

# Oconto County Aquatic Invasive Species Strategic Management Plan

2014



Oconto County Land Conservation Division  
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## Table of Contents

<b>LIST OF ACRONYMS</b> .....	III
<b>EXECUTIVE SUMMARY</b> .....	III
<b>CHAPTER 1: INTRODUCTION</b> .....	1
BACKGROUND AND PURPOSE.....	1
ECONOMIC IMPACT OF AIS .....	1
MISSION STATEMENT.....	2
VISION STATEMENT .....	2
TRACKED AQUATIC INVASIVE SPECIES .....	2
POTENTIAL INVASIVE SPECIES THREATS.....	4
<b>CHAPTER 2: OCONTO COUNTY WATER RESOURCES</b> .....	5
• WATERSHEDS.....	5
• COASTAL REGION.....	7
• SHORELINES .....	7
• WETLANDS .....	10
<i>Purple Loosestrife Bio-control</i> .....	10
<i>Phragmites australis Control Program</i> .....	11
• SURFACE WATER .....	13
OUTSTANDING AND EXCEPTIONAL RESOURCE WATER.....	16
<b>CHAPTER 3: GOALS</b> .....	17
GOAL 1: ESTABLISH PARTNERSHIPS FOR FUNDING OPPORTUNITIES TO SUPPORT INVASIVE SPECIES MANAGEMENT.....	17
GOAL 2. MONITOR OCONTO COUNTY FOR THE PRESENCE OF AIS .....	18
GOAL 3. PREVENT THE INTRODUCTION OF AQUATIC INVASIVE SPECIES (AIS) INTO OCONTO COUNTY WATERS.....	20
GOAL 4. EDUCATE OCONTO COUNTY RESIDENTS AND VISITORS REGARDING THE PROBLEMS POSED BY AIS.....	22
GOAL 5: CONTROL THE SPREAD OF EXISTING AQUATIC INVASIVE SPECIES FOUND TO BE PRESENT IN OCONTO COUNTY	
<b>APPENDICES</b> .....	27
<b>APPENDIX A</b> .....	27
MONITORED AIS IN OCONTO COUNTY .....	27
<b>APPENDIX B</b> .....	28
INVASIVE SPECIES .....	28
TIMBERLAND INVASIVE PARTNERSHIP .....	28
CLEAN BOATS CLEAN WATERS (CBCW) PROGRAM .....	28

CITIZEN LAKE MONITORING NETWORK (CLMN) PROGRAM .....	29
PROJECT RED (RIVERINE EARLY DETECTORS).....	29
LAKE ORGANIZATIONS .....	29
LAKE ASSOCIATIONS.....	29
LAKE DISTRICTS.....	30
<b>APPENDIX C .....</b>	<b>31</b>
AIS IN OCONTO COUNTY .....	31
<b>APPENDIX D .....</b>	<b>35</b>
WISCONSIN AIS REGULATION AND ENFORCEMENT .....	35
<b>APPENDIX E .....</b>	<b>37</b>
OCONTO COUNTY AIS SURVEY .....	37

## MAPS

CHAPTER 2 MAPS.....	6
MAP 2.1 .....	6
MAP 2.2 .....	9
MAP 2.3 .....	12
MAP 2.4 .....	14
MAP 2.5 .....	15
AIS PRESENT IN OCONTO COUNTY .....	31
NORTHERN OCONTO COUNTY AIS.....	34
SOUTHERN OCONTO COUNTY AIS .....	34

## Figures

OCONTO COUNTY AIS SURVEY FIGURES .....	37
FIGURE 1: WATERCRAFTS CURRENTLY USED IN OCONTO COUNTY .....	37
FIGURE 2: WATER BODIES VISITED IN OCONTO COUNTY.....	38
FIGURE 3: LAKE HEALTH .....	38

## List of Acronyms

AIS	Aquatic Invasive Species
CBCW	Clean Boats Clean Waters
CLMN	Citizen Lake Monitoring Network
Project RED	Riverine Early Detection
SWIMS	Surface Water Integrated Monitoring System
DNR	Wisconsin Department of Natural Resources
LCD	Oconto County Land Conservation Division
OCEDC	Oconto County Economic Development Corporation
UWEX	Oconto County University of Wisconsin Extension

## Executive Summary

Oconto County has a wealth of varied surface water resources. Lakes, rivers, streams, and their associated wetlands, floodplains, and shorelines form important elements of the natural resource base of Oconto County. Both surface and groundwater are interrelated components of the county's hydrological system. The variety and accessibility of these lakes and streams remains one of the biggest draws for many people who call Oconto County their home and those who visit the area annually.

During the winter of 2014 the Oconto County Land Conservation Division (LCD) sent out a voluntary survey to randomly selected Oconto County lake residents. Feedback from this survey was intended to gauge the knowledge, preferences, and interests of Oconto County residents who may be directly impacted by topics related to the waters of the county. This survey has provided the LCD with information which was utilized in creating the goals and objectives of this document. Water body health was found to be a consistent topic of interest among residents and visitors alike.

One threat to the county's water health is aquatic invasive species (AIS). There are 379 lakes, over 1,073 miles of intermittent streams, 140,000 acres of wetlands, and approximately 25 miles of Lake Michigan shoreline (Bay of Green Bay) within Oconto County. Of these water bodies 65 locations contain at least one documented and verified AIS (Full list of AIS within Oconto County Waterways can be found in Appendix C). This strategic plan attempts to complement existing collaborative AIS efforts between the Oconto County Land Conservation Division, the Wisconsin Department of Natural Resources (DNR), UW-Extension (UWEX), participating organizations, individual volunteers, and interested parties within Oconto County. This document is designed to delineate a county-wide approach for coordinating the prevention, control, and possible elimination of certain AIS within Oconto County watersheds. Projected methodology includes early detection and assessment of newly established pioneer infestations; monitoring established occurrences; implementing public outreach and education programs; improving the understanding of the ecology of AIS; and supporting the development, testing, and implementation, of prevention, management, and control methods.

This document is intended to strengthen the Oconto County AIS partnership and to provide structure for the management of AIS in Oconto County. This plan is provided by Oconto County Land Conservation Division and arranged to be utilized by LCD staff, Oconto County lake organizations, the UW-Extension

(UWEX), DNR, Timberland Invasive Partnership, local governments, and groups interested in preventing the introduction and spread of aquatic invasive species.

## **Chapter 1: Introduction**

### **Background and Purpose**

The lakes, rivers, and other waterways of Oconto County are important natural resources enjoyed by the public for water dependent recreation and natural beauty. Water bodies within Oconto County also have a significant impact on the local economies and should be allotted protection from AIS. Throughout Oconto County and Wisconsin AIS concerns are present and significant.

The Oconto County AIS Program seeks to provide critical leadership and information to the public organizations, private citizens, and government officials alike in the eradication or control of AIS. The following are areas of focus:

1. Clean water resources for environmental, economic & quality of life uses;
2. Education through evidence based trainings;
3. Assistance through volunteer efforts;
4. Provide information dissemination based upon sound research;
5. Public/Stakeholder awareness, understanding, and positive involvement;
6. Collaborative efforts between government and local associations/organizations;
7. Encourage local enforcement of AIS state laws and regulations;
8. Utilization of outside resources to assist the program (i.e. materials/speakers/grants).

### **Economic Impact of AIS**

Water resources are a vital part of Oconto County's economy by providing the county with general recreation, tourism, weekend cabins, full-time residents, swimming, boating, fishing, and much more. Based on information from the voluntary survey of people living on Oconto County waters, 66% visit between 1-5+ water bodies during a typical month of boating. These transient boaters have a higher potential of moving AIS to various water bodies within Oconto County, Wisconsin, and to other states. Data from the Davidson-Petersen Visitor Expenditure Study, funded by the Wisconsin Department of Tourism, revealed that visitors to Oconto County spent almost \$77.38 million in Oconto County during 2013. These expenditures include license fees, payments to local government, and taxable sales to local vendors that support 1,500 jobs within the county. The Tourism Expenditures have been increasing over recent years. In 2010, tourism expenditures were \$66 million. These visitors are important to the economic growth of Oconto County. Visitors and county residence have commented to local officials that lakes which are infested with AIS have made some areas of lakes impassable, riparian owners have expressed concern over the potential for reduced property values, and the potential to lessen the appeal of Oconto County as a tourist destination.

Sales taxes generated by visitors add over \$1.5 million to Oconto County's financial resources which are essential for the continuation of county services and operations. In an effort to address the rising number of water bodies infested with AIS, Oconto County has prioritized educating water front property owners, recreational users, and the general public about the effects of AIS and focused outreach efforts on programs to prevent the spread of aggressive invasive species, manage known infestations, and provide early detection monitoring efforts on Oconto County's water bodies.

## Mission Statement

The following mission statement will provide the overall direction of the Oconto County AIS Program and guide decision making processes for both local and county-wide invasive species management efforts within the county.

*Oconto County's AIS Program aims to protect the long-term health and sustainability of Oconto County's lakes and waterways by providing individuals, associations, local governments and organizations with assistance through education, direction, grant writing support, and facilitation that will enhance detection, prevention and the eradication or control of aquatic invasive species.*

## Vision Statement

The following vision statement provides specific values which correlate directly to the mid-term and long-term success of aquatic invasive species management efforts.

*Oconto County's AIS Program provides contiguous aquatic invasive species organization which stimulates and guides support of local associations, organizations, the general public, and officials to prevent the introduction and spread of invasive species into Oconto County's local waterways. Additionally, through programs funded by the County and other outside resources, the AIS program contains, controls, and where possible eradicates invasive species present in Oconto County.*

## Tracked Aquatic Invasive Species

Several common invasive species are located within Oconto County lakes and rivers. Eurasian water milfoil (EWM), curly-leaf pondweed, banded mystery snails, Chinese mystery snails, *Phragmites australis*, purple loosestrife, and rusty crayfish are the most common invasive species affecting the county's waters. (For a full list of AIS tracked by LCD see Appendix A)

**Eurasian water milfoil, *Myriophyllum spicatum***



Photo by Chris Hamerla

**Rusty Crayfish, *Orconectes rusticus***



Photo by Chris Hamerla

Curly-Leaf Pondweed, *Potamogeton crispus*



Photo by Jane Mangold

## Tracked Aquatic Invasive Species Continued

Purple Loosestrife, *Lythrum salicaria*



Photo by Chris Hamerla

Phragmites or Common Reed, *Phragmites australis*



Photo by Kelly Kerns

Banded Mystery Snail, *Viviparus georgianus*



Photo by WDNR



Photo by Amy Benson

## Potential Invasive Species Threats

Future introductions of aquatic invasive species not listed under this plan should be anticipated for Oconto County as invasive species are capable of introduction through a variety of conduits. As such Oconto County reserves the ability to amend the list of invasive species managed under this plan.

Various federal, state, and local agencies continuously evaluate the invasive potential of numerous plant and animal species. When individual species are identified to be a potential threat, these species are recommended to be considered for future NR40 inclusion. Inclusion of new species to NR40 will be considered as an immediate inclusion into the Oconto County Aquatic Invasive Species Strategic Action Plan.

## **Chapter 2: Oconto County Water Resources**

In April 2011, the Oconto County Land Conservation Division and Oconto County Economic Development Corporation (OCEDC) requested that the Land Conservation Committee consider investigating the feasibility of a cooperative venture with lake associations, municipalities, and other interested stakeholders to develop an aquatic invasive species inventory and monitoring program. The LCD and OCEDC sought to establish a strong partnership with local, county, state agencies and private individuals, organizations, and associations. This partnership is intended to create improved coordination of AIS projects among the lake districts and associations allowing for joint bidding with vendors, uniform standards for performance of contractors, and efficiencies in an effort to reduce the overall cost to individual stakeholders. Oconto County realizes the importance of protecting the abundant surface and groundwater resources indicative of Northeast Wisconsin.

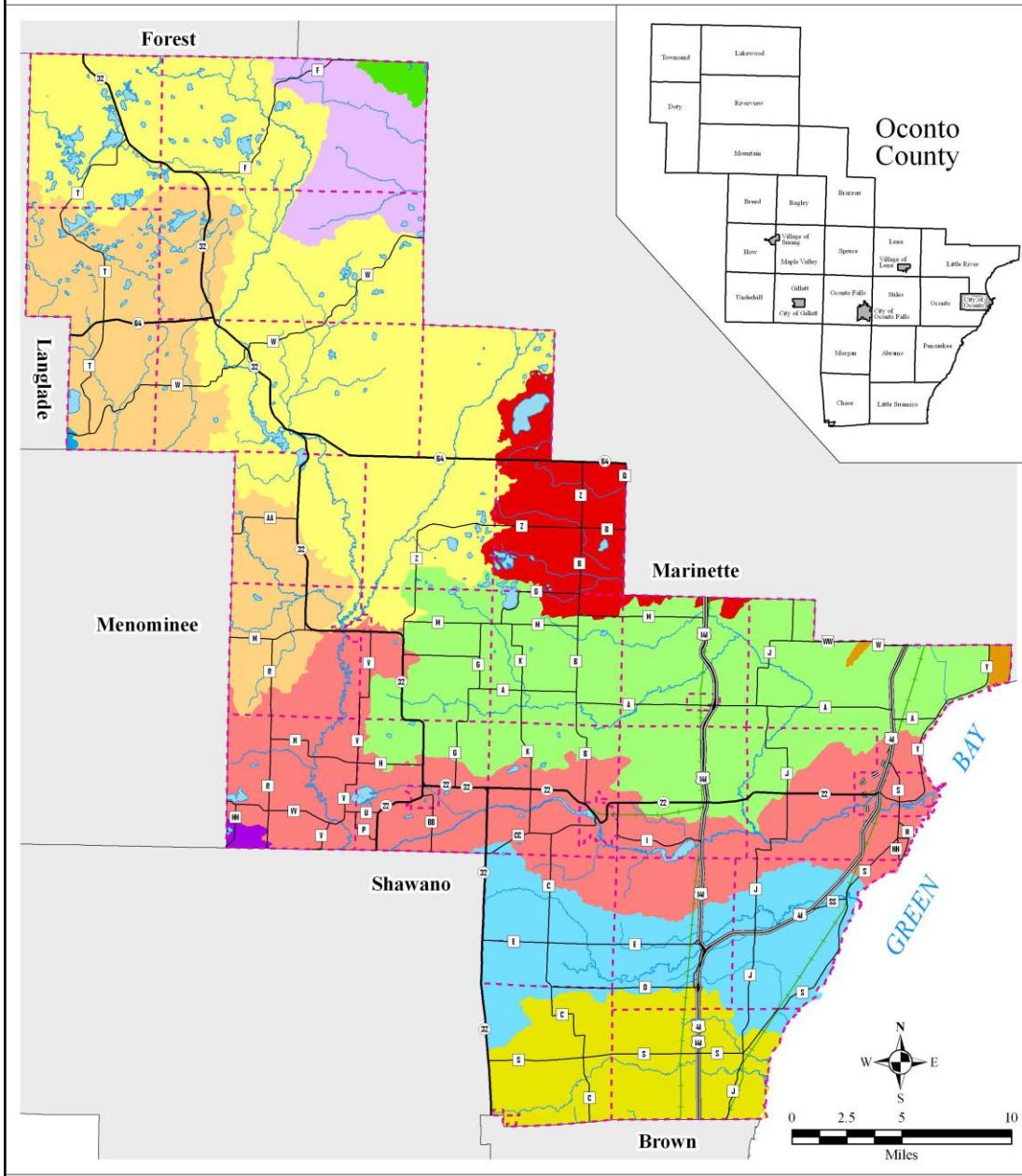
- Watersheds**

Oconto County consists of ten watersheds which are a part of the larger Lake Michigan Basin. All of these watersheds drain directly or indirectly into Lake Michigan through the Bay of Green Bay or one of the county's major rivers. Of these watersheds, Little River Watershed, Middle Peshtigo River, Thunder Rivers Watershed, Pensaukee River Watershed are recognized as priority watersheds based on numerous factors including but not limited to the potential for unique species to respond positively to nonpoint source controls and sensitivity to phosphorus loading. These watersheds will be given special attention when considering monitoring efforts for AIS.

**(Map 2.1)**

# Watersheds

## Oconto County, Wisconsin



### Base Map Features

Community Boundary	Little Peshtigo River
U.S. Highway	Pensaukee River
Future USH 41 Bypass	Shawano Lake
State Highway	South Branch Oconto River
County Highway	Lower North Branch Oconto River
Railroad	Lower Oconto River
Surface Water	Lower Peshtigo River
	Middle Peshtigo and Thunder Rivers
	Upper Peshtigo River
	Wolf River/Langlade and Evergreen Rivers

This map is neither a legally recorded map nor a survey, and is not intended to be used as either. It is a compilation of records, information and data to be used for reference purposes only. Oconto County and the Bay-Lake RPC are not responsible for any inaccuracies herein contained. Source: WDNR, 1992; Oconto County; Bay-Lake Regional Planning Commission, 2008.

**Map 2.1: Oconto County Watersheds**

- **Coastal Region**

The Great Lakes have a long history of aquatic nonindigenous species introductions – both intentional and unintentional. As of 2012, over 180 nonindigenous species have been reported to have reproducing populations in the Great Lakes Basin. Oconto County contains approximately 25 miles of the Bay of Green Bay (Lake Michigan) shoreline. Along this shoreline there are approximately four boater access points. Based on launch fees collected by the City of Oconto's Parks and Recreation Department during the 2013 boating season at the Breakwater and City Dock boat launches around 5,500 people purchased daily launch permits and approximately 200 people purchased seasonal passes. This information does not take into account the number of boaters who utilize free launching during Oconto County tournaments on the bay when the launch fees are waved and free to the public. Oconto County's Parks Department also collected launch fees from the North Bay Shore and Pensaukee River boat launches where 2,946 daily passes and approximately 435 annual passes were purchased. That 8446 day passes and 635 annual passes have been sold at the four launches on the bay is significant as the Bay of Green Bay is considered a 'super-spreader' water body.

Water bodies that pose the greatest risk of enabling the spread of invasive species, such as those with a large number of both AIS and boater use, for instance the Bay of Green Bay, are referred to as 'super-spreaders'. Preventing the transport of AIS from these 'super-spreader' waters has the potential to make one of the greatest differences in slowing the spread of AIS within Oconto County. Efforts are of particular interest as the Bay of Green Bay coastline offers a variety of natural resources including beaches, wetlands, etc.; living resources including the flora and fauna and unique habitats of the coast; and cultural resources such as the history, recreation and agriculture. Oconto County recognizes the importance of protecting these valuable assets as development in coastal areas typically leads to greater land disturbance, runoff, AIS, and pollutants.

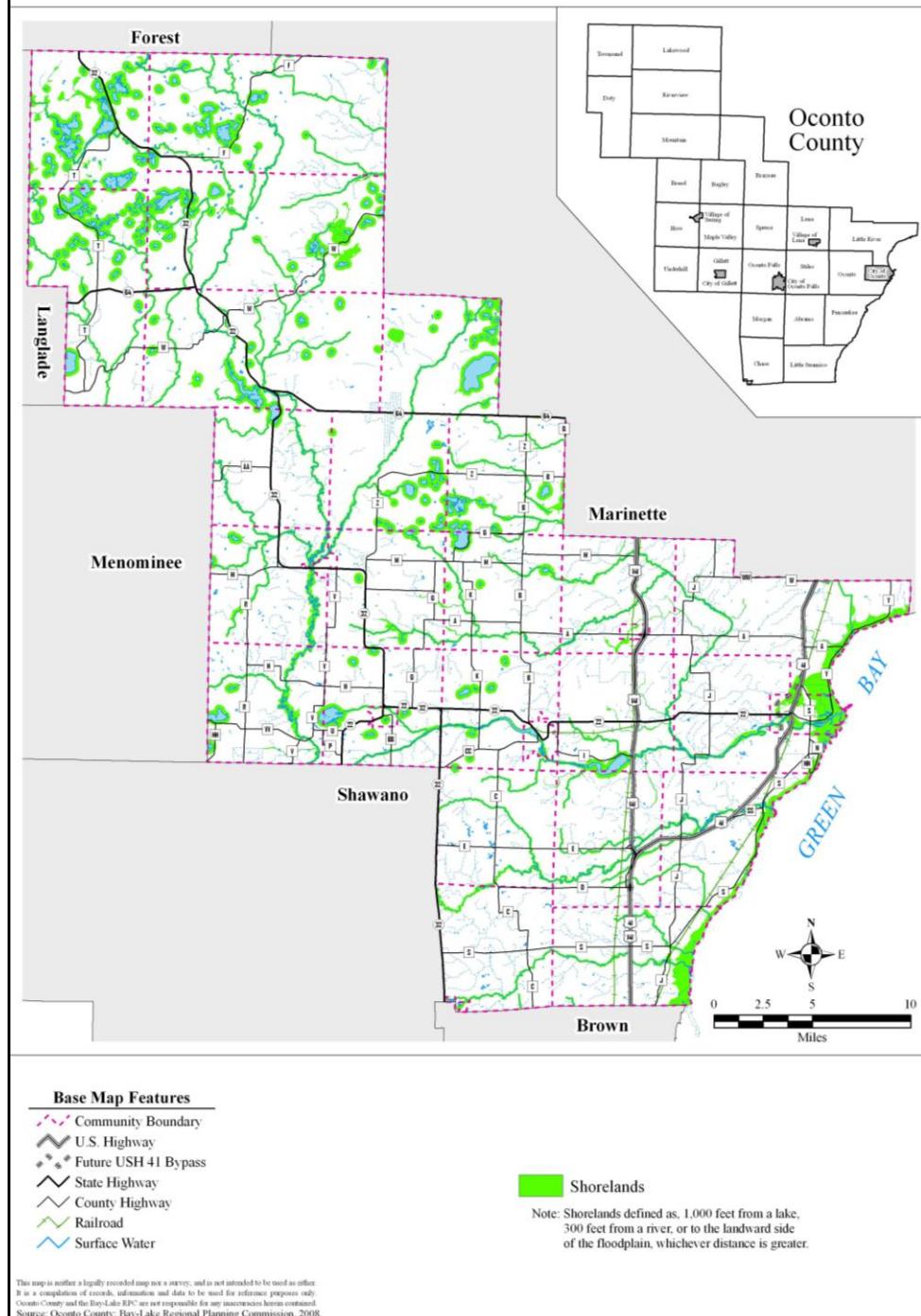
- **Shorelines**

The vegetated land adjacent to lakes and rivers is referred to as the shoreland (interchangeable with "shoreline") region. (See Oconto County's shorelands: **Map 2.2**). This land serves as the buffer zone between aquatic and terrestrial ecosystems. Often referred to as the riparian zones, these corridors serve as wildlife habitat, protect water quality, slow the flow of flood/storm waters, and provide other vital functions which protect property and human health. As the value of this buffer zone has become more widely understood, Wisconsin has increasingly established laws and local ordinances requiring that these vegetated tracts be preserved or restored with appropriate native vegetation. Riparian property owners can restore natural shorelines to protect and enhance water quality through shoreline restoration projects utilizing grants or the county cost share program. Shoreline restoration efforts have been undertaken by several Oconto County lake organizations. In recognizing and acting upon restoration efforts within the shoreland area these organizations and in some cases individuals have taken steps to protect soils and

waterways while diversifying the presence of native vegetation. Native seeds often lie dormant in the soil for years. If areas are not mowed, it is likely that native plants will regenerate from the seed bank on site. Removing undesirable, aggressive plants will eliminate competition for natives. If the site is undeveloped, care should be taken to retain most of the existing vegetation with the exception of a narrow access corridor if desired. If active planting is needed, appropriate species should be chosen based on site characteristics. Numerous resources exist for shoreland property owners who wish to plan and install a native shoreline to prevent shoreline erosion and lake sedimentation; algal blooms and excessive aquatic plant growth; and/or loss of wildlife habitat.

# Shorelands

## Oconto County, Wisconsin



Map 2.2: Oconto County Shorelands, including inland and coastal shorelands

- **Wetlands**

Oconto County contains approximately 140,000 acres of wetlands. Prominent wetlands in the county include Christie Lake, Morgan Marsh, Jamison Marsh, Lena Swamp, Wolf Marsh, Brazeau Swamp, Peshtigo Brook Wetlands, County Line Swamp, West Shore Rivers Wetlands, Wesco Creek Swamp, and others adjoining the many lakes and streams of the county.

Oconto County has a number of extensive wetland complexes, with the majority being located within 25 miles of the Bay of Green Bay shoreline. Wetlands located within close proximity of the coast provide rich habitat for plants and animals and greatly influence the larger ecosystem processes of the Great Lakes Ecosystem. As transition zones between land and water, coastal wetlands are often rich in species diversity and provide critical habitat for migratory and nesting birds, spawning fish, and rare plants.

When evaluating ecosystem economic value, wetlands have been found to be among the most valuable ecosystems, second only to estuaries. A broad study conducted by the Wetlands Initiative found wetlands to be 75 percent more valuable than lakes and rivers, 15 times more valuable than forests, and 64 times more valuable than grasslands or rangelands. An acre of wetland has been found to be worth about \$6,000 a year. Historically, wetlands have been abundant with the presence of water either on the surface or in the ground; therefore, areas in the close vicinity of lakes and rivers, or with shallow groundwater tables, were prone to have most of the wetlands. The Great Lakes region has lost over 50 percent of its wetlands, and some coastal areas of the Great Lakes have seen 95 percent declines. Oconto County's Pensaukee River watershed (166 square miles) discharges into the coastal wetlands commonly called the "West Shore" of the Bay of Green Bay. The West Shore has some of the most productive wetlands remaining in the Great Lakes system and encompasses greater than 50% of Lake Michigan's remaining wetlands. Oconto County's wetlands are of great value to Oconto County and to the state of Wisconsin. With this understanding, the LCD feels it is vital to protect coastal wetlands from the detrimental impacts of AIS. Two invasive species are the focus of current AIS management in respect to wetlands, *Phragmites australis* (Phragmites or Common Reed Grass) and *Lythrum salicaria* (Purple Loosestrife).

### **Purple Loosestrife Bio-control**

Purple loosestrife (*Lythrum salicaria*) is a wetland plant from Europe and Asia. Purple loosestrife was first introduced to North America via the east coast in the 1800s. Similar to many invasive species purple loosestrife can be found in disturbed areas including along roads, canals, and drainage ditches. This plant has also been distributed as an ornamental. Purple loosestrife invades marshes and lakeshores and can form dense, impenetrable stands which are unsuitable as cover, food, or nesting sites for a wide range of native wetland wildlife.

There are a number of methods to control purple loosestrife, however bio-control may be the most viable long-term control method, promising to greatly reduce the need for other more costly and disruptive control methods.

The DNR and UWEX, along with hundreds of citizen cooperators, have been introducing natural insect enemies of purple loosestrife, from its home in Europe, to infested wetlands in Wisconsin since 1994. Careful research has shown that these insects are dependent on purple loosestrife and are not a threat to other plants. Insect releases monitored in Wisconsin and elsewhere have shown that these insects can effectively decrease purple loosestrife's size and seed output, thus letting native plants reduce its numbers naturally through enhanced competition. Volunteers raise beetles which are released at infested locations within Oconto County.

<http://dnr.wi.gov/topic/invasives/loosestrife.html>

### ***Phragmites australis* Control Program**

Common Reed Grass or Phragmites (*Phragmites australis*) is a perennial wetland grass that grows 3'-20' tall with dull, very slightly ridged, stiff, and hollow stems. These plants create dense clones where canes remain visible in winter. Phragmites invades moist habitats including lake shores, river banks and roadways; commonly observed in disturbed areas. Phragmites has extensive rhizomes which store energy so the plant can recover from cutting, burning, or grazing. Phragmites alters hydrology and wildlife habitat, increases fire potential, and shades native species. It can spread through root fragmentation, long runners above ground, and sometimes windblown seeds or cut stem fragments.

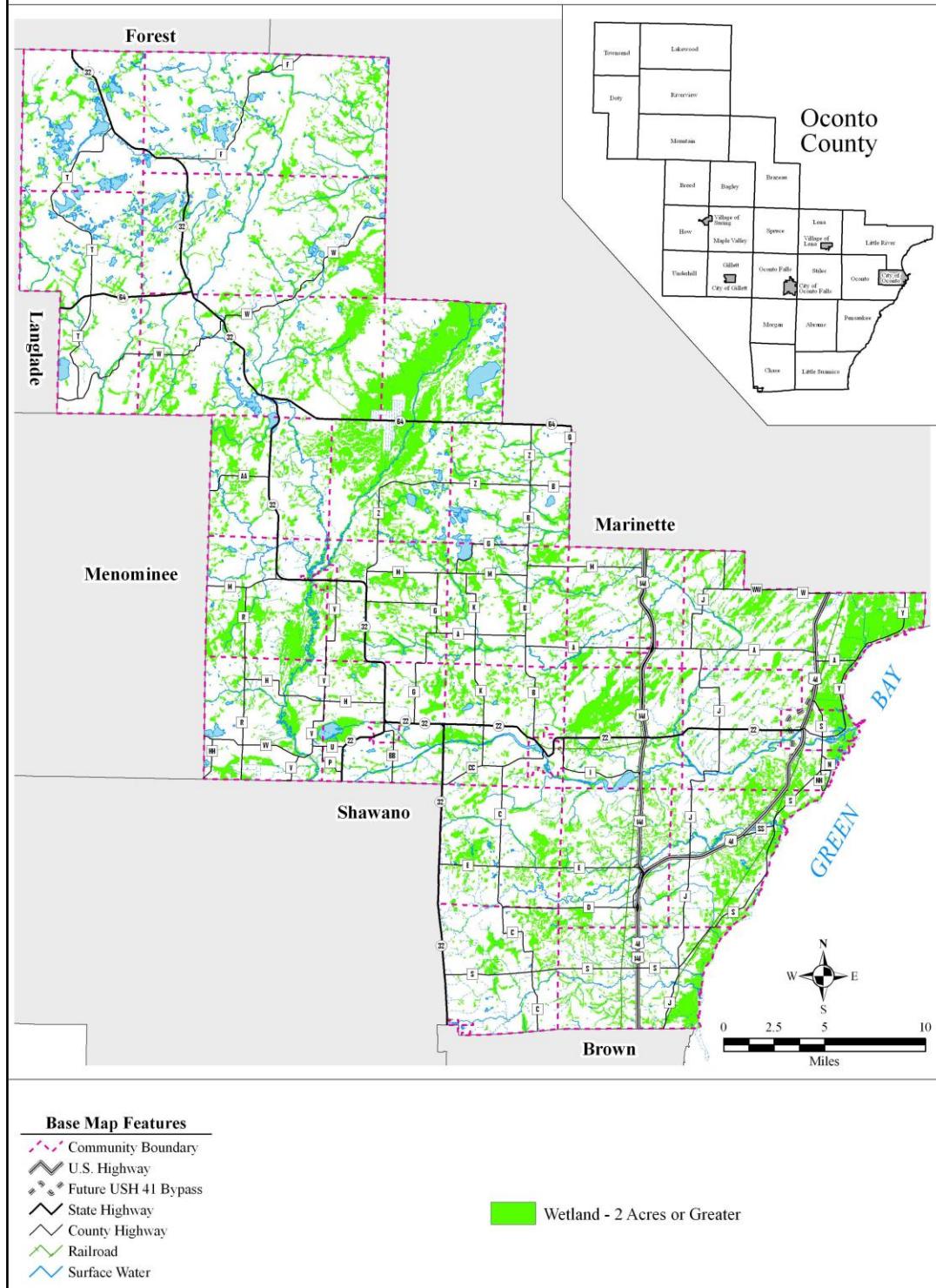
From 2011 to 2013 federal funds were provided for the treatment of 3,300 acres of Phragmites along the western shore of the Bay of Green Bay starting at Seagull Bar at the northern tip of Marinette County moving south to Duck Creek in Brown County on both public lands and private lands below the ordinary high water mark, within designated Conservation Opportunity Areas (COA's). Oconto County continues to support treatment and control efforts of Phragmites along the Bay of Green Bay shoreline.

As of February 2014, the LCD documented occurrences of Phragmites throughout the county. Locations and information on approximate densities have been shared with the DNR for potential inland treatment. Continued monitoring, mapping, and control measures for Phragmites are expected in Oconto County to prevent the distribution of Phragmites into natural ecosystems.

<http://dnr.wi.gov/topic/invasives/fact/phragmites.html>

# Wetlands

## Oconto County, Wisconsin



## • **Surface Water**

The surface waters in Oconto County primarily flow southeast to the Bay of Green Bay. The major river systems within the county consist of the Little Suamico, Oconto, Little and Pensaukee Rivers. Oconto County has many lakes and streams that provide an abundant supply of surface water. The surface waters of the county provide quality habitat for waterfowl and wildlife in addition to recreational opportunities.

The most likely way new AIS will be introduced into Oconto County waters is by recreational boaters and anglers who do not properly clean their boats, trailers or boating equipment when coming from source waters. The threat is most significant to the larger lakes in the county, such as White Potato Lake which as of 2013 has no documented AIS within the lake, yet receives boat traffic from super-spreader lakes such as the Bay of Green Bay, Shawano, Winnebago, and also waterways such as the Fox, Wolf, and Mississippi Rivers.

Lake and stream management plans typically deal with one specific water resource. The majority of invasive species are readily transported between water bodies by humans. As such, a watershed approach to invasive species management may be more successful in Oconto County. This plan will detail several general concepts to combat invasive species on a countywide basis. With the continuous travel of boaters between these lakes, it will be essential for inter-lake communication to solve these regional issues.

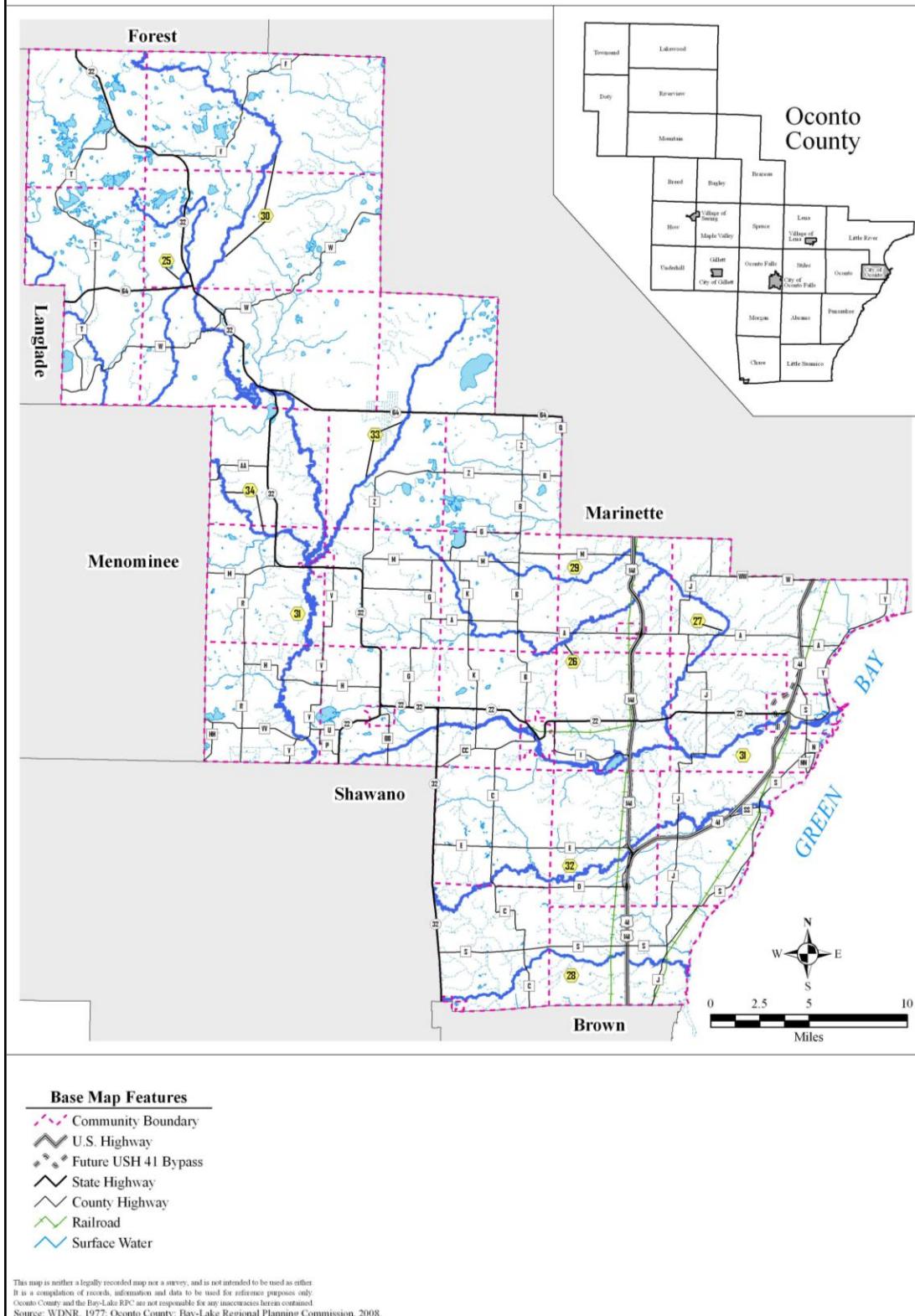
Some of the questions that could be used to address AIS topics with surface water property owners:

- Are we knowledgeable about aquatic invasive plants and animals?
- Do we have a functional and proactive management strategy?
- What would we do if an invasive species was discovered in the water body today?
- Who would handle the situation? Who would take the lead?
- Who do we call to report the suspected AIS?
- What are the treatment options available for AIS and what are the “pros” and “cons” of each?
- How would we finance treatment operations?
- Do we need an emergency AIS treatment fund?

Overall, Oconto County has 200 named lakes totaling 10,486 acres and 179 unnamed lakes totaling 567 acres. Additionally, the county contains 1,073 miles of streams which cover 12,814 surface acres. (**See Maps: 2.4 and 2.5**)

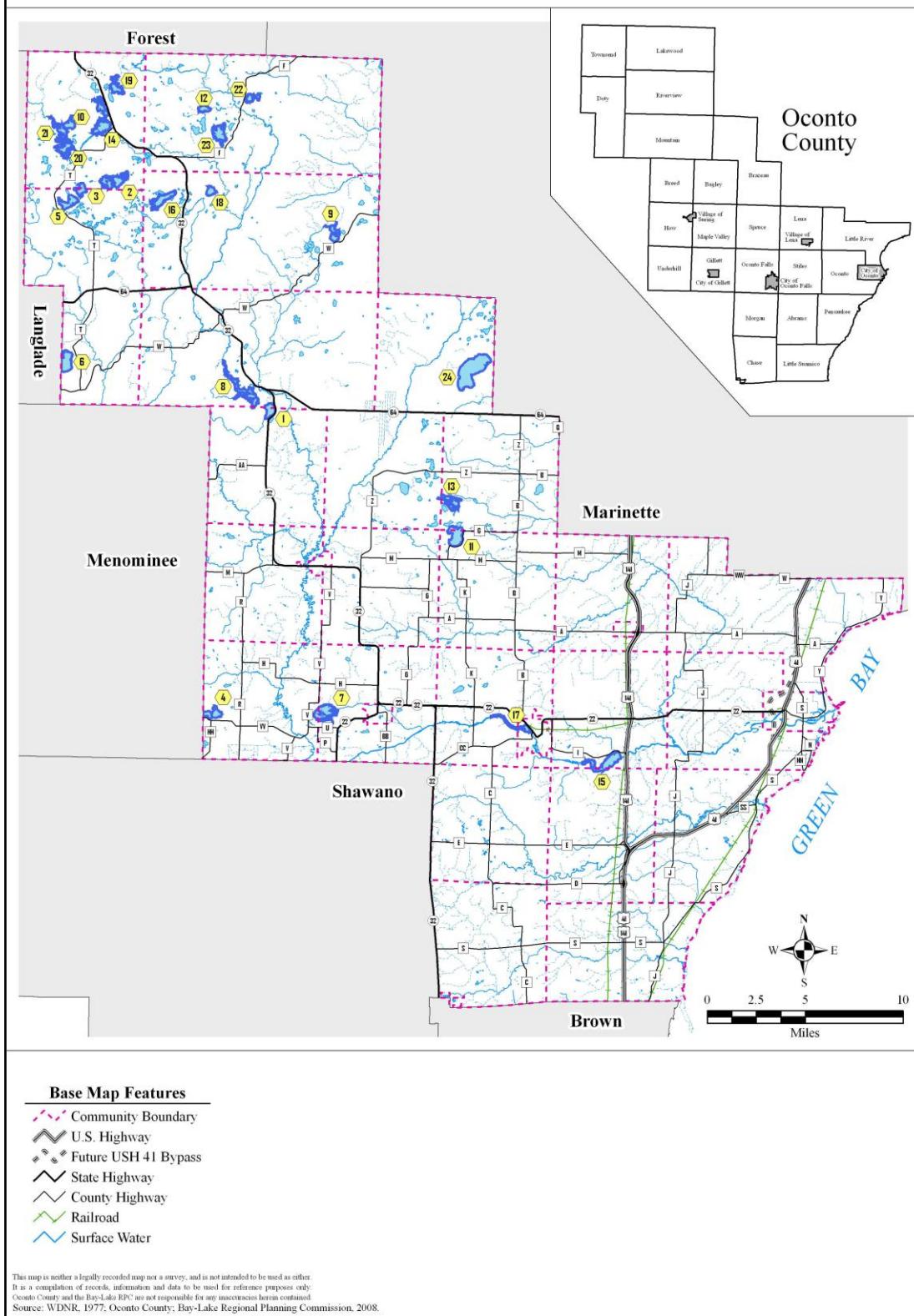
# Major Rivers and Creeks

## Oconto County, Wisconsin



# Major Lakes and Ponds

Oconto County, Wisconsin



Map 2.5: Oconto County Lakes and Ponds

## **Outstanding and Exceptional Resource Water**

Outstanding and Exceptional Resource Waters have been designated as such in NR 102.10 and NR 102.11 of the Wisconsin Administrative Code, Water Quality Standards for Wisconsin Surface Waters. An Outstanding Resource Water is a lake or stream having excellent water quality, high recreational and aesthetic value, high quality fishing, and free from point/nonpoint source pollution. An Exceptional Resource Water is a lake or stream exhibiting the same high quality resource values as an Outstanding Resource Water, but it may be impacted by nonpoint sources of pollution or have the potential for receiving a wastewater discharge from a non-sewered community in the future.

Within Oconto County there are nine named bodies of water that are classified as Outstanding Resource Waters including Archibald Lake, Bear Paw Lake, Boot Lake, Chain Lake, First South Branch Oconto River below HWY 32, Hills Pond Creek, Second South Branch Oconto River Below junction with Deadman Creek, South Branch Oconto River Above Menominee Reservation to HWY 32, and an additional 34 that are classified as Exceptional Resource Waters.

Oconto County is an ecologically rich county; made evident by the fact that over 133 rare mammals, birds, fish, turtles, herptiles, butterflies, invertebrates, plants, and communities occur within the county, including three federally listed species. Oconto County also has 33 state endangered or threatened species and one species of special concern. Many of the species found in Oconto County are considered rare because their populations and habitat are declining throughout their range. These species are of aesthetic, ecological, cultural, educational, historical, recreational, and/or scientific importance to the land and people. A portion of protecting these ecological gems includes preventing the spread and introduction of AIS.

## **Chapter 3: Goals**

Five areas will be addressed in the following chapter: funding, monitoring, prevention, education, and control. Many implementable actions are applicable on an ongoing basis or as the opportunity arise to coordinate efforts with interested parties. Specific timelines or deadlines have been outlined where appropriate. The actions are listed within tables. The party primarily responsible for each action is listed specifically.

These goals are meant to expand on specific objectives and recommended actions for Oconto County's AIS Program. These activities will provide a guide for the coordination and collaborative efforts of invasive species management programing within Oconto County. Numerous stakeholders both county-wide and regionally will benefit from the realization of these management goals.

### **For the following tables:**

OC	Oconto County
TIP	Timberland Invasive Partnership
LCD	Oconto County Land Conservation Division
OCEDC	Oconto County Economic Development Corporation
UWEX	Oconto County University of Wisconsin Extension
OCLO	Oconto County Lake Organizations
OCLG	Local Governments (Towns, Cities and Village)
DNR	Wisconsin Department of Natural Resources

### **GOAL 1: Establish partnerships for funding opportunities to support invasive species management.**

Funding is commonly an inhibiting factor in aquatic invasive species education and control. Therefore, Oconto County partners should strive to generate sustained and diversified funding mechanisms for the efforts contained in this plan. County governments can offer a unique community support system pertaining to AIS efforts. Counties can coordinate and encourage townships to work together in unified water body protection efforts. One method of accomplishing this is by supporting an AIS Coordinator position to manage AIS activities. County government can take an active role in the sponsorship of state administered AIS grants. Counties can help local lake associations seek grants for many types of lake protection projects, including projects focused on AIS issues. County governments can also initiate AIS projects to be completed by county personnel. The AIS Coordinator position can be funded through the AIS Grant Program with the DNR to accomplish such projects as: AIS partnership coordination, volunteer monitoring support, educational campaigns, and more. The actions of the Oconto County Land Conservation Division are directed by elected County Board Supervisors. The LCD personnel are natural resource management professionals and are often well versed in all aspects of AIS matters. The LCD is a natural home for county-wide lake protection and AIS initiatives, such as supporting an AIS Coordinator position, enforcing and promoting shoreland buffers, and assisting with shoreland restoration or enhancement projects. All short- and long-term funding options should be explored. Programming is dependent on utilizing a diverse collaboration of local, county, state, and federal agencies. Sustained local funding sources should be sought after to allow for the continuation of the Oconto County AIS Program.

<b>Objective 1: Continue to seek funding for staff (specifically the AIS Coordinator position) to continue AIS endeavors.</b>		
<b>Activities</b>	<b>Facilitator</b>	<b>Measurement Tools</b>
<b>Activity 1:</b> Explore the potential of utilizing a portion of the county's existing boat launch fees and adding additional launching fees to fund AIS management efforts on local lakes.	OC, LCD, OCLG, OCEDC	Additional funding for AIS management.
<b>Activity 2:</b> Pursue short and long-term grant funding opportunities.	LCD	Maintain a database of grant funding opportunities.
<b>Activity 3:</b> Continue to seek and maintain a diverse AIS funding program through grant programs, community foundations, and other pertinent sources.	LCD, OCLG, DNR, OCEDC	Maintain a database of grant funding opportunities available on county webpage.
<b>Activity 4:</b> Continue to seek funding for a wide variety of AIS educational, prevention, control, implementation, and other related programming.	LCD, OCEDC	Maintain a database of grant funding opportunities.
<b>Activity 5:</b> Explore the potential of the County and local governments funding a position for a permanent AIS Coordinator in Oconto County.	LCD, OCEDC, OCLG	Encourage all levels of government to provide funding for AIS Coordinator position.

## **Goal 2. Monitor Oconto County for the presence of AIS.**

Effective invasive species monitoring depends largely on public education and participation. Monitoring training for volunteers is dependent on technical assistance provided by the Oconto County AIS Coordinator and the DNR. Individuals, organizations, and interested stakeholders should be educated and capable of positively identifying invasive species and have avenues for reporting findings. Reported information must be confirmed, documented, and maintained in an accessible format. All monitoring programs must be science-based and focused on detecting various species. Monitoring efforts are expected to be sustained at a local level to ensure that changes in invasive species populations can be monitored on an on-going basis to detect changes. Monitoring invasive species populations is an important component in both educational and control activities.

<b>Objective 1: Encourage and support efforts to monitor waters for the presence of aquatic invasive species.</b>		
Activities	Facilitator	Measurement Tools
<b>Activity 1:</b> Solicit interest via local press, email, county webpage, and in-person notices about availability for lakeshore and whole-lake monitoring programs.	LCD, OCLO	20 volunteers/year.
<b>Activity 2:</b> Provide 2 Citizen Lake Monitoring Network (CLMN) AIS Monitoring workshops per year within the county.	LCD, DNR, OCLO	10 individuals attending/workshop.
<b>Activity 3:</b> Contact and encourage civic groups to contribute time and effort to monitor efforts on water bodies for invasive species.	LCD, OCLO	Reach out to 5 civic groups/year.
<b>Objective 2: Establish programs/protocols for county departments who work on or near lakes and municipalities to assist in the monitoring and reporting of AIS.</b>		
Activities	Facilitator	Measurement Tools
<b>Activity 1:</b> Meet with various departments and municipalities to educate their personnel on AIS impacts, identification, simple monitoring procedures, and reporting protocols. Provide these departments and municipalities with identification material and educational pamphlets for their use.	LCD, OCLO	County departments and municipalities participation.
<b>Activity 2:</b> Coordinate with the Timberland Invasive Partnership (TIP) and DNR to establish reporting procedures to websites such as: the DNR SWIMS database and the Great Lakes Early Detection Network (GLEDN). <a href="http://www.gledn.org/cwis438/websites/GLEDN/Home.php?WebSiteID=17">http://www.gledn.org/cwis438/websites/GLEDN/Home.php?WebSiteID=17</a>	LCD, TIP	Procedures established, links on webpage.
<b>Objective 3: Maintain an inventory of waters in the county that have populations of aquatic invasive species.</b>		
Activities	Facilitator	Measurement Tools
<b>Activity 1:</b> Coordinate with DNR, US Forest Service (USFS), US Fish & Wildlife Service (FWS), and WI Sea Grant's AIS inventory databases. Work with town boards, lake organizations, property owners, and others to identify infested lakes and the level of infestations in those lakes.	LCD	Continuous updates on databases.
<b>Activity 2:</b> Continue to attend TIP meetings and collaborate with its signatories on monitoring activities such as Project RED, CLMN and CBCW.	LCD, TIP	6 meetings/year.

### **Goal 3. Prevent the introduction of aquatic invasive species (AIS) into Oconto County waters.**

Preventing the spread of AIS to Oconto County waters is a complex undertaking which is dependent on a multi-faceted approach by all those using the county's waterways. The basics include: **Inspection** of individual boats and personal/commercial equipment to remove all aquatic plants from boats, motors, trailers, tires, propellers, anchors, and other locations. **Removing** any visible plants, fish, animals, or mud. Immature forms of animals, such as larval zebra mussels, can live in mud, dirt or sand. Some invasive plants can produce an entire new colony from a single strand barely two inches long. **Draining** all the water from the boat, motor, bilge, live wells, and bait wells. **Disposing** of leftover bait in a trash receptacle, not in the water. **Rinsing** boats and all fishing equipment with hot (104 degrees or higher) tap water, OR thoroughly drying boats and fishing equipment. The following objectives assist in realizing these efforts/behavioral changes.

<b>Objective 1: Institute a watercraft monitoring/ inspection program at boat landings in the county.</b>		
<b>Activities</b>	<b>Facilitator</b>	<b>Measurement Tools</b>
<b>Activity 1:</b> Provide annual CBCW trainings.	LCD, DNR, UWEX	Two trainings/year.
<b>Activity 2:</b> Assist towns, local lake organizations, and interested citizens in setting up and maintaining boat landing inspection/monitoring programs following CBCW protocols.	LCD, OCLO	5 priority landings/year.
<b>Activity 3:</b> Coordinate with lake organizations and WI Sea Grant watercraft inspectors to ensure boat landing coverage throughout boating season.	LCD, OCLO	15 landings coordinated and staffed for both inland lakes and coastal areas/year.
<b>Objective 2: Maintain an inventory of each landing and regularly check for proper and adequate AIS signage; including maintenance (replacement) of that signage as necessary.</b>		
<b>Activities</b>	<b>Facilitator</b>	<b>Measurement Tools</b>
<b>Activity 1:</b> Keep an updated database of landings with updated AIS signs and dates of sign placement/boat landing conditions.	LCD, DNR	1 Complete Database.
<b>Activity 2:</b> Encourage lake organizations to update signs and remove old signs.	LCD, OCLO, DNR	Reminder message in newsletters and at OCLO meetings.

<b>Objective 3: Encourage AIS monitoring and prevention for special events held on lakes/rivers.</b>		
Activities	Facilitator	Measurement Tools
<b>Activity 1:</b> Stay in communication with the regional DNR and OCEDC regarding fishing tournaments or other permitted activities held on lakes. Provide AIS staff for events to ensure that adequate CBCW inspections and education is present.	LCD, OCEDC, UWEX	75% of activities monitored/year.
<b>Activity 2:</b> Communicate with resorts/businesses/OCLO that host tournaments or recreational activities held on the lake.	LCD, OCLO, UWEX	50% of activities monitored/year.
<b>Objective 4: Maintain a communication line between the county and the state and between the county and neighboring counties concerning AIS issues.</b>		
Activities	Facilitator	Measurement Tools
<b>Activity 1:</b> Distribute regional-related AIS information for NE Wisconsin to county residents, utilize groups such as TIP.	LCD, OCLO, TIP, DNR	2 communications encouraging feedback/Receiving feedback.
<b>Objective 5: Encourage Oconto County residents to install best management practices which will protect and enhance water quality.</b>		
Activities	Facilitator	Measurement Tools
<b>Activity 1:</b> Explore opportunities to establish “shoreline” buffers/shoreline restoration projects where applicable in Oconto County.	LCD, OCLO, DNR	Provide guidance and assistance in restoration initiatives.
<b>Activity 2:</b> Encourage all residents to improve storm water management practices on their properties by installing rain gardens, rain barrels, native plantings, and other appropriate practices on their property.	LCD, OCLO, DNR, UWEX	Provide guidance and assistance in storm water management initiatives, and educational materials.

<b>Objective 6: Encourage groups to apply for available grant funds.</b>		
<b>Activities</b>	<b>Facilitator</b>	<b>Measurement Tools</b>
<b>Activity 1:</b> If infestations are confirmed, identify best treatment options to pursue.	LCD, OCLO, DNR	Seek out scientifically sound data for the AIS and verifiably successful treatments.
<b>Activity 2:</b> Send regular emails to stakeholders in regards to grant availabilities and deadlines.	LCD	Assist in AIS grant applications.
<b>Activity 3:</b> Establish a section on the county's web page of helpful hints, links, and other resources for writing grants.	LCD	Website links established/advertised.
<b>Activity 4:</b> Develop a contact list of individuals who can assist others with grant applications including DNR contacts, county contacts, and successful applicants of similar grants who are willing to assist.	LCD, OCLO	Update AIS contact list as necessary to provide correct and accurate contacts for organizations, individuals, and professionals seeking assistance with OC AIS matters.

#### **Goal 4. Educate Oconto County residents and visitors regarding the problems posed by AIS.**

Invasive species education and awareness has increased in recent years, but a number of boaters, shoreline property owners, and citizens may not be fully aware of the potential impacts of invasive species. Many Oconto County residents indicated through surveying that they are aware of invasive species but may not be aware of the regulations or how they may be contributing in the spread of AIS. Listed in the tables below are identified approaches for providing educational information. Effective invasive species education will require volunteer participation, effective communication, and enforcing regulations. Many of these efforts can be initiated by the AIS Coordinator, but the longevity of their success primarily relies on volunteer efforts, local government participation, and property owner compliance.

<b>Objective 1: Conduct a mass media campaign to inform and educate residents and visitors about AIS.</b>		
<b>Activities</b>	<b>Facilitator</b>	<b>Measurement Tools</b>
<b>Activity 1:</b> Send out an annual press kit to the press, radio, and other media outlets to both inform and encourage them to report AIS prevention and monitoring messages to their audiences.	LCD	Minimum of 5 articles in the press/year.
<b>Activity 2:</b> Invite media to workshops and functions related to AIS held in the county.	OCLO, LCD	50% press coverage/year.
<b>Activity 3:</b> Work with OCEDC, local Chambers of Commerce, TIP, and outdoor recreation groups to place AIS messages in their yearly publications.	LCD, OCEDC, OCLO, TIP, LG	AIS messages in 50% of publications/year.
<b>Activity 4:</b> Work with Oconto UWEX in incorporating AIS outreach information through the UWEX's publications.	LCD, UWEX	AIS messages in a minimum of 1 UWEX publication/year.
<b>Activity 5:</b> Develop promotional/ educational tools for waterfront property owners that will inform them of actions that help prevent AIS introductions.	TIP, OCLO, LCD	Gauge local interest in materials and develop/distribute when and where appropriate.

#### **Objective 2: Targeted AIS educational efforts toward key audiences.**

<b>Activities</b>	<b>Facilitator</b>	<b>Measurement Tools</b>
<b>Activity 1:</b> Display materials for education/outreach purposes at significant county events. (County Fair, local festivals, fishing tournaments, etc.)	TIP, LCD, UWEX	5 Events/year.
<b>Activity 2:</b> Host and advertise for workshops geared toward specific audiences including: resort owners, guides, realtors, watercraft retailers, lakeshore/river property owners, bait dealers, county departments, chambers, local governments, and campground managers.	LCD, OCLO, TIP, UWEX	3 Workshops/year.
<b>Activity 3:</b> Present AIS information to classrooms, adult civic groups (Rotary, Lions), and children activity groups (4-H, Scouts).	LCD	5 Presentations/year.

<b>Objective 3: Provide information via easily accessible means to the public</b>		
<b>Activities</b>	<b>Facilitator</b>	<b>Measurement Tools</b>
<b>Activity 1:</b> Establish and build upon a county email list for communicating news on AIS issues.	LCD	Interested party addresses, unsolicited positive feedback.
<b>Activity 2:</b> Publish semi-annual AIS newsletters for local governments, lake associations, schools, state and federal agencies, media outlets, chambers, and other interested groups and individuals to be posted on LCD webpage and circulated among OCLO via email distribution.	LCD	Unsolicited positive feedback.
<b>Activity 3:</b> Provide AIS material such as <i>Through the Looking Glass: A Field Guide to Aquatic Plants</i> by Susan Borman; <i>Aquatic Plants of the Upper Midwest</i> by Paul W. Skawinski; and others for interlibrary loan to public libraries in Oconto County.	LCD	Distribute materials. Track usage through library check-out system.
<b>Activity 4:</b> Hold annual “Lake Fair” to discuss lake management issues including AIS updates.	LDC, OCLO, DNR	One lake fair annually.

## **Goal 5: Control the spread of existing aquatic invasive species found to be present in Oconto County waters.**

Once invasive species populations are identified and monitored, they must then be controlled and, where feasible, eradicated. Control programs should be aimed at both minimizing local populations and preventing new infestations in other areas. A coordinated early detection and rapid response protocol must be implemented to ensure new invasive species can be eliminated as a pioneer population before problems escalate. If control programs are delayed, control projects may become cost-prohibitive and too large to successfully control. It is important to recognize that all invasive species are unique and require different protocols to control. Proactive actions before and after implementing control projects is vital to the success of control efforts in Oconto County.

<b>Objective 1: Keep documentation of the infested waters in the county, the level of infestations and management.</b>		
Activities	Facilitator	Measurement Tools
<b>Activity 1:</b> Maintain documentation for the locations of infestations with the LCD. Utilize DNR maps and species distribution; enter data into DNR SWIMS database.	LCD, DNR	1 Complete inventory.
<b>Activity 2:</b> Coordinate with DNR to track/survey infestations and document management.	LCD, DNR	1 Complete inventory.
<b>Activity 3:</b> Communicate with lake groups about proactively addressing AIS, determining best management activities, and recording locations of AIS and types of management (manual, chemical, biological).	LCD, OCLO, DNR	1 Complete Inventory.
<b>Activity 4:</b> Promote PL beetle-rearing bio-control projects.	DNR, OCLO, LCD	Promote to schools, promote to lake groups to partner with youth groups, target lakes with reported PL infestations.
<b>Objective 2: Provide expertise on the available aquatic invasive species management options and management funding options via a website or easily accessible information.</b>		
Activities	Facilitator	Measurement Tools
<b>Activity 1:</b> Provide management options, possible funding sources, experts, contacts in state and federal agencies, and/or link to a DNR webpage on the county AIS webpage.	LCD	Annually updated webpage.
<b>Activity 2:</b> Encourage DNR and other partners to update their web pages to provide associations with the most current AIS science, management, and policy.	LCD, DNR	Up-to-date AIS DNR website.
<b>Objective 3: Provide decontamination stations for the on-site removal of AIS</b>		
Activities	Facilitator	Measurement Tools
<b>Activity 1:</b> Explore the feasibility of placing decontamination stations at locations with high potential for spreading AIS, e.g.: "super spreader" Lake Michigan (Bay of Green Bay).	LCD, OCLG, OCEDC, OC, OCLO, TIP, DNR	Pursue funding options: boat launch fees, grants, etc.

<b>Objective 4: Develop DNR-approved Rapid Response Plans for each AIS.</b>		
<b>Activities</b>	<b>Facilitator</b>	<b>Measurement Tools</b>
<b>Activity 1:</b> Provide guidance to organizations interested in Rapid Response Grants/Plans based on infestations.	LCD, OCLO	Develop Rapid Response templates for each AIS.
<b>Activity 2:</b> Work with the county and towns to address liability issues and grant sponsorship if the need arises.	LCD, OCLO	Develop 1 Liability reference sheet for county and towns.

## **Appendices**

### **Appendix A**

#### **Monitored AIS in Oconto County**

Listed below are the species prioritized for monitoring efforts in Oconto County based on AIS listed under Wisconsin's Invasive Species Rule (Chapter NR 40), local and regional concerns, and potential impact to the county's water resources.

- Asiatic clam (*Corbicula fluminea*)
- Banded mystery snail (*Viviparus geogianus*)
- Brittle water nymph (*Najas minor*)
- Brazilian waterweed (*Egeria densa*)
- Chinese mystery snail (*Cipangopaludina chinensis*)
- Curly-leaf pondweed (*Potamogeton crispus*)
- Eurasian water milfoil (*Myriophyllum spicatum*)
- Faucet snail (*Bithynia tentaculata*)
- Fishhook waterflea (*Cercopagis pengoi*)
- Flowering rush (*Butomus umbellatus*)
- Freshwater jellyfish (*Craspedacusta sowerbii*)
- Bighead carp (*Hypophthalmichthys nobilis*)
- Silver carp (*Hypophthalmichthys molitrix*)
- New Zealand Mudsnaails (*Potamopyrgus antipodarum*)
- Hybrid Eurasian/northern water milfoil
- Japanese knotweed (*Polygonum cuspidatum*)
- Phragmites (*Phragmites australis*)
- Purple loosestrife (*Lythrum salicaria*)
- Quagga mussel (*Dreissena bugensis*)
- Rainbow smelt (*Osmerus mordax*)
- Round goby (*Neogobius melanostomus*)
- Red swamp crayfish (*Procambarus clarkia*)
- Rusty crayfish (*Orconectes rusticus*)
- Water hyacinth (*Eichhornia crassipes*)
- Yellow floating heart (*Nymphoides peltata*)
- Zebra mussel (*Dreissena polymorpha*)

## **Appendix B**

### **Definitions**

#### **Invasive Species**

Aquatic invasive species (AIS) are non-native species that threaten the diversity and abundance of native species by reducing ecological stability of native ecosystems. The introduction of an invasive species is likely to cause economic, recreational, or environmental harm through adversely affecting human, animal, or plant health. AIS can be plants, animals, or pathogens. Typically predators, parasites, pathogens, and competitors keep AIS in check and create a balance. However, when transported to a new environment, these checks may no longer exist, giving invasive species an advantage to out-compete and displace native species. Wisconsin Statutes s.23.22 (1)(c) define invasive species as “non-indigenous species whose introduction causes or is likely to cause economic or environmental harm or harm to humans.” Wisconsin Statutes 40.02 (3m) further defines aquatic invasive species as “any invasive species that dwells in water or wetlands.”

#### **Timberland Invasive Partnership**

The Timberland Invasive Partnership (TIP) is a regional cooperative weed management area comprised of Oconto County, Shawano County, Langlade County, Menominee County, Menominee Indian Tribe of Wisconsin, the Stockbridge-Munsee Community, and a variety of governing bodies, organizations, and individuals from each partnering region. The goal of this organization is to encourage the development of local and regional partnerships among federal, state, county, local government agencies; tribal entities; private individuals; and various interested groups to manage invasive species. The Timberland Invasive Partnership regional associates share many common management concerns. This regional partnership allows resource managers to share technical expertise, experiences, and manpower in addressing cross-jurisdictional invasive species management.

#### **Clean Boats Clean Waters (CBCW) Program**

Through the Clean Boats, Clean Waters program, volunteers are trained to organize and conduct watercraft inspections. The watercraft inspection volunteers educate boaters on how and where invasive species are most likely to hitch a ride on the boat/equipment to other water bodies. These volunteers provide hands-on training at boat landings for the watercraft owner which shows the owner how to inspect their boat and trailer for invasive species. Volunteers also distribute informational brochures, collect data on each watercraft owner’s knowledge of AIS, and enter information gathered from the CBCW inspection form into the DNR statewide water resource database called the Surface Water Integrated Management System (SWIMS). Information from SWIMS has a variety of functions including determining the extent of invasive species, health of water bodies, locating boat landing, etc.

<http://www.uwsp.edu/cnr-ap/UWEXLakes/Pages/programs/cbcw/default.aspx>

## **Citizen Lake Monitoring Network (CLMN) Program**

The Citizen Lake Monitoring Network (CLMN) is a group of citizen science volunteers across Wisconsin. Volunteers collect various scientific data to track water quality; identify and map native plants; and identify and map aquatic invasive species data on local waterways throughout the state. In total, over 1,000 volunteers participate. The overall CLMN goals are to collect high quality data; to educate and empower local citizens; and to compile and share knowledge from collected data. Volunteers can collect a variety of data. Data collected may include water temperature, dissolved oxygen, water clarity, and various chemical information such as phosphorous, nitrogen, and chlorophyll levels. This data is used to track the long-term trophic status of lakes.

<http://www.uwsp.edu/cnr-ap/UWEXLakes/Pages/programs/clmn/default.aspx>

## **Project RED (Riverine Early Detectors)**

Wisconsin's rivers and streams are vulnerable to invasion by a number of invasive species. Early detection is essential for protecting these waterways. Linear flow within rivers and streams can cause invasive species to quickly spread along an entire stretch of river. Project RED (Riverine Early Detectors) is a collaborative monitoring program between the DNR, the National Institute for Invasive Species, various Wisconsin counties, and the River Alliance of Wisconsin to provide resident volunteers with the necessary tools to perform invasive species monitoring. The program trains volunteers to monitor rivers and streams via water craft including power boats where appropriate, canoe, kayak, or on foot. Volunteers are trained to identify 15 different invasive species. Project RED trainers are available to help volunteers choose locations, identify when to monitor and where for different invasive species, and develop a monitoring schedule that is convenient for the volunteer(s). Online data management tools are available through <http://www.citsci.org> that help participants report and map their findings. If an invasive species is identified on a river corridor, the River Alliance and DNR can help with eradication and containment efforts by providing funding and technical resources. <http://www.wisconsinrivers.org/our-work/project-red>

## **Lake Organizations**

There are two main types of lake organizations: lake associations and lake districts. Lake associations are voluntary groups. Lake districts are special purpose units of government. The same lake may have both a voluntary association and a public management district.

### **Lake Associations**

Lake associations are voluntary groups which may include unincorporated associations, qualified lake associations (incorporated associations), and nonprofit corporations. Lake associations can form without any formal requirements, although many incorporate under Chapter 181 of the Wisconsin Statutes to be eligible for state cost sharing grants. Associations have no power over lake community residents; membership and dues are voluntary. To be eligible for state lake planning, protection, and recreational boating facilities grants, a lake association must be "qualified," which includes being

incorporated and meeting other standards.

<http://www.wisconsinlakes.org/index.php/lake-organizations>

## **Lake Districts**

Lake districts are special purpose units of government, and include; public inland lake protection and rehabilitation districts, sanitary districts, special districts, and commissions formed by local governments. The purpose of a district is to maintain, protect, and improve the quality of a lake and its watershed for the mutual good of the members and the lake environment.

Lake districts are established by town, county or village boards, or city councils, and are usually based on a formal petition of lake area owners. Forming and operating lake districts must comply with Chapter 33 of the Wisconsin Statutes. The boundaries of a lake district usually include the property of all riparian owners and can include off-lake properties which benefit from the lake or affect the lake's watershed. The district may include all or part of a lake or more than one lake. A city or village must give its approval to be included in a district.

Lake districts are governmental bodies with elected or appointed leaders and annual budgets funded from tax levies or special assessments. Districts also have some capabilities to regulate lake use, such as local boating ordinances and sewage management. Within a lake district, all property owners share in the cost of management activities undertaken by the district. Residents who live in the district and are eligible voters and all property owners have a vote in the affairs of the district. This is accomplished at an annual meeting which must be held between May 22 and September 8 each year.

## Appendix C

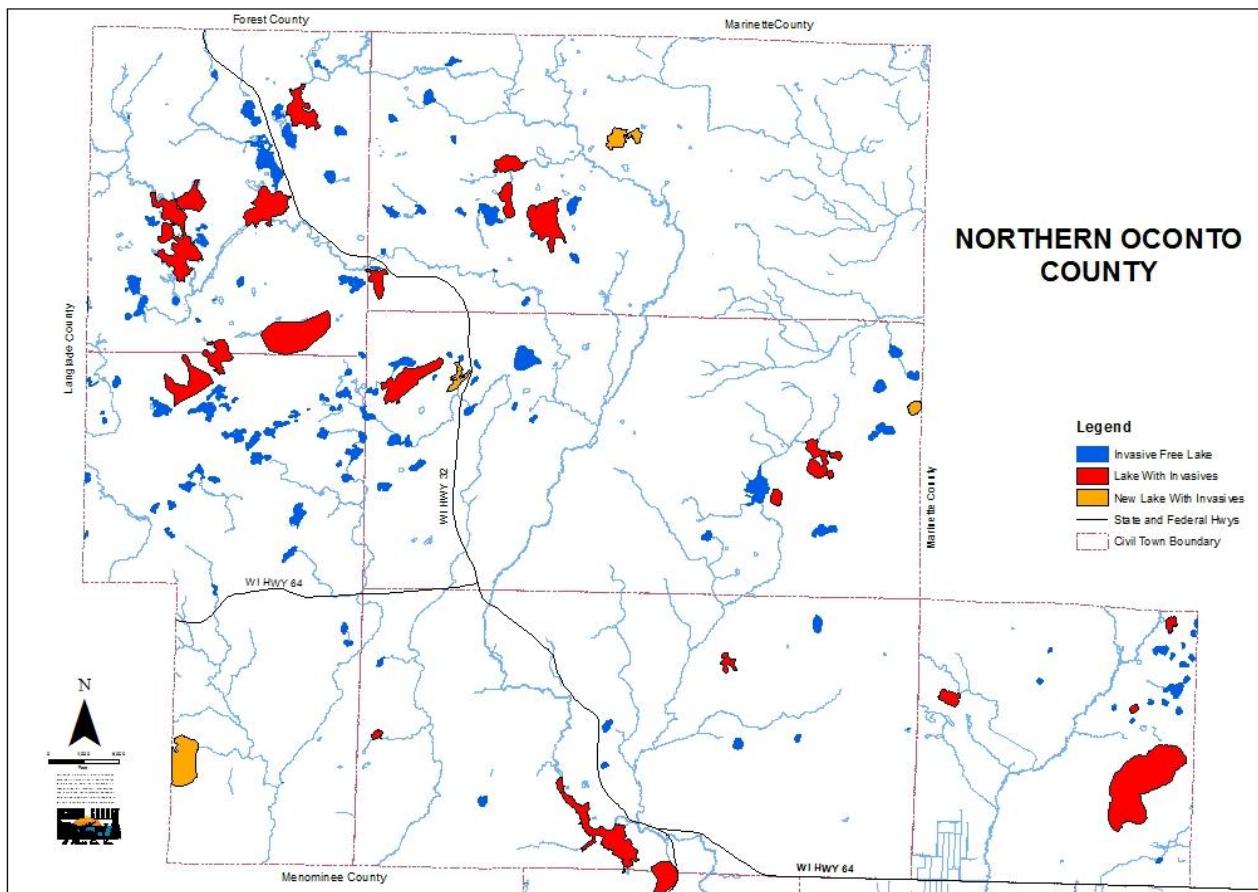
### AIS in Oconto County

❖ The 2013 complete list of water bodies containing documented and verified aquatic invasive species in Oconto County. <http://dnr.wi.gov/lakes/invasives/AISLists.aspx?species=&location=43>

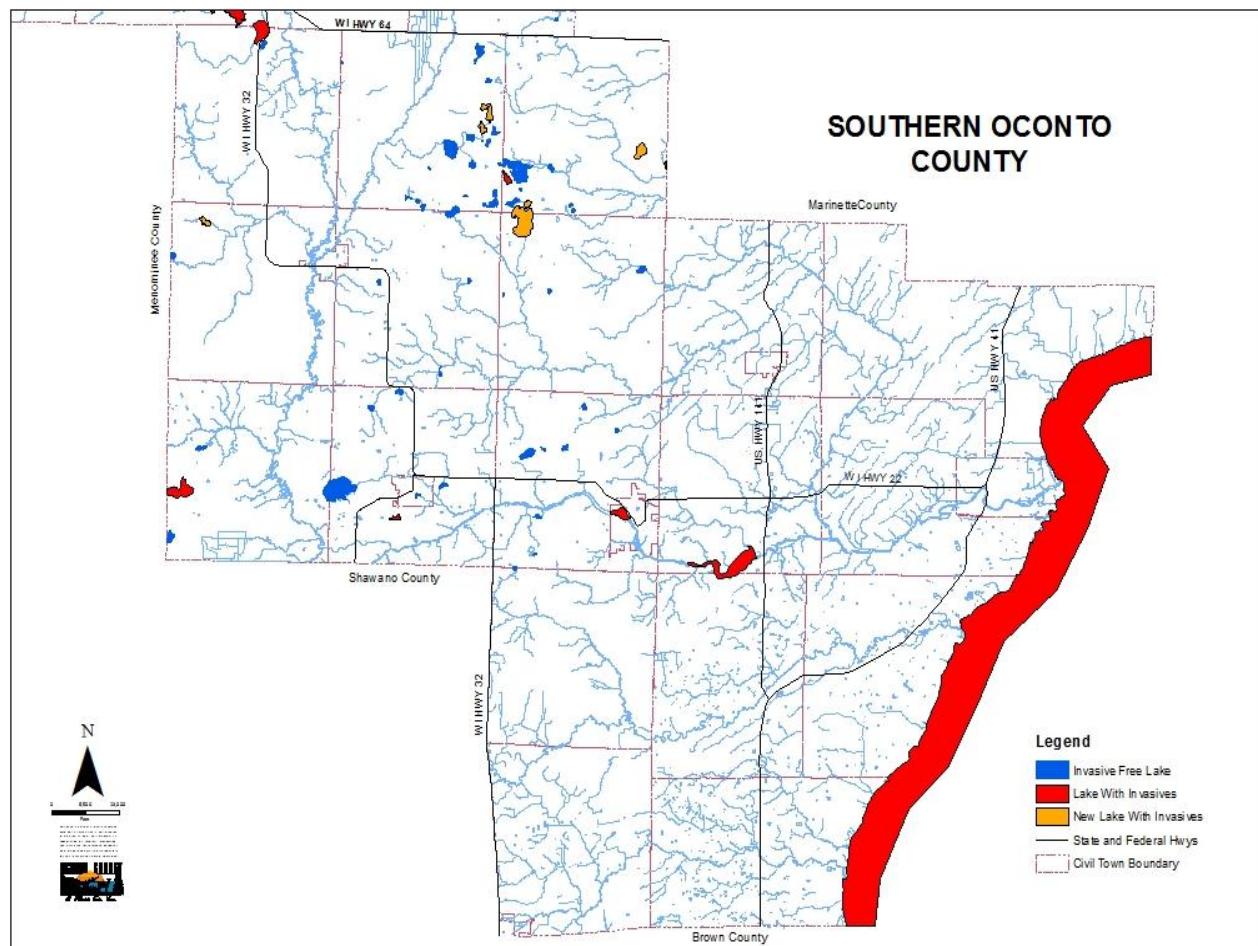
Waterbody Name	Aquatic Invasive Species	Waterbody ID Code (WBIC)
Anderson Lake	Rusty Crayfish	458700
Archibald Lake	Banded Mystery Snail, Flowering Rush, Eurasian Water-Milfoil	417400
Bass Lake (T32NR17ES22)	Eurasian Water-Milfoil	462400
Bear Paw Lake	Eurasian Water-Milfoil, Banded Mystery Snail	418000
Berry Lake	Freshwater Jellyfish, Hybrid Eurasian / Northern Water-Milfoil, Eurasian Water-Milfoil, Banded Mystery Snail	418300
Boot Lake	Banded Mystery Snail, Rusty Crayfish	418700
Boulder Lake	Eurasian Water-Milfoil	491800
Boundary Lake	Banded Mystery Snail	499000
Caldron Falls Reservoir	Eurasian Water-Milfoil, Banded Mystery Snail	515500,545400
Chain Lake	Rusty Crayfish, Banded Mystery Snail	464700
Chute Pond	Curly-Leaf Pondweed, Chinese Mystery Snail, Eurasian Water-Milfoil, Banded Mystery Snail	462520
Crooked Lake	Eurasian Water-Milfoil	462000
Daly Creek	Rusty Crayfish	444500
Explosion Lake	Banded Mystery Snail	466900
Finnegan Lake	Eurasian Water-Milfoil	420600
Gilkey Lake	Eurasian Water-Milfoil	462300
Green Bay	Eurasian Water-Milfoil, Sea Lamprey, Zebra Mussels, Purple Loosestrife, Phragmites, Rusty Crayfish, Spiny-Waterflea, Alewife, Round Goby, Eurasian Ruffe, Curly Leaf Pondweed	70
Grindle Lake	Chinese Mystery Snail	421600
Hayes Creek	Rusty Crayfish	481100
Horn Lake	Eurasian Water-Milfoil	467100
Hwy 41 / 141 - 1/2 mile S	Purple Loosestrife	

Waterbody Name	Aquatic Invasive Species	Waterbody ID Code (WBIC)
John Lake	Eurasian Water-Milfoil	470600
Kelly Brook	Rusty Crayfish	443800
Kelly Lake	Eurasian Water-Milfoil	446600
Lake Michigan	Eurasian Water-Milfoil, Sea Lamprey, Zebra Mussels, Purple Loosestrife, Phragmites, Rusty Crayfish, Spiny-Waterflea, Alewife, Round Goby, Eurasian Ruffe, Curly Leaf Pondweed	20
Linzy Creek	Rusty Crayfish	453400
Little River	Rusty Crayfish	441300
Machikanee Flowage	Flowering Rush, Curly-Leaf Pondweed, Zebra Mussel, Eurasian Water-Milfoil	448200
Maiden Lake	Rusty Crayfish, Eurasian Water-Milfoil, Banded Mystery Snail	487500
Mary Lake	Banded Mystery Snail	496300
McCaslin Brook	Rusty Crayfish	463600
Montana Lake	Chinese Mystery Snail, Eurasian Water-Milfoil	518300
Munger Lake	Eurasian Water-Milfoil, Banded Mystery Snail	470900
North Branch Little River	Rusty Crayfish	442800
North Branch Oconto River	Rusty Crayfish	457800
North Branch Suamico River	Rusty Crayfish	411400
Oconto Falls Pond	Eurasian Water-Milfoil, Chinese Mystery Snail, Zebra Mussel	449300
Oconto River	Zebra Mussel, Rusty Crayfish	440200
Oconto River - just NW of Hwy 41 bridg	Japanese Knotweed	440200
Oconto River - S of Hwy 22 and Cook Ave intersection	Purple Loosestrife	440200
Oconto River - SE of West, Mott, and Mill intersection	Japanese Knotweed	440200
Oconto River - SW of end of Farnsworth Ave	Purple Loosestrife	440200
Pecore Creek	Rusty Crayfish	481000
Pensaukee River	Rusty Crayfish	412900
Peshtigo Brook	Rusty Crayfish	454600
Peshtigo River	Rusty Crayfish	515500

Waterbody Name	Aquatic Invasive Species	Waterbody ID Code (WBIC)
Pickerel Lake	Chinese Mystery Snail	457300
Pickerel Lake	Banded Mystery Snail, Chinese Mystery Snail	474900
Reservoir Lake	Banded Mystery Snail, Eurasian Water-Milfoil, Hybrid Eurasian / Northern Water-Milfoil, Chinese Mystery Snail	466700
Rost Lake	Chinese Mystery Snail	504300
Round Lake - Oconto Co	Eurasian Water-Milfoil	446700
Shay Lake	Chinese Mystery Snail	456765
South Branch Oconto River	Rusty Crayfish	480900
Star Lake	Banded Mystery Snail	427900
Temple Lake	Banded Mystery Snail	485200
Tibbet Creek	Rusty Crayfish	412300
Townsend Flowage	Chinese Mystery Snail, Banded Mystery Snail, Eurasian Water-Milfoil	465000
Ucil Lake	Chinese Mystery Snail	455400
Underwood Lake	Eurasian Water-Milfoil, Chinese Mystery Snail	519700
Waubee Lake	Chinese Mystery Snail	439500
Wescott Lake	Banded Mystery Snail	455300
Wheeler Lake	Eurasian Water-Milfoil, Chinese Mystery Snail	439800
White Potato Lake	Rusty Crayfish	515100
Winslow Lake	Hybrid Eurasian / Northern Water-Milfoil	486200
Wiscobee Lake	Chinese Mystery Snail	481700



AIS present in Northern Oconto County: Map 1



AIS present in Southern Oconto County: Map 2

## Appendix D

### Wisconsin AIS Regulation and Enforcement

Boaters are asked by Clean Boats, Clean Waters watercraft inspectors if they are “aware” of AIS laws. Since 2008, over 90% of respondents in Oconto County have indicated their awareness of current state regulations. Though the majority of individuals in Oconto County are aware of the AIS regulation laws, individual practices are not necessarily being undertaken to prevent the spread of invasive species. Oconto County and many lake residents believe that additional enforcement efforts are needed to complement existing educational activities.

The State of Wisconsin has regulatory measures in place for invasive species violations. Administrative Code NR40 includes many provisions addressing possession, transportation, and introduction of invasive species with maximum penalties of over \$2,000. This document includes a short list of fineable activities in the state of Wisconsin as of January 2013, please see the full list of violations here: <http://dnr.wi.gov/topic/Invasives/documents/AISBondSchedule6.2013.pdf>

### Aquatic Invasive Species Statute Guide as of January 2013

All minimum and maximum penalties have court cost included

#### NR CHAPTER 40 – INVASIVE SPECIES

**NR 40.04(3):** Transport, possess or transfer a prohibited invasive species

**Citation Penalty Amount \$295.00 Maximum \$389.50 (K-1) \*\***

**NR 40.04(3):** Introduce a prohibited invasive species

**Citation Penalty Amount \$389.50 Maximum \$389.50 (K-2) \*\***

**NR 40.05(3):** Transport, possess or transfer a restricted invasive species

**Citation Penalty Amount \$295.00 Maximum \$389.50 (K-3) \*\***

**NR 40.05(3):** Introduce a restricted invasive species

**Citation Penalty Amount \$389.50 Maximum \$389.50 (K-4) \*\***

**N4 40.07(2):** Failure to remove all aquatic plants or aquatic animals attached to, or drain all water from, any vehicle or equipment (other than boating or fishing equipment) immediately after removal from the water, and before leaving a boat launch or associated parking area. *[also see NR 19.055(1)]*

**Citation Penalty Amount \$200.50 Maximum \$389.50 (W-35) \*\***

**NR 40.07(3):** Transporting over land from another state any vehicle or equipment (other than boating or fishing equipment) for use on waters of the state without first removing all attached aquatic plants and aquatic animals and draining all water before entering the state. *[also see NR 19.055(2)]*

**Citation Penalty Amount \$232.00 Maximum \$389.50 (W-29) \*\***

**NR 40.07(4)**: Operate a vehicle, watercraft or other object of any kind in any wetland or non-navigable water of the state if the vehicle, watercraft or other object has an aquatic plant or aquatic animal attached to the exterior.

**Citation Penalty Amount \$295.00 Maximum \$389.50 (W-30) \*\***

**NR 40.07(6)**: Using a live prohibited fish invasive species as fishing bait.

**Citation Penalty Amount \$358.00 Maximum \$389.50 (K-8) \*\***

**NR 40.07(6)**: Unlawful use of live non-native crayfish for bait on inland or outlying waters.

**Citation Penalty Amount \$187.90 Maximum \$389.50 (K-8) \*\***

\*\* For any Intentional violations of the above listed NR 40 offenses are crimes = Shall be fined not less than \$1,000 nor more than \$5,000, or shall be imprisoned for not less than 6 months nor more than 9 months or both.

**CRIME: Bail \$500**

\*\* For any 2nd or subsequent violations of the above NR 40 offenses within 5 years are crimes = Shall be fined not less than \$700 nor more than \$2,000 or shall be imprisoned for not less than 6 months nor more than 9 months or both.

**CRIME: Bail \$500**

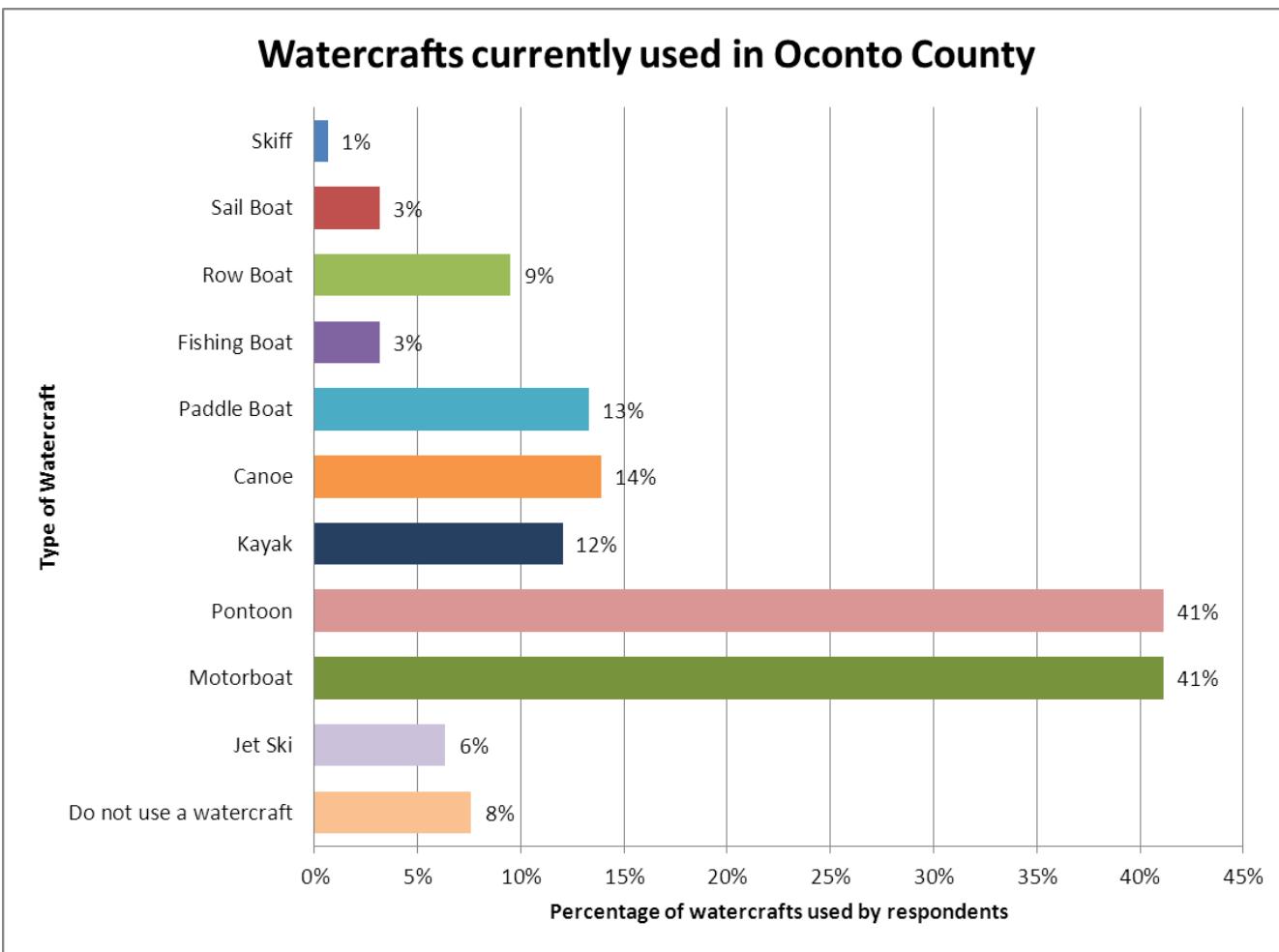
## Appendix E

### Oconto County AIS Survey

On February 13, 2014 the LCD sent out approximately 300 Aquatic Invasive Species Surveys to shoreline property owners with residence on populated lakes in Oconto County through mail. On the same day an email was sent to the Presidents of known lake organizations in Oconto County encouraging them to send a copy of the survey via email to their membership which was to be returned to the AIS Coordinator electronically. Approximately 155 surveys were returned and recorded, of these, 12 were received by the county via email; the remaining 143 surveys were returned through mail. The following information is based on the responses of those who chose to participate in this survey. Complete AIS Survey results are available upon request from the LCD office.

**Question: What type(s) of watercraft(s) do you currently use in Oconto County? Please circle all that apply.**

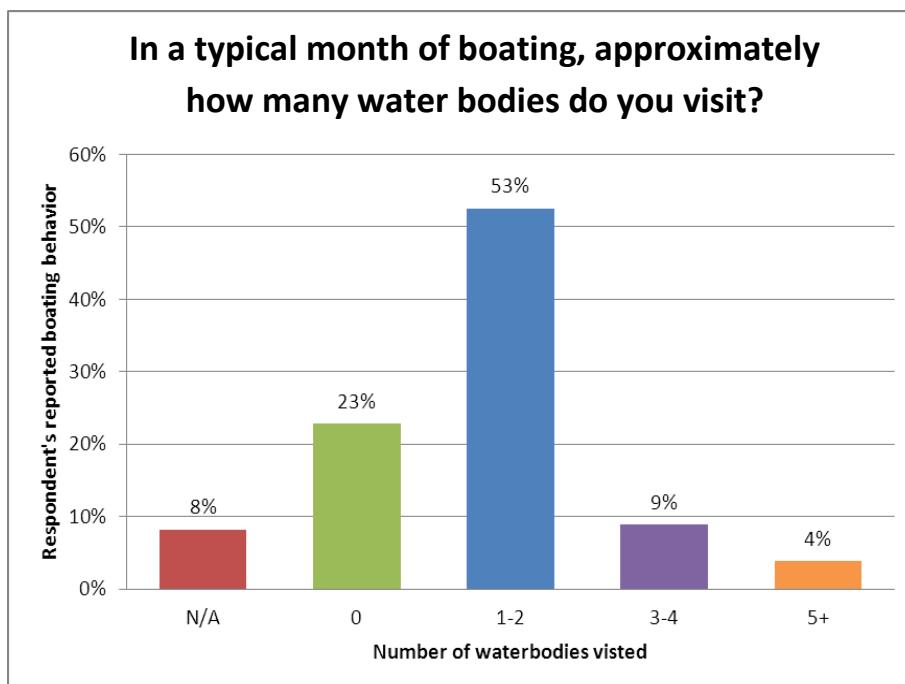
- a. Do not use watercraft
- b. Jet ski (personal watercraft)
- c. Motorboat
- d. Pontoon
- e. Other



**Figure 1: Watercrafts currently used in Oconto County**

**Question: If you have a watercraft, in a typical month of boating, approximately how many water bodies do you visit?**

a. 0      b. 1-2      c. 3-4      d. 5+



66% of surveyed Oconto County residential boaters reported visiting one or more water bodies over a typical month of boating.

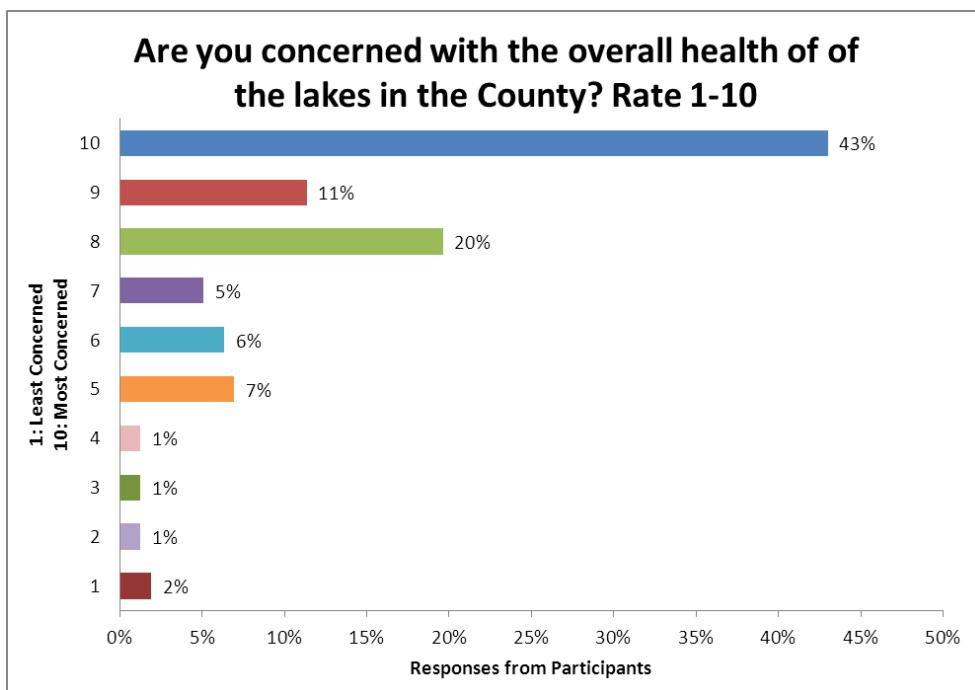
**Figure 2: Water bodies visited in a typical month of boating**

**Question: Are you concerned with the overall health of the lake in Oconto County i.e. water quality degradation shoreline erosion, AIS, algae blooms, etc.?**

**Please rate 1-10 with 1 being not concerned and 10 being very concerned.**

**Comments**

1      2      3      4      5      6      7      8      9      10



74% of surveyed Oconto County waterfront residences reported significant concern for the overall health of Oconto County lakes.

**Figure 3: Lake Health**