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Funding for this program is provided through the New York State Environmental Protection Fund
New York State Contract No. 010340

A Special Thanks to:

The Cornell Cooperative Extension of Saratoga County as Host Organization

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

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

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

Copy of this report can be obtained from the Capital/Mohawk PRISM website:
http://www.capitalmohawkprism.org/

2018 Capital/Mohawk PRISM Annual Report
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Introduction

The Capital/Mohawk Partnership for Regional Invasive Species Management (PRISM) exists to fight the threat of invasive species in and around the Capital Region of New York State (NYS). NYS Environmental Conservation Law [9-1703 (1)] defines invasive species as non-native species that can cause significant harm to the environment, economy, or to human health. Invasive species are a form of biological pollution that come from around the world. The rate of invasion is growing rapidly due to the increase of international trade and climate change. In response to this growing problem, NYS established an Invasive Species Task Force in 2003. The NYS Invasive Species Task Force recommended building and funding a network of invasive species partnerships to prevent or minimize the harm caused by invasive species to New York's environment in its 2005 report to the Governor and legislature.

To act on that recommendation, in 2013, the NYS Department of Environmental Conservation (DEC) contracted the administration of eight PRISMs across the state. The PRISM is funded through NYSDEC's Environmental Protection Fund and is hosted by Cornell Cooperative Extension of Saratoga County. This is the first year the PRISM has been fully funded, with the contract continuing until 2023.

The PRISM partners with resource managers, non-governmental organizations, educational institutions, industry representatives, resource users, citizen scientists, local, state, and federal agencies to combat invasive species. The PRISM delivers a host of functions to address invasive species impacts, including, but not limited to:

- Coordinating and planning regional invasive species management with partner agencies.
- Identifying and delivering targeted education and outreach opportunities.
- Recruiting and training community volunteers.
- Supporting research through citizen science.
- Establishing early detection, monitoring, and rapid response protocols.
- Implementing eradication projects.

The eight PRISMS of New York State
Invasive species are regionally ranked in to a tiered system based on its presence within the PRISM and is then prioritized based on its ranking and state-assigned threat score. A species threat score is determined by its ecological impact; biological characteristics and dispersal ability; ecological amplitude and distribution; and difficulty to control. Based on these categories some invasive species are more aggressive with higher threat scores than others. For more information, consult the NYS Ranking System for Evaluating Non-Native Plant Species for Invasiveness. The tier ranking system is described below and is designed to align with the invasion curve model.

- **Tier 1 – Early Detection/Prevention:** Species is not in PRISM yet, with anticipated high or very high impacts. Highest level of survey efforts for detection.
- **Tier 2 - Eradication:** High and very high impact species with low enough abundance to make eradication feasible within the PRISM. Highest level of response efforts.
- **Tier 3 – Containment:** High and very high impact species that are likely too widespread for eradication, but low enough abundance to think about regional containment.
- **Tier 4 – Local Control:** Well-established species with high and very high impacts. Eradication efforts not feasible at this time.
- **Tier 5 - Research:** Species in or surrounding the PRISM that need more research, mapping, and monitoring to understand invasiveness and impacts.

The Invasion Curve model delineates the cost of management over time as a species proliferates. As the graphic illustrates, as a species is allowed time to succeed in a new setting, population is allowed to increase, which greatly increases the management costs for a given species.

Source: USDA Forest Service 2005 Invasive Plant Environmental Impact Statement
The Capital/Mohawk PRISM encompasses the following geographic area: Herkimer, Fulton, Saratoga, Warren, and Washington Counties south of the Adirondack Park forest preserve boundary, portions of Greene County that are outside of the Catskill Park forest preserve boundary, and all of Albany, Schenectady, Montgomery, Rensselaer, and Columbia Counties. The region covers approximately 3,148,326 acres or 4,919 square miles. “Cropland, forestland, pastureland, comprise the major land uses in New York including the Capital Region. These land uses receiving the majority of the conservation treatment that address our soil, water, air, plant, and animal resources.”

The Capital/Mohawk PRISM geography is composed of several different landscape regions. The Hudson Mohawk Lowlands and Taconic Mountains are the two main regions. To a lesser degree the PRISM also rests within portions of the Champlain Lowlands and Allegany Plateau. Each landscape has different bedrock, elevation, and drainage basin characteristics. All the major landscapes in New York have been influenced by prior glacial periods over large time scales. The differences in bedrock, soil compositions, elevation and latitude all play a roll in the biota found within each landscape.

The Nature Conservancy similarly has created ecoregions for NYS. “The distribution of plant and animal species in New York closely corresponds with ecoregional boundaries. These areas of ecological homogeneity are defined by similarities in soil, physiography, climate, hydrology, geology and vegetation.” \(^2\) The PRISM contains portions of four ecoregions, described below.

- **Great Lakes Ecoregion:** Formed during the last glacial advance 14,000 years ago, this region is characterized by gently rolling, low level landscapes and flat lake plains. The region’s climate is influenced by the Great Lakes and has an astonishingly high level of biodiversity and unique habitats.

- **High Allegheny Plateau Ecoregion:** Defined by a broad series of high elevation hills that form a plateau rising to 1,700-2,100 feet. It extends in the north from the Great Lakes Plains of Lake Ontario to the ridge and valley region of the Central Appalachians to the south, and from the Lake Erie Plain in the west to the Hudson River Valley.

- **Lower New England-Northern Piedmont Ecoregion:** Lies along the mid- to southeastern portion of New York. The limestone valley is defined by low mountains and lakes throughout.

- **St. Lawrence-Champlain Valley Ecoregion:** Characterized by mountain streams, deltas and marshes that line the shores of the St. Lawrence River and Lake Champlain.

\(^2\) NYSDEC. [https://www.dec.ny.gov/animals/9402.html](https://www.dec.ny.gov/animals/9402.html)
The Capital/Mohawk PRISM Boundary drains water from four watershed regions. The Upper Hudson and Mohawk drainage basins fill the greatest percentage of the PRISM. A small portion of the Champlain and Lower Hudson watershed are tied to the PRISM. The interconnectivity, fluid dynamics, and incursion of transportation on these water bodies creates a unique risk for spread for invasive species.

“The Upper Hudson River Watershed originates in the Adirondack Mountains and flows south to the Hudson River confluence with the Mohawk River at the Troy Dam. The watershed lies primarily in New York State River but also drains a portion of southwestern Vermont and a small part of Massachusetts. The Upper Hudson Watershed makes up about one-third of the larger Hudson River Basin, which also includes the Mohawk River Watershed.” 3

**Location:**
- Most of Saratoga, Washington and Warren Counties,
- Much of Essex* and Hamilton Counties*, and
- Portions of northern Rensselaer and northeastern Fulton Counties.

**Size:** 4,620 square miles of land area within New York State

**Rivers and Streams:** 7,140 miles of freshwater rivers and streams. Major tributary watersheds to the Upper Hudson River include:
- Sacandaga River* (1,740 river/stream miles)
- Schroon River* (822 miles)
- Fish Creek (551 miles)
- Hoosic River (533 miles)
- Batten Kill (334 miles)

**Lakes, Ponds and Reservoirs:** 229 significant freshwater lakes, ponds, and reservoirs (76,940 acres), including:
- Great Sacandaga Lake Reservoir (26,800 acres)
- Indian Lake* (4,465 acres)
- Saratoga Lake (4,030 acres)

*Not in the PRISM

3 NYSDEC. [https://www.dec.ny.gov/lands/48041.html](https://www.dec.ny.gov/lands/48041.html)
“The Lower Hudson Watershed makes up about 40% of the larger Hudson/Mohawk River Basin which is one of the largest drainage areas on the eastern seaboard of the United States. Most of this 12,800 square mile basin lies in New York State. The Lower Hudson Watershed extends from the Battery at the southern end of Manhattan to the Troy Dam at the confluence of the Mohawk River. Along this entire 153 mile reach the Hudson is actually a tidal estuary, rather than a river.”

**Location:**
- Most of Westchester*, Putnam, Orange*, Ulster*, Columbia and Albany Counties;
- Much of western and central Dutchess*, eastern Greene, and southern Rensselaer Counties; and

**Size:** 4,982 square miles of land area within New York State (excluding the Upper Hudson and Mohawk River Watersheds, which are addressed separately).

**Rivers and Streams:** 8,861 miles of freshwater rivers and streams. Major tributary watersheds to the Hudson River Estuary (excluding the Upper Hudson and Mohawk Watersheds) include:
- Rondout/Wallkill Rivers* (1,584 river/stream miles)
- Stockport/Kinderhook Creeks (1,077 miles)
- Catskill Creek (927 miles)
- Esopus Creek (631 miles)
- Croton River* (607 miles)

**Lakes, Ponds and Reservoirs:** 324 significant freshwater lakes, ponds, and reservoirs (37,676 acres), including:
- Ashokan Reservoir* (8,060 lake/reservoir acres)
- Rondout Reservoir (2,024 acres)
- New Croton Reservoir *(1,949 acres)
- Alcove Reservoir* (1,363 acres)
- Cross River Reservoir* (899 acres)
- Muscoot/Upper New Croton Reservoir* (770 acres)

*Not in the PRISM

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4 NYSDEC. http://www.dec.ny.gov/lands/48367.html

Image provided by NYSDEC: http://www.dec.ny.gov/lands/53749.html
“The Mohawk River Watershed lies entirely within the borders of New York State. The Mohawk River originates in the valley between the western Adirondacks and the Tug Hill Plateau and flows 140 miles to the east where it joins the Hudson River. The Mohawk Watershed comprises about one-quarter of the larger Hudson River Basin. Sections of the Mohawk River also serve as the New York State Barge (Erie) Canal.”

**Location:**
- All of Montgomery County;
- Most of Schoharie County*;
- Much of Schenectady, Greene, Fulton, Herkimer and Oneida* Counties; and
- Parts of Albany, Saratoga, Delaware*, Otsego*, Hamilton*, Madison* and Lewis Counties*.

**Size:** 3,460 square miles of land area, all within New York State.

**Rivers and Streams:** 4,086 miles of freshwater rivers and streams. Major tributary watersheds to the 140 miles of the Mohawk River include:
- Schoharie Creek (1,650 river miles)
- West Canada Creek (1,165 miles)
- East Canada Creek (515 miles)

**Lakes, Ponds and Reservoirs:** 135 significant freshwater lakes, ponds, and reservoirs including:
- Hinkley Reservoir (2,684 acres)
- Delta Reservoir* (2.376 acres)
- Peck Lake* (1,426 acres)
- Schoharie Reservoir* (1,132 acres)

*Not in the PRISM

Image provided by NYSDEC: [http://www.dec.ny.gov/lands/53752.html](http://www.dec.ny.gov/lands/53752.html)

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NYSDEC. [https://www.dec.ny.gov/lands/48041.html](https://www.dec.ny.gov/lands/48041.html)
“The Lake Champlain Watershed (8,234 square miles) drains the area between the Adirondack Mountains in northeastern New York State and the Green Mountains in northwestern Vermont. The long, narrow and deep lake has its outlet at its northern end where it flows through the Richelieu River into Quebec and empties into the Saint Lawrence River.”

**Location:**
- Most of Clinton* County,
- Much of Essex* County,
- Southwest portion of Franklin* County,
- Eastern portion of Warren County, and
- Northern portion of Washington County.

**Size:** 3,050 square miles of land area within New York State.

**Rivers and Streams:** 4,883 miles of freshwater rivers and streams. Major tributary watersheds to Lake Champlain in New York State include:
- Ausable River* (767 river miles)
- Saranac River* (662 miles)
- Great Chazy River* (545 miles)
- Boquet River* (532 miles)
- Mettawee River* (390 miles)
- Ticonderoga Creek/Lake George* (380 miles)

**Lakes, Ponds and Reservoirs:**
Excluding Lake Champlain (278,480 acres), 235 significant freshwater lakes, ponds, and reservoirs (159,302 acres), including:
- Lake George* (28,523 acres)
- Upper Saranac Lake* (4,844 acres)
- Lower Saranac Lake* (2,145 acres)
- Lake Placid* (1,954 acres)

*Not in the PRISM

*NYSED: [https://www.dec.ny.gov/lands/48369.html](https://www.dec.ny.gov/lands/48369.html)
Vector Management

The vectors of invasive species spread in the region include major highway corridors and inter-state exchanges, including an extensive county and town highway network. Three canal systems (Erie, Champlain, and Feeder) transect a major part of this region and act as additional pathways for invasive species to be transported. Along the Hudson River, three major ports are available to ocean-going cargo ships: Albany, Catskill, and Troy. The Mohawk River, due to a history of development and connectivity to the Great Lakes, represents a major vector for both aquatic and terrestrial invasive species.

Albany is a major shipping thoroughfare in NYS, with north/south and east/west rail lines allowing species to be introduced and dispersed from shipments and freight. Many of the shipping destinations include, but are not limited to, the river ports, CSX Rail Yard, and Albany International Airport. Unfortunately, warehouse locations are often a great harboring and/or breeding ground for many invasive species that have arrived to NYS.

Areas often developed and/or disturbed by human activities can result in increased populations of invasive species. Once established, these invasive species can proliferate into natural setting. Approximately 451,202 acres\(^7\) (14 percent) within the PRISM are considered disturbed, recently modified by human activities, or developed. Unfortunately, there is often a disconnect between industry and land managers on the role that development has in proliferating the spread of invasive species.

Managing the ability of invasive species to move throughout these various land types is a chief concern of the PRISM. More information on how that prevention is accomplished in the region is covered in the following sections.

\(^7\)Acreage courtesy of New York State Department of Environmental Conservation Office of Information Technology Services

Flowering Rush is one of many species that use the Mohawk and Hudson rivers to spread across the state.

The spread of Water Chestnut along the waterways of the Capital region has been well documented.
Natural Resources

The 3,148,326 acres within the Capital/Mohawk PRISM are rich in natural resources. The landscape of the PRISM consists of a mosaic of forest lands, developed urban space, waterways and lakes, and agricultural areas, which contribute to a diverse production of timber, crops, recreational opportunities, and biodiversity. These three million acres are home to important migratory pathways, rare and endangered plants and animals, and a wide variety of every day New Yorkers. The geographic diversity ranges from very rural farm and woodlands to highly populated urban areas. Woodland habitat in the 11-county PRISM area make up 1,743,262 acres.

Over 166,000 acres of the PRISM encompass hydrologic areas – wetlands and surface water bodies. The aquatic resources of the Capital region are a major consideration when thinking about the issues of invasive species. The Hudson and the Mohawk rivers intersect in Albany and both have been used for trade, recreation, and sustenance, predating colonial settlement. Though the presence of these rivers is a major draw to the region, they act as major vectors for new species to enter the PRISM and threaten our native flora and fauna.

The agricultural resources of the Capital Region are vast with 889,680 acres of farmland. Agricultural products are an important export that can be threatened by the proliferation of invasive species. Notably, the Spotted Lanternfly, a new invasive insect species to NYS with large agricultural impacts, was first detected in the PRISM this year in Albany County. The PRISM, the Department of Agriculture and Markets, and the NYSDEC are all dedicated to keeping an eye on this insect to find any breeding populations in the state. More information on the Spotted Lanternfly and the PRISM’s actions to monitor the region is available in the Terrestrial Invasive Species Program Report Section.
The Capital/Mohawk PRISM is hosted by the Cornell Cooperative Extension of Saratoga County (located in Ballston Spa, New York) and is staffed by one PRISM Coordinator, one Terrestrial Coordinator, and one Aquatics Coordinator. There is additional funding for an Education and Outreach Coordinator, who may be hired in the coming year. Various organizations, including land trusts, conservation groups, and municipal entities, oversee and manage natural areas that are invaded or have the potential of being compromised with invasive species. These organizations have historically been invited to become partners of the PRISM and to take part in a PRISM committee. A full list of PRISM partners is available in Appendix 1. The PRISM has a Steering Committee and four subcommittees (Agriculture, Aquatics, Conservation, and Education/Outreach) that meet two to four times a year to advise PRISM staff.

**Steering Committee:** Key partners from the NYSDEC, Department of Agriculture and Markets, Department of Transportation, Saratoga Soil and Water Conservation District (SWCD), Albany Pine Bush Commission, National Park Service, and Natural Heritage Program make up this committee. The Steering Committee works with PRISM coordinators to follow the five-year strategic plan process, develop and guide the annual work plan, and connect with each of the subcommittees. Each member of the PRISM Steering Committee is also a representative to one or more of the PRISM subcommittees. The Steering Committee is also responsible for reviewing PRISM contracts, the Request for Proposal (RFP) process, and major changes in PRISM structure.
**PRISM Subcommittees:**

**Agriculture Committee:** This committee focuses on best management practices and recommendations that will be most effective for the agricultural community. Participants from the SWCDs, Department of Agriculture and Markets, and the Cornell Cooperative Extension identify high priority agricultural pests and work to communicate their importance to the farming public.

**Aquatics Committee:** Aquatic professionals focus on priority invasive species identified in aquatic ecosystems within the PRISM and to develop an early detection list and protocol for early detection/rapid response species within the PRISM. Additionally, this committee has assisted in prioritizing areas to provide watercraft launch steward coverage.

**Conservation Committee:** Partners on this committee work to identify priority species to focus on within the PRISM area that may put conservation areas at a higher risk. Key efforts of this committee include developing a tier system priority list and reviewing the annual Terrestrial work plan. This year, the committee has taken on a new task of identifying a site for an Invasive Species Prevention Zone in the Capital region.

**Education/Outreach Committee:** This committee develops, prioritizes, and compiles existing educational/curriculum materials for use within the PRISM region. The committee has an additional focus on event planning for the annual New York State Invasive Species Awareness Week.
An Invasive Species Prevention Zone (ISPZ) is a formal designation for a natural area that is dominated by native species and is known to support exceptional biodiversity concentrations as defined by the New York Natural Heritage Program. Invasive species prevention zones are areas greater than 500 acres with very limited intrusions from invasive species. Typically an ISPZ is also an area highly susceptible to the introduction of invasive threats from multiple vectors. The presence of significant habitats, rare, threatened or endangered species found within the designated area merits an additional layer of protection to preserve the existing ecology.

**Invasive Species Prevention Zone Goals:**

- Prevent, detect, and rapidly respond to new invasions.
- Implement control efforts of old infestations and restore natural ecosystem functions.
- Monitor and evaluate successes and failures of invasive species management activities.
- Educate the public about invasive species and their effects on our environment.
- Preserve the existing and unique ecology of the designated area.

The PRISM assessed multiple sites for ISPZ designation through a set of defining criteria and variables. Through the advisory of the Conservation Committee, NYSDEC and members of the Office of Parks Recreation and Historic Preservation (OPRHP), the PRISM has designated Moreau Lake State Park as the region’s first ISPZ. Moving forward, the PRISM will generate an invasive species management plan, in a partnership with OPRHP, for the park in its entirety. Programs using best management techniques, integrated pest management protocol and collaboration of both resource mangers and citizen scientists will be integrated into the invasive species management plan to protect the park.
Education and Outreach

Overall educational goals of the Capital/Mohawk PRISM in 2018 were to deliver education and outreach to assorted entities throughout the region to provide a better understanding of invasive species and their impacts; collaborate with PRISM partners and stakeholders to expand opportunities; maintain and further develop website and social media avenues; and to provide assistance to communities, organizations, and others in developing educational materials when responding to an invasive species infestation.

Educational materials were developed and promoted with the aid of the Education/Outreach Committee and PRISM interns. Materials developed included fact sheets, resource guides, manuals, lesson plans, exhibits, and other resources. These resources were also shared by other PRISMs to be distributed within the Capital Region. Standardized materials designed by the NYSDEC Bureau of Invasive Species and Ecosystem Health were promoted and distributed by the PRISM. To a lesser degree, fact sheets, reports, and findings from both the Department of Agriculture and Markets and Department of Transportation were also distributed.

Social media outlets (Facebook and Instagram) were used to help promote outreach events, deliver educational content, and post awareness and research information. The PRISM has an established website in which 20,741 unique visits were executed from January 1, 2018 to January 1, 2019. Overall, 53,853 page views were loaded in the same timeframe. The PRISM will continue to promote the website, social media, listserv, and other venues to enhance invasive species awareness, education, outreach, and partner efforts.

In summary, the PRISM has executed 1,584 direct stakeholder contacts in 2018 in which individuals participated in group instruction through various educational programs, lectures, presentations, and/or hands-on-training involving more technical instruction. The PRISM began hosting removal workdays at various preserves and properties where citizens were taught the threat of various invasive species and trained in the manual removal methods for those species. Sites for workdays included the Albany Pine Bush Preserve, Staalensen Preserve, Plotter Kill Preserve, Fish Creek, the Woodlawn Preserve, and the Wyomanock Center for Sustainable Living.

A total of 88,612 indirect contacts were reported in which individuals attended various events and received varying degrees of invasive species information. Indirect contacts are informed estimates of various audiences for the year. Numbers are tabulated from social media host sites and metrics; listserv audiences; and volume of posts, newsletters, press releases, print material, including public events like fairs and home and garden shows. Typically events were serviced by PRISM staff members where educational displays, re-
source guides, and fact sheets were distributed to a general audience. Events included the Capital District Flower and Garden Show, the Saratoga County Planning and Zoning Conference, Washington County Fair, and I Love My Park Day. For a complete breakdown of the audiences for both direct and indirect contacts in the PRISM, please see Appendix 3.

In 2018, the PRISM experienced new growth and received charges from the Invasive Species Council, Invasive Species Advisory Committee and ISAW Planning Committee regarding the development, delivery, and content of invasive species material. In order to address the dynamic nature and threats from invasive species, a greater level of participation from the Education/Outreach Committee is needed in 2019. Educational materials should emphasize prevention strategies and best management practices. Invasive species content should be evaluated, tailored, and targeted to meet the needs of the greater Capital region as well as various stakeholder groups.
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</tr>
<tr>
<td>07/14/2018</td>
<td>ISAW Wyomanock Center Stewardship Day</td>
<td>10</td>
</tr>
<tr>
<td>07/21/2018</td>
<td>Babcock Lake Association Aquatic I.S. Lecture</td>
<td>9</td>
</tr>
<tr>
<td>08/02/2018</td>
<td>Huyck Preserve Science Symposium #1</td>
<td>5</td>
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<tr>
<td>08/04/2018</td>
<td>Huyck Preserve Science Symposium #2</td>
<td>51</td>
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<tr>
<td>08/17/2018</td>
<td>Moreau Lake State Park Scouting w/ OPRHP</td>
<td>11</td>
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<td>08/18/2018</td>
<td>Woodlawn Preserve I.S. Stewardship Day</td>
<td>6</td>
</tr>
<tr>
<td>08/24/2018</td>
<td>Columbia-Greene Lakes Coalition Aquatics E/O</td>
<td>31</td>
</tr>
<tr>
<td>08/25/2018</td>
<td>Cossayuna Lake Aquatics Presentation and Field Identification</td>
<td>15</td>
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<tr>
<td>08/25/2018</td>
<td>Lower Rhoda Aquatics Presentation and Field Identification</td>
<td>35</td>
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<td>09/05/2018</td>
<td>ISAW Planning Committee</td>
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<tr>
<td>09/10/2018</td>
<td>Friends of Moreau Monthly Meeting</td>
<td>22</td>
</tr>
<tr>
<td>09/18/2018</td>
<td>Conservation Committee</td>
<td>7</td>
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<tr>
<td>09/20/2018</td>
<td>Malta Rotary Club</td>
<td>19</td>
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<tr>
<td>09/28/2018</td>
<td>Invasives for Middle School Teachers BOCES</td>
<td>32</td>
</tr>
<tr>
<td>09/29/2018</td>
<td>Plotterkill Preserve I.S. Workday</td>
<td>26</td>
</tr>
<tr>
<td>11/01/2017-18</td>
<td>SCIAC Schenectady</td>
<td>8</td>
</tr>
</tbody>
</table>
Invasive Species Awareness Week

July 8th-14th, 2018 was proclaimed Invasive Species Awareness Week (ISAW) across NYS. The awareness week is an annual educational campaign coordinated by the Invasive Species Council, the Invasive Species Advisory Committee, and the eight PRISM’s along with their partner organizations. The mission of the New York ISAW is to promote the knowledge and understanding of invasive species and the harm they can cause to the environment, economy and human health.

Citizens of all ages are empowered by engagement in a wide range of activities to help stop the spread of invasive species. The week-long campaign features numerous statewide events focused on invasive species ranging from removal projects, interpretive walks, guided hikes woods walks, paddling events, presentations by subject matter experts, informational webinars, citizen science trainings on subjects such as iMapInvasives, film screenings, and tabling events.

The fifth annual ISAW campaign deployed over 170 events across NYS. Event totals for each PRISM region are present in the table below. There were 25 ISAW events held in the Capital/Mohawk Region with the PRISM directly participating in seven events and PRISM partners leading the other 18 events. The PRISM is currently preparing for 2019 ISAW events and looking to increase partner participation and involvement to increase awareness of invasive species in our state. In addition, the PRISM is seeking to expand the geographic range of events to reach all eleven counties within the PRISM.
Monday, July 9th: Featherstonhaugh State Forest ISAW Survey

The PRISM led a survey with citizen scientists at Featherstonhaugh State Forest as a kick-off event for ISAW. The team lead several groups of varying ability to identify invasive plants and look for Hemlock Woolly Adelgid (HWA). This event was designed to include the public on a typical day in the field for the terrestrial team.

Tuesday, July 10th: Hike For Hemlocks at Moreau Lake State Park

The PRISM and the Adirondack Mountain Club partnered with the Friends of Moreau to host a Stewardship Day at Moreau Lake State Park. Participants attended a technical presentation on invasive species, their threats to our forest, and lake ecology. The presentation focused on the work being done by the Hemlock Initiative from Cornell and included a woods walk for non-detect observations of the adelgid. In addition, the workshop covered an introduction and demonstration of the iMapInvasives Mobile App.

Tuesday July 10th: Invasive Species Science on Tap

Following an invasive species presentation by Emma Antolos at the Albany Pump Station, the Master Gardeners of Cornell Cooperative Extension Albany and PRISM staff members held a question and answer event where citizens could ask an expert relating to invasive species based on their concerns.
**Wednesday July 11th: Empire State Plaza Farmer’s Market**

The PRISM and ten other Capital Region entities tabled at the Farmers Market at The Empire Plaza, Albany to inform attendees about various invasive species and their prevention methods.

**Friday July 13th: Thacher State Park iMapInvasives Training**

The PRISM Terrestrial team, iMapInvasives team, and Cornell Cooperative Extension of Albany County partnered to bring an iMapInvasives training and Hemlock Woolly Adelgid Survey to the public at John Boyd Thacher State Park.

**Saturday July 14th: Kids Day at Empire State Plaza**

New York State DEC staff and the PRISM partnered to bring invasive species awareness and education to the youth of our region. The Kids Day program at the Empire Plaza in Albany was a great success. The event serviced 100 participants through arts and crafts with an educational emphasis on invasive species.

**Saturday and Sunday, July 14th and 15th: Canal Days Festival at Schoharie Crossing**

The PRISM Aquatics team closed out ISAW with an event co-sponsored by OPRHP. This festival brought in boaters, anglers, and other river enthusiasts to Schoharie Crossing. The PRISM provided a heated boat washing decontamination station and tabling event to the outing. Clean, Drain, and Dry practices were delivered on-site with all boat steward interns present to connect with the public.
Citizen Science

The New York iMapInvasives database has been a longstanding partner of the Capital/Mohawk PRISM. Their use of citizen science to detect invasive species provides baseline data for the majority of the PRISM region. In 2018, thirteen trainings were conducted to help promote this vital tool and provide volunteers with the basics of collecting observations through the mobile app as well as species identification. A new facet of the iMapInvasives program was the creation of a certified trainers network, the work of Brittney Rogers, which will increase the number of individuals able to lead future software trainings. This will lead to an exponential increase of citizen scientists participating in the iMapInvasives program. The PRISM will continue to support iMapInvasives and their mission of creating interactive mapping software for concerned citizens and resource managers by leading trainings and adding to the user database.

<table>
<thead>
<tr>
<th>Date</th>
<th>Trainer</th>
<th>Training Class Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/20/2018</td>
<td>Laurel Gallor</td>
<td>2018 - Columbia Land Conservancy HWA Training</td>
<td>Chatham</td>
</tr>
<tr>
<td>4/14/2018</td>
<td>Tim Kennelty, Glenda Berman</td>
<td>2018 - Spring Gardening Day Columbia Greene CCE – TTT</td>
<td>Ghent</td>
</tr>
<tr>
<td>4/28/2018</td>
<td>Spencer Barrett</td>
<td>2018 – Albert Family Community Forest Training – TTT</td>
<td>New Lebanon</td>
</tr>
<tr>
<td>5/12/2018</td>
<td>Tim Kennelty</td>
<td>2018 - Columbia Land Conservancy iMapInvasives Training- TTT</td>
<td>Chatham</td>
</tr>
<tr>
<td>5/30/2018</td>
<td>Jennifer Dean</td>
<td>2018 - NYS CPRHP - Parks Strike team</td>
<td>Thatcher State Park</td>
</tr>
<tr>
<td>6/30/2018</td>
<td>Jessica Ingham</td>
<td>2018 - Schodack Island State Park Mobile App Training</td>
<td>Schodack</td>
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<tr>
<td>7/10/2018</td>
<td>Kristopher Williams</td>
<td>2018 – ISAW Capital Mohawk Training - TTT</td>
<td>Moreau</td>
</tr>
<tr>
<td>7/13/2018</td>
<td>Meg Wilkinson, Joellen Lampman, Emma Antolos</td>
<td>2018 - Invasive Species Awareness Week iMapInvasives Training - Thacher Park TTT</td>
<td>Voorhesville</td>
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<tr>
<td>9/28/2018</td>
<td>Jennifer Dean</td>
<td>2018 - Capital Region BOCES Invasive Species Teacher Workshop</td>
<td>Albany</td>
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<tr>
<td>10/20/2018</td>
<td>Kristopher Williams</td>
<td>2018 - Huycck Preserve Eldridge Research Center IS Edu and Stew Day – TTT</td>
<td>Rensselaerville</td>
</tr>
</tbody>
</table>
Regional iMapInvasives Summary Data

There has been a significant increase in 2018 of the number of reports from citizens, both mobile and to a lesser extent, online entry as shown in the table to the right. The number of users comfortable using the non-detect record function also vastly increased. This increase suggests that the trainings were successful in communicating the use of the non-detect function. Switching users to iMap 3 in the coming year represents a challenge in terms of sustaining the established user base while increasing the application’s functionality.

Additional information regarding the ten most commonly reported species for the region is present in the second table. The records show a positive impact on the public number of Tree of Heaven reports, which can be attributed to an increase in focused Spotted Lanternfly outreach. This table also illustrates the success in mapping HWA through the non-detected record feature.

Observation, Assessment, Treatment

Another new feature from the iMapInvasives team, the OAT system, represents the combined data of OPRHP and PRISM field teams, who piloted the system this summer. This data will be formatted to enter into the system directly when iMap 3 is released in 2019. With both field teams primarily focused on terrestrial plant species, it is easy to see that influence on the types of data entering the system. The OAT system allows for more detailed data entry which will be transferable to iMap 3.

Invasive Species Elicitation

The PRISM has been working in partnership with the NYS Invasive Species Research Institute to provide input and data for a decision tool they are developing. This tool will help target priority scouting and management areas for high-threat aquatic and terrestrial invasive species. The PRISM expects that this tool will greatly benefit future invasive species management across NYS.

![Chart information provided by iMapInvasives and NYNHP](chart.png)

<table>
<thead>
<tr>
<th>Record Type</th>
<th>2017</th>
<th>2018</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Animal</td>
<td>23</td>
<td>17</td>
<td>-26%</td>
</tr>
<tr>
<td>Terrestrial Animal</td>
<td>5</td>
<td>25</td>
<td>+400%</td>
</tr>
<tr>
<td>Insect</td>
<td>121</td>
<td>80</td>
<td>-34%</td>
</tr>
<tr>
<td>Aquatic Plant</td>
<td>118</td>
<td>47</td>
<td>-60%</td>
</tr>
<tr>
<td>Terrestrial Plant</td>
<td>937</td>
<td>2,570</td>
<td>+174%</td>
</tr>
<tr>
<td>Not Detected</td>
<td>129</td>
<td>2,735</td>
<td>+2020%</td>
</tr>
<tr>
<td>Mobile</td>
<td>886</td>
<td>2,565</td>
<td>+190%</td>
</tr>
<tr>
<td>Online</td>
<td>260</td>
<td>439</td>
<td>+69%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top 10 Reported Species</th>
<th>Observations in 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japanese Knotweed</td>
<td>433</td>
</tr>
<tr>
<td>X-HWA- NOT Detected</td>
<td>262</td>
</tr>
<tr>
<td>Oriental Bittersweet</td>
<td>243</td>
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<tr>
<td>Common Buckthorn</td>
<td>230</td>
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<tr>
<td>Morrow’s Honeysuckle</td>
<td>161</td>
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<tr>
<td>Multiflora Rose</td>
<td>157</td>
</tr>
<tr>
<td>Garlic Mustard</td>
<td>140</td>
</tr>
<tr>
<td>Common Reed</td>
<td>123</td>
</tr>
<tr>
<td>Norway Maple</td>
<td>107</td>
</tr>
<tr>
<td>Tree-of-heaven</td>
<td>96</td>
</tr>
</tbody>
</table>
The Capital/Mohawk PRISM added a new component in 2018; the addition of a full-time Aquatic Invasive Species (AIS) Coordinator. Gwendolyn Temple (preceded by Leah Gorman who left the position in May 2018) began her role as AIS Coordinator in August. Though her position began towards the end of the aquatics field season, she continued the AIS Coordinator’s duties of supervising three watercraft inspection stewards at numerous launch sites across the Capital/Mohawk region. The boat stewards deployed best management practices as outlined in the “New York State Watercraft Inspection Steward Program Handbook.” Education and outreach regarding Clean, Drain, Dry practices were the focus of the aquatic boat steward program. In addition, the aquatics team:

- Provided education and outreach to the general public regarding the threats AIS pose.
- Gave technical presentations to private lake associations.
- Conducted aquatic invasive species plant pulls.
- Coordinated municipality efforts to respond to aquatic infestations.
- Provided a boat decontamination station through coordination with Montgomery County SWCD.
- Constructed and delivered regionally specific fact sheets.
- Surveyed for new and emerging AIS within the PRISM’s geographical area.

Gwendolyn Temple, AIS Coordinator, removing water chestnut at Selkirk Shores State Park

The Hudson River is one of the aquatic resources that the AIS program works to protect from the impacts of invasive species.
Watercraft Inspection Steward Program

Three watercraft inspection stewards were hired for the 2018 boating season; two from SUNY Environmental Science and Forestry under the direction of the NYSDEC and one through a Memorandum of Understanding with Montgomery County SWCD. Although the launch steward program is primarily used for education and outreach, it is also used as an early detection and spread prevention mechanism for species that may be entering a waterbody that has yet to be infested.

For 2018, our three stewards covered five launch sites across the Capital/Mohawk region: Canajoharie boat launch, Cossayuna Lake, Round Lake, Schoharie Crossing, and Spier Falls boat ramp. In total, they surveyed 3,280 boaters over the course of the boating season, preventing the spread of 158 aquatic invasive species (water chestnut, curly leaf pondweed, Eurasian watermilfoil, zebra mussel, and brittle naiad).

The complete 2018 Watercraft Steward cumulative report can be viewed at:
www.capitalmohawkprism.org/reports.

Declan Daley (left) and Tyler Levy (right) at Spier Falls Boat Ramp during the 2018 boating season
Canajoharie Boat Launch: 42°54’31.6"N, 74°34’14.1"W
28 watercraft (7 days at launch)
25 surveys completed
3 AIS intercepted
52 launch users

- **Cossayuna Lake:** 43°13’03.2",N 73°24’39.8."W
676 watercraft (35 days at launch)
578 surveys completed
56 AIS intercepted
1157 launch users

- **Round Lake:** 42°56’05.5"N, 73°47’26.9"W
1326 watercraft (42 days at launch)
919 surveys completed
102 AIS intercepted
1714 launch users

- **Spier Falls Boat Ramp:** 43°13’15.0"N, 73°46’07.8"W
11 watercraft (1 day at launch)
6 surveys completed
0 AIS intercepted
11 launch users

- **Schoharie Crossing:** 42°56’17.9"N, 74°17’20.7"W
196 watercraft (14 days at launch)
146 surveys completed
1 AIS intercepted
351 launch users

There are many different types of native bladder-wort across the Capital/Mohawk region.

Tyler Levy checking for potential AIS going in to Round Lake

Jesse Dixon, on the stewards for the 2018 boating season, at Schoharie Crossing
Simple Aquatic Survey Program:

The Simple Aquatic Survey, or S.A.S., was first instituted within the Capital/Mohawk PRISM this year. This program seeks to reach out and educate individuals from lake associations throughout the PRISM’s geographical region, training them in how to identify aquatic macrophytes within their respective lakes. This data can then be used to monitor and manage populations of invasive macrophytes throughout the Capital/Mohawk region.

It was successfully implemented over the field season of 2018 in partnership with iMapInvasives. Thirteen participants from eight different lakes began their surveying in June after attending an in-person training and completed their season in September. The primary means of gathering data on aquatic macrophytes is through the use of a rake toss, one of which was given to each participant. This rake toss is then used to fill out a geospatial survey using the Survey123 app in order to observe the overall abundance of plants within a specific location as well as their invasive nature. Overall, this program was a great success and will be continued in 2019. The PRISM is hopeful that more lake associations will participate due to an increased PRISM presence throughout the Capital/Mohawk region this past year.

The two main tools needed to perform a Simple Aquatic Survey: The Survey 123 App (pictured above), and a rake toss (pictured below). Participants were trained in the use of both these tools and rake tosses were distributed to interested Lake Associations.
Early Detection of Aquatic Invasive Species

New populations of three emerging (Tier 2) AIS were reported over the 2018 field season. A population of yellow floating heart was reported in Washington County on the Hudson River by Leah Gorman, the former PRISM AIS Coordinator. A new population of European frogbit was found in Fish Creek, Saratoga County by Kristopher Williams during a water chestnut pull with Saratoga PLAN. Finally, a population of starry stonewort was found in Lake Lauderdale, Washington County by Leah Gorman.

Follow-ups regarding these species are currently being planned for the 2019 field season. A water chestnut pull with Saratoga PLAN may be implemented in combination with removal efforts for European frogbit in Fish Creek in order to reduce the population size. Survey efforts will also be increased in the areas these species were sighted in order to accurately determine the density of each population.
Aquatic Management/Restoration Projects

A water chestnut pull was performed in combination with one of our PRISM partners, Saratoga PLAN, at Fish Creek in Saratoga County. A total of 36 volunteers attended the event. The PRISM gave a brief presentation on water chestnut identification, phenology, and ecological impacts before the start of the pull. The removal identified three major seed banks that are progressing in a negative direction in growth. The PRISM would like to take a lead role with Saratoga PLAN and implement a management plan to effectively reduce the water chestnut infestation size and density. Coincidentally, European frogbit, a tier 2 emerging species within the Capital/Mohawk region, was found in Fish Creek during the aquatic pull. Efforts to eradicate this species in Fish Creek will be made in 2019.
Conclusions:

Overall, the Capital/Mohawk PRISM aquatic program was successful during the first fully funded year of our contract. Despite the transition in staff, the program remained consistent with the prior year’s data and was ultimately successful in identifying numerous high priority species across the Capital/Mohawk region. The aquatic program is anticipating a significantly higher growth rate in 2019, particularly as it relates to watercraft inspection stewards. Survey efforts for AIS will be increased and standardized in 2019 in order to monitor emerging high priority species. Scouting locations will also be identified with the help of the aquatics committee that are of high ecological significance to NYS.

Next Steps:

Identified program goals of the Capital/Mohawk Aquatic Program include but are not limited to:

- Monitoring emerging species discovered this year in order to eradicate/contain their populations.
- Expanding scouting capabilities for the 2019 field season to reflect discoveries made this year.
- Development of management projects to eradicate high priority aquatic invasive species.
- Expansion of education/outreach programs for the general populace regarding emerging and well-established aquatic invasive species.
- Expanding watercraft inspection steward program to highlight waterbodies that have not historically been monitored within our region.
- Integration of aquatic biocontrol releases into the PRISM’s management portfolio.
- Continuing to develop partner relationships in order to increase management capabilities and pro-

Water Chestnut at Lock 7 on the Erie Canal
Spencer Barrett, who was hired on a temporary basis in 2017, was brought on as the full-time Terrestrial Invasive Species Coordinator to jump-start the terrestrial program for the Capital/Mohawk PRISM. During the 2018 field season, the terrestrial species team set out with the goal of identifying emerging invasive species populations throughout the Capital region to identify rapid response treatment targets in years to come. The Conservation Committee was consulted to create a prioritization process for protected natural areas and to pick locations to be surveyed based upon their ecological value score. Locations in Greene, Columbia, and Rensselaer counties were prioritized during the first half of the summer, with the focus shifting to Schenectady, Washington, Saratoga, and Albany counties later in the season. The team made reports of rare and endangered plants to the New York Natural Heritage Program whenever feasible.

Scouting of selected locations was performed by Spencer with the help of two interns, one from Cornell and one from SUNY Environmental Science and Forestry. Lily-Anne Trainor, who was employed by the New York State Hemlock Initiative, was hired with a focus on HWA. Elizabeth Jamison had a focus on terrestrial invasive plants. Over the course of the summer, the group visited 51 sites to look for high priority species. Additional tasks included leading volunteer invasive species removal days, representing the PRISM at outreach events, creation of outreach materials, and ongoing early detection and rapid response projects.
Terrestrial Management Projects

Giant Hogweed Removal:

Giant Hogweed removal has been one of the ongoing projects of the Capital/Mohawk PRISM for a number of years. Historically, this management has been done in partnership with the Saratoga SWCD and the NYSDEC; a partnership that continues on today, albeit at a reduced level due to the PRISM’s growing capacity to perform management with staff. Last year, five sites were mechanically treated or monitored over a five county area. Another site was added this year due to a citizen report of a new location within Saratoga County. All sites were treated and/or monitored, two with the help of the Saratoga SWCD. Seventy three plants were treated through the root-cut method.

Mile-a-Minute at Five Rivers:

PRISM staff received a report of a previously new-to-PRISM species in Albany County from staff at the Five Rivers Environmental Education Center. Mile-A-Minute Vine, an extremely aggressive invasive vine, had been moved into the preserve on contaminated fill material. Thanks to the extremely quick recognition of staff at Five Rivers, PRISM staff was able to respond swiftly, manually removing 380 stems from 1.1 acres of soil alongside the Vloman Kill. The initial removal in August was followed up in September, where a single plant that was in immature fruit was removed. Hopefully this population has been rooted out, but it will be followed up this coming year to prevent an ongoing problem. Teaching Capital Region residents to identify this species should be an ongoing focus for education and outreach efforts.
Prevention and Monitoring of Spotted Lanternfly

A new project for the Terrestrial team this summer was the establishment of monitoring locations for Spotted Lanternfly (*Lycorma deliculata*) to assess if this species had crossed the Pennsylvania border to colonize new locations in New York. Spotted Lanternfly (SLF) is a leafhopper from China that has been spreading rapidly in Pennsylvania and was found this year in Albany County, as well as new sites in the Finger Lakes, New Jersey, Delaware and Virginia. This species has observed detrimental impacts to a number of important crop species such as grapes, apples and hops, as well as direct impacts on species such as oak, sycamore, and maple. The species has observed effects on forest plant regeneration in general due to a proliferation of honeydew which increases levels of sooty mold.

The primary host tree associated with SLF is the tree of heaven (*Ailanthus altissima*) an invasive plant that prefers waste habitats such as vacant lots and right-of-ways. The primary locations of *Ailanthus* in the PRISM are in the southern counties such as Columbia and Greene, though it is found up to Warren county in sparser numbers. The monitoring procedure for this project involved setting up sticky band traps on individual tree of heaven plants with at least a six inch diameter around a five county area which included Albany, Schenectady, Rensselaer, Columbia and Greene Counties.

PRISM partners were essential in monitoring these traps, with volunteers from Cornell Cooperative Extension, Schenectady County Invasive Species Committee, Albany Victory Gardens, SUNY Environmental Science and Forestry, New Baltimore Conservancy, and Columbia Land Conservancy all monitoring traps near their respective locations. The SUNY Environmental Science and Forestry participant monitored a tree in Central Park, Schenectady. The monitoring through the trapping process was accompanied by outreach to public who inspected the traps through signs that were posted with each trap. The PRISM would like to thank all partners who made this monitoring possible.
Scouting and Monitoring Highlights

- 1600+ total OAT (Observation, Assessment, Treatment) reports were collected during the summer season. The priority was placed on vector surveying when on-site.
- 51 total sites visited throughout an eight county area.
- 18 total Tier 1 and 2 species (early detection/rapid response) populations were found.
- Five total rare plant surveys were completed for New York’s Natural Heritage Program.

Notable species findings:

- First upstate of population of Shrubby Bushclover (*Lespedeza bicolor*) found in Saratoga County. This species was recently detailed in a Forest Service publication about new invaders to the Northeast.
- White poplar (*Populus alba*), a known weedy species, was found in two new counties at three protected sites.
- A location in Columbia County was found to have three new Tier 2 species in roughly the same area. Japanese Spirea (*Spirea japonica*), Yellow Archangel (*Lamiastrum galeobdolon*), and Amur Honeysuckle (*Lonicera maackii*) were all found within a .5-acre plot.
- February Daphne (*Daphne mezereum*) was newly reported in Saratoga County. This species was only previously found in Fulton County.
- Asiatic Dayflower (*Commelina communis*) was found in both Saratoga and Schenectady counties. Citizen reports of this species mostly surround the Albany and Troy area and suggest that this species is much more common than current data suggests.
- Japanese Angelica Tree (*Aralia elata*) was moved from a Tier 1 to a Tier 2 species by the PRISM after a small population of this plant was found in Saratoga County.
- Two new Porcelainberry (*Ampelopsis bervipedunculata*) sites were located in Albany and Saratoga Counties. This extremely invasive vine is present in high numbers in the Lower Hudson Valley and had previously only been known to exist on the boundary of Columbia County.
- Two new Hemlock Woolly Adelgid sites were found in the town of Ballston in Saratoga County. This is currently the northernmost Hemlock Woolly Adelgid-infested county in New York.
- Citizen reports were verified for species such as Yellow Garden Loosestrife (*Lysimachia vulgaris*) and porcelainberry leading to a renewed focus on adding iNaturalist reports into the portfolio of data available to the PRISM.
- Japanese Hops (*Humulus japonicus*) was found at two locations, one in Washington County and one in Schenectady County with a possible additional location in Albany County.
- Reports of Nepalese Smartweed (*Polygonium nepalense*) in Saratoga County were followed up on by summer staff. This population was delineated and treatment of this species is planned for the coming year.
- The northernmost population of Wineberry (*Rubus phoenicolas*) in the PRISM was found in Albany County. Populations of this plant are most often found in Columbia and

Shrubby Bushclover was found growing in a free-living state in Saratoga County, the first upstate record of this plant.
Conclusions:

Five main program categories, shown in the graph below, were identified for the summer to calculate how staff spent their time. Travel time was included in the main category that the individual workday was devoted to. As expected, the majority of time was devoted to surveying ecologically significant locations. There was an increase in the management of invasive populations compared to previous years due to increased PRISM capabilities. To ensure success in the field, a significant amount of time was spent planning for the season.

Next Steps:

Identified program goals of the Terrestrial Program include but are not limited to:

- Responsive management of high threat emerging invasive species populations.
- Capacity building through working with partners, obtaining more capability to do management, obtaining additional staff, and biocontrol evaluation.
- Follow up on ongoing management projects to ensure success post-treatment.
- Monitor emerging species in the Capital/Mohawk Region and document their invasivity for the increased awareness of all stakeholders.
- Integration of Biocontrol releases into the PRISM’s management portfolio.
In 2018 the Capital/Mohawk PRISM, with the guidance and support of the Steering Committee, released contract service dollars to provide funding for invasive species projects across the Capital Region as a pilot program.

A total of $60,882.21 originating from the Environmental Protection Fund through the NYSDEC was released to eight PRISM partners. The work executed by partners included the identification, monitoring, and research of priority invasive plants and animals; the containment and suppression of infestations through management projects; restoration projects; research for best management practices; and education and outreach product development. Work was performed in the agricultural, aquatic, and terrestrial realms by municipalities, fellow extension offices, accredited academic institutions, preserve managers, and citizen scientists. The 2018 calendar year was the first time the PRISM released contract service dollars for funding of partner related work. Contracts were distributed to partners based out of five counties throughout the PRISM.

Funding Released by Contract Holder:

1. Albany County SWCD $8,916.50
2. The Farm on Peaceable Pastures $8,750.00
3. The Poughkeepsie Day School $7,700.00
4. Columbia Land Conservancy $9,000.00
5. Cornell Cooperative Extension: Rensselaer County $8,916.50
6. Siena College $7,885.00
7. Schenectady County $1,042.00
8. Montgomery County SWCD $9,000.00
Contracted Projects

Spotted Lanternfly Mobile Sign

*Albany County SWCD*

Albany County SWCD submitted a proposal to construct a mobile billboard in order to enhance awareness of the invasive Spotted Lanternfly (SLF). Feeding by sometimes thousands, SLF stresses plants, making them vulnerable to disease and attacks from other insects. SLFs also excrete large amounts of sticky “honeydew,” which attracts sooty molds that interfere with plant photosynthesis, negatively affecting the growth and fruit yield of plants. The billboard will be strategically placed at events in the Capital region to garner the attention of citizens. In addition, the billboard has an aquatics theme encouraging boaters to clean, drain, and dry their equipment to prevent aquatic hitchhikers from invading our waters. If you are interested in having either billboard at an event, please feel free to reach out to the PRISM office or the Albany SWCD. As part of the contract, a schedule of events where the billboard will be present was proposed.

Targeted Grazing of Sheep on Phragmites

*The Farm on Peaceable Pastures*

The Farm on Peaceable Pastures explored the application of livestock for invasive species management through an approach referred to as prescribed grazing. Prescribed grazing is a lesser-known methodology for managing invasive species, but offers many unique environmental and social benefits. The viability of prescribed grazing has been assessed through site visits and literature review, then reported in a handbook designed for conservationists. Moreover, the Farm on Peaceable Pastures has worked with the Tivoli Preserve Community Farm in the Tivoli Lake Preserve in Albany to implement prescribed grazing and provide education to the surrounding community about invasive species through over ten community outreach days as well as the publication of a brochure detailing invasive plants that can be found in the preserve.
Bloody Red Shrimp and Round Goby

*The Poughkeepsie Day School*

In Dr. Brent Boscarino’s contracted project with the Poughkeepsie Day School, a survey-based investigation and experimental approach was targeted at identifying the presence/absence of the bloody red shrimp and round goby as well as the feeding relationships between the two invaders. Students under the supervision of Dr. Boscarino surveyed for round goby by fish seining. At the same locations, plankton net sampling of the bloody red shrimp has been completed. In addition, round goby feeding experiments with bloody red shrimp under different light conditions have been employed. All fish and shrimp survey work began in late July and continued through the end of August.

Restoration of Seigel-Kline Kill

*Columbia Land Conservancy*

The Columbia Land Conservancy submitted a contract to support their ongoing restoration project at the Siegel Kline Kill Conservation Area which involves the removal of invasive plants and restoration of the landscape. On May 18th a workday was held and attended by twelve volunteers, who over the course of three hours, manually removed invasive honeysuckle plants and installed two dozen native trees. Columbia Land Conservancy also hosted a Bio-Blitz survey on June 23rd where participants counted 145 species of plants, birds, stream macroinvertebrates, fungi, and more within the preserve. A plan for habitat improvement was created for the meadow by Helia Native Nursery and a native seed mix was spread to improve biodiversity. This 54.6-acre property has had a lot of exciting improvements in recent years and the PRISM can’t wait to see how the native wildlife and flora responds to the work.

The restoration of Siegel-Kline Kill involved the removal of an invasive hedgerow that used to border the property along with the replanting of native trees in its place.
Monitoring Vegetable Crops for ALM and SM

Rensselaer County CCE

Through this contract, Vegetable Specialists through the CCE of Rensselaer County were able to monitor for Allium Leafminer and Swede Midge throughout multiple counties in the PRISM. Both are important crop pests and the majority of staff time on this project was devoted to visiting different farms throughout the specified multi-county area to identify first flight time as well as preventative measures that could be taken by growers. Traps for Swede Midge were placed around sample plots and netting was put over crops to prevent Allium Leaf Miner from feeding. No new counties tested positive for Allium Leaf Miner, though new counties were added adjacent to the PRISM. No counties were found to have Swede Midge presence in CapMo as well, though Clinton County continues to have reported outbreaks of the insect. Outreach to farmers was an additional component of this

Identifying Priority Invasive Species

Conservation Efforts in the Town of Colonie

Siena College

Using iMapInvasives, invasive species were mapped through for five town-owned properties: the Crossings, the Mohawk-Hudson Bike Trail, the Town of Colonie Golf Course, Schuyler Flatts Cultural Park, and an unnamed property scoring highly for ecological significance. Surveyors were students at Siena who performed vector surveys similar to those done by PRISM interns. At the end of the project, an Invasive Species Walk and Talk was held at the Crossings, maps of each site were created, and a poster presentation was presented at the Siena College Summer Research Symposium. Findings of this project were also presented to the Town of Colonie Conservation Advisory Committee to inform policy decisions.
Boot Brush Stations

Schenectady County

The Schenectady County Invasive Species Committee (SCISC) was awarded a contract by the PRISM to construct and install five boot brush stations at the trailheads of the Plotter Kill, Indian Kill, and County Forest Preserves. The SCISC worked with the Schenectady County SWCD staff for all construction and installation activities. Each boot brush station contains a waist-high informational sign on invasive plants that are a particular problem in the preserve with a functional ground-level brush to remove seeds from boots and shoes. The stations will encourage hikers to clean their footwear before and after entering the preserves to help prevent the introduction and spread of non-native invasive species within the county and the overall PRISM region. The SCISC will continue to educate the public with a portable sign and boot brush at events throughout

Phragmites Removal

Montgomery County SWCD

The Thomas H. Burbine Memorial Forest and Nature Trail is a forever wild territory, maintained by Montgomery County SWCD, which is located in close proximity to Charleston State Forest. The SWCD executed a contract to provide effective response and control measures to treat the Phragmites that is present on-site. During the summer, the pond outlet was renovated and the outlet ditch, which was infested with Phragmites, was rebuilt. Upstream of the pond area a total of 2.3 acres was treated by hiring a certified aquatic pesticide applicator to spray the phragmites during vegetative growth. During the next growing season, the success of the treatment will be evaluated. Invasive species management handouts were developed and mailed to all Town Highway departments. Additionally, SWCD staff completed a bridge over the spillway that will allow visitors the opportunity to hike the entire park trail.
Summary of Contracted Projects:

The Capital/Mohawk PRISM will be releasing funds to stakeholders again in 2019 based on demands and the successes of projects in the first year of the pilot program. Changes in the up and coming year will involve:

- A slight increase in total funding available, up to $70,000.
- Revision of the submission process with an earlier and longer application window.
- Project completion date and reporting deadline was moved up to December 5, 2019.
- Mid-term reporting will be more explicit for checks and balances of work performed.
- The PRISM will be releasing Priority Objectives similar to the practice of other PRISMs in order to target the proposals towards meeting priorities of the five-year strategic plan as well as the PRISM annual work-plan.

In 2018, contracts touched on each facet of invasive species management, from prevention to restoration, a practice that the PRISM hopes to continue in the future. One of these projects took place in an identified Environmental Justice community. The breakdown of contract-holder classification for 2018 is as follows:
Information Management

Capital/Mohawk PRISM Facebook page (www.facebook.com/CapMoPRISM)

The PRISM’s Facebook page shares invasive species information in real time with the public and acts as an event calendar for citizens to stay informed of public PRISM events. The page is updated by staff and volunteers. The PRISM’s 2018 goal of increasing its Facebook reach by 50 percent was exceeded with an overall 70 percent increase in its audience.

Capital/Mohawk PRISM Instagram (www.instagram.com/capitalmohawkprism)

This account is mostly used for informal invasive species information. The PRISM similarly had a 2018 goal of increasing its Instagram reach by 50 percent. The Instagram account’s reach increased by over 85 percent, with the largest segment of our audience being from the Albany area. The most successful posts were those that showed PRISM staff doing field work, which will continue to be an area of social media focus to keep the public involved.

iNaturalist

iNaturalist projects enable the PRISM to gather reports of any species on the tier lists in all counties within the PRISM boundary. An advantage to using iNaturalist is that the reporter does not need to know what species they are submitting as the observation can be identified by a more experienced naturalist. There are currently two PRISM Projects running on iNaturalist which were created this year: one for Aquatic species and one for Terrestrial. The total observations for these projects are skewed based on the fact that the data present has only been gathered since the creation of the website in 2008.

Some notable species that have had new populations reported and verified through iNaturalist are Porcelainberry, Yellow Garden Loosestrife, Lesser Celandine, and Japanese Hops. Unverified populations include Himalayan Balsam, Autumn Clematis, and Beefsteak Plant. The below table shows the total iNaturalist reports for the two PRISM projects as of December 17, 2018.

<table>
<thead>
<tr>
<th>Project</th>
<th>Observations</th>
<th>Species</th>
<th>Observers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic</td>
<td>61</td>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td>Terrestrial</td>
<td>1,049</td>
<td>66</td>
<td>231</td>
</tr>
</tbody>
</table>
Website Improvements (www.capitalmohawkprism.org)

Numerous website additions and updates took place during 2018 to streamline and improve partner and public interactions with PRISM services. Some of the larger updates are summarized in the list below:

- Aquatic and Terrestrial tabs were designated for easier navigation based on constituent interest.
- Events were posted to the main page and Facebook exclusively; all extraneous calendars were retired.
- A new blog page was created and six articles authored by various PRISM staff were posted covering a wide range of invasive species issues.
- Factsheets for each emerging Terrestrial Invasive Plant were linked to the website with the help of interns from Siena College. Widespread species will have factsheets published during 2019.
- A new page was added to explain the purpose and intent behind the creation of an ISPZ, which represents an evolving partnership between the PRISM and OPRHP at Moreau Lake State Park. This site was designated with the help of the Conservation Committee.
- All downloads under the Resources tab were sorted into a subcategory based upon field of invasive species control.
- Annual Work Plan, Reports, Tier List, and other annual PRISM documents were updated per the Scope of Work of the PRISM.
- Links to current Part 575 Regulations and the new document “New York State Invasive Species Comprehensive Management Plan” were added to the homepage.
- A Requests For Proposal tab was established to spotlight ongoing projects being contracted out by the PRISM as well as make proposal documentation available year-round to partners and groups planning projects that would be eligible for future PRISM funding.

To improve the public’s knowledge of state strategy regarding Invasive Species, official DEC documents are posted on the front page of the PRISM website.
Summary of Work

Percentage of work executed in the PRISM was diverse and dependent on the time of year, needs of the community, and calls for action. Eight categories of work were developed based on the goals, objectives, strategies and anticipated outcomes of our 2018 Work Plan. Work performed percentages shown above and detailed below are an approximation of summed workday events as outlined in staff quarterly reports.

Work Category Descriptions:

1. **Prevention, Education, and Outreach: 20%**

   Prevention is the first line of defense in invasive species management.
   - The most effective strategy against invasive species is to prevent them from ever being introduced and established. Preventive measures typically offer the most cost-effective means to minimize or eliminate environmental and economic impacts.
   - Prevention relies on a diverse set of tools and methods, especially public education, to raise awareness of invasive species issues and reduce the chance of unintentional and intentional introductions of invasive species.
   - Increased awareness will, over time, lead to better environmental decisions and inspire actions to help stop the introduction and spread of invasive species.
   - Target groups for prevention and education measures include academia, conservation practitioners, community and volunteer groups, non-profit agencies, government agencies, municipalities, industry leaders and associations, educators, and citizen scientists from all age groups.
Methodology:
- Invasive species prevention awareness campaigns (such as ISAW)
- Workshops, woods walks and field visitations
- Stewardship training days
- Development and construction of outreach materials for distribution including; traveling displays, exhibits, pamphlets, identification cards, fact sheets, resource guides and videos.

2. Early Detection: 16%
Early detection work is the ability to rapidly detect new and recent invaders and eradicate all individuals of a species that is new to a geographic region. Early detection and rapid response is the next highest priority after prevention as it represents the point on the invasion curve where treatment is most effective.

Methodology:
- Field work from PRISM Coordinators, Interns, and Partners
- Data collection and reports from citizen scientists and resource managers.

3. Coordination: 16%
Coordination and collaboration occurred across jurisdictions, municipalities, agencies, and partners. The PRISM acted as an information hub and an organizing force in the region to connect like-minded people to achieve common goals regarding invasive species related activities.
- Coordination facilitates opportunities for sharing resources, including funding, personnel, equipment, technical information, solutions to complex problems, and expertise.
- Collaboration can occur on-site, in-person meetings, conference calls, workshops, board meetings, and can sometimes involve multiple agencies coming together and sharing resources for a common goal.

4. Information and Management: 11%
Involves the collection, utilization, and sharing of data. Information management can come in many forms.

Methodology:
- Development and collaboration of management plans for invasive species infestations and properties with partners and associates.
- Geographic Information Systems data sharing, iMapInvasives, WISPA, OAT, and SAS data programs.
- Acting as a regional clearinghouse of best management practices for public distribution. Relaying control information for various invasive species to citizens and professionals.
5. Rapid Response and Control: 5%

Rapid response to new threats is imperative to protect our natural ecosystems in a cost-effective way. Rapid Response is a follow-up to early detection and is paramount in stopping the spread of new invasive biologic threats to our region before they have the chance to proliferate.

Methodology:
- Perform removal and eradication activities in a timely manner using the most feasible solution for the species.
- Undertake containment projects to prevent established tier 2 and 3 infestations from further spread, often done at the edge of the geographic range.
- Perform suppression projects to reduce the density and scale of the species.
- Implement large-scale controls which combine resources and methods to contain, suppress, and eradicate infestations in a given location.

6. Restoration: <1%

Restoration should consider best management practices for the given climate zone. Restoration requires the development and implementation of effective methods for areas that were degraded by invasive species where suppression or control has taken place, often involving the replanting of areas with appropriate native species. Rapid response removals should consider restoration practices on a small scale.

7. Administrative: 22%

Administrative duties are core functions to keep the day-to-day operations flowing and short and long term projects moving forward. Administrative work includes the following duties:
- Program and plan education and outreach events including the development of presentations, resource guides, factsheets, etc.
- Manage and oversee the contractual work provided by PRISM contract holders.
- Hold internal staff and team meetings.
- Manage web page and social media accounts and create and distribute press releases.
- Confirm iMapInvasives data.
- Develop site specific management plans.
- Report work executed through annual, quarterly, and scouting reports.

8. Other: 10%

Other work includes professional development for staff; host-specific training; human resource meetings; interviewing of employees and interns; employee and intern on-boarding and training; time sheet management; community service; and mentoring.
Coordination in the annual budget accounts for all activities related to administering the program by all coordinators in the Capital/Mohawk PRISM. Coordination addresses each of the eight work categories of the 2018 work plan through devoted staff time. The work executed from the plan includes prevention, education, and outreach; early detection; coordination; information management; rapid response; and control. Coordination duties also include administrative duties and other professional development activities. Coordination is a large function of dollars spent in the PRISM historically and continues today.

In 2018, under the new contract awarded to the PRISM allocated funds for invasive species projects that were executed by partners on behalf of the PRISM. The eight project Request for Proposals accounted for 24 percent of the PRISM’s budget. Work executed by contract recipients delivered various types of invasive species work. Two partners focused on education and outreach. One academic institution completed an early identification project. Two projects focused on research work relating to invasive species management and control. Two other projects focused on suppression and control of tier 4 species. In addition one conservancy utilized funds to restore a site. Over time, the funding for such projects will increase.

Throughout the first fully funded year of the PRISM’s contract, staff was able to devote time to a diverse array of invasive species project throughout the region. However, there are areas that could be improved upon in the following years such as restoration, early detection/rapid response, and control. Moving forward, the PRISM will actively work to expand its capabilities in these areas through developing new partnerships, piloting new project, and increasing staff capabilities. Obtaining more staff (both seasonal and full-time), acquiring pesticide application capabilities, and submitting proposals for outside funding are all strategies that can be used to increase our capacity to meet the diverse needs of our partner organizations and regional community.
Appendix 1. PRISM Partners and Projects

Omissions to the list are not intentional, please let us know if you would like to be included in future listings. Thank you all for all of your contributions to preventing the spread of invasive species!

Adirondack Mountain Club - Albany Chapter
Albany Pine Bush Preserve Commission
Albany Soil and Water Conservation District
Appalachian Mountain Club - Albany Chapter
Audubon NY
Babcock Lake Estates
Ballston Lake Improvement Association
Bowman Lake Association
Buckingham Pond Conservancy
Burden Lake Association
Columbia Land Conservancy
Columbia-Greene Lakes Coalition
Cornell Cooperative Extension
Cossayuna Lake Improvement Association
Davey Tree
Duane Lake Association
Friends of Moreau Lake State Park
Friends of Woodlawn Preserve
Huyck Preserve
Kinderhook Lake Corporation
Little Troy Pond
Mohawk River Watershed Coalition
Mohawk-Hudson Land Conservancy
Montgomery County Soil and Water Conservation District
National Grid
New Baltimore Land Conservancy
NYS Federation of Lake Associations
NY iMapInvasives
NY Natural Heritage Program
NY ReLeaf Program
NYS Department of Agriculture and Markets
NYS Department of Environmental Conservation
NYS Department of Transportation
NYS Hemlock Initiative
NYS Nursery and Landscape Association
NYS Office of Parks, Recreation, and Historic Preservation
Queechy Lake Club
Rensselaer Land Trust
Saratoga County Soil and Water Conservation District
Saratoga National Battlefield (NPS)
Saratoga PLAN
Schenectady County Invasive Species Council
Siena College
Skidmore College
Sleepy Hollow Lake, Association of Property Owners
Sterling Environmental Engineering
Tivoli Park
The Nature Conservancy
The Sacandaga Mohawk Flotilla/United States Coast Guard Auxiliary
Town of Ballston Parks and Recreation Committee
United States Department of Homeland Security
Union College
University at Albany, SUNY
Upper Hudson Watershed Coalition
US Geological Survey
Wilton Wildlife Preserve & Park
Albany Pine Bush Preserve:
Invasive Plant Management over 385 Acres

With funding provided by United States Forest Service’s Wildfire Risk Reduction Grant Program and NYSDEC, invasive re-sprouting trees across 385 acres of pine barrens were treated in 2018. NYS licensed crews moved through the pine barrens cutting and treating invasive woody tree sprouts. Invasive and overabundant native tree species including black locust, aspen, cherry, maple and box elder were removed to facilitate future fire management, maintain the barrens and a variety of rare species, and prevent these sites from reverting to forest. Treating invasive re-sprouts represents the final phase of barrens restoration; recurring prescribed fire at a 5 to 10 year frequency will maintain the barrens.

Southern Pine Beetle (SPB) Surveys Continue

In collaboration with staff from the NYSDEC Division of Lands and Forest - Forest Health Program, 2018 SPB monitoring was expanded from two to five pheromone traps. This year’s sampling results are pending, but follow a single positive detection in the Preserve in 2017. Silvicultural thinning of pitch pine stands and prescribed fire are used throughout the preserve to restore the globally-rare inland pitch pine-scrub oak barrens and its 76 wildlife species of greatest conservation need. The Albany Pine Bush Preserve Commission and NYSDEC anticipate that these management efforts will also improve ecosystem health and pitch pine stand resilience, reducing potential SPB-induced damage in the preserve.

University of Albany:

Dr. George Robinson, professor at the University of Albany, published a paper regarding the spread of Oriental Bittersweet in riparian habitats and the role that dredged soil plays in the spread of this invasive vine. The study was performed at Schodack Island State Park, where seeds were planted in different substrates to track germination patterns. The germination for bittersweet was found to be almost three times higher in the dredged soil plots, which are a much different growing substrate than native floodplain soils. The results from this study suggest that the majority of Bittersweet in the State Park invaded in the past decade, and that management of more heavily invaded sites should be more aggressive to target the seed source. Another important finding was that the natural floodplain

Neil Gifford of the Albany Pine Bush setting up a SPB Pheromone Trap for monitoring.
Adirondack Research:

In 2018, Adirondack Research, in partnership with Adirondack Park Invasive Plant Program and NASA DEVELOP, provided ground verification data to improve remote sensed hemlock (*Tsuga canadensis*) distribution models by recording hemlock presence/absence as well as under- and over-story species composition and abundance. Fixed plots were identified in the Adirondack Park and surveyed in late summer/early fall when leaves were still present on deciduous trees to allow for better identification. A total of 334 hemlocks were identified within the 48 plots that contained hemlocks. Plots that contain no hemlocks were identified and recorded as well. This data will help improve future remote sensed models and will provide information and data for all of NYS that can be used to monitor for HWA in the PRISM.

The Schenectady County Invasive Species Committee:

The Committee’s activities for 2018 included the administration of a $100,000 NYSDEC Urban Forestry grant which provided funds to conduct street tree surveys in the cities of Schenectady, Rotterdam and Glenville. To carry out this project, the committee worked closely with CCE of Schenectady County, officials from each of the municipalities, and Davey Resource Group (performed the surveys). The Committee’s outreach efforts for 2018 included exhibits at the Schenectady Greenmarket, which prompted the management of emerald ash borer found in ash trees along Schenectady’s lower State Street, and at the CCE Annual Plant Sale, which led to the eventual treatment of hemlocks infested with HWA discovered in an historic area of Vale Cemetery. The Committee carried out a garlic mustard pull at the Great Flats Preserve in Rotterdam and coordinated with the PRISM on a stewardship event at the County’s Plotter Kill Preserve. Committee members also participated in a survey of HWA in hemlocks at the Lisha Kill Preserve, and assisted the NYSDEC’s Forest Health Unit in a follow-up survey of hemlocks in the HWA-treatment area at the Plotter Kill Preserve. The Committee continued its efforts to obtain approval from the County Legislature of the Long Term Hemlock Management Plan which was developed last year.

![Participants from Union College, PRISM, and the Committee at the Plotter-kill Workday on September 29th.](image-url)
Appendix 2. List of Terrestrial Scouting Locations

- Cairo Lockwood State Forest
- Vossburgh Swamp
- Anchor Diamond Park
- Beebe Hill State Forest
- Berlin State Forest
- Prospect Mountain
- Tongue Mountain
- Pole Hill Pond Preserve
- Dunham Bay
- Taconic State Park
- Taconic Crest Trail
- Smith Farm OSI Property
- Moreau State Park
- Albany Pine Bush
- Daniel’s Road State Forest
- Shenentaha Park
- Usher’s Road State Forest
- Madison Hollow
- Grafton Lake State Park
- Cherry Plain State Park
- Featherstoneaug State Forest
- Schenectady County Forest
- Indian Kill/Hemlock Hollow
- Jeff Blatnick Park
- Vischer Ferry
- Carter’s Pond
- Thacher State Park
- Wyomanock Center for Sustainable Living
- Poultney River
- Schodack Island State Park
- Lewis A. Swyer Swamp
- Lincoln Mountain State Forest
- Daketown State Forest
- Black Creek Marsh Wildlife Management Area
- Malta Ecological Park
- Harvey Mountain State Forest
- Stockport Flats
- Kelley Park
- Nutton Hook
- Vorheesville Rail Trail
- Woods Hollow Nature Preserve
- Wilton Wildlife Preserve
- Ora Phelps Nature Preserve
- Coldbrook Preserve
- Galway Preserve
- Le Vine Preserve
- Christman Sanctuary
- Moreau Lake State Park
- Columbia County Syringa/Impatiens Sites
- Albany Rail Trail
- Jeff Blatnick Park

2018 Capital/Mohawk PRISM Annual Report
### Appendix 3. Education and Outreach Demographics

#### Indirect Contacts

<table>
<thead>
<tr>
<th>Dates</th>
<th>Activity</th>
<th>Number of Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/24/2018 - 08/20/2018</td>
<td>Boat Steward Checks/WISPA PROGRAM</td>
<td>3291</td>
</tr>
<tr>
<td>08/14/2018 - 08/19/2018</td>
<td>Altamont County Fair</td>
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<tr>
<td>05/19/2018 - 09/15/2018</td>
<td>CCE Master Gardener Plant Sale</td>
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</tr>
<tr>
<td>10/02/2017 - 09/29/2018</td>
<td>Fact Sheets, Flyers, Web Page, Social Media</td>
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<tr>
<td>08/16/2018 - 09/30/2018</td>
<td>Steering Committee</td>
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<td>09/15/2018 - 09/15/2018</td>
<td>Fall Fest 5 Rivers DEC Education</td>
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<td>05/05/2018 - 05/05/2018</td>
<td>I Love My Park (Moreau)</td>
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<tr>
<td>11/01/2017 - 09/30/2018</td>
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#### Direct Contacts

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<th></th>
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<th>Pac. Is.</th>
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<td>59</td>
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<td>Total</td>
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<td>1364</td>
<td>152</td>
<td>36</td>
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<td>1584</td>
<td>88612</td>
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</tbody>
</table>

The first widespread news on SLF in New York came at the Press Conference at Peeble’s Island State Park where trapping technique was demonstrated by NYSDEC employees. These traps were monitored by PRISM staff after the event.

The temporary tattoos of invasive species reach the intended target audience at County Fairs and Nature Festivals. The reach at these kind of events is represented under the indirect contacts.
Success Story 1: Schenectady County Field Day

On May 24th and 31st of 2018; the Capital/Mohawk PRISM partnered with the CCE of Schenectady County to deliver a component of invasive species education to students from the Schenectady Central School District. The two events occurred at Schenectady Central Park where students received education through an outdoor learning lab. The students from Schenectady represented a diverse audience in a historically underserved community, making environmental education at this event especially valuable. Over the two day period, 158 students of middle school age participated in an outdoor learning activity in which students developed a working definition of what an invasive species is and the harm that such organisms can cause to the environment. In addition, students identified vectors that invasive species use enter into the ecosystems. Examples included invaders to the nearby Mohawk river such as Water Chestnut, and urban tree pests such as Emerald Ash Borer and HWA.

A second part of the learning experience involved crazy worm (*Amynthas agrestis*) surveying. In a guided learning lab, students set up one square meter sampling plots and pored a solution of ground mustard and water onto the ground to draw worms to the surface. Students then examined the samples to try to identify any *Amynthas* earthworms. The impact of the *Amynthas* on native ecosystems was discussed afterwards. Students made connections to why invasive species are more likely to succeed in the environment based on observations and behavior of the organism.

**Accomplishments and Impacts:**

- Students were cognizant of a new type of subject matter in science as well as a potential career field.

- Students were able to identify a species of invasive worm (*Amynthas agrestis*) and understand the impacts to the environment.

- Students observed impacts of invasive species on native flora and fauna.
Success Story 2: Schenectady High School Invasive Species Curriculum Implementation

On November 29th and 30th of 2018; The Capital/Mohawk PRISM partnered with the NYSDEC’s Education Committee to deliver a component of Invasive Species Curriculum to high school students in the Schenectady Central School District. The two days of instruction occurred in various Schenectady High School science classrooms in which students received target curriculum from the 2018-2019 Pilot Program, which is as follows.

- Day 1: What are invasive species?
- Day 2: How do invasive species spread?
- Day 3: What do invasive species look like?
- Day 4: What invasive species are an issue locally?

The two days of in-house training at Schenectady High School unpackaged curriculum from Days 1 through 4 due to time constraints. Various components of the training were adapted to meet the needs of students. Students were able to define and identify pathways regarding invasive species. In addition, students gained required state department of education laboratory hours in science while identifying, sketching, and summarizing specific invasive species commonly found in Schenectady proper as well as connecting their personal outdoor experiences with some of the species that were covered such as Water Chestnut.

Accomplishments and Impacts:

- Follow-up is planned in the spring of 2019. The PRISM will visit the school district and conduct urban woods walk to identify invasive species first-hand on campus and nearby at sites such as Central Park. The development and implementation of invasive species education is a crucial step in protecting our natural resources from the threat of invasive organisms. The students of the Schenectady School District are an excellent target for this education as they represent the future.

- The PRISM will continue to refine and present on the NYS Invasive Species Curriculum with guidance from the Education/Outreach Committee.