2020

WNY PRISM Annual Report

Partnership for Regional Invasive Species Management

WNY PRISM

Prepared By

Andrea Locke, WNY PRISM Coordinator

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Cover Photo: Early Detection Project Manager Brittany Hernon removes slender false brome from Carlton Hill Multiple Use Area, amid dame's rocket, another invasive species.

All photos used in this annual report, unless otherwise cited, are property of WNY PRISM.

Introduction

Western New York Partnership for Regional Invasive Species Management (WNY PRISM) faced many challenges brought by the COVID-19 pandemic. With the pandemic, changes needed to address the health and safety of our staff and the public with whom we work so closely impacted how we operate. We started the year with an ambitious work plan and despite the hurdles and detours we faced we were able to accomplish a great deal. Some of our programs were more greatly impacted than others by COVID-19. Our Watercraft Inspection Stewardship Program, survey efforts and data collection protocol development were able to move forward with relatively little impact once the appropriate health and safety protocols were put in place. While on the other hand, our educational programs and invasive species removal efforts were impacted more significantly.

Due to the dedication of WNY PRISM staff and the NYS Department of Environmental Conservation, the Watercraft Inspection Stewardship Program was able to start as scheduled on Memorial Day weekend. The program was bolstered this year due to an increase in launch usership, likely due to boating being a great option for recreational social distancing. Survey efforts also moved forward with little impact due to them being primarily an individual, field-based effort.

Prior to the emergence of COVID-19, WNY PRISM had established a focus on improving data collection protocols, data organization and analysis. Significant effort was put towards creating new data collection protocols and updating established protocols to incorporate new tools, such as iMap Mobile Advanced and Survey 123. The invasive species survey protocol and early detection site monitoring protocol received updates, and a new early detection site assessment protocol was developed. Each of these protocols were used by WNY PRISM staff throughout the season and were provided to partners. Improved data organization tools were also developed to assist with the increasing amount and types of data being collected including a shared Geodatabase.

In response to COVID-19, educational efforts were shifted online, and new emphasis was placed on expanding the use and effectiveness of social media platforms and content. Despite their initial delayed start, and early season travel limitations, the Crew were able to complete nearly all planned survey, invasive species removal and habitat restoration projects.

We would like to thank our host organization, the Great Lakes Center at SUNY Buffalo State and the Research Foundation for SUNY Buffalo State, as well as the NYS Invasive Species Program for their continued support. We would also like to thank WNY PRISM's partners including the dedicated members of our Steering Committee and Working Groups. Invasive species are a landscape issue and no one organization or agency can address the threat of invasive species alone. WNY PRISM looks forward to continuing to build relationships and work together to achieve long-lasting, sustainable success.

WNY PRISM 2020 Programmatic Highlights

- WNY PRISM has worked with **171** partners including **11 new partners** in 2020.
- Hired new **Aquatic Invasive Species Program Manager**, Nicole Smeenk.
- Hired **28 seasonal staff members** – Invasive Species Management Assistants (3), Education and Outreach Assistant (1), Boat Stewards/Environmental Educators (19), GIS Technician (1), Survey & Monitoring Technicians (2), Data Analysts (2).
- **Managed 231 acres** across **39 sites**.
- The Crew Assistance Program generated **21 proposals** from **14 partners.**
- Invasive species targeted for removal included **invasive shrubs, Japanese stiltgrass, Japanese angelica tree, water chestnut, water lettuce, water hyacinth, European frog-bit, knotweed, mugwort, Canada thistle, *Phragmites*, reed canarygrass** and **mile-a-minute**.
- **14 acres restored** with native seed and plugs.
- Developed and updated several **data collection protocols** to incorporate advanced tools.
- **77 sites surveyed** for invasive species including **51 early detection sites** and **98 miles of trail**.
- Developed **Japanese stiltgrass habitat suitability model** to focus survey efforts.
- WNY PRISM staff submitted **4109 records** to iMapInvasives including **62 unique species**.
- The **top five recorded** invasive species for WNY PRISM in 2020 are **yellow flag iris, multi-flora rose, bush honeysuckle, common buckthorn and garlic mustard**.
- The **top 5 not detected** invasive species for WNY PRISM in 2020 are **slender false brome**, **flowering rush**, **Japanese stiltgrass**, **water chestnut** and **hemlock woolly adelgid**.
- Tabled at **3 events**, delivered **26 presentations** and held **4 workshops,** resulting in **935 direct contacts**.
- Developed **Spring and Fall Webinar Series** that reached **364 people** – presentations were uploaded to WNY PRISM's YouTube Channel.
- WNY PRISM trained **220 volunteers**.
- Developed **4 commitment banners** and a WNY PRISM **informational banner**.
- Facebook posts **reached 49,419 individuals** and drove **329 visitors** to the website, a **101% increase** from 2019.
- Posted **202 Instagram stories** viewed **8,589** times, a **1,053% increase** from 2019.
- Provided **7 Boot Brush Stations** to partners.
- The Watercraft Inspection Stewardship Program achieved a **89% acceptance rate** with **1,309 interceptions** – the most encountered species were **Eurasian watermilfoil (717) and curly leaf pondweed (463)**.
- Boat Stewards conducted **23,041 boat inspections** working at **19 launches** across **6 counties.**
- WNY PRISM Watercraft Inspection Stewardship Program received the **2020 Erie County Environmental Management Council Environmental Excellence Award**.

Background

An invasive species is one that is non-native to the ecosystem under consideration and whose introduction causes, or is likely to cause, economic or environmental harm, or harm to human health. As the world has become more interconnected and climate change has combined with traditional human-aided forms of disturbance, the negative impacts of invasive species are increasingly being felt. Western New York is particularly at risk to the threat posed by invasive species due to the long history of human development and alterations to the landscape, our adjacency to Lakes Erie and Ontario, our placement within both the Great Lakes Basin and Mississippi River Watershed, and due to our position along well-traveled commerce and transportation corridors.

Recognizing the growing threat of invasive species, NYS established the Invasive Species Task Force (ISTF), a multi-stakeholder working group made up of agencies, conservation organizations and businesses co-led by the NYS Departments of Environmental Conservation (DEC) and Agriculture and Markets (DAM), with the purpose to investigate invasive species issues and provide recommendations to the Governor and Legislature. The ISTF report, presented in 2005, identified 12 key recommendations which, when implemented, would allow NYS to effectively address invasive species.

Based upon the recommendations from the ISTF, NYS established the Invasive Species Council (ISC) and Invasive Species Advisory Committee (ISAC) and formed within the DEC the Office of Invasive Species Coordination, now the Invasive Species Coordination Section (ISCS). Among the remaining 12 key recommendations were those that led to the creation of the New York Invasive Species Research Institute (NYISRI), establishment of the New York Invasive Species Database/iMapInvasives Program (iMap), and that which supported the creation of eight PRISMs, regional public-private partnerships designed to strategically deliver invasive species management functions across the state. Established in January 2014, WNY PRISM is one of these eight partnerships. These entities, along with the NYS Office of Parks, Recreation and Historic Preservation (NYS Parks), make up the statewide Invasive Species Program.

The WNY PRISM region consists of the 8 western-most counties in NYS: Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans and Wyoming.

WNY PRISM is a sponsored program of the Research Foundation for SUNY Buffalo State and is hosted by the Great Lakes Center at SUNY Buffalo State. Funding for WNY PRISM is provided by the Environmental Protection Fund through a contract with DEC. Additional funding is provided through federal, state and foundation grant programs including the Great Lakes Restoration Initiative.

WNY PRISM

Regional Description

The WNY PRISM region encompasses the eight western-most counties in NYS (Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans and Wyoming) and is the only PRISM region to include two of the Great Lakes: Lakes Erie and Ontario. Regional borders include those with Pennsylvania, Ontario, Canada, and Finger Lakes PRISM.

The Old Portage Bridge crosses the Genesee River in Letchworth State Park. Opened to traffic in 1875 after the original, built in 1851, was destroyed by fire, the bridge was demolished to make way for the new Genesee Arch Bridge (inset, photo from Wikipedia).

Home to some of NYS's most impressive natural features including Niagara Falls and the Niagara River Gorge, Letchworth State Park, and Zoar Valley, western New York boasts a diverse landscape. The Niagara River Corridor was designated by the United States as a Wetland of International Importance under the Ramsar Convention. Rare species found in WNY include the federally endangered eastern massasauga rattlesnake (*Sistrurus catenatus*), federally threatened Houghton's goldenrod (*Solidago houghtonii*), state endangered queen snake (*Regina septemvittata*), and state threatened yellow giant hyssop (*Agastache nepetoides*).

Four major watersheds (Lake Erie-Niagara River, Lake Ontario and Minor Tributaries, Genesee River, and Allegheny River) are found within the region and WNY PRISM is part of both the Great Lakes and Mississippi River Basins. Habitats and natural features found within the region include northern hardwood and conifer forests, beech-maple forests, coastal plains, wetland communities including bogs and fens, significant riverine systems and glacial landforms such as moraines and kettle ponds.

Land dedicated to agricultural production includes 1.38 million acres divided among 6,315 farms, with a median farm size of 75 acres (U.S. Agricultural Census, 2017). The highest volume agricultural products produced in western New York are corn, wheat, oats, soybeans, hay, fruit (including grapes/wine) and cattle. According to a 2007 U.S. Department of Agriculture Report, three western New York counties (Chautauqua, Genesee and Wyoming) ranked among the top 10 in agricultural sales for NYS, with Chautauqua County ranked as the top grape producer.

WNY PRISM's eight-county region is home to over 1.5 million people and 6,440 square miles. Buffalo, the second most populated city in NYS, was settled in the mid-1700s as a trading post. Over the next 200 years, Buffalo and the surrounding area became an economic center for shipping, manufacturing, and hydropower. The long history of human interaction with the landscape has had a direct influence on invasive species presence, distribution and the negative impacts felt across the region.

Mission

The WNY PRISM mission is to proactively identify, evaluate and address invasive species priorities in western New York using a coordinated partnership of local professionals, organizations and private citizens to improve, restore and protect local aquatic and terrestrial resources.

Operational Structure

WNY PRISM's operational structure consists of staff, a Steering Committee, Working Groups, partners and stakeholders. WNY PRISM staff include a Director, Coordinator, Program Managers and several seasonal positions.

The Steering Committee is comprised of a core group of individuals representing a variety of organizations, agencies, businesses and citizens, and is representative of the invasive species management needs of the WNY PRISM region. Steering Committee meetings take place quarterly with additional communication and meetings held as needed. Participation in the Steering Committee is strictly voluntary.

Working Groups (Terrestrial, Aquatic, Education and Outreach) have been established and meet on an ongoing basis or as needed, focusing on the completion of specific projects.

Full Partnership Meetings are held twice a year. The Spring Partner Meeting is held in April, ahead of the field season, and the Fall Partner Meeting is held in October or November. Working Groups and Full Partnership Meetings are open to everyone however registration is sometimes required. For more information on WNY PRISM's operational structure, please see WNY PRISM's Operational Guidelines.

WNY PRISM held socially distanced staff meetings in 2020, like this one held at Ellicott Creek Park in July. Pictured left to right is Marcus Rosten, Emily Thiel, Brittany Hernon, and Lucy Nuessle.

WNY PRISM Steering Committee

Buffalo Niagara Waterkeeper	Claudia Rosen
Cornell Cooperative Extension of Erie County	Sharon Bachman
Ecology & Environment, Inc. - retired	Paul Fuhrmann
New York Sea Grant	Monica Miles
NYS Certified Nursery and Landscape Association/Chestnut Ridge Nursery	Bob Smith
NYS Department of Transportation	Mark Bogdan
NYS Department of Environmental Conservation	Jennifer Dunn
NYS Office of Parks, Recreation and Historic Preservation	Aaron Heminway
Roger Tory Peterson Institute/Chautauqua County	Jonathan Townsend
U.S. Army Corps of Engineers – Buffalo District	Lynn Greer
U.S. Department of Agriculture – Natural Resources Conservation Service	Mike Shaw
U.S. Fish and Wildlife Service – Lower Great Lakes Fish and Wildlife Conservation Office	Colleen Keefer

WNY PRISM Staff

Dr. Christopher Pennuto
Director

Andrea Locke
Coordinator

Brittany Hernon
Program Manager – Early Detection

Lucy Nuessle
Program Manager – Terrestrial Invasive Species

Marcus Rosten/Nicole Smeenk
Program Manager – Aquatic Invasive Species

Emily Thiel
Program Manager – Education & Outreach

Seasonal Staff – 2020

Invasive Species Management Assistants
Julia Biondi · Kyle Serena · Jason Kappan

Education and Outreach Assistant
Danielle Dolan

Lead Boat Stewards
Emily Harrower · Katrina Smith

Boat Stewards/Environmental Educators

Michele Carmelia · Bryan Colby · Kelly 'Layla' Crabtree · Alexandra DePonceau · Riley Delpriore
Lily Engebrecht · Devyn Goldberg · Bianca Gonzales · Matthew Hahn · Daniel Korff · Sam Krebs
Anna Lee · Vincent Manuella · Brandon Metzinger · Jarred O'Connor · Brianna Saylor · Jesse Stevens

Early Detection Survey & Monitoring Technicians

Amanda Gabryszak · Alexander Krest

GIS Technician

Melissa Boglioli

Data Analysts

Sonya Bayba · Brianna Saylor

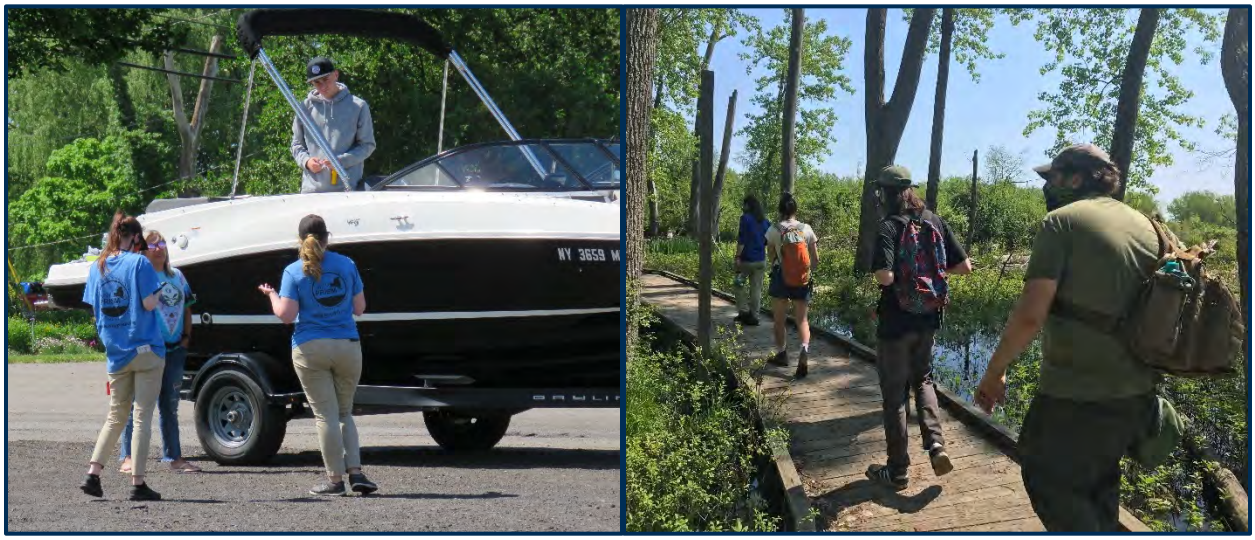
WNY PRISM 2020 Seasonal Staff: clockwise from center – Jason Kapan, Melissa Boglioli, Danielle Dolan, Amanda Gabryszak, Julia Biondi, Alexander Krest and Kyle Serena.

WNY PRISM 2020 Annual Report

WNY PRISM efforts are guided by the WNY PRISM 5-year Strategic Plan (2019-2023), which was developed through a year-long collaborative process involving regional partners. The plan puts forth an ambitious program designed to provide the framework by which the invasive species management needs of western New York may be met. Six goals associated with WNY PRISM's established core functions are broken down into objectives and strategies for implementation. The strategic plan is supported by annual work plans that identify specific tasks WNY PRISM staff will focus on in any given year. The WNY PRISM 2020 Annual Work Plan provided the framework for 2020.

The WNY PRISM Annual Report provides an overview of the projects and programs WNY PRISM implemented in 2020. Most of the work described in this report is funded primarily through the WNY PRISM contract. However, some projects, including the Priority Lands Invasive Species Removal and Volunteer Monitoring Program and the Mosquito Junction Restoration, are funded through external grant programs such as the Great Lakes Restoration Initiative. For more information on the projects and programs mentioned in this report, or to view additional documents and resources, please visit www.wnyprism.org.

The annual report is organized based on WNY PRISM's established Goals: Partner and Network Coordination, Information Management, Education and Outreach, Prevention, Early Detection and Rapid Response, and Management and Habitat Restoration. As an organization that depends upon partnerships to achieve success, many of the projects highlighted in this report include considerable support and assistance from partner organizations, without whom the projects would not be possible. In this way, the WNY PRISM Annual Report serves not only as a record of WNY PRISM activities, but as an overview of many invasive species management efforts taking place across the region. WNY PRISM looks forward to continuing to work with the growing partner network.



WNY PRISM runs a Watercraft Inspection Stewardship Program and several field-based invasive species management programs each summer. WNY PRISM Boat Stewards inspect a boat at West Canal Marina, along the Erie Canal, on the left and the WNY PRISM Crew tours Tifft Nature Preserve, the site of a habitat restoration project, on the right.

Partner and Network Coordination

Goal: Effectively coordinate the WNY PRISM partner network and strengthen relationships to the benefit of all those impacted by invasive species and those involved with invasive species management.

WNY PRISM Partner Support and Engagement

WNY PRISM is, at its core, a partnership organization. Working together with partners towards a common goal allows for us to effectively create long-term, sustainable progress involving invasive species management efforts. While partner and network coordination may not result in the most impressive metrics or visuals, without the meetings and collaborative efforts, those invasive species management success stories would not be possible. WNY PRISM's partner and network coordination efforts focus on providing a connection to broader regional invasive species networks, including the New York State Invasive Species Program (ISP), providing partners with the support and information necessary to implement invasive species management activities, and ensuring WNY PRISM is able to continue operations and expand programming to meet the growing needs of the region.

WNY PRISM works closely with the NYS ISP partners to address shared priorities across the state. Participation in these efforts allows WNY PRISM to provide statewide updates and important information to our region about species such as spotted lanternfly, an approaching region priority, and ensure western New York regional priorities are being incorporated into the broader, statewide programs. WNY PRISM participated in NYS Invasive Species Program meetings, monthly webinars and working groups including Terrestrial, Aquatic and Education Outreach Coordinators Meetings, as well as statewide iMapInvasives project and tool development meetings, species specific initiatives, and NYISRI led prioritization meetings. WNY PRISM took part in the NYS Cooperative Agricultural Pest Survey Stakeholder Meeting (CAPS), which identifies statewide forest pest and agricultural invasive species priorities and provided regional updates to the ISC and ISAC. In addition, WNY PRISM collected feedback on the proposed pesticide regulatory updates from partners and provided those to the state through the DEC Pesticide Stakeholder process.

WNY PRISM developed a new informational banner for use at meetings and outreach events early in 2020. Unfortunately, the opportunity to use the banner was limited this year.

On a regional level, WNY PRISM held quarterly Steering Committee Meetings, Spring and Fall Partner Meetings, and Working Group meetings such as the quarterly Education and Outreach Working Group meetings and species-specific efforts including mile-a-minute, water chestnut and slender false brome working group meetings. WNY PRISM attends the WNY Forest Pest Task Force Meetings, led by Cornell Cooperative Extension and participates as a member of the Great Lakes *Phragmites* Collaborative Advisory Committee, Great Lakes Action Agenda Committee, *Hydrilla* Collaborative, and many others.

As part of efforts to increase regional awareness of WNY PRISM and to simplify the message of our expansive scope of work, we continued to incorporate more consistent, well-defined terminology within the website and outreach materials and developed an informational banner to accompany our outreach table. The newly framed information more clearly identifies what the partnership is and what it does.

To support partner efforts and to bring additional resources for invasive species management to the region, WNY PRISM offers proposal and management plan review and provides letters of support for partners seeking grants. Partners including Buffalo Niagara Waterkeeper, Western New York Land Conservancy and NYS Parks submitted grant proposals to support new and ongoing projects, for which WNY PRISM provided letters of support in 2020.

COVID-19 Response

March brought with it a significant shift in how WNY PRISM would approach both the coming field season and the remainder of the year. While the year began with slowly increasing levels of travel and meeting restrictions, by mid-March NYS had hit “Pause”. The first order of business for WNY PRISM was to address seasonal staff, for which we were in the midst of interviewing. We chose to move forward with hiring, fully aware that the field season and project work may end up looking quite different.

COVID-19 impacted nearly every aspect of WNY PRISM programming. Between March and May, what we knew about the virus changed almost daily and with it our ability to implement projects came into question. Considerable effort was placed on the development of adjusted work plans, health and safety plans, procurement of PPE and cleaning supplies, development of remote working infrastructure and procedures, and on re-formatting seasonal staff training, to ensure we could continue our work through the pandemic. Despite the uncertainty, WNY PRISM staff were dedicated to moving forward and ensuring we were in compliance with the shifting landscape of policies and guidelines. It is due to the flexibility and dedication of WNY PRISM staff and our host organization that we were able to overcome these challenges.

Opportunities to get together were few in 2020, but WNY PRISM staff were still able to with proper health and safety protocols in place.

Information Management

Goal: Establish WNY PRISM as the leading resource for invasive species management information and strategic planning. Ensure information is current, accurate, regionally appropriate and easy to access, and provide opportunities for improved data collection and partner collaboration.

WNY PRISM Listserv

The WNY PRISM Listserv is the primary means by which WNY PRISM shares important invasive species news and information with partners. In 2020, 27 subscribers were added to the Listserv, increasing membership to 320.

WNY PRISM Listserv Email Breakdown:

- 27 WNY PRISM eNews
- 28 event announcements
- 19 partner news items
- 10 job opportunities
- 7 grant/funding opportunities
- 13 WNY PRISM news items

The WNY PRISM eNews is a biweekly digest of invasive species news, grant information, job openings, professional development opportunities and public events.

Invasive Species Surveys and Mapping

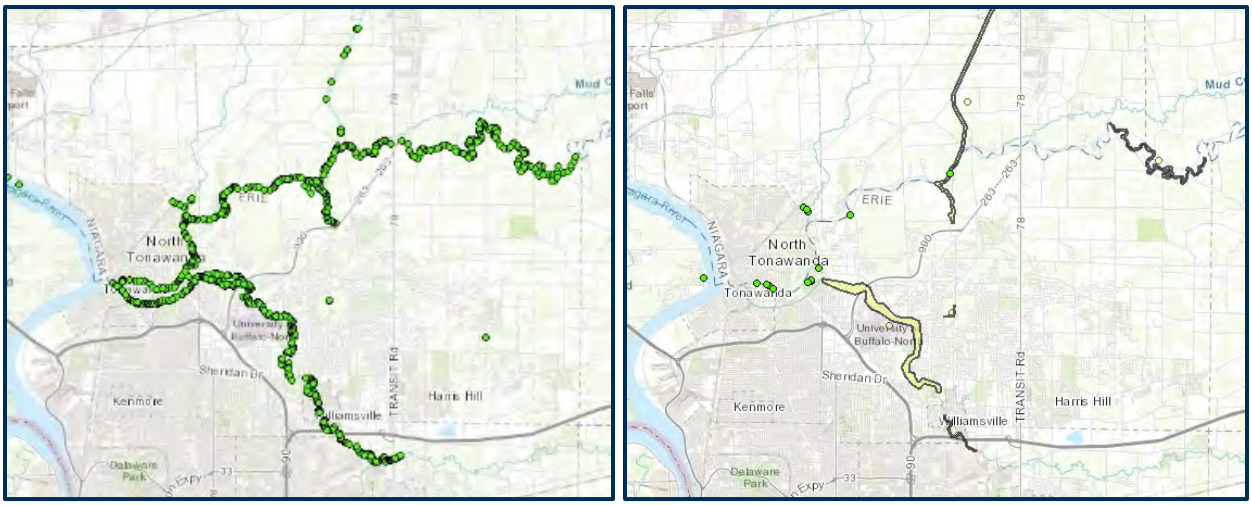
Presence and Distribution Data Gap Surveys

In 2020, WNY PRISM identified two invasive species, yellow flag iris (*Iris pseudacorus*) and flowering rush (*Butomus umbellatus*), as part of ongoing effort to fill presence and distribution data gaps within the region. We hired a graduate student, Alexander Krest, from SUNY Buffalo State to survey Ellicott Creek, Tonawanda Creek and the Erie Canal with additional sites selected after the initial surveys were complete. WNY PRISM Boat Stewards added to the data collected for this project. All together 47 sites across the 8 counties of WNY PRISM were surveyed. Yellow flag iris was found to be common and widespread with only 4 not detected reports and 948 presence reports. Flowering rush was found to

Yellow flag iris observed in Ellicott Creek.

have a more restricted distribution across the region and where present, occurs with lower density. Flowering rush surveys resulted in 27 not detected reports and 44 presence reports.

The flowering rush data was further assessed to determine if its identified presence and distribution would lend itself to removal efforts. The data analysis identified 20 out of the 44 sites as having populations suitable to allow for 1 or 2 people to manually remove the plants within a single day. These sites will be further assessed in 2021 to see if we can fit removal efforts into the Crew's schedule. If projects are implemented, it will allow us to test the efficacy of manual removal for this species.



Yellow flag iris presence data (left) versus flowering rush presence and not detected data (right) across the same search area within the Erie Canal, Tonawanda Creek and Ellicott Creek. Green points represent confirmed presence and yellow polygons represent searched areas with no presence detected.

Water chestnut was also a focus species for surveys in 2020. WNY PRISM's Southern Lead Boat Steward, Emily Harrower, led efforts and surveyed 14 sites throughout the Southern Tier. Water chestnut was not found at any new sites.

The WNY PRISM Crew assisted with data priorities focused on geographic gaps rather than individual species. Two areas with few observations uploaded to iMapInvasives were identified and sites within them, Griffis Sculpture Park in Cattaraugus County and Canadaway Creek Wildlife Management Area (WMA) in Chautauqua County, were selected for surveys. Both sites had significant invasive species presence including many of WNY's Tier 4 species. Despite the common nature of the species found, the information gathered will prove helpful with management planning and project prioritization for partners regionally.

WNY PRISM Boat Stewards surveyed Lime Lake for water chestnut and yellow flag iris in 2020.

iMapInvasives

WNY PRISM Region*

- 160 iMap Users Trained
- 4880 Records
    - 4109 Records by WNY PRISM Staff
- 230 Not Detected
- 93 Unique Species Reported
    - 62 from WNY PRISM Staff
- 67 Observers/Users
- 16 Organizations
- Top 6 Not Detected Species Reported
    - Slender False Brome
    - Flowering Rush
    - Japanese Stiltgrass
    - Water Chestnut
    - Hemlock Woolly Adelgid
    - Tree of Heaven & European Frog-bit
- Top 6 Species Reported
    - Yellow Flag Iris
    - Multi-flora Rose
    - Honeysuckle
    - Common Buckthorn
    - Garlic Mustard
    - Curly Leaf Pondweed

Hemlock Woolly Adelgid Identification and Survey Training held at Chestnut Ridge in Erie County.

**Based on the iMapInvasives 2020 Annual Report – WNY PRISM, provided to WNY PRISM by iMapInvasives in December 2020.*

Invasive Species Survey Protocol

Invasive species surveys are an integral step in invasive species management planning and may be used to conduct an invasive species inventory of an area or to look for individual species. The information gathered is used to guide education and outreach initiatives, future survey efforts, management decisions and much more.

WNY PRISM has been conducting surveys since 2014, but the process has evolved over time due to both changes in data needs and the availability of new tools and technology such as iMap Mobile Advanced (IMMA). In 2020, WNY PRISM updated our invasive species survey protocol to take advantage of newly purchased tablets allowing us to use IMMA and the Survey 123 application. WNY PRISM field staff transitioned to using the new tools and protocols and it was provided, along with paper data forms, to partners for use. WNY PRISM encouraged partners to use the updated protocols to help improve invasives species presence and distribution data throughout the region.

Invasive Species Prioritization - Tier Ranking

The NYS ISP developed a system to prioritize invasive species based on management strategies and recommendations. The aim of this system is to provide a level of consistency with how species are prioritized across the state, while continuing to allow each PRISM to rank species based on their local need, impact, and level of threat. The NYS Tier Ranking System identifies five tiers based on species abundance, impact (including potential future impact), cost of control, and the difficulty of control. WNY PRISM adopted the newly established tier system in 2019, using it to identify species priorities, inform management decisions, and assist in project selection. During the Fall Partner meeting, species prioritization was discussed and partners provided feedback on how WNY PRISM should proceed with updating and expanding the Tier Rankings. Feedback included the need for a region-wide ranking that takes into account geographic distribution and ability to effectively manage a species. The 2020 list of species tier rankings, including 85 ranked species, is available for partner reference.

WNY PRISM maintains an Approaching Region Priority List, and an Early Detection Priority Species List, which provide guidance beyond the Tier Rankings for the selection of priorities within the Tier 1 and Tier 2 categories. Both lists were updated in 2020. Goatsrue (*Galega officinalis*) was added to the approaching region list while porcelain berry (*Ampelopsis brevipendunculata*) was moved from the approaching region list to the early detection list.

Research Priorities

WNY PRISM Invasive Species Phenology Project

The most effective management strategies incorporate the use of several methods and tools that take advantage of unique characteristics of the target species, a strategy often referred to as Integrated Pest Management. But just as important as 'what' is 'when'. Effective treatment timing is essential to achieving cost effective, long-term success, and guidance on management timing was identified as a priority information need. While general guidance exists for larger regions, such as the Northeastern United States, local climate factors can greatly impact species phenology.

Working with staff at iMapInvasives, we looked at WNY-based observations for 12 common species: bush honeysuckle (*Lonicera spp.*), common buckthorn (*Rhamnus cathartica*), knotweed (*Reynoutria spp.*), lesser celandine (*Ficaria verna*), mugwort (*Artemisia vulgaris*), multiflora rose (Rosa multi-flora), *Phragmites* (*Phragmites australis*), reed canarygrass (*Phalaris arundinacea*), spotted knapweed (*Centaurea stoebe*), swallow-wort (*Cynanchum spp.*) and wild parsnip (*Pastinaca sativa*). Using the data, including photos, within observation records, we worked to determine a timeline of when each species emerges,

Reed canarygrass flowering on May 29 and black swallow-wort flowering on June 27.

produces leaves, flowers, and goes to seed. The large data sets spanning several years should allow us to develop meaningful, accurate and regionally specific management timing recommendations.

Biocontrols - Update

WNY PRISM research priorities continue to highlight the need for support and development of biological controls. Biocontrols offer a powerful tool in the management of invasive species, however scientists remain cautious. The modern biocontrol approval process involves multiple rounds of testing and regulation at both the state and federal level to ensure the highest level of safety. Several of WNY PRISM's priority species are the target of current biocontrol research including swallow-wort, knotweed, hemlock woolly adelgid (*Adelges tsugae*), water chestnut (*Trapa natans*), knotweed and *Phragmites.*

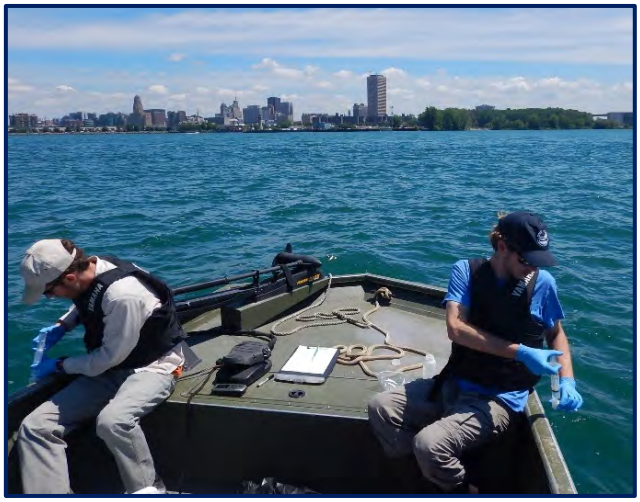
A swallow-wort biocontrol, *Hypena opulenta*, was released at several locations across NYS and at one test site resulted in the 100% defoliation of swallow-wort within four weeks. The New York Invasive Species Research Institute worked with Cornell Cooperative Extension of Erie County and WNY PRISM to identify appropriate release sites in WNY. While a few sites were identified, the moth was released at only a single site, in Clarence. This site will continue to be monitored by CCE in 2021. Significant progress was made this year with biocontrols entering the field testing stages. The knotweed psyllid (*Aphalara itadori*), a sap-sucking insect, was released in June. A week after releasing the adult insects, researchers found they had successfully laid thousands of eggs. A previously identified psyllid was released to manage knotweed but had failed to establish, making researchers cautiously optimistic about this one.

The Hemlock Initiative continues to engage in active research, rearing and releasing of several biocontrols approved for use against hemlock woolly adelgid and a petition has been submitted to the United States Department of Agriculture Technical Advisory Group for field release approval of *Galerucella birmanica*, a biocontrol targeting water chestnut. Finally, our Canadian partners have released two stem-feeding moths, *Archanara geminipuncta* and *A. neurica* that target *Phragmites*. It may be another year or two before these agents receive approval for release in the United States.

Swallow-wort biocontrol, Hypena opulenta, an herbivorous moth, was released at several locations within NYS in 2020, including a site in Clarence, pictured here.

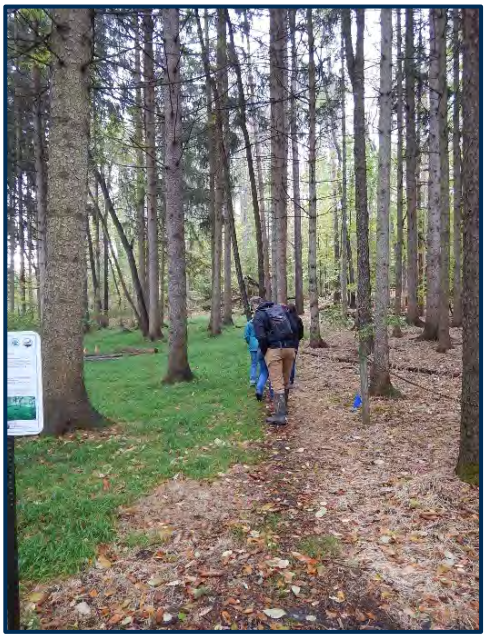
New York State eDNA Harbors Project - Update

Beginning in 2018, WNY PRISM worked with Dr. Paul Simonin in support of the New York State eDNA Harbors Project, a collaborative effort between multiple PRISMs (SLELO, FL-PRISM, WNY PRISM) and Cornell University. The research is testing a new method of processing samples for eDNA, a process that would allow for a single sample to be tested for a large subset of invasive species. Water samples were collected from points in and around the Buffalo Harbor twice each year, once in the summer and again in the fall. Researchers have received some encouraging results from a trial run of the new method but are still analyzing the sequencing data. The Buffalo Harbor samples have yet to be processed, but efforts continue.



Dr. Paul Simonin and WNY PRISM ISMA Ryan Elliott collected water samples from Lake Erie in 2019, as part of the NYS Harbors eDNA Project.

Slender False Brome Management



The GLSFBWG toured the research plot at Genesee County Park and Forest - on the left is the mechanical (mow) only plot and on the right is the herbicide only plot.

As part of the Great Lakes Slender False Brome Working Group, funded by the Environmental Protection Agency through the Great Lakes Restoration Initiative, WNY PRISM conducted research to determine the best management practices for slender false brome. The research began in 2018 and continued through 2019, and looked at four management methods: manual removal, mechanical treatment, herbicide treatment and a combination of mechanical and herbicide treatments. The two years of research showed that herbicide treatment was both the most effective treatment and the treatment requiring the least amount of time and financial investment. Manual removal is also very effective, but is only realistic for small, isolated infestations due to the high cost of labor and potential for soil disturbance and damage.

WNY PRISM was committed to continuing the slender false brome management at the research sites in 2020 and took advantage of the pre-existing plots and protocols to continue collecting data. Percent cover data was collected prior to herbicide treatment (due to the end of the funded research, we chose to treat all sites with herbicide only) and will be collected again in 2021. Post-treatment seed count data and additional information on native plant regeneration was also collected.

Education and Outreach

Goal: Increase public and partner awareness, understanding, and participation in meaningful and effective invasive species management activities.

Education and outreach efforts were among the hardest hit by the COVID-19 pandemic, requiring a complete reimagining of our programs. Most of WNY PRISM's events were cancelled after NYS Pause went into effect, with only a few able to make the necessary adjustment to a remote format. While we mourned the cancellations and indefinite delays, we were able to effectively move forward. Efforts shifted from in-person educational opportunities to online presentations and workshops, development of outreach materials, social media engagement and improvement of website content. While the impacts of COVID-19 on education and outreach were significant, the work accomplished during this time will continue to benefit the program long after we return to 'normal'.

The year began with several presentations and tabling events. WNY PRISM provided presentations for the annual Rural Landowners Workshop (RLW) and staffed outreach tables at the Western New York State Turfgrass Association annual meeting and PlantWNY Tradeshow. We presented on invasive species in landscaping to South Towns Garden Club and held the first of 3 planned volunteer trainings for the Tonawanda Rails to Trails Project. We also held 2 Hemlock Woolly Adelgid Trainings in partnership with Erie County and the Hemlock Initiative. We had initially planned a single training, but it quickly filled to capacity and the second training was added to the schedule.

Volunteers practiced surveying for HWA at Chestnut Ridge as part of WNY PRISM and Erie County's February Hemlock Woolly Adelgid Survey Training, was one of our last in-person events held in 2020.

To balance the loss of in-person events, WNY PRISM moved online to hold both a spring and fall webinar series, anchored by our full partnership meetings. Presentations included several guest presenters and wide-ranging topics from emerging threats, identification, and management strategies to the impacts of invasive species on birds. Each presentation was recorded and uploaded to WNY PRISM's new YouTube Channel. In-person attendance for the webinar series totaled 272 while the uploaded videos received an additional 92 views.

Due to the COVID-19 pandemic limiting volunteer opportunities, the M&T Bank's Think Green Resource Group reached out to WNY PRISM to see if there was a way to develop a more socially distanced opportunity for the group. Working with M&T Bank and iMap, we were able to put together a training and mini-iMap Challenge for their volunteers. We selected a couple of easy to identify, common species

for the group to look for while walking along local trails. Building this relationship with the Think Green team will lead to many volunteer opportunities in the future.

Fifteen new invasive species profiles were added to our website including those for beech leaf disease and oak wilt, both species of high interest within the region. Beech leaf disease is a relatively new threat to western New York, although it does remain unclear as to when it first arrived, and oak wilt has been confirmed not far outside of WNY PRISM. Best Management Practices (BMP) fact sheets were developed for biennials, tree of heaven (*Ailanthus altissima*), water hyacinth (*Eichhornia crassipes*), water lettuce (*Pistia stratiotes*), and water chestnut, doubling the size of our BMP library.

WNY PRISM developed a new Best Management Practice Fact Sheet for water hyacinth.

The eNewsletter, released biannually, received a redesign in time for its spring release. The Spring Newsletter highlighted the Rails to Trails Invasive Plant Mapping and Removal Project, which was unfortunately delayed due to COVID-19, while the Fall Newsletter focused on providing updates on biocontrol research. Biocontrols are frequently identified as a priority by regional partners.

The Education and Outreach Working Group continued to meet quarterly and selected 2 high priority projects on which to focus their efforts. The Working Group began development of a new video series to increase awareness of species currently under the public radar. Yellow-floating heart (*Nymphoides peltatum*) will be the first species to receive this treatment. Work also began to develop a new infographic to discourage aquarium dumping, which is a likely vector for the introduction of *Hydrilla* (*Hydrilla verticillata*) to local waterbodies.

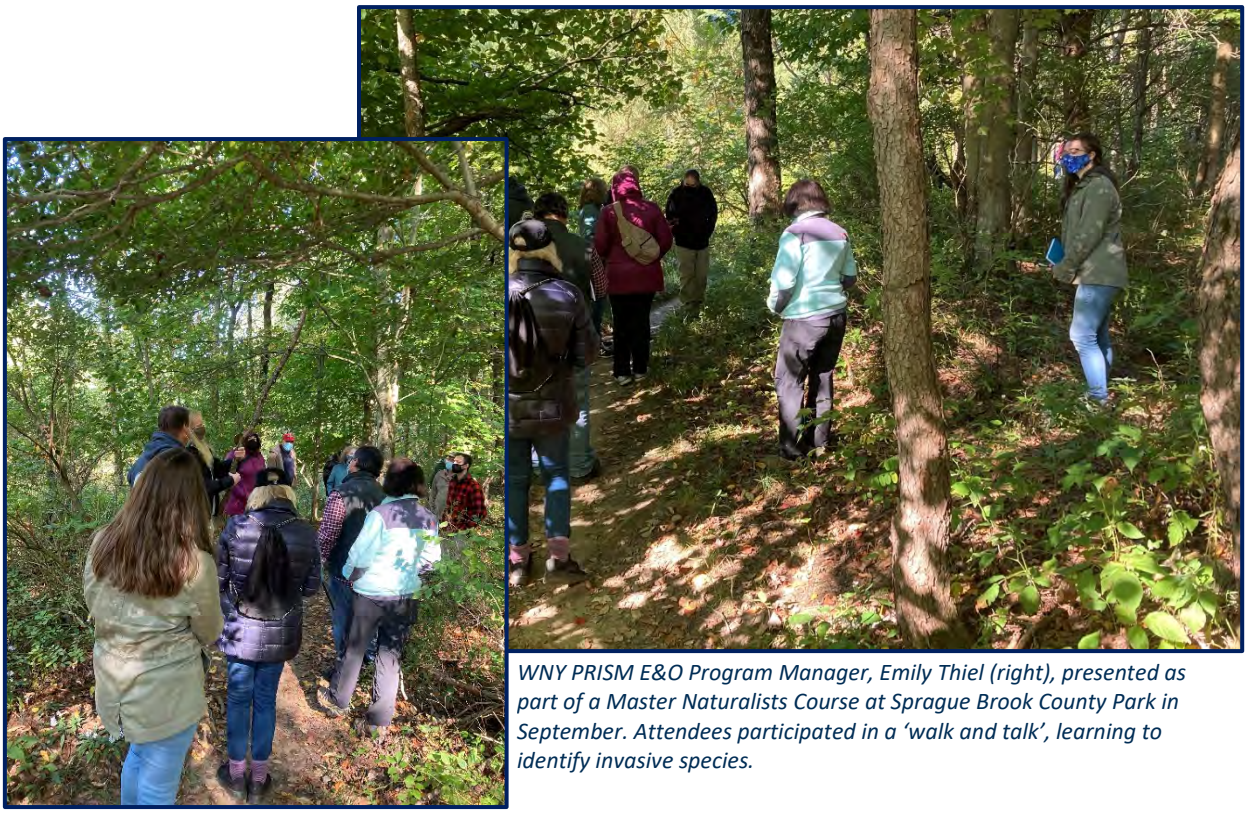
WNY PRISM Events

As part of education and outreach efforts, WNY PRISM tracks both direct contacts and event attendees. Direct contacts include those with whom WNY PRISM staff, or in some cases volunteers, communicate with directly. All participants in partner meetings, presentations, workshops and trainings are considered direct contacts. Event attendees are those who may stop by our table and/or take outreach materials, but with whom we did not have first-hand communication. WNY PRISM recorded 935 direct contacts in 2020.

Partner Meetings	**County**	**Direct Contacts**	**Date**
Spring Partner Meeting	Online	42	Apr-16
Fall Partner Meeting	Online	45	Oct-22

Outreach Table/Display	County	Contacts/Attendees	Date
PlantWNY Trade Show	Erie	62/200	Feb-7
Rural Landowners Workshop (RLW)	Cattaraugus	25/150	Mar-7
NYSTA, Western Conference	Erie	18/150	Mar-9

Workshop/Training	County	Direct Contacts	Date
HWA Survey & Volunteer Training	Erie	32	Feb-8
Rails to Trails Volunteer Training	Erie	29	Feb-13
HWA Survey & Volunteer Training	Erie	15	Mar-14
iMapInvasives Training	Online	14	Jun-12



WNY PRISM E&O Program Manager, Emily Thiel (right), presented as part of a Master Naturalists Course at Sprague Brook County Park in September. Attendees participated in a 'walk and talk', learning to identify invasive species.

Presentations	County	Date	
Educator Development Day	Erie	100	Jan-24
RLW – Early Detection Species Updates	Cattaraugus	23	Mar-7
RLW – Intro to iMapInvasives	Cattaraugus	16	Mar-7
RLW – AIS on Private Property	Cattaraugus	14	Mar-7
South Towns Garden Club	Erie	14	Mar-13
CCE Erie County – Garden Fence Chat	Online	16	Apr-30
Spring Webinar Series			
Early Detection – SFB, JSG, MAM	Online	22	Apr-30

Birds and Invasives	Online	67	May-7
Boot Brush Stations	Online	7	May-14
Ask an Expert	Online	5	May-28
Friends of Letchworth Stewardship Day	Online	8	May-30
Master Gardeners – Helpline	Online	36	Jun-9
Crayfish: the Good, the Bad and the Yummy	Online	25	Jun-10
Chautauqua County Master Gardeners	Online	22	Jun-17
Intro to IS and Mapping Challenge	Online	54	Jul-21
Master Naturalists Training	Erie	17	Sep-19
Fall Webinar Series			
Dormant Season ID and Prevention	Online	29	Oct-15
Emerging Forest Pests and Disease	Online	27	Oct-29
Agricultural Pests and Disease	Online	21	Nov-5
Managing Woody IS in Winter	Online	63	Nov-12
Emerging Aquatic Threats	Online	31	Nov-19
Tools, Tips and Tricks to E&O During Covid	Online	56	Nov-6
Chautauqua Lake Association Annual Meeting	Online	50	Dec-7
Take Action Against Invasive Species	Online	16	Dec-9

Spring and Fall Webinar Series presentations were posted to WNY PRISM's YouTube Channel. Presentations have received an additional 92 views.

Pledge to Protect

Traditional invasive species educational messaging has been based on raising awareness. By increasing the public's awareness and understanding about environmental issues, we hope to develop a sense of place and value that leads to action. But the success of this approach is often difficult to measure. As such, we have been reimagining some of our programs to move away from a goal of increasing awareness towards a more active model that encourages action. One aspect of this is expanding our community science and volunteer programs, while another involves asking people to commit to desired actions.

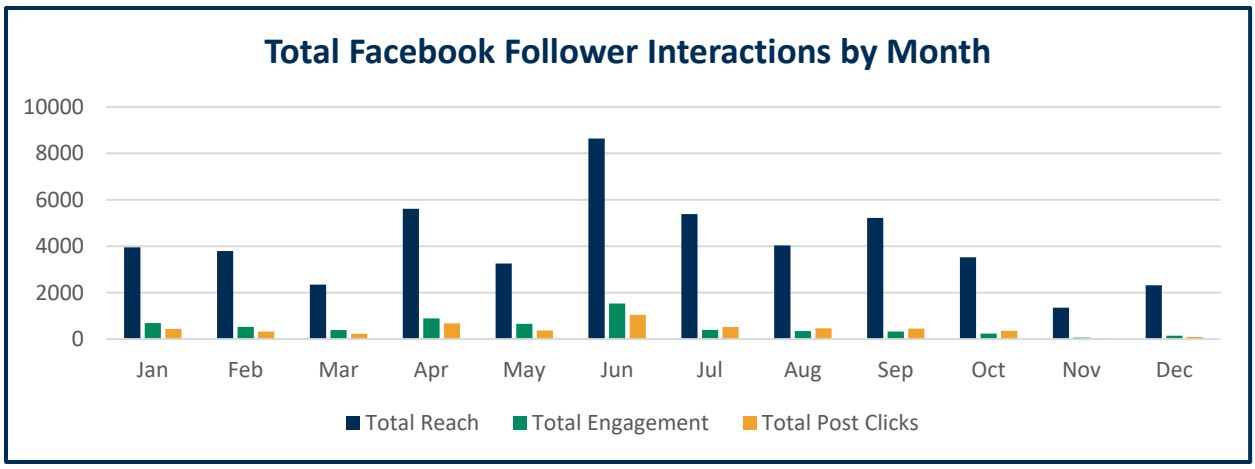
WNY PRISM developed four commitment banners representing regional and national campaigns including '*Play. Clean. Go.'*, '*Clean. Drain. Dry.'*, '*Don't Move Firewood',* and '*Be Plantwise'*. The banners will be placed on display at trainings and outreach events where we will ask members of the public to sign in support of taking positive action. Simple action steps, such as cleaning your footwear before entering and upon leaving a trail or natural area, are identified on the banners – actions we believe can become new habits.

The banners are 36" x 20" and as they are filled up with signatures, they would be transferred (using clear contact paper) to a larger installation demonstrating the regional commitment to improving invasive species management. Those who sign the banners will also be given wallet-sized cards as a reminder of their commitment and the small steps they can take to help stop the spread of invasive species.

Additional banners include "I Pledge to Protect my Lands: Know Before you Grow" and "I Pledge to Protect my Trees: Don't Move Firewood".

Social Media Report

WNY PRISM administers both a Facebook and Instagram account through which we share information and stories about the many aspects of our work. Social media outreach became one of the few consistent avenues to reach the people of western New York, and an increased focus on these platforms resulted in large gains in our social media following, allowing us to reach record numbers of people.



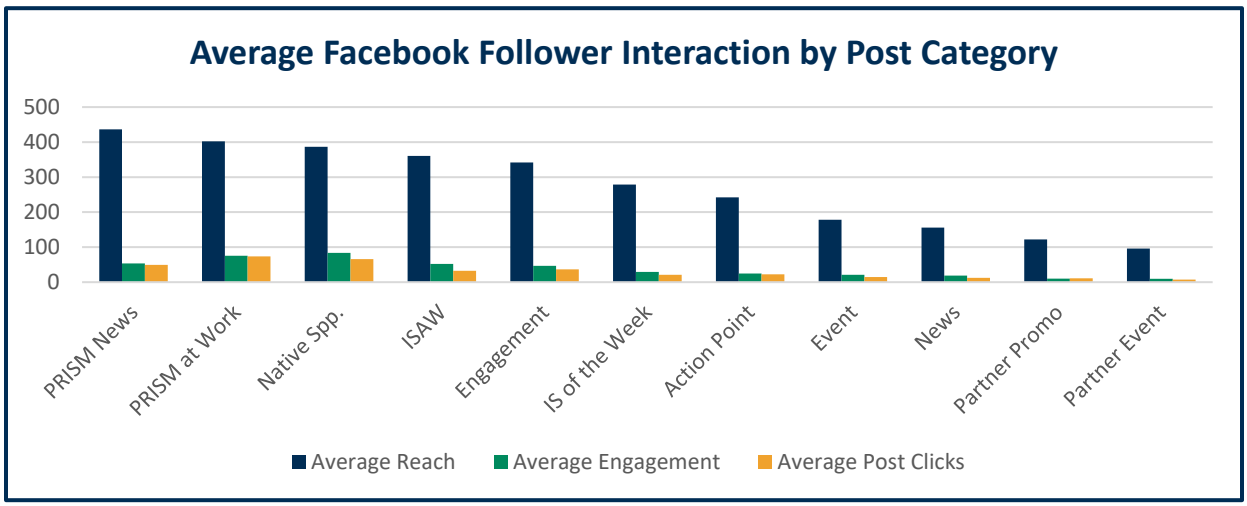
We gained 224 Facebook page likes this year, an increase of 57% which compares well against the 39% increase in 2019 and the 33% increase in 2018. Recruitment was more robust during the spring and summer months as compared to the fall and winter months, but this is to be expected given social media post frequency and the inclusion of popular topics such as our field work and participation in

outreach events. We created 15 Facebook Event Pages in 2020, reaching a total of 19,682 individuals and garnered 444 responses. Social media also represents an opportunity to drive traffic to our website so individuals can learn even more about WNY PRISM and invasive species. Facebook posts that linked to WNY PRISM webpages drove 329 visitors to our website in 2020, a 101% increase from 2019.

WNY PRISM's Instagram reached 426 followers, an increase of 124% from 2019. The recruitment pattern mirrors that of Facebook, with the majority of recruitment happening during the traditional field season. In 2020, we created 135 Instagram posts which garnered 3,137 likes, or an average of 23 on each post. Instagram stories are featured posts or reposts that are only available for a limited time. These allow us to publish time-specific content that may not apply after a certain date (events, publication releases, etc.) or to repost content as it applies to our projects. In 2020 we posted 202 stories, primarily during our field season. The stories were viewed 8,589 times and each was viewed on average 42.5 times, resulting in a 1,053% and 70% increase respectively from 2019.

WNY PRISM spread native seed at TIfft Nature Preserve as part of a LEWPA funded project to develop restoration seed mixes.

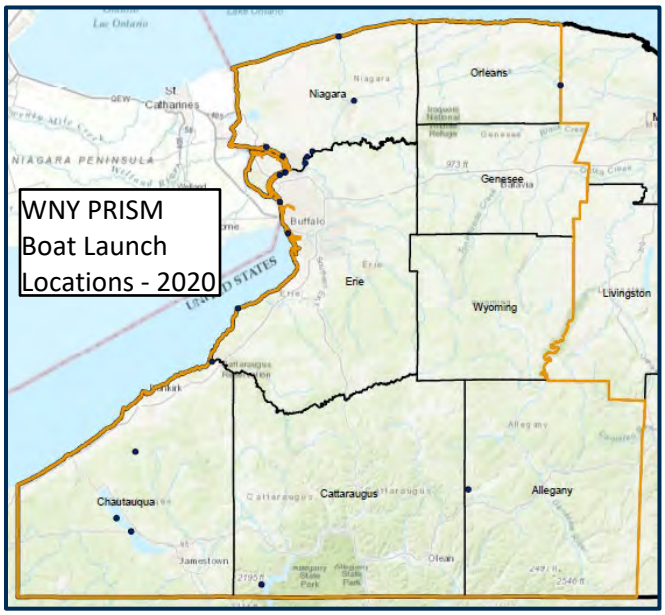
Two of the most popular topics for posts, for both Facebook and Instagram, were those focused on native plants and ecology, and behind the scenes looks into WNY PRISM. The most viewed Instagram post was a combination of those two categories, a story depicting WNY PRISM staff spreading native seed in areas that had previously seen successful invasive species removal efforts. However, the most popular Facebook post category was WNY RPISM News. This is possibly due to the increased public interest in high profile species including spotted lanternfly for which we shared updates throughout the year.



Prevention

Goal: Prevent the introduction of invasive species to the WNY PRISM region, limit the spread of invasive species within the region and limit the movement of invasive species established in WNY PRISM to other regions.

Watercraft Inspection Stewardship Program



Watercraft have long been identified as a key pathway for the spread of aquatic invasive species. Plants and animals can be easily transported by boats and trailers between different bodies of water. To disrupt this pathway of invasion and help reduce the spread of aquatic invasive species, WNY PRISM has established a Watercraft Inspection Stewardship Program (WISP). Boat Stewards/Environmental Educators (Stewards) are placed at public access launches across the region to perform voluntary inspections, to remove visible plant and animal material from all types of watercraft, and to provide essential information on how everyone can take action to stop the spread. WNY PRISM's Program was acknowledged by Erie County in 2020, receiving the 2020 Erie County Environmental Management Council Environmental Excellence Award.

Data collected from our first full season in 2019 informed site selection in 2020. Sites were prioritized and selected based on 4 factors: usership, invasive species presence, priority waterbodies and opportunities for public engagement. Four sites previously staffed in 2019 were removed from the program, and 2 new sites added.

Removed sites include small, hand launches that had either very low usership or were geographically close to other higher performing launches. The 2 sites added in 2020 were Hanover Town Boat Launch, located on Cattaraugus Creek in Sunset Bay, and Griffon Park located on the Niagara River in Niagara Falls. In total, 19 launches were staffed in 2020.

Boat Launch	Body of Water	Watercraft Inspected	Invasive Species Intercepted
Amherst Veterans Canal Park	Erie Canal	1144	5
Bear Lake	Bear Lake	340	56
Bemus Point*	Chautauqua Lake	1953	566

Black Rock Canal	Black Rock Canal	683	26
Cuba Lake	Cuba Lake	2241	30
Gratwick Riverside Park	Niagara River	723	11
Griffon Park	Niagara River	1167	21
Hanover Town Boat Launch	Cattaraugus Creek	1505	18
Holley – Sans Souci Park	Erie Canal	192	0
Isle View Park	Niagara River	518	11
Nelson C. Goehle – Widewaters	Erie Canal	1037	2
Niawanda Park	Niagara River	1171	57
North Tonawanda Botanical Gardens	Erie Canal	1844	2
Olcott Harbor	Lake Ontario	1646	442
Onoville Marina Park	Allegheny River	1802	25
Prendergast Point*	Chautauqua Lake	241	20
Sturgeon Point	Lake Erie	2356	9
West Canal Park	Erie Canal	2125	8
Wilkeson Pointe	Lake Erie	348	0

**Bemus Point and Prendergast Point are staffed by both WNY PRISM and the Chautauqua Lake Association. These numbers represent only WNY PRISM's data.*

Steward training took on a different look this year due to COVID-19. Unable to hold in-person training or to conduct practice inspections, we resorted to 2 full days of remote learning and having the Steward's first weekend at their launches be paired with another Steward. We were very lucky to have several Stewards return in 2020 which allowed us to pair a first year Steward with someone more experienced.

Stewards did get the chance to meet their Lead Stewards and Program Manager when they traveled to the Great Lakes Center Field Station to pick up their supplies and equipment, ahead of training. We scheduled each Steward with an individual 15-minute block of time during which they were able to review the outreach materials and work through the COVID-19 Personal Protective Equipment (PPE) and disinfection protocols.

Tables were set-up for Stewards when they picked up their supplies and equipment from the Great Lakes Center.

Lead Stewards distributed PPE provided by DEC, including disposable masks, disposable gloves, and hand sanitizer, on a bi-weekly basis. WNY PRISM further provided Stewards with a reusable mask, paper towels, disinfectant and hand soap. If a steward ran out of PPE, they could not conduct inspections until they had more supplies.

Stewards were required to wear a mask at their launch with very few exceptions. They were permitted to remove their mask only if no one was present at the launch as we wanted to ensure members of the public felt comfortable approaching them. Stewards were required to wear disposable gloves if they needed to physically touch a boat to remove plant debris.

At the start of the season, Stewards were not permitted to hand out materials due to concerns about transmission, however beginning June 18, a protocol was established to allow for the safe distribution of outreach materials.

WNY PRISM Boat Steward/Environmental Educator conducting a typical, voluntary watercraft inspection.

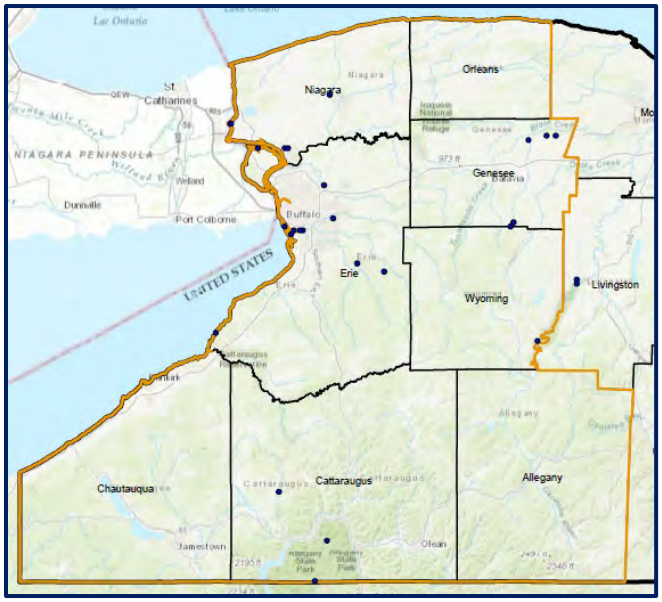
Over the course of 15 weeks, Stewards spent time talking with area residents and visitors about the importance of aquatic invasive species spread prevention. At the end of each interaction, boaters were asked to take a pledge to "Clean. Drain. Dry." their boats, even if a Boat Steward was not present. Stewards recorded 89% of boaters agreeing to the pledge and 8% replying 'maybe'. Boat Stewards handed out a total of 3,187 educational items such as species watch cards, which was down by over 2,000 from the previous year. This is likely due to the delay in being permitted to distribute materials, but also likely due to both the public's apprehension about taking items and having to set the informational tables 6 feet further from the launch and trails, adding a barrier.

The agreement percent for voluntary boat inspections decreased this year from 94% in 2019 to 89% in 2020, again likely due to COVID-19. Stewards conducted 23,041 inspections, an increase of 3,225 from 2019, and intercepted 1,309 aquatic invasive species. The number of interceptions decreased by 530. Eurasian watermilfoil (*Myriophyllum spicatum*) remained the most common species with 717 interceptions, followed by curly leaf pondweed (*Potamogeton crispus*) with 463. Zebra and quagga mussels (*Dreissena spp*.), spiny/fishhook waterflea (*Bythotrephes longimanus /Cercopagis pengoi*), and brittle naiad (*Najas minor*) had 104,

3, 17 and 2 interceptions, respectively. The list of species intercepted in 2020 matches that of 2019, although the bottom three species were in a different order.

Boot Brush Station Program

WNY PRISM has continued our partnership with "Play. Clean. Go." to bring additional boot brush stations and educational opportunities to the region. Boot brush stations are an effective tool to prevent the spread of terrestrial invasive species and help educate the public on the importance of taking individual action. Invasive species can quickly spread along trails and other areas with heavy foot traffic. As mud contaminated with plant material and seeds collect in boot treads, invasive species spread along trails. From trails, species can further establish within the preserves.



WNY PRISM Boot Brush Station locations, updated 2020.

WNY PRISM opened the 2020 Boot Brush Station Program for applications in January. We received 8 applications and were able to select 7 based on funding. Three of the 7 stations were installed and 4 stations, for which WNY PRISM has provided the signs and materials to partners, are still awaiting installation. Installation was delayed both due to supply issues with lumber and due to partners needing to address COVID-19 safety concerns for staff and volunteers completing the installation. When included, the 4 boot brush stations awaiting installation brings the total number of stations developed and installed within the region to 33.

Spread Prevention Protocol

When working in the field it is very important to ensure that we ourselves do not become a vector for the spread of invasive species. WNY PRISM staff spend time working with early detection priority species, in areas with high invasive species cover, and high-quality natural areas and restorations. Just as the public can transport seed in their boot treads while hiking along a trail, invasive species managers can do the same.

To ensure we are not a source of spread, WNY PRISM developed a spread prevention protocol, primarily for use by WNY PRISM staff but available for use by partners to provide as training and guidelines for field staff. The protocol identifies clothing and work items that need to be inspected

and cleaned when moving from one site to another, or at the end of each workday. This simple checklist will ensure WNY PRISM is not a vector of spread.

Footwear: Use a handheld brush (provided) to remove all mud and plant material out of treads of footwear.

Clothing: Visually inspect clothing and remove any plant material.

Equipment: Visually inspect all equipment and tools and remove any plant material.

Vehicles: Inspect vehicles and clean vehicles as necessary throughout the season.

Approaching Region Species Update

The Approaching Region Priority Species List represents species not yet present in WNY, but most likely to both appear in the near future and cause significant damage to either the environment, economy, or human health. The list highlights species to be on the lookout for and serves as a tool for partners to help direct outreach and invasive species awareness efforts. Initial species were selected, reviewed and approved by the WNY PRISM Steering Committee and a process for updating the list was developed.

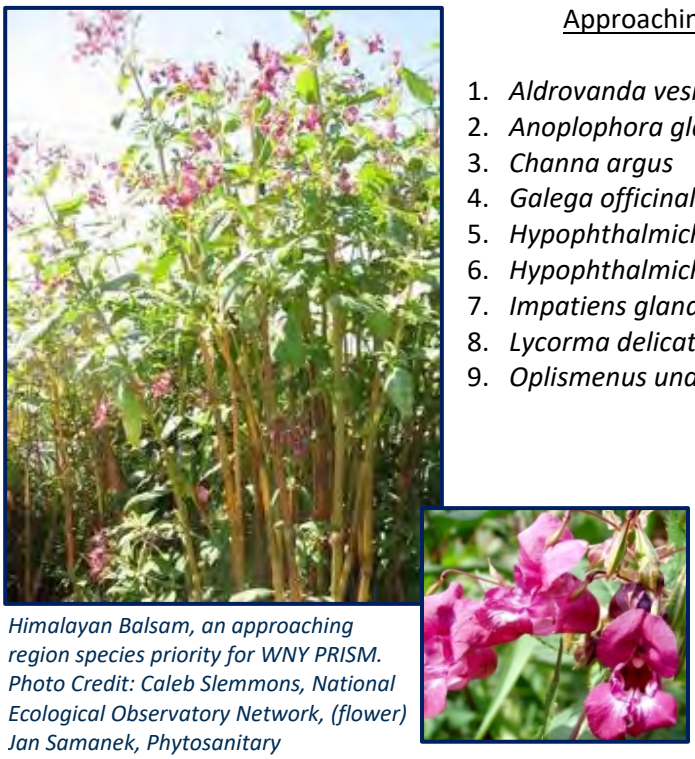
Species currently on the approaching region list will automatically be added to the early detection list should they be confirmed present in WNY. This situation occurred in 2019 when yellow-floating heart was first reported and has occurred again in 2020 with the confirmation of WNY PRISM's first occurrence of porcelain berry in Delaware Park.

For a new species to be added to the approaching region list, it must first be nominated for consideration. Nomination may come from any partner, but it must include an explanation for inclusion and supporting documentation. The species is then reviewed by the appropriate Working Group (i.e. Terrestrial or Aquatic) who will provide a recommendation to the Steering Committee. The WNY PRISM Steering Committee will make the final determination on inclusion.

In 2020, WNY PRISM was contacted by the Allegheny Plauteau Invasive Plant Management Area (APIPMA) in northwestern Pennsylvania concerning an emerging invasive plant, goatsrue. This plant has quickly emerged in their region as a high priority early detection species but has not yet been identified in New York, despite being present along the state line. Goatsrue was added to the approaching region priority

Goatsrue was added to WNY PRISM's approaching region priority list in 2020, based on a partner recommendation. Photo Credit: APIPMA.

list after discussions during the Fall Partner Meeting and subsequent approval by the Steering Committee.



Himalayan Balsam, an approaching region species priority for WNY PRISM. Photo Credit: Caleb Slemmons, National Ecological Observatory Network, (flower) Jan Samanek, Phytosanitary Administration; Bugwood.org.

Approaching Region Priority Species List

1.	*Aldrovanda vesiculosa*	Waterwheel
2.	*Anoplophora glabripennis*	Asian Longhorned Beetle
3.	*Channa argus*	Northern Snakehead
4.	*Galega officinalis*	Goatsrue
5.	*Hypophthalmichthys molitrix*	Silver Carp
6.	*Hypophthalmichthys nobilis*	Bighead Carp
7.	*Impatiens glandulifera*	Himalayan Balsam
8.	*Lycorma delicatula*	Spotted Lanternfly
9.	*Oplismenus undulatifolius*	Wavyleaf Basket Grass

Early Detection and Rapid Response

Goal: Develop an effective early detection program and associated protocols that provide for reporting, assessment, and response efforts.

Early Detection Program Update

The WNY PRISM early detection program focuses on the survey, removal and spread prevention of Tier 1 and Tier 2 species, with an emphasis on established approaching region and early detection species priorities. Currently capped at 10 species, WNY PRISM's Early Detection Priority Species represent those that pose the greatest threat to the region while also being those for which a goal of eradication is reasonable with current management capabilities. Previously listed as one of our approaching region priorities, porcelain berry was reported and confirmed in the region for the first time this year, resulting in the species being automatically added to the early detection priority list.

In addition to porcelain berry, amur maple (*Acer ginnala*), beech leaf disease nematode (*Litylenchus crenatae mccannii*), Brazilian waterweed (*Egeria densa*), red swamp crayfish (*Procambarus clarkii*), and yellow-bellied slider (*Trachemys scripta scripta*) were reported in WNY PRISM for the first time in 2020.

(Top) Yellow floating heart. Photo Credit: Greg Bales. (Middle) Water hyacinth. (Bottom) Porcelain berry.

<u>Early Detection Priority Species</u>

1.	*Ampelopsis brevipendunculata*	Porcelain Berry
2.	*Aralia elata*	Japanese Angelica Tree
3.	*Brachypodium sylvaticum*	Slender False Brome
4.	*Cytisus scoparius*	Scotch Broom
5.	*Eichhornia crassipes*	Water Hyacinth
6.	*Microstegium vimineum*	Japanese Stiltgrass
7.	*Nymphoides peltata*	Yellow-Floating Heart
8.	*Persicaria perfoliata*	Mile-a-Minute
9.	*Pistia stratiotes*	Water Lettuce

WNY PRISM staff dedicate a significant amount of time to early detection management efforts. This year, 51 sites were surveyed for terrestrial and aquatic early detection priority species, guided in part by the slender false brome and Japanese stiltgrass habitat suitability models. Surveys included over 90 miles of trails and 175 hours of effort. As a result of these surveys, one new slender false brome and six new Japanese stiltgrass sites were identified. Partners reported 3 additional sites, one each for Japanese stiltgrass, water hyacinth and water lettuce. WNY PRISM surveyed these sites and confirmed the presence of the identified species.

WNY PRISM staff treated 68.25 acres of terrestrial early detection species using a combination of manual and chemical methods. Water hyacinth was identified and removed from two locations with fewer than 40 plants total; one site was managed by WNY PRISM while the second by NYS Parks staff. A large population of water lettuce was removed from Hyde Park Lake, a 30-acre waterbody in Niagara County. Over 750 hours were dedicated to implementing early detection species removal efforts.

WNY PRISM's Early Detection Assessment Protocol and data collection form were finalized in April, ahead of the Spring Partner Meeting where it was presented and made available to partners. The protocol was developed to help improve regional response efforts relating to Tier 1 and Tier 2 species, priorities for treatment and removal. The assessment, which should be conducted after the species is confirmed, identifies information necessary to develop appropriate management strategies and further identify the tools and resources needed to implement successful management projects.

Early Detection Species Site Monitoring and Surveys

Early Detection Site Monitoring

Early detection sites, known sites with previous removal efforts resulting in no remaining plants, are monitored annually by WNY PRISM. If removal efforts have resulted in individuals not being found for 3 consecutive years following the successful treatment the site will then be monitored every other year, up to either 5 or 7 years depending on the species. If no individuals are found after the final year, the site is considered eradicated and removed from WNY PRISM's site monitoring list. If at any point additional plants are found, the site resets to active management and annual monitoring will begin again the following year.

This year marked the first with one of WNY PRISM's early detection monitoring sites reaching the final year of monitoring. Unfortunately, 6 water hyacinth plants were found, and removed, from the site. WNY PRISM has 15 early detection monitoring sites (53 total early detection sites). At this time, no sites have met the presumed eradicated criteria. However, two sites, both water hyacinth sites, will reach their final year of monitoring in 2021.

After 4 years of no water hyacinth being found at Oppenheim Park in Niagara County, 6 individuals were found, and removed, in 2020.

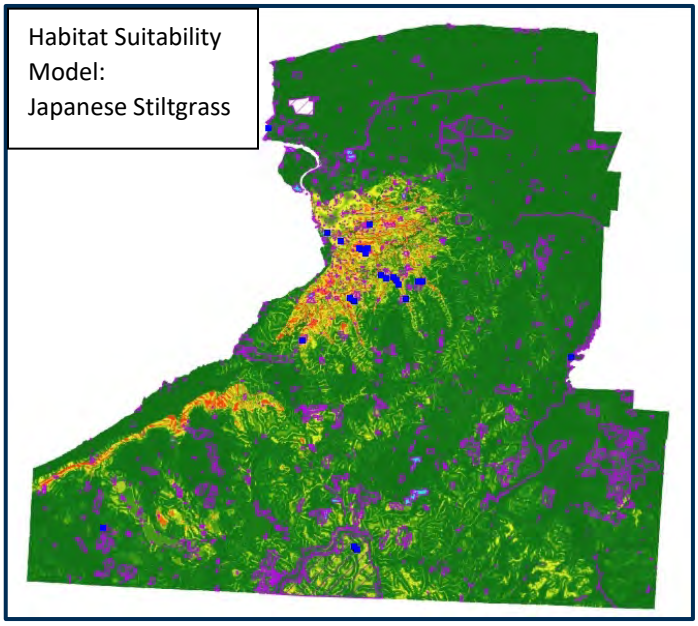
Early Detection Surveys

WNY PRISM carried out early detection species surveys using the established invasive species survey and site assessment protocols. Terrestrial surveys focused on slender false brome, Japanese stiltgrass, and mile-a-minute. Early detection survey efforts focus on a maximum of 3 species to ensure plants are not overlooked due to looking for too many species at a time.

Early detection surveys involve walking along trails and streams within selected parks and natural areas to look for the target species. If the target species are not detected during these efforts, a not detected

entry is recorded and uploaded to iMapInvasives. WNY PRISM recorded 53 not detected slender false brome sites and 20 not detected Japanese stiltgrass sites in 2020. If target species are found, data is collected on plant distribution, phenology and percent cover. As part of the site assessment, data is also collected on additional native, non-native and invasives species presence, invasive species source populations and potential for spread.

A total of 45 sites and 92 miles of trail were surveyed for slender false brome and Japanese stiltgrass. New populations of Japanese stiltgrass were found in Erie and Allegany Counties. Within Erie County, Japanese stiltgrass was found at 5 new sites along Eighteen Mile Creek and a single new site along Cazenovia Creek, at the West Seneca Soccer Complex. In Allegany County, within Vandermark State Forest, a small population of Japanese stiltgrass was reported by DEC, who requested survey assistance. WNY PRISM completed a survey and provided this information to DEC who returned to treat the infestation. Slender false brome was found at one new site along the Groveland Secondary Trail, in Genesee County, which DEC was also able to treat.



The Japanese Stiltgrass Habitat Suitability Map, developed in 2020, depicts areas where there is a higher probability of the species being found. The blue points represent current, known populations.

Survey sites were prioritized based on the habitat suitability models for Japanese stiltgrass and slender false brome. The GIS-based models use many factors to identify areas where each speices is most likely to be found including known locations and pathways of spread. Each of the new Japanese stiltgrass infestations and the slender false brome infestation were found at sites identified as high probability areas by the habitat suitability models.

Japanese stiltgrass is easy to identify with the silver, off-center mid-rib that develops as the plants mature later in the spring.

Aquatic early detection surveys targeting water lettuce and water hyacinth were conducted with known water lettuce and water hyacinth sites visited for annual monitoring and removal. WNY PRISM was unable to gain permission to access a water lettuce site located on private property, however the landowner had previously agreed to remove the plants should they survive through the previous winter. Nearby public sites were surveyed to determine if the population was spreading, but no plants were found. In addition, and based on a partner recommendation, Bond Lake Park was surveyed for water lettuce and water hyacinth, with no plants observed. Partner reports led to confirmation of water lettuce at Hyde Park Lake and water hyacinth at Buckhorn Island State Park.

Early Detection Species Management

Japanese Angelica Tree

Japanese angelica tree was reported to WNY PRISM in 2018 after being identified and confirmed at Lake Erie State Park by NYS Parks. With assistance from NYS Parks, who cleared out last year's brush to improve site access, WNY PRISM treated the 0.25-acre infestation for the second year in 2020. Larger Japanese angelica trees, those over 3' tall, were treated using a basil bark herbicide treatment while those smaller than 3' tall, including resprouts, received a spot foliar treatment. WNY PRISM spent 4 hours on Japanese angelica tree treatment in 2020 compared to 27 hours in 2019. The significantly less time spent on treatment this year demonstrates the effectiveness of previous efforts and is encouraging for future efforts.

WNY PRISM assisted NYS Parks with Japanese angelica tree removal efforts in 2019 and implemented a follow-up treatment in 2020. This picture shows the infestation prior to treatment.

Japanese Stiltgrass

ISMA, Kyle Serena, manually removed Japanese stiltgrass from Franklin Gulf County Park.

WNY PRISM treated 12 acres of Japanese stiltgrass across 13 sites using a combination of manual and chemical removal. Manual removal took place at 8 sites, 5 of which are along Cazenovia Creek in Erie County: Cazenovia Creek Fish and Wildlife Management Area, Cazenovia Park, Majors Park, Mill Road Park and Red Jacket Park. Emery Park, also located along Cazenovia Creek, was visited for manual removal but no plants were found this year. Japanese stiltgrass was manually removed from Franklin Gulf County Park, along Big Sister Creek, Kenneglenn Scenic and Nature Preserve along Hunter's Creek, and a site along the Niagara Gorge. A few individuals were found at Kenneglenn and the Niagara Gorge, but a more significant infestation was present at Franklin Gulf. WNY PRISM removed 27 garbage bags of Japanese stiltgrass in 2020.

Herbicide spot treatments were used to treat Japanese stiltgrass at 5 sites. Three, Oakwood Cemetery, American Legion VFW Post 362 and Hunters Creek County Park, are in their second year of treatment. Despite being first reported in 2019, Chestnut Ridge County Park received its first treatment in 2020.

Japanese stiltgrass was found during an invasive species inventory survey of Mossy Point in 2020, a site recently acquired by the WNY Land Conservancy and adjacent to Hunters Creek County Park. Mossy Point was treated with herbicide alongside Hunters Creek and all chemically managed sites were treated twice this season. The second treatment is used to ensure the entire infestation was treated by catching any individuals that emerged after the first treatment or that may have been missed.

Mile-A-Minute

The coordinated management of mile-a-minute is the focus of the Mile-a-minute Working Group, facilitated by WNY PRISM. Efforts are focused on infestations in the Oakfield area, one on private property and a second at Oak Orchard WMA, the only known populations in the region. Surveys have been conducted around the known sites and no new populations have been found.

WNY PRISM ISMA, Julia Biondi, pulled mile-a-minute in Oakfield, assisting with management research.

A team led by Dr. Kathryn Amatangelo, at the College at Brockport, has been implementing research on mile-a-minute and has established management plots and untreated control areas to investigate best management practices for the species. The management strategies being looked into include herbicide, mechanical and herbicide, and manual removal.

WNY PRISM assisted with outreach efforts and manual removal in 2020. Outreach efforts included an informational mailer, based on a previously developed postcard, and sent it to 250 area residents by the research team. The postcard was originally developed by FL-PRISM, adapted by WNY PRISM in 2018 and provided for this effort along with our Best Management Practice fact sheet.

Slender False Brome

WNY PRISM treated 56 acres of slender false brome in 2020. Herbicide treatments were used at Letchworth State Park (Letchworth) and Genesee County Park and Forest (GCPF), while the remaining sites were addressed through manual removal. The entire slender false brome infestation at GCPF and selected areas of Letchworth, including the established research plots as part of a now concluded Great Lakes Restoration Initiative project to determine the best management practices for slender false brome, were treated with herbicide. Herbicide was found to be the most effective method when compared to mechanical and hybrid treatments, as well as the least costly which was primarily due to the time required to implement the treatments. Additional funding from a DEC Rapid Response Grant allowed a new 5-acre slender false brome infestation at Inspiration Point, also in Letchworth, to be

treated. However, areas of Letchworth were left untreated in 2020 as the full infestation is outside of WNY PRISM's capacity to manage.

Slender false brome monitoring and manual removal was implemented at 4 sites. All observed plants have been removed annually from a 1-acre area at Trestle Park since 2018 and from a 0.25-acre area at the Carlton Hill Multiple Use Area (MUA) since 2019. Manual removal will continue at these sites over the next few years to continue progress towards site eradication. Slender false brome was also removed from a section of the West Shore Trail, at Drew's Nature Center, an area WNY PRISM has focused on since 2018, and starting from the western extent of the infestation along the trail. Although sparse in sections, the infestation along the West Shore Trail extends 13 miles, through 4 townships, and includes both public and private property. The trail sees heavy ATV use, which is likely a primary vector for continued spread. WNY PRISM removed 1.25 garbage bags of slender false brome.

WNY PRISM hosted the NY/NJ Trail Conference Conservation Dog Program again in 2020. Dia, the Detection Dog, and her handler Joshua Beese, practiced slender false brome detection at Letchworth State Park.

The Great Lakes Slender False Brome Working Group is a collaborative effort that continues to bring people together to discuss slender false brome research, management, and strategies and to work towards eradication of this species. As part of this collaborative effort, we were able to work with the NY/NJ Trail Conference and Lower Hudson PRISM's Conservation Dog Program to continue training their dogs on the detection of slender false brome.

Water Hyacinth

Five of the 6 known water hyacinth infestations in the WNY PRISM region were visited in 2020 for continued monitoring and removal efforts. Of the 5 sites, only the Oppenheim Park location had water hyacinth present. The 6 plants found at Oppenheim Park were removed and properly disposed of. Water hyacinth had not been found at the site since 2015, which further stresses the need for long-term monitoring of early detection sites. The single known location not visited in 2020 is on private property. WNY PRISM was unable to reach the business owner to gain permission to access the site this year. In 2021, areas near this private property will be surveyed and attempts will again be made to contact the business owner.

One new water hyacinth infestation was reported in 2020, at Buckhorn Island State Park. WNY PRISM reached out to NYS Parks to inform them of the find and their strike team was able to both complete a survey and remove all plants found at this location. Approximately 2 dozen plants were removed.

Water Lettuce

In August, WNY PRISM received a report from Buffalo Niagara Waterkeeper that they found what they believed to be water lettuce at Hyde Park Lake in Niagara County. WNY PRISM visited the site on the day following the initial report and confirmed the presence of water lettuce. A survey and site assessment was then scheduled at our earliest availability, in accordance with established protocols. Close to 300 plants were found and removed from Hyde Park Lake as part of the initial survey. Known for the speed at which its able to reproduce, the need for follow-up surveys was identified.

WNY PRISM staff returned twice more in 2020, removing an additional 439 plants. During the final survey, small individuals were found to be hiding within riprap and below docks, making them very difficult to reach and remove. While WNY PRISM staff were diligent in ensuring each individual was found and removed, it is possible that some were not seen. WNY PRISM will continue to monitor this infestation.

Additional Species

WNY PRISM continued to work with U.S. Army Corps of Engineers – Buffalo District (USACE), DEC and U.S. Fish and Wildlife Service (USFWS) on the Tonawanda Creek/Erie Canal *Hydrilla* Demonstration Project, a multi-year project aimed at eradicating *Hydrilla* from the Erie Canal and providing information for the development of Best Management Practices. Due to COVID-19 health and safety protocols limiting non-agency staff from being on agency boats, WNY PRISM's direct involvement with survey efforts was reduced this year. However early discoveries of *Hydrilla* within the canal by WNY PRISM staff led to the discovery of an infestation within Sawyer Creek. This potential source population was included in the treatment this year.

Red swamp crayfish was found by students at the Park School in Amherst.

Red swamp crayfish was discovered by students at the Park School in Amherst and was reported to both iMap and WNY PRISM. Dr. Chris Pennuto, WNY PRISM Director, confirmed the identification and began working with the school and students to develop a trapping and monitoring program.

Management and Habitat Restoration

Goal: Assist with management planning and project implementation focused on long-term, sustainable projects that provide resilience against future invasions, and provide improved ecosystem function and services. Supported efforts will be based on WNY PRISM identified priorities through primarily technical assistance and training, with project implementation assistance when capacity allows.

WNY PRISM management and habitat restoration efforts include several types of projects across different ecological communities and involving many different partners and collaborative structures. Project work generally involves the manual or chemical removal of identified invasives species or habitat restoration through the addition of native seed or plugs. Most of this work takes place in terrestrial systems, including wetland, riparian, and upland communities, however efforts also involve aquatic invasive species removal. Not including early detection species removal efforts, WNY PRISM removed invasive species from approximately 63 acres including approximately 2 acres of aquatic species removal. Native seed and plugs were used to help restore 14 acres across 3 sites.

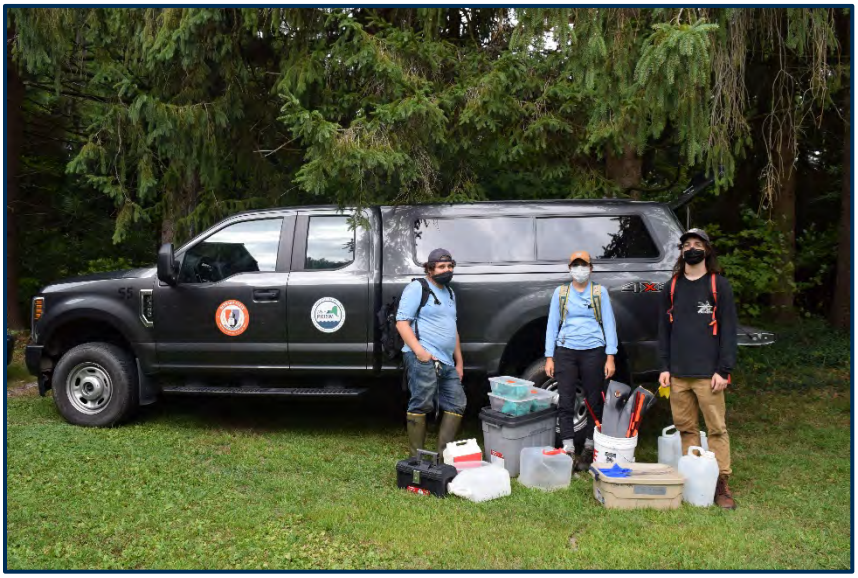
WNY PRISM Crew Assistance Program

The Crew Assistance Program (CAP) is one of WNY PRISM's most successful and longest running programs, having been established in 2016. Each year, WNY PRISM releases a request for project proposals through which partners may request assistance for invasive species removal, habitat restoration and/or invasive species surveys. The program, which takes the form of a trained 3-person Crew of Invasive Species Management Assistants, is designed to provide support for invasive species management projects and to help build partner capacity for future management projects through experiential learning and improved understanding of management strategies and methods. Over the course of the past few years, as WNY PRISM's other programming has expanded, the scope of the CAP has narrowed and no longer addresses traditional outreach requests or projects involving primarily early detection priority species.

The 2020 WNY PRISM Crew at the Eternal Flame, from left to right: Julia Biondi, Lucy Nuessle, Jason Kappan and Kyle Serena.

WNY PRISM recognizes that most invasive species removal efforts require multiple years of treatment and while project acceptance one year does not guarantee a project will be selected in subsequent years, we do take long-term project needs into account when selecting projects. We recognize that

invasive species management requires a significant commitment of time and resources, especially when addressing well-established issues within a highly impacted landscape, and we often continue projects for multiple years. This makes the decision to accept new projects more difficult, as our ability to fit them into our increasingly tight schedule decreases. To address this concern, we strongly encourage partners to provide long-term management plans in their proposals and we include this as one of our scoring criteria. In addition, we require partners who receive assistance through CAP agree to continued monitoring and management of the selected project for at least 5 years after WNY PRISM completes the agreed upon work.



The WNY PRISM Crew unloaded the truck at Houghton Preserve, to get ready for a day of cut-stump treatment.

WNY PRISM received 21 project proposals from 14 partners in 2020. Points are awarded for proposals within target areas (priorities, partnership, sustainability, and capacity), based on how well they met the criteria, and the highest scoring projects are given scheduling priority. After reviewing all the proposals, and addressing additional project commitments, 8 new projects/proposals were selected for 2020 including 6 management projects. The WNY PRISM Crew worked on invasive species removal projects at Alexander Preserve, Houghton Preserve, Browns Creek Tributary Forest Preserve, Fredonia Campus Woodlot, Bergen Swamp, and multiple Japanese knotweed sites in Niagara County. In addition, 3 previously selected CAP projects were carried over into 2020, to allow for a final year of treatment before the sites were handed back to project partners for monitoring and maintenance.

Alexander and Houghton Preserves are owned and managed by the Nature Sanctuary Society of Western New York (NSSWNY) and represent two high quality nature preserves with impressive native biodiversity and plant communities. This marks the first year WNY PRISM worked on the 118-acre Alexander Preserve, located within the Zoar Valley. The Crew worked on removal of an isolated, ½-acre autumn olive (*Elaeagnus umbellata*) infestation. Houghton Preserve, located near Springville, was first surveyed by WNY PRISM in 2019. The Crew, alongside several volunteers, removed glossy buckthorn (*Frangula alnus*) from 2.22 acres within the 23-acre preserve.

Browns Creek Tributary Forest Preserve, a 30-acre property located in Chautauqua County, is owned and managed by the Chautauqua Watershed Conservancy (CWC). Both *Phragmites* and knotweed were identified as target species for removal and CWC staff assisted with management by cutting the infestations prior to the Crew implementing a spot foliar application of herbicide. The Crew completed the treatment of 0.6 acres in September.

WNY PRISM has worked with SUNY Fredonia on invasive species removal efforts at the Fredonia Campus Woodlot for a few years. Each year we have worked with SUNY Fredonia staff and student volunteers to address invasive shrubs within the 18-acre project site. In 2020, the Crew spent 3 days working at the Campus Woodlot, treating bush honeysuckle, glossy buckthorn, and privet within a 0.85-acre section of the site. The goal of this project is to remove the well-established, larger individuals through cut-stump treatments, allowing for student volunteers to be able to maintain the site by hand-pulling seedings.

WNY PRISM Crew, from left to right Kyle Serena, Jason Kapan, Julia Biondi, keeping 6' distance while spraying phragmites as Browns Creek Tributary Forest Preserve.

Efforts to address invasive species removal and mapping continued at Bergen Swamp, a 2,000-acre nature preserve and Natural National Landmark comprised of diverse wetlands, fens, cedar swamps and pine-hemlock forests surrounded by rural and agricultural communities. The unique habitats and native flora and fauna present in Bergen Swamp make this preserve a high priority conservation area. The Crew spent 2 days addressing invasive shrubs, Japanese and common barberry (*Berberis spp*.) and multi-flora rose, and *Phragmites* within a 2-acre section of preserve and spent 2 days completing a comprehensive survey of a 50-acre section. Invasive species treatments included foliar herbicide application for the shrubs and use of 'clip and drip' for the *Phragmites*.

Stem injection is an effective method of treating species like Japanese knotweed.

WNY PRISM assisted Niagara County Soil and Water Conservation District (NCSWCD) with their Niagara County Japanese Knotweed Eradication Program for the third year. This ambitious program aims to address all knotweed within the county using a systematic approach to surveys and treatment. Approximately 400 sites have been identified as part of this program. The Crew joined NCSWCD staff for 3 days, treating 0.97 acres across 3 sites. The Crew assisted with herbicide stem-injection, the preferred method for an initial treatment of smaller infestations. Sites that have been managed previously have been transitioned to foliar follow-up treatments.

WNY PRISM worked on 3 projects that had previously been selected through CAP and that were identified as needing an additional year of follow-up treatment before we were comfortable handing the site back to project partners for monitoring and maintenance. The Crew has been working to remove glossy buckthorn from College Lodge Nature Preserve, located in Chautauqua County for several years. The 200-acre property contains diverse, high-quality forests and wetlands and represents a long-term investment on the part of WNY PRISM. This final year of treatment included a 2.3-acre section of the preserve.

The Crew implemented a third, and final year of Japanese knotweed removal at an Erie County streambank stabilization project along Cayuga Creek. One person was able to address the knotweed in a 0.6-acre area of the 11-acre site in just a few hours. This year also marked the third year of honeysuckle removal at the Rosche Preserve, a 44-acre property located in Cattaraugus County. The site includes a variety of wetland, woodland and open grassland habitats and honeysuckle had been encroaching on the isolated wetlands. Working with volunteers, the Crew was able to address the necessary honeysuckle follow-up as well as address multi-flora rose.

Although not a CAP project, the Crew also spent parts of 3 days working on invasive species removal along the Riverwalk Trail in Buffalo, in a section of trail between Porter Avenue and the Peace Bridge that runs parallel to I-190. Now in the third year of management, the Crew implemented follow-up treatments for knotweed, *Phragmites*, mugwort, and wild parsnip. The 2.3-acre project site is part of a broader effort to understand what management of urban trails will entail.

Management and Restoration Projects

Seneca Bluffs Natural Habitat Park Restoration Project

Seneca Bluffs Natural Habitat Park is a small preserve located within the city of Buffalo, along the Buffalo River, and owned and managed by Erie County. The preserve serves as an example of a long-term collaborative effort to remove invasive species and restore ecosystem function. The project features several partners focused on different aspects of the restoration. In February, WNY PRISM brought

Seneca Bluffs Before & After knotweed removal. The photo on the left shows the knotweed infestation ahead of WNY PRISM's first treatment in 2015 (site was mowed prior to treatment). The photo on the right shows the same area, pre-treatment 2019.

partners together to discuss the status of the restoration and to identify next steps. Invasive species removal and hydrologic restoration have been very successful and as these efforts come to an end, a new focus will need to be placed on monitoring, maintenance, and native plant restoration. Moving forward, emphasis will be placed on monitoring restoration efforts and rebuilding a native seed bank and plant communities to compete against the reestablishment of invasive species.

The USACE designed and implemented streambank stabilization, native plant restoration and invasive species removal along the lower terrace and conducted their final year of treatment in 2020. Erie County Soil and Water Conservation District completed the soil grading within the more recently purchased addition to the preserve and Buffalo Niagara Waterkeeper continued to work with volunteers to add native trees. WNY PRISM has implemented invasive species management efforts at Seneca Bluffs every year since 2014. Efforts initially focused on knotweed, but as knotweed has been successfully removed from the site, efforts have shifted towards mugwort, *Phragmites*, reed canarygrass, and Canada thistle. WNY PRISM has also shifted efforts from strictly invasive species removal towards restoration. In 2020, WNY PRISM planted native seed within sections of the preserve that have seen the most significant reduction in invasive species cover.

Priority Lands Invasive Species removal and Volunteer Monitoring Program

In 2018, WNY PRISM received funding to implement the Priority Lands Invasive Species Removal and Volunteer Monitoring Project through the U.S. Forest Service Great Lakes Restoration Initiative Cooperative Weed Management Areas grant program. This project represents a collaborative effort between WNY PRISM, the Western New York Land Conservancy and Buffalo Audubon Society. WNY PRISM has focused efforts on invasive species removal at 3 high quality nature preserves (Niagara Escarpment Preserve, The Owen's Falls Sanctuary and the North Tonawanda Audubon Nature Preserve) while the Land Conservancy focused their efforts on the development of a volunteer monitoring program and restoration efforts within the 13-acre grassland area at the Stella Niagara Preserve. WNY PRISM has also assisted with invasive species removal efforts at Stella Niagara, focusing on the wooded areas framing the site.

Invasive species removal efforts began in 2018 and continued throughout 2019. The project was expected to be complete in June 2020, but due to COVID-19 impacting the start date for the Crew, we received a 1-year no cost time extension to complete the work.

The Crew spent a few days in August and September treating multiple species at Owen's Falls, Niagara Escarpment Preserve and

The waterfall that gives Owen's Falls its name peaks through the trees in the spring and at North Tonawanda Audubon Preserve, staff remove large buckthorn in December.

North Tonawanda Audubon Preserves. Management efforts focused on the foliar and/or cut-stump treatments of common buckthorn, honeysuckle, glossy buckthorn, multi-flora rose and privet. A small population of tree-of-heaven was removed from Niagara Escarpment Preserve. In December, WNY PRISM staff spent an additional day removing larger, individual common buckthorn present at North Tonawanda Audubon Preserve. These trees represented a significant seed source and removal will assist in the long-term success of management efforts.

Mosquito Junction – Tifft Nature Preserve

WNY PRISM assisted Tifft Nature Preserve and The Buffalo Museum of Science with implementation of the Mosquito Junction Swamp Restoration at Tifft Nature Preserve Project in 2020. Tifft Nature Preserve is a 264-acre urban nature preserve that provides valuable habitat for migratory songbirds. Along the margins of a large, remnant marsh there are other types of wetlands and transition zones such as one area named Mosquito Junction. This project focuses on the removal of invasive species and restoration of native plant communities within this area.

Working alongside Tifft stewardship staff, the Crew implemented invasive species removal efforts focused on common buckthorn, glossy buckthorn and *Phragmites*. Foliar treatment of common buckthorn resprouts and seedlings took place in August across a 2.7-acre area ahead of native tree, shrub, and herbaceous plant installation. Due to heavy deer browse within the preserve, considerable time was taken to wrap each of the planted trees and shrubs. In September, the Crew worked outwards from the native planting area towards a large infestation of *Phragmites*, continuing to work on buckthorn removal.

Restoration Seed Mixes

WNY PRISM has begun work to identify means through which enhanced resiliency against the re-establishment of invasive species within managed sites may be achieved. The first few years following the initial removal of invasive species are key to achieving long-term success as it is during this time that invasive species will re-emerge, gaining a competitive advantage before native species are able to establish. With support from the Lake Erie Watershed Protection Alliance, WNY PRISM developed native seed mixes with species that have characteristics likely to provide increased competitiveness against invasive species during the early years of restoration. Separate mixes were created for upland and riparian areas. Three sites that had seen significant invasive species removal efforts were selected and the seed was spread just before winter set in. WNY PRISM will continue to monitor the sites to see how well the mixes perform against potential reestablishment of invasive species.

WNY PRISM spread native seed at Tifft Nature Preserve to look at native species establishment.

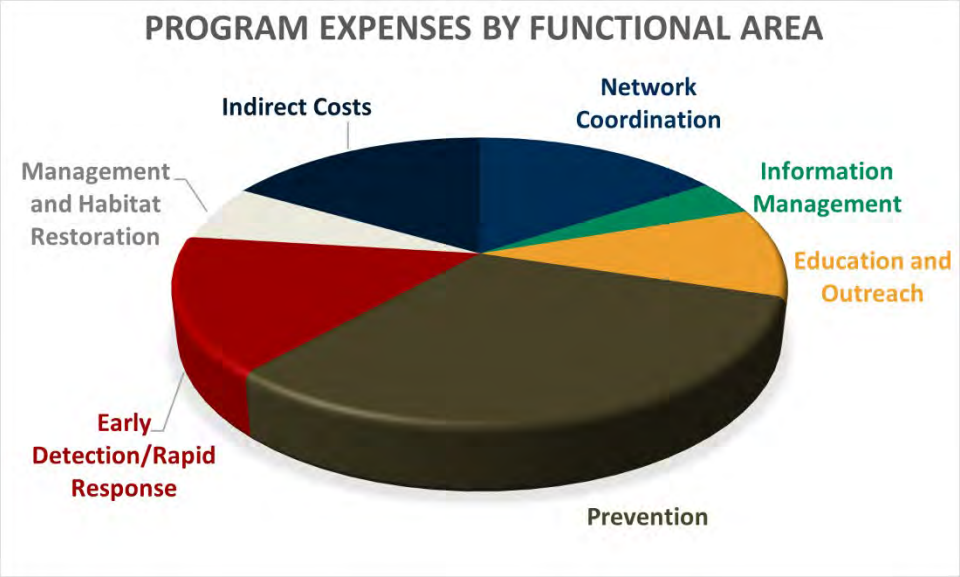
Aquatic Invasive Species Removal Projects

Aquatic invasive species removal efforts focused on water chestnut and European frog-bit. Water chestnut removal included assisting Water Chestnut Working Group partners with projects at the Audubon Community Nature Center (ACNC), Camp Timbercrest Girl Scout Camp and Conewango WMA. Approximately 77 plants were removed from Camp Timbercrest and 66 were removed from Conewango WMA. Work at ACNC has been ongoing for several years, but the number of plants continues to trend downward. Low water levels made survey and removal efforts difficult at Conewango WMA this year. It was not possible to kayak much of the site and the mud made walking nearly impossible. WNY PRISM Boat Stewards spent a single day assisting with removal in 2020, accessing plants using waders and kayaks.

WNY PRISM removed European frog-bit from the area around the boat launch at Harwood Lake.

Harwood Lake was surveyed for European frog-bit, first reported and confirmed in 2019, which was found present in approximately 1.07 acres of the 38-acre lake. Two large garbage bags of European frog-bit were removed from an area surrounding the boat launch by WNY PRISM Boat Stewards, where it was the most dense, but additional removal will be necessary. WNY PRISM Boat Stewards also assisted NYS Park with frog-bit removal at Buckhorn Island State Park on Grand Island, helping to remove over 2,700 pounds of plant material over the course of 5 days.

Summary of Program Expenses



This summary of program expenses is intended to provide a general overview of how WNY PRISM divided time and resources in 2020. It includes all funded programs. Expenses were grouped together by Goal/Core Function. Most WNY PRISM activities fall within multiple categories and effort was taken to place expenses in the most appropriate category. This is not intended to serve as a financial report.

Network Coordination (15%) - Activities and expenses related to Partner/Network Coordination including the cost of program administration, general office supplies, travel, and related personnel costs.

Information Management (5%) - Activities and expenses related to Information Management including related personnel costs, survey and monitoring, prioritization, research, outreach, and supplies.

Education and Outreach (9%) - Activities and expenses related to Education and Outreach including related personnel costs, volunteer management, website and online resources management, materials development, travel, and supplies.

Prevention (31%) - Activities and expenses related to Prevention including related personnel costs, boat stewardship program management, travel, and supplies.

Early Detection/Rapid Response (14%) - Activities and expenses related to Early Detection and Rapid Response including related personnel costs, site assessments and monitoring, outreach, travel, and supplies.

Management & Habitat Restoration (6%) - Activities and expenses related to Habitat Management and Restoration Goals, including related personnel costs, Crew Assistance Program, planning, travel, and supplies.

Indirect Costs (20%) - Indirect Costs as determined by the Research Foundation for SUNY Buffalo State.