |
| | Roberts Wesleyan College | 1,752 |
| | Rochester Institute of Technology | 18,292 |
| | St. John Fisher College | 2,700 |
| | SUNY Brockport | 8,413 |
| | University of Rochester | 9,308 |
| **Onondaga** | Syracuse University | 21,267 |
| | SUNY ESF | 2,250 |
| | SUNY Upstate Medical | 1,542 |
| | LeMoyne College | 3,400 |
| | Onondaga Community College | 13,018 |
| **Ontario** | Finger Lakes Community College | 6,539 |
| | Hobart and William Smith Colleges | 2,272 |
| **Schuyler** | | |
| **Seneca** | | |
| **Steuben** | Corning Community College | 5,500 |
| **Tioga** | | |
| **Tompkins** | Cornell University | 22,400 |
| | Ithaca College | 6,723 |
| | Tompkins Cortland Community College | 3,384 |
| **Wayne** | | |
| **Yates** | Keuka College | 1,769 |

FINGER LAKES
PRISM
Partnership for Regional
Invasive Species Management

HOBART AND WILLIAM SMITH COLLEGES

FINGER LAKES
INSTITUTE

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