Oneida County Lake Planning Grant:

Aquatic Invasive Species
Education, Prevention & Planning

FINAL REPORT

(Completion Date: December 2008)

Grant/Project Number: AEPP-147-08

Prepared for:
Wisconsin Department of Natural Resources

Prepared by:

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&
Land & Water Conservation Staff

Grantee

Oneida County Land & Water Conservation Department

Project Title

Aquatic Invasive Species
Education, Prevention, & Planning

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AEPP-147-08

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INTRODUCTION:

The possibility of aquatic invasive species (AIS) colonizing Wisconsin waterways is a real problem that entire communities face today and will continue to face into the future. As a result of the aggressive reproductive potential of some of these species, ecological decline and financial constraint could become a reality for some communities. For these reasons, AIS issues have become a key topic of concern for citizen groups and local government.

Maintaining clean and healthy surface waters takes an enormous investment of time, thought, and money. But with the proper goals set in place, constant vigilance, and ecosystem management planning, we can "out wit" these invaders and stop or slow the spread of non-indigenous species in our communities.

Of the 162 invasive species on record, there are only six species that are most problematic in Wisconsin's inland surface waters. The following are these six invasive animals and aquatic plants – Rusty Crayfish, Zebra Mussel, Spiny Water Flea, Eurasian Water-Milfoil, Curly-leaf Pondweed, and Purple Loosestrife.

The spread of AIS across Wisconsin began impacting lakes in and around Oneida County as early as 1990, but significantly more so in approximately 2001. As public awareness of these aforementioned invaders began to increase, the concern for the impact they would have on our local lakes prompted growing demands on the limited staff in the Oneida County Land and Water Conservation Department and the Rhinelander office of the Wisconsin Department of Natural Resources (WDNR). With approximately 1,100 lakes in Oneida County, an organized approach was obviously needed to stop the spread of AIS.

The Oneida County Board of Supervisors authorized the Land and Water Conservation Committee to pursue a WDNR cost share grant for the purpose of AIS public outreach. The WDNR approved the grant, and the grant process was initiated on April 1, 2008 with the County, and continued to be implemented through December 31, 2008.

PROJECT OBJECTIVES AND BUDGET:

The Oneida County Land and Water Conservation Department/Committee has a respectable working relationship with the WDNR, Oneida County Lakes and Rivers Association (OCLRA) and University of Wisconsin Extension. The county will continue to work with these groups in addition to elected town officials, individual lake groups, business community, Chamber of Commerce, schools, media, and other interested persons.

There are twenty (20) towns and one (1) city in Oneida County. Local municipalities can be a valuable resource for lake groups to work with. Lake groups may work with local municipalities for sponsorship when applying for lake planning or AIS grants.

The concept of the project focused on coordinating the efforts of all interested entities throughout the county. In addition, education, prevention and public awareness increased in the county by holding workshops, disseminating informational AIS folders and brochures, press releases, and presentations to lake groups, schools, and towns and development of a draft AIS Strategic Plan (see Appendix B, Oneida County Aquatic Invasive Species Strategic Plan Draft Report). This project was overseen by the Land and Water Conservation Committee/Department, with day to day activities to be organized by Jennifer Holman, 2008 AIS Coordinator, Nancy Hollands, County Conservationist, and Jean Hansen, Conservation Specialist.

The following includes a list of objectives completed for the 2008.

1. AIS Coordinator **attendance at the Wisconsin Association of Lakes Convention**
2. **Hired two limited term employees Water Craft Inspectors**
3. **Watercraft inspections at boat landings**
4. Began creating a functioning Oneida County **AIS webpage**
5. **Hosted** three Clean Boats, Clean Waters Workshops
6. **Hosted an Award Ceremony** for lake groups and volunteers
7. **Hosted a Citizen Lake Monitoring workshop**
8. Attended monthly **Oneida County Lakes Rivers (OCLRA) meetings**
9. Purchased **Signs** for the Oneida County AIS Transportation Ordinance

#1 AIS Coordinator Attendance at the Wisconsin Association of Lakes Convention, Green Bay, Wisconsin

On April 17-19, 2008 the AIS Coordinator, Jennifer Holman attended the Wisconsin Association of Lakes Convention in Green Bay, Wisconsin. The Convention is one of the most cost effective training and networking experiences for the AIS Coordinator. This attendance gave the AIS Coordinator the opportunity to maintain a community-based network of volunteers, work with state and local legislators to make sure there is funding in place to achieve the Oneida County Aquatic Invasive Species Program's vision, and network with researchers who are studying AIS management and/or prevention strategies.

#2 Hired two limited term employees (LTE) Watercraft Inspectors and #3 watercraft inspections at boat landings

On June 10, 2008 Nancy Hollands and Jennifer Holman began interviewing LTE candidates. On June 25, 2008 Craig Strid and Tom Lohry began working as LTE's. Mr. Strid and Mr. Lohry visited and monitored every lake with a public boat landing in Oneida County at least once throughout their schedule of Thursday-Monday including all fishing tournaments. Their schedule included 600 hours per LTE. These hours allowed the LTE's to educate the public about the threat AIS pose and the steps necessary to prevent the spread of AIS as well as inspect all boats entering and leaving the landings. The LTE's also participated in a Clean Boats, Clean Waters workshop hosted by Oneida County on June 26, 2008 at the Pelican Town Hall.

Throughout the month of September-October 2008 the LTE's entered all 3200-120, 3200-124 and/or 3200-130 forms onto the Department of Natural Resources website.

#4 Began creating a functioning Oneida County AIS webpage

Ms. Holman began working with Josh Drews in the Oneida County Information Technology Department on May 21, 2008 in developing an AIS webpage. The webpage contains the following resources: Background, Prevention/Education, Detect/Monitor/Identify, Rapid Response Control, Partners, Species Profile, Grants and Funding, Research Projects, Upcoming Workshops, Fishing Tournaments in Oneida County, Oneida County AIS Program's Mission Statement, Draft AIS Strategic Plan, and Resource Library. Because Ms. Holman had to coordinate the development of the webpage with the (Information Technology Services (ITS) Department, the creation of the website has been prolonged. The skeleton of the Webpage is completed and should be up and running by December 2008.

#5 Hosted three Clean Boats, Clean Waters Workshops

Oneida County hosted three Clean Boats, Clean Waters workshops on May 29 at the Minocqua Town Hall (18 participants), June 12 at the Three Lakes Town Hall (27 participants), and June 26, 2008 at the Pelican Town Hall (14 participants). The presenters at the workshops included Jean Hansen, Oneida County Conservation Specialist and Ms. Holman. The workshop consisted of two hours of presentations, plant identification with Sandy Wickman, Wisconsin Department of Natural Resources, and a Watercraft inspection section. These workshops promoted an increase in volunteer watercraft inspections throughout the county.

#6 Hosted an Award Ceremony for lake groups and volunteers

The LWCD/Committee honored all Lake Associations/Districts with an award, including five lake groups receiving a Leadership Award and five volunteers receiving a Distinguished Service Award. Oneida County also presented the Clean Our Oneida Lakes (C.O.O.L.) founders Luke and Kyle Leonard a Distinguished Service Award for their generous commitment of time, support and inspiration in removing garbage from our lakes here in Oneida County. The Award Ceremony took place on Saturday, August 16, 2008 at 6:00 pm at the Holiday Inn Express. The scope was changed to include this Award Ceremony on August 5, 2008

Guest Speakers for the award ceremony included:

Mr. Thomas Rudolph, Chairman, Oneida County Land and Water Conservation Committee

Ms. Jennifer Holman, Aquatic Invasive Species Coordinator, Oneida County Land and Water Conservation Department

Mr. Jeff Bode, Lakes and Wetlands Section Chief, Wisconsin Department of Natural Resources

Ms. Erin Heneger, Aquatic Invasive Species Volunteer Coordinator for 'Clean Boats, Clean Waters', University of Wisconsin-Extension Lakes

Mr. Bob Williams, President, Oneida County Lakes and Rivers Association

Northern Field Representative for Congressman Steve Kagen, Elisa Farmilant

#7 Hosted a Citizen Lake Monitoring workshop

On July 15, 2008 Oneida County hosted a Citizen Monitoring Workshop at Kemp Station. The presenters included Sandy Wickman and Laura Herman, University of Wisconsin Extension, Lakes Program. The workshop included review of the Citizen Lake Monitoring Network Training Manual, how to input AIS monitoring data into the Wisconsin State Surface Water Integrated Monitoring System (SWIMS) database, plant identification, and demonstration of raking techniques on a pontoon boat. Thirteen individuals participated in this workshop.

#8 Attended monthly Oneida County Lakes Rivers (OCLRA) meetings.
Starting in March 2008, after Ms. Holman was hired as the AIS Coordinator, she began attending OCLRA board meetings. They are held at the Rhinelander- Oneida County Airport downstairs in one of the UW-extension conference rooms.

#9 Purchased Signs for the Oneida County AIS Transportation Ordinance
On September 9, 2008 the LWCD Committee granted approval to change the 2008 Grant scope to include the purchase of 200 signs. On October 16, 2008 Kyle McLaughlin from the Wisconsin Department of Natural Resources approved the purchase of signs under the 2008 Grant. Oneida County has contracted with Shirts, Signs, and Design from Rhinelander to manufacture the Oneida County AIS Transportation Ordinance signs. Please see Appendix A. Ordinance Sign.

PROJECT BUDGET:

The following table contains the budget of the project expenses. Oneida County has paid these expenses over the course of the nine month project period, but could earn reimbursement based on the extent of in-kind volunteer time and professional services.

	State	County	Total
Project Totals:			
State Grant Funding	**$25,000.00**		
Oneida County Funding		**$8,333.00**	
Total Project Funding			**$33,333.00**
Project Expenses Detail:			
1 Salaries, wages and employee benefits for AIS Coordinator		**$17,958.00**	
2 Salaries, wages, and employee benefits for LTE Watercraft Inspectors	**$10,507.24**		
3 Training (Wisconsin Lakes Convention)	**$689.19**		
4 Travel	**$3,996.57**		
5 Pontoon Rental	**$125.00**		
6 AIS Transport Signs	**$2,796.50**		
7 AIS Colored Brochures	**$2,260.00**		
8 Workshop Materials and Fees	**$768.00**		
9 Postage & Copying Costs	**$2,504.02**	**$130.27**	
10 AIS Office Supplies		**$1,108.86**	
11 Awards Ceremony	**$1,353.48**		
Grand Total	**$25,000.00**	**$19,197.13**	**$44,197.13**

PROJECT ACCOMPLISHMENTS:

Education is the key to addressing the non-native aquatic species issues we are facing throughout the State. Oneida County was granted the opportunity through this grant to coordinate efforts of all interested entities throughout the county in the fight against AIS. In addition, education, prevention, and public awareness increased in the county by holding workshops, newsletters, informational handouts, press releases, and fact sheets. Oneida County also assisted in the coordination of volunteers for the lakes that do not have any monitoring, or for lakes that need additional monitoring through the Volunteer Database and presentations. Some of this recruitment also took place during the Citizen Lake Monitoring workshop.

These events began a unique community support system pertaining to AIS and allowed the Land and Water Conservation Department the opportunity to begin building a strategy for continued AIS prevention in the County.

CONCLUSION:

Overall the project was successful from the perspective of accomplishing the objectives of this grant. This project was a wonderful opportunity to increasing awareness of AIS in the county. Now with a full-time AIS Coordinator, our public outreach efforts have been expanded and the awareness of AIS will continue to increase not only to our local resident population, but also to our absentee landowner's, tourists, and fisherman.

APPENDICES

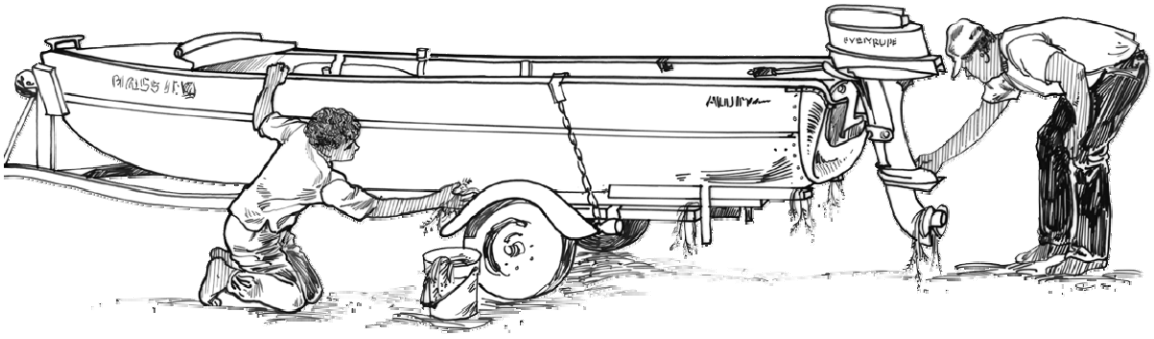
APPENDIX A

Oneida County AIS Transportation Sign

Oneida County cares about our water resources!

ALL AQUATIC PLANTS OR INVASIVE ANIMALS SHALL BE REMOVED BEFORE ENTERING A ROADWAY OPEN TO THE PUBLIC!

FINES - $200-$500.



Oneida County Ordinance § 10.05

APPENDIX B

Oneida County AIS Strategic Plan Draft Report

Oneida County AIS
Strategic Plan Draft Report
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Executive Summary

Invaders at the Gate

Be it the rusty crayfish, Eurasian water-milfoil, or Curly-leaf pondweed, invading species of all kinds cross state borders or expand their presence into Wisconsin everyday. They come as the result of migration, deliberate introduction, and, very often, by chance. When invaders do make it past the front gate, they can bring unintended consequences. They can decimate native species and quickly degrade ecosystems. Animal and plant invaders – those already past the front gate and others trying to get through – have the potential to change the face of Oneida County, Wisconsin forever.

Aquatic invasive species (AIS) are a threat to Oneida County's environment and economy, exacting a high price for their presence. These biological invasions can produce serious, often irreversible effects on our waterbodies. While not all non-native species have aggressive traits, the sheer number of these species coming through our gates is increasing at an alarming rate. According to the Wisconsin Department of Natural Resources, there are approximately 116 non-native plant species documented in Wisconsin. This figure represents only a fraction of the total number of non-native species present in the state. Because of the devastating effect on Oneida County's aquatic plants, animals, and economy by some of these invaders, Oneida County citizens pay hundreds of thousands of dollars each year to prevent, control, and attempt to eradicate aquatic invasive species.

Oneida County has an aquatic invasive species program which assists the general public in combating the negative effects of invasive species. However, the county lacks fundamental information such as: important resources at risk, invasive species distribution countywide, the extent of infestations, and the total amount spent by towns, lake associations and property owners of Oneida County. Furthermore, no comprehensive data have ever been compiled to present a broad picture of the AIS problem or the degree to which the county's current program are managing the problem. To strengthen the county's AIS efforts and make sound future decisions, we need this kind of fundamental formation.

Call to Action

The Oneida County Land and Water Conservation Department/Committee Aquatic Invasive Species Program's mission is to provide direction, planning, and coordination to empower those entities engaged in the prevention, detection, and control of AIS.

The plan presents 18 specific action items. The five, short-term (3 years) priority objectives for implementation are:

1. Compile existing information and conduct a baseline assessment of AIS information and programs in Wisconsin.
2. Develop a Web-based clearinghouse as the interchange for all existing AIS information statewide.
3. Support targeted outreach campaigns to raise awareness of the potential damage cause by AIS.
4. Facilitate and improve communication, accessibility of tools, and coordinated approaches across all organizations.
5. Improve program's access to emergency funding and develop early detection and rapid response network.

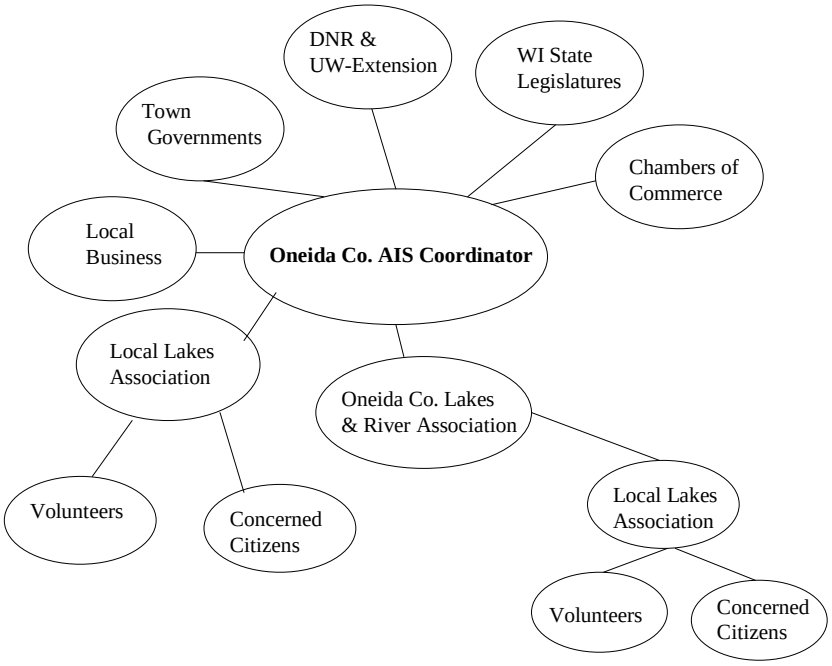
The Department/Committee recognizes that building and enhancing systems for partner coordination require time and money. Accordingly, the Department/Committee crafted long-term objectives for implementation. Included among those objectives are:

1. Determine AIS pathways (means of entry) that lack defenses an address the gaps.
2. Assess current laws regarding AIS and make recommendations for progressive legislation.
3. Use risk analysis and economic models to prioritize the activities used for invasive species management.
4. Improve efficiencies in spending on the control and eradication of AIS across the county.

Future efforts related to quantifying and managing Oneida County's AIS problem will be demanding. The Department/Committee is developing a three-year work schedule that will focus on how it and its critical partners can implement the objectives.

It will not be possible to prevent all AIS from entering Oneida County waterbodies, nor to completely eradicate those already here. However, Oneida County can and must significantly decrease the myriad of economic, environmental, and human health impacts posed by AIS.

Fostering Cooperation



This is not a comprehensive list of entities for coordination, but lists examples of coordination opportunities and current efforts.

SECTION 1

Invaders at the Gate: Understanding Oneida County's Aquatic Invasive Species Problem

In Oneida County, most people are completely unaware of the aquatic invasive species. What they see are lush landscapes and abundant wildlife. They might not recognize the dangerous, the invading prolific plants, adaptable animals, and microscopic organisms that can transform the physical world, and put Oneida County's waterbodies biological richness and diversity at risk.

Roughly 50,000 non-indigenous species in the United States cause major environmental damage and losses totaling about $137 billion each year.[1] Battling these invaders, Oneida County spends hundreds of thousands of dollars each year to prevent or eliminate AIS.

Jurisdictional boundaries do not stop AIS from crossing the county's border. It's critical that the county and its partners act deliberately and cohesively to stem the threat of existing invaders, prevent the introduction of new AIS, and ensure the viability of native species.

Invaders come in all taxonomic kingdoms and include animals, plants, fungi, protista (mold, algae), and monera (bacteria and viruses). Upon its introduction to a new area, an invasive species may spread readily and rapidly if it lacks natural predators or grazers (in case of plants) and if there are no competitive species or diseases to keep them in check.

In Harm's Way: The Economy and Environment

Established AIS can and do harm the economy, environment, and natural resources. Across private and public sectors, scientists, government officials, and industry leaders now recognize the serious threat to the environment from AIS. In the United States, about 400 of the 958 species listed under the Endangered Species Act as threatened or endangered are considered at risk primarily because of competition with and predation by non-indigenous species.[1]

For centuries, species too numerous to quantify have traveled with us to all parts of the globe. As our population has grown, become more mobile, and developed ever more sophisticated and rapid means of transportation, the rate of invasion by harmful species also has grown. Unwanted species enter the state and then into the county in any number of ways, along what are known pathways, including:

- Importation of seeds, plants, fruits, and vegetables.

[1] David Pimentel, Lori Lach, Rodolfo Zuniga, and Doug Morrison BioScience, Vol. 50, No.1 (Jan., 2000), pp. 53-65

- Ballast water discharged by ships.
- Hulls of boats, which often are encrusted with AIS.
- Traveler's clothes or shoes.
- Cars and airplanes.
- Solid waste and soil dumped as fill into wetlands.
- People who abandon unwanted pets and ornamental plants. Owners of non-native species, such as exotic fish have been known to release them "into the wild."
- Internet sales of plants and animals.

Oneida County pays a substantial price for co-existing with invasive species. We live, work, and recreate among marauding plants, animals, and organisms that damage our waters, natural areas, and fisheries. Invasive species are found in every type of ecosystem. The damage they inflict can be measured in lost revenue to the county's economy, especially when a particular species problem is not immediately addressed. The costs also appear as degraded landscape, less viable habitat for native plants and animals, and lost biological diversity as native species are pushed to the brink of extinction. Other costs include reduced accessibility to recreation activities such as boating, lower property values, and more. Additionally, some of the smallest, often microscopic invaders jeopardize the health of aquatic plant, animals, and people.

The following is not a complete list of harmful outcomes due to AIS but rather a summary of the most serious threats they pose to the county, namely the economy and the environment.

Economic Damage
AIS threaten Oneida County's economy because they can contribute to the decline in property values. For example, lake front properties have been known to command a lesser price if the lake is infested with plants that interfere with boating and swimming.

Environmental Harm
AIS often have a detrimental impact on native species. Whether introduced deliberately or inadvertently, the invaders may out-compete native species for resources, prey upon them, reduce the resilience of ecosystems, and change the local habitat. When established, a new species can alter fundamentally the ecology of an area. AIS crowd out native species, reduce open water habitat and oxygen level. They alter fish habitat, disturb sediment levels from increased erosion, alter stream temperatures, and change nutrient levels.

Sometimes the control measures applied to an invasive species can adversely affect the county's natural resources. Thus, it is not just the invading animals, plant, and pathogens that degrade the environment, but also the control or eradication methods (herbicides and mechanical removal) used to stem an infestation.

Control and Eradication Is Costly
It takes years of diligent efforts to eliminate harmful, aggressive non-native species. Additionally, invasive species management on waterbodies –detection, control, eradication, monitoring, and rehabilitation strategies – is expensive. Control and eradication costs are rarely a one-time expense. Management costs alone sometimes exceed the total budgets of managing agencies. Hence, affected water can and does go untreated or inadequately restored.

Invasive Species Pathways

Transportation:
Air (planes, floatplanes, helicopters)
Water/aquatic (boat hulls, equipment, ballast water)
Travel (humans, vehicles)

Living Industry Pathway
Plants aquatic (importation of plants for research, includes seeds roots, plant trade such as aquaculture, nursery and landscape)

Miscellaneous Pathways:
Biocontrol (release of species to control another which then becomes invasive itself)
Interconnected waterways (freshwater canals, estuaries, domestic waste streams)
Natural migration (wind patterns, migratory birds)

SECTION 2

Bolstering Oneida County's Defenses Against Aquatic Invasive Species

The Oneida County Aquatic Invasive Species Strategic Plan is a vital first step towards a cohesive approach to managing the county's problem with AIS. In 2006, the County Board created the Aquatic Invasive Species program and tasked the Aquatic Invasive Species Coordinator to improve the countywide coordination to combat AIS and the threat they represent to Oneida County's economy, environment, and natural resources.

The AIS Coordinator's primary focus, and the purpose of this plan, is to foster strategic, unified, and coordinated approaches to minimize the detrimental effects of AIS.

For resource agencies and their partners that already address the problem, the plan establishes clear priorities in coordination and information sharing; prevention, management, and control/eradication efforts; and education to increase awareness of the problem and its solutions. The plan defines actions intended to mend gaps in the county's defenses against AIS. New partnerships and opportunities to leverage existing revenue and secure new funds will help the county realize its overarching vision as stated in the following strategic goals:

1. **To foster cooperation, coordination, and communication among government agencies, stakeholders, and lake associations.**

2. **To prevent the introduction and establishment of AIS and reduce their adverse impacts on Oneida County's environment and economy.**

3. **To refine and coordinate countywide capacity to identify, report, and respond to both newly discovered and existing invasive infestations.**

4. **To assist those who manage AIS through containment, control, and eradication efforts.**

5. **To support the restoration and rehabilitation of key ecosystems adversely affected by AIS.**

While the five goals embody the program's vision, the plan's objectives and related actions describe the tools needed to bolster the county's current capabilities to control and manage AIS.

The goals represent short- and long-term initiatives and are direct response to existing technical, funding, education, and regulatory obstacles that inhibit Wisconsin's resource agencies from effectively battling a host of plant and animal invaders. The goals were

developed in conjunction with a variety of associations to address information voids, coordination gaps, funding issues, and technical constraints in this field of work.

Everyone in Oneida County has a stake in reducing the harmful effects of invading plants and animals. Ultimately, the success of Oneida County's AIS strategic plan to address this growing problem will hinge on the collaborative efforts of public agencies – and active participation by the public. The landowner, boater, gardener, traveler, and others all need to grasp the problem and support the necessary solutions to protect the county's water resources. The Department/Committee realizes that education and outreach programs will become an important line of defense for AIS prevention and control. Empowering individuals to assist resource agencies and conservationists may be the essential element in securing the passage of legislation and fighting AIS on the ground.

Oneida County isn't starting from scratch. The Department/Committee recognizes the significant work accomplished by both the public and private agencies and organizations to minimize the effects of AIS. Inter-agency committees and task forces routinely meet to address impending statewide threats as well as infestation of AIS. By building on existing and successful models, the Department/Committee and its partners hope to bolster the state's effectiveness in coping with AIS.

To achieve the overarching goals, the Department/Committee by way of objectives - have a clear road map to:

1. Determine the breadth and depth of the AIS threat in Oneida County
2. Establish clear, countywide priorities for the short- and long-term
3. Improve the county's capability to prevent new infestations and act quickly and decisively upon discovering new threats
4. Strengthen the county's overall control efforts for established species infestations
5. Communicate the gravity of AIS and, in so doing change public opinion and behaviors, and alter the views of decision makers

Objectives

In the following section, 18 objectives appear as short- and long-term initiatives. The short-term objectives represent immediate priorities highlighted by the Department and Committee members. As budgets allow, the short-term objectives will occur concurrently. The long-term objectives and related actions cannot be accomplished in the next three years; however, the Department/Committee expects progress will occur on several long-term measures.

Short-term Objectives (0-3 years)
The Department/Committee ranked the five short-term objectives as its highest priorities. These objectives, if implemented, would provide the foundation necessary for the Department/Committee to facilitate more effective and efficient AIS management in the county. When the time comes to execute specific actions, the Department/Committee and its partners will work closely to identify roles and responsibilities.

Goal 1: To refine and coordinate countywide capacity to identify, report, and respond to both newly discovered and existing AIS infestations.

Problem Statement: Oneida County is fortunate to have a program in place to monitor and respond to many AIS. However, there are many others for which there is little understanding of the nature and extent of the infestations and the necessary tools to address them. Without such knowledge it is difficult for the Department/Committee, or others, to fully define the scope of the AIS problem, as well as the county's capacity to measure its progress (through specifically implemented actions) to combat them. The Department/Committee recommends compiling existing data on AIS and programs into a geospatial data system. This kind of data system would pinpoint the location and spread of AIS countywide, indicate those programs in place to address them, and inform decisions concerning new programs needed to combat the problems. This information will provide the Department/Committee, and others, with a countywide perspective on the nature and extent of the problem as well as a mechanism to measure progress controlling them.

Objective No. 1
Compile existing information and conduct a baseline assessment of AIS information in Oneida County. This baseline would serve as an initial step towards coordinating a countywide, strategic response to the threat of AIS. The baseline will:

- **Provide analysis of the worst AIS in the county, the locations of the areas most affected, pathways, and resources most at risk.**
- **Identify public and private efforts to prevent, control, monitor, or eradicate AIS.**
- **Inform public and private entities as it improves the county's ability to coordinate resources.**

Action 1.1 Develop the county's AIS program budget package, in coordination with partners, to compile existing information on species locations and programs in place.

Action 1.2 Work with partners to compile existing data.

Action 1.3 Perform functional gap analysis on county's capacity to address problem.

Action 1.4 Report back to the County Board on necessary steps to address gaps.

Action 1.5 Develop a system and process to measure results of initial baseline assessment and update data to ensure AIS program and progress related to infestations can be analyzed.

Problem Statement: All too often, state agencies lack information to identify, respond to, or control AIS infestations. While data and information exists on many Web sites and in agencies and universities, it is scattered as well as difficult to access or understand. The Department/Committee will create a Web-based clearinghouse to disseminate information on all aspects of AIS management. The clearinghouse would be extremely useful tool for those involved in AIS issues. The online clearinghouse would become a central hub of information including listings of know AIS, potential funding sources, Web sites, risk assessments, control methods, and so forth all relating to AIS work.

Objective No. 2
Develop a Web-based information clearinghouse as the interchange for all existing AIS information countywide.

Action 2.1 Develop the County's AIS program budget package to support the development of the Web-based infrastructure necessary to house the clearinghouse.

Action 2.2 Form a team to implement consistent, basic reporting format and standards for data input and review all information for technical accuracy before launching the Web site.

Action 2.3 Working with partners, identify information and links to populate the clearinghouse.

Action 2.4 Create the framework for the Web site, including existing resource lists.

Action 2.5 Publicize clearinghouse and adaptively manage content.

Goal 2: To foster cooperation, coordination, and communication among Government agencies, lake associations, and private landowners.

Problem Statement: Those on the front line of AIS battles realize bolstering public awareness of the problem and providing education will be the key in overcoming serious threats. Most people remain unaware of the effects of the county's AIS. They do not realize that ordinary individuals play a role in the introduction and establishment of plant and animal invaders. But widespread knowledge and simple changes in behavior can prevent the spread of AIS.

Objective No. 1
Support targeted outreach campaigns to educate both public and private sectors on the damage caused by AIS.

Action 3.1 Develop common message and speaking points for AIS Coordinator to use when discussing AIS.

Action 3.2 Inventory and identify partner's most effective educational tools and dissemination tactics. Coordinate educational programs that are successful in the county.

Action 3.3 Encourage and leverage the participation of those in the private sector and public to help with education.

Goal 3: To assist those who manage AIS through containment, control, monitoring, and eradication efforts, and provide the necessary tools to respond.

Problem Statement: AIS Coordinator needs to respond quickly and efficiently to prevent the introduction and spread of AIS. Precious time can be lost during the process of determining authority of funding, obtaining permits, and coordinating responses. In addition, the AIS Coordinator may not have access to the tools needed to respond with the utmost effectiveness and least amount of environmental disturbance and cost. The AIS program will enhance communication channels to facilitate rapid responses, through coordination.

Objective No. 1
Increase and enhance communication across all entities to ensure coordinated approaches are supported and tools are accessible to address AIS issues.

Action 4.1 Build capacity to address the threat of AIS in the County's waterbodies ecosystem by ensuring that the Department/Committee's key strategies are integrated into a statewide partnership.

Goal 4: To prevent the introduction and establishment of AIS and reduce their adverse impacts on Oneida County's environment and economy through enhanced early detection and rapid response capabilities.

Problem Statement: Early action is critical to stop the introduction and spread of invasive species. Agency funds often are tied in statute to specific species and discretionary funds may be inadequate or limited in their use for early response.

Objective No. 1
Enhance capacity to respond to AIS by improving access to emergency funding and building on existing efforts to develop a county early detection and rapid response network.

Action 5.1 Establish a protocol and flowchart to support an early detection and rapid response network. Conduct tabletop exercises to enhance communications of the most efficient processes.

Action 5.2 Establish a county fund for emergency, rapid response.

Action 5.3 Use existing early detection and rapid response models to build a functioning, countywide system with enhanced capacity for detection, verification, assessment, planning, and response.

Long-term Objectives
The Department/Committee intends to work concurrently on both short- and long-term Objectives in order to maximize the county's effort to prevent, manage, and control AIS. The Department/Committee also recognizes that the complexity of the objectives that follow will require more time to initiate and, ultimately, to accomplish. (Please note: The following Objectives are not listed in order of priority).

Goal 1 To prevent new introductions, refine and coordinate countywide capacity to identify, report, and respond to both newly discovered and existing invasive species. To support the restoration and rehabilitation of key ecosystems adversely affected by aquatic invasive species.

Problem Statement: The county needs reliable information on emerging threats and new species arriving here, gathered through risk analyses. Without it, no intervention is likely to be either timely or successful. Early detection of new infestations requires vigilance and regular monitoring of managed areas and surround ecosystems. A prompt and coordinated response to a new species can reduce environmental and economic impacts at a lower financial cost, and result in less damage to the county's resources. Government agencies charged with protecting Wisconsin's borders do an admirable job with the available resources. However, the county remains vulnerable to new threats. New invaders arrive and will continue to arrive in times of stagnating and fluctuating budgets. A cohesive, countywide strategy to identify new species and prevent their establishment will enhance the efforts of all groups and agencies working to maintain the biological health and richness of Oneida County. Stopping an AIS – either before it reaches the county, or shortly after it arrives – is far less expensive than trying to remove the invader once it becomes established.

Objective No. 1
Evaluate and recognize current methods for preventing the introduction and spread of AIS.

Action 6.1 Encourage the use of AIS management in habitat restoration projects.

Action 6.2 With partners, conduct analyses of current methods and practices for efficacy and cost-effectiveness. As necessary, strongly encourage the

development and incorporation of new methods and practices to prevent the introduction of AIS.

Action 6.3 Promote best management practices regarding the use of equipment and proper methods of decontamination when moving between waterbodies.

Objective No. 2
Compile and access existing approaches to risk analysis and suggest a standard approach for use by the county. Expand the use of risk analyses to prepare for future threats.

Action 7.1 Convene scientific advisory panels to develop risk analyses for unexpected arrivals; expand the county risk analyses to include probable and potential changes in species and categories of organisms.

Action 7.2 Recommend guidelines for state risk analyses documents.

Action 7.3 Make risk analyses from county, state, and regional partners available online.

Objective No. 3
Conduct a gap analysis of entry pathways to identify those in need of greater protection.

Action 8.1 Work with partners to identify gaps in protection; close gaps in regulatory authority, funding, and other areas.

Objective No. 4
Encourage the expansion of and emphasis on AIS surveillance efforts.

Action 9.1 Conduct gap analysis of existing surveillance efforts. Use the results from the pathway gap analysis (Objective No. 3). Link results from all analyses to the clearinghouse Web site.

Action 9.2 Work with lake associations to engage volunteers to detect AIS.

Action 9.3 Review successful models for ongoing surveillance.

Objective No. 5
Improve and expand diagnostic capabilities for specialists in the field including equipment.

Action 10.1 Build a database of taxonomic experts and make it available online.

Action 10.2 Train county staff, volunteers, and private sector individuals associated with AIS management programs to identify key species.

Action 10.3 Highlight the need for basic and applied research and support outgoing efforts through education and outreach.

Objective No. 6
Use the concept of a scorecard to continue ongoing evaluations of management efforts. Such a scorecard would inform land and public resource managers and indicate the need for project enhancements to protect Oneida County from AIS.

Action 11.1 In partnership with the lake associations, surrounding counties, state agencies, and local government, develop a scorecard, start a peer review process to analyze the scorecard, and develop a comprehensive biennial reports on the county's efforts to control, contain, monitor, and eradicate AIS.

Action 11.2 Monitor selected AIS management projects to determine their effectiveness at reducing the size of infestations and the rate of spread.

Action 11.3 Assess all agency AIS programs for effectiveness.

Action 11.4 Engage the research community to ensure ongoing research to support AIS management efforts, based on gaps identified by the scorecard.

Objective No. 7
Use risk analysis and economic models to prioritize the activities used for AIS management.

Action 12.1 Conduct a comprehensive risk analysis for all invaders, based on existing information, and for the purpose of identifying priority species and focus areas.

Action 12.2 Research and develop appropriate economic models to inform prioritization actions.

Objective No. 8
Consider the need for restoration in all AIS management plans; take actions during project implementation to protect intact ecosystems and restore degraded ones.

Action 13.1 Build restoration funding into the county plans and include long-term maintenance and monitoring activities, as appropriate.

Action 13.2 Compile information on restoration and rehabilitation efforts and build a history of successful restoration practices for placement on the Department/Committee's clearinghouse Web site.

Action 13.3 Partner with scientific organizations and academia to support and strengthen policies that incorporate the best available science for using native species in restoration. Topics for new and existing policies include establishment methods, species community relationships, genetic suitability, and site-specific information for proposed lake management plans.

Action 13.4 Encourage the development of state, county, or other municipality nurseries that specialize in aquatic native plant.

Goal 2 To foster cooperation, coordination, and communication among government agencies, stakeholders, lake associations, and general public. To support the restoration and rehabilitation of key lake ecosystems adversely affected by AIS.

Problem Statement: Public awareness and education is a large piece of the AIS puzzle. As stated in the short-term objectives, widespread public knowledge and simple changes in public behavior will help lake associations and the county's partners control existing problems as well as prevent and stem new threats by invading plants, animals, and pathogens.

Objective No. 1
Support educational and outreach materials that encourage the use of native species in restoration.

Action 14.1 Increase outreach to wholesale and retail nurseries on the need to promote desired aquatic native plant species and discourage the sale of non-native, invasive plants.

Action 14.2 Collaborate with groups such as aquatic native plant societies, state agencies, and universities to develop and distribute educational materials.

Action 14.3 Support research on native species suitable for restoration including aquatic plant species resistance to disease and insects, restoration and disturbance ecology, and behavior of intact and disturbed ecosystems.

Objective No. 2
Support targeted outreach campaign to educate both public and private sectors on the damage and potential harm caused by AIS.

Action 15.1 Define user groups and enlist their help to identify specific targeted audiences for each user group (Examples of user groups include, but not limited to: pet and aquarium trade, plant importers, boaters, personal watercraft users, etc.). Increase effectiveness by identifying potential educational overlaps between audiences and duplicative educational efforts.

Action 15.2 Coordinate a countywide, education outreach campaign with tools aimed at specified audiences. This will be a multifaceted education campaign that broadcasts clear and consistent messages related to AIS work.

Action 15.3 Support the creation of a quarterly newsletter to provide all partners with information on local and regional AIS issues.

Goal 3 To foster cooperation coordination, and communication among lake associations. To assist those who manage AIS through containment, control, and eradication efforts.

Problem Statement: The state lacks adequate, stable funding on many AIS fronts. More funding is needed for (1) early detection and rapid response; (2) programs to control and eradicate invasive plants, animals, and pathogens already in Wisconsin; (3) monitoring managing, and researching the problem at large; and (4) education and outreach efforts. The state also lacks dedicated, stable funds to enhance long-term AIS programs.

Objective No. 1
Develop consistent criteria to track AIS funding and spending among the county. Work with federal and state agencies to track spending data to fully understand the amount of state and federal revenue being spent to manage species threats; determine how the county and others spend existing AIS funds; and inform future budget, planning , and implementation needs.

Action 16.1 Develop accurate and consistent language to define the project type (survey versus prevention or containment versus eradication) and clear, categorical definitions of AIS work (such as plant management or AIS control).

Action 16.2 Expand information on the state's spending related to AIS and include federal, tribal, county, and non-governmental organizations. Use data from existing sources to track spending on non-state resources, such as federal and private grants.

Objective No. 2
Improve efficiencies in spending across the county.

Action 17.1 Expand partnerships to control or manage AIS throughout every town and City.

Action 17.2 Support the use of coordination success models such as coordinated plant management areas and regional coordination entities (For example, Mississippi River Basin Panel and Great Lakes Basin Panel).

Action 17.3 Promote funding and legislative authority of the state AIS programs to help promote and enforce its programs.

Action 17.4 Encourage the development of an integrated, fiscal approach to AIS management, one that seed to link budgets across agencies/local government responsible for managing AIS.

Action 17.5 Encourage regional funding that targets specific AIS.

Action 17.8 Increase funding and protect existing funding sources to state and local government, municipalities, and lake associations for the prevention and control of AIS.

In the past decade, the Legislature passed several bills to help agencies tackle invasive animals. However, funding occurs in a piecemeal fashion, and often is tied to commodity and pathway-based needs.[2] The state's management efforts, funding levels, and regulations for invasive animals still lag behind those for invasive plants.

The Department/Committee has identified the following barriers to effectively manage AIS:

- **Competing priorities.** Agencies with legal authority to manage AIS often have other funding mandates that hinder their ability to regulate or manage an infestation as needed.
- **After-the-fact regulations.** Regulations and specific control mechanisms are introduced well after a species is established. Regulations are not being developed with the next crisis in mind.
- **Regulatory obstacles.** Regulations pertaining to valuable natural resources encourage thoughtful and methodical planning before actions are taken. In the case of a new species threat, planning, and acting usually occur together. Environmental regulations tend to lack emergency clauses that would enable resource managers to swiftly address new threat.
- **Species control versus pathway restriction.** Usually, resource managers aim prevention and management efforts at controlling unwanted species rather than closing off particular pathways.

[2]Pathway: The means by which species are transported from one location to another, National Invasive Species Council definition.

Preventing the introduction of any number of species by managing the avenues by which they enter the state is far more desirable.

Objective No. 3
Assess current AIS laws and authorities. Recommend legislation to address gaps and overlaps, especially for non-plant species.

Action 18.1 Support and strengthen enforcement of state laws and local government AIS Ordinances.

Action 18.2 Strengthen current County AIS Ordinances that safeguard against AIS introductions and spread.

SECTION 3

Assets to Build Upon

Oneida County boasts many examples of successful, collaborative partnerships and projects. That said, opportunities exist for increased cooperation between state agencies, local governments, and stakeholder groups. The remainder of this section provides a summary of existing coordination efforts across all jurisdictions.

Local and State Coordination
The local government, state agencies, and lake associations/Districts play an important and successful role in coordinating and prioritizing efforts for many AIS management programs. This partnership is an important initiative focused on protecting and restoring the Oneida County waterbodies ecosystems. Coordinating with the partnership to achieve mutual goals and eliminate duplication of effort is a critical component of the Oneida County Land and Water Conservation Department/Committee strategic plan.

University and College Coordination
University of Wisconsin, and other state universities and colleges through their academic, research, and extension programs are essential to winning the battle against AIS. In coordination with the federal government, they operate federally-sponsored programs to provide specialized training, scientific research and on-the-ground assistance and technical expertise.

Federal Government Coordination
The Aquatic Nuisance Species Task Force coordinates between federal agencies, states, and stakeholders through regional panels and issue specific work groups. It implements the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, including the national ballast water management program. Its mission is to protect limited aquatic resources by preventing the introduction and spread of exotic nuisance species; coordination of the management and research activities of state, tribal, federal, commercial, environmental, and research entities and other regional panels.

Techniques to Manage Aquatic Invasive Species
State agencies, local government, and lake groups working on AIS issues have developed a systematic approach to address the problem. This can be described in a linear fashion. Emergencies and regulatory mandates also impact how AIS work is performed.

Assessing the Risk
AIS are a recognized threat to natural waterbodies. A developed risk analyses defines the threat and manage the risks associated with particular species. A risk analysis is a systematic way of gathering, evaluating, and recording information to prepare for a response to an identified hazard.

A formal risk analysis usually is conducted in response to a specific need. The resulting documentation includes a description of any AIS that might enter the county; detailed information related to the named AIS and their likelihood of gaining entry; and information as to whether and how the invaders can be kept out, such as by cleaning live wells and fire tanker trucks. The risk analysis allows resource agencies to evaluate threats, affords a basis for decision-making, and provides for future adjustments. Risk analyses also can be used to develop lists of AIS that should be prevented from becoming established in Wisconsin.

Early Detection Rapid Response

Early detection and rapid response clearly is the preferred response model once AIS has entered the county, become established, or expanded its range. It is much more effective to remove a small, relatively new population of an invader than it is to wait until the same population is well established and thriving. Early detection requires knowledgeable people actively conducting surveillance to find new species and determine whether or not they likely are to become a threat.

Once AIS has become established, there are multiple management options:

- Eradicate small, newly introduced, or isolated populations of the species.
- Stop its movement or reduce its spread to protect surround areas.
- Reduce the population of established AIS to minimize harmful effects.
- Implement proper restoration techniques to maintain a sustainable system.
- Take no action, when control options are not feasible.

Eradication

Eradication, or the verified removal of all potentially reproductive units of the AIS, is the highest level of control. It can be successful only when the species' distribution is known, pathways of introduction are closed, and there is enough information about the species' biology to develop successful eradication methods. Eradication projects often extend over several years with a multi-year follow-up component to verify the outcome.

Stop the Spread

Containment can be as simple as creating a buffer around an infestation to stop or slow the spread of the invading species, especially if natural barriers exist. This is the principle behind many quarantines and requirements to sanitize boats and equipment. Containment strategies require constant monitoring to verify compliance and success.

Reduce the Population

Controlling or reducing AIS populations, usually to an economic or environmentally significant threshold value, is a strategy often used when eradication is unlikely because the species already is well established, there are no ways to eradicate it, or eradication methods are unacceptable. Long-term monitoring of the species population density is necessary for successful control.

Restoration
The goal behind AIS control is to recreate a sustainable system once the AIS has been removed. Restoring waters with native plants, whether through natural regeneration or replanting, will help prevent invading plants from re-establishing themselves.

No Action
No action may be the only choice when the environmental, economic, or social costs of control are simply unacceptable. That may be caused by AIS, such as hydrilla, that has become so ubiquitous that systematic control or even suppression, except on some piecemeal sites, is not feasible. Taking no action may be the only response if we lack an effective tool either to detect an AIS at low levels or to control it. The keys to avoiding this unfortunate choice lie in close coordination with the research community; the development of detection and control tools; and a rapid response when highly invasive species are first detected.

Preserving response flexibility, fulfilling minimum procedural requirements, and reacting rapidly to invaders while they remain vulnerable can lead to conflicting goals. To resolve these tensions and pursue an effective eradication campaign, there needs to be a societal consensus, business cooperation, and political will that acknowledges the potential economic and ecological damage likely to result from not responding to threats.

Research, Education, and Outreach
Scientific Research: Data Will Guide Future Success
Reliable information provided by scientific research is an essential component of any effective plan to address AIS. In Wisconsin, scientists at a number of universities, other institutions, and state agencies research aspects of biology, ecology, control, and management of aquatic invasive species.

Research challenges are expanded as new AIS issues come to light, especially in the context of ecological degradation. Among other needs, there is growing demand for taxonomists to identify new AIS and for trained staff to develop risk assessments to assess which species likely will become invasive. There is growing demand for research on environmentally safe control methods and natural defense mechanisms.

Education and Outreach Efforts
Almost every group engaged in the AIS arena has an education component in their programs. The following is not a complete list of education efforts, but recognizes some examples of Oneida County's efforts to disseminate AIS information to the public.

- Conducted Clean Boat Clean Water workshops
- Conducted Citizen Monitoring workshops
- Presented to lake groups
- Presented to towns and city
- Created AIS folders and brochure to hand out to public
- Presented to schools
- Held AIS booth at local stores and events

The responsibility to prevent new introductions and control the spread of existing invaders does not belong to any one industry, organization, or person but rather to all residents of Oneida County. This countywide plan is just the beginning; the road to a strategic and unified approach to specific actions that will minimize the adverse effects of AIS as they will help sustain Oneida County's plant and animal communities as well as its thriving economy.