

# 2021

## WNY PRISM Annual Report



Prepared By

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*Cover Photo: WNY PRISM Watercraft Inspection Steward/Environmental Educators worked with staff and volunteers from the Audubon Community Nature Center to remove water chestnut from Big Pond.*

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

## Introduction

Invasive species are those species which are 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. Western New York is particularly at risk to the threat of invasive species due to both the human and geographic characteristics of the region. Human impacts, including development and alterations to the landscape, and the region's position along several prominent pathways of invasion, including well-traveled commerce and transportation corridors and location within both the Great Lakes Basin and Mississippi River Watersheds, lead to the increased likelihood of establishment and spread of invasive species. WNY PRISM is home to over 600 unique, non-native species.



*The WNY PRISM region encompasses the eight western-most counties of NYS and is the only PRISM region to include two of the Great Lakes: Lakes Erie and Ontario.*

Established in 2014, the WNY PRISM office has worked to meet the invasive species management needs of the region, forming partnerships, developing new programs and resources, and addressing staff capacity through hiring Program Managers and increasing seasonal hiring. In 2021, WNY PRISM focused on expanding and improving early detection and prevention programs. This effort focused on several aspects of these programs including removal activity, data collection, community science and behavior change education.

WNY PRISM would like to thank our host organizations, 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. WNY PRISM looks forward to continuing to build relationships and work together to achieve long-lasting, sustainable success.

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 NYS Department of Environmental Conservation (DEC). Additional funding is provided through federal, state and foundation grant programs including the Great Lakes Restoration Initiative.



Department of  
Environmental  
Conservation



NEW YORK STATE  
INVASIVE SPECIES  
MANAGEMENT



## 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.

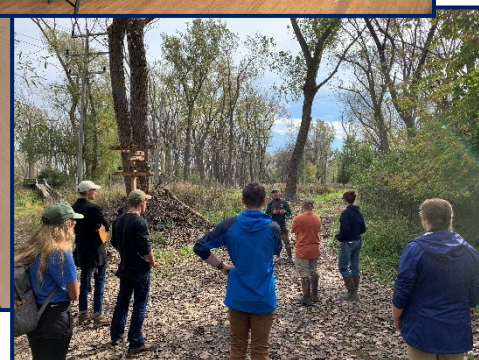
## Operational Structure

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, 25-30 seasonal/short-term staff and student interns.

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 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.

Partner 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. Working Groups and Partner 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 our first in-person Full Partnership Meeting since 2019 in October. The meeting was held at Tiff Nature Preserve and included a tour of the Mosquito Junction Restoration Project, led by Tiff Steward, Zachary Goodrich.*

**WNY PRISM Steering Committee**

Buffalo Niagara Waterkeeper	Robert Coady
Cornell Cooperative Extension of Erie County	Sharon Bachman
WSP (formerly Ecology & Environment, Inc.)	Paul Fuhrmann
New York Sea Grant	Megan Kocher
NYS Certified Nursery and Landscape Association/Chestnut Ridge Nursery	Bob Smith
NYS Department of Transportation	Mark Bogdan
NYS Department of Environmental Conservation, Region 9	Jennifer Dunn
NYS Office of Parks, Recreation and Historic Preservation	Aaron Heminway
Royal Fern Nursery, Chautauqua Watershed Conservancy	Jonathan Townsend
U.S. Army Corps of Engineers – Buffalo District	Kathleen Buckler
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**

<b>Dr. Christopher Pennuto</b> Director	<b>Andrea Locke</b> Coordinator
<b>Brittany Hernon</b> Program Manager – Terrestrial	<b>Cecilia Pershyn</b> Program Manager – Education and Outreach
<b>Nicole Smeenk</b> Program Manager – Aquatic	

**Seasonal Staff**

**Education and Outreach Assistant**

John Montgomery

**Invasive Species Management Assistants**

Aubrey Franks · Jason Kappan · Lyndzie Vail

**Lead Watercraft Inspection Steward/Environmental Educators**

Jesse Stevens · Vincent Manuella

**Watercraft Inspection Steward/Environmental Educators**

Benjamin Halleck · Colin Kingsbury · Emily O’Bryan · Emma Ranney · Greer Barclay · Heather Reimondo  
Jennifer Kachermey · Mia Giannini · Nate Beard · Nicholette Nowak · Noah Gerstein · Tyler Harrington  
Nicole Hertel

**Early Detection Survey & Monitoring Technicians**

Amanda Gabryszak · Sonya Bayba

**GIS Technician**

Melissa Boglioli



## WNY PRISM 2021 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 2021 Annual Work Plan](#) provided the framework for 2021.

The WNY PRISM Annual Report provides an overview of the projects and programs WNY PRISM implemented in 2021. Most of the work described in this report is funded through the WNY PRISM contract. However, some projects, including the Western New York Japanese Stiltgrass Early Detection and Rapid Response Project and the Tiffitt Nature Preserve Mosquito Junction Restoration, are funded through external grant programs such as the Great Lakes Restoration Initiative and Greenway Ecological Standing Committee. For more information on the projects and programs mentioned in this report, or to view additional documents and resources, please visit [www.wnyprism.org](http://www.wnyprism.org).

WNY PRISM depends on strong partnerships to achieve success, and many of the projects highlighted in this report include support and assistance from partner organizations. In this way, the WNY PRISM Annual Report serves not only as a record of WNY PRISM activities, but as an overview of invasive species management efforts taking place across the region.

This 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.



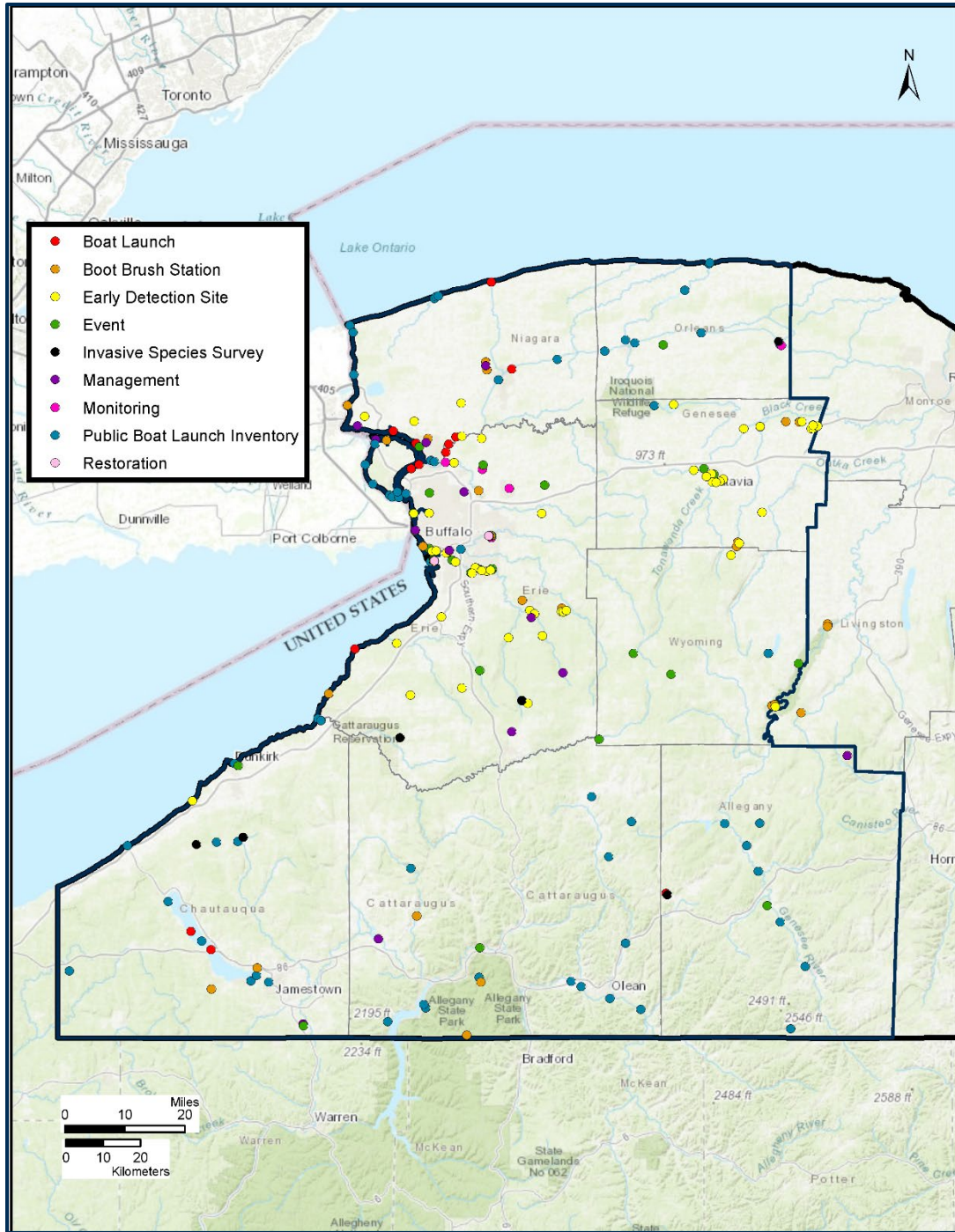
*WNY PRISM coordinates a Watercraft Inspection Stewardship Program and several field-based invasive species management programs. WNY PRISM Boat Stewards practice inspections during training on the left and the WNY PRISM Crew treats common buckthorn resprouts within the North Tonawanda Audubon Preserve on the right.*

## WNY PRISM 2021 Programmatic Highlights

- WNY PRISM has worked with **193** partners including **21 new partners** in 2021.
- Hired new **Education and Outreach Program Manager**, Cecilia Pershyn.
- Hired **23 seasonal staff members** – Invasive Species Management Assistants (3), Education and Outreach Assistant (1), Boat Stewards/Environmental Educators (15), GIS Technician (1), Survey & Monitoring Technicians (2).
- The Crew Assistance Program received **18 proposals** from **12 partners**. WNY PRISM selected **9 projects** – **4 management/removal, 4 survey, and 1 management and restoration project**.
- **3 water hyacinth** sites are **presumed eradicated** after 5 years of monitoring without occurrence.
- **Surveyed 2800 acres** for invasive species, not including early detection species surveys.
- **24 sites surveyed** for **early detection species** including **700 hours of effort** and **95 miles of trail** surveyed.
- **Early detection** priority species removal efforts resulted in **31 sites managed** with a combination of herbicide and manual removal, resulting in **20 bags of Japanese stiltgrass, 9.25 bags slender false brome, 38 water hyacinth** plants and over **150 water lettuce** plants removed.
- WNY PRISM staff submitted **819 records** to iMapInvasives including **41 unique species**. **1,113 total records** were submitted to iMapInvasives from the WNY PRISM Region.
- The **top five recorded** invasive species for WNY PRISM in 2021 are **multi-flora rose, bush honeysuckle, beech leaf disease nematode, slender false brome** and **Japanese barberry**.
- **Slender false brome** was the **top not-detected species**.
- Tabled at **12 events**, delivered **22 presentations** and held **5 workshops** resulting in **1,237 direct contacts**.
- WNY PRISM's YouTube Channel received **472 views** and over **60 hours watched**.
- Obtained **130 signatures** on WNY PRISM **Pledge to Protect** commitment banners, created **new wallet cards** and **"I Pledge to Protect" stickers** to give to those who signed.
- WNY PRISM staff responded to **103 public inquires**, submitted through the website, email and by phone. Questions about **knotweed management made up 20% of inquiries**.
- Facebook posts **reached 31,244** individuals and WNY PRISM added **160 new followers**.
- Instagram posts and stories **reached 13,018** individuals and WNY PRISM added **207 new followers**.
- Developed **6 Boot Brush Stations** for partners, currently awaiting installation – **31 Boot Brush Stations** have been fully installed across the WNY PRISM region.
- The Watercraft Inspection Stewardship Program (WISP) achieved a **92% acceptance rate** with **684 interceptions** – the most encountered species were **Eurasian watermilfoil (390)** and **curly leaf pondweed (237)**.
- Added two new surveys to WISP – the walk-up pedestrian survey and angler survey. **Boat Stewards conducted 409 pedestrian surveys and 345 angler surveys**.
- Boat Stewards conducted **12,886 boat inspections** working at **15 launches** across **4 counties**.
- **Spread prevention measures** were taken by **65%** of survey participants prior to talking with a Boat Steward and **78% agreed to take the "Clean. Drain. Dry." pledge**.



# WNY PRISM – Where We Work



## Partner and Network Coordination

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*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.*

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WNY PRISM works closely with partners and stakeholders across the region to address priority invasive issues. It is through partnership that we work to improve the effectiveness of invasive species management efforts, increase awareness of invasive species issues and encourage the adoption of spread prevention action among partners and the public.

Partner and network coordination begins with the WNY PRISM Steering Committee, which is comprised of member organizations, agencies, businesses and citizens who represent the varied invasive species management interests within the WNY PRISM region. The Steering Committee provides essential support for WNY PRISM efforts including the review and approval of strategic and species priorities, operational documents, and proposals. Several members also participate in WNY PRISM Working Groups. Terrestrial, Aquatic, and Education and Outreach Working Groups are open to all those interested in supporting WNY PRISM efforts and assisting with various projects, programs and initiatives.



*WNY PRISM staff attended the New York State Invasive Species Summit in November. Staff had the opportunity to meet with partners and stakeholders from across the state to discuss important invasive species management issues. Photo Credit: Kate Monacelli, Finger Lakes PRISM.*

In 2021, WNY PRISM collaborated with 21 new partners, bringing the total number of partners we've collaborated with to 193. In addition to working with partners on project implementation, we also promote their programs and events. As part of WNY PRISM presentations and workshops, we acknowledged partner programs and accomplishments 83 times.

WNY PRISM staff responded to over 100 inquiries from the public, received through our website, email and by phone. Topics were varied and ranged from observation reports, volunteer events and requests for presentations to job opportunities. However, the most frequent questions received were about management recommendations, and knotweed was the most asked about. In response to public interest, WNY PRISM focused our annual Terrestrial Management Workshop on knotweed Best Management Practices and strategies.

## Collaboration

WNY PRISM works to provide the region with support and resources necessary to implement invasive species management projects while also working with statewide and greater regional partners. Working with partners outside of the region allows WNY PRISM to provide support for shared priorities and ensure priorities of the WNY PRISM region are incorporated into broader programs. WNY PRISM staff participate in, and/or facilitate, several local, statewide and regional working groups, task forces and collaboratives to better support the region we serve. Within each of these collaboratives, members work together to develop and implement a wide range of projects aimed at improving management efficacy.

WNY PRISM facilitates and/or participates in the following local, regional and statewide collaboratives:

- AIS Lakes/Ponds Prioritization
- Great Lakes Action Agenda
- Great Lakes Environmental Sciences PSM Advisory Board
- Great Lakes *Hydrilla* Collaborative
- Great Lakes *Phragmites* Collaborative
- Great Lakes Slender False Brome Working Group
- iMapInvasives SLF-TOH Survey Working Group
- iMapInvasives Tier Ranking Working Group
- Lake Erie Watershed Protection Alliance Watershed Advisory Committee
- NYS Aquatic Coordinators Working Group
- NYS *Hydrilla* Task Force
- NYS Invasive Species Management Metrics Working Group
- NYS Pesticide Stakeholder Working Group
- NYS Terrestrial Coordinators Working Group
- *Phragmites* Adaptive Management Framework
- PRISM Education and Outreach Committee
- Swallow-wort Research Group
- Watercraft Inspection Stewardship Program Manual Update
- Watercraft Inspection Stewardship Program App (WISPA)
- WNY Forest Pest Task Force
- WNY Mile-A-Minute Working Group
- WNY PRISM Aquatic Working Group
- WNY PRISM Education and Outreach Working Group
- WNY PRISM Terrestrial Working Group
- WNY Spotted Lanternfly Working Group
- WNY Water Chestnut Working Group



NEW YORK STATE  
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WNY PRISM provides support for partners seeking funds for invasive species management efforts in the forms of proposal review, grant resources and letters of support. Letters of support were provided for the Wyoming County Soil and Water Conservation District, Great Lakes Center and Nature Sanctuary

Society of Western New York. Wyoming County Soil and Water Conservation District's Invasive Japanese Knotweed Management on East Koy/Wiscoy Creek project was awarded funding and WNY PRISM will continue to support the project by assisting with the development of a workshop targeting municipalities. Awards have yet to be announced for the remaining submitted proposals.

## Partner Meetings

WNY PRISM held partner meetings in the spring and fall of 2021. The spring meeting, held remotely, focused on preparing for the upcoming field season by reviewing the various toolkits, trainings and resources WNY PRISM has developed to assist with regional efforts, including survey and site assessment protocols, [Best Management Practices](#), spread prevention tools, and priority species resources. The fall partner meeting,



held at Tiff Nature Preserve, featured a welcome return to in-person meetings and we took full advantage of the opportunity with a tour of the Mosquito Junction Restoration Project. In addition, we were joined by Nate Drag, Great Lakes Literacy Specialist and Associate Director of the Great Lakes Program for New York Sea Grant, who led a discussion on improving the success of volunteer-based programs.

## WNY PRISM Listserv

The WNY PRISM Listserv is the primary means by which WNY PRISM shares important invasive species information and resources with partners. In 2021, 108 emails were sent through the Listserv by WNY PRISM, iMapInvasives (iMap) and the New York Invasives Species Research Institute (NYISRI). Listserv membership increased by 32 subscribers, bringing the total Listserv membership to 334.

WNY PRISM Listserv Email Breakdown:

- 23 WNY PRISM eNews
- 33 event announcements
- 11 statewide webinar announcements
- 12 job opportunities
- 2 grant/funding opportunities
- 24 news items
- 3 calls to action

The WNY PRISM eNews is a biweekly digest of invasive species news, grant information, job openings, professional development opportunities and public events. Several items included in the eNews, such as funding, events and job opportunities, are not sent individually and therefore not included in the individual category metrics.

## Information Management

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*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.*

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### Prioritization

#### Invasive Species Tier Ranking

The NYS Invasive Species Program developed a system to prioritize invasive species based on management strategies and recommendations. The aim of this program is to provide a level of consistency 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 (presence and distribution), impact (including potential future impact), cost of control, and the difficulty of control. WNY PRISM first adopted the tier system in 2019, using it to identify species priorities, inform management decisions, and assist in project selection. In 2021, WNY PRISM revisited species tiers based on an effort by iMap to develop a program that would automatically assign tier rankings based on presence and distribution data within the database.

iMap provided WNY PRISM with recommended tier rankings for over 1400 non-native and invasive species both present within the region and within a 100-mile buffer. WNY PRISM staff worked with the WNY PRISM Terrestrial and Aquatic Working Groups to conduct a review of the provided tier rankings and made several recommended changes for species tiers and for the model used to generate the tiers. After the Working Groups approved or selected a new tier for each species, the WNY PRISM Steering Committee was presented the rankings for final approval, which was received in March.



*Multi-flora rose is ranked as a Tier 4 species in WNY PRISM. Tier 4 species are widespread in the region and management is recommend as part of an asset-based protection strategy. Multi-flora rose was the most reported species in WNY PRISM this year.*

The full list of tiered species includes many species that are low priority. Therefore, WNY PRISM has produced a shorter list of 146 species, [WNY PRISM Invasives Species Tier Rankings](#), as a quick reference for partners. These species represent species of concern and interest to the region.

## Species Priorities

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 (Prevention) and Tier 2 (Early Detection/Eradication) categories. WNY PRISM prioritizes the survey, monitoring and management of these species, as well as education and outreach related to increasing regional awareness.

The Data Gap Species Priority List is adjusted annually. In 2021, four species were selected as priority data gap species: tree of heaven, wild chervil, callery pear and swallow-wort. WNY PRISM field staff were trained to identify these species and instructed to keep a lookout for them. We also highlighted them in outreach and social media, seeking help from community scientists to add observations to iMap.

### **Approaching Region Priority Species** – *species not yet present in WNY PRISM*

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

### **Early Detection Priority Species** – *species present in WNY PRISM*

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

### **Data Gap Species Priorities** – *more information is needed on presence and distribution*

- |   |                              |
|---|------------------------------|
| 1) <i>Ailanthus altissima</i>           | Tree of Heaven               |
| 2) <i>Anthriscus sylvestris</i>         | Wild Chervil                 |
| 3) <i>Pyrus calleryana</i>              | Callery (Bradford) Pear      |
| 4) <i>Vincetoxicum (Cynanchum) spp.</i> | Black and Pale Swallow-worts |

## Surveys and Monitoring

### Data Collection Protocols

The collection and assessment of data is essential for invasive species management planning and WNY PRISM continues to develop and refine data collection protocols for general invasive species surveys, early detection surveys, site assessments and post-treatment assessments. The information gathered as part of invasive species management efforts is used to develop and adjust management plans, guide future survey efforts, acquire funding, inform education and outreach programs and much more.

In 2021, WNY PRISM updated our [invasive species survey and site assessment protocols](#) based on small adjustments made ahead of the field season. Post-treatment data collection protocols were developed and tested during the field season. WNY PRISM encourages partners to use the updated protocols to help improve invasives species presence and distribution data throughout the region, to track early detection priority species, and to take steps towards improved management success.

### Data Gap Surveys

WNY PRISM conducts invasive species surveys to address data gaps and further inform management efforts within the region. Surveys consist of general inventories and species-specific efforts. Invasive species inventory surveys were carried out at Cazenovia Park (16.8 acres), along the snowmobile trail at Franklin Gulf (28.2 acres), and along a 1.25-mile stretch of the Erie Canalway Trail (1.2 acres) including portions of the adjacent Holley Canal Falls Park (9.7 acres).

Species specific efforts focused on 4 species: tree of heaven, swallow-wort, wild chervil, and callery pear. Each species was chosen to support WNY PRISM and partners program initiatives. Tree of heaven is a statewide priority due to its relationship with spotted lanternfly and the swallow-worts are the focus of priority biocontrol research. Both wild chervil and callery pear are believed to be significantly underreported within the region and improved presence and distribution data is necessary to prioritize management projects and support spread prevention efforts.



*The Crew took a break to enjoy the scenery during an invasive species survey along the snowmobile trail at Franklin Gulf County Park.*

## Water Chestnut Surveys

WNY PRISM continues to focus efforts on water chestnut surveys within the Southern Tier. Working in collaboration with partners through the WNY Water Chestnut Working Group, several sites were surveyed and monitored in 2021.

WNY PRISM staff surveyed 25.5 acres within Conewango Swamp Wildlife Management Area and the northern portion of Cuba Lake (68.6 acres). Water chestnut was not found in Cuba Lake, however 66 plants were found and removed from Conewango Swamp.

Volunteers with Camp Timbercrest surveyed Kaiser Lake for the third year, finding and removing 105 plants. The entire shoreline area of the lake has been surveyed, but volunteers have not yet surveyed the full waterbody. The Chautauqua Watershed Conservancy and Roger Tory Peterson Institute, with support from the Audubon Community Nature Center (ACNC), surveyed the Chautauqua Outlet in July, removing 50 plants. A follow-up survey in August, led by the Chautauqua Lake and Watershed Management Alliance, resulted in no additional plants found.

Two new water chestnut sites were confirmed in 2021. The first site is on private land in Cattaraugus County and the second site is at Allegany State Park, at Red House Lake. In both cases, all observed plants were removed and sites are expected to be monitored annually moving forward. Additional surveys within Allegany State Park (Quaker and Science Lakes) resulted in no plants found.

## Buffalo Harbor Aquatic Plant Survey

The Buffalo Harbor was identified as one of three priority sites for the Invasive Aquatic Plant Surveillance in New York Great Lakes Ports Project, led by The Nature Conservancy. WNY PRISM staff assisted The Nature Conservancy with the selection of priority areas within the Buffalo Harbor and Niagara River, and with the survey and plant sampling.

The survey took place over the course of 3 days and stretched from the Buffalo Outer Harbor, including a



*Water Chestnut surveys and site monitoring resulted in approximately 225 plants being removed from 5 sites.*

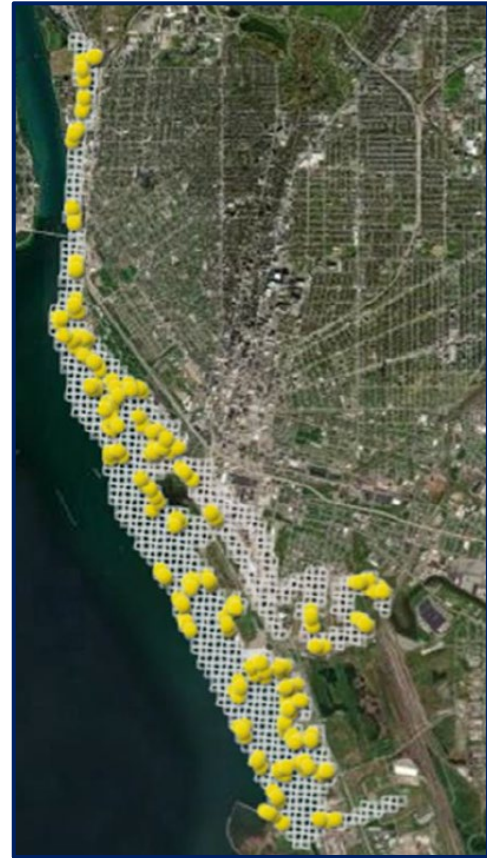


*Eurasian Watermilfoil was the most common invasive species found during the Buffalo Harbor Aquatic Plant Survey.*



portion of the Buffalo River, to the mouth of Scajaquada Creek. Plants were collected using rake tosses, conducted by WNY PRISM staff. Plants were separated and when possible, identified in the field by a trained taxonomist. If the specimen couldn't be identified to species in the field, it was retained and identified in the lab. Plant specimens were collected for vouchering and provided to the SUNY Oswego herbarium.

Twenty-seven species were collected from across 58 sample units. Three native species were encountered in more than 50% of the sample units: *Vallisneria americana*, *Ceratophyllum demersum*, and *Potamogeton richardsonii*. Six of the species collected are non-native. Eurasian watermilfoil, (*Myriophyllum spicatum*), starry stonewort (*Nitellopsis obtusa*), and curly leaf pondweed (*Potamogeton crispus*) were detected in 47%, 21%, and 14% of sample units, respectively. The remaining three non-native species, including flowering rush, a species of concern in WNY, were detected in fewer than 10% of sample units. WNY PRISM staff spent 3-days working with staff from The Nature Conservancy and surveyed 1663 acres.



Map shows the location of aquatic plant sampling within the Buffalo Harbor survey area. Map of survey locations provided by The Nature Conservancy.

### Non-Native Species Collected

Species	% Sample Units
<i>Myriophyllum spicatum</i>	47
<i>Nitellopsis obtusa</i>	21
<i>Potamogeton crispus</i>	14
<i>Najas minor</i>	10
<i>M. spicatum</i> x <i>M. sibiricum</i>	3
<i>Butomus umbellatus</i>	2

### iMapInvasives

#### WNY PRISM Region\*

- 1113 Total Records
- WNY PRISM Staff
  - 819 Records by WNY PRISM Staff
  - 69 Not Detected by WNY PRISM Staff
  - 41 Unique Species Reported



Japanese stiltgrass was among the most reported species in 2021, both detected and non-detected.

- Top 10 Not Detected Species Reported
  - Slender False Brome
  - Flowering Rush
  - Japanese Stiltgrass
  - Water Chestnut
  - Hemlock Woolly Adelgid
  - Tree of Heaven
  - European Frog-bit
  - Starry Stonewort
  - Yellow Flag Iris
  - Water Hyacinth
- Top 10 Species Reported
  - Multi-flora Rose
  - Bush Honeysuckle
  - Beech Leaf Disease Nematode
  - Slender False Brome
  - Japanese Barberry
  - Dame's Rocket
  - Japanese stiltgrass
  - Garlic Mustard
  - Mugwort
  - Common Barberry

*\*Data is partially based on the iMapInvasives 2021 Annual Report – WNY PRISM, provided to WNY PRISM by iMapInvasives in December 2021.*



*Volunteers at the 4th Annual Friends of Letchworth Stewardship Day learned how to identify slender false brome and collect population data.*

## Research Priorities

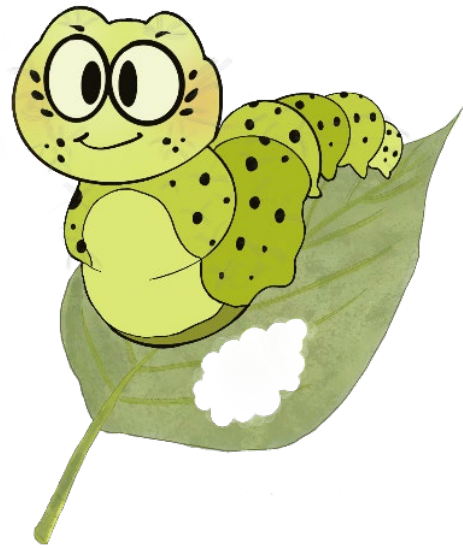
### Swallow-wort Biocontrol

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, allowing us to manage species more effectively. Black and pale swallow-wort have proven to be difficult to manage using traditional manual, mechanical or chemical means, leading to efforts to identify and develop a viable biocontrol option.

Researchers have identified *Hypena opulenta*, an herbivorous moth, as a promising biocontrol for swallow-wort and the species has been released at several locations across NYS to determine its effectiveness in a real-world setting. Clarence Oak Openings first saw the biocontrol released last year, but monitoring has continued through 2021. WNY PRISM continued to work with partners including The New York Invasive Species Research Institute, Cornell Cooperative Extension of Erie County and Orleans

County Soil and Water Conservation District to identify an additional research site for the 2021 season. A perfect site was found at Holley Canal Falls Park in Orleans County. The WNY PRISM Crew, consisting of WNY PRISM Invasive Species Management Assistants and additional seasonal staff, conducted an invasive species survey in May and found a few large swallow-wort populations. The park is now a second western New York release site. WNY PRISM also provided a boot brush station to support ongoing management efforts at the park.

In July, Swallow-wort Research Group partners toured the Clarence site to learn about the monitoring effort and see *H. opulenta* in action. Attendees saw both the adult moths and larvae, as well as evidence of larval feeding. We also saw significant defoliation of swallow-wort in an area adjacent to the research plots. The research plots were set-up within the wooded area of the preserve although the swallow-wort infestation extends into the grassland areas where leaf damage and defoliation were observed. Those present felt it was unlikely to be the result of the small number of *H. opulenta* released and thought it may be due to a combination of factors including heat and drought conditions, location along the escarpment (shallow soil), recent extreme thunderstorms that resulted in significant hail damage, and other pathogens. To determine a possible cause of defoliation, samples were sent to the Cornell Plant Diagnostic Lab. The results suggested the primary cause of defoliation was a severe spider mite infestation, likely exacerbated due to drought conditions.



*WNY PRISM volunteer, Maddie Sliwinski, created this artwork depicting Hypena opulenta feeding on swallow-wort.*



*Swallow-wort biocontrol, Hypena opulenta, was released and monitored at Clarence Oak Openings (pictured here) and Holley Canal Falls Park. Project partners visited the site in July and H. opulenta larvae were found on swallow-wort leaves.*

## Education and Outreach

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

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The year began with several presentations, two of which were in partnership with iMap and another was a hemlock woolly adelgid volunteer survey training that was held online and later posted to our [YouTube Channel](#), where it has since been viewed 50 times. The training resulted in observations of hemlock woolly adelgid being reported and further resulted in renewed efforts to bring management resources, in the form of biocontrols, to the region.

The 8<sup>th</sup> Annual New York Invasive Species Awareness Week (NYISAW), was held Sunday, June 6 – Saturday, June 12, 2021. WNY PRISM worked closely with the statewide PRISM network on development of programming for NYISAW and presented the Kick-Off Webinar that highlighted events taking place in each of the PRISMs as well as statewide events. Additional WNY PRISM led events included a Boat Steward Launch & Learn, 2 Walk and Talks, an online presentation entitled *Invasive Species and Pollinators*, and outreach at the Belmont Farmers' Market. A total of 185 individuals participated in WNY PRISM NYISAW events and programming.



*WNY PRISM led a Walk and Talk at Seneca Bluff Natural Habitat Park during NYISAW. Participants learned about the multi-partner effort to remove invasive species and restore native habitat.*

Educational events continued to be held remotely in 2021, however many were once again held in person while adhering to strict COVID safety protocols and regulations. WNY PRISM worked with the Friends of Letchworth State Park to host the 4<sup>th</sup> Annual Friends of Letchworth Stewardship Day. The half-day event included a classroom presentation, a Walk and Talk and slender false brome removal. The science teachers of the Kenmore-Tonawanda School district and Niagara Greenway Commission held a joint event aimed at providing information and resources for bringing real world science efforts into the school, to which WNY PRISM was invited to present on the organization and invasive species. The Audubon Community Nature Center invited WNY PRISM to be a guest presenter at one of their First Friday talks, where we gave a presentation on emerging invasive species threats. Monthly Walk and Talks were presented at 8 area nature preserves and farmers' markets proved very popular again this summer. WNY PRISM set-up and staffed displays at markets in 6 of our 8 counties.

## 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 volunteers communicate with directly. All participants in partner meetings, presentations, workshops and trainings are considered direct contacts. Event attendees include those who may stop by our table and take outreach materials but with whom we did not have direct verbal communication. WNY PRISM recorded 1,237 direct contacts and 4,327 attendees in 2021.

Partner Meetings	County	Direct Contacts	Date
Spring Partner Meeting	Online	16	Apr-15
Fall Partner Meeting	Erie	12	Oct-21

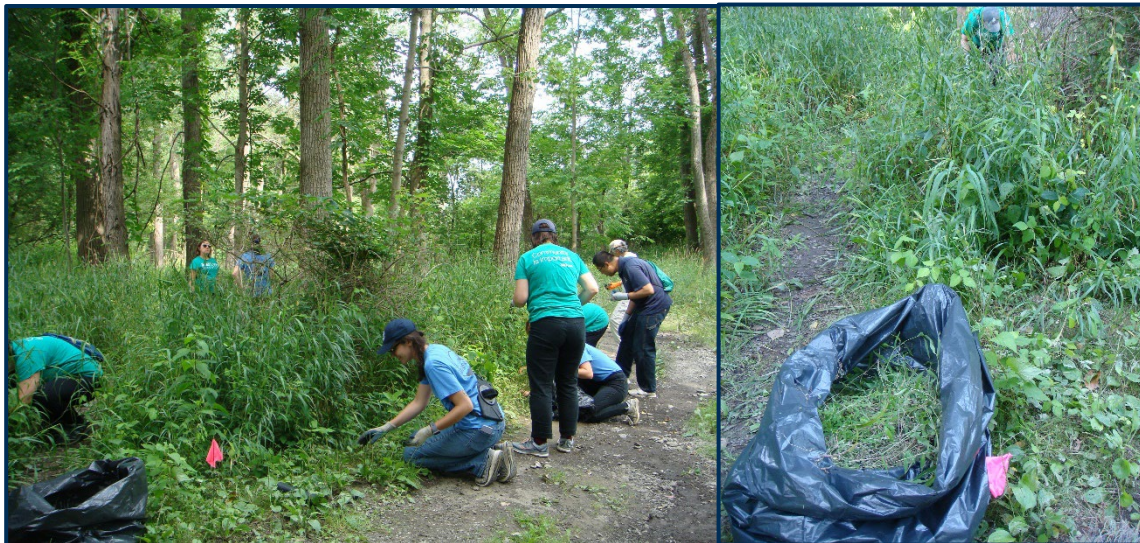
Outreach Table/Display	County	Contacts/Attendees	Date
Belmont Farmers' Market	Allegany	9/58	Jun-10
Salamanca Farmers' Market	Cattaraugus	14/222	Jul-6
Genesee Country Farmers' Market	Genesee	12/128	Jul-8
West Seneca Farmers' Market	Erie	19/326	Jul-15
Orleans County Fair	Orleans	185/1465	Jul-29
Clarence Environmental Days	Erie	34/327	Aug-28
Dunkirk Farmers' Market	Chautauqua	5/39	Sep-8
Town of Boston L.E.A.F	Erie	23/30	Sep-11
Arcade Farmers' Market	Wyoming	21/63	Sep-16
NYS Fall Classic Sportsman Show	Genesee	38//167	Sep-18
Insectageddon	Erie	52/130	Sep-25
NYS Invasive Species Summit	Albany	60/300	Nov-15



*Jason Kappan and Tyler Harrington staffed an informational table at the Clarence Environmental Day and Monarch Release, hosted by the Clarence Farmers' Market. They were also able to help with the monarch release.*

<b>Presentations</b>	<b>County</b>	<b>Direct Contacts</b>	<b>Date</b>
Ontario Invasive Plant Council Conference	Online	140	Jan-12
Erie County Environmental Mgt. Council	Online	21	Jan-19
iMapInvasives User Stories	Online	22	Feb-24
UB Invasion Ecology Seminar	Online	30	Mar-26
NYISAW Kick-Off	Online	68	Jun-6
Boat Steward Launch & Learn	Erie	1	Jun-6
NYISAW: Invasive Species and Pollinators	Online	46	Jun-9
M&T Bank Think Green Resource Group	Online	22	Jul-8
Finger Lakes Regional Watershed Alliance	Livingston	26	Jul-19
Ken-Ton School District – Science Teachers	Erie	33	Aug-30
Audubon Community Nature Center Talk	Chautauqua	9	Oct-1
PRISM <i>Uninvited</i> Documentary Panel	Online	85	Nov-5
Letchworth <i>Uninvited</i> Documentary Panel	Wyoming	12	Nov-13
<i>Hypena opulenta</i> Case Study	Albany	15	Nov-15

<b>Workshop/Training</b>	<b>County</b>	<b>Direct Contacts</b>	<b>Date</b>
iMapInvasives WMA AGOL	Online	43	Mar-2
HWA Survey and Volunteer Training	Online	12	Mar-6
Letchworth Stewardship Day	Wyoming	9	Jun-19
Terrestrial IS Management Workshop	Erie	1	Aug-7
Aquatic Plant Identification Workshop	Erie	2	Sep-25



Volunteers from M&T Bank Think Green Resource Group pulled Japanese stiltgrass from Mill Road Park in West Seneca.

<b>Volunteer Workdays</b>	<b>County</b>	<b>Direct Contacts</b>	<b>Date</b>
Mill Road Park JSG Removal	Erie	12	Jul-22
Mill Road Park JSG Removal	Erie	22	Jul-31
Cazenovia Creek JSG Removal	Erie	7	Aug-21
Soccer Complex JSG Removal	Erie	15	Aug-28

Cazenovia Creek JSG Removal	Erie	5	Sep-11
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<b>Walk and Talks</b>	<b>County</b>	<b>Direct Contacts</b>	<b>Date</b>
Seneca Bluffs	Erie	4	Jun-7
Great Baehre Swamp	Erie	8	Jun-12
Craneridge Homeowners Association	Erie	7	Jul-25
Unity Island Park	Erie	11	Aug-4
Cazenovia Park	Erie	8	Aug-17
Faun Lake	Wyoming	12	Sep-3
Reinstein Woods Fall Festival	Erie	6	Sep-19
Beaver Meadow	Wyoming	3	Oct-2

WNY PRISM’s 2021 presentations posted to [WNY PRISM’s YouTube Channel](#) received 123 views while total viewership in 2021 (including previously posted videos) was 472 with over 60 hours watched.

### Outreach Material

WNY PRISM continues to produce high quality outreach materials aimed at increasing awareness of invasive species issues and spurring action within the community.

WNY PRISM’s eNewsletter is released biannually. The [2021 Spring Newsletter](#) focused on the Watercraft Inspection Stewardship Program and highlighted our Tier Ranking System prioritization effort. The [2021 Fall Newsletter](#) showcased our successful Early Detection Program, featuring several of our priority early detection projects including slender false brome and Japanese stiltgrass removal efforts. This newsletter also highlighted many community science programs supported by WNY PRISM including those for hemlock woolly adelgid and spotted lanternfly, and our volunteer removal program for Japanese stiltgrass.

WNY PRISM species priorities continue to shift based on new information and species emerging within, and near, the region. When priorities shift, it is important to update outreach materials. In 2021, WNY PRISM Aquatic and Terrestrial Keep-A-Lookout Fliers were updated to target current species priorities. In addition, the Forest Pest Binder, a mainstay at WNY PRISM outreach events since 2015, saw a much-needed redesign. The updated



(Top to bottom) Cecilia Pershyn led a Walk and Talk at Beaver Meadows, Tiff Nature Preserve Steward Zachary Goodrich presented at WNY PRISM’s Terrestrial Management Workshop, and Brittany Hernon donned the emerald ash borer costume for the Land Conservancy’s Insectageddon.

resource includes information on spotted lanternfly, updated hemlock woolly adelgid biocontrol information, and much more!

## Community Science

WNY PRISM Community Science efforts focused on surveys for two species, hemlock woolly adelgid and spotted lanternfly. Partnering with Cornell Cooperative Extension – Erie County and the Western New York Forest Pest Task Force, WNY PRISM developed and held a hemlock woolly adelgid survey training for volunteers. The training was held live, recorded, and posted to YouTube where 50 additional volunteers have viewed the presentation. Observations were submitted to iMap from attendees, leading to renewed conversations with Erie County and the New York Hemlock Initiative about the potential for biocontrol release in the region. Spotted lanternfly efforts took the form of support for statewide tree-of-heaven and spotted lanternfly surveys, as WNY PRISM encouraged volunteers to take part in iMap grid-square surveys.

Volunteerism is an important component of community science and WNY PRISM held 5 Japanese stiltgrass volunteer removal workdays. The workdays focused on hand-pulling stiltgrass from 3 natural areas along the Buffalo River in West Seneca: Mill Road Park, West Seneca Soccer Complex and Cazenovia Creek Wildlife Management Area. A total of 46 volunteers donated 141 hours and removed 17 bags of stiltgrass from these sites. Several volunteers had heard about the workdays from an informational mailing sent to area residents to encourage keeping a lookout for the species on their own property, and one new infestation was confirmed based on a report by a volunteer.

## Pledge to Protect

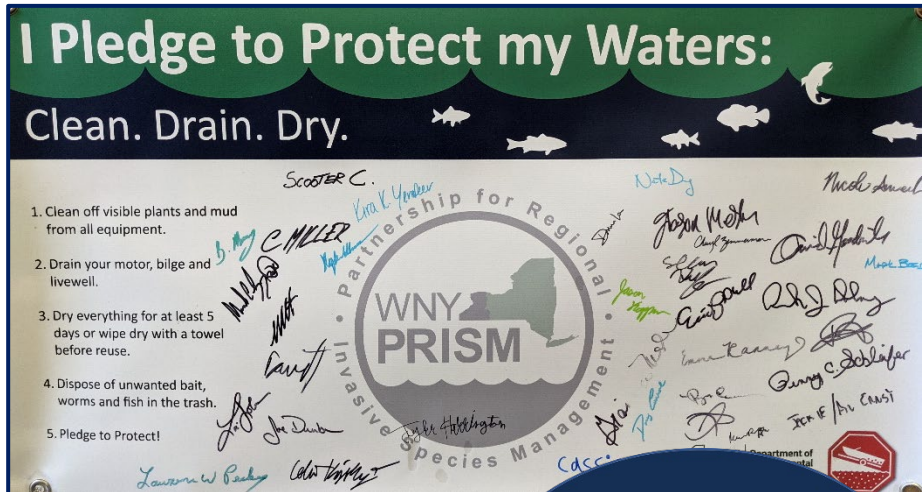
Traditional educational messaging for invasive species is based on raising awareness, but we recognize this is only the first step in improving management. Over the course of several years, we have reimagined our educational programs to identify increased awareness as a strategy used to reach our goal of improved management, rather than the goal itself. One aspect of this shift involved the expansion our community science and volunteer programs, while another involves encouraging people to commit to taking small steps towards improved invasive species management action, primarily through spread prevention.



*Volunteers signed and posed with the "I Pledged to Protect my Lands" banner after working hard at a Japanese stiltgrass removal workday at Mill Road Park.*



WNY PRISM previously developed 4 commitment banners representing regional and national campaigns including 'Play. Clean. Go.', 'Clean. Drain. Dry.', 'Don't Move Firewood', and 'Be Plantwise'. The banners are placed on display at trainings, volunteer workdays and other outreach events, where we asked participants and 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 and removing plant material from boats are identified on the banners.



WNY PRISM collected 130 signatures on our Pledge to Protect commitment banners in 2021.



In addition to the commitment banners, wallet cards and "I Pledged to Protect" stickers were created to provide to all those who have made the commitment and signed one of the banners. We obtained 130 signatures on the commitment banners in 2021.

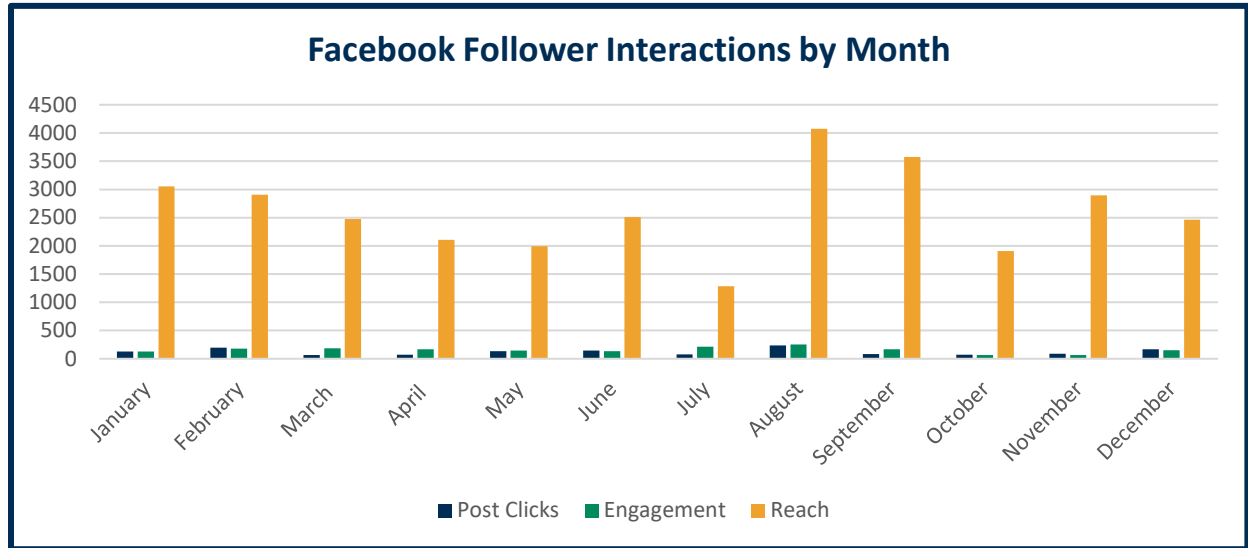
### Social Media Report

WNY PRISM administers [Facebook](#) and [Instagram](#) accounts through which we interact with the public and share stories about the many aspects of our work.

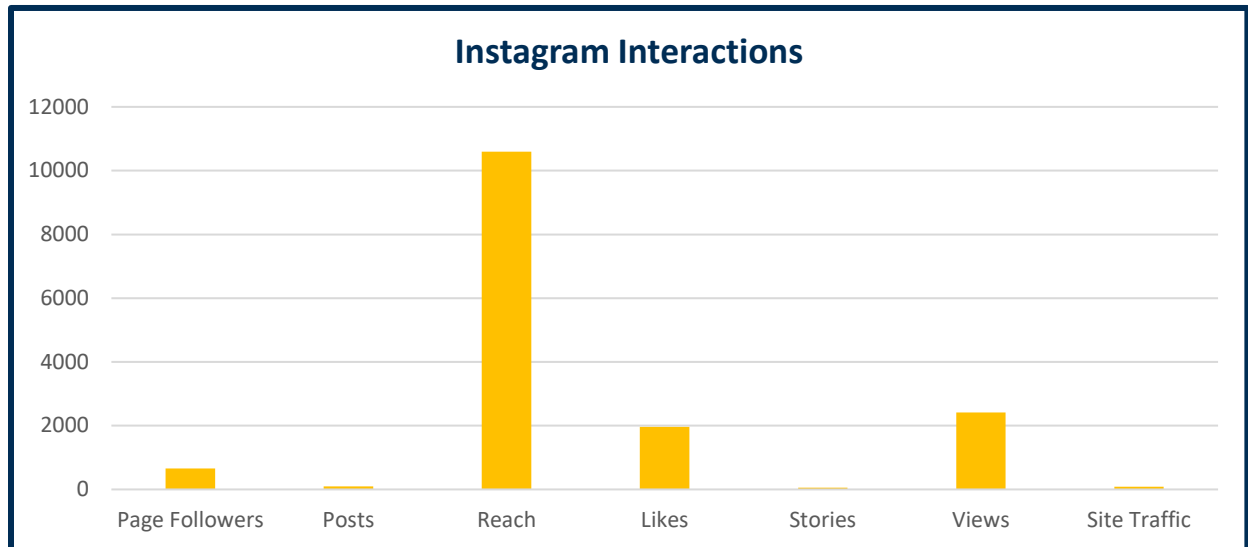
In 2021, WNY PRISM gained 99 Facebook pages likes and 160 followers, representing increases of 16% and 23%, respectively. We created 119 Facebook posts reaching a total of 31,244 individuals resulting in 1,861 engagement actions, defined by followers reacting, commenting or sharing a post.

WNY PRISM averaged 2 Facebook posts per week and posts ranged in topic from invasive species news, calls to action, general information and field reports, to events and staff bios. The most frequent topics for Facebook posts were events, including both WNY PRISM and partner events, and invasive species of the week. Staff spotlights, each focusing on a different staff member, were posted to Facebook twice monthly beginning in the fall. These received our highest average engagement, more than 10 points higher than the second-place category, which was invasive species news.





WNY PRISM’s Instagram reached 660 followers, representing an increase of 46% over last year. The 150 Instagram posts and stories created in 2021 reached 13,018 people and drove 90 individuals to our website. Instagram posts followed similar categories as Facebook posts, however the top performing categories were different. Field reports and events were the most popular among Instagram users with invasive species news, the second highest in engagement for Facebook users, being among the lowest.



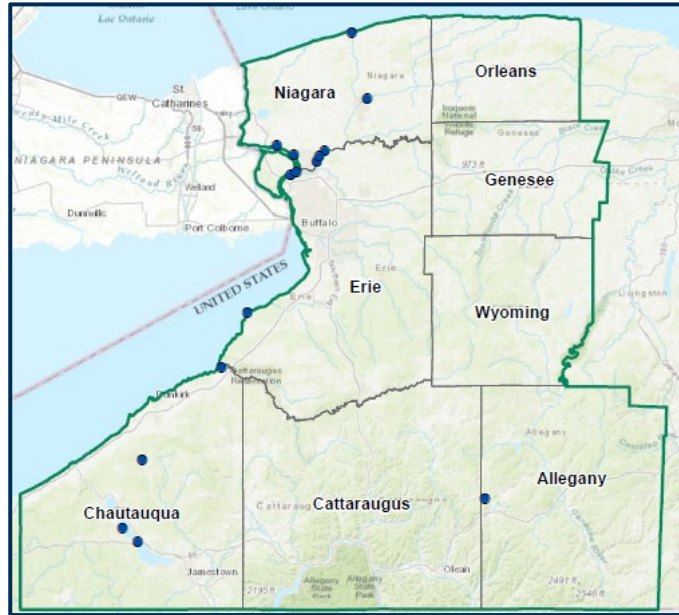
WNY PRISM’s YouTube channel saw a large jump in viewership this year. Videos received 472 views and over 60 hours watched in 2021. The most popular video was a program detailing WNY PRISM’s Boot Brush Station Program. The other top 5 videos were *Western New York’s Emerging Forest Pests and Diseases*, *2021 Hemlock Woolly Adelgid Survey Training*, *Dormant Season Identification and Prevention of Invasive Species* and *Birds and Invasives*.

## 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

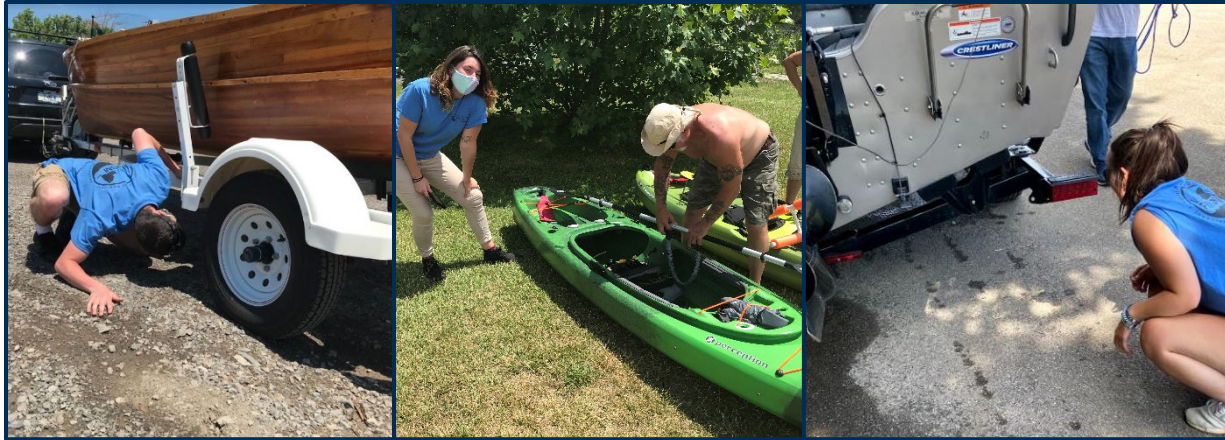
Watercraft have been identified by NYS as a key pathway for the spread of aquatic invasive species. Plants and animals are easily transported by boats and trailers between different bodies of water. To disrupt this Pathway of Invasion, and help reduce the spread of aquatic invasive species, WNY PRISM has established a Watercraft Inspection Stewardship Program (WISP). Watercraft Inspection Steward/Environmental Educators (Boat Stewards) are placed at public launches across the region to perform voluntary watercraft inspections, to remove visible plant and animal material from watercraft, and to educate the public on how they can take action to stop the spread.



WNY PRISM 2021 Boat Launch Locations.

Launch selection takes place each year as WNY PRISM staff review the data from previous years to determine what launches should be prioritized for staffing moving forward. Site traffic, usership, cost per inspection, location, and invasive species presence and distribution are among the factors considered during prioritization. High traffic launches with few invasive species present, such as Onoville Marina, are a priority to prevent the introduction of new species. Conversely, lower traffic launches may still be a priority due to known presence of a priority invasive species, making inspections of retrieving watercraft particularly important. Some launches are prioritized, such as those along the Erie Canal, due to the high likelihood of spread within the waterbody and some launches may not have high usership numbers but survey responses show few visitors to the launch have had previous contact with a steward, making these locations priorities for spreading the message of aquatic invasive species awareness and “Clean. Drain. Dry.”.

WNY PRISM prioritized 18 launches in 2021, however due to difficulty filling all positions, only 14 launches were fully staffed this year. Launches at Onoville Marina, Sans Souci Park, and Black Rock Canal were not staffed. However, due to an early season closure of Sturgeon Point, one steward was temporarily relocated to Bear Lake, providing valuable data from this location.



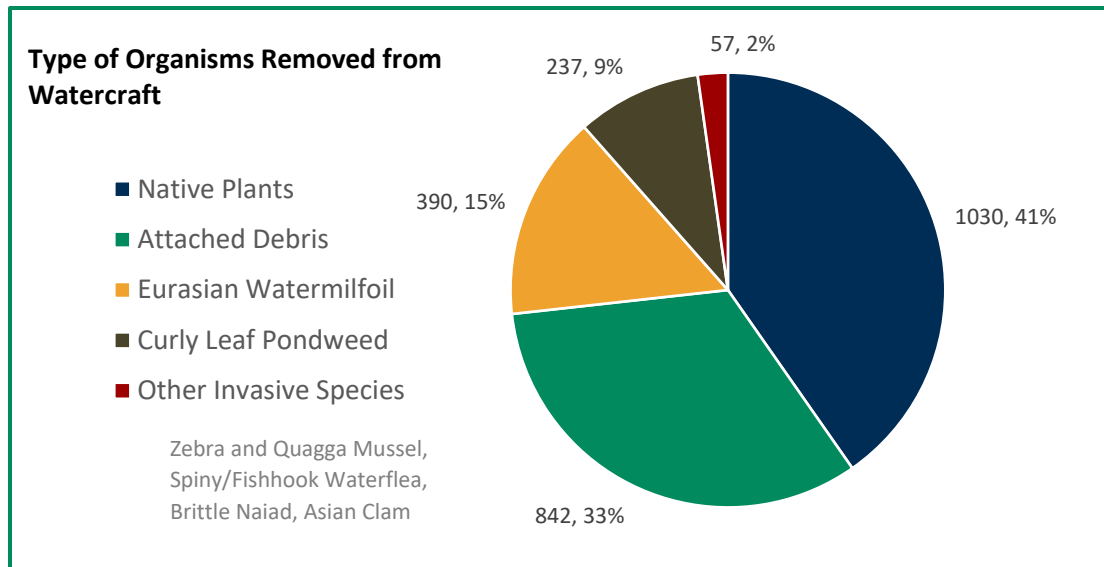
Watercraft Inspection Steward/Environmental Educators inspected boats across the region, during launch and retrieval. Boat Launches (left to right): West Canal Park, North Tonawanda Botanical Gardens and Sturgeon Point.

<b><u>Boat Launch</u></b>	<b><u>Body of Water</u></b>	<b><u>Watercraft Inspected</u></b>	<b><u>Invasive Species Intercepted</u></b>
Amherst Veterans Canal Park	Erie Canal	1582	6
Bear Lake	Bear Lake	17	10
Bemus Point*	Chautauqua Lake	1200	169
Black Rock Canal	Black Rock Canal	Position Not Filled	
Cuba Lake	Cuba Lake	668	7
Gratwick Riverside Park	Niagara River	491	7
Griffon Park	Niagara River	1608	4
Hanover Town Boat Launch	Cattaraugus Creek	1013	33
Holley – Sans Souci Park	Erie Canal	Position Not Filled	
Isle View Park	Niagara River	183	8
Nelson C. Goehle – Widewaters	Erie Canal	1378	6
Niawanda Park	Niagara River	448	14
North Tonawanda Botanical Gardens	Erie Canal	865	1
Olcott Harbor	Lake Ontario	1482	166
Onoville Marina Park	Allegheny River	Position Not Filled	25
Prendergast Point*	Chautauqua Lake	879	69
Sturgeon Point	Lake Erie	1044	174
West Canal Park	Erie Canal	1147	10

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

Over the course of 15 weeks, Stewards conducted 12,886 boat inspections and the total number of interactions, including boat inspections, walk-up patrons and anglers, was 24,790. The number of invasive organisms intercepted (i.e., found and removed) through boat inspections was 684. The most frequently intercepted species was Eurasian watermilfoil (390), followed by curly leaf pondweed (237). The list of species intercepted in 2021 is similar to the previous two years, however this is the first year

Asian clam (1) was intercepted. Invasive species were intercepted on 551 boats, or 4.9% of all watercraft inspected.



The agreement percent for voluntary boat inspections was 92% in 2021, higher than last year (89%), but still below 2019 (94%). Those boaters agreeing to an inspection are asked several questions aimed at helping us improve invasive species management and education efforts. Of those surveyed, 72% of boaters had interacted previously with a Boat Steward and 65% of boaters had taken spread prevention measures prior to arriving at the launch. When asked if they would commit to take a pledge to “Clean. Drain. Dry.”, even when a Boat Steward is not present, 78% of survey participants agreed.

Boaters may choose to provide WNY PRISM with information on where and when they last launched their boat. This can provide valuable information on potential threats that could be transported into the region. Of those boaters agreeing to provide this information, 37% of watercraft had been previously in the water within the last two-weeks. Lake Erie was the most common previous launch location with the Niagara River and Erie Canal next most common. Along with NYS Parks and the Chautauqua Lake Association, the western New York region has Boat Stewards present at key launches across these waterbodies. Although less frequent, we also have boaters coming to WNY from outside NYS, from as far as Minnesota, Alabama, Florida and Maine. This information is essential as we can identify potential threats from those regions that are not yet established in our region.



Map of inbound locations reported for launches on Chautauqua Lake - courtesy of iMapInvasives.

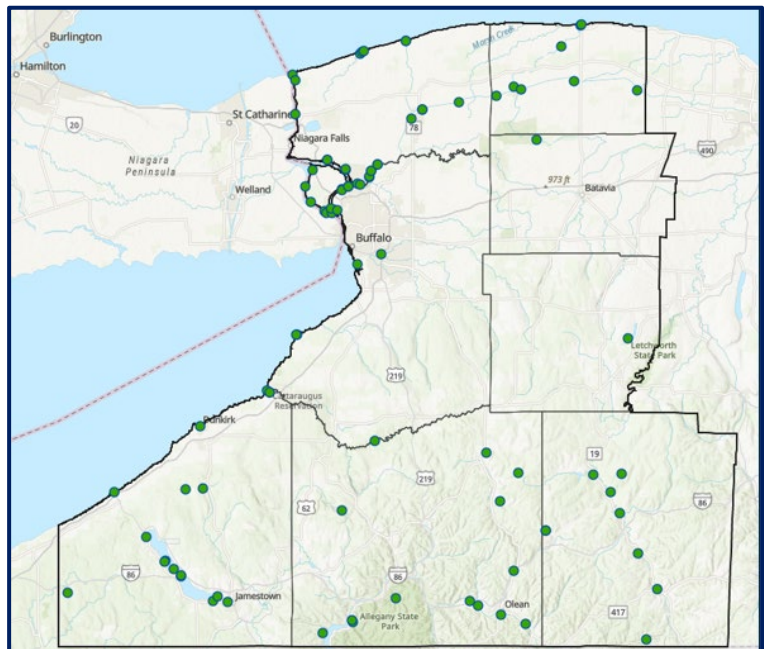
The primary activity boaters participated in was recreation with 59% of boaters surveyed identifying this as the purpose for their launch. However, there are launches (Bemus Point, Prendergast Point, Hanover Town Boat Launch and Olcott Marina) for which fishing was the most common activity. This information allows WNY PRISM to better focus outreach and training for Boat Stewards at various launches. Additional recorded activities include commercial, research, government and maintenance.

Watercraft inspection data is collected using the NYS Watercraft Inspection Stewardship Program Application (WISPA). In 2021, additional surveys were added to the program, the WISPA Angler Survey and WISPA Walk-Up Survey. The angler survey is designed to collect information on invasive species awareness from those fishing around the launch while the walk-up survey focuses on those who are using the area for other recreation and happen to walk up to the steward. The use of these surveys varied considerably between launches. Some of the launches with heavier boat traffic, such as Sturgeon Point, are not set up to have members of the public walk through or fish from the docks while other launches have clearly designated fishing areas or are adjacent to a popular park with a walking trail.

Stewards submitted 253 walk-up and 167 angler surveys, with the busiest launches being along the Erie Canal. Likely due to this being the first season with this data being collected, the majority of those surveyed had never previously interacted with a Steward.

### Public Boat Launch Survey

WNY PRISM identified 83 public boat launches to survey as part of an effort to collect information on the presence and condition of invasive species educational material and disposal stations. This information will be helpful as WNY PRISM works to increase the adoption of spread prevention actions taken by the community, especially when a Boat Steward is not present. Of the 83 launches identified, 7 were inaccessible at the time of the survey, primarily due to construction. For the 76 launches visited, 37 (49%) had spread prevention or other aquatic invasive species educational material present, but only 15 (20%) had disposal stations. Educational material ranged from species specific posters, most often for water chestnut, to different iterations of the “Clean. Drain. Dry.” message. Invasive species disposal stations were mostly in fair condition and showed evidence of plant material being properly disposed there. However, several were becoming overgrown and in need of being emptied. For those launches that did not have outreach materials posted, we took note of whether there was a bulletin board or other location present on which information could easily be added.



*WNY PRISM conducted a survey of 76 public boat launches across the region, looking at outreach material and disposal stations.*



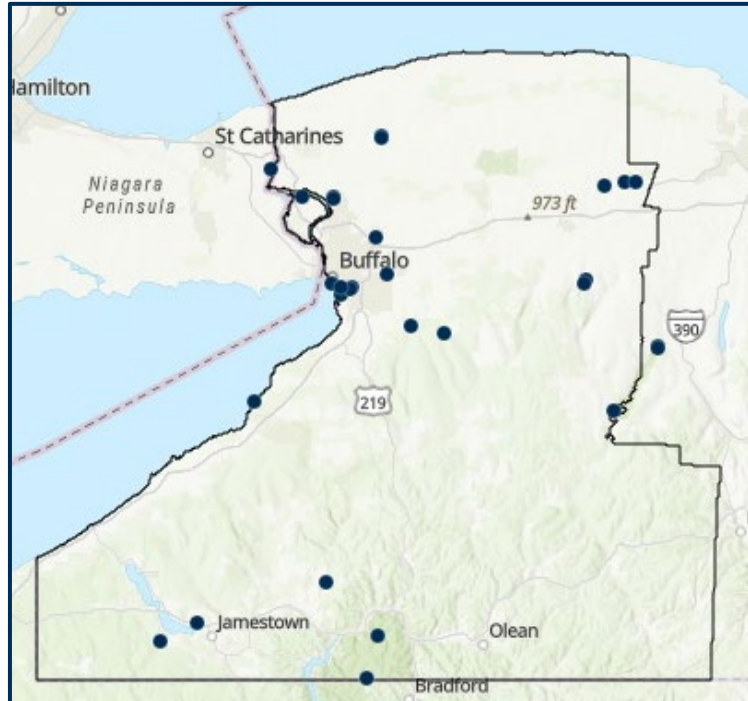
*Photos documented each of the 76 launches visited as part of the public boat launch survey. In addition to the presence and condition of outreach materials and disposal stations, the survey allowed us to assess the launch layout and condition for potential future placement of a Boat Steward.*

### Boot Brush Station Program

WNY PRISM continues our partnership with the North American Invasive Species Management Association (NAISMA) and “Play. Clean. Go.” to increase the number of boot brush stations within the WNY PRISM region. Boot brush stations are an effective tool in preventing the spread of terrestrial invasive species and helping to 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 first collect in boot treads, and then fall off after hitching a ride. From trails, species can establish further within the preserves.

WNY PRISM opened the 2021 Boot Brush Station Program for applications in January, making 6-8 stations available for partners. As part of this program, WNY PRISM provides the signs and all materials necessary for installation to partners, which are either shipped directly to partners, or available for pick-up at the Home Depot of their choice.

WNY PRISM works with partners to design and select species to display on the sign and encourages the inclusion of an early detection priority species as the spotlight species. Installation was again delayed due both to supply issues and partners needing to address COVID-19 safety concerns for staff and volunteers completing the installation. WNY PRISM and our partners have installed 31 boot brush station to date, with several still awaiting installation.



*Map of WNY PRISM Boot Brush Station locations.*

## Early Detection and Rapid Response

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

The WNY PRISM early detection program addresses the survey, removal and spread prevention of Tier 1 and Tier 2 species, with a focus on established approaching region and early detection species priorities. WNY PRISM's Early Detection Priority Species represent those that pose the greatest threat to the region while also being species for which a goal of eradication is reasonable based on current species presence and distribution and management capabilities. There were no changes to the Early Detection Priority Species list in 2021.

### Early Detection Priority Species

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



(Top) Yellow floating heart. Photo Credit: Greg Bales. (Bottom) Water lettuce.



WNY PRISM staff were joined by some friendly ducks during Japanese stiltgrass manual removal efforts at Cazenovia Park.

WNY PRISM staff dedicates a significant amount of time to early detection survey and management efforts each year. In 2021, 24 sites were surveyed for early detection priority species, based on habitat suitability models and locations of known infestations. Surveys included over 95 miles of trail and 126.5 hours of effort. As a result of these surveys, 2 new Japanese stiltgrass sites were identified. All plants were hand-pulled from these sites after survey data was recorded. An additional Japanese stiltgrass infestation was identified and mapped on a private property in West Seneca after the homeowner reported the species to WNY PRISM. Data was recorded on the infestation and management recommendations were provided to the homeowner. Slender false brome was found at 1 survey site, the Groveland Secondary Trail, but the species has already been recorded along this trail, so no new slender false brome sites were found in 2021.

WNY PRISM managed terrestrial and aquatic early detection invasive species at 31 sites using a combination of manual and chemical methods and 572 hours of effort. Efforts resulted in the



removal of 20 bags of Japanese stiltgrass, 9.25 bags of slender false brome, over 150 water lettuce and 38 water hyacinth plants. Three early detection sites moved into the eradicated category this year. Water hyacinth has not been found in Bull Creek, Ellicott Creek or Ransom Creek for at least 5 years, resulting in these sites being presumed eradicated.

Volunteer workdays were hosted to involve community members in Japanese stiltgrass removal efforts. WNY PRISM worked closely with the Town of West Seneca to promote events and recruit volunteers. Volunteers learned how to identify Japanese stiltgrass ahead of assisting with hand-pulling at 3 parks in West Seneca. Volunteers contributed 141 hours to removal efforts.

## Early Detection Priority Species Updates

### Early Detection Site Designations

WNY PRISM early detection sites, those with known infestations of early detection priority species, are placed into 4 categories: **Active**, **Inactive**, **Partner** and **Eradicated**. **Active** sites are those WNY PRISM staff members and volunteers visit each year to survey for and remove plants. **Inactive** sites are those for which WNY PRISM is unable to carry out management. This is most often due to capacity limits but may also be due to an inability to safely access the sites or a lack of permission to enter a site. **Partner** sites are those managed by WNY PRISM partners and **eradicated** sites are those identified as presumed eradicated based on WNY PRISM's early detection site monitoring protocol.



*The WNY PRISM Invasive Species Management Assistants and Survey Technicians completed invasive species survey training at Cazenovia Park early in the season.*

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, the site will then be monitored every other year for up to 5 or 7 years depending on the species. If no individuals are found after the final year, the site is presumed 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 time WNY PRISM early detection monitoring sites met the criteria for being designated eradicated. Three water hyacinth sites, Bull Creek, Ellicott Creek and Ransom Creek, reached 5 years without plants being detected, the identified threshold for water hyacinth.

### Porcelain Berry

Porcelain berry was first reported in Delaware Park in 2020 by a community scientist and volunteer; this remains the only known site within the region. After providing species confirmation, the volunteer removed the plants and in 2021, the same volunteer returned to Delaware Park to monitor, once again removing the plants. WNY PRISM visited the site later in the season and did not find additional plants. Moving forward WNY PRISM will work with the volunteer and park managers to assess the infestation and develop a management plan to ensure the plants don't continue to regenerate.

### Japanese Angelica Tree

Japanese angelica tree was reported to WNY PRISM in 2018 after being identified and confirmed at Lake Erie State Park, and this remains the only known occurrence of this species within the region. Working in partnership with NYS Parks for the third year, WNY PRISM treated the 0.25-acre infestation. Larger Japanese angelica trees, those over 3' tall, were treated using a basal bark herbicide treatment while those smaller than 3' tall, including resprouts, received a spot foliar treatment. WNY PRISM spent 2 hours implementing herbicide treatment this year, compared to 4 hours in 2020 and 27 hours in 2019.



*Japanese angelica tree at Lake Erie State Park - photo taken in 2019, prior to initial treatment.*

### Slender False Brome

WNY PRISM has dedicated significant time and resources to the management of slender false brome, efforts that include continued facilitation of the [Great Lakes Slender False Brome Working Group](#). This brings partners together to discuss slender false brome research, management, and strategies, and to work towards eradication of this species. The Working Group held a meeting on April 26, 2021, to discuss management plans for the 2021 season. The primary goal of the meeting was to ensure survey and management efforts were coordinated so as not to miss or overlap sites. However, the group also discussed updates on research projects and brainstormed outreach tactics to encourage increased community involvement with removal efforts.

Slender false brome is found at 11 sites within Genesee and Wyoming Counties, including 3 sites on private land. WNY PRISM implemented manual and chemical management efforts at 6 sites this year while partners with the College of Brockport and Bergen Swamp Preservation Society managed the infestation at Bergen Swamp.

WNY PRISM spent a total of 164 hours implementing manual and chemical removal to treat slender false brome in 2021. Manual removal took place at 5 sites, removing a total of 9.25 bags of plants. Slender false brome has been manually removed at Trestle Park and Drew's Nature Center since 2018, and the Carlton Hill Multiple Use Area (Carlton Hill) since 2019. In 2021, only 1 plant was found at both Trestle Park and Carlton Hill, demonstrating the success of management efforts.

Slender false brome extends along 13 miles of the West Shore Trail, which spans 4 different municipalities and includes both private and public land. WNY PRISM does not have the capacity to treat the full 13-mile stretch and has prioritized efforts on the west end of the trail, in the Village of Elba, where plants were manually removed to prevent further western expansion. Additional manual removal took place at Genesee County Park and Forest (GCPF), in areas outside of the herbicide treatment.

Herbicide treatments were used to treat slender false brome in Letchworth State Park (Letchworth) and GCPF. A 5-acre infestation located at Inspiration Point at Letchworth was treated for a second year, along with some patches near the Humphrey Nature Center. A 4.2-acre section of the 42-acre Trout Pond infestation at Letchworth was treated as well, however, capacity limitations do not allow for WNY PRISM to treat the entire 42 acres. The 7-acre infestation at GCPF was treated, along with some isolated patches along the trails.



*WNY PRISM seasonal staff manually removed slender false brome from Genesee County Park and Forest. Slender false brome is a bunch grass with arching leaves covered in fine hairs.*

### Scotch Broom

Scotch broom is a shrub native to Northern Africa and Europe that can grow up to 10 feet tall and has small, pea-like, yellow flowers that are present from May to June. When mature, the seed pods explode launching seeds that can survive up to 30 years in the soil up to 20 feet away. There is only a single known scotch broom infestation present within the region, at Letchworth. The site is under the management of NYS Parks, however WNY PRISM continues to prioritize raising awareness for this species to ensure new populations are detected early and before a 30-year seed bank may be established.



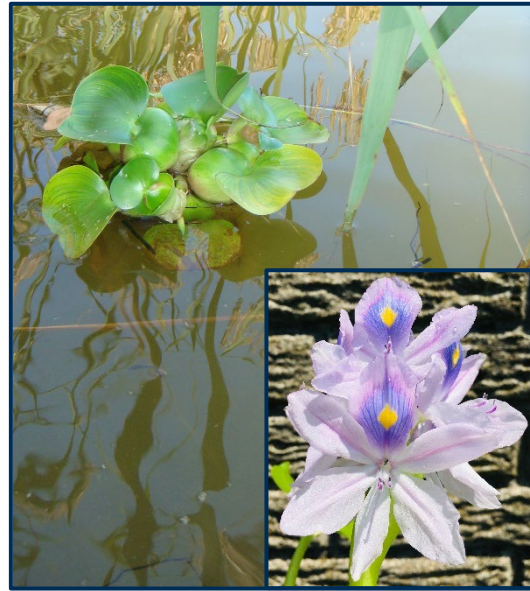
*Scotch Broom has showy pea-like, yellow flowers. Photo Credit: Utah State University, Bugwood.org*

## Water Hyacinth

Water hyacinth has been found in Niagara and Erie Counties. At the start of 2021 there were 7 water hyacinth sites in the WNY PRISM region, 6 of which are being managed by WNY PRISM, with assistance from the U.S. Fish and Wildlife Service (USFWS), and a single site, Buckhorn Island State Park, being managed by NYS Parks.

Water hyacinth was found at only a single site this year, Tonawanda Creek. The USFWS found and removed 15 plants while surveying the area as part of a separate project a month prior to WNY PRISM's survey that found an additional 23 plants, which were also removed. A follow-up survey conducted by WNY PRISM staff did not find any additional plants.

Three water hyacinth monitoring sites were designated presumed eradicated in 2021 when, for the fifth consecutive year, no plants were found. The sites include Bull, Ellicott, and Ransom Creeks. The Bull Creek monitoring site was based on a 2001 report, submitted to iMap through a bulk upload from the U.S. Geological Survey. While the species was confirmed, the location data was approximate. WNY PRISM staff surveyed both up and downstream of the data point as part of annual monitoring but recognize that the approximate location may be less accurate than we originally considered when setting the site monitoring area. We plan to survey the full upstream, navigable portion of Bull Creek in 2022, and if water hyacinth is found it will be identified as a new site.



*Water hyacinth has been eradicated from 3 sites in WNY PRISM.*

## Japanese Stiltgrass

Japanese stiltgrass (JSG) remains a primary focus of WNY PRISM's terrestrial early detection efforts with 30 sites within the region. Sites include 5 managed by WNY PRISM partners, 15 active sites where WNY PRISM implemented manual and/or chemical removal efforts and 10 inactive sites where management did not occur in 2021. Japanese stiltgrass is found in 6 counties in the WNY PRISM region: Allegany, Cattaraugus, Chautauqua, Erie, Niagara and Wyoming. While this may bring into question why the species continues to be considered an early detection priority, when we look at the WNY PRISM region as a whole, it is more understandable. There is only 1 JSG site in each county outside of Erie County, where the remaining 25 sites are located.

WNY PRISM staff members spent a total of 335 hours implementing manual and chemical removal to treat Japanese stiltgrass at 15 sites across the region. Manual removal took place at 10 sites; efforts through which 20 bags were removed. Two new sites, Bailey Peninsula and West Falls Park, were identified this year during terrestrial invasive species survey efforts. The infestations were small enough that after survey data was collected, all plants were hand-pulled from the sites. Five manual removal sites are located along Cazenovia Creek in Erie County: Cazenovia Creek Fish and Wildlife Management Area, Cazenovia Park, Mill Road Park, Red Jacket Park and the West Seneca Soccer Complex.



*Japanese stiltgrass infestation at Franklin Gulf County Park – before (top) and after (bottom) treatment, 6 weeks apart.*

Approximately 200 plants were manually removed from Kenneglenn Scenic and Nature Preserve, representing an increase in plants from last year. Two additional manual removal sites along Cazenovia Creek, Emery Park and Majors Park, were monitored but no plants were found this year.

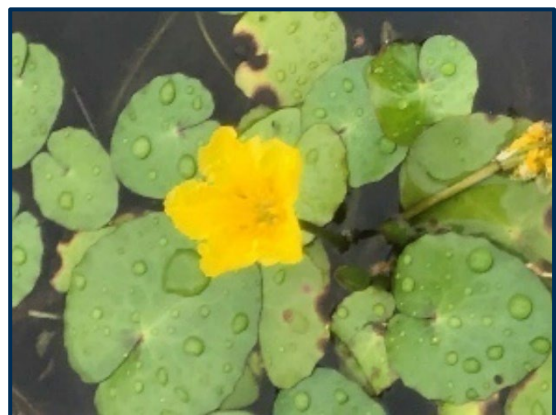
Herbicide treatments were used to treat JSG at 5 sites. Four sites, American Legion VFW Post 362, Hunters Creek County Park, Chestnut Ridge County Park and Mossy Point, have received treatment for multiple years. Manual removal was used at Franklin Gulf County Park in 2020, but the infestation proved too dense for this method to be effective, so efforts shifted to herbicide treatment in 2021. All sites were treated twice during the field season.

WNY PRISM held volunteer workdays at 3 manual removal sites along Cazenovia Creek: Cazenovia Creek Fish and Wildlife Management Area, Mill Road Park and the West Seneca Soccer Complex. To help get the word out to the public, postcards (100) were sent to residents along Eighteen Mile Creek in Hamburg while letters (100) with additional information were sent to residents along Cazenovia Creek in West Seneca. Attendees learned how to identify Japanese stiltgrass, heard about threats this species poses to the region and then hand-pulled plants while interacting with WNY PRISM staff and other community members. Volunteers contributed 141 hours to Japanese stiltgrass manual removal efforts.

### Yellow Floating Heart

Yellow floating heart is an herbaceous perennial plant native to Asia and Europe that can form dense populations that exclude native species and create areas with low oxygen levels, negatively impacting fish populations. Yellow floating heart spreads vegetatively and by seed and is widely recognized as one of our more difficult species to manage.

The only known infestation of yellow floating heart within the WNY PRISM region is on private property in Chautauqua County. The landowner is actively managing the infestation with technical assistance from WNY PRISM.



*Yellow floating heart is known from a single site in WNY PRISM.*

### Mile-A-Minute

The coordinated management of mile-a-minute is the focus of the Mile-a-Minute Working Group, facilitated by WNY PRISM. The Working Group includes partners from Finger Lakes PRISM, where mile-a-minute is also present, however efforts in WNY PRISM are focused on infestations in the Oakfield area. The primary site is at Oak Orchard Wildlife Management Area (Oak Orchard), but populations are also present on a couple adjacent private properties. Surveys have been conducted around the known sites and no new populations have been found.

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 control areas to investigate Best Management Practices for the species. The team has permission to treat mile-a-minute on the private properties adjacent to Oak Orchard and they are treated along with the infestation at Oak Orchard, which is managed by DEC with assistance from Working Group members. WNY PRISM seasonal staff assisted with mile-a-minute manual removal this year.

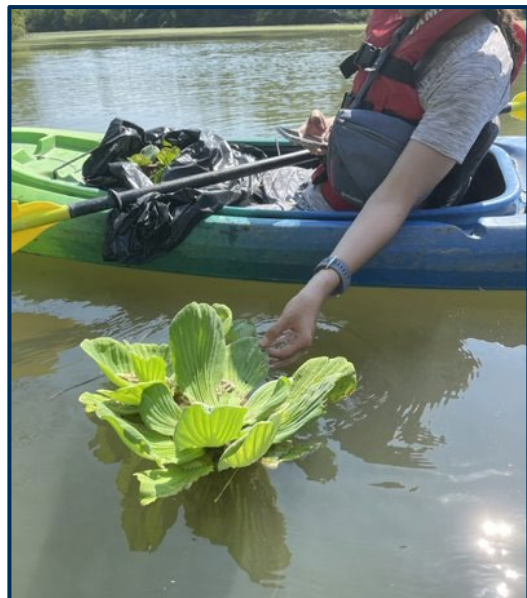


*Mile-a-minute photographed at Oak Orchard WMA. Visible are the maturing berries and characteristic triangular leaves.*

### Water Lettuce

Water lettuce has been observed at 4 sites in WNY PRISM. Three sites are active while the fourth, present on private property, is currently inactive. WNY PRISM spent a total of 32 hours surveying water lettuce sites and plants were found at 2 sites, Tonawanda Creek and Ellicott Creek. The water lettuce in Tonawanda Creek occurs in the same location as the water hyacinth and USFWS again assisted with removal, pulling approximately 30 plants. WNY PRISM followed up one month later removing an additional 8 plants. A final survey in September resulted in no plants found. Ellicott Creek was surveyed by WNY PRISM from mid-August to early September, removing approximately 150 plants.

Hyde Park Lake was the site of a significant water lettuce infestation reported to WNY PRISM in 2020. WNY PRISM staff were quick to respond, removing over 730 plants. This year, Hyde Park Lake was surveyed twice, and no plants were found!



*Water lettuce was found and removed from Ellicott Creek, pulled during site monitoring in August.*

## Additional Early Detection Species

### Red Swamp Crayfish



*The Crew installed a fence at the Park School on June 3, 2021, to contain the red swamp crayfish population within the pond.*

Red swamp crayfish was discovered by students at the Park School in Amherst and reported to both iMap and WNY PRISM in 2020. Dr. Chris Pennuto, WNY PRISM Director, confirmed the identification and began working with the school and students to develop a management plan focused on trapping and monitoring the crayfish. The developed program was continued into 2021 and saw students at the school set up traps to catch the crayfish. The collected crayfish were frozen and several were shared with USFWS, who were looking into population genetics.

The Park School reached out through the Crew Assistance Program for assistance with setting up a containment fence around the campus pond in which the red swamp crayfish is found. The Crew spent 3 days working alongside students and parent volunteers to construct a fence that fully enclosed the pond. This high priority project will prevent the crayfish from moving out of the pond, potentially towards the nearby Ellicott Creek. This is the only known occurrence of red swamp crayfish in the region.

### Hydrilla

WNY PRISM continued to work with U.S. Army Corps of Engineers – Buffalo District (USACE), DEC and 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. WNY PRISM Boat Stewards provided information and educational outreach to the public along the Erie Canal, at staffed launches, both before and during treatment. Boat Stewards also had the opportunity to assist with pre and post treatment monitoring efforts, working with USACE and USFWS project staff.



*WNY PRISM Boat Stewards assisted with pre and post treatment monitoring of Hydrilla in Tonawanda Creek/Erie Canal.*

For several years, the only known occurrences of *Hydrilla* in the WNY PRISM region were within Tonawanda Creek/Erie Canal, and two small waterbodies in Orchard Park. However, in August a member of the public reported a potential new population of *Hydrilla* at the Gratwick Riverside Marina in the City of North Tonawanda, a report quickly confirmed by USACE. The marina does not have a boat launch, but it does have high levels of transitory traffic and opens directly onto the Niagara River. The site is also close to Gratwick Riverside Park, which has a popular boat launch staffed by a WNY PRISM Boat Steward.



*A new infestation of Hydrilla was found at Gratwick Riverside Marina in the City of North Tonawanda, reported by a member of the public.*

The response to the newly discovered infestation was swift. Additional surveys were completed by USACE within the Niagara River and DEC planned and implemented an aquatic herbicide treatment (copper) that took place in early September. WNY PRISM shifted our Boat Stewards to allow for one to be present at the marina Thursday and Friday evenings, and all-day Saturday and Sunday, for several weeks to close out the season. Despite the marina not having a launch, Boat Stewards were able to stay busy talking with members of the public about *Hydrilla*, the upcoming management and spread prevention.

The response effort was covered by several local media outlets including WGRZ, Buffalo's NBC affiliate. A reporter met with WNY PRISM staff at the site and produced a several minute segment on the infestation, *Hydrilla* biology and identification, and the partnership and response effort.



*WNY PRISM Northern Lead Boat Steward, Vincent Manuella, spoke with visitors about the newly discovered infestation of Hydrilla at the marina.*

WNY PRISM worked with Dr. Susan Wilde, with the Warnell School of Forestry and Natural Resources at the University of Georgia, who is conducting research into an epiphytic cyanobacteria, *Aetokthonos hydrillicola*, that is associated with *Hydrilla* and has been linked to avian vacuolar myelinopathy. This neurological disease has most notably been found among bald eagles and American coots in southern and Mid-Atlantic states. We collected several samples prior to treatment and shipped them to Dr. Wilde's lab to assist with her research.



## Management and Habitat Restoration

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*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.*

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WNY PRISM management and habitat restoration efforts include several types of projects across different ecological communities, addressing a wide range of invasives species and involving many different partners and collaborative structures. Project work often involves invasive species surveys, manual or chemical removal of identified invasives species and habitat restoration through the addition of native seed or plugs. Most of our work takes place in terrestrial systems, including wetland and riparian communities, however efforts have increasingly involved aquatic invasive species removal.

### WNY PRISM Crew Assistance Program

The Crew Assistance Program (CAP), established in 2016, continues to be one of WNY PRISM's most successful programs, improving invasive species management across the region by assisting partners with invasive species surveys and mapping, invasive species removal, habitat management and restoration projects. We work alongside our partners to accomplish priority projects they may be otherwise unable to complete alone. Furthermore, the program offers valuable opportunities for partners to work alongside WNY PRISM's experienced staff to gain experience with removal



*The 2021 WNY PRISM Crew completed invasive shrub removal at Rattlesnake Hill Wildlife Management Area in July, as part of the Crew Assistance Program.*

methods and equipment, and to learn about prioritization and adaptive management strategies that can be used to increase the effectiveness of invasive species management moving forward.

WNY PRISM received 18 Crew Assistance Program proposals from 12 partners in 2021. Each proposal was reviewed and prioritized based on our established review criteria and assessed based on the project's ability to fit within our capacity and schedule after addressing other project commitments. In 2021, 9 projects were selected including 4 invasive species inventory surveys, 4 management projects,



*WNY PRISM conducted an invasive species survey at the Craneridge Homeowners Association and spent time teaching volunteers how to identify invasive species.*

and one management and restoration project. Projects were located across four WNY PRISM Counties: Allegany, Chautauqua, Erie and Niagara. Invasive species surveys were conducted at Cassadaga Lakes Nature Park, College Lodge Forest, Craneridge Association and Lawton Woods. Invasive species management took place at the Park School, Rattlesnake Hill Wildlife Management Area, Reinstein Woods, in the Town of Holland and multiple sites across Niagara County.

WNY PRISM conducted an invasive species inventory survey at the Craneridge Homeowners Association, located in Southern Erie County. This community is working to remove invasive species and plant native species to support a healthy ecosystem. After the invasive species survey was complete, WNY PRISM and the Craneridge Woodlands & Habitat Committee hosted a Walk and Talk for interested community neighbors to come out and learn more about invasive species identification and management. Community members continue to report invasive species to iMap.

Two Western New York Land Conservancy (Land Conservancy) properties, Lawton Woods and College Lodge, were surveyed this year. Land Conservancy staff joined the Crew during the College Lodge survey to help them navigate the preserve, which has few marked trails. WNY PRISM also surveyed Cassadaga Lakes Nature Park, a Chautauqua Watershed Conservancy property. *Persicaria longiseta* was found on the preserve and the Chautauqua Watershed Conservancy was able to quickly mobilize a crew of trained volunteers to remove the small infestation, effectively stopping the spread of this species to new areas of the park.



*The Crew surveyed College Lodge, previously under the management of SUNY Fredonia and now owned by the Land Conservancy.*

The WNY PRISM Crew worked with DEC at the Rattlesnake Hill Wildlife Management Area (Rattlesnake Hill) to treat a 1.09-mile stretch of forest edge with dense invasive species cover, to protect the interior of the forest which is relatively free of invasives. Species targeted for cut-stump treatment included honeysuckle, autumn olive, multi-flora rose and common buckthorn. The Rattlesnake Hill project demonstrated the power of working together. Staff from DEC operated chainsaws and brushcutters to remove the invasive shrubs while Finger Lakes Trail volunteers piled the cut material to make stumps accessible for the Crew to apply herbicide. This assembly-line process allowed the entire project site to be treated within the budgeted time, a task which could not have been completed by one group alone.



*The Crew planted native species in a *Phragmites* restoration area at Reinstein Woods, inside of the newly constructed deer enclosure fence.*

The Crew assisted Reinstein Woods staff and volunteers in restoration efforts within a *Phragmites* infestation that has been managed since 2016. The infestation is now at a stage where adding native biodiversity through habitat restoration can help buffer against future invasions. Native plant species were selected for the site conditions and deer enclosures were put in place to protect the plants from herbivory. The Crew also spent 2 days in the fall treating *Phragmites* using spading, foliar herbicide treatment of a mowed patch, and clip-and-drip herbicide treatment of scattered plants throughout a 0.5-acre area.

WNY PRISM treated knotweed as part of 2 projects. The Crew foliar treated a 0.03-mile knotweed infestation, that was mowed by the Town of Holland. This site serves as a demonstration project aimed at increasing local support for additional management work moving forward. The Crew also assisted Niagara County Soil and Water Conservation District (NCSWCD) with their Niagara County Japanese Knotweed Eradication Program. For the fourth year, the Crew worked alongside NCSWCD staff for 3 days using foliar and stem injection treatment at 9 sites across the county.

The final CAP project was the red swamp crayfish containment project in partnership with the Park School. This project was described within the early detection section of this report.

## **Management and Restoration Projects**

### Riverwalk Trail – Porter Avenue

In partnership with the City of Buffalo, WNY PRISM managed invasive species along the Riverwalk Trail between Porter Avenue and the Peace Bridge beginning in 2018. Management and herbicide treatments focused on 2 target species, knotweed and *Phragmites*, but additional species were managed including

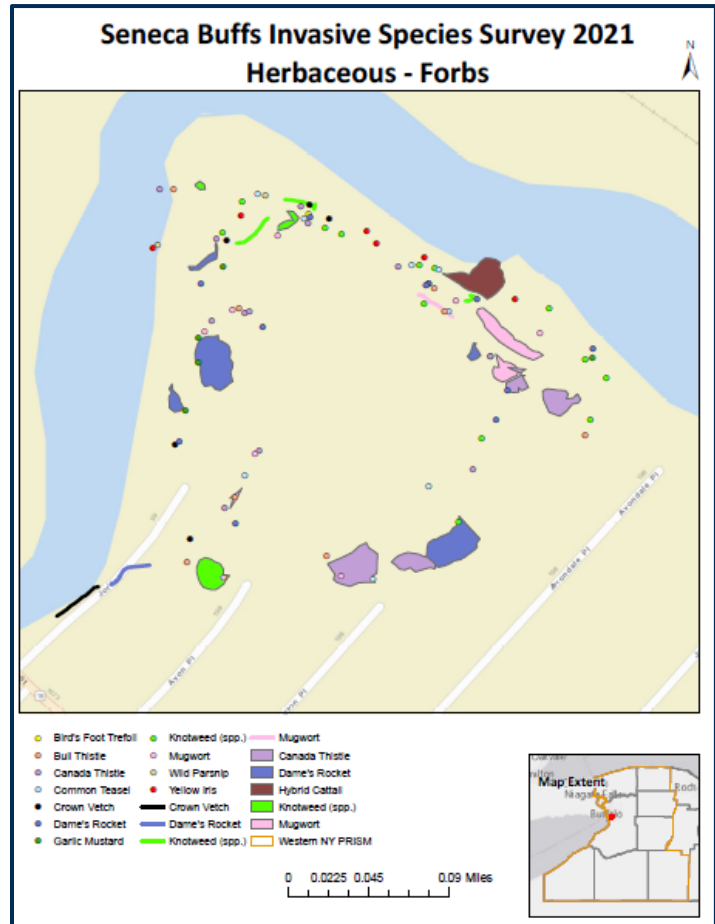
common buckthorn, Canada thistle, bull thistle, crown vetch, mugwort, and wild parsnip. The Crew treated all these species, apart from *Phragmites*, in May and returning later in the season to carry out follow-up treatment and to address the *Phragmites*. The 2.3-acre project site is part of a broader effort to understand the time and cost investment required to effectively manage an urban trail. This was the fourth, and final, year of management for this project.

Seneca Bluffs Natural Habitat Park Restoration Project

Seneca Bluffs Natural Habitat Park (Seneca Bluffs) is a popular recreational destination located along the Buffalo River. 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. WNY PRISM has worked with Erie County to implement invasive species management and native plant restoration within the upper terrace of Seneca Bluffs each year beginning in 2014. In addition to WNY PRISM’s efforts, USACE implemented a streambank stabilization project that included the removal of invasive species and native plant restoration, Buffalo Niagara Waterkeeper held several volunteer workdays to reestablish native species, and Erie County Soil and Water Conservation District assisted with *Phragmites* treatments and site grading.

On June 1, 2021, the Crew re-surveyed the approximately 15-acre Seneca Bluffs for terrestrial invasive species. Since the original survey was conducted in 2014/15, prior to the recent management having taken place, a new survey was needed to reassess management needs and strategies moving forward.

Following the survey, the Crew spent 3 days treating a wide range of species including knotweed, reed canarygrass, Canada thistle, mugwort and *Phragmites*. Despite the long list of species observed on the site, the total invasive species cover on the site has dropped significantly. When the project began in 2014, Seneca Bluffs had near 100% invasive species cover, primarily knotweed.



*WNY PRISM provides partners with project reports including survey maps. In the case of Seneca Bluffs, several maps were provided (Forbs, Grasses, Trees and Shrubs) to make it easier to understand as so many unique species were found on the site.*

## 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 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 coordination of a volunteer monitoring program.

Invasive species removal efforts that began in 2018 continued through 2021. The Crew started work in May, spending several days conducting follow-up treatments in areas previously treated before moving on to new areas of the preserves. Target species included common and glossy buckthorn, multi-flora rose, bush honeysuckle, privet, Canada thistle and reed canarygrass. The project finished up in October with a final treatment of small *Phragmites* populations at the sites. A total of 27.91 acres of invasive species were treated in 2021.



*The Crew treated invasive species at North Tonawanda Audubon Preserve in May and June. Native species were seen regenerating in areas we had treated previously.*

### Mosquito Junction – Tifft Nature Preserve

WNY PRISM continued to work with Tifft Nature Preserve (Tifft) to implement the Mosquito Junction Swamp Restoration Project in 2021. Tifft is a 264-acre urban nature preserve that provides valuable habitat for migratory songbirds. Along the margins of a large, remnant marsh there are additional wetlands and transition zones including Mosquito Junction. This project focuses on the removal of invasive species and restoration of native plant communities within this area.

WNY PRISM staff worked alongside Tifft stewardship staff and volunteers for 12 days, spending 288 hours, removing invasive species and restoring native plant communities in the Mosquito Junction project area. The Crew implemented invasive species removal efforts focused on common buckthorn, glossy buckthorn, honeysuckle, Canada thistle, bull thistle and mullein. Restoration efforts included

planting native trees and shrubs and constructing a fence around the plants to protect them from herbivory, primarily from deer.

### Houghton Preserve

The Houghton Preserve is the first property purchased by the Nature Sanctuary Society of Western New York (NSSWNY), acquired in 1934. The 23-acre preserve contains a kettlehole bog surrounded by forested wetlands that provide habitat to numerous rare flora and fauna. Beginning in 2019, the NSSWNY partnered with WNY PRISM to survey for and manage invasive species that threaten the biodiversity of the preserve. Invasive species surveys showed low invasive species cover, especially within the bog, but several encroaching shrub species raised concerns. In 2021, WNY PRISM worked with the NSSWNY on implementation of the newly funded project entitled *Invasive Species Management to Protect Rare Habitats at Alexander and Houghton Preserves*.

The Crew spent 7 days at the Houghton Preserve during the 2021 field season. Invasive species removal efforts focused on glossy buckthorn, which is the dominant woody invasive species in the preserve, multi-flora rose and bush honeysuckle. The Crew started cut-stump treatments at the southern preserve boundary, first working in areas not treated in 2020, before moving toward the northeast preserve boundary, completing follow-up treatment in areas that were previously treated. Cut-stump treatment took place across a 5.24-acre area. Volunteers assisted with this effort by hand-pulling seedlings and freeing up time for the Crew to focus on cut-stump efforts.



*The Houghton Preserve is a beautiful example of a kettlehole bog, a rare habitat and plant community found in western New York.*

## Water Chestnut and European Frog-bit Removal

Aquatic invasive species removal efforts (non-early detection) once again focused on water chestnut and European frog-bit. Water chestnut removal included projects at the Audubon Community Nature Center (ACNC) and Conewango Swamp Wildlife Management Area (Conewango Swamp). WNY PRISM Boat Stewards spent 32 hours assisting ACNC, removing 2 jet sleds of water chestnut. Work at ACNC is ongoing, beginning shortly before WNY PRISM was established in 2014. Despite what the long duration of the project may suggest, it has been highly successful. Each year less water chestnut is removed, and the project area decreases. Big Pond continues to be the focus of efforts with only a few plants removed from Backyard Pond and no plants were removed from Spatterdock Pond this year. For the second consecutive year, 66 plants were removed from Conewango Swamp.



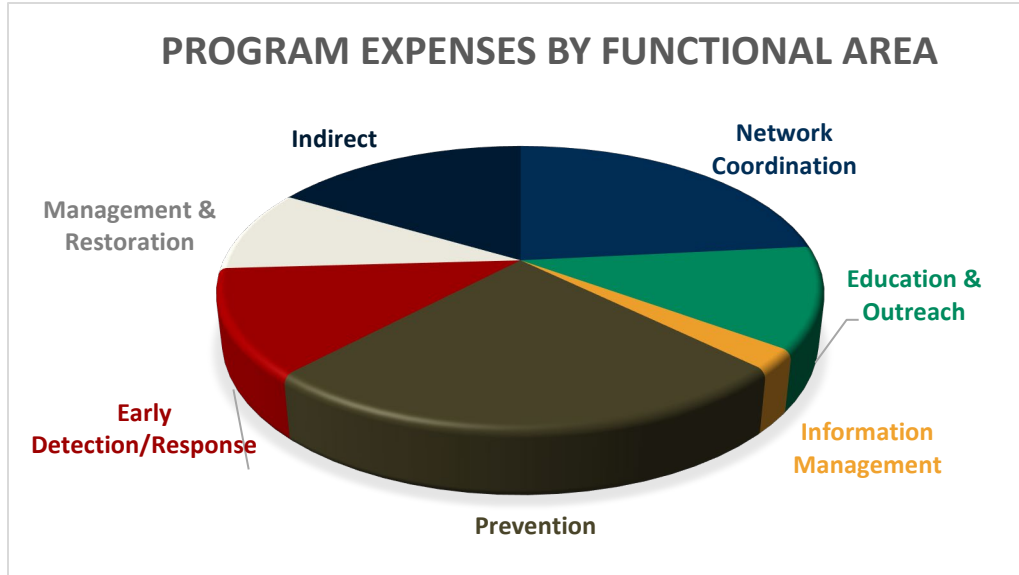
*WNY PRISM Boat Stewards helped at Audubon Community Nature Center (ACNC), spending a day removing water chestnut from Big Pond – two jet sleds filled with water chestnut were removed with a combined WNY PRISM and ACNC staff effort.*

WNY PRISM Boat Stewards also assisted NYS Parks with European frog-bit removal at Buckhorn Island State Park on Grand Island. In this third year of assistance, we spent 18 hours hand pulling this invasive species from Burnt Ship Creek, successfully removing 181 pounds during a single day's work.



*WNY PRISM Boat Stewards assisted NYS Office of Parks, Recreation and Historic Preservation with removal of European frog-bit from the Burnt Ship Creek at Buckhorn Island State Park.*

## 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 2021. 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 (23%)** - Activities and expenses related to Partner/Network Coordination including the cost of program administration, general office supplies, travel, and related personnel costs.

**Information Management (2%)** - Activities and expenses related to Information Management including related personnel costs, survey and monitoring, prioritization, research, outreach, and supplies.

**Education and Outreach (12%)** - 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 (25%)** - Activities and expenses related to Prevention including the Watercraft Inspection Stewardship Program, related personnel costs, management, travel, and supplies.

**Early Detection/Rapid Response (12%)** - 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 (9%)** - Activities and expenses related to Habitat Management and Restoration Goals, including related personnel costs, Crew Assistance Program, planning, travel, and supplies.

**Indirect Costs (16%)** - Indirect Costs as determined by the Research Foundation for SUNY Buffalo State.



## WNY PRISM Partners

Adirondack Park Invasive Plant Program  
Alfred Farmers' Market  
Alfred State College  
American Legion Post 362  
Amherst Conservation Advisory Council  
Amherst Public Library  
Amherst State Park  
Arcade Chamber of Commerce  
Audubon Community Nature Center  
Belmont Farmers' Market  
Bergen Swamp Preservation Society  
Buffalo Audubon Society  
Buffalo Museum of Science  
Buffalo Niagara Heritage Village  
Buffalo Niagara Waterkeeper  
Buffalo Olmsted Parks Conservancy  
Buffalo Science in the (Virtual) Pub  
Buffalo Sewer Authority  
Buffalo Women of Environmental Learning & Leadership (BWELL)  
Buffalo Zoo  
Byron-Bergen Central Schools  
Canal Village Farmers Market  
Capital Region PRISM  
Catskill Regional Invasive Species Partnership  
Cattaraugus County Highway Department  
CCE of Allegany County  
CCE of Erie County  
CCE of Genesee County  
CCE of Niagara County  
CCE of Orleans County  
CCE of Wyoming County  
Certified Nursery Landscape Professionals  
Chautauqua County Forest Pest Taskforce  
Chautauqua Institution  
Chautauqua Lake & Watershed Management Alliance  
Chautauqua Lake Association

Chautauqua Watershed Conservancy  
Chautauqua-Conewango Consortium  
City of Buffalo  
City of Dunkirk  
City of Lockport  
City of Niagara Falls  
City of North Tonawanda  
City of Tonawanda  
Clarence Hollow Farmers Market  
Conewango Creek Watershed Association  
Cornell University  
Craneridge Association  
Daemen College  
Don't Move Firewood  
Eastern Monarch Butterfly Farm Ecology & Environment, Inc.  
Elmwood Village Farmers Market  
Environmental Protection Agency  
Erie Canal Harbor Development Corporation  
Erie County Agricultural Society  
Erie County Department of Environment and Planning  
Erie County Department of Parks, Recreation and Forestry  
Erie County Soil and Water Conservation District  
Faun Lake Association  
Finger Lakes PRISM  
Finger Lakes Regional Watershed Alliance  
Fox Valley Farmers Market  
Friends of Bond Lake  
Friends of Iroquois National Wildlife Refuge  
Friends of Letchworth SP  
Friends of Times Beach  
Friends of Unity Island  
Genesee Country Farmers' Market  
Genesee County Agricultural Society

Genesee County Park and Forest  
Genesee County Soil and Water Conservation District  
Genesee River Wilds  
Girl Scouts of Western New York - Camp Timbercrest  
Grand Island Conservation Advisory Committee  
Grand Island Memorial Library  
Great Lakes Action Agenda  
Great Lakes Center at SUNY Buffalo State  
Great Lakes Hydrilla Collaborative  
Great Lakes Media  
Great Lakes Phragmites Collaborative  
Great Lakes Restoration Initiative  
Greystone Nature Preserve  
Groundworks Buffalo  
Habitattitude  
Hamburg Farmers Market  
Invasive Species Advisory Committee  
Invasive Species Coordination Section  
Invasive Species Council  
Jamestown Community College  
Jamestown Farmers Market  
Ken-Ton School District  
Lake Erie Seaway Trail Center  
Lake Erie Watershed Protection Alliance  
Lily Dale Assembly  
Lockport Community Market  
Lockport Public Library  
Long Island Invasive Management Area  
Lower Hudson PRISM  
M&T's Think Green Resource Group  
Master Forest Owners  
Master Gardeners  
Master Naturalists  
National Plant Diagnostic Network

Natural Resources Conservation Service – USDA  
Nature Sanctuary Society of Western New York  
New York Farm Bureau  
New York iMapInvasives Program  
New York Invasive Species Research Institute  
New York Natural Heritage Program  
New York New Jersey Trail Conference  
New York Sea Grant  
New York State Turfgrass Association  
Niagara County Parks  
Niagara County SWCD  
Niagara Frontier Botanical Society  
Niagara River Greenway  
Niagara University  
NIASMA  
North American Invasive Species Management Association  
North Buffalo Farmers Market  
North Tonawanda City Market  
NYS Canal Corporation  
NYS Classic Fishing Tournaments  
NYS Department of Agriculture and Markets  
NYS Department of Environmental Conservation  
NYS Department of Transportation  
NYS Federation of Lake Associations  
NYS Hemlock Initiative  
NYS Office of Parks, Recreation, and Historic Preservation  
NYS Thruway Authority  
Olean Farmers' Market  
Onondaga Environmental Institute  
Ontario Invasive Plant Council  
Orchard Park Library  
Orleans County Soil and Water Conservation District  
Panama Rocks

Perry Farmers' Market  
Pfeiffer Nature Center  
Plant WNY  
Play. Clean. Go.  
PUSH Buffalo  
Reinstein Woods  
Research Foundation for SUNY Buffalo State  
Richmond Memorial Library  
Riverside Community High School  
Roger Tory Peterson Institute  
Rushford Lake Association  
Saint Bonaventure University  
Salamanca Farmers' Market  
Science Demands Action  
Seneca Nation of Indians  
Silver Lake Association  
Silver Lake Water Quality Group  
South Towns Garden Club  
St. Lawrence Eastern Lake  
Ontario PRISM  
Starry Stonewort Collaborative  
Stop Aquatic Hitchhikers  
SUNY Buffalo State  
SUNY Fredonia  
The College at Brockport  
The Nature Conservancy  
The Park School  
Tifft Nature Preserve  
Town of Amherst  
Town of Aurora  
Town of Bergen  
Town of Boston Conservation Advisory Council  
Town of Byron  
Town of Cheektowaga  
Town of Clarence  
Town of Eden – Conservation Advisory Board  
Town of Hanover  
Town of Holland  
Town of Newfane  
Town of Tonawanda  
Town of Tonawanda – Youth, Parks & Recreation  
Town of West Seneca  
U.S. Army Corps of Engineers – Buffalo District

U.S. Department of Agriculture – Animal and Plant Health Inspection Service  
U.S. Department of Agriculture – National Resources Conservation Service  
U.S. Fish and Wildlife Service – Lower Great Lakes Fish and Wildlife Conservation Office  
University at Buffalo  
University of Georgia  
Village of Allegany  
Village of East Aurora  
Village of Holley  
WBFO 88.7 NPR  
West Seneca Chamber of Commerce  
Western New York Land Conservancy  
WGRZ Channel 2  
WNY Forest Pest Taskforce  
Wyoming County Soil and Water Conservation District