WNY PRISM
STRATEGIC PLAN
2014 – 2018

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WNY PRISM Coordinator
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Introduction

The Western New York Partnership for Regional Invasive Species Management (WNY PRISM), based upon the Scope of Work provided to by the New York State Department of Environmental Conservation, has been tasked with the coordination of regional invasive species management activities. This involves the collaboration with partners and stakeholders from across the state in the delivery to share information and resources, identify needs, conduct regional invasive species management planning, develop strategies, and highlight success stories and challenges in invasive species management for western New York. The WNY PRISM 5-Year Strategic Plan (2014 – 2018) provides the structure by which these activities will be implemented.

WNY PRISM has developed six goals, along with associated objectives, strategies, outputs and outcomes. The six goals have been organized in association with WNY PRISM core functions: Partner/Network Coordination, Information Management, Education and Outreach, Prevention, Early Detection and Rapid Response, and Management and Habitat Restoration. WNY PRISM also identified additional efforts essential to the success of WNY PRISM. These either didn’t fit within identified goals, or applied too broadly across multiple goals to be embedded within a single one. Such efforts are described as Additional Program Elements and have been included in this strategic plan.

The WNY PRISM 5-Year Strategic Plan puts forth an ambitious program designed to provide the programmatic basis for which the invasive species management needs of the western New York region may be met. However, the idea that the WNY PRISM Office will, at any point, be able to meet such an expectation as ‘all of the region’s invasive species management needs’ being met, is daunting and unlikely. As such, great care was taken in the development of this strategic plan to identify priorities among priorities, and to formulate a realistic plan that will allow for the future expansion of WNY PRISM activities and capacity. In addition, this strategic plan identifies multiple strategies that depend upon a strong partner network to achieve success. WNY PRISM is looking forward to working with our growing partnership network to implement this strategic plan.

The WNY PRISM 5-Year Strategic Plan was developed in collaboration with the WNY PRISM Steering Committee, and prepared by the WNY PRISM Coordinator. WNY PRISM would like to thank all of our Partners and their representatives who helped with the development and review of this strategic plan. We would also like to thank our many Partners who have worked since 2008 to form WNY PRISM and lay the groundwork that has been instrumental to our success.
New York State Invasive Species Problem Statement

Invasive species are defined by Environmental Conservation Law (9-1703(1)) as non-native species that can cause harm to the environment, economy, or to human health. They are a form of biological pollution that comes from all around the world and the rate of invasion is increasing due to increasing international trade. A wide variety of species negatively impact many sectors of our world; our ecosystems, including all natural systems and managed forests; our food supply, including agricultural products and harvested wildlife, fish, and shellfish; our built environments, including landscaping, infrastructure, industry, gardens and pets; our economy, recreation, and human health.

Responding to this growing problem, NYS passed legislation in 2003 that created the New York Invasive Species Task Force (ISTF). The ISTF 2005 final report (http://www.dec.ny.gov/animals/69899.html) led to a 2008 statute, known as Title 17 of ECL Article 9, which established the New York Invasive Species Council and Invasive Species Advisory Committee. The Council is co-led by New York State Departments of Environmental Conservation (DEC) and Agriculture and Markets (DAM). Among the Council’s numerous statutory responsibilities is the requirement, at 9-1705.5(g), to: “support(ing) within available funds and encourage(ing) Partnerships for Regional Invasive Species Management [PRISMs] in their efforts to address invasive species through coordination, recruitment, and training of volunteers, education, early detection, rapid response, eradication, research, and planning”.

New York State Invasive Species Coordination Unit

<table>
<thead>
<tr>
<th>RED - Contracts</th>
<th>SOLID LINES - Statutory Tasks (ECL 9, Title 17)</th>
<th>DASHED - Not in Statute</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRISMs (8)</td>
<td>COUNCIL</td>
<td>List Bill &amp; AIS Prevention Bill</td>
</tr>
<tr>
<td>NGOs</td>
<td>9 NYS agencies led by DEC &amp; DAM</td>
<td></td>
</tr>
<tr>
<td>State agency reps (regions)</td>
<td>DOT, SED, OPBIP, DOD, APA, Thruway, Canals</td>
<td></td>
</tr>
<tr>
<td>Local governments</td>
<td>ADVISORY COMMITTEE</td>
<td>Comprehensive Management Plan</td>
</tr>
<tr>
<td>Volunteers</td>
<td>25 NGOs, Academia, Trade Groups, etc.</td>
<td>IS Summit (Inservice)</td>
</tr>
<tr>
<td>Education &amp; Outreach</td>
<td>Research Institute &amp; Research</td>
<td>Review of Laws &amp; Policies</td>
</tr>
<tr>
<td>Information Clearinghouse</td>
<td>Cornell University, etc.</td>
<td>NYS, Federal Ballast Water</td>
</tr>
<tr>
<td>Research Institute &amp; Research</td>
<td>Cornell University, etc.</td>
<td>AIS Spread Prevention Grants</td>
</tr>
<tr>
<td>NY Natural Heritage Program</td>
<td>Locational Database (GIS)</td>
<td></td>
</tr>
<tr>
<td>Member Items &amp; Aid to Localities</td>
<td>Ex-NYS Coordination</td>
<td>Encouraging Industry</td>
</tr>
<tr>
<td>Response Teams &amp; Interns (PRISM pilots)</td>
<td>1 DEC - 2 Contract Staff</td>
<td>Regulatory Streamlining</td>
</tr>
<tr>
<td>Pesticides, 19/24/29, SEQRA &amp; PEIS</td>
<td>Ex-NYS Coordination</td>
<td></td>
</tr>
<tr>
<td>- Federal (ISAC)</td>
<td>- Regional (ANN Panels, etc)</td>
<td></td>
</tr>
<tr>
<td>- other states</td>
<td></td>
<td></td>
</tr>
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</table>

New York State Invasive Species Program Components – updated 2015
**WNY PRISM**

**History**

Based upon the twelve recommendations of the 2005 NYS Invasive Species Task Force, eight Partnerships for Regional Invasive Species Management were created to help prevent or minimize the harm caused by invasive species on New York’s environment, economy, and the health and well-being of the State’s Citizens. PRISMs are intended to coordinate invasive species management functions including coordinating partner efforts, recruiting and training citizen volunteers, identifying and delivering education and outreach, establishing early detection monitoring networks, and implementing direct eradication and control efforts.

Work began to establish WNY PRISM in 2008 with the creation of a temporary steering committee, however it was more than 5 years before a WNY PRISM contract was awarded, and without funding and structure to support WNY PRISM as an organization, the group did not meet on a regular basis. The WNY PRISM contract was awarded to the Research Foundation for SUNY Buffalo State on April 13, 2013 and the final approval was obtained in November of that year. The WNY PRISM Office was established within the Great Lakes Center and WNY PRISM began operations in January 2014, with the hiring of a dedicated WNY PRISM Coordinator.

The Great Lakes Center (GLC) is an institute of researchers and educators at SUNY Buffalo State dedicated to investigating the ecology of the Great Lakes and their tributaries. Many of the staff are full time research scientists or technicians while others are professors of Biology at SUNY Buffalo State. In addition to lab facilities on the main campus, the GLC also has a field station on the waterfront and a fleet of boats to conduct field studies. The GLC’s mission is to improve the quality of the environment by providing the best possible science to decision-makers concerned with the health and sustainability of resources. The GLC is committed to improving human-environment interactions in the Great Lakes ecosystem guided, in part, by an understanding of the evolutionary and ecological processes and patterns acting on the system. As such, the GLC makes an ideal home for the WNY PRISM office.

WNY PRISM held its first Steering Committee Meeting on January 30, 2014. The first items on the agenda were the review and adoption of our Operational Guidelines, development of a 2014 Annual Work Plan and addressing Steering Committee needs with regard to filling expertise and/or regional gaps. With a finalized list of Steering Committee Members, the committee met on April 22 & 23, 2014 to develop strategic plan goals, objectives, strategies, outputs and outcomes. These efforts formed the basis for this strategic plan and subsequent Annual Work Plans. Strategic Plan goals were finalized in November, 2014. This 5-year strategic plan spans 2014 – 2018; the four remaining years in the current WNY PRISM contract along with an additional year, expected to be part of a no-cost contract extension using unexpended funds from contract year one (2013).

**Geographic Region**

Western New York is home to a beautiful and unique ecological landscape along with a rich and storied cultural history. Encompassing the eight western-most counties in NYS (Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans and Wyoming), this area includes some of New York State’s most impressive natural features, such as Niagara Falls and the Niagara River, Niagara and Portage Escarpments, Lake Erie and Lake Ontario Shorelines, forests of the Southern Tier, Iroquois National Wildlife Refuge, and Chautauqua Lake. Among our natural treasures are Letchworth State Park, voted
the Best State Park in the 2015 USA Today’s Reader’s Choice Award, Zoar Valley, and Niagara Falls, considered among the natural wonders of the world. In addition, western New York includes major watersheds such as Lake Erie-Niagara River, Southwestern Lake Ontario and Allegheny River, and is part of both the Great Lakes and Mississippi River Basins. Western New York shares borders with Pennsylvania and Ontario, Canada, and shares a regional border with the Finger Lakes and Finger Lakes PRISM.

Western New York is home to a number of rare species and natural communities. The Niagara River itself is a globally significant Important Bird Area with one of the world’s most impressive concentrations of gulls, having 19 species recorded. Rare species include the federally endangered eastern massasauga rattlesnake (*Sistrurus catenatus*), federally threatened Houghton’s goldenrod (*Solidago houghtonii*), state endangered queen snake (*Regina septemvittata*), and state threatened yellow giant hyssop (*Agastache nepetoides*). Ecosystems include hardwood and old growth forests, coastal plains, various wetland communities such as bogs and fens, and significant riverine systems.

WNY PRISM’s eight-county region is home to over 1.55 million people and nearly 6500 square miles, not including adjacent areas of both Lakes Erie and Ontario. The region contains cultural and urban centers such as Buffalo, Jamestown, Lockport and Niagara Falls. Buffalo was founded in 1801 (incorporated in 1832) and is currently the second most populated city in New York State, second only to New York City. The metropolitan area (City of Buffalo and surrounding communities) has a population of 1.13 million people. Land dedicated to agricultural production includes over 1.4 million acres with an average farm size of 170 acres. Three western New York counties (Chautauqua, Genesee, Wyoming) ranked among the top 10 in agricultural sales for New York State, according to a 2007 U.S. Department of Agriculture Report. Chautauqua County ranking as the top grape producer. Additional economic drivers for the region include light manufacturing, recreation and tourism, and education. There are twenty three colleges and universities in western New York. This impressive diversity of cultural, historic, geographic, ecologic and agricultural factors make WNY a globally unique and important place.

Figure 2: Map of WNY PRISM

Figure 3: Watersheds and Water Resources
Table 1: WNY PRISM Counties: Size, Population, Metropolitan Areas (2010 Census)

<table>
<thead>
<tr>
<th>County</th>
<th>Population</th>
<th>Square Miles</th>
<th>Metropolitan Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegany</td>
<td>48,946</td>
<td>1029.31</td>
<td>None</td>
</tr>
<tr>
<td>Cattaraugus</td>
<td>80,317</td>
<td>1308.35</td>
<td>Olean</td>
</tr>
<tr>
<td>Chautauqua</td>
<td>134,905</td>
<td>1060.23</td>
<td>Jamestown-Dunkirk-Fredonia</td>
</tr>
<tr>
<td>Erie</td>
<td>919,040</td>
<td>1042.69</td>
<td>Buffalo-Cheektowaga</td>
</tr>
<tr>
<td>Genesee</td>
<td>60,079</td>
<td>492.94</td>
<td>Batavia</td>
</tr>
<tr>
<td>Niagara</td>
<td>216,469</td>
<td>522.36</td>
<td>Niagara Falls-Lewiston-Lockport</td>
</tr>
<tr>
<td>Orleans</td>
<td>42,883</td>
<td>391.26</td>
<td>None</td>
</tr>
<tr>
<td>Wyoming</td>
<td>42,155</td>
<td>592.75</td>
<td>None</td>
</tr>
</tbody>
</table>

Table 2: Major Land Use (km²) for WNY PRISM Counties

<table>
<thead>
<tr>
<th>County</th>
<th>Forest¹</th>
<th>Agriculture²</th>
<th>Other³</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>Allegany</td>
<td>1,786.3</td>
<td>610.4</td>
<td>271.5</td>
<td>2,668.2</td>
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<tr>
<td>Cattaraugus</td>
<td>2,315.2</td>
<td>742.4</td>
<td>335.0</td>
<td>3,392.6</td>
</tr>
<tr>
<td>Chautauqua</td>
<td>1,298.6</td>
<td>954.5</td>
<td>497.5</td>
<td>2,750.6</td>
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<tr>
<td>Erie</td>
<td>1,182.1</td>
<td>604.4</td>
<td>918.0</td>
<td>2,704.5</td>
</tr>
<tr>
<td>Genesee</td>
<td>498.2</td>
<td>742.8</td>
<td>38.9</td>
<td>1,279.9</td>
</tr>
<tr>
<td>Niagara</td>
<td>372.7</td>
<td>577.2</td>
<td>404.4</td>
<td>1,354.3</td>
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<tr>
<td>Orleans</td>
<td>278.1</td>
<td>565.6</td>
<td>170.0</td>
<td>1,013.7</td>
</tr>
<tr>
<td>Wyoming</td>
<td>651.9</td>
<td>882.3</td>
<td>1.4</td>
<td>1,535.6</td>
</tr>
<tr>
<td>Total WNY PRISM</td>
<td>8,383.1</td>
<td>5,679.6</td>
<td>2,636.7</td>
<td>16,699.4</td>
</tr>
</tbody>
</table>

¹ Alerich and Drake. 1995. ² USDA, 2007. ³Includes Urban, Wetland, Grassland

Operational Structure

WNY PRISM’s consists of a full-time WNY PRISM Coordinator and part-time Director along with seasonal employees and interns. In addition, WNY PRISM has a Steering Committee and has established Working Groups to assist with programmatic needs and priority setting. Additional information about WNY PRISM’s Operational Structure can be found in our Operational Guidelines, available on our website (http://www.wnyprism.org/about/news/).

The WNY PRISM Steering Committee is comprised of a core group of individuals representing a diversity of organizations, state and federal agencies, private sector businesses and other stakeholders. Individuals are selected by the entity they are representing. WNY PRISM works to ensure that the Steering Committee is representative of the invasive species management needs of the WNY PRISM region. The Steering Committee serves in an advisory capacity and assists the WNY PRISM Coordinator with implementing the goals identified in this Strategic Plan.
Steering Committee Member Organizations & Agencies (2014)

Buffalo/Niagara RiverKeeper
Chestnut Ridge Nursery – Certified Nursery and Landscape Professionals
Conecuh Creek Watershed Association
Cornell Cooperative Extension – Erie County
Ecology & Environment, Inc.
The Nature Conservancy
New York SeaGrant
New York State Certified Nursery and Landscape Professionals

New York State Department of Environmental Conservation
New York State Department of Transportation
New York State Parks, Recreation, and Historic Preservation
SUNY Buffalo State – The Great Lakes Center
United States Army Corps of Engineers
United States Department of Agriculture – Natural Resources Conservation Service
United States Fish and Wildlife Service – Lower Great Lakes Office

Working Groups (2014)

WNY PRISM has established Working Groups to assist with fulfilling identified needs. The Aquatic, Terrestrial and Conservation Targets Working Groups were initially established to assist with developing priorities for the region, but may be used to address future needs as well. The Education and Outreach Working Group was established to identify regional needs and work to address those needs. Working Groups are open to all interested stakeholders and scheduled meeting are posted on our public events calendar (http://wnyprism.wpengine.com/calendar/).

Aquatic Invasive Species

SUNY Buffalo State, Chautauqua County, SUNY Fredonia, New York State Department of Environmental Conservation (DEC), Buffalo Niagara Riverkeeper, U.S. Fish and Wildlife Service (USFWS)

Education & Outreach Working Group


Conservation Targets

Chautauqua Lake Association, Roger Tory Peterson Institute, New York State Office of Parks, Recreation and Historic Preservation (NYS Parks), University at Buffalo, DEC, Western New York Land Conservancy, Chautauqua Watershed Conservancy

Terrestrial Invasive Species

Buffalo Museum of Science, SUNY Buffalo State, New York State Department of Transportation, SUNY Fredonia, Buffalo Audubon Society, DEC, United States Department of Agriculture – Natural Resources Conservation Service
Partners

WNY PRISM is a network of public and private entities that share a common interest in the protection of Western New York from the harm caused by invasive species. Together we represent over 50 different federal, state, and local government agencies, non-profit organizations, universities, businesses, and individuals. In general, WNY PRISM classifies partners as Primary Partners, Additional Partners, or Cooperating Affiliates. Primary Partners are those entities that serve on the WNY PRISM Steering Committee and/or Working Groups, as well as funding agencies and our host organization. Additional Partners are generally those entities that work in partnership with WNY PRISM with regard to invasive species management efforts, share resources, and/or share information. Cooperating Affiliates include additional stakeholders involved with invasive species management activities within the WNY PRISM region that communicate such efforts to WNY PRISM, or assist WNY PRISM with disseminating information on invasive species. Below is a list of Partners that are involved with WNY PRISM in varying capacities.

Adirondack Park Invasive Plant Program
Amherst State Park
Bergen Swamp Preservation Society
Buffalo Audubon Society
Buffalo Niagara Riverkeeper
Capitol-Mohawk PRISM
Catskill Regional Invasive Species Partnership
Certified Nursery Landscape Professionals
Chautauqua Lake Association
Conewango Creek Watershed Association
Cornell Cooperative Extension
Cornell University
DEC Invasive Species Coordination Unit
Ecology & Environment, Inc.
Erie County Environment and Planning
Erie County Soil and Water Conservation District
Finger Lakes PRISM
Friends of Bond Lake
Friends of Times Beach
Genesee River Wilds
iMapInvasives
Long Island Invasive Management Area
Lower Hudson PRISM
Master Gardeners
National Plant Diagnostic Network
Nature Sanctuary Society of Western New York
New York Sea Grant
New York State Department of Agriculture and Markets
New York State Department of Transportation
New York State Invasive Species Research Institute

New York State Office of Parks, Recreation, and Historic Preservation
Niagara County Soil and Water Conservation District
Orleans County Soil and Water Conservation District
Pine Woods Park – City of North Tonawanda
PlayCleanGo!
PUSH Buffalo
Reinstein Woods
Roger Tory Peterson Institute
Rushford Lake Association
Seneca Nation of Indians
Silver Lake Association
St. Lawrence Eastern Lake Ontario PRISM
Stop Aquatic Hitchhikers
SUNY Fredonia
The Chautauqua Institute
The Nature Conservancy
The Western New York Land Conservancy
Tifft Nature Preserve - Buffalo Museum of Science
Town of Amherst
United States Fish and Wildlife Service
United States Army Corps of Engineers
United States Department of Agriculture
National Resource Conservation Service
University at Buffalo
Wyoming County Soil and Water Conservation District
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.

Vision

The Vision of WNY PRISM is to foster regional collaboration and coordination wherein the threat of invasive species will be minimized and the natural resources and beauty of Western New York will be preserved. Specifically, the vision of this strategic plan is that, within 5 years, WNY PRISM will have the capacity to effectively address invasive species issues within the region. This will be accomplished through establishment of a partnership network and communication structure, increased regional understanding of invasive species priorities, issues, and management, increased regional capacity for prevention, early detection, rapid response, management, and habitat restoration efforts, and secured funding to sustain WNY PRISM into the future.

Guiding Principles

Partnership – The regional and expansive scope of WNY PRISM requires the effective use of partnerships with all stakeholders, including government agencies, non-profit organizations, private sector business, universities, and citizens. While each Partner offers significant knowledge and resources, there is an understanding that conservation and information gaps exist throughout the region and it is important that these are addressed moving forward. Success will hinge on the creation of an additive program, one that brings together the strengths of all Partners within the region, and not one that creates redundancy.

Education and Outreach – The ability and opportunity to enhance Partner (including private citizens) understanding of invasive species, invasive species management, environmental and ecological principles, and how Partners fit into the greater landscape is of utmost importance. Through increased understanding and wise use of available information, resources, and opportunities, Partners will be better able to provide more effective and ecologically significant stewardship within the region. Effective messaging and materials are necessary in order to ensure that Partners are receiving the most accurate information. It is also important to recognize that PRISM staff, Volunteers, and Partners need opportunities to continue their education about invasive species, invasive species management, ecology, conservation management practices and landscape needs.

Invasive Species Management – Built upon a shared understanding and conservation ethic, WNY PRISM recognizes that effective invasive species management must include not only the prevention, early detection, assessment, rapid response, and removal of invasive species, but also in conserving resilient, healthy, functioning ecosystems that consist of all essential ecological components and communities. Conservation science is continually improving and implementation of any conservation plan must adapt to this changing knowledge base. WNY PRISM embraces innovative and adaptable approaches to invasive species management.
Efficacy – Measurable and replicable outcomes are essential in establishing a successful and adaptive program. The continuing evaluation and re-evaluation of outcomes along with allowing for the programmatic flexibility to modify any objective, strategy and/or goal will allow for WNY PRISM to achieve greater success.

Sustainability – WNY PRISM recognizes programmatic, financial and ecological sustainability as an essential component of all programs and activities. In order to achieve overall programmatic success, WNY PRISM needs to be financially sustainable and therefore a broad scope of funding sources should be developed. Educational and Volunteer Programs must be designed to be additive to the mission through continued engagement of participants. Implemented projects will need to address (improve) the health, functionality and resilience of ecosystems, and produce sustainable results that require minimal continued input.

Overview of the Threat

The New York State Invasive Species Task Force defines an invasive species as a species that is nonnative to the ecosystem under consideration, and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species pose considerable risk to New York State and western New York in particular. Western New York’s unique position, both geographically and culturally, increases invasive species spread potential and adds to the likelihood of new invasive species establishment.

Western New York is highly impacted by human disturbance and development. The Buffalo-Niagara region has long been a population center, seeing significant modification to the natural landscape since the early 1800’s. From urban development to hydrologic manipulation, and creation of shipping canals and harbors, much of the landscape has been altered. In addition, the extensive systems of roads, utilities, rivers and tributaries has allowed for the increased movement of invasive species. While there are areas with lower invasive species occurrence, there are no areas within the region, including those designated as nature preserves and otherwise considered remote, free from invasive species pressure.

Western New York has over 220 confirmed invasive species and 50 species considered approaching region (species not currently in WNY but confirmed within adjacent geography), based on combined iMapInvasives and Eddmaps data. Due to recognized and significant data gaps within these databases, the true number of invasive species present and directly impacting western New York is difficult to quantify. Known invasive species range from the very common, such as Phragmites australis (Common Reed/Phragmites), Reynoutria spp. (Japanese, giant, and bohemian knotweeds) and locally common Dreissena polymorpha (Zebra Mussel), to emerging species such as Adelges tsugae (Hemlock Woolly
Adelgid), *Brachypodium sylvaticum* (Slender False Brome), and *Hydrilla verticillata* (Hydrilla). The considerable data gaps with regard to invasive species presence and distribution within the region become apparent with concern to species that are likely more common that currently known. Species such as *Cynanchum louiseae* and *C. rossicum* (Black and Pale Swallow-wort), *Celastrus orbiculatus* (Oriental Bittersweet), *Butomus umbellatus* (Flowering Rush), and *Hydrocharis morus-ranae* (European Frog-bit) have been noticeably under-reported. The current state of known versus actual invasive species presence and distribution increases the difficulty for implementing effective, sustainable management within the region.

While western New York has significant invasive species issues, the region also has considerable resources with regard to the people, organizations and agencies working on invasive species management. Western New York has strong educational programming available for a wide range of user groups. Apart from general invasive species information outreach, in the form of tabling events and newsletters, education and outreach efforts have been primarily spread prevention based. Efforts include boat stewardship/clean, drain, dry programs and forest pest/don’t move firewood outreach. Agencies including DEC, USFWS and United States Army Corps of Engineers - Buffalo District, have a strong presence in western New York, with efforts focused on water and near-shore resources. Programming includes early detection/eDNA projects within the great lakes and the multi-partner *Hydrilla* Demonstration Project. Site-specific invasive species removal efforts have grown in recent years to include an increased number of sites and increased scope of management. Although capacity for invasive species removal and habitat restoration efforts remains regionally limited, the growing interest and activity shows great promise for future expansion and increased effectiveness of efforts.

**Pathways of Invasion**

The events that have led to the current state of invasive species issues felt throughout western New York are many. Each individual species has unique characteristics that provided for its arrival and establishment in our region. However, the commonalities between species, of how they arrive and spread, are described as Pathways of Invasion. For the vast majority of our invasive species, the primary Pathways of Invasion can be attributed to humans. Introductions may or may not have been intentional, but human-aided pathways can be identified for nearly all of our invasive species introductions. Primary human-aided pathways of invasion include all forms of human disturbance on the natural landscape such as construction, transportation and utility grids, water resources manipulation, agriculture, disruption of ecosystem processes, and climate change. Additional human-aided pathways include industries such as landscape and nursery trades, pet trades, and agriculture.

WNY PRISM recognizes human-aided Pathways of Invasion as the primary way invasive species are introduced and spread through our region. However, while humans continue to be the primary driver of invasive species spread, we must also understand the natural means by which species are transported. Once species reach a certain population level within the landscape they are able to use natural means of dispersal to great effect. These means are plentiful and include vectors such as birds and other animals, water, and wind. Unfortunately, there is little that can be done in order to manage these natural pathways. Therefore, our best option for addressing Pathways of Invasion is to focus on the dominant human-aided pathways. The primary mechanism by which to address Pathways of Invasion requires alteration of behavior. In cases where the Pathway of Invasion is driven by industry or governments, improved regulations and protocols can be used to great effect. However, regulations are less effective on individuals who transport infested firewood, dump aquarium plants into their backyard, or track
invasive plant seed in the treads of their boots as they travel around the region. Here, education and outreach efforts are necessary to alter individual behavior.

There is a widow of opportunity to address invasive species prior to the species causing a significant negative impact within the region, as shown in the Invasive Species Curve (Figure 5). During this time, cost of management is lower while the number of effective management options available is greater. By focusing efforts on the disruption of Pathways of Invasion, we can decrease the likelihood of new invasive species from establishing and limit the spread of those species with range restrictions or those which are only locally common.

Based upon WNY PRISM’s established priority species and associated Pathways of Invasion, we recognize the following Pathways of Invasion as those for which strategies should be implemented in order to address establishment and spread: Boats, Roads and Utility Corridors, Firewood, Nursery and Landscaping Trades, and Recreation.

**Boats:** Recreational boating and fishing is an important pathway for the movement of aquatic invasive species. Boats are known vectors of aquatic plants and animals and boat stewardship programs are limited in our region.

**Roads and Utility Corridors:** Both the construction and maintenance of roads and utility corridors is a primary vector for the transportation of terrestrial invasive species. Construction and mowing equipment can spread seeds and other plant materials by deflection as well as by transporting equipment from one location to another. Construction disturbance provides an opening for new invasive species establishment.

**Firewood:** Forest pests and pathogens pose a major threat to the health of the forest ecosystems and economy in the region, and the movement of firewood and other wood products is considered the primary vector. With the continued threat of the Emerald Ash Borer and the potential threat of the Asian Long-horned Beetle, movement of firewood continues to be of regional concern.

**Nursery and Landscape Trades:** Historically, the nursery industry has been responsible for bringing invasive ornamental plants to new areas. Inadvertent introduction of invasive pests may also occur in the movement of plants and plant materials, such as within the soil and packing materials. Many of WNY PRISM’s terrestrial priority species can be attributed to the nursery and landscape trades.

**Recreation:** Seeds and plant material from invasive species can stow away on hiking boots, waders and fishing gear, clothing, tires, or the underside of vehicles and equipment used in recreational activities. These seeds can be transported great distances before falling off in a new location. Activities such as hiking, fishing, hunting, ATV riding, boating, and other activities can be a significant mechanism for transporting aquatic and terrestrial invasive species.
### WNY PRISM Priorities

WNY PRISM priority species lists were developed through the collaborative efforts of our Steering Committee and Terrestrial and Aquatic Working Groups. Priority species lists will be updated as needed.

#### Terrestrial Invasive Species

<table>
<thead>
<tr>
<th></th>
<th>Species Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Adelges tsugae</em></td>
<td>Hemlock Woolly Adelgid</td>
</tr>
<tr>
<td>2</td>
<td><em>Agrilus planipennis</em></td>
<td>Emerald Ash Borer</td>
</tr>
<tr>
<td>3</td>
<td><em>Cirsium arvense</em></td>
<td>Canada Thistle</td>
</tr>
<tr>
<td>4</td>
<td><em>Cynanchum louiseae</em></td>
<td>Black Swallow-wort</td>
</tr>
<tr>
<td>5</td>
<td><em>Cynanchum rossicum</em></td>
<td>Pale Swallow-wort</td>
</tr>
<tr>
<td>6</td>
<td><em>Lonicera spp.</em></td>
<td>Bush Honeysuckles</td>
</tr>
<tr>
<td>7</td>
<td><em>Phalaris arundinacea</em></td>
<td>Reed Canary Grass</td>
</tr>
<tr>
<td>8</td>
<td><em>Phragmites australis</em></td>
<td>Phragmites, Common Reed</td>
</tr>
<tr>
<td>9</td>
<td><em>Reynoutria spp.</em></td>
<td>Knotweeds</td>
</tr>
<tr>
<td>10</td>
<td><em>Rhamnus cathartica</em></td>
<td>Common Buckthorn</td>
</tr>
</tbody>
</table>

#### Aquatic Invasive Species

<table>
<thead>
<tr>
<th></th>
<th>Species Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Corbicula fluminea</em></td>
<td>Asian Clam</td>
</tr>
<tr>
<td>2</td>
<td><em>Hemimysis anomala</em></td>
<td>Bloody Red Shrimp</td>
</tr>
<tr>
<td>3</td>
<td><em>Hydrilla verticillata</em></td>
<td>Hydrilla</td>
</tr>
<tr>
<td>4</td>
<td><em>Hydrocharis morus-ranae</em></td>
<td>European Frog-bit</td>
</tr>
<tr>
<td>5</td>
<td><em>Orconectes rusticus</em></td>
<td>Rusty Crayfish</td>
</tr>
<tr>
<td>6</td>
<td><em>Scardinius erythrophthalmus</em></td>
<td>Rudd</td>
</tr>
<tr>
<td>7</td>
<td><em>Trapa natans</em></td>
<td>Water Chestnut</td>
</tr>
</tbody>
</table>

#### Early Detection Species

<table>
<thead>
<tr>
<th></th>
<th>Species Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Anoplophora glabripennis</em></td>
<td>Asian Longhorned Beetle</td>
</tr>
<tr>
<td>2</td>
<td><em>Brachypodium sylvaticum</em></td>
<td>Slender False Brome</td>
</tr>
<tr>
<td>3</td>
<td><em>Channa argus</em></td>
<td>Northern Snakehead</td>
</tr>
<tr>
<td>4</td>
<td><em>Eichhornia crassipes</em></td>
<td>Water Hyacinth</td>
</tr>
<tr>
<td>5</td>
<td><em>Hypophthalmichthys molitrix</em></td>
<td>Silver Carp</td>
</tr>
<tr>
<td>6</td>
<td><em>Hypophthalmichthys nobilis</em></td>
<td>Bighead Carp</td>
</tr>
<tr>
<td>7</td>
<td><em>Microstegium vimineum</em></td>
<td>Japanese Stiltgrass</td>
</tr>
<tr>
<td>8</td>
<td><em>Persicaria perfoliata</em></td>
<td>Mile-a-Minute Vine</td>
</tr>
<tr>
<td>9</td>
<td><em>Pistia stratiotes</em></td>
<td>Water Lettuce</td>
</tr>
</tbody>
</table>

### Goals and Strategies

The WNY PRISM Steering Committee worked to identify goals, objectives, and related strategies during 2014, holding a two-day planning session. Six goals were identified: Partner/Network Coordination, Information Management, Education and Outreach, Prevention, Early Detection and Rapid Response, and Management and Habitat Restoration. Goals received final approval by the WNY PRISM Steering Committee in November 2014 and were shortly thereafter submitted to NYS DEC ISCU and posted for the public.
Partner/Network Coordination

Goal #1- Establish a partnership network and communication for those involved in invasive species information and management within the WNY PRISM region. Facilitate opportunities for cooperation including sharing of information, personnel, equipment and expertise.

Objectives:

A. Establish WNY PRISM as regional ‘go to’ organization for coordination and information on invasive species management by December 2018.
B. Establish means of communication(s) to facilitate sharing of information and resources among partners by December 2018.
C. Create a database of existing partners and stakeholders, programming and priorities by December 2015.
D. Provide information, assistance and collaboration opportunities to partners seeking external funds/grants – ongoing.
E. Identify the appropriate document to formalize partnership agreement and obtain commitment from partners by December 2014.
F. Identify key partners and stakeholders including points of contact for each of WNY PRISM’s eight counties by December 2015.
G. Coordinate with other PRISMs, NYS Invasive Species Advisory Committee, DEC’s Invasive Species Unit and other appropriate broader region stakeholders - ongoing.

Strategies:

1. Facilitate partnership communication through scheduled partnership meetings, additional meetings (i.e. Steering Committee, Working Groups), email listserv, feedback requests and use of appropriate technology and social media.
2. Develop web based tools for providing information to partners and public, to include community events, invasive species information and current projects.
3. Collect information for partner program and project database through polling partners and independent searches.
4. Collect information on potential funding sources and provide information on appropriate opportunities to partners.
5. Identify and present options for Partnership Agreements and Letters of Support to Steering Committee to select as template for formalizing WNY PRISM Partnership.
6. Identify potential/new partners through current partners, web searches, events, listserves, and community events.
7. Attend PRISM Leaders meetings, participate in statewide calls, and collaborate with statewide partners such as Cornell Cooperative Extension, NYS Invasive Species Research Institute, and NYS Invasive Species Clearinghouse.
8. Identify and record baseline data and information from which to determine progress and success meeting strategic plan goals.
Outputs:

1. Full Partnership Meetings held twice a year and Steering Committee Meetings held 4 times per year (6 total meetings).
2. Open Working Group Meetings held as needed, determined through input from Steering Committee and Working Group Members.
3. WNY PRISM website/webpage, email listserv and social media for use in sharing information.
4. Database of partners and stakeholders describing scope of work, programming and priorities.
5. Directory of regional invasive species projects.
6. Database of funding sources available for partners.
7. Formalized Partnership Agreement and/or Letters of Support from Steering Committee members and primary partners.
8. Baseline metrics to measure progress and success.

Outcomes:

1. Increased regional knowledge of invasive species management information and efforts
2. Increased cooperation, collaboration, and understanding of regional efforts, priorities, partner organizations and management practices among WNY PRISM partners.
3. Increased partner knowledge of current and past management efforts within the WNY Region.
4. Increased number of invasive species management activities within WNY PRISM.
5. Annual increases in number of partners subscribed to email listserv and ‘likes’ on Facebook.
Information Management

Goal #2- Collect, utilize, and share information regarding invasive species management including species, pathways of invasion, surveys, infestations, control methods, monitoring, research, current efforts/projects and opportunities for partner collaboration.

Objectives:
A. Identify regional priorities for invasive species management including, conservation targets, high priority conservation areas, invasive species prevention zones and high probability areas by December 2017.
B. Determine current/known presence and distribution of invasive species by December 2015.
C. Identify invasive species of immediate concern and likely to invade (approaching region) by December 2015.
D. Assemble lists of contacts and resources to assist with management activities by December 2015.
F. Develop new WNY PRISM website to be used as the primary source of invasive species information within the region and promote use by December 2015.
G. Develop comprehensive source of invasive species information that is accurate, searchable and user friendly by December 2018.
H. Utilize and encourage use of iMapInvasives as the ‘go-to’ mapping software for current infestations and regional projects by December 2018.
I. Identify Invasive Species Management Projects occurring in the region and potential future projects by December 2015.
J. Identify regional invasive species information gaps and research needs by December 2017.

Strategies:
1. Gather information on invasive species management and reduce information gaps through targeted web searches, online tools, field surveys, partners, staff enrichment/conferences and trainings, and networking.
2. Organize gathered information into accessible, easily updated formats and distribute information utilizing online and print media, community events and partners.
3. Utilize available documents, strategies and partner expertise for prioritization and development of Invasive Species Prevention Zones.
4. Develop Working Group(s) or Committee(s) to assist with the development of regional conservation targets and research needs, and to address other needs as identified.
5. Identify WNY PRISM invasive species priorities and develop species lists, such as Approaching Region, Prevention, Early Detection, and Presence Established, and share with partners and stakeholders.
6. Identify both species and habitat specific Best Management Practices for identified priority invasive species.

7. Provide training opportunities for iMapInvasives and encourage use.

8. Utilize current online resources while developing WNY PRISM specific website, twitter and Facebook.

9. Cooperate with NYS Invasive Species Research Institute to identify research needs for prevention, early detection, rapid response, and control of invasive species, and support activities through citizen science.

10. Establish methods for receiving and analyzing partner and stakeholder input and feedback.

Outputs:

1. WNY PRISM Website developed as a regional source of invasive species information, to include links to appropriate external directories, information, and databases.

2. Updated species lists (based on 2007 NYS regional assessments) for established, early detection, prevention and approaching region species.

3. Database for Best Management Practices for priority invasive species, developed in partnership with other PRISMs and statewide resources.

4. WNY PRISM print and online tools, as identified through information gap analysis, for public events and partner use.

5. Map identifying priority lands for invasive species management activities.

6. Identified potential research opportunities and/or needs provided to NYS DEC’s Invasive Species Unit and Invasive Species Research Institute.

7. Document providing information on regional invasive species management activities and projects.

Outcomes:

1. Increased partner knowledge of the invasive species presence and distribution within the WNY PRISM region.

2. Increased partner awareness of emerging issues and potential future invasive species threats.

3. Increase in the number of iMapInvasives Observers, Organization and number of invasive species observations submitted to iMapInvasives.

4. A more comprehensive understanding of invasive species issues and management among partners.

5. Improved partner and public access to up-to-date invasive species information within WNY region and New York State.

6. Increased partner communication and timely dissemination of invasive species information, events and projects.
Education and Outreach

Goal #3 - Increase the public, partner, and stakeholder awareness, understanding and participation in invasive species issues and management within the WNY PRISM region, through effective educational and outreach efforts.

Objectives:

A. Identify education, outreach and training needs within the WNY region and propose ways to fill them by December 2016.
B. Identify currently available and needed outreach materials and resources by December 2015.
C. Identify, communicate with those implementing, and assess models of outreach among groups in WNY involved with environment/invasive species education/outreach training by December 2015.
D. Develop and implement education, outreach and training opportunities as appropriate and efforts align with WNY PRISM priorities and Scope of Work – ongoing.
E. Work with partners to develop, further develop, and/or assist with development of education materials to meet identified regionals needs - ongoing.
F. Develop education toolkit for various target groups (including municipalities) to identify priority invasive species, understand their impacts and management options by December 2018.
G. Support statewide education and outreach efforts – ongoing.
H. Develop measurement tools for determining success of education and outreach programs by December 2017.

Strategies:

1. Develop and support educational programing about invasive species identification, management and ways individuals can become involved.
2. Provide invasive species management learning opportunities for practitioners, citizen scientists, and other interested parties through educational events, presentations, meetings, and/or workshops.
3. Hire Seasonal Employees to assist with Education and Outreach events.
4. Support statewide education and outreach efforts.
5. Develop or otherwise obtain educational outreach materials based on priorities and need.
6. Utilize social media, email listserve, and website (utilize current WNY PRISM/nyis.info website and develop new independent WNY PRISM website) to provide invasive species information to the public and assist with education and outreach efforts.
7. Utilize press releases, public service announcements and other forms of media, when appropriate, to disseminate information to a broader audience.
8. Utilize current WNY PRISM/NYIS.info website and develop new independent WNY PRISM website.
9. Attend community events, conferences, meeting and trainings to promote WNY PRISM and provide information to interested parties, based on developed priorities set through Steering Committee and Working Groups.
10. Develop table-top display for event use, one that is easily customizable to the interests and needs of the individual event, along with ‘traveling’ kit of information and display items.

11. Assist partners with education and outreach events, when aligned with WNY PRISM goals and priorities.

12. Utilize quizzes, forms and questionnaires to track knowledge gained through workshops and trainings and track participation to determine the number of people reached.

13. Develop marketing and branding (logo, letterhead) for WNY PRISM.

14. Develop tools for measuring the success of education and outreach programming

Outputs:

1. WNY PRISM will have a presence at community outreach events, at least 1 in each county every year.
2. Provide at least 4 training opportunities (i.e. invasive species ID, management workshops) per year.
3. WNY PRISM presence at and/or assistance with the development of partner events (at least 8 per year).
4. Website and other online media will be current and have timely information about education and outreach events.
5. Record of Metrics including, number of events, participants (direct & indirect), targeted groups, press coverage, knowledge gains, number of newsletters and educational materials produced.

Outcomes:

1. Public awareness of invasive species issues within WNY region and across New York State will increase.
2. Public awareness of management and prevention measures of invasive species will increase.
3. Increased public involvement in invasive species efforts and activities across WNY.
4. Increased public and partner knowledge of WNY PRISM office, mission, and scope of work.
5. WNY PRISM messaging will be consistent with established Mission/Goals/Objectives.
## Prevention

**Goal #4** - Facilitate the prevention of new occurrence, spread, and further establishment of invasive species within the WNY PRISM region through understanding of pathways of invasion and targeting of priority conservation areas. Prevention measures must address both the movement of invasive species in and out of the WNY PRISM region.

### Objectives:

A. Maintain close communication with partners and other PRISMs to identify potential threats and to stay informed on control methods being deployed - ongoing.

B. Sustain public awareness of invasive species threats and increase awareness of new and potential threats - ongoing.

C. Support State and Federal efforts, such as “Clean, Drain, Dry”, prohibited and regulated species, and firewood transportation laws, to prevent the introduction and establishment of invasive species to (and movement from) the WNY region - ongoing.

D. Prioritize pathways of invasion and encourage use of priority invasive species best management practices, to assist with regional prevention efforts by December 2017.

E. Support prevention efforts that focus on primary pathways of invasion (pathways) and identified High Probability Areas (HPA) to prevent movement of invasive species both into and out of the WNY PRISM region - ongoing.

F. Develop spread prevention programs and practices for priority invasive species and identified needs, and propose ways to encourage use by December 2018.

G. Develop Landscape Alternatives program for WNY to assist with decreasing the establishment of invasive plant species by December 2016.

H. Prioritize areas within WNY PRISM to prevent the spread and establishment of invasive species, and establish Invasive Species Prevention Zones (ISPZ) by December 2018.

### Strategies:

1. Collaborate with partners, utility companies, business/industry and municipalities to reduce invasive species introductions and encourage resource protection through meetings and providing for input during protocol development.

2. Support existing state, federal and local prevention programs and practices through education of regional partners and stakeholders on programs, and encouragement of use.

3. Identify, through use of working groups and/or committees, appropriate areas for designation as Invasive Species Prevention Zones (ISPZ), utilizing existing ISPZ criteria.

4. Utilize existing pathways analyses to prioritize pathways that provide the greatest risk of introduction and spread of invasive species within WNY, develop potential priority pathway management actions/program to address those pathways and propose partner implementation within WNY PRISM region.

5. Identify and provide outreach to target audiences (anglers, boaters, hikers, etc.) based on identified priority pathways.

6. Communicate with PRISM leaders and New York State Invasive Species Advisory Committee on prevention issues and actions, and assist with development and feedback when appropriate.
7. Develop list of resources for public and partner use, to assist with invasive species identification and Best Management Practices for new threats to WNY.

8. Identify and support the use of Best Management Practices on development, construction, and land use projects.

9. Encourage public agencies to incorporate invasive species awareness and training into plans and activities.

10. Collaborate with local businesses and municipalities to provide non-invasive landscape alternatives and promote public use of non-invasive landscape plants.

Outputs:
1. Information on prevention of species of concern and Best Management Practices available and distributed to partners, public and identified target audiences.
2. Brochure and educational materials on the use of non-invasive landscape alternatives for the WNY PRISM region.
3. Identified Invasive Species Prevention Zone(s).
4. Prioritized list of pathways and potential new invasive species for the WNY PRISM region, made available to partners and public.
5. Best Management Practices made available for businesses and municipalities, focusing on prevention of invasive species establishment within new development, construction, and land use projects.

Outcomes:
1. Increased cooperation and resource sharing among partners on regional prevention efforts.
2. Increased regional availability of information on prevention species of concern and Best Management Practices.
3. Increased public awareness of the need to prevent the spread of invasive species and on specific actions individuals can take, in order to assist with prevent efforts.
4. Reduced risk of new introductions and establishment of new invasive species to the WNY PRISM region.
5. Inclusion of prevention Best Management Practices in plans and implementation of construction, development and land use projects.
Early Detection and Rapid Response

**Objectives:**

A. Coordinate regional invasive species mapping, early detection and monitoring of priority invasive species and areas - ongoing.
B. Develop WNY PRISM volunteer program to assist with invasive species occurrence data and monitoring of identified priority areas by December 2015.
C. Utilize successful (existing) Early Detection and Rapid Response frameworks by December 2015.
D. Assist in the development of early detection and rapid response protocols, in addition to current successful frameworks, for addressing new populations of existing species and introductions of new species within the WNY PRISM region, when necessary - ongoing.
E. Develop protocol for coordinating partner efforts in early detection and rapid response efforts for priority species - ongoing.
F. Develop guide, for partner use, to assist with understanding regulations and navigating the permitting process in relation to rapid response activities by December 2016.
G. Analyze invasive species distribution data and prioritize High Probability Areas to monitor –by December 2017.
H. Identify early detection and monitoring needs and develop monitoring protocols by December 2017.
I. Assist partners with on-the-ground early detection, assessment, and rapid response efforts – ongoing.

**Strategies:**

1. Communicate with partners concerning new occurrences of established species and new species within the WNY PRISM region through use of meetings, conference calls and other media.
2. Develop effective survey and monitoring plan for early detection using available WNY PRISM and partner capacity and resources by accessing staff, volunteers, equipment, outreach capabilities, and programmatic tools (i.e. iMapInvasives).
3. Develop list of resources for partners and public to assist with identification and Best Management Practices for priority invasive species threats to WNY.
4. Establish and/or utilize rapid response teams to address early detection issues within identified priority conservation areas and/or priority species.
5. Hire seasonal employees (Invasive Species Management Crew) to assist with early detection and rapid response efforts, when available and efforts align with WNY PRISM priorities and Scope of Work.
6. Identify resources (contractors, businesses and programs) for addressing rapid response needs for private landowners and other parties and provide information to Partnership.
7. Utilize practice exercises and drills to assist with rapid response efforts when appropriate.
Outputs:

1. Accessible information for partners and public concerning early detections, rapid response protocols and best management practices for identified priority invasive species.
2. Coordinated regional effort for early detection and rapid response for priority species, including more effective use and sharing of resources.
3. Protocols for the early detection, assessment and rapid response of priority invasive species made available to partners.
4. Current species distribution and occurrence data readily available to partners, within iMapInvasives.
5. Produce annual report on early detection and rapid response efforts for partners and public.
6. Document for understanding state regulations and navigating the permitting process.

Outcomes:

1. Increased sharing of resources among WNY PRISM partners, directly tied to early detection and rapid response implementation.
2. Increase in the number of early detections reported.
3. Increase in the number of rapid response activities tied to reported early detections.
4. Decrease in the number of new species and/or populations of existing species establishing and spreading within the WNY Region.
5. High priority conservation areas are protected from new invasions and priority conservation targets are preserved.
6. Increased effectiveness of early detection, assessment, and rapid response within WNY region.
Management and Habitat Restoration

Goal #6- Assist partners with control of invasive species (eradication, containment, suppression) on high priority conservation areas based on identified regional conservation targets. Assist with the establishment of long-term management and monitoring, and the restoration of impacted sites to healthy native vegetation, to provide increased resilience against future invasions.

Objectives:

A. Assist partners with invasive species management planning and implementation of priority invasive species management activities as necessary and appropriate, including assistance with development of invasive species (site weed) management plans - ongoing.

B. Develop, and propose to partners, a preliminary strategy for long-term management and monitoring for invasive species removal and restoration efforts by December 2016.

C. Develop and promote strategy for restoration of sites where invasive species have previously been removed by December 2017.

D. Establish and direct WNY PRISM Invasive Species Management Crew for assisting partners with invasive species removal and restoration efforts, when available and efforts align with WNY PRISM priorities and scope of work - ongoing.

E. Assist partners with the implementation of invasive species management and habitat restoration efforts, when efforts align with WNY PRISM priorities, supported actions and Scope of Work – ongoing.

F. Engage private landowners, organizations, private-sector business, municipalities and agencies in invasive species management activities, including planning, removal and site restoration - ongoing.

G. Utilize volunteer program to assist with priority invasive species removal projects, when available and efforts align with WNY PRISM priorities and Scope of Work - ongoing.

H. Utilize a demonstration project model for new tools and methods of invasive species control as opportunities and need present themselves, and when efforts align with WNY PRISM priorities and Scope of Work- ongoing.

Strategies:

1. Develop protocol for invasive species management planning assistance and provide training opportunities to assist partners with invasive species (site-weed) management plans.

2. Utilize developed priority species lists, conservation targets, invasive species prevention zones, and high value conservation areas to assist in determining regional priority projects.

3. Develop protocol and criteria for determining if individual projects will be considered a regional priority and therefore fall within WNY PRISM priorities and Scope of Work.

4. Implement and/or assist with implementation of control projects based on available funds, current capacity, and resources to maximize long-term, effective control efforts.

5. Determine capacity (size of project, species, location, etc.) for internal (PRISM) response and control efforts versus need for outside resources such as private contractors or increased partner input.

6. Further develop prevention, early detection, and rapid response resources for partners to assist with understanding regulatory needs and permit requirements for long-term management.
7. Review and update Best Management Practices, for priority targets, using current and best available science, effectiveness, and cost, and provide to partners.

8. Identify resources and equipment (i.e. staff, volunteers, equipment, and storage) available through partners for assistance with regional control efforts.

9. Identify available resources (i.e. private contractors, funding) for private landowners and other independent entities, for the removal and management of invasive species on individual properties, and make information available to the public through established WNY PRISM communication methods.

10. Work with partners to develop measures, metrics and monitoring protocols for determining the success of invasive species removal, management, and restoration projects, and encourage use among Partners.

Outputs:

1. Annual Work Plan including invasive species removal and restoration projects.
2. Standard protocol and criteria for determining WNY PRISM priority projects.
3. Regional list of priority invasive species and habitat management projects.
4. Workshop(s) on development of invasive species (site-weed) management plans
5. Annual metrics including acres treated, acres restored, number of project sites, number of species treated and number of partners involved.
6. Invasive species control demonstration projects, as needed.

Outcomes:

1. Increased use of invasive species management planning tools among partners.
2. Increased understanding and use of invasive species control options, restoration methods, long-term monitoring and long-term control (follow-up treatments) efforts among partners.
3. Increased number of on-the-ground conservation projects within the WNY region.
4. Broader regional participation and investment in invasive species control as measured by number of projects and partners involved.
5. Improved management efficacy through partner collaboration and use of Best Management Practices.
6. Greater resilience to future invasions due to increased restoration efforts.
7. Documented recovery of target habitats, flora and fauna.
Additional Program Elements

WNY PRISM acknowledges that there are additional program elements not specifically addressed within the established goals of this strategic plan or that apply to more than one of the established goals. These additional program elements address these aspects of WNY PRISM that are essential to the successful implementation of the WNY PRISM Strategic Plan and Scope of Work, but have not otherwise been identified.

Volunteer Program

WNY PRISM recognizes the need for an effective volunteer program to assist with the implementation of the goals outlined in this strategic plan. Components of an effective volunteer program will include training, tracking, and managing volunteers.

- Recruit and train volunteers in invasive species identification, monitoring, management and prevention techniques.
- Recruit and train volunteers to verify species, collect and report data consistent with NYS Invasive Species Database (NYSISD) format and quality assurance/quality control requirements.
- Recruit and train volunteers to assist with implementation of Education and Outreach strategies as outlined in this strategic plan.
- Compile list of volunteer names and measure volunteer inputs through, tracking activities and hours contributed to WNY PRISM projects and efforts.

Additional Funding and Program Sustainability

WNY PRISM recognizes programmatic, financial and ecological sustainability as essential components of all programs and activities. In order to achieve overall programmatic success, additional funding may be necessary.

- Pursue funding opportunities when need and opportunity arise, based on potential identified funding gaps and to provide additional resources as necessary, to address WNY PRISM priorities.
- Assure that WNY PRISM seeks funds necessary for only those projects and tasks that align with WNY PRISM priorities and Scope of Work.
- Assist partners with locating and acquiring additional funding as needed and for efforts that align with WNY PRISM priorities and Scope of Work.

Operational Tasks and Contract Deliverables

WNY PRISM recognizes that certain aspects of WNY PRISM operations and Scope of Work are not addressed in established goals, but are essential for the overall success of WNY PRISM. These tasks include administrative duties, grant reporting and management, operational framework, and additional deliverables. Specific requirements include quarterly and annual reports, annual work plans, maintaining operational guidelines and partnership agreements/letters of support, strategic planning, and other administrative duties.