

2023 ANNUAL REPORT

CAPITAL REGION PRISM PARTNERSHIP FOR REGIONAL INVASIVE SPECIES MANAGEMENT



**INVASIVE SPECIES
MANAGEMENT**
CAPITAL REGION

Sneezeweed (Helenium spp.) in the tidal marshes at the Ramshorn-Livingston Audubon Sanctuary.

Capital Region PRISM

Partnership for Regional Invasive Species Management

Contract No. C012558 January 1, 2023, to December 31, 2027
Annual Report 2023

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The New York State Department of Environmental Conservation, Invasive Species Coordination Section; the New York State Department of Agriculture and Markets; the New York State Invasive Species Council; Invasive Species Advisory Committee; New York State Legislature; the Capital Region PRISM Steering Committee and the Cornell Cooperative Extension



Department of
Environmental
Conservation



Agriculture
and Markets

Cornell Cooperative Extension
Saratoga County

The numerous partner organizations and their representatives who contribute their expertise, time and resources to the development and success of the Capital Region PRISM. A copy of this report can be obtained from the Capital Region PRISM website:

capitalregionprism.org



Capital Region PRISM

Vision, Mission, and Goals 2023-2027

The CR-PRISM has five set goals to mitigate the harmful effects of invasive species to the public while protecting critical ecological and economic resources of the region. The goals, objectives, and actions of the CR-PRISM [Five-year Strategic Plan](#) 2023-2027 will be implemented collaboratively among the CR-PRISM staff and partners.

Vision

To cultivate a region in which partners work together to address the harmful impacts associated with invasive species to protect its lands and waters, biodiversity, economy, and quality of life.

Mission

Our mission is to prevent, detect, and respond to harmful invasive species in the PRISM region through collaboration, resource sharing, strategic messaging, and education.

Goal 1: Partnership

Coordinate and collaborate with partners to grow and strengthen regional capacity to prevent, detect, and respond to invasive species.

Goal 2: Prevent

Minimize the introduction and spread of harmful invasive species into new areas.

Goal 3: Detect and Monitor

Detect and monitor harmful invasives species approaching and affecting the Capital Region.

Goal 4: Respond

Mitigate ecological and economic impacts of priority invasive species using an integrated pest management approach.

Goal 5: Education, Outreach, and Communication

Build engaged communities that understand, support, and invest in the PRISM's work to prevent, detect, and respond to harmful invasive species in the Capital Region.

CR-PRISM 2023 Goal Accomplishments by Geography

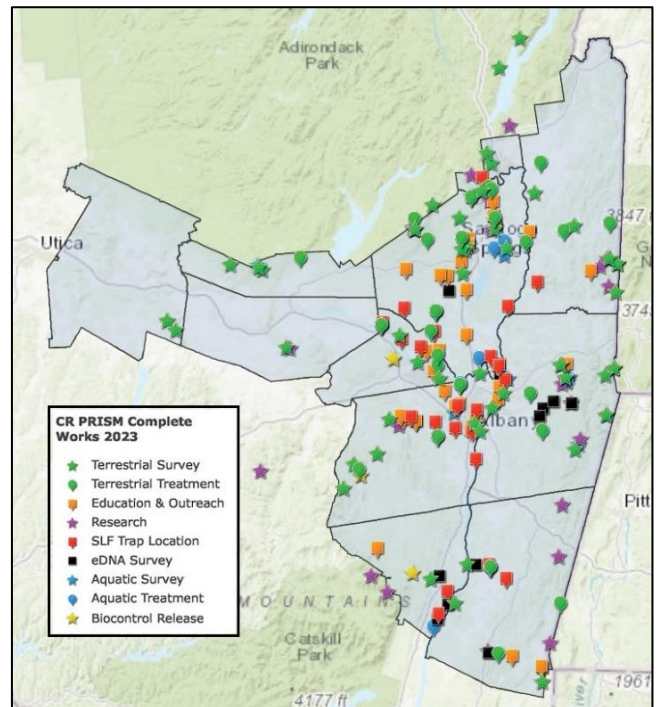


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Executive Summary

Capital Region Partnership for Regional Invasive Species Management

The Capital Region PRISM (CR-PRISM) through its host agency, the Cornell Cooperative Extension (CCE) of Saratoga County, has administered year one of a new contractual agreement with the New York State Department of Environmental Conservation (NYS DEC). The CR-PRISM and residents of New York State are sincerely grateful for the financial support provided from the Environmental Protection Fund to support conservation efforts to protect our environment. In addition, the CR-PRISM is thankful and truly appreciates all stakeholders who have invested in the collaborative process to help protect our environment from the detrimental effects of invasive species.

The introduction of invasive species disrupts natural communities and ecological processes. Impacts include the displacement of native species resulting in loss of species diversity and degradation of habitats. Negative economic impacts associated with invasive plant and animal introductions affect agriculture, forest, and commercial production. Invasive species can alter recreational activities and can cause significant health problems. All life depends on healthy ecosystems and the various ecosystem services they provide.

As stewards of the lands and waters it is our collective responsibility to objectively protect these resources for the present and the future. More needs to be done than just conserving our lands and waters from anthropogenic stressors like urbanization and climate change. Practitioner's thoughtful interventions are needed to promote healthy, functioning, and sustainable ecosystems. Management goals and concepts such as resistance, resilience, and transition should be considered when there is a desire to maintain a resource with high economic, cultural, or ecological value. These practices are designed to promote greater biodiversity, resilience, connectivity, and thus healthier ecosystems. Many opportunities to protect, conserve, and manage habitat in NYS exist. Large tracts of land and numerous water bodies have low to no introduction of non-native species that are healthy and productive. The lands and waters of New York and the biota that inhabit these areas deserve our attention.

CR-PRISM 2023 Accomplishments

The CR-PRISM's 2023-2027 Five Year Strategic Plan outlines five goals to guide priority work actions for the CR-PRISM and its Partnership to deliver. Below is a snapshot of the great works completed in 2023 across those five goals. In addition, the CR-PRISM provides new products to support its network such as a Partner Acknowledgement, Steering Committee Charter, and Crew Assistance Program.

- **Partnership:** The CR-PRISM serves to help identify natural resource agents and bind these individuals and groups into a strong cohesive and collaborative group called the Partnership. Partners are an integral component of the CR-PRISM in reaching a common goal of slowing and controlling the spread of invasive species. In 2023 the CR-PRISM collaborated in a myriad of ways with 120 partners across the region. These partners have been identified as Principal Partners (16 members), Strategic Partners (51 members) and Cooperating Affiliates (53).
- **Prevention:** One of the CR-PRISM's largest prevention programs is the Watercraft Inspection Steward Program (WISP) which helps to protect New York waters from aquatic invasive species (AIS) introductions. The WISP Program has engaged 15,742 people while inspecting 10,088 watercrafts and intercepting 830 AIS from entering/leaving waterbodies and had a 78% compliance rate for taking Clean, Drain, Dry (CDD) prevention measures.

- Monitor and Detect:** The CR-PRISM conducted early detection surveys with efforts that focused on high-threat species in and around uninvaded areas. In 2023 approximately 5,232 total acres were surveyed on both public and private lands in the aquatic and terrestrial realms. Efforts typically occur in identified Priority Conservation Areas (PCAs) and Priority Waterbodies (PWBs) but also includes secondary sites with lower conservation values when appropriate. A total of 16/28 PCA's covering 4,257 acres and 37 miles of trails were monitored along with 16/29 waterbodies for an additional 975 acers of surveillance. The PRISM also introduced an environmental (e)DNA pilot program to increase the capacity to detect high-threat AIS. Forty-nine (49) samples were collected at eleven (11) prioritized locations in the upper Hudson River Watershed. Two new tier 1 species were detected in the PRISM for 2023.
- Response** The CR-PRISM staff prioritized management actions towards high threat species in low abundance, or areas where there are high conservation values worth protecting. Some examples of high threat species controlled were giant hogweed (*Heracleum mantegazzium*), water chestnut (*Trapa natans*), and mile-a-minute (*Persicaria perfoliata*). AIS Response was comprised of water chestnut removals at eight (8) prioritized sites, totaling 22 acres managed with 10,887 pounds of AIS removed by manual and mechanical methods. The addition of terrestrial invasive species (TIS) technicians increased the CR-PRISM's capacity to conduct both monitoring and response actions. A total of 94 locations were under management and post treatment services. A total of 280 acres were managed in 2023. The PRISM also cooperated with a handful of principle investigators to release limited amount of biocontrol's. A total of 3,446 biocontrol insects were released in 2023.
- Outreach, Communication, and Education:** The CR-PRISM retooled and focused educational instruction to reach targeted audiences. Programs were designed to provide participants with prevention, detection, and management tools, to empower them to take action to mitigate the harmful effects of invasive species. The PRISM hosted 78 educational presentations and workshops in the calendar year reaching 2,390 direct program participants. Six iMapInvasives training courses were held, that reached sixty-one (61) community scientists. The PRISM engaged 408 volunteers through specific programs for a total of 2,461 hours of service. The value of volunteer service was calculated to be \$78,259.

For more details on these metrics and outcomes please read on. A more comprehensive description and listing of core metrics can be found in the 2023 Annual Work Plan Summary section and appendices of this report. The CR-PRISM is thankful for the numerous stakeholders that encompass its network. Together we can make a difference.



SCA Interns Thatcher State Park Left, HRTF Center and Right, 2023

Introduction and Background

The following annual report for the Capital Region Partnership for Regional Invasive Species Management, contract No. C012558 January 1, 2023, to December 31, 2027, is a summary of the deliverables and related outcomes to administer the PRISM in 2023. The CR-PRISM is a collaborative organization created to address the threat of invasive species. CR-PRISM is a not-for-profit quasi government agency hosted by Cornell Cooperative Extension of Saratoga County. The CR-PRISM strategically operates across eleven counties and is financially supported by the Environmental Protection Fund as administered by the New York State Department of Environmental Conservation.

The CR-PRISM is one of eight Partnerships for Regional Invasive Species Management in New York State. New York State has taken a multifaceted and integrated approach to addressing the challenges presented by invasive species. This approach is outlined in the [NYS Invasive Species Comprehensive Management Plan \(ISCMP\) of 2018](#), which has a eight focal initiatives to “minimize the introduction, establishment, proliferation, and negative impacts caused by invasive species.” These initiatives are reflected in the [CR-PRISM Strategic Plan 2023-2027](#). The following report will highlight achievements from each goal over the last year.

The CR-PRISM works in collaboration with partner groups to promote prevention, education, and outreach strategies, create effective detection and response networks, and execute best management practices for invasive species control including post-treatment monitoring and restoration actions. In addition, the PRISM supports research involving studies pertaining to the ecological impact and effective control of invasive species. Work is also conducted to help train volunteers and community scientists in these measures. The goal of these efforts is to protect conservation targets within communities and to slow the spread of invasive species.

To promote regional cohesiveness and reduce the spread and impact of invasive species, CR-PRISM collaborates with a variety of Principal and Strategic Partners and Cooperating Affiliates in a Partnership. Members belong to academic institutions, government agencies, municipalities, not-for-profit organizations, private preserves and parks, land trusts, conservancies, lake associations, agricultural institutions, local businesses, tribal groups, environmental groups, and community scientists. All are welcome. For more information on the CR-PRISM Partnership please see the [Partner Invite and Acknowledgement](#).

The CR-PRISM is staffed by a full-time terrestrial invasive species coordinator, aquatic invasive species program manager, education and outreach coordinator, and lead coordinator. Seasonal staff include watercraft inspection stewards, invasive species technicians, and interns from partner colleges in the region. The core members of the CR-PRISM serve as regional experts and possess the skills necessary to enhance each of the PRISM’s strategic goals. In addition, the PRISM is comprised of a Partnership in which members further assist in completing complimentary priority actions to slow the proliferation of invasive species.

The CR-PRISM uses a Framework of Response for invasive species prevention and management strategies that include species Tier prioritizations and vector management to mitigate the spread of invasive species. Staff utilize the [CR-PRISM Tier List](#) and the [Statewide Tier List](#) managed by the New York Natural Heritage Program (NYNHP) when considering projects. In addition, the CR-PRISM’s [Standard Operating Procedures](#) are used to identify where work efforts should be focused; areas with lower invasive counts and densities receive greater attention. Areas where protected, endangered, or species of concern are present receive greater prioritization across all Tiers. In summary, early detection systems are conducted by species, impact, and location on both public and private lands

and waters. Prevention and outreach strategies focus on high-threat invasive species of concern and emphasize practices that the public and private industry can adopt to help mitigate invasive species detriments and control the further spread of these harmful organisms.

Priority Conservation Areas (PCAs) have been identified for terrestrial early detections and management activities. Detection methods and lakes for aquatic surveys are chosen by utilizing a Priority Waterbody (PWB) Model. PCAs and PWBs are determined by ecological significance, risk of spread, public access, abundance of invasive species, and other modeled attributes for detection, monitoring, and response activities. In addition, the CR-PRISM consults with the NYNHP, PRISM Conservation Committee, and members of the Invasive Species Coordination Section in regard to detection, monitoring, and response efforts.

The CR-PRISM delivered a variety of targeted communication, education, and outreach events in 2023 through various platforms. The PRISM shared best management practices (BMP) with partners and stakeholders, upheld a social media presence, and helped communities, organizations, and others in reaching their goals of increasing awareness and knowledge of invasive species management. The CR-PRISM also participated in the Annual New York State Invasive Species Awareness Week.

The recruitment and training of volunteers within the PRISM region to aid in detection and management of invasive species, has been imperative to help protect the environment. Outreach programs, volunteer engagements, and partner staff trainings utilize the statewide database tool, iMapInvasives, for reporting the presence, absence, and treatment of invasive species.

The Watercraft Inspection Steward Program utilized watercraft stewards to perform three key functions in protecting waterbodies in the Capital Region and beyond. The program educated boaters of the impacts of AIS through behavioral messaging, reduced the spread of AIS between different bodies of water, and empowered boaters to protect the natural resources they cherish. The program served as an early detection measure by intercepting AIS from watercraft during launch and retrieval. The results of the [2023 Watercraft Inspection Steward Program](#) report can be found on the CR-PRISM website.

Collaboration with our partners is key to our success and we want to share these efforts and invite you to embrace these initiatives. The strength of the CR-PRISM truly lies within its partners. Please feel free to reach out to the staff at any time to learn more about the possibilities of partnering with future projects.



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Goal 1: Partnership

Coordinate and collaborate with partners to grow and strengthen regional capacity to prevent, detect, and respond to invasive species.

CR-PRISM understands that the nature and complexity of invasive species prevention and management are too great for one single entity to solve. Partners and communities are key to an effective framework of response. Partnerships are the foundation of the CR-PRISM.

The ISCMP of 2018 states that the finite funding available for invasive species management creates capacity issues to slow and prevent the harm caused by these non-native species in all segments of our environment and society.

“The needed breadth of expertise, technology, and staffing required to address invasive species problems effectively requires a robust network of partners to reduce the fragmentation of invasive species response.”

The CR-PRISM strategy to address limitations in capacity is through the construction and maintenance of partnerships. The CR-PRISM serves to help identify natural resource agents and bind these individuals and groups into a strong cohesive and collaborative group called the Partnership. Partners are an integral component of the CR-PRISM in reaching a common goal of slowing and controlling the spread of invasive species. An essential role of the CR-PRISM is to identify and assist stakeholders to improve opportunities for sharing of resources while delivering up-to-date practices for outreach, prevention, detection, management, restoration, and research.

CR-PRISM helps to form collaborations to conduct invasive species works through a variety of channels. A spring and fall partner meeting are held each year; typically, PRISM updates, partner reports, and announcements are shared during these meetings. Time is allotted for collaborative work group sessions for partners to learn from one another and foster information sharing. In 2023, a spring meeting was held on April 13th with forty-four participants, with a fall meeting occurring on December 5th with thirty-three participants.

Partner Acknowledgment

Members of the Partnership are classified into three groups: Principal or Strategic Partners, and Cooperating Affiliates. Benefits and requirements for participating as a CR-PRISM Partner are outlined in a Partner Invite and Acknowledgment. Please review this document for more details. The Acknowledgment defines the Partnership with a common goal of slowing and controlling the spread of invasive species. A total of 120 partners were active with the CR-PRISM in 2023 with 17 new members. Membership varies from year to year.



Grassland Bird Trust Inc. and CR-PRISM Terrestrial Invasive Sp. Technicians, 2023

Active Partners in 2023

16 Active Principal Partners are those entities with the greatest vested interests with the mission of the CR-PRISM. Principal Partners are critical to the delivery of components of the CR-PRISM Five-Year Strategic Plan and engage with the CR-PRISM staff on a regular basis. Principal partners may also be serving under a subcontract or agreement with the PRISM.

51 Strategic Partners are municipal, county, government, and statewide stakeholders who have the capacity to perform critical actions in preventing and managing invasive species within their agencies and are imperative to regional cohesiveness. Strategic partners typically are active from year to year in shared initiatives with the PRISM.

53 Cooperating Affiliates are any group, club, or organization that takes an active interest and a desire to cooperate in CR-PRISM and support its mission. Cooperating affiliates tend to take part in one-time events or participate in limited engagements and actions. Cooperating affiliates may be active/inactive from year to year.

The CR-PRISM also acknowledges the ancestral stewards of the lands and waters in which we help to protect, the Mohican and Mohawk people. The CR-PRISM's commitment to preserving the natural resources of our shared environment, honors the legacy of the Mohican and Mohawk peoples, as the original stewards who nurtured this land as an Indigenous population. We honor and respect their historic dedication to taking care of the natural world and commit our efforts to making these lands a more inclusive and equitable environment for all.

The PRISM consults with a Steering Committee and related ad hoc sub-committees; conservation, aquatic, agriculture, and education as needed on initiatives and projects. In addition, the CR-PRISM staff regularly communicates and participates in initiatives with the PRISM network across the state. The core staff serves on partner committees and advisory groups within the region. Furthermore, the PRISM participates in three steering committees, two advisory groups at the state level, and one task force. The inclusion and involvement with partners through committee structures allow the CR-PRISM to better assist the region by providing important connections, resources, and expertise. The staff participated in a total of eighty-four working group meetings/subcommittees within the Partnership with 1,465 personal interactions during those meetings. Please note the full partner and committees list(s) in Appendix B.

Request for Proposals

The Request for Proposals (RFP) offered by the CR-PRISM provides a method to share and leverage limited resources within the Partnership to execute invasive species prevention, detection, and response practices. The RFP process provides an opportunity to execute invasive species actions and supplement the critical work that is already being done by CR-PRISM partners. The funding process also helps to leverage work from PRISM partners who otherwise would not be able to complete such tasks. The RFP process allows the CR-PRISM to help deliver additional goals and objectives that further the Five-Year Strategic Plan and annual work plans. The RFP subcontracts are financially supported by the New York State Department of Conservation through the Environmental Protection Fund.

In 2023, the CR-PRISM, with the guidance and support of its Steering Committee, released contract service dollars to fund invasive species partner projects across the Capital Region. All projects received final approval from the NYS Invasive Species Coordination Section. An initial budget of \$105,000 was appropriated for RFPs, and Memorandum of Understandings (MOUs).

Five RFP applications were received in 2023 for a total of \$84,589.60 in funding requests. The most feasible, justified, and beneficial projects to the environment and communities of the CR-PRISM were selected along with other criteria from the selection process. Project requests were prioritized based on alignment with the PRISM Priority Objectives and Strategic Plan, and application to the public. All five proposals were funded for 2023. Details to the [CR-PRISM RFP](#) and [partner reports](#) can be found on the CR-PRISM webpage.

Two MOUs and one contract for service were also executed in 2023. A collaborative agreement to assess success of a biocontrol predator release of *Hypena opulenta* to control swallowwort (*Vincetoxicum ssp.*) was executed with the Edmund Niles Huyck Preserve. Another MOU in partnership with Saratoga PLAN was completed for a removal and restoration project involving three agencies and over three dozen volunteers. Summaries of the proposals are described in Appendix G. To supplement the PRISM’s AIS early detection program a service agreement with Cornell University was established for an eDNA pilot program with the Hudson River National Estuarine Research Reserve. For more information and summaries of works completed by partners through the request for proposal process please note their descriptions in Appendix G.

<i>CR-PRISM RFPs 2023</i>	<i>Requested Amount</i>
Adirondack Research	\$ 24,921.00
Grassland Bird Trust, Inc.	\$ 18,971.38
Edmund Niles Huyck Preserve, Inc.	\$ 24,994.00
National Audubon Society	\$ 9,703.22
Friends of Tivoli Farm and Preserve	\$ 6,000.00
<i>Memorandum of Understanding / Service Agreement</i>	
Huyck Preserve Hypena Opulenta Assessment	\$ 1,232.15
Saratoga PLAN Restoration Project	\$ 873.98
Cornell University eDNA Genomics Core Facility (EGCF) Lab	\$7,037.00
<i>Total Contract Service Funds Released for the Partnership</i>	<i>\$ 93,732.13</i>

CR-PRISM Partner Highlight

Town of Colonie: Mohawk River Park Revitalization

The Town of Colonie Conservation Board contacted the CR-PRISM, requesting consultation, regarding actions needed to remove water chestnut (*Trapa natans*) from the Mohawk River Park in late 2022, and again in early 2023. The AIS Program Manager, Hannah Coppola and Lead Coordinator, Kristopher Williams met on site with Town Board Members and Supervisor to discuss justifications for removal and provide best management practice recommendations. Additional resources were shared that covered methods to conduct both manual and mechanical treatments of the invasive plant, the need for long-term management commitment, permitting articles, volunteer engagement, disposal, and potential sources for funding for a removal project.

The Town subsequently submitted on their own accord a grant proposal to the Mohawk River Basin Program and procured funding to initiate the removal program. The outcomes of the consultation resulted in the removal of 65-tons of invasive water chestnut biomass using mechanical methodology, with an additional manual follow-up removing an estimated 2,385lbs. The Town of Colonie utilized an RFQ process to subcontract out the proposed work in which two hydro-rakes were deployed to remove approximately four acres of water chestnut over four eight-hour days. The work action also included a volunteer engagement piece led by the CR-PRISM where thirteen members from the community assisted in the removal of plants in shallow water where the hydro-rakes could not reach. The site was featured in a NYS DEC press release showcasing the awards granted from the NYS DEC Mohawk River Basin Program and was attended by Lt. Governor Antonio Delgado and NYS DEC Commissioner Basil Seggos. The funding for the project helps to advance the goals of and objectives of the Mohawk River Basin Action Agenda 2021-2026. The process initiated by the Town of Colonie to revitalize their riverfront has created a model in which other communities can follow to take action and help protect the environment and benefit the public. The CR-PRISM played a minor but vital role as a partner in this project and continues to serve and aid the Town of Colonie.



Town of Colonie Response Area, 2023



Volunteers of Town of Colonie Response practicing CDD Prevention Measures, 2023

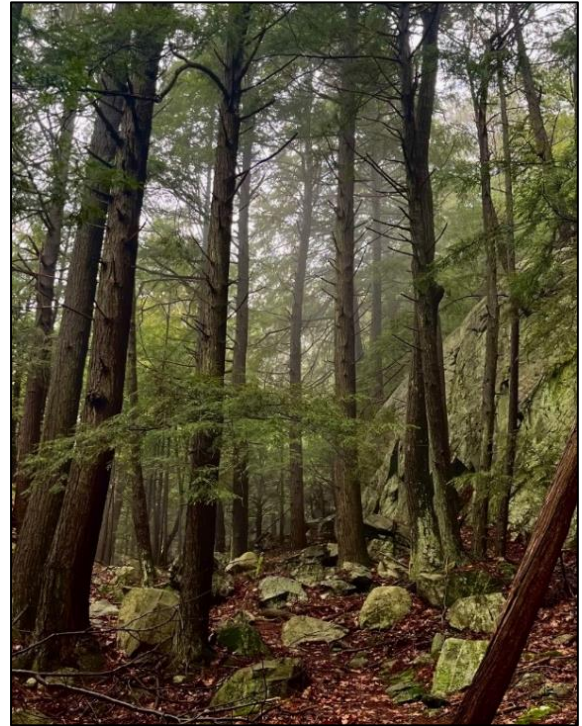


NYS DEC Commissioner Basil Seggos, Lt. Governor Antonio Delgado, Mohawk Watershed Coordinator Katherine Czajkowski, Colonie Town Supervisor Peter Crummey, Todd Drake Albany County Legislature, and others.

CR-PRISM Invasive Species Prevention Zones

To assist in the delivery of practical management actions with limited resources, an Invasive Species Prevention Zone (ISPZ) has been identified by the CR-PRISM. An ISPZ is a natural area usually greater than 500 acres which is primarily comprised of native species, with limited invasive species presence. An ISPZ is an area highly susceptible to the introduction of invasive threats from multiple vectors. The presence of significant habitats, and rare, threatened, or endangered species found within the designated area merits an additional layer of protection to preserve the existing ecology. Moreau Lake State Park (MLSP) is designated by the CR-PRISM as an ISPZ.

Prevention strategies are regarded as a cost-effective measure to help prevent and slow the introduction of terrestrial and aquatic invasive species. Prevention strategies include awareness campaigns, biosecurity measures such as eliminating transportation pathways, and practices of cleaning construction equipment and recreational gear. These types of prevention strategies do not guarantee that an invasive species will not be introduced, but greatly reduce the risk.



ISPZ Moreau Lake State Park, 2023

Identifying newly established populations of invasive species in uninvaded areas is critical in preserving conservation targets. Local eradication of small populations of invasive species is optimal with capacity constraints for management. Additional management strategies can occur in the form of containment and/or suppression actions; containment refers to limiting the spread of established species into surrounding uninvaded regions. Containment is used to slow or completely stop the spread of invasive species. Suppression efforts focus on the dispersal of species into uninvaded areas by reducing seed banks and propagule sources. Research has shown that containment may be the best strategy for minimizing the impacts of invasive species. ⁽¹⁾

The CR-PRISM partners with the Office of Parks, Recreation and Historic Preservation (OPRHP) to provide a complimentary level of services to help protect MLSP from the negative impacts of invasive species. The CR-PRISM has been working closely with the OPRHP while deploying prevention, early detection, and response actions within the 8,000-acre complex that represents the total area of the state park. The key is the local eradication of newly introduced species into this critical habitat to maintain the ecological integrity of the region. In addition, suppression efforts of known and manageable invasive species adjacent to the ISPZ are ongoing. Connectivity on greater scales are also important to protecting this region. The NYNHP [Invasive Species Prioritization Model](#) illustrates the high ecological significance and risk of spread of invasives into the area. Contact a coordinator for more information on a [Framework of Response and how to delineate an ISPZ](#).

ISPZ Priority Actions at Moreau Lake State Park in 2023

Water resources at MLSP are critical to its classification as a Bird Conservation Area by the state and an Important Bird Area by the Audubon Society. The CR-PRISM frequently conducts AIS detection and monitoring surveys on Moreau Lake, Lake Bonita, and on the Hudson River for aquatic invasive macrophytes. No new AIS have been identified or reported within or surrounding the immediate area of the park in 2023. Known AIS infestations in MLSP waters are monitored and delineated. Eurasian watermilfoil (*Myriophyllum spicatum*) plant beds are expanding in the park and the PRISM has recommended prioritizing management of this species with restoration. In addition, the PRISM deployed a watercraft inspection steward at MLSP. Over 1,171 recreational users were reached to teach park participants on AIS prevention practices. A total of 647 recreational watercraft were inspected to intercept aquatic invasive species and educate people on “Clean, Drain, Dry” prevention practices.

On the terrestrial side, PRISM has been active in the surveillance of invasive forest pests for the detection of new infestations and monitoring known populations, such as hemlock woolly adelgid, beech leaf disease, and southern pine beetle. A new hot spot of HWA has been observed and reported. The OPRHP has prioritized the management of this forest pest. Hemlock trees are a dominant overstory tree in large sections of the region. In addition, the terrestrial program has conducted vector and Tier management throughout the park. Annual removal of invasive species in highly probable areas such as trails and parking lots are conducted along with the removal of high threat species encroaching the area near significant habitats within the park. The greatest asset in conducting management activities in the Moreau Lake ISPZ is the area protected from the spread of recently introduced invasive species populations. The PRISM has also worked closely with the land manager overseeing the newly acquired Big Bend Parcel and has provided recommendations for future management.

In 2023, approximately 197 acres were under surveillance to monitor and detect species in prioritized areas which included specific terrestrial areas and waterbodies. A total of 26.8 acres received management across the park, with 1.3 acres under active post treatment monitoring and response, and an additional 15 acres under monitoring without response as species were not detected at the time.



*Outer Images: CR-PRISM Terrestrial Invasive Sp. Technicians conducting response efforts, 2023
Middle Image: Terrestrial Invasive Species Technicians with Office of Parks and Recreation and Historic Preservation, 2023.*

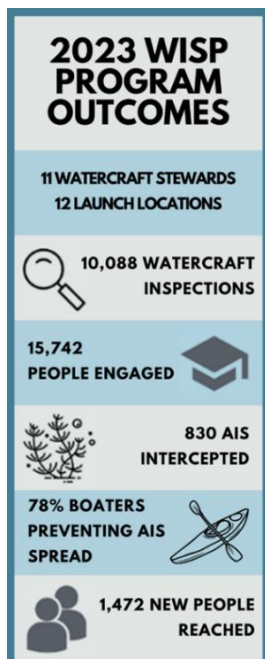
Goal 2: Prevent

Minimize the introduction and spread of harmful invasive species into new areas.

Prevention is the leading management strategy and the most cost-effective measure when addressing invasive species. Prevention includes limiting the spread of existing invasive species and new ones approaching the region. CR-PRISM staff and partners implement active prevention measures and conduct prevention outreach to develop public awareness about the harm caused by invasive species and how to control their spread.

Aquatic Invasive Species Watercraft Inspection Steward Program

2023 marks the fifth year that the Capital Region PRISM administered a Watercraft Inspection Steward Program (WISP). Watercraft stewards provided voluntary, non-decontamination inspections for waterbody users. Watercraft stewards deployed prevention and education strategies for boaters to adopt while intercepting AIS during physical inspections. Watercraft stewards stationed at public boat launches instructed recreational boaters on Clean, Drain, Dry practices. These standardized practices are outlined in the NYS DEC Watercraft Inspection Steward Program Handbook (2022). One of the goals of inspections is to train the public on how to prevent the spread of AIS; this is achieved through participation in the inspection process, ultimately encouraging a behavioral change that motivates individuals to practice Clean, Drain, Dry standards independently.



In 2023, the CR-PRISM hired eleven watercraft stewards who were placed at twelve priority launch locations within the CR-PRISM geographic region. Watercraft stewards engaged with 15,742 individuals while inspecting 10,088 watercrafts. Stewards intercepted 830 AIS during watercraft inspections, many of which was Eurasian water-milfoil (*Myriophyllum spicatum*) removed from retrieving watercraft. In total, stewards reached 1,472 new individuals Clean, Drain, Dry messaging, who had not previously interacted with a watercraft steward. Each season, new users of launch locations and visitors from outside of CR-PRISM boundaries create the gap of boaters who have not taken spread prevention measures. Maintaining a presence at high use launch areas is essential to delivering Clean, Drain, Dry messaging, and preventing the spread of AIS into new waterbodies. An overview of the season can be found below, and the full report is available online at the link below:

- [2023 Watercraft Inspection Steward Program Annual Report](#)
- [2022 NYS Watercraft Inspection Steward Program Handbook](#)

2023 Primary Metrics: Watercraft Inspection Steward Program

Stewards interact and inspect a variety of watercraft types; motorized watercraft typically have higher susceptibility to unknowingly transporting AIS, while watercraft such as kayaks have less risk with fewer areas for attachment. Kayaks were most commonly observed with a total of 4,867 recorded. Motorboats were the second most common watercraft type with a total of 3,684 recorded. Round Lake observed the highest number of kayaks, while Cossayuna Lake observed the highest number of motorboats. In total, across all launch locations, 10,240 watercrafts were inspected along the Hudson River, Mohawk River, and local waterbodies.

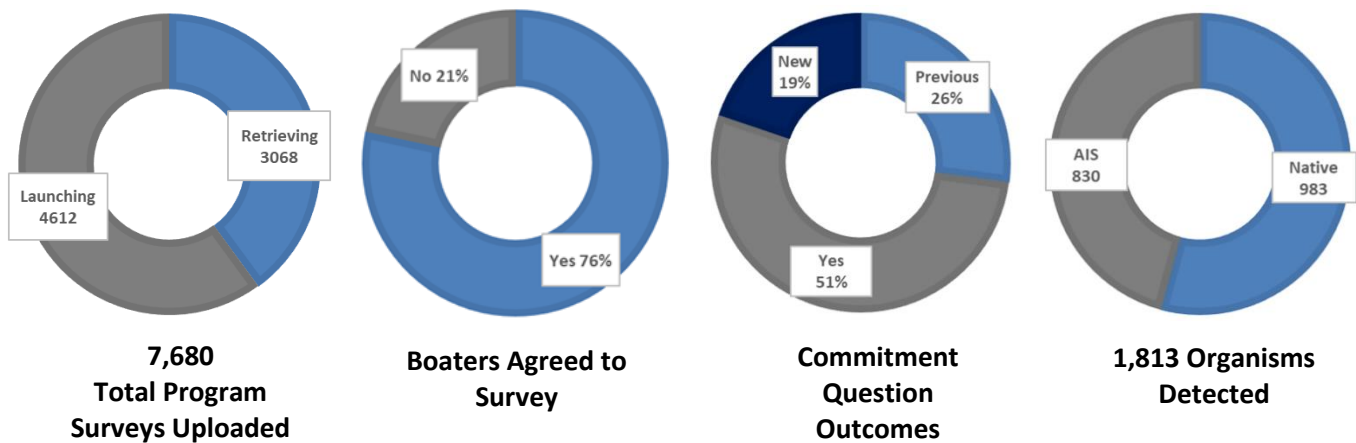
Stewards inspected 4,612 launching watercrafts. Stewards detect plant and animal matter through visual inspection of the outside of the watercraft, and ask boaters to assist them with the Clean, Drain, Dry practice. Dutchman’s Landing recorded the greatest number of AIS observed on launching watercraft (26), followed by Waterford Point (21), and Round Lake (15). AIS intercepted during a launching watercraft inspection could indicate a boater is new to Clean, Drain, Dry practices or non-compliant. A total of 100 AIS were observed on launching watercraft in the 2023 WISP season.

Stewards inspected 3,068 retrieving watercrafts. A higher number of AIS found on retrieving watercraft indicated boaters are taking spread prevention measures prior to arriving at a new launch location. Round Lake intercepted the highest volume of species during retrieval (445); the largest contributor to Round Lake’s intercepts was Eurasian water-milfoil (EWM). This can be attributed to ideal environmental conditions for increased growth. Cossayuna Lake intercepted the second largest number of AIS (123), followed by Waterford Point (59), and Lock 6 (30).

Watercraft stewards most commonly intercepted watercraft carrying EWM (412), followed by curly-leaf pondweed (180), water chestnut (120), zebra mussels (76), and brittle naiad (42). Round Lake had the highest volume of AIS intercepts (460); a large portion of these intercepts being EWM from retrieving watercraft. Cossayuna showed the second highest number of intercepts (130) followed by Waterford Point (80). A total of 830 AIS were intercepted with no new species of AIS detected. Out of the 1,813 total species intercepted, 54% were identified as native species. The table below provides a summary of each AIS intercepted on both launching and retrieving watercraft.

Aquatic Invasive Species Intercepts by Launch Location						
<i>Launch Location</i>	<i>Zebra Mussel</i>	<i>EWM</i>	<i>Brittle Naiad</i>	<i>CLP</i>	<i>Water Chestnut</i>	<i>Total Detects</i>
Alcathy's/Lock 6	0	0	0	2	34	36
Cossayuna Lake	56	51	0	23	0	130
Dutchman’s Landing	11	17	2	2	34	66
Freemans Bridge	1	0	0	1	1	3
Germantown	0	3	1	0	20	24
Henry Hudson Park	0	2	0	0	6	8
Hudson River Public	0	0	0	0	6	6
Kiwanis/Rotterdam Park	2	1	4	0	2	9
Moreau Lake State Park	0	4	0	0	0	4
Round Lake	1	313	1	145	0	460
Schoharie Crossing	3	1	0	0	0	4
Waterford Point	2	20	34	7	17	80
Total Intercepts	76	412	42	180	120	830

The following pie graphs outline 2023 WISP program outcomes. Total program survey uploads indicates how many surveys watercraft stewards uploaded through the WISPA application for both retrieving and launching. Boaters who agreed to the watercraft survey follows, and shows the percentage of those indicating yes, and no to an inspection. Most boaters agree to inspections. Total organisms detected include those from both retrieving and launching watercraft, as well as the number found to be invasive vs. native. Lastly, watercraft stewards ask boaters the commitment question of “Will you commit to clean, dry, dry practices even when a watercraft steward is not present?”. This pie graph outlines those who answered yes, previously responded yes, and those who are new to learning of watercraft stewards and commit.



Over the duration of the 2023 boating season, eleven watercraft stewards educated 15,742 individuals at 12 locations, inspecting 10,088 watercrafts and intercepting 830 AIS. Watercraft stewards are the first line of defense against the spread of AIS. Stewards reach new boaters each year with Clean, Drain, Dry messaging. Since the CR-PRISM's initial WISP program in 2019, an average of 1,406 new people have been reached annually. The CR-PRISM is proud to have had 12 (including supervisor) outstanding staff in 2023 that helped continue to spread the message of Clean, Drain, Dry. The CR-PRISM strongly supports the WISP program's purpose of protecting our aquatic environments from future infestations; in addition to this, the CR-PRISM supports the program's capacity to help maintain the viability of local and regional economies and recreational activities that benefit New York State residents and tourists.

SLF Prevention and Early Detection Program

The CR-PRISM engaged volunteers through its 2023 Spotted Lanternfly (SLF) Trap Program. The Program was a prevention/outreach program done in partnership with NYS Agriculture and Markets (AGM). The traps served two purposes, first was to act as a means of possible early detection of SLF, and second was to act as an outreach tool and raise awareness of SLF amongst the public. NYS AGM provided CR-PRISM with SLF traps and identification tags, and in turn, the PRISM worked with partners in the region to set up and monitor the traps. In total, 23 traps were placed throughout the region from as far south as Columbia County and as far north as Saratoga County, each one featuring a laminated sign developed by the PRISM to provide information on SLF and its impacts. Traps were featured on a variety of properties ranging from pick-your-own farms to private nature preserves. Volunteers were asked to monitor the traps at least biweekly, and they did so from trap installation (late May at the earliest to late July at the latest) until the end of November (or slightly longer in some instances). Throughout the year, no instances of SLF presence were detected at any of the traps.



Terrestrial Invasive Sp. Technician installing SLF Trap on Tree of Heaven, 2023

Goal 3: Detect & Monitor

Detect and monitor harmful invasive species approaching and affecting the PRISM Region.

Detection and monitoring actions are critical to slowing the spread of invasive species and managing impacts. Early detection of new infestations is a cost-effective management strategy when paired with rapid response, providing the best opportunity to address harmful invasive species before they cause considerable damage to the environment.

Invasive species management must be a multi-pronged approach and requires continued efforts from multiple partners. These efforts come not only from working together to raise awareness, educate and prioritize threats of different species approaching the region, but require action when inevitably high threat species are introduced. One of the ISCMP goals of 2018 (Advanced Prevention and Early Detection), states:

“Though investment in prevention measures at all scales is the first line of defense, even the most robust prevention efforts will not be 100% effective. For this reason, early detection, and rapid response of IS infestations is essential.”

In the unfortunate event that prevention measures cannot stop the introduction of an invasive species, the CR-PRISM is prepared to act against these threats. This includes not only actively participating in early detection monitoring networks but prioritizing sites for the most effective detection of these species. Early detection and subsequent management of newly introduced non-native species is a sound practice for protecting our natural resources, economy, and threatened species. As non-native species proliferate over large geographies, the costs for control become prohibitive. The CR-PRISM believes that focused detection and monitoring of these species is a cost-effective means to determine targeted responses to these threats.

In 2023, the CR-PRISM and partners recorded detections and non-detections, focusing on high-threat invasive species. Survey efforts were prioritized based on the Tier system and NYS Invasive Species Threat Rankings. Additionally, the CR-PRISM staff utilized event horizon scanning, and reviewed neighboring PRISM Tier Lists to create High Priority Invasive Species Lists for species across various terrains. High Priority Invasive Species Lists were created for aquatic, terrestrial, forest and agricultural ecosystems. The listed species were used for the highest priority for monitoring, detection, and response efforts within the Capital Region PRISM. These lists have been shared with the Partnership to incorporate them into their education, detection, and response efforts. To view the High Priority Species Lists, please visit the [CR-PRISM Species of Concern page](#).

It is crucial for these high threat species with low distribution to be considered for management before a population becomes too large, for effective eradication.

Tier 1 & 2 species of focus in both the AIS and TIS realms included:

- Hydrilla (*Hydrilla verticillata*), European frog-bit (*Hydrocharis morsus-ranae*), starry stonewort (*Nitellopsis obtusa*), variable-leaf milfoil (*Myriophyllum heterophyllum*), fanwort (*Cabomba caroliniana*), Chinese mitten crab (*Eriocheir sinensis*), quagga mussel (*Dreissena bugensis*), parrot feather watermilfoil (*Myriophyllum aquaticum*), (beech leaf disease (*Litylenchus crenatae mccannii*), southern pine beetle (*Dendroctonus frontalis*), Japanese angelica tree (*Aralia elata*), and mile-a-minute (*Persicaria perfoliata*).

Tier 3 & 4 high threat species of focus included:

- Water chestnut (*Trapa natans*), yellow floating-heart (*Nymphoides peltate*), Eurasian watermilfoil (*Myriophyllum spicatum*), hemlock woolly adelgid (*Adelges tsugae*), and giant hogweed (*Heracleum mantegazzianum*).

In 2023, 17 individual iMapInvasives records submitted by CR-PRISM staff and partners were ‘first in area’ reports, which demonstrated the success in designating areas for surveying in locations that are considered ecologically significant, highly probable due to recreational use, and previously not monitored for invasive species. Tier 1 species that have been confirmed near the CR-PRISM boundary are monitored to determine probable locations of encroachment based on proximity. Currently, there are ten Tier 1 species within 25 miles of the CR-PRISM boundary. Note the AIS and TIS species below for example.

Tier 1 Aquatic Species within 25 miles of CR-PRISM Boundary			
Scientific Name	Common Name	Confirmed Count	Unconfirmed/iNaturalist Count
<i>Cabomba caroliniana</i>	Fanwort	87	0
<i>Hydrilla verticillata</i>	Hydrilla	0	1
<i>Myriophyllum aquaticum</i>	Parrot feather watermilfoil	1	0
<i>Tinca tinca</i>	Tench	1	0

Tier 1 Terrestrial Species within 25 miles of CR-PRISM Boundary			
Scientific Name	Common Name	Confirmed Count	Unconfirmed/iNaturalist Count
<i>Arum italicum</i>	Italian arum	0	2
<i>Clematis terniflora</i>	Japanese virgin’s bower	1	6
<i>Cytisus scoparius</i>	Scotch broom	2	0
<i>Photinia villosa</i>	Oriental redbtip	0	1
<i>Salvia glutinosa</i>	Sticky sage	1	4
<i>Symphlocos paniculata</i>	Sapphireberry	0	1

Aquatic Invasive Species Detect and Monitor Efforts

Detection methods and lakes for aquatic surveys are chosen by utilizing a Priority Waterbody (PWB) Model. A majority of surveys (78%) in 2023 were conducted on a PWB. These waterbodies are determined through ecologic significance, risk of spread, public access, abundance of invasive species, and other modeled attributes for early detection and management activities. Example PWBs surveyed include Grafton Lakes State Park, Moreau Lake State Park, Cherry Plains State Park and Rockwood State Forest.

A total of 16 aquatic surveys were completed by the CR-PRISM and subcontracted partner, Adirondack Research. These surveys resulted in 974.4 total acres receiving detection and monitoring services for high threat AIS. The CR-PRISM completed nine of the total surveys accounting for 506.4 acres. Surveys were completed in five of the CR-PRISMs eleven counties, with some locations taking multiple days to complete. Adirondack Research, serving as part of the CR-PRISMs AIS early detection team completed seven lake surveys using both motorized and non-motorized watercraft. Adirondack Research conducted surveys in four counties, totaling 468 acres. The subcontracted partner has a greater capacity and resources. Larger waterbodies from the CR-PRISM Priority Waterbody Model are selected for work with Adirondack Research with a majority of lakes surveyed near the

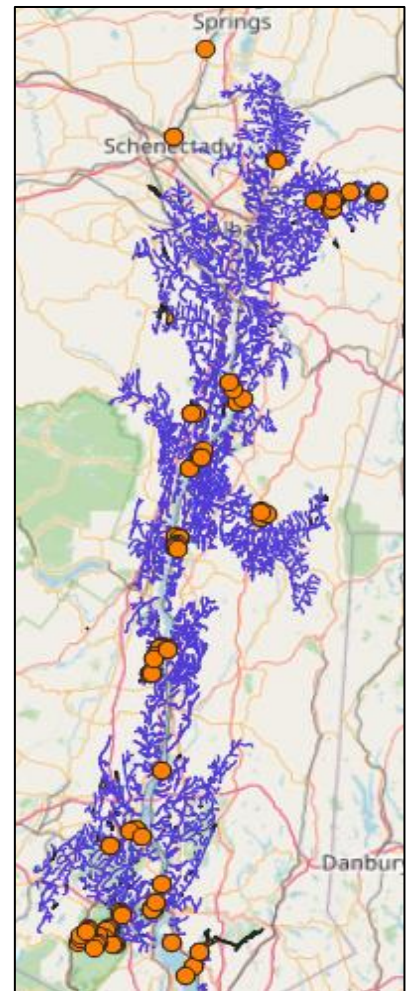
Adirondack Park. The most common native plant species were recorded in all surveys. For a comprehensive report please view the, [Adirondack Research CR-PRISM Detect and Monitor Report](#).

Survey efforts were based on early detections for Tier 1 & 2 species in the Capital Region PRISM with a focus on very high threat species. Tier 3 and Tier 4 species were recorded, and emphasized in waterbodies where infestations were new to the area for potential response. The most common AIS detected include Eurasian watermilfoil (*Myriophyllum spicatum*), and water chestnut (*Trapa natans*). Lakes surveyed ranged in size from 19 acres (Mill Pond, GLSP) to 122 acres (Long Pond, GLSP). All CR-PRISM and subcontracted partner data with polygons and points are recorded in iMapInvasives. No new AIS species were detected or reported in the CR-PRISM 2023.

Aquatic Invasive Species Environmental DNA (eDNA)

New to the CR-PRISM in 2023 was the implementation of eDNA sampling for AIS plants and animals. The CR-PRISM played a key role within the Hudson River Task Force (HRTF) beginning in 2021. The Task Force is comprised of individuals from multiple organizations including The Hudson River National Estuarine Research Reserve, CR-PRISM, NYS DEC, and OPRHP. The group created a methodology to identify sites for eDNA sampling. The Primary goal was to identify high priority sites for collaborative aquatic invasive species monitoring and future control in the Hudson River Watershed. The map image below depicts identified priority locations, with 2023 eDNA sampling sites.

The CR-PRISM sampled eleven priority locations with the collection of 49 samples. Sampling periods were split into two timeframes to capture eDNA detritus before and after plant senescence to determine when future data collection would be most effective. Collected sample rounds took place from July-August and then again in September and October. A total of 22 priority invasive plants and 27 invasive animals were tested using methodologies outlined by [Cornell Universities Environmental DNA and Genomics Core Facility](#) (EGCF). Samples were transported to Cornell Universities EGCF lab. For more information or to request data please contact the CR-PRISM AIS Program Manager.



Hannah Coppola practicing eDNA sampling of Hudson River with the HRTF, 2023

Terrestrial Invasive Species Detect and Monitor Efforts

In 2023, all eleven of the counties in the CR-PRISM received detection and monitoring efforts, with one survey conducted outside of the PRISM in Schoharie County during an ash tree leaf collection for a research project. The CR-PRISM focuses terrestrial work efforts within Priority Conservation Areas (PCAs) which have a high ecological significance, greater possibility of invasion and/or have a high recreational, social or cultural value. The Terrestrial team conducted 72 detection and monitoring surveys across 4,257.65 acres and 36.45 miles of trails. A total of 57 distinct properties were surveyed this year. Most detection efforts were conducted on public-owned lands (49), with 7 privately owned sites and 1 location with mixed public and private ownership. In 2023, sixteen of twenty-eight of the PRISM’s PCAs resulting in 1,1100.06 acres and 0.3 miles of trails being surveyed. In MLSP, the CR-PRISM’s ISPZ, 75.19 acres were surveyed. Additionally, 41 locations outside of the PCAs were surveyed accounting for 3,036.68 acres and 36.15 acres of trails. These detection and monitoring surveys targeted identification of all Tier 1 and 2 species and Tier 3 and 4 when encroaching on critical habitat, vector management, and high threat invasive forest pests of concern. This year with the additional capacity of three Invasive Species Technicians, a strong focus was placed on highly probable areas leading to 1,633.45 acres being surveyed as well as 14.86 acres managed through these detection efforts.

In 2023, two Tier 1 species were reported and confirmed in the CR-PRISM: beech leaf disease nematode (*Litylenchus crenatae mccannii*) and elm zig-zag sawfly (*Aproceros leucopoda*). Monitoring will continue for both these species and any findings will be reported to iMapInvasives and the NYS Invasive Species Coordinate Section. With increased capacity, there were also more detections of Tier 2 species within the region. New Tier 2 species detected in 2023 include: bamboo spp. (*Phyllostachys spp.*), wild chervil (*Anthriscus sylvestris*), Japanese angelica tree (*Aralia elata*), mile-a-minute (*Persicaria perfoliata*), amur corktree (*Phellodendron amurense*), cup-plant (*Silphium perfoliatum*), Japanese snowball (*Viburnum plicatum*), Japanese spiraea (*Spiraea japonica*), and golden rain tree (*Koelreuteria paniculata*). The CR-PRISM will continue to conduct detection and monitoring efforts focusing on Tier 1 and Tier 2 species and evaluate feasibility of these species for management actions. If management is determined to be feasible for these species, they will be elevated to a response project.

County	# of Surveys
Albany	9
Columbia	6
Fulton	3
Greene	2
Herkimer	2
Montgomery	1
Rensselaer	12
Saratoga	17
Schenectady	4
Schoharie	1
Warren	7
Washington	8

Forest Health Detection and Monitoring

Forest health detection and monitoring efforts in 2023 continued to be a significant part of detection and monitoring priorities within the CR-PRISM. Northeastern forests are under attack by many different invasive species as well as the additional stress of climate change. Therefore, the CR-PRISM collaborated with various partners throughout the region to increase awareness of invasive forest pests and train staff and volunteers to identify many of these high threat species. Trainings were conducted with the Town of Malta highway staff and with the Warren County and Franklin County Soil and Water Conservation District staff on how to identify forest pest signs and symptoms. A framework for prioritizing survey efforts, as well as treatment options were discussed during these trainings.

Early detection efforts are critical in slowing the spread of forest pests. Throughout the 51 detection and monitoring activities conducted in 2023, the CR-PRISM staff assessed conditions relating to overall forest health and areas highly vulnerable to different forest pests. These assessments included looking at age class of the forest stands, species composition and other stressors present. When the PRISM detects invasive forest pests, staff notify land managers and discuss a framework of response and options for management. When feasible, the PRISM has supported chemical treatments through the annual Request for Proposals. The PRISM encourages chemical treatments for areas of high conservation, social or cultural values. CR-PRISM worked with the New York State Hemlock Initiative this year to assess sites for release of hemlock woolly adelgid biocontrol's and conduct some releases in areas determined to be favorable sites for release. Additionally, PRISM collaborated with researchers to collect samples for genetic analyses of vulnerable trees. For more information regarding these efforts, please see the "Response" section of this report.

CR-PRISM staff continue to work diligently to perform effective detection and monitoring efforts across the Capital Region. For more information on the detection and monitoring efforts of the CR-PRISM in 2023, please see the [Capital Region PRISM Reports & Products page](#).



CR-PRISM Forest Health Survey, 2023

Goal 4: Respond

Mitigate ecological and economic impacts of priority invasive species using an integrated pest management approach.

Once a harmful invasive species is detected, CR-PRISM staff and partners determine how to respond. Invasive species response is multi-faceted and requires continued effort. The CR-PRISM staff uses an integrated pest management-based framework to respond to infestations; this is a tool to assess threats, risk, resource value, and removal feasibility to select the best response.

The NYS ISCMP states the need for well-informed and transparent decision-based invasive species response as well as sharing of information regarding response actions.

“The development and implementation of IS response decision tools to all taxa are needed to make well informed and transparent decisions in the planning phase of an IS response. Additionally, response projects and specific management actions need to be shared among practitioners across the State to facilitate information sharing, and to increase collective understanding of appropriate actions and their outcomes.”

The CR-PRISM recognizes the need to prioritize invasive species, areas for response, and evaluate project success to focus response efforts due to limited funds and resources. Therefore, response project sites are chosen with the intent of protecting rare, threatened, or endangered species and ecosystems, protecting areas where there are low number of invasives, or a species is likely to threaten human health. Additionally, the CR-PRISM collaborates with partners throughout the region to provide valuable insight into management decisions and evaluate success of past response actions.

In 2023, a total of 43 species in both the aquatic and terrestrial realms were reported and managed by the CR-PRISM. Post-treatment monitoring and the resulting adaptive management is included in the total acreage managed. Best management practices were implemented to achieve the greatest possible success. Partners and CR-PRISM staff together managed 329.34 acres across the Capital Region in 2023. With increased capacity, the PRISM staff managed 296.97 acres across the Capital Region.

Aquatic Response Efforts

In 2023, the CR-PRISM focused aquatic removal efforts on water chestnut (*Trapa natans*). Removal efforts were completed by CR-PRISM staff and coordinated between partners for larger response efforts. Removals are selected based on the PRISM’s Water Chestnut Prioritization Model. In total, the PRISM performed water chestnut removal at eight locations, manually removing approximately 10,887 lbs. of dewatered water chestnut. Removals were justified by ecological significance (2), community outreach (2), emergency access pathway (1), and public access (3). For more detailed information on AIS management efforts please refer to the CR-PRISM’s treatment reports online.

Aquatic Invasive Species Water Chestnut Reponses Locations

<i>Location</i>	<i>County</i>	<i>Methodology</i>	<i>Biomass Removed</i>
Chevoit Park	Columbia	Manual/Mechanical	3,500 lbs.
Fish Creek	Saratoga	Manual	810 lbs.
Town of Colonie	Albany	Manual	2,385 lbs.
Ann Lee Pond	Albany	Manual	200 lbs.
Delegan Pond	Saratoga	Manual	32 lbs.
Fish Creek	Saratoga	Manual	1,200 lbs.
Camp Road	Saratoga	Manual	2,760 lbs.
*Town of Colonie	Albany	Mechanical	65.05 tons

*The CR-PRISM participated in a Partnership to assist the Town of Colonie with their mechanical harvesting program.

With the assistance of 102 volunteers totaling 251 hours, removals averaged 3-4 hours each. One of the eight removal locations (Delegan Pond, 4 acres) was a priority waterbody; priority waterbodies maintain a high comprehensive score with significant ecological value for the area. Delegan Pond has been receiving treatment since 2020 and has been reduced from the initial biomass removal of 3,000 lbs. to 32 lbs. in less than three years of management. An additional 13.52 acres were treated within non-priority waterbodies with lower comprehensive scores.

All data from WC removals is collected using the Field Maps application, which uploads into the iMapInvasives statewide database. This data is additionally recorded as a Water Chestnut Action Site. The goal of designating annual removals as actions sites is to document efforts, standardize biomass calculations across the state, and track management effectiveness over time. Additionally, institutional knowledge is recorded. Of the eight CR-PRISM response locations in 2023, three were new including: Chevoit Park, Ann Lee Pond, and the Town of Colonie.



Top Left and Bottom Right: Water Chestnut Removal
Chevoit Park, Hudson River, 2023



Terrestrial Response

The CR-PRISM increased response capacity by the addition of three seasonal Terrestrial Invasive Species Technicians. The PRISM staff conducted 94 response actions across eleven counties, resulting in 279.45 acres managed. Additionally, CR-PRISM conducted in-depth management consultations with partners and participated in four invasive species related research projects for the year. Of the 279.45 acres managed, 33% (92.84 acres) were within twelve PCAs. Within the CR-PRISM’s ISPZ, 26.86 acres were managed this year. In 2023, focus was placed on thirty-one secondary sites, primarily surrounding PCAs to identify and protect the PCAs from approaching invasive species, resulting in management of 186.60 acres.

Response Actions per County	
Albany	11
Columbia	8
Fulton	2
Greene	3
Montgomery	2
Rensselaer	12
Saratoga	31
Schenectady	10
Schoharie	1
Warren	2
Washington	12

A total of forty-two (42) distinct properties received response actions in 2023. Fifteen (15) properties were privately owned while twenty-eight (28) were owned by public organizations. The management projects completed by the CR-PRISM staff, fifteen were post-treatment monitoring projects and initial treatment was completed for seven new management projects. One of the new projects included treatment of cup plant (*Silphium perfoliatum*), a Tier 2 species at the Mud Creek Conservation Area. The species was an intentional rain garden planting which escaped out of the contained area. Stems were cut to ground level and root balls were removed via grubbing; biomass was left on-site to decompose. Additionally, 15 acres of highly probable areas were managed along vectors such as trails, parking lots and disturbed sites. Research actions were conducted over 84.59 acres.

Giant hogweed (*Heracleum mantegazzianum*) continues to be a high-priority species within New York State due to its human health risk and high invasiveness score of 72. TIS Technicians have been essential in the removals of this high-threat species across the CR-PRISM. In 2023, eleven giant hogweed sites across six counties within the Capital Region were monitored for regrowth and managed when necessary. A total of 177 plants were removed for the season along with any visible seedlings. A total of five sites were active with seed germination. No new reports of giant hogweed were reported from the public or field observations in 2023.

Giant Hogweed Stats		
County Name	Number of Sites	Total Stems
Columbia	1 site	0 stems
Fulton	1 site	3 stems & seedlings
Saratoga	3 sites	0 stems
Schenectady	4 sites	174 stems & seedlings
Rensselaer	1 site	0 stems
Washington	1 site	20 juveniles observed
6 Counties Total	11 Sites Total	197 juvenile stems & seedlings

*Sites 3706, 3707 and 3774 are adjacent

TIS Technicians assisted select partners to increase response capacity which CR-PRISM partners identified as one of the major challenges to accomplishing response goals. Technicians worked alongside staff at the Huyck Preserve to conduct post-treatment monitoring and follow up management of false spiraea (*Sorbaria sorbifolia*), yellow archangel (*Lamium galeobdolon*) and initial treatment of Japanese primrose (*Primula japonica*), a Tier 2 species. Additionally, technicians conducted an initial treatment removing: 300 stems of Norway maple (*Acer platanoides*), 75 honeysuckle (*Lonicera spp.*), 45 oriental bittersweet (*Celastrus orbiculatus*), 25 multiflora rose (*Rosa multiflora*), as well as other common invasives within Victory Woods at the Saratoga National Historical Park, an important historical site. Lastly, technicians assisted the Grassland Bird Trust to remove honeysuckle (*Lonicera spp.*) along a trail that is currently under construction, protecting critical bird habitat. The CR-PRISM is planning to formalize and expand this programming in 2024 as a Crew Assistance Program to enhance partner's invasive species projects.



Terrestrial Invasive Sp. Technicians, Giant Hogweed Removal, 2023

The CR-PRISM continued to serve as consultants to partners to determine the best management practices for partners' properties. PRISM staff offer technical trainings to partner staff and volunteers to train proper identification of invasive species, utilize a framework of response approach and demonstrate integrated pest management techniques for effective invasive species response actions. This year, the CR-PRISM trained the Columbia Land Conservancy staff and volunteers on identification of highly probable areas, identification features of common invasive species and integrated pest management techniques. The PRISM also provided an in-depth training of iMapInvasives products including iMapInvasives Mobile App and desktop, and iMap Mobile Advanced (IMMA) in Field Maps. Partnership approached in this way continues to result in successful management through the Request for Proposal process, volunteer engagement events, as well as workdays with land managers and their staff and volunteers of private preserves.

Restoration following control and response measures enhances the stability of the area disturbed and encourages growth of native species. The CR-PRISM assisted Saratoga PLAN staff and volunteers from Regeneron to restore the trailside buffer along Glowegee Creek Preserve South trails. Participants restored treated areas with native plants selected from a local nursery and spread seeds from native species present on site. This project was aimed to prevent invasive seed spread along the trail to protect unique species that grow on the calcareous substrate further within the preserve. The CR-PRISM is continuing to improve restoration practices at response sites, as well as communicating with partners to determine the most beneficial native plants for their sites and best practices for restoration.

Research Highlights with Principle and Strategic Partners

Research addressing invasive species provides current knowledge, and the resources and tools required to respond to and manage invasive species now and in the future. Supporting research efforts will permit practitioners, lake associations, land managers, and the public to respond to invasive species throughout the state more effectively.

The NYS ISCMP states: “Response projects and specific management actions need to be shared among practitioners across the State to facilitate information sharing, and to increase collective understanding of appropriate actions and their outcomes. [...] Innovative techniques, such as biocontrol of IS, offer promising outcomes and there is a need to continue support for biocontrol research, its development, and application.”

The CR-PRISM participated in four research data collection projects in 2023 to support strategic partners. Each research project had future implications in potential conservation, management, and restoration outcomes for practitioners. The CR-PRISM served as a collective agency in which critical field data was gathered while procuring permissions to access critical habitat over a wide geographic area.

Research Data Collection Program 1:

Ash Tree Genomic Study: Principal Investigator, The Schatz Center for Tree Molecular Genetics Pennsylvania State University. Funded by The Nature Conservancy, Trees in Peril Program.

The study collected ash tree leaf samples for a multiple state genomic assessment for contemporary standing genetic variation within native ash populations. The CR-PRISM was tasked with identifying living populations of Green Ash (*Fraxinus pennsylvanica*), White Ash (*Fraxinus americana*), and Black Ash (*Fraxinus nigra*). The PRISM collected a total of 40 samples for the study under a Temporary Revocable Permit with the NYS DEC. Baseline data is currently in process to direct conservation and restoration needs in the future. A majority of the samples were collected from Rural Gove State Forest, Montgomery County and Lake Desolation State Forest, Saratoga County.



Ash Tree Sample, 2023

Research Data Collection Program 2:

Hemlock Landscape Genomics Project: Principal Investigator; Department of Ecology and Evolutionary Biology, Plant Computational Genomics Lab, University of Connecticut. Funded by United States Department of Agriculture.

The goal of this investigation was to identify climate adaptive genomic variation to support seed banking efforts for conservation. The PRISM collected hemlock tissue extracted from NYS DEC Regions 4-5 from the Southern Adirondacks to the Northern Catskills. A Temporary Revocable Permit from the NYS DEC was also utilized for this activity. NYNHP Elemental Occurrences were used to locate potentially diverse tree samples. Twenty-two independent collections were made throughout the region.



Hemlock Tree Sample, 2023

Research Data Collection Program 3: Biocontrol Release

Hypena Opulenta Biocontrol Assessment: Principal Investigators; NYS Invasive Species Research Institute and the New Jersey Phillip Alampi Beneficial Insects Laboratory; Division of Plant Industry, New Jersey Department of Agriculture.

The CR-PRISM secured and released, in a collaborative effort, an approved biocontrol agent. *Hypena opulenta* is a moth feeding insect for the control of swallowwort (*Cynanchum spp.*). Swallowwort is an invasive vine from Europe that is a well-established and high threat prohibited invasive species in New York. The invasive vine outcompetes native plants, resists management actions, and lowers arthropod diversity in pollinator habitats.

The Phillip Alampi Beneficial Insects Laboratory supplied *Hypena* pupae for the project, the NYISRI provided [standardized protocol](#), and the Edmund Niles Huyck Preserve, Inc. provided a release site. The CR-PRISM provided the funding mechanism for supplies and materials for the assessment and was the primary investigator overseeing all aspects of the assessment in the field. A total of 40 pupae were received and nested into two tents with the goal to breed a population. A total of six moths emerged. The results were mixed as a fungal infection attacked the pupae resulting in the premature demise of the remaining pupae. The reason for this is not currently fully understood but highlights the difficulty in establishing biocontrol agents in the environment. Modifications to the program will be made, as successful rearing in the wild is occurring in other parts of the state.



Left to Right: Huyck Preserve assisting in biocontrol release, *Hypena opulenta*

Research Program 4 Biocontrol Release Assessments

Hemlock woolly adelgid (*Adelges tsugae*) is an invasive forest insect that poses a serious threat to the native forest and ornamental hemlock trees in the eastern United States. Eastern hemlock (*Tsuga canadensis*) is at risk for fatal HWA infestations with the trees lacking natural resistance and having no natural predators to minimize damage from HWA populations. *Laricobius nigrinus* is a specialist predatory beetle native to the Pacific Northwest, where HWA is native to western hemlock and mountain hemlock trees. *Laricobius nigrinus* beetles feed exclusively on HWA's overwintering generation throughout the fall and winter. The CR-PRISM conducted assessments throughout the capital region in 2023, resulting in two sites receiving biocontrol releases.

In spring of 2023, the CR-PRISM and Albany Water Department (AWD) assessed the hemlock stands lining the Hannacroix Creek for the potential release of *Leucotaraxis piniperda*, a species of silver fly. The Hannacroix Creek feeds directly into the Alcove Reservoir, one of the main water sources for the city of Albany, making it an extremely valuable resource to protect. An integrated pest management approach has been initiated to respond to the hemlock woolly adelgid infestation. AWD conducted basal bark treatments of imidacloprid and dinotefuran

to protect high priority trees with the goal of preserving the ecosystem services they provide. Once the site was determined to have enough living hemlock woolly adelgid for the *Leucotaraxis piniperda* to feed on, 1,254 silver flies were released for the control of hemlock woolly adelgid.

The Plotter Kill Preserve, a scenic tributary to the Mohawk River in Schenectady County, contains nearly 645 acres of rugged hardwood and coniferous forest. The gorge of the Plotter Kill was cut by melt waters at the close of the ice ages and is home to three spectacular waterfalls. The Schenectady County Invasive Species Committee (SCISC), the CR-PRISM, NYS DEC and the New York State Hemlock Initiative, based out of Cornell University, collaborated to release a biocontrol predator to help manage the HWA found in hemlock stands bordering the Plotter Kill along the steep slopes of the creek. On November 9th, 2023, the collaborating partners above gathered to release 2,115 beetles (*Laricobius nigrinus*). In the future, assessments will be completed at both sites to determine the establishment of these predators which are showing signs of success throughout the state.

The CR-PRISM was successful in invasive species response efforts in 2023 and continues to evaluate results to determine best actions moving forward. A large effort in 2023 was made by both the CR-PRISM Aquatic and Terrestrial programs, to develop Standard Operating Procedures which outline framework and methods for conducting detection, monitoring, and response strategies for the longevity of both programs. In addition, updates have been made to the Temporary Revocable Permits for the NYS DEC and the Scientific Research Permits for the NYS OPRHP. The language in the permits have been updated to ensure clarity of the work performed on NYS lands and waters and ensure the PRISM can move forward without delays.

The CR-PRISM will review and evaluate management projects for 2024 based on treatment outcomes in 2023. For more information regarding management project progress in 2023, please see Appendix F. Information in the chart includes response method and type, first year of management, years of management, pre-treatment area and percent cover as well as post-treatment area and percent cover and years of documented invasive species absence. For full reports of the response efforts of the CR-PRISM in 2023, please see the [Capital Region PRISM Reports & Products page](#). CR-PRISM and its partners continue to collaborate to share knowledge of successes and challenges of response and adaptive management to respond to new invasive species threats more effectively in the Capital Region.



*CR-PRISM and New York State Hemlock Initiative Predator Release for HWA Control. Left HWA, Center (*Laricobius nigrinus*) Right NYSHI Research Technician Elizabeth D'Auria 2023*

Goal 5: Outreach, Communication & Education

Build engaged communities that understand, support, and invest in the PRISM’s work to prevent, detect, and respond to harmful invasive species in the Capital Region.

Education and outreach strategies are needed to reduce the harmful impacts of invasive species in the region. Many people are not aware of the harm caused by invasive species; others may be motivated to work on invasive species but may be overwhelmed by the scale of the problem. CR-PRISM staff seek to empower people through understanding the CR-PRISM approach to invasive species, their role in invasive species prevention, detection, and response, and providing resources for those who want to be more involved.

The NYS DEC Invasive Species Comprehensive Management Plan (ISCMP) 2018 sets forth a goal to “Engage and Inform the Public” which are critical actions to help prevent invasive species from spreading. Educational programming with awareness can result in behavioral changes that reduce the spread and intentional release of invasive species into the environment. Targeted programs were designed by the CR-PRISM in 2023 to address this goal. Educational products focused on prevention and management strategies for resource managers and homeowners to empower them to take action to mitigate the harmful effects of invasive species.

The CR-PRISM delivered a variety of education and outreach events in 2023 through various platforms, hosting both in-person and virtual events. The PRISM collaborated with partners and stakeholders, upheld a social media presence, and helped natural resource managers, municipalities, communities, organizations, and others reach their goals of increasing awareness and knowledge of invasive species.

Education and outreach products such as trifold brochures, factsheets, best management practices, resource guides, identification guides, manuals, and presentations were developed, updated, and promoted throughout the year to support educational and outreach programming. The PRISM also distributed products from the NYS Department of Environmental Conservation Bureau of Invasive Species and Ecosystem Health, Department of Agriculture and Markets (NYS AGM), New York State Invasive Species Research Institution, NYS Integrated Pest Management at Cornell College of Agriculture and Life Science, the New State Invasive Species Information website, and other accredited academic institutions, agencies, and organizations.

Educational Programming

Throughout 2023, the CR-PRISM hosted sixty-one (61) programs with a total reach of 4,400 individuals. Fifty-one (51) of the total programs reached 1,361 individuals through direct educational programming (lectures, demonstrations, workshops, webinars, etc.), including several newly developed and targeted programs like the examples listed below.

- *“Invasive Species Framework of Response for Land Managers”*
- *“Invasive Species Prevention Tool Kit for Municipalities”*
- *“Landscape Sustainability & Pollinator Restoration with IPM of Invasive Species”*
- *“Beech Leaf Disease & Community Science”*
- *“NY Land Trust Conference Presentation Leveraging Partnerships for Management”*
- *“Mohawk Watershed Symposium, Water Chestnut Problem Defined”*

Outreach

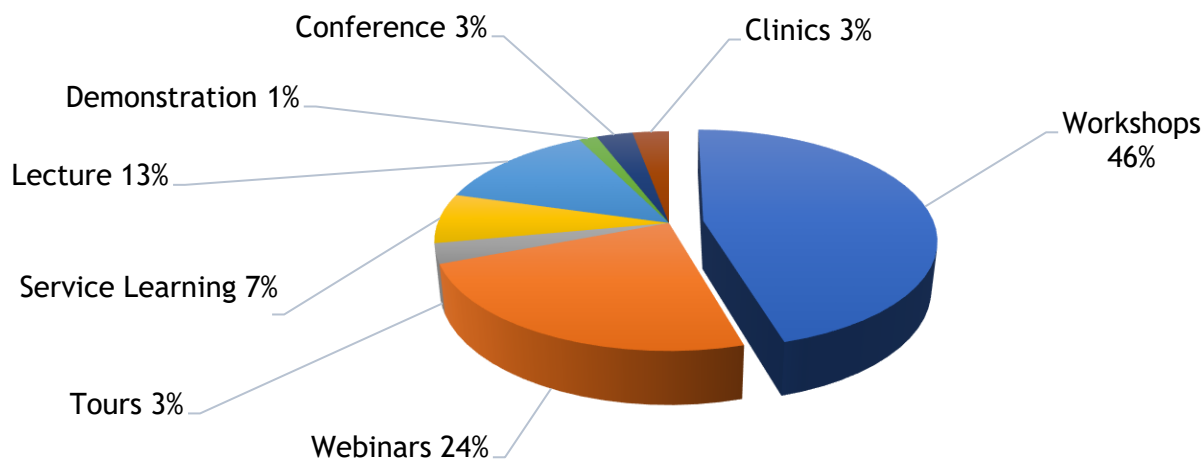
Supplementary programming occurred with general outreach at tabling events, festivals, and fairs. Passive outreach occurred when participants (direct contacts) at events interacted with staff to make general inquiries. The PRISM tabled eleven (11) different fairs and events throughout the region reaching a broad audience totaling 3,039 interactions.

- *The Troy Flower & Garden Expo*
- *Saratoga Sustainability Fair*
- *Niskayuna Arbor Day; Lupine Fest*
- *Wilton Wildlife Festival and Pollinator Palooza*
- *Saratoga County Fair*
- *2023 Invasive Species Expo*

Communications

The CR-PRISM utilizes various means of indirect communications with its constituents which include the CR-PRISM Website, CCE Website, PRISM Listserv, partner distribution list, press releases, and social media accounts. The PRISM also releases email communications and newsletters periodically. The total reach of indirect communications was 29,069. The PRISM website and social media account for 17,854 views and another 11,215 coming from passive events. In 2023, the PRISM reflected on the efficacy of its Listserv communication strategy, and in doing so identified a gap in which many Principal and Strategic Partners were not receiving (or had not signed up) for communications through the Listserv. In response to this, the PRISM developed a targeted distribution list in which interested partners sign up to receive direct emails about high-value topics (release of RFP, ISAW announcements, Partner Meetings, etc.). For a list of all events organized by type, refer to Appendix C.

CR-PRISM PERCENTAGE OF EDUCATION AND OUTREACH EVENTS



Volunteer Engagement Program

The Capital Region PRISM has revitalized its volunteer engagement program. Targeted initiatives reaching volunteers through partner networks and has been successful tool. Tracking work efforts such as the number of events, volunteers, and hours engaged has helped to show case the breadth of our educational programming. Program delivery has focused on instruction of and the deployment of Integrated Pest Management strategies, to make impacts on invasive species, in locations adopted by volunteers. The PRISM engages volunteer base by providing opportunities for early detection, response, and restoration efforts throughout the year. Volunteers have also participated in outreach events. A total of 16 volunteer engagements occurred in 2023 with 408 volunteers completing 2,461 hours of service. The financial value of these volunteer work efforts is \$78,259.80. In 2023, the PRISM began to evolve and adapt its Volunteer Engagement Program to improve its efficacy. The result was an increase in volunteer engagement, which was up significantly from the previous year.



Volunteer Engagement Columbia Land Conservancy 2023

iMapInvasives

Volunteer engagement also included the specific training on how to use the Statewide database used to collect invasive species information known as iMapInvasives, a product of the NYS Natural History Program and NatureServe. The PRISM offered six iMapInvasives training courses throughout the year reaching 64 individuals. Most of these training courses focused on the mobile app platform for reporting. Programs included community scientists and volunteers from partner groups. This training provided members of the public an opportunity to learn how to identify common invasive species, and importantly how to report those that they find. In addition, partner agencies and their staff were also trained on the use of iMapInvasives using the various data collection tools through ArcGIS. The goal of those trainings was to delineate invasive species infestations on private preserves and conservancies.

Volunteer Engagement Highlight

The CR-PRISM Partnered with Saratoga PLAN on a response and restoration initiative that included volunteer engagement at the Glowegee Creek Trails Preserve. The program included two components; A MOU to serve as a funding mechanism for restoration supplies and training to identify and manage invasive species. The event hosted by Saratoga PLAN occurred on October 26th. The Glowegee creek itself is a tributary to the Kayaderoseras Creek, which eventually drains into Saratoga Lake. Many unique spring ephemerals and wildflowers can be found within the property which is dominated with calcium rich soils. The site is an old agricultural farm with established invasive species in highly probable areas. The intent of the workday was the removal of trailside invasive species to create a buffer zone along the trail to prevent invasive species propagules from being trafficked farther into the core of the property. Priority areas have been identified for invasive removal followed by the plantings of native shrubs and flowers for restoration.

Saratoga PLAN recruited volunteers through Regeneron Pharmaceuticals “Day for Doing Good” program which enlisted 25 participants alongside PLAN and PRISM staff totaling 37 participants. PLAN stewardship manager, Bonnie Nightingale designed and implemented the program. Volunteers were divided into smaller work groups by parcels for management and restoration. Each group was supervised by PRISM or PLAN staff. Heavy equipment and tools were provided by Saratoga PLAN and the PRISM. PRISM staff trained volunteers on how to identify the common invasive species in the area and how to safely remove them. Volunteers and staff spent several hours removing plants along the trail, leaving large woody debris to be mulched on site. Afterward, a variety of native species such highbush blueberry, winterberry, serviceberry, and witch hazel were planted in the disturbed soils. This response and restoration program is in its third year. Post treatment monitoring with additional response and restoration is anticipated in 2024.



Saratoga PLAN and Volunteers, Regeneron Pharmaceuticals Volunteers, CR-PRISM 2023

2023 Education & Outreach Highlight: New York State Invasive Species Expo

The following success story will explore how CR-PRISM has been engaging and informing the public on conservation-based practices to better our environment. The New York State Invasive Species Council (ISC) and Invasive Species Advisory Committee (ISAC) deploy an invasive species summit every two years. The New York State Invasive Species Expo, was designed and held in New York State's Saratoga Spa Park from Sunday, September 24th to Tuesday the 26th.

To deploy the event two committees were created and given charge by the NYS Invasive Species Coordinate Section to design and deliver a summit for a three-day creative conference in the fall of 2023. The creation of a content and logistics committee was composed of members from the NYS DEC and related state agencies including the PRISM's. Addison Kubik, the Education and Outreach Coordinator for the CR-PRISM served on the Sunday content committee. Kristopher Williams, the Team Leader for the CR-PRISM served on the logistics committee. Together these committees paired together with other regional natural resource experts to design and deploy a unique conference experience.



Addison Kubik with a spotted lanternfly, 2023 Invasive Species Expo.

The Expo was held in a creative format to appeal to a wide range of attendees from both the public and professional realms. The expo was intentionally designed to be immersive, hands-on experience featuring: Unique presentations, hands-on workshops, interactive demonstrations, small-group discussions, along with field trips and outdoor activities. The Expo was hosted in Saratoga Spa State Park because of its unique historic architecture and open space as a backdrop.

The overall theme: Reflect, Adapt, and Evolve was incorporated into the planning process and selection of programs. Participants focused on programming during the expo which provided an opportunity to reflect on what's been accomplished so far in the field of invasive species management. Additionally, participants were able to learn about the innovative ways to adapt invasive species management in unprecedented times. The Expo also created spaces to discuss how we can evolve as practitioners to confront challenges moving into the future, facilitating many meaningful discussions.

The Expo was delivered in two parts, one was a community conservation day that was open to the public and the other geared toward professional development days, also open to all who were interested. The Community Conservation Day held on Sunday was paired with the Saratoga Farmers Market from 10-4 pm, which according to NYS OPRHP reaches up to 5000 attendees on average. The location was also at Saratoga Spa Park near the children's museum to capture a broad audience.

Over two dozen state agencies and private conservation groups participated in the Community Conservation Day. The Community Conservation Day featured a variety of tables to visit (including exhibits from each of the New York State PRISMs), an event passport to fill out for prizes, and several demos and workshops throughout the day (including Invasive Species Detection Dogs provided by Lower Hudson PRISM, and an iMapInvasives workshop). Tabling groups included the New York State Natural Heritage Program, New York State Department of Agriculture

and Markets, and New York State Department of Environmental Conservation, along with private groups like the Grassland Bird Trust, Adirondack Research, and the Nature Conservancy along with a host of other regional conservation-based groups.

The Professional Development Days on Monday and Tuesday featured content for invasive species professionals and natural resource experts with traditional presentations, along with engaging indoor and outdoor workshops. Field demos and trips were paired with lunch and learn activities. Professional poster sessions and other networking opportunities were also offered. Over 600 registrants signed up for the second portion of the Expo. A portion of the registrants were not the same on both days. Julie Lockwood from Rutgers Department of Ecology, Evolution, and Natural Resources was the guest speaker with a talk on “Avoiding the Invasive Species Doom Loop.” Over the course of both days 12 presentations, 15 workshops, 6 lunch and learn talks, and 6 field trips were offered. The CR-PRISM also participated in delivering several workshops like “Keeping Forests Healthy” and field trips such as “Invasive Species Woods Walk & Identification.” The Expo was well received by participants.



Group photo of participating organizations, 2023 Invasive Species Expo

2023 Annual Work Plan Summary

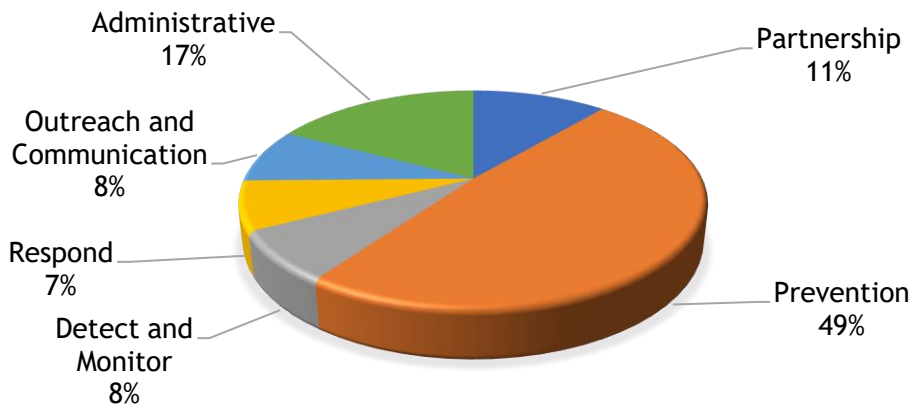
The Capital Region PRISM diligently and effectively executed the scope of work and associated deliverables to administer the Partnership as defined by the NYS DEC contract number C012558. The [CR-PRISM 2023 Work Plan](#) was crafted to deliver a coordinated response to mitigate the harmful effects of invasive species to the public while protecting critical ecological and economic resources of the region. The NYS Invasive Species Comprehensive Management Plan of 2018, as directed by Environmental Conservation Law Article 9 Title 17, is constructed around eight focal initiatives. The overarching goal of the ISCMP is to “minimize the introduction, establishment, proliferation, and negative impacts caused by invasive species.” The objectives and priority actions of the [CR-PRISM Five-Year Strategic Plan](#) have been aligned to the ISCMP initiatives, when appropriate, and built into the PRISM’s Annual Work Plan. Progress from the [CR-PRISM 2023 Annual Work Plan](#) was monitored and recorded throughout the year using an internal database. Captured metrics have been used to highlight and summarize successes throughout the 2023 annual report.

The CR-PRISM’s Strategic Plan, built by the Partnership, is comprehensive with five major goals. The plan is robust with a set of objectives and priority actions for each goal. When reviewing the CR-PRISM 2023 Annual Work Plan, all five goals and seventeen objectives were addressed through priority work actions. In total 48 of the 56 priority work actions were deployed for an 87% completion rate. Completed work efforts have been tracked quarterly and summarized in reports to the Department. The table below shows the number of goals, objectives, and priority work actions selected for delivery for the entire year.

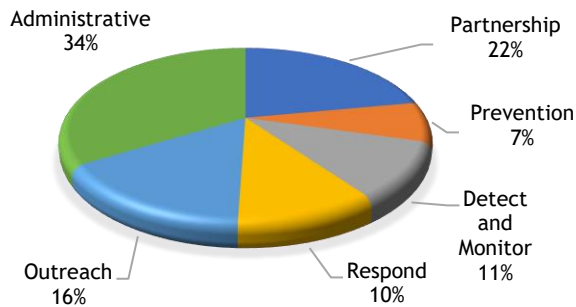
The subsequent graph(s) represents the entire staff including seasonal hires cumulative efforts by workdays in which a goal was addressed. An administrative category is included to demonstrate the time needed to operate and maintain the CR-PRISM. Additional graphs have been abstracted to show the difference between the work efforts of year-round staff verses seasonal employees. The inclusion of seasonal staff has increased the CR-PRISM capacity.

CR- PRISM Goals, Objectives and Priority Actions Addressed		
Goals	Number of Objectives	Number of Priority Work Actions
Goal 1: Partnership	3 of 3	14/14 = 100%
Goal 2: Prevent	4 of 4	6/9 = 67%
Goal 3: Detect and Monitor	3 of 3	8/9 = 89%
Goal 4: Respond	4 of 4	11 / 12 = 92%
Goal 5: Outreach & Education	3 of 3	9/12 = 75%
All 5 Goals Addressed	17 of 17 Objectives Addressed	48 of 56 Priority Work Actions Enacted

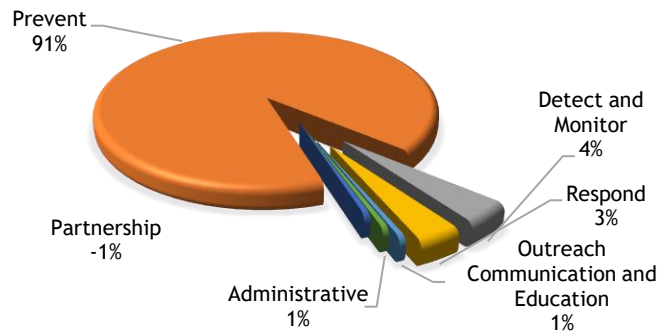
2023 PERCENTAGE OF WORKDAYS SPENT BY ALL CR-PRISM STAFF PER GOAL



PERCENTAGE OF WORK DAYS SPENT BY CORE STAFF PER GOAL



PERCENTAGE OF WORKDAYS SPENT BY SEASONAL STAFF PER GOAL



A generalized SWOT analysis was conducted quarterly and at the end of the year to identify strengths, weakness, opportunities, and threats to the PRISM’s programing. Adjustments will be reflected in subsequent years. Items in need of review and deployment for 2024 are an AIS and TIS Tier List update, revaluation to Priority Conservation Areas and the PRISM’s approach to managing these locations. In addition, the methods in which the PRISM’s Priority water bodies are surveyed will be reevaluated based on emerging technologies in eDNA. The CR-PRISM will continue to strive and find a balance in deploying broad strategic based initiatives with more comprehensive based conservation strategies at the local level. Post treatment monitoring is improving with a greater push for restorative efforts. Modification to standard operating and strategic plans will be conducted quarterly in 2024 as identified.

CR-PRISM Goals: Core Metrics

Goal One: Partnership	
Principal Partners	16
Strategic Partners	51
Cooperating Affiliates	53
RFPs Funded	5
MOUs / Service Agreements Funded	3

Goal Two: Prevention	
Watercraft Stewards	11
Launches with Coverage	12
Watercraft Inspections	10,088
People Engaged	15,742
AIS Intercepted	830
Boaters Preventing Spread	78%
New People Reached with CDD Messaging	1,472
SLF Traps Deployed	23

Goal Three: Detect and Monitor	
Aquatic Detect and Monitor	
Surveys by CR-PRISM & AR	16
Acres Surveyed by CR-PRISM & AR	974.4
Acres Surveyed in ISPZ	89
Acres Surveyed in PWB	368.6
Counties Surveyed	5
eDNA Counties Surveyed	5
eDNA Survey Locations	11
eDNA Samples (including controls)	49
eDNA Plants/Animals Surveyed For	22/27
New Tier 1 AIS Detected in PRISM	0
Terrestrial Detect and Monitor	
Surveys by CR-PRISM	72
Acres Surveyed by CR-PRISM	4,257.65 acres & 36.5 trail mi.
Counties Surveyed	12
Acres Surveyed in PCAs	1,110.06 acres & 0.3 miles
Acres Surveyed in ISPZ	75.19
Number of PCAs Surveyed	16 of 28
Secondary Sites Surveyed	41
New Tier 1 TIS Detected in PRISM	2

Goal Four: Response	
Aquatic Response	
Water Chestnut (WC) Responses	8
Counties with Response Actions	3
WC Acreage Manually Treated	17.52
WC Acreage Mechanically Treated	4.71
WC Pounds Removed Manually	10,887
WC Tons Removed Mechanically	65.05
Acres Managed in PWB	4
Acres Managed in ISPZ	0
WC Action Sites of CR-PRISM	4
Terrestrial Response	
Response Actions	94
Counties with Response Actions	11
Acres Managed	279.45
Acres Managed in PCAs	92.84
Acres Managed in ISPZ	26.86
Acres of Highly Probable Areas Managed	15
Giant Hogweed Stems Removed	197 stems & seedlings
Giant Hogweed Sites with Germination	5 of 11
PCAs with Response Actions	12 of 28
New Response Projects	7
Post-Treatment Monitoring Projects	15
Public Properties Accessed for Response	28
Private Properties Accessed for Response	15
Biocontrol's Released	3,446

Goal Five: Outreach, Communication, and Education	
Number of Educational Programs with Direct Educational Contacts	(61) 1,361
Number of Tabling Events with Outreach Contacts	(11) 3,039
Total Indirect Contacts	29,069
Social Media and Website Indirect Contacts	17,854
iMap Trainings/ Individuals Trained	6 / 64
Volunteers Engaged	408
Volunteer Hours of Service	2,461
Cornell CALS 2023 Value of Volunteer Labor per Hour	\$31.80
Value Generated by PRISM Volunteers	\$78,259.80

Appendix A: CR-PRISM Structure

PRISM Structure

The Capital Region PRISM is a collaborative organization created to address the threat of invasive species. CR-PRISM is a not-for-profit quasi-governmental agency hosted by Cornell Cooperative Extension of Saratoga County. The CR-PRISM strategically operates across eleven counties and is financially supported by the Environmental Protection Fund as administered by the New York State Department of Environmental Conservation (NYS DEC).

The CR-PRISM is staffed by a full-time Terrestrial Invasive Species Coordinator, Aquatic Invasive Species Program Manager, Education and Outreach Coordinator, and Lead Coordinator. Seasonal staff include Watercraft Inspection Stewards, Field Technicians, and interns from partner colleges in the region. The core members that make up the CR-PRISM have strengths in each individual area of expertise. In addition, the PRISM is comprised of a Partnership in which members further assist in completing complimentary priority actions to slow the proliferation of invasive species.

Committees:

The current Capital Region PRISM governance model is consensus-driven with priority actions identified and described in a strategic plan by the Partnership which is related to the deliverables to administer the Capital Region Partnership for Regional Invasive Species Management 2023-2027, contract number C012558 as prescribed by the NYS DEC.

To create an environment for effective decision-making and to help improve the Partnership, the CR-PRISM Steering Committee exists. The Mission of the Steering Committee is to serve, support, and strengthen the PRISM, through representation, collaboration, and decision making. The committee provides leadership, guidance, and serves as a resource. The committee also provides recommendations for implementation of the CR-PRISM Strategic Plan with the intent of bringing a more integrated approach to conservation-based regional planning that ultimately affects our ecosystems and human interactions within those systems

Members of the steering committee serve on subcommittees that are critical in reviewing new strategies for deployment. The representative ad hoc sub-committees of the CR-PRISM are the Agriculture, Aquatic, Conservation, and Education committees. The Capital Region PRISM Steering Committee Charter can be found on the PRISM's report page.

Appendix B: CR-PRISM Partner List

2023 CR-PRISM Partnership Summary		
<i>Classification</i>	<i>New</i>	<i>Active</i>
Principal Partners	1	16
Strategic Partners	7	51
Cooperating Affiliates	9	53

Principal Partners	
Adirondack Research	Rensselaer Land Trust
Albany County Office of Natural Resource Conservation	Rensselaer Plateau Alliance
Cornell eDNA and Genomics Core Facility	Rexford Fire Department
Friends of Tivoli Preserve	Saratoga PLAN
Grassland Bird Trust	Wilton Wildlife Preserve & Park
Hudson Crossings Park (Schuylerville)	Adirondack Research
Hudson River National Estuarine Research Reserve	Albany Co. Office of Natural Resource Conservation
Huyck Preserve	Cornell eDNA and Genomics Core Facility
Mohawk-Hudson Land Conservancy	Friends of Tivoli Preserve
National Park Service- Saratoga National Historic Park	Grassland Bird Trust
NYS Audubon Society	Hudson Crossings Park (Schuylerville)

Strategic Partners	
Adirondack Watershed Institute	NYS Hemlock Initiative
Albany Water Department	NYS OPRHP Region 11
Canal Corps/NY Power Authority	NYS OPRHP Region 6
City of Albany	NYS OPRHP Region 7
City of Glens Falls	NYS OPRHP Statewide
City of Rensselaer	NYS Water Resource Institute (NYS DEC)
City of Troy	PLISM LIISMA
Columbia Land Conservancy	PRISM CRISP
Cornell Cooperative Extension(s) -Columbia-Greene, Rensselaer, Albany, Schenectady, Saratoga, Warren, Dutchess, Ulster	PRISM APPIP
Hudson River Estuary Program Cornell University	PRISM FL
NYS Natural Heritage Program	PRISM LH
Lake Champlain Basin Program	PRISM SLELO
Landscape Interactions	PRISM WNY
New York Invasive Species Research Institute	Schenectady County Invasive Species Council (SCISC)
New York Power Authority	Siena College

NYS DEC Division of Fish and Wildlife; Fisheries	SWCD Albany County
NYS DEC Division of Lands & Forests; I.S. and Ecosystem Health; Forest Health Diagnostic Lab	SWCD Columbia County
NYS DEC Division of Lands & Forests; I. S. and Ecosystem Health; Hogweed	SWCD Rensselaer County
NYS DEC Division of Lands & Forests; Invasive Species and Ecosystem Health; Tree Nursery	SWCD Saratoga County
NYS DEC Region 4	SWCD Washington County
NYS DEC Region 5	SWCD Warren County
NYS DEC Region 6	Town of Colonie
NYS DEC ReLeaf Program Region 5	US Geological Survey
NYS DEC State Foresters	SWCD Warren County
NYS Department of Agriculture and Markets	US Geological Survey

Cooperating Affiliates	
Adirondack Mountain Club - Albany Chapter	Shaker Historic Museum
Agricultural Stewardship Association	Skidmore College
Albany County Legislature	Starbucks (Western Ave)
Albany Pine Bush Preserve Commission	The Sacandaga Mohawk Flotilla/United States Coast Guard Auxiliary
Ancram Resilient Garden and Farms	Town of Ballston Spa
Babcock Lake Estates	Town of Ballston Spa Park and Tree Board
Ballston Lake Improvement Association	Town of Bethlehem
Battenkill Conservancy	Town of Clifton Park
City of Saratoga	Town of Germantown
Clifton Park Library	Town of Glenville
Columbia-Greene Lakes Coalition	Town of Malta
Cossayuna Lake Improvement Association	Town of Rotterdam
Crandall Public Library	Union College
Dyken Pond Environmental Education Center	University at Albany, SUNY
ECOS: The Environmental Clearinghouse	USDA NIFA/ U. of Connecticut Plant Computational Genomics Lab
Friends of Moreau Lake State Park	Village of Catskill
Friends of Woodlawn Preserve	Village of Round Lake
Lake George Land Conservancy	Village of Waterford
Mohawk River Basin Program	Wild Ones Native Plant Group
Mohawk River Watershed Coalition	Rensselaer Polytechnic Institute
New York Forest Owners Association	The Bioreserve
New York Logger Training	Town of Malta
Niskayuna Tree Council	Town of Rotterdam
Northeast Aquatic Plant Management Society	Union College

NYS Federation of Lake Associations	University at Albany, SUNY
NYS Thruway Authority	USDA NIFA/ U. of Connecticut Plant Computational Genomics Lab
Pine Hollow Arboretum	Village of Catskill
Rotary Scout Reservation	Village of Round Lake
Saratoga Lake Protection and Improvement District	Village of Waterford
Saratoga Mountain Bike Association	Wild Ones Native Plant Group
Saratoga Public Library	Rensselaer Polytechnic Institute
Scenic Hudson	

Appendix C: 2023 Events

Lectures and Workshops

Date	Event Title	Contacts
January	1. Zebra Mussel Lego Robotics Team Lecture	7
February	2. Grafton Lakes HWA Survey with SCA, OPRHP and DEC	25
	3. Wilton Wildlife Preserve Fireside Talk on Invasives	15
March	4. Mohawk Watershed Symposium Lecture	170
	5. Master Forest Owner Volunteer Training Program	56
	6. Flower & Garden Expo Day 2 Lecture	9
April	7. Flower & Garden Expo Day 3 Lecture	7
	8. CR-PRISM Spring Partners Meeting	44
	9. Wilton Wildlife Preserve iMap Woods Walk	10
May	10. SUNY Albany Ecology Lecture on Invasive Species / Native Restoration	21
	11. Arbor Day Tree Planting and Instruction for Community Forest	24
	12. NY Land Trust Conference "Leveraging Partnerships for Management"	64
June	13. iMapInvasives Mobile App Training	12
	14. Moreau Lake State Park: Conservation Field Days	74
	15. NYISAW: Woodlot Ownership 101	30
July	16. NYISAW: Invasive Species Integrated Pest Management Demo	3
	17. NYISAW: Invasive Species Guided Hike at the Bioreserve	9
	18. NYISAW: What's Bugging Your Trees?	18
	19. CLC: Part 2 Staff Training on Field Maps and iMap	6
	20. Cornell IPM Sustainability Workshop and Panel	78
August	21. Cornell Master Forest Owner Program Volunteer Training (NRCS, SWCD)	12
	22. Lake Protectors Training partnered with APIPP	20
	23. Spotted Lanternfly: What you Need to Know	5
September	24. Forest Pest Training-Town of Malta	5
	25. CLC Overmountain Conservation Area iMap Training	7
	26. New York Logger's Training	8
	27. Restoration, & Integrated Pest Management for the Homeowner	53
October	28. SCA OPRHP Patriates Day Service Project	27
	29. ASA Forest Health Woods Walk / iMap Training	12
	30. IS Expo Workshop: Keeping Forest Healthy	41
	31. IS Expo Walk and Talk: Invasive Species Identification	20
	32. RPI Guest Lecture	26
November	33. Pesticide Training Course for Forest Pest and Ornamental Applications	6
	34. NYS Conference of Mayors Training School Invasive Species Prevention	53
	35. Ancram Resilient Gardens & Farms Meeting- IPM Strategies	23
December	36. Saratoga PLAN Removal and Restoration with Regeneron	28
	37. IPM and Pollinator Restoration Master Gardener Advanced Class	28
December	38. Albany County Master Gardeners Invasive Species Workshop	44
	39. Capital Region PRISM Year-End Partner's Meeting	33
	40. Hudson Adirondack Day Lily Society Invasive Species Presentation	19

Webinars

Date	Event Title	Contacts
January	1. Hemlock Hunters HWA Program	53
February	2. Agricultural Stewardship Association: Forest Pest Webinar	9
March	3. Invasive Species for Master Gardeners	33
April	4. Wilton Wildlife Preserve iMap Webinar	12
June	5. NYISAW: Beech Leaf Disease & Community Science	11
	6. NYISAW: Invasive Species Problem with CLC Webinar	22
	7. NYISAW: CLC iMap Training Webinar	15
	8. NYISAW: Management of Aquatic Invasive Species	14
October	9. iMapInvasives Webinar: Viewing Management Outcomes	37
November	10. ECOS Speaker Series Webinar	18

Tabling Events

Date	Title	Direct Outreach	Indirect Outreach
March	1. Mohawk Watershed Symposium Tabling	N/A	300
	2. Capital Region Garden & Flower Expo	650	1900
April	3. Saratoga Sustainability Fair	108	300
	4. Arbor Day Niskayuna Town Hall Tree Giveaway	78	200
May	5. Lupine Fest	300	1500
June	6. NYISAW: Wilton Wildlife Preserve Wildlife Festival	117	800
	7. NYISAW: Pollinator Palooza	35	500
	8. NYISAW: Native Seeds and Invasive Species with Starbucks	91	200
	9. Hudson Crossing Native Plant Sale Tabling by Volunteer	N/A	125
July	10. Saratoga County Fair	1267	4400
September	11. 2023 Invasive Species Expo	393	990

Website/Social Media

Date	Title	Contacts
2023	Facebook: Followers	698
	Facebook: Individuals Reached	3,014
	Instagram: Followers	1032
	Instagram: Individuals Reached	3,948
	CR-PRISM Website Visits	9,162

Appendix D: Meetings

Date	Event Name	Contacts	Audience	Category
1/4/2023	Terrestrial Invasive Species Co. Meeting	19	Statewide	Committee
1/1/2023-2024	NYISRI Collaborator Bio-Control Research	17	Statewide	Research
1/5/2023	Pollinate Now Discussion	3	Regional	Workgroup
1/11/2023	ISAC Chair Meeting	3	Statewide	Workgroup
1/11/2023	AIS CR-APPIP Cross Collaboration	3	Regional	Workgroup
1/12/2023	Prism Leaders Quarterly Meeting	18	Statewide	Workgroup
1/17/2023	Japanese Tree Lilac Working Group	10	Statewide	Workgroup
1/18/2023	Hudson River Task Force	27	Regional	Taskforce
1/19/2023	Schenectady Invasive Species Committee	6	Local	Workgroup
1/18-19/2023	HWA Managers Meeting	54	Statewide	Workgroup
1/20/2023	PRISM Leaders Meeting	6	Statewide	Taskforce
1/23/2023	WISP Coordinators Meeting	23	Statewide	Committee
1/23/2023	Restoration and Pollinator Discussion with CLC	4	Local	Workgroup
1/25/2023	Terrestrial Invasive Species Co. Meeting	11	Statewide	Committee
1/26/2023	Statewide PRISM call-in	129	Statewide	Committee
1/27/2023	Regional Stewardship Professionals Gathering	10	Regional	Committee
1/30/2023	Agricultural Committee	7	Regional	Committee
1/30-31/2023	DEC Incident Command Response Training	24	Statewide	Workshop
2/1/2023	Rare Threatened and Endangered Species Prioritization	26	Statewide	Workgroup
2/6/2023	APIPP & CRP TIS Coordinator Check-In	2	Regional	Workgroup
2/7/2023	Swallowwort Management at Huyck Preserve	3	Local	Workgroup
2/6/2023	CR-PRISM Agriculture Committee Meeting	6	Regional	Committee
2/7/2023	ISAC Meeting #50	18	Statewide	Committee
2/8/2023	HRTF Site Prioritization Meeting	2	Regional	Taskforce
2/8/2023	APPIP AIS Committee Meeting	41	Regional	Workgroup
2/9/2023	Grafton Lakes HWA Survey with SCA, OPRHP and DEC	25	Regional	Workshop
2/13/2023	Master Forest Owner Program	6	Statewide	Workgroup
2/16/2023	Schenectady Invasive Species Committee	4	Regional	Committee
2/17/2023	E/O Coordinators Meeting	14	Statewide	Committee
2/21/2023	AIS Coordinators Staff Meeting	24	Statewide	Committee
2/22/2023	Terrestrial Invasive Species Co. Meeting	9	Statewide	Committee
2/22/2023	Statewide PRISM call-in	100	Statewide	Committee

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3/3/2023	IS Expo Planning	12	Statewide	Committee
3/6/2023	Australian Biosecurity Research	12	International	Think Tank /Interview
3/17/2023	Mohawk River Basin Steering Committee Meeting	25	Regional	Steering Committee
3/22/2023	Steering Committee Meeting	13	Regional	Steering Committee
3/27/2023	Land trust Work Group	4	Regional	Committee
3/27/2023	Agriculture Committee Meeting	6	Local	Agg Committee
3/29/2023	Terrestrial Invasive Species Co. Meeting	12	Statewide	Committee
3/29/2023	Monthly PRISM Statewide Call In	78	Statewide	Committee
3/29/2023	2023 PRISM SLF Season Kickoff Meeting	15	Statewide	Workgroup
3/31/2023	WC Action Sites Pre-Meeting	10	Statewide	Workgroup
4/4/2023	HRTF Meeting	19	Statewide	Taskforce
4/4/2023	WC Action Sites Webinar	16	Statewide	Webinar
4/7/2023	PRISM Leaders Meeting	11	Statewide	Workgroup
4/8/2023	Expo Logistics Meeting	6	Statewide	Workgroup
4/10/2023	Master Forester Volunteer Program	6	Statewide	Workgroup
4/11/2023	NYPA Guy Park Manor Canal Reimagined	14	Regional	Workgroup
4/20/2023	Beech Leaf Disease Communications Group	30	Statewide/NE	Workgroup
4/27/2023	Hudson River Task Force	12	Statewide	Taskforce
5/1/2023	New York Power Authority	2	Statewide	Introduction
5/2/2023	ISAC Meeting #50	24	Statewide	Committee
5/12/2023	IS Expo Planning	5	Statewide	Committee
5/15/2023	IS Expo Content Committee	11	Statewide	Committee
5/26/2023	IS Expo Content Committee	20	Statewide	Committee
5/31/2023	All PRISM Call-in	69	Statewide	Committee
6/2/2023	Expo Content Demos and Workshops	6	Statewide	Workgroup
6/16/2023	HRTF Site Prioritization Group	6	Regional	Taskforce
6/27/2023	SLF Outreach Meeting	50	Statewide	Workgroup
6/28/2023	All PRISM Call-in	75	Statewide	Committee
6/30/2023	HRTF eDNA Site Prioritization	4	Regional	Taskforce
6/30/2023	Mohawk River Basin Steering Committee	28	Statewide	Steering Committee
7/11/2023	Town of Colonie Water Chestnut Workgroup	5	Local	Workgroup
7/13/2023	PRISM Leaders Quarterly Meeting	15	Statewide	Roundtable
7/13/2023	HRTF eDNA Field Training	11	Local	Taskforce
8/2/2023	Terrestrial Invasive Species Co. Meeting	7	Statewide	Committee
8/24/2023	IS Expo Planning	5	Statewide	Committee
8/24/2023	Region 5 ReLeaf Committee Meeting	6	Regional	Committee
9/6/2023	ISAC Chair Meeting	3	Statewide	Sub Committee
9/7/2023	Expo Meeting with OPRHP	8	Regional	Workgroup
10/10/2023	Mohawk River WC Stakeholder Group	9	Regional	Workgroup

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10/13/2023	AIS WISP Co. Statewide Meeting	17	Statewide	Committee
10/20/2023	Mohawk River Basin Steering Committee	23	Regional	Steering Committee
10/24/2023	Hudson River Task Force	5	Regional	Taskforce
10/26/2023	ReLeaf Region 5 Committee Meeting	7	Regional	Committee
11/1/2023	Terrestrial Invasive Species Co. Meeting	7	Statewide	Committee
11/6/2023	ISAC Subcommittee Economic Impact	5	Regional	Sub Committee
11/9/2023	Hudson River Task Force	19	Statewide	Committee
11/30/2023	ISAC Meeting 53	18	Statewide	Committee
12/1/2023	MRBP Mohawk Watershed Research Priorities	49	Regional	Workgroup
12/1/2023	MRBP Research Focus Group Fisheries	17	Regional	Sub Committee
12/11/2023	Cornell Master Forest Owner Program	6	Statewide	Workgroup
12/14/2023	Albany County Legislature	4	Local	Workgroup
12/14/2023	NYS DEC Region 5 ReLeaf Meeting	6	Regional	Workgroup

A total of 84 meetings interacting with 1507 partners.

Appendix E: Terrestrial & Aquatic PCA/PWB Lists

Aquatic Priority Waterbodies

County	Priority Waterbody Name
Albany	1. Basic Creek Reservoir 2. Thompson Lake 3. Partridge Run Wildlife Management Area: -Fawn Lake, White Birch Pond, Tubbs Pond, Newt Lake
Columbia	4. Queechy Lake
Fulton	5. Rockwood Lake
Greene	6. North-South Lake
Herkimer	7. Spruce Lake
Montgomery	N/A
Rensselaer	8. Black River Pond, Dunham Reservoir 9. Grafton Lake State Park: -Long Pond, Shaver Pond, Second Pond, Mill Pond
Saratoga	10. Delegan Pond 11. Little Round Lake 12. Round Lake, Colonie Reservoir 13. Moreau Lake State Park: -Moreau Lake, Lake Bonita
Schenectady	14. Featherstonaugh Lake 15. Collins Lake 16. Mariaville Lake
Warren	17. Butler Pond 18. Rush Pond 19. Halfway Creek/Ann Pond
Washington	20. Carters Pond (Carters Pond Wildlife Management Area) 21. Battenkill River

Terrestrial Priority Conservation Areas

County	Priority Conservation Area Name
Albany	<ol style="list-style-type: none"> 1. Ann Lee Pond Preserve 2. Ashford Glen Preserve 3. Black Creek Marsh WMA 4. Partridge Run WMA 5. Thacher State Park
Columbia	<ol style="list-style-type: none"> 6. Nutton Hook Tidal Wetland 7. Stockport Flats WMA
Fulton	<ol style="list-style-type: none"> 8. Rockwood State Forest 9. Peck Hill State Forest
Greene	<ol style="list-style-type: none"> 10. Four Mile Point Preserve 11. Vosburgh Swamp
Herkimer	<ol style="list-style-type: none"> 12. Plantation Island WMA 13. Spruce Creek/Lake Reservoir
Montgomery	<ol style="list-style-type: none"> 14. Charleston State Forest 15. Rural Grove State Forest
Rensselaer	<ol style="list-style-type: none"> 16. Capital District WMA 17. Cherry Plain State Park and WMA 18. Grafton Lakes State Park
Saratoga	<ol style="list-style-type: none"> 19. Moreau Lake State Park (ISPZ) Main Property 20. Saratoga Sand Plains WMA 21. Wilton Wildlife Preserve and Park/Saratoga Sand Plains WMA
Schenectady	<ol style="list-style-type: none"> 22. Indian Kill Preserve 23. Sanders Preserve
Warren	<ol style="list-style-type: none"> 24. Moreau Lake State Park (ISPZ) West Property 25. Ralph Road State Forest
Washington	<ol style="list-style-type: none"> 26. Eldridge Swamp State Forest 27. Ft. Edward Grasslands, Goose Egg State Forest 28. Washington County Grasslands

Appendix F: 2023 Management Project Progress Reports

Aquatic Invasive Species Project Progress Reports

County	Columbia
Location	<i>Town of Germantown</i>
Response Goal	Suppression
Site Justification	Public Recreation Benefit/Access to Hudson River
Target Species	Water Chestnut
Response Method	Manual/ Mechanical
Response Type	Hand pulling, pontoon boat with self-made harvester front
First Year of Treatment	2023
Years of Management	One
Site Managed in 2023?	Yes, Initial Treatment
Pre-Treatment Acreage	0.63acre pre-treatment survey area
Pre-Treatment % Cover	76-100%
Total Area Managed in 2023 (Acres)	0.26 acres
2023 Biomass Removed	~3,500lbs.
2023 Percent Cover	76-100% (initial year of treatment)
Trace/Sparse/Dense/ Monoculture	Monoculture/Dense

County	Saratoga		
Location	<i>Fish Creek Parts 1&2</i>	<i>Delegan Pond</i>	<i>Camp Road</i>
Response Goal	Suppression	Eradication	Suppression
Site Justification	Public Outreach/Recreation	Ecological Significance	Emergency Access Point
Target Species	Water Chestnut & European Frogbit	Water Chestnut	Water Chestnut
Response Method	Manual	Manual	Manual
Response Type	Hand Pull	Hand Pull	Hand Pull
First Year of Treatment	2019	2020	2022
Years of Management	5 Years	4 Years	2 Years
Site Managed in 2023?	Yes	Yes	Yes
Pre-Treatment Survey Area Acreage	3.5 acres	4 acres	0.25 acres
Pre-Treatment % Cover	51-75%	5%	76-100%
Total Area Managed in 2023 (Acres)	5.9 acres	4 acres	.24 acres
2023 Biomass Removed	~1,010lbs.	~32lbs.	~2,760lbs.
2023 Percent Cover	51-75%	0-1%	25% of target area
Trace/Sparse/Dense/ Monoculture	Sparse/Dense	Trace/Sparse	Dense/Monoculture

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County	Albany		
Location	<i>Town of Colonie Manual</i>	<i>Town of Colonie Mechanical</i>	<i>Ann Lee Pond</i>
Response Goal	Suppression	Suppression	Suppression
Site Justification	Public Recreation	Public Recreation	Ecological Significance
Target Species	Water Chestnut	Water Chestnut	Water Chestnut
Response Method	Manual	Mechanical	Manual
Response Type	Hand Pull	Wee-Doo Harvester	Hand Pull
First Year of Treatment	2023	2023	2023
Years of Management	1 Year	1 Year	1 Year
Site Managed in 2023?	Yes	Yes	Yes
Pre-Treatment Survey Area Acreage	53 acres	53 acres	10.5 acres
Pre-Treatment % Cover	51-75%	76-100%	26-75%
Total Area Managed in 2023 (Acres)	0.06 acres	3.24 acres	7.3 acres
2023 Biomass Removed	~2,385 lbs.	~65.05 tons	~200 lbs.
2023 Percent Cover	51-75%	76-100%	26-75%
Trace/Sparse/Dense/Monoculture	Sparse/Dense	Dense/Monoculture	Sparse/Dense

Terrestrial Invasive Species Project Progress Reports

County	Albany	Albany	Columbia	Columbia	Fulton
Location	<i>DEC Five Rivers Environmental Education Center</i>	<i>Ann Lee Pond</i>	<i>Giant Hogweed DEC Site #3938</i>	<i>Mud Creek Conservation Area</i>	<i>Giant Hogweed DEC Site #3726</i>
Response Goal	Eradication	Suppression	Eradication	Eradication	Eradication
Target Species	Mile-a-minute (<i>Persicaria perfoliata</i>)	Lesser Celandine (<i>Ficaria verna</i>)	Giant Hogweed (<i>Heracleum mantegazzianum</i>)	Cup-Plant (<i>Silphium perfoliatum</i>)	Giant Hogweed (<i>Heracleum mantegazzianum</i>)
Response Method	Manual	Chemical/Manual	Manual	Mechanical/Manual	Manual
Response Type	Hand pulling	Grubbing/ Foliar spray	Digging	Brushcutting/Grubbing	Digging
First Year of Treatment	2018	2021	2022	2023	2020
Years of Management	5	3	2	1	4
Site Managed in Present Year	Yes, PTM	Yes, PTM	Yes, PTM	Yes, Initial Treatment	Yes, PTM
Pre-Treatment Area (Acres)	0.8 acres	2.35 acres	1 plant	0.26 acres	50 plants
Pre-Treatment % Cover	5%-25% (15%)	-	-	26%-50%	-

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Total Area Managed in 2023 (Acres)	0.02 acres	0.30 acres	0 plants	0.26 acres	3 plants
2023 Percent Cover	<5%	Polygon 1: >5%; Polygon 2: 5-25%; Polygon 3: <5%; Polygon 4: 26%-50%	-	26%-50%	-
Number of Populations/ Individuals	1 individual	4 patches	0 plants	3 patches	3 plants
Years of Invasive Species Absence	0	0	1	0	0

County	Greene	Rensselaer	Rensselaer	Saratoga	Greene
Location	<i>Four Mile Point Preserve</i>	<i>Dearstyne Rd- Japanese Butterbur</i>	<i>Giant Hogweed DEC Site #850</i>	<i>Giant Hogweed DEC Site #2131</i>	<i>Giant Hogweed DEC Site #2501</i>
Response Goal	Suppression	Eradication	Eradication	Eradication	Eradication
Target Species	Wineberry (<i>Rubus phoenicolasius</i>)	Japanese Butterbur (<i>Petasites japonicus</i>)	Giant Hogweed (<i>Heracleum mantegazzianum</i>)	Giant Hogweed (<i>Heracleum mantegazzianum</i>)	Giant Hogweed (<i>Heracleum mantegazzianum</i>)
Response Method	Manual	Manual/Cultural	Manual	Manual	Manual
Response Type	Grubbing	Digging/Cutting/Solarization	Digging	Digging	Digging
First Year of Treatment	2019	2022	2010	2014	2015
Years of Management	5	2	13	9	8
Site Managed in Present Year	Yes, PTM	Yes, PTM	Yes, PTM	Yes, PTM	No, no permissions
Pre-Treatment Area (Acres)	1.34 acres	0.07 acres	27 plants	495 plants	104 plants
Pre-Treatment % Cover	-	-	-	-	-
Total Area Managed in 2023 (Acres)	0.15 acres	0.07 acres	0 plants	0 plants	-
2023 Percent Cover	Polygon 1: 26%-50%; Polygon 2: 51%-75%; Polygon 3: <5%; Polygon 4: NA	-	-	-	-

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Number of Populations/ Individuals	4 patches	1 patch	0 plants	0 plants	-
Years of Invasive Species Absence	0	0	3	2	0

County	Saratoga	Saratoga	Saratoga	Saratoga
Location	<i>Giant Hogweed DEC Site #3469</i>	<i>Giant Hogweed DEC Site #3320</i>	<i>Daketown State Forest</i>	<i>Daniel's Rd State Forest</i>
Response Goal	Eradication	Eradication	Eradication	Exclusion
Target Species	Giant Hogweed (<i>Heracleum mantegazzianum</i>)	Giant Hogweed (<i>Heracleum mantegazzianum</i>)	Shrubby Bushclover (<i>Lespedeza bicolor</i>)	Japanese Stiltgrass (<i>Microstegium vimineum</i>)
Response Method	Manual	Manual	Mechanical/ Manual	Mechanical/ Manual
Response Type	Digging	Digging	High Cut Stump/ Grubbing	Brushcutting/ Hand Pulling
First Year of Treatment	2018	2018	2020	2019
Years of Management	6	6	4	5
Site Managed in Present Year	Yes, PTM	Yes, PTM	Yes, PTM	Yes, PTM
Pre-Treatment Area (Acres)	10 plants	12 plants	1 acre	9.79 acres
Pre-Treatment % Cover	-	-	26%-50% (47%)	90%
Total Area Managed in 2023 (Acres)	0 plants	0 plants	0.59 acres	8.9 acres
2023 Percent Cover	-	-	5-25%	26%-50%
Number of Populations/ Individuals	0 plants	0 plants	1 population	1 population
Years of Invasive Species Absence	1	2	0	0

Request for Proposal (RFP) Projects

Huyck Preserve and Biological Research Station

County	Albany				
Location	<i>Huyck Preserve and Biological Research Station (multiple projects)</i>				
Response Goal	Eradication	Suppression	Eradication	Eradication	Eradication
Target Species	Japanese Primrose (<i>Primula japonica</i>)	False spiraea (<i>Sorbaria sorbifolia</i>)	Yellow archangel (<i>Lamium galeobdolon</i>)	Leafy spurge (<i>Euphorbia esula</i>)	Leafy spurge (<i>Euphorbia esula</i>)
Response Method	Manual	Manual	Manual	Manual	Manual
Response Type	Digging	Grubbing/Hand Pulling	Grubbing	Grubbing	Grubbing
First Year of Treatment	2022	2019	2019	2023	2023
Years of Management	2	5	4	1	1
Site Managed in Present Year	Yes, PTM	Yes, PTM	Yes, PTM	Yes, Initial	Yes, Initial
Pre-Treatment Area (Acres)	0.05 acres	2.88 acres	9.20 acres	0.001 acres	0.001 acres
Pre-Treatment Percent Cover	-	Northern Population: 76%-100%; Southern Population: 5%-25%	5%-25%	-	-
Total Area Managed in 2023 (Acres)	0.05 acres	1.19 acres	0.07 acres	0.001 acres	0.001 acres
2023 Percent Cover	<5%	26%-50%	2/6 populations: 5%-25%; 4/6 populations: <5%	-	<5%
Number of Populations/Individuals	6 populations	3 populations	6 populations	16 individuals	16 individuals
Years of Invasive Species Absence	0	0	0	0	0

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County	Albany				
Location	Huyck Preserve and Biological Research Station (multiple projects)				
Response Goal	Eradication	Eradication	Suppression	Suppression	Suppression
Target Species	Wild chervil (<i>Anthriscus sylvestris</i>)	Japanese Spiraea (<i>Spiraea japonica</i>)	Bishop's Goutweed (<i>Aegopodium podagraria</i>)	Norway Maple (<i>Acer platanoides</i>)	February Daphne (<i>Daphne mezereum</i>)
Response Method	Manual	N/A	N/A	Manual	Manual
Response Type	Grubbing	N/A	N/A	Hand Pulling	Grubbing
First Year of Treatment	2023	2023	2019	2019	2019
Years of Management	1	1	4	2	4
Site Managed in Present Year	Yes, Initial	Yes, Initial	No	No	No
Pre-Treatment Area (Acres)	0.0005 acres	0.02 acres	0.14 acres	0.02 acres	0.07 acres
Pre-Treatment Percent Cover	-	-	76%-100%	5%-25%	5%-25%
Total Area Managed in 2023 (Acres)	0.0005 acres	0	0	0.02 acres	-
2023 Percent Cover	<5%	-	-	-	-
Number of Populations/ Individuals	2 individuals	NA	-	1 individual	-
Years of Invasive Species Absence	0	1	1	4	1

County	Albany				
Location	Huyck Preserve and Biological Research Station (multiple locations)				
Response Goal	Suppression	Suppression	Suppression	Suppression	Suppression
Target Species	European Privet (<i>Ligustrum vulgare</i>)	Autumn Olive (<i>Elaeagnus umbellata</i>)	Burning Bush (<i>Euonymus alatus</i>)	Common Barberry (<i>Berberis vulgaris</i>)	Common Buckthorn (<i>Rhamnus cathartica</i>)
Response Method	Manual	Manual	Manual	Manual	Manual
Response Type	Cut stump	Large plants- cut stump & solarized; Small plants- hand pulled	Grubbing/Hand Pulling	Large plants- cut stump and solarized; Small plants- hand pulled	Small plants and resprouts on cut stumps- Flame Treated; Large plants cut to base

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First Year of Treatment	2019	2019	2019	2019	2022
Years of Management	3	5	5	5	2
Site Managed in Present Year	Yes, PTM	Yes, PTM	Yes, PTM	Yes, PTM	Yes, PTM
Pre-Treatment Area (Acres)	2.97 acres	3.88 acres	0.86 acres	14.31 acres	1.17 acres
Pre-Treatment Percent Cover	51%-75%	51%-75%; 76%-100%	<5%	5%-25%; 51%-75%; 76%-100%	-
Total Area Managed in 2023 (Acres)	0.09 acres	1.08 acres	0.02 acres	0.19 acres	0.12 acres
2023 Percent Cover	5%-25%	most populations <5%; 2 populations 26%-50%	<5%	Most populations <5%; 1 population 5%-25%	<5%
Number of Populations/Individuals	1 population	22 populations	1 population	7 populations	1 population
Years of Invasive Species Absence	0	0	0	0	0

County	Albany				
Location	<i>Huyck Preserve and Biological Research Station (multiple locations)</i>				
Response Goal	Suppression	Suppression	Containment	Suppression	Containment
Target Species	Reed Canary Grass (<i>Phalaris arundinacea</i>)	Japanese Stiltgrass (<i>Microstegium vimineum</i>)	Common Reed (<i>Phragmites australis</i>)	Japanese Barberry (<i>Berberis thunbergii</i>)	Pale Swallow-wort (<i>Vincetoxicum rossicum</i>)
Response Method	Manual	Manual	Manual	Manual	Manual
Response Type	Patch #1: Digging/Handpulling ; Patch 2: Seed heads removed	Flame treated	Broken at base and pushed over or cut below the waterline when possible	Flame treated (62 individuals) & Grubbing (46 individuals)	Grubbing
First Year of Treatment	2022	2022	2023	2019	2019
Years of Management	2	2	1	3	4
Site Managed in Present Year	Yes, PTM	Yes, Initial	Yes, PTM	Yes, PTM	Yes, PTM

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Pre-Treatment Area (Acres)	28.5 acres	0.03 acres	3.40 acres	46.54 acres	139.48 acres
Pre-Treatment % Cover	-	<5%	-	-	5%-25%; 76%-100%
Total Area Managed in 2023 (Acres)	0.07 acres	0.03 acres	1.21 acres	0 acres	0.45 acres
2023 Percent Cover	<5%	<5%	3 points- 76%-100%; 1 point- 5%-25%	<5%	Most populations <5%; 1 population 5%-25%
Number of Populations/ Individuals	1 population	2 populations	3 populations	20+ populations	6 populations
Years of Invasive Species Absence	0	0	0	0	0

County	Albany				
Location	<i>Huyck Preserve and Biological Research Station (multiple locations)</i>				
Response Goal	Containment	Suppression	Suppression	Suppression	Containment
Target Species	Black Swallow-wort (<i>Vincetoxicum nigrum</i>)	Japanese Knotweed (<i>Fallopia japonica</i>)	Eurasian Watermilfoil (<i>Myriophyllum spicatum</i>)	Curly-leaf Pondweed (<i>Potamogeton crispus</i>)	Water Chestnut (<i>Trapa natans</i>)
Response Method	Manual	Manual	Manual	Manual	Manual
Response Type	Grubbing/Seed pods removed in larger patch	Grubbing 3 patches; 1 patch treated with hardware cloth	Hand pulling and floating material collected	Hand pulling and floating material collected	Hand pulled to roots
First Year of Treatment	2019	2019	2019	2019	2019
Years of Management	4	5	5	5	6
Site Managed in Present Year	Yes, PTM	Yes, PTM	Yes, PTM	Yes, PTM	Yes, PTM
Pre-Treatment Area (Acres)	1.40 acres	4.63 acres	311.24 acres	179.56 acres	90.24 acres
Pre-Treatment	-	26%-50%	-	-	-

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Percent Cover					
Total Area Managed in 2023 (Acres)	0.22 acres	1.32 acres	6.67 acres	6.67 acres	.04 acres
2023 Percent Cover	<5%	26%-50%; 51%-75%; 76%-100%	5-25%	5-25%	<5%
Number of Populations/Individuals	4 populations	6 populations	-	-	1 population
Years of Invasive Sp. Absence	0	0	0	0	0

**Tivoli Lake Preserve & Farm, Ramshorn Livingston Audubon Sanctuary,
Alfred Z. Solomon Viewing Shed**

County	Albany	Greene	Greene	Washington	Washington
Location	<i>Tivoli Lake Preserve and Farm</i>	<i>Ramshorn-Livingston Audubon Sanctuary</i>	<i>Ramshorn-Livingston Audubon Sanctuary</i>	<i>Alfred Z. Solomon Viewing Shed</i>	<i>Alfred Z. Solomon Viewing Shed</i>
Response Goal	Suppression	Eradication	Suppression	Suppression	Suppression
Target Species	Autumn Olive (<i>Elaeagnus umbellata</i>), Wild parsnip (<i>Pastinaca sativa</i>), Common reed (<i>Phragmites australis ssp. australis</i>), Common buckthorn (<i>Rhamnus cathartica</i>), Multiflora rose (<i>Rosa multiflora</i>)	Small Carpetgrass (<i>Arthraxon hispidus</i>)	Common Reed (<i>Phragmites australis</i>)	Brown Knapweed (<i>Centaurea jacea</i>)	Reed Canary Grass (<i>Phalaris arundinacea</i>)
Response Method	Cultural	Chemical	Chemical	Chemical	Chemical
Response Type	Prescribed Grazing	Foliar Spray	Foliar Spray	Foliar Spray	Foliar Spray
First Year of Treatment	2021	2023	2023	2022	2022
Years of Management	3	1	1	2	2
Site Managed in Present Year	Yes, PTM	Yes, Initial Treatment	Yes, Initial Treatment	Yes, PTM	Yes, PTM
Pre-Treatment Area (Acres)	2.75 acres	0.09 acres	4.79 acres	80.60 acres	1.28 acres
Pre-Treatment Percent Cover	5%-25%- autumn olive; No data on other species	51%-75%	<5%; <5%-25%	76%-100%	90%
Total Area Managed in 2023 (Acres)	3.67 acres	0.09 acres	4.79 acres	39.18 acres	4.54 acres
2023 Percent Cover	-	51%-75%	<5%; <5%-25%	51%-75%	76%-100%
Number of Populations/ Individuals	-	2 populations	2 populations	1 population	1 population
Years of Invasive Species Absence	0	0	0	0	0

Alfred Z. Solomon Viewing Shed

County	Washington				
Location	<i>Alfred Z. Solomon Viewing Shed</i>				
Response Goal	Suppression	Suppression	Suppression	Eradication	Suppression
Target Species	Spotted Knapweed (<i>Centaurea stoebe ssp. micranthos</i>)	Morrow's honeysuckle (<i>Lonicera morrowii</i>)	Wild Parsnip (<i>Pastinaca sativa</i>)	Japanese Knotweed (<i>Fallopia japonica</i>)	Common Buckthorn (<i>Rhamnus cathartica</i>)
Response Method	Chemical	Manual	Mechanical/ Chemical/ Manual	Chemical/ Manual	Manual
Response Type	Foliar Spray	Cutting/ Grubbing	Brush hogging/ Hand Pulling/ Foliar spray	Hand Pulling/ Foliar Spray	Cutting
First Year of Treatment	2023	2023	2022	2022	2022
Years of Management	1	1	2	2	1
Site Managed in Present Year	Yes, Initial Treatment	Yes, Initial Treatment	Yes, PTM	Yes, PTM	Yes, PTM
Pre-Treatment Area (Acres)	12.37 acres	0.74 acres	25.63 acres	0.2 acres	0.37 acres
Pre-Treatment Percent Cover	5%-25%	-	5%-25%; 26%-50%	76%-100%	51%-75%
Total Area Managed in 2023 (Acres)	12.37 acres	0.74 acres	48.85 acres	3.61 acres	-
2023 Percent Cover	5%-25%	-	26%-50%	51%-75%	-
Number of Populations/ Individuals	1 population	20 individuals	2 populations	1 population	-
Years of Invasive Species Absence	0	0	0	0	0

RFP Forest Pest Projects

Please note there is no pre-treatment available for these projects, however prior to future treatments pre-treatment data will be collected and reported with the same metrics as post-treatment metrics.

Huyck Preserve and Biological Research Station

County	Albany			
Location	<i>Huyck Preserve and Biological Research Station (multiple projects)</i>			
Response Goal	Suppression	Suppression	Suppression	Suppression
Target Species	Hemlock Woolly Adelgid (<i>Aldeges tsugae</i>)	Hemlock Woolly Adelgid (<i>Aldeges tsugae</i>)	Hemlock Woolly Adelgid (<i>Aldeges tsugae</i>)	Hemlock Woolly Adelgid (<i>Aldeges tsugae</i>)
Response Method	Chemical	Chemical	Chemical	Chemical
Response Type	Basal bark spray	Trunk Injections	Basal bark spray	Trunk Injections
Chemicals Applied	Imidacloprid and Dinotefuran (Safari)	Imidacloprid	Imidacloprid and Dinotefuran (Safari)	Imidacloprid
First Year of Treatment	2020	2020	2021	2021
Years of Management	1	1	1	1
Site Managed in Present Year	Initial treatment of trees near Rensselaerville Falls	Initial treatment of trees near Rensselaerville Falls	Initial treatment of trees surrounding Lincoln Pond	Initial treatment of trees surrounding Lincoln Pond
Diameter at Breast Height (in.) Minimum	>8 inches	>8 inches	>8 inches	>8 inches
Live Crown Ratio Minimum (%)	≥30%	≥30%	≥30%	≥30%
NYSHI Prioritization Complete?	Y	Y	Y	Y
Number of Stems Treated	394 trees	16 trees	350 trees	10 trees
Total Diameter Treated (in.)	5,839 inches	212 inches	5,775 inches	171 inches
2023 Post-Treatment HWA Density (Average)*	Plot 1: 0.0833; Plot 2: 0.1333; Plot 3: 0		Plot 1: 0; Plot 2: 1.063; Plot 3: 0	
2023 Post-Treatment Hemlock Canopy Health (Average)*	Plot 1: 3.167; Plot 2: 2.2; Plot 3: 1.926		Plot 1: 4.333; Plot 2: 3.438; Plot 3: 4.056	
2023 Post-Treatment Presence of Low Branches (Average)*	Plot 1: 1.83; Plot 2: 0.46; Plot 3: 0		Plot 1: 1.524; Plot 2: 0.938; Plot 3: 0.2778	
2023 Other stressors identified?	Plot 1: EHS present; Plot 2: EHS present; Plot 3: NA		Plot 1: NA; Plot 2: NA; Plot 3: NA	

Hyuck Preserve and Biological Research Station

County	Albany			
Location	<i>Huyck Preserve and Biological Research Station (multiple locations)</i>			
Response Goal	Suppression	Suppression	Suppression	Suppression
Target Species	Hemlock Woolly Adelgid (<i>Aldeges tsugae</i>)	Hemlock Woolly Adelgid (<i>Aldeges tsugae</i>)	Hemlock Woolly Adelgid (<i>Aldeges tsugae</i>)	Hemlock Woolly Adelgid (<i>Aldeges tsugae</i>)
Response Method	Chemical	Chemical	Chemical	Chemical
Response Type	Basal bark spray	Trunk Injections	Basal bark spray	Trunk Injections
Chemicals Applied	Imidacloprid and Dinotefuran (Safari)	Imidacloprid	Imidacloprid and Dinotefuran (Safari)	Imidacloprid
First Year of Treatment	2022	2022	2023	2023
Years of Management	1	1	1	1
Site Managed in Present Year	Yes, continued treatments on trees in Lincoln Pond Stand	Yes, continued treatments on trees in Lincoln Pond Stand	Yes, continued treatments on trees in Lincoln Pond Stand	Yes, continued treatments on trees in Lincoln Pond Stand
Diameter at Breast Height (in.) Minimum	>8 inches	>8 inches	>8 inches	>8 inches
Live Crown Ratio Minimum (%)	≥30%	≥30%	≥30%	≥30%
NYSHI Prioritization Complete?	Y	Y	Y	Y
Number of Stems Treated	352 trees	12 trees	366 trees	0 trees
Total Diameter Treated (in.)	5,962 inches	190 inches	5,952 inches	0 inches
2023 Post-Treatment HWA Density (Average)*	Plot 1: 0; Plot 2: 0; Plot 3: 0		-	
2023 Post-Treatment Hemlock Canopy Health (Average)*	Plot 1: 3.958; Plot 2: 2.947; Plot 3: 3.313		-	
2023 Post-Treatment Presence of Low Branches (Average)*	Plot 1: 0.7083; Plot 2: 0.421; Plot 3: 0.125		-	
2023 Other stressors identified?	Plot 1: NA; Plot 2: NA; Plot 3: NA		-	

*These applications were assessed using the binned 5-Point Scale: 0: <1% 1: 1 - 20% 2: 21 - 40% 3: 41 - 60% 4: 61 - 80% 5: 81 - 100%.

Appendix G: 2023 RFP Summaries

Proposal 1: Adirondack Research (A.R.) “AIS Tier 1 and 2 Lake Surveys”

Adirondack Research conducted early detection surveys of Tier 1 and Tier 2 AIS in waterbodies within the CR-PRISM. Surveys were completed on larger lakes accessible to motorized watercraft. The supplemental surveys increased the CR-PRISM capacity to perform early detections for AIS. Lake selections were based on several guiding parameters from the CR-PRISM Priority Waterbody Model with an emphasis on waterbodies near the Adirondack Blue Line. AR delineated survey data using Field Maps, an ArcGIS app, which allows for data to be shared directly to the iMapInvasives database. No new AIS macrophytes were identified in these surveys. Lakes surveyed in prior years will be monitored for changes in abundance from one year to the next. Data is shared with the public and private stakeholders. A total of seven lakes received detection and monitoring services covering 468 acres. Gaining permission to access private water bodies continues to be a barrier. Kieser Lake, a 150-acre waterbody, was a selected lake to which access was denied. The services performed by Adirondack Research are an extension of the macrophyte surveys done internally completed by the PRISM.

Proposal 2: Grassland Bird Trust Inc., Alfred Z Solomon Parcels A and B; “Critical Grassland Bird Habitat Restoration Using Chemical, Mechanical, Manual and Cultural Controls”

Grassland Bird Trust, (GBT) Inc., 501 (c)(3) is a not-for-profit land trust conserving critical habitat for endangered, threatened, and rapidly declining at-risk grassland birds. The project request for management occurred on two properties. The fourteen-acre Alfred Z. Solomon Parcel A (Ft Edward, NY) and the sixty-four-acre Parcel B (Argyle, NY). The parcels are within the 2,000-acre core of NYS Washington County Grassland Important Bird Area (IBA) prioritized by the NYS DEC for their habitat richness. The two parcels have a valuable ecological connection to the 500 acres of Washington County Grassland Wildlife Management Area. Educational guided bird walks for the public, sponsored by GBT, are held multiple times a year. These properties are open to the public with parking, habitat signage, and a viewing platform.

GBT performed the following services through the RFP.

- Chemical, cultural, and mechanical control(s) of brown knapweed (*Centaurea jacea*), reed canary grass (*Phalaris arundinacea*), wild parsnip (*Pastinaca sativa*) and Japanese knotweed in areas that were identified in 2021 and 2022. The proposal utilized adaptive management strategies, continued post-treatment monitoring observations, and reporting of results which have implications for future management options across the region including the Washington County Grasslands Management Area. Appropriate NYS DEC wetland permitting, and permissions were executed prior to the commencement of the control activities. The exclusion of secondary satellite invasive species populations was also conducted to prevent species from reclaiming the landscape where target invasive species were removed.
- Restoration efforts included cultural controls to re-establish grasses present on-site and re-seed with appropriate grassland species. Native and non-native plant counts were completed in chosen quadrants to assess the effectiveness of treatments. Pre and post treatment photos were taken to visually support the results of the program. All presence and treatment data were uploaded to iMapInvasives. Bird counts will be monitored over time and reported.
- The GBT designed, purchased, and installed two sets of invasive species boot brush stations with behavioral messaging. The signs have been installed where public parking and viewing platforms are located.

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- The GBT also held a volunteer engagement workday to help remove invasive species encroaching on the property in parking areas and property lines. Twelve volunteers contributed 190 hours of work removing invasive species in highly probable areas.

Proposal 3 Edmund Niles Huyck Preserve, Inc. “Enhancing Ecosystem Health by Management and Monitoring of TIS, AIS and Forest Pests”

The Edmund Niles Huyck Preserve proposal is a continuation of work from prior years. The proposal addressed a diverse set of objectives and priority actions of all five of the CR-PRISMs strategic goals. Outside the confines of the proposal the Preserve has been sharing the result of successes with other members of the Partnership and has started to attend statewide land manager meetings with related state agencies. The robust RFP delivered on well-defined targets for treatments, implemented adaptive management strategies, and provided educational programming. The preserve has also collaborated with the CR-PRISM with biocontrol releases and assessments. The *Hypena opulenta* moth, a biocontrol for swallowwort vine control, has been released under the PRISM’s guidance and support through the NYISRI. Additional biocontrol’s have also been released through the NYS Hemlock Initiative. The preserve also partners with the CR-PRISM in education and outreach programs with targeted audiences.

The RFP project advanced the Huyck Preserve’s conservation goals in invasive species management and monitoring in the terrestrial, forest, and aquatic realms. The Preserve hired seasonal staff and purchased supplies needed to accomplish its invasive species goals. Work continued managing and monitoring terrestrial and aquatic invasive plants as outlined in the Huyck Preserve’s invasive species management and monitoring plan. Educational lectures and lessons to inform the public about invasive species occurred, including a volunteer engagement program. The preserve is connected to surrounding ecologically significant state parcels and holds 15 rare communities as identified by the NYNHP within its borders. The preserve implemented alternative controls alongside traditional best management practices. All treatment records have been reported in iMapInvasives.

The 2023 goals for invasive species management were as follows:

- Perform a third round of treatment of hemlock woolly adelgid (HWA) at Lincoln Pond, a stand earning the highest priority for protection based on New York State Hemlock Initiative’s (NYSHI) prioritization tool.
- Pursue elimination of species emerging at the Preserve and possible to eradicate across the PRISM region (Tier 1 and 2)
- Pursue elimination of small, discrete populations of invasive species within the Preserve that are widespread regionally (Tier 3)
- Contain Tier 4 invasive species populations that are too large or labor intensive to eradicate for now but that are relatively discrete and may be prevented from spreading.
- Engage the public to increase awareness of invasive species identification, prevention, monitoring and management through education and outreach activities and continue to engage volunteers including through the Volunteer Trail Steward program.
- Continue innovative methods for invasive species management.

Proposal 4 National Audubon Society: Eradication of a Tier 2 Species: “Small Carpetgrass (Anthraxon hispidus) Removal at the Ramshorn-Livingston Sanctuary”

The Ramshorn-Livingston Sanctuary is a high-valued conservation area, with elemental occurrences of rare and threatened species. Located in Catskill NY, the sanctuary contains over 436 acres of tidal marsh and swamp, upland forests, and fallow farm fields. Ramshorn-Livingston contains the largest tidal swamp in the northern Hudson River estuary. Audubon New York and Scenic Hudson cooperatively own and manage the property. The tidal wetland has been identified by the Hudson River Task Force (HRTF) as a priority action site.

The main target species, small carpetgrass (*Anthraxon hispidus*), a high threat prohibited Tier 2 species, was treated alongside common reed (*Phragmites australis*), a very-high threat Tier 4 species, in a rapid response project. Funding for the program permitted two chemical treatments of the site area with restoration. The target population is small enough that local eradication is feasible. Glyphosate was used instead of mechanical means in order to reduce soil disturbance to the area. The area is subject to flooding and has a high likelihood of erosion from wave action from the Hudson River. Follow-up monitoring occurred, and no individuals of small carpetgrass were found. The nearby patch of *Phragmites australis* was also successfully chemically treated to ensure that native marsh vegetation continued to recolonize the area where the small carpetgrass was treated. Treating this area also ensures that the native vegetation is migrating with sea level rise, rather than invasive species such as common reed. Treatment actions were reported in iMapInvasives.

Proposal 5 Friends of Tivoli Lake Preserve and Farm Inc, “Grazing Project”

The novel program is a suppression effort with passive education. Rotational grazing that utilized a flock of sheep was used to suppress Common Reed that persists along a recently renovated path in Tivoli Lake Preserve. The management of the common reed provided greater visibility along trailside in the preserve while increasing safety of visitors. Educational signs were posted along the trail for the viewing public while the grazing project was active. The project is a continuation of efforts that raised awareness of invasive species and how grazing efforts can be used to suppress well-established Tier-4 plants. A bio-assessment was completed before and after to measure progress. Prior bioassessments are documented and the rotational grazing polygons have been uploaded in iMapInvasives. The value of outreach in the environmental justice area is significant. Invasive species works and signage are components in Friends of Tivoli Lake Preserve events. The friends group also maintains an active website <https://friendsoftivoli.org/>.

Memorandum of Understanding(s)

The CR-PRISM collaborated with strategic partners to deliver a series of Memorandum of Understandings (MOUs) to expand our capacity from the 2023 CR-PRISM Work Plan. In particular, the MOUs were executed to boost the PRISM’s ability enhance important projects such as monitoring and detection services, restoration action, and a biocontrol assessment.

Saratoga Plan MOU

A restoration program was executed with Saratoga PLAN in a collaborative effort. The Glowegee Creek Trails Preserve, now under active and ongoing management, was cleared of common invasive species in highly probable trail sides. Restoration has occurred alongside control efforts in which live stakes, native plantings, and reseeding have occurred. The trails of the Glowegee Creek Preserve traverse a geological fault line with limestone outcrops, rare plants are found in the preserve. The CR-PRISM supplied funding for the restoration project and personnel to

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lead the volunteer removal efforts. Saratoga Plan garnished volunteer participants through Regeneron, a biotechnology company, and their sustainability program. The PRISM, in a collaborative effort with Saratoga PLAN supervised 25 volunteers and staff to complete 150 hours of work at the site.

Edmund Niles Huyck Preserve MOU

The CR-PRISM secured and released, in a collaborative effort, an approved biocontrol agent (*Hypena opulenta*), a moth feeding insect for the control of swallowwort (*Cynanchum* spp.). In order to release funds through our contract service line for this rare opportunity, CR-PRISM partnered with the Huyck Preserve. The Preserve is an idea place with a viable population of Swallowwort to monitor for predation. The Huyck Preserve is a biologic research center with infrastructure and capacity to deliver on such actions. The Huyck Preserve, with funds from the MOU, purchased specialized equipment and predators to execute the program. Both PRISM and Preserve staff assisted in the monitoring of the program.

Cornell University eDNA Genomics Core Facility (EGCF) Lab Service Agreement

The Hudson River Task Force has been collecting eDNA samples for both invasive animal and plant species at prioritized sites across the lower and mid-Hudson River Basin. The CR-PRISM, the NYS DEC Hudson River Estuary Program, and the NYS Water Resource Institute NYS DEC Region 3 AIS Coordinator were the four major stakeholders in collecting samples. The program conducted early detections for forty-eight species, (25 aquatic invasive plants and 23 animals). The full panel of species presence report is currently pending. Cornell University's eDNA Genomics Core Facility (EGCF) Lab will analyze collected samples. The early detection program supplements the visual and macrophyte surveys performed by the CR-PRISM along with the prevention measures provided through the PRISM's Watercraft Inspection Steward Program. Results will be used to determine future management actions.

Appendix H: iMapInvasives PRISM Summary Report 2023

Top Ten Species Reported: Presence (Confirmed), Not-Detected, Treatment

Presence Detected	Statewide	
1	Eurasian Watermilfoil	4,187
2	European Common Reed	1,626
3	Curly Pondweed	1,571
4	Multiflora Rose	1,445
5	Starry Stonewort	1,394
6	Oriental Bittersweet	1,147
7	Giant Hogweed	1,060
8	Buckthorn	1,029
9	Japanese stiltgrass; Nepalese Browntop	1,012
10	Southern Pine Beetle	947

CRP	
European Common Reed	1,392
Eurasian Watermilfoil	986
Japanese Knotweed	720
Garlic Mustard	388
Purple Loosestrife	318
Bush Honeysuckle (sp. unknown)	292
Hemlock Woolly Adelgid	245
Common Carp	204
Oriental Bittersweet	155
Broadleaf Watermilfoil	154

Not-Detected	Statewide	
1	Hemlock Woolly Adelgid	1,525
2	Garlic Mustard	981
3	Giant Hogweed	968
4	European Common Reed	564
5	Beech leaf disease nematode	456
6	Japanese Knotweed	357
7	Purple Loosestrife	241
8	Longhorn Tick	163
9	Curly Pondweed	155
10	Eurasian Watermilfoil	149

CRP	
Hemlock Woolly Adelgid	503
Beech leaf disease nematode	111
Spotted Lanternfly	77
Longhorn Tick	15
Water Chestnut	7
Yellow Iris	7
Banded Mystery snail	6
Brazilian Waterweed	6
Brittle Naiad	6
Carolina Fanwort	6

Treatment	Statewide	
1	Garlic Mustard	176
2	Japanese Knotweed, Japanese Bamboo	99
3	Water Chestnut	98
4	Wild Parsnip	54
5	Autumn Olive	51
6	Common reed grass, phragmites	45
7	Japanese Stiltgrass	34
8	Purple Loosestrife	32
9	Pale Swallowwort	23
10	Oriental Bittersweet	16

CRP	
Autumn Olive	61
Wild Parsnip	54
Phragmites	31
Purple Loosestrife	30
Japanese knotweed	9
Water Chestnut	8
Pale Swallowwort	7
Multiflora Rose	7
Common Barberry	6
Wild Carrot	5

Number of Unique Species Reported (Presence Data Only)

Number of Species Reported	
Statewide	238
CRP	101

Summary Numbers: Presence, Not-Detected, Searched Areas,

Acres of Searched Areas by PRISM

	Presence Records		Not-Detected Records	Searched Areas Records	Acres of Searched Areas
	Confirmed	Unconfirmed			
Statewide	31,142	2,754	20,188	38,094	253,667
CRP	1,576	254	1,008	2,391	11,098

Summary: Presence and Not-Detected Records by Data Entry Method

	Presence				
	Online	Mobile App	Bulk Upload	NS Survey123	Custom Jurisdiction Apps
Statewide	1,726	5,660	10,759	1,090	14,682
CRP	212	731	409	38	440

	Not Detected				
	Online	Mobile App	Bulk Upload	NS Survey123	Custom Jurisdiction Apps
Statewide	850	11,434	1,542	1,068	5,294
CRP	52	515	145	139	157

Reason for Not Detecting

Reason for Not Detecting	Statewide	CRP
Presumed eliminated due to treatment	2,577	7
Habitat No Longer Exists	13	0
Low Detectability (wrong timing, season, low abundance, etc.)	270	71
Species has never been detected here previously	1,302	151
<i>Not defined</i>	15,360	779

CR-PRISM: Species That Are Confirmed and New to County

Species Name	County of Report
Elm zigzag sawfly	Albany
Beech leaf disease nematode	Albany
Southern Pine Beetle	Columbia
Creeping Smartweed	Columbia
Yellow Foxglove	Columbia
Giant Hogweed	Fulton
Asian Longhorned Beetle	Greene
Amur Peppervine	Greene
Giant Hogweed	Greene
Starry Stonewort	Herkimer
Spongy Moth	Herkimer
Butter-and-eggs	Herkimer
Autumn-olive	Herkimer
Dwarf Honeysuckle	Herkimer
Elongate Hemlock Scale	Montgomery

Species Name	County of Report
Japanese stiltgrass; Nepalese Browntop	Montgomery
Starry Stonewort	Rensselaer
Elm zigzag sawfly	Rensselaer
Leafy Spurge	Rensselaer
Elm zigzag sawfly	Saratoga
Amur Corktree	Saratoga
Field Garlic	Saratoga
Hairy Bittercress	Saratoga
Guelder-rose Viburnum	Saratoga
Elm zigzag sawfly	Warren
Creeping Thistle	Warren
Elm zigzag sawfly	Washington
Bell's Honeysuckle	Washington
Amur Honeysuckle	Washington
Bell's Honeysuckle	Montgomery

Number of Unique Observers/Users (That Submitted Records In 2023)

Records tagged to an Organization		
	Statewide	CRP
Number of Unique Users Submitting Presence Observations (confirmed and unconfirmed)	335	48
Number of Unique Users Submitting Not-Detected Records	133	16
Number of Users Submitting Treatment data	55	14

Records NOT tagged to an Organization (No Organization or Blank)		
	Statewide	CRP
Number of Unique Users Submitting Presence Observations (confirmed and unconfirmed)	816	123
Number of Unique Users Submitting Not-Detected Records	240	22
Number of Users Submitting Treatment data	6	0

Records tagged to the PRISM Organization*		
	Statewide	CRP
Number of Unique Users Submitting Presence Observations (confirmed and unconfirmed)	76	7
Number of Unique Users Submitting Not-Detected Records	50	5
Number of Users Submitting Treatment data	23	4

Top Ten Organizations Submitting Presence and Not-Detected Records

STATEWIDE							
Organization Name	Total Records	Presence*	Not-Detected	Organization name	Total Records	Presence*	Not-Detected
New York State Department of Environmental Conservation (NYS DEC)	9,959	7,634	2,325	Western New York PRISM (WNY PRISM)	2,125	2,012	113
Adirondack Park Invasive Plant Program (APIPP)	7,338	3,757	3,581	Capital Region PRISM (CR-PRISM)	1,521	839	682
Lower Hudson (LH) PRISM - Volunteer	4,458	4,458	0	St. Lawrence and Eastern Lake Ontario PRISM (SLELO PRISM)	1,262	1,128	134
Adirondack Research LLC	2,707	2,648	59	New York Natural Heritage Program (NYNHP) - NY	989	976	13
Finger Lakes Institute (FLI)	2,145	2118	27	Catskill Regional Invasive Species Partnership (CRISP)	821	652	169

CR-PRISM							
Organization name	Total Records	Presence*	Not-Detected	Organization name	Total Records	Presence*	Not-Detected
Capital Region PRISM (CR-PRISM)	1,482	832	650	Adirondack Park Invasive Plant Program (APIPP)	19	15	4
New York State Department of Environmental Conservation (NYS DEC)	563	400	163	Albany Department of Water and Water Supply	15	15	0
Huyck Preserve and Biological Research Station	153	153	0	State University of New York at Cobleskill	14	14	0
New York Natural Heritage Program (NYNHP) - NY	152	143	9	Grassland Bird Trust	13	13	0
New York State Office of Parks Recreation and Historic Preservation (NYS OPRHP)	59	51	8	Cornell University (NY)	8	8	0

* Confirmed and Unconfirmed

Appendix I: Equipment List

Power Tools/Large Equipment:

Item Name	Number Available
Weedwhacker (STIHL)- FS 131, FS 56 RC (2)	3
Brush cutter (STIHL)- FS 360C	1
Battery Operated Chainsaw (STIHL)- MSA 120C	1
Gas powered Chainsaw (Stihl)- MS211C	1
Battery Operated Hedge Trimmers (Kobalt)	1
Battery Pack & Charger for STIHL chainsaw	2
Battery Pack & Charger for Kobalt trimmers	1
Backpack Vacuum	1
Backpack Sprayer	1

Large Hand Tools:

Item Name	Number Available
Shovels (Razorback)	6
Shovels (Ames)- used for Giant Hogweed	4
Rogue Hoe (Top Dog)	4
Rogue Hoe (The Beast)	1
Rogue Hoe (40" handle)	1
Rogue Hoe (54" handle)	1
Rogue Hoe (60" handle)	1
Pick Mattock (2.5 lbs.)	2
Pick Mattock (5 lbs.)	1
Loppers (Fiskars)	5
Loppers- Ratchet Drive (Fiskars)	3
Hard Rake (Anvil)	4
Hard Rake (Razorback)	2
Spade (Fiskars)	2
Spade (Razorback)	2
Weed Wrench (Puller Bear)	1

Small Equipment:

Item Name	Number Available
Small Cooler (1 gallon)	2
Large Cooler (5 gallon)	1
Aquatic Rake	6
Leaf Rakes	6
Dry Bag	2
Ripstop Tarp	4
Plankton Net	1
Muck Boots	2 pairs (size 7 &9)
Chest Waders	2 (size 11, 7)
Hand grubbers	6

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Handsaw	7
Pruners	5
Trowel (Ames)	3
Cut & Hold Pruners (35 inch)	2
Buckthorn baggies	56
Hand lens	10
Headlamp Slonik (4), Coast XPH34R (2)	6
DBH Tape (Forestry suppliers)	5
Snowshoes (MSR)	22 inch-2, 25 inch- 1
Harness (STIHL Brush cutters/weedwhackers)	3
Micro spikes (Kahtoola)	S-1, M-1, L-1
Trash bins	2
Flagging tape	12 rolls
Flag markers	100+
11-inch Cable Ties	500
14-inch Cable Ties	100
Jet sled (Eagle claw shappell)	2
Kayak paddles Werner (3), Field & Stream (2), Swift (1)	6 sets

Personal Protective Equipment:

Item Name	Number Available
First Aid Kits	14
Tie down straps for boats	6
Life jackets	Coast Guard certified (4), NRS Zen Life vest- L/XL (1), NRS Chinook Life Vest- SM/M (1), NRS Shenook Life vest- XS/M (1), Unbranded (2)
Inflatable Life jacket belt/vest (Eyson 33-M)	2
Ear Protection (Bilsom & Husqvarna)	2
Forestry High-visibility vests	8 regular, 4 XXL
Safety Goggles (Cover Glasses)	20
Safety Goggles (Don't cover glasses)	19
Gaiters (Lymeez)	8 pairs
Chainsaw Chaps (Husqvarna)	1
Chainsaw Chaps (Forester)	1
Long Cuff PVC Coated Gloves (No latex)	9
Long Cuff Gloves (with Latex)	3
Forestry Helmets	6
Helmet with face shield	4
Mesh face shield	4
Plastic face shield	2
Earplugs	100+
Tyvek Shirts	M-5, L-20, XL-57, 2XL-16

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Tyvek Pants	M-1 XL-5
Tyvek Coveralls	M 14 (w/booties), M 27, L 2 (w/booties), L-67, XL-25
Garden gloves	20 pairs
Work gloves	5 pairs
Buckets	5
28 in cone	4
18 in cone	1
Mariner 110 Fire Extinguisher (Kidde)	3
Personal Floatation Device (Bradley)	2
SOS Distress Light- White eVDS (C-1003)	1
Water Rescue Rope (West Marine)- 75ft	1
Buoys (Zokizoki)	4
C- Light H2O Emergency Signaling Light	2
Air pump	1
Bilge Pump (Better Boat)	1

Decontamination Equipment:

Item Name	Number Available
Disinfectant bottles (Large)	10
Long-handled Brush	3
Bleach (Gallon)	1
Dish soap	5
Heavy-duty scrub brush (Handheld)	2
Short Handled brush	2
Nitrile Gloves	1 box (XL)
Water jugs (6-gallon, 5-gallon, 3-gallon)	3
Brooms	4

Electronics:

Item Name	Model #s	Number Available
Galaxy Tab Active2 Tablets	SM-T570	7
Huawei MediaPad T3 Tablets	KOB-W09	4
Samsung Galaxy Tab Active 3 Tablet	SM-T390	2
Laptop (Dell)	Latitude 7400, 7410, 7420, 7420 7430, 7490	6
Monitor Screen	U2415b	2
Fish Finder (Lowrance)	504464306	

Vehicles & Boats:

Item Name	Number Available
Hornbeck Single Kayak	2
Hornbeck Tandem Canoe	1
Motor Lowe Boat (16.9ft)	1
Pelican Trailblazer 100 Kayak (Pink)	1
Trophy 126 by Future Reach Kayak (Green)	1

Outreach Materials (Does Not Include Disposable Goods):

Item Name	Number Available
Folding tables (Boat Steward)	7 +27?
Longer Folding Tables	2
Canopy Tents-100 ft ²	5
Caravan Canopy, E-Z UP (2), Eurmax, Unbranded (2)	4
Canopy Weights (US Weights 7.5lbs each)	2
EZ Up Weight Bags (holds 25lbs.)	5
Umbrellas	28
Sandwich Boards	20
Camping Chairs	1
Step Ladder (5 ft)- Gorilla Ladder GLA4xb	2
Captain’s Chairs	

Research Equipment:

Item Name	Number Available
Hypena Tent	3
Meter Man	1
Meter Stick	4

Appendix J: Operational Capacity of CR-PRISM

Name	PRISM Role	Operational Capacity
Kristopher Williams	PRISM Coordinator	<ul style="list-style-type: none"> • Pesticide Technician- 3a • US Coastguard Auxiliary, Boat America Safe Boating Course • Incident Command System Training • Game of Logging Levels 1,2 and 3
Hannah Coppola	Aquatic Program Manager	<ul style="list-style-type: none"> • US Coastguard Auxiliary, Boat America Safe Boating Course
Sam Schultz	Terrestrial Invasive Species Coordinator	<ul style="list-style-type: none"> • Pesticide Technician-3a • Incident Command System Training • Game of Logging Level 1
Addison Kubik	Education & Outreach Coordinator	<ul style="list-style-type: none"> • Incident Command System Training • Making Moves: Creating Conservation Movements with Brooke Tully Course

Citations

1. Adam Lampert and Andrew M. Liebhold “Optimizing the use of suppression zones for containment of invasive species.” Ecological Applications 2023