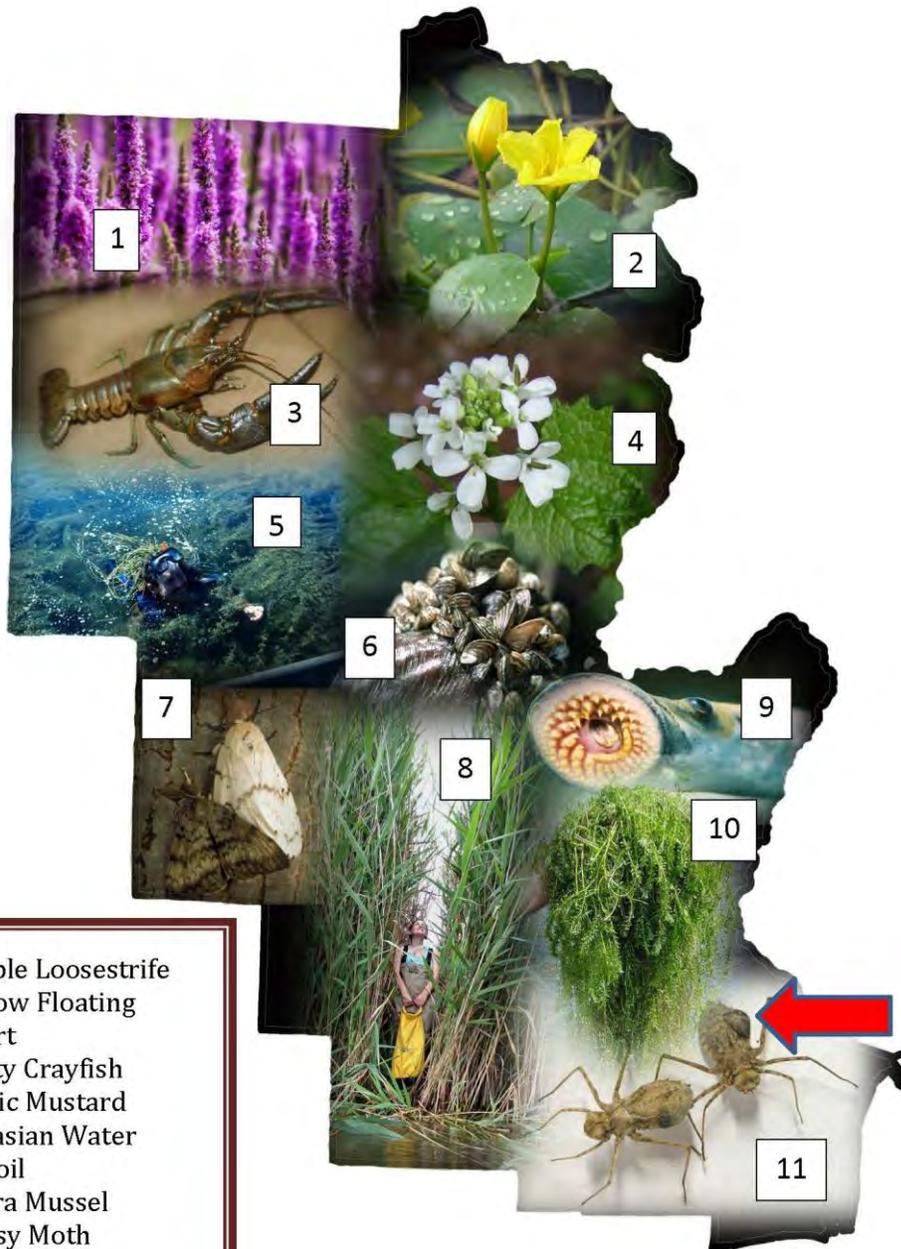


Marinette County Invasive Species Strategic Plan





1. Purple Loosestrife
2. Yellow Floating Heart
3. Rusty Crayfish
4. Garlic Mustard
5. Eurasian Water Milfoil
6. Zebra Mussel
7. Gypsy Moth
8. Phragmites
9. Sea Lamprey
10. Hydrilla
11. Zebra Mussel attached to dragon fly nymph exoskeleton

Acknowledgements

Marinette County Land Information Committee

Ted Sauve – Chair

Joe Policello – Vice Chair

Robert Holley – Member

Alice Baumgarten – Member

Laurence Nichols – Member

Clancy Whiting - Member

John Fendryk – Farm Services Agency Representative

Marinette County Land Information Department

Greg Cleereman – County Conservationist, Land and Water Conservation Division

Ryan Parchim – Aquatic Invasive Species Coordinator

Tim Oestreich – Geographic Information System Coordinator

Chuck Druckrey – Surface Water Specialist, Land and Water Conservation Division

Anne Bartels – Education Specialist, Land and Water Conservation Division

Aleta DiRienzo – Program Assistant, Land and Water Conservation Division

Table of Contents

Contents

Land Information Department Mission	5
Purpose.....	5
Partners	6
Surface Water Resources.....	8
Land Resources	9
Exotic species	11
Marinette County Efforts	15
Plan Priorities.....	18
A. Prevention	18
B. Detection.....	18
C. Rapid Response	18
D. Control.....	18
E. General	18
Priority Objectives	19
Appendix 1: Boat Landing Locations.....	20
Appendix 2: Water Bodies Known to Contain AIS	21
Appendix 3: Known Phragmites Locations.....	22

Land Information Department

Mission

The design, development and implementation of a Land and Geographic Information system that contains and integrates all land records within Marinette County to aid property owners, businesses and government agencies with the information necessary to make wise land use decisions for the promotion of the public health, safety, and general welfare of all who live in or visit Marinette County, as well as the protection of the natural resources of the County.

The Land and Water Conservation Division (LWCD) of the Land Information Department is responsible for implementing Marinette County policies and programs related to invasive species management.

Purpose

Marinette County is renowned for abundant natural resources. Clean rivers and lakes, good fishing, State and County Parks, a huge county forest, famous waterfalls, miles of trails, and many other attractions lure hundreds of thousands of outdoor enthusiasts from across the Midwest each year. Unfortunately, each visitor has the potential to introduce or spread invasive species. The Menominee River runs along the entire northeast border of the county. The Peshtigo River and its six flowages bisect the county. Any introduced invader has the potential to spread downstream quickly. These rivers drain into Green Bay, home to dozens of invasive species.

Although Marinette County is allocating significant resources to battling invasive resources, it is not enough. To protect the lakes, streams, fish, wildlife, and natural scenic beauty we value we will have to work together. This plan lays out how we can increase awareness of invasive species to prevent their introduction. It describes new tools and techniques to eradicate pioneer infestations before they spread. Finally, it identifies the tools for minimizing the impacts of existing populations of invasive species.

Partners

Prior to the Revolutionary War, Ben Franklin warned his co-revolutionaries, “If we do not hang together, we shall surely hang separately.” In the war against invasive species, allies are also critical. No single entity has the resources to battle invasive species alone. Several of our important partners are listed below.

Private Landowners

Private landowners are on the front lines in the battle against exotic invasive species. Sometimes, they are responsible for moving invasive species. In many, many more instances, they are paying the consequences for others actions. Preventing and controlling invasive species is only possible with active cooperation and help from private landowners and citizens. Marinette County had been fortunate to work with many individuals that want to control invasive species on their land and in their lake. Many people have volunteered time to inspect watercraft, report new species, and teach others about invasive species.

Wisconsin Department of Natural Resources

Since 1991, the DNR has provided more than \$800,000 for 30 Marinette County Lake and Aquatic Invasive Species projects. DNR staff assist the LWCD in the field and provide modeling, mapping, and other support. Marinette County has been an active participant in several DNR sponsored projects, especially Phragmites and Japanese Knotweed control.

Wild Rivers Invasive Species Coalition

Marinette County is a member of the Wild Rivers Invasive Species Coalition (WRISC). WRISC is a partnership between Marinette, Florence, Forest, Menominee, and Dickinson Counties; state and federal agencies, lake groups, and concerned citizens. Because invasive species often disperse widely across the landscape and jurisdictional boundaries, this cooperative partnership combines multi-agency resources and expertise to coordinate public education, work-group activities, control methods and promote best management practices to help slow their spread.

The Menominee River Watershed Inventory Project

Implemented by WRISC, the main project goal is to compile and prioritize invasive species infestations across geopolitical boundaries of the Menominee River Watershed. All invasive species documented during this project will be submitted to the regional database, Midwestern Invasive Species Information Network ([MISIN](#)). The project focuses on mapping Purple Loosestrife, Phragmites, European Swamp Thistle, Japanese Barberry, Autumn Olive, Tansy, Japanese Knotweed, Common and Glossy Buckthorn, Eurasian/Hybrid Watermilfoils, and Zebra Mussels. Data collected from this project will help WRISC prioritize control efforts.

Local Units of Government

Marinette County has worked with the several local units of government on Eurasian Water Milfoil and Gypsy Moth control projects. The Town of Stephenson has even appropriated money to assist local lake groups with invasive species control.

Non-Governmental Organizations

Seven lake associations and districts have worked with the LWCD on Gypsy Moth spraying and Eurasian Water Milfoil control projects, and development of whole lake management plans. All Lake Management Plans incorporate an aquatic invasive species identification and rapid response components. Beecher Lake District has also participated in a drawdown to control Milfoil. The LWCD encourages the formation of associations and districts to facilitate better invasive species management and control.

Surface Water Resources

Lakes

Marinette County contains 442 lakes covering 13,735 surface acres. These vary in size from 2,409 acre Lake Noquebay to small pothole lakes less than 2 acres. Ninety-six percent of county lakes are less than 100 acres in size. Ninety-two percent are less than 50 acres in size. Seventy percent of all Marinette County Lakes are less than 10 feet deep, while eighty-three percent are less than 20 feet deep.

Of the 442 lakes found in Marinette County, 125 have all or some of their shoreline in public ownership. There are 320.35 miles of lake shoreline. With the purchase by the WDNR of Wisconsin Public Service lands adjoining the Peshtigo River Flowages, ninety-one miles, or twenty-eight percent are publicly held.

Streams

Marinette County contains 304 rivers and streams with a total surface area of 4,700 acres and a total length of 920 miles. There are 191 rivers and streams (totaling 614 miles) classified as trout water, the highest numbers in the state.

Marinette County has more stream miles of Exceptional (ERW) or Outstanding Resource Waters (ORW) than any other county in the state. ERW and ORW are designations given to Wisconsin's highest quality water bodies and receive special protection levels from "point source pollution" degradation. Point source pollution originates from discrete sources such as industrial or wastewater outflow from a pipe.

The Peshtigo and Menominee are the two largest rivers in the county. The Menominee River flows for 119 miles and drains 4,150 square miles of Wisconsin and Upper Michigan. The Peshtigo River flows for 144.8 miles, draining 1,155 square miles. The Lower Menominee River in the City of Marinette is an Area of Concern designated by the US Environmental Protection Agency. The Peshtigo River and especially the Menominee River originate from, or drain significant portions of, land outside of Marinette County. This leaves Marinette County to some extent, dependent on good environmental decisions and land use outside of local control.

In recent years, land use changes and long-term drought have led to water quantity and quality issues. Low stream flows and lake water levels have affected access to lakes and rivers. Low water levels and high temperatures have generally been a boon to the growth of aquatic plants, especially invasive species such as Eurasian Water Milfoil.

Wetlands

The State Legislature defined Wisconsin's Wetlands in 1978 as "An area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic (water-loving) vegetation and which has soils indicative of wet conditions."

Wetlands perform a number of important functions and provide diverse habitat for hundreds of fish, wildlife and plant species.

According to research by Joy B. Zedler and Suzanne Kercher, from the Botany Department, University of Wisconsin–Madison, “Wetlands seem to be especially vulnerable to invasions. Even though ≤6% of the earth’s land mass is wetland, 24% (8 of 33) of the world’s most invasive plants are wetland species. Furthermore, many wetland invaders form monotypes, which alter habitat structure, lower biodiversity (both number and “quality” of species), change nutrient cycling and productivity (often increasing it), and modify food webs. Wetlands are landscape sinks, which accumulate debris, sediments, water, and nutrients, all of which facilitate invasions by creating canopy gaps or accelerating the growth of opportunistic plant species.”

Marinette County contains 212,997 acres of wetlands, about 4% of the total Wisconsin acreage. Wetlands cover greater than twenty-three percent of Marinette County. Purple Loosestrife (*Lythrum salicaria*) and Giant Reed (*Phragmites Australis*) are two of the more problematic invaders of Marinette County wetlands.

Land Resources

Forest

According to the land use inventory of Marinette County, there are a total of 681,102 acres of woodlands within Marinette County. Aspen, in combination with paper birch and red maple, is the most common forest type comprising 43 percent of the total forest acreage. Marinette County contains several relatively rare ecosystems, especially pine barrens. Some of the dominant forest tree species, such as aspen, oak, and red pine, are highly susceptible to defoliation by Gypsy Moths.

Marinette County Forest

The *Marinette County Forestry 15 Year Plan* identifies 231,675 acres of county forest. The forest is composed of 402 management compartments ranging in size from 140 acres to nearly 1,800 acres. Within the county forest boundaries, approximately 82 percent of the land is county-owned with most of the remaining 18 percent in small private holdings. The Marinette County Forest ranks as the second largest county forest in Wisconsin. There are almost 228 miles of forest roads. ATV riders have access to 332 trail miles, predominantly on county forest.

Peshtigo River State Forest

The Peshtigo River State Forest’s forest is part of a complex ecosystem, with a mix of biotic communities that provide habitat for a diversity of plants and animals. Most uplands have dry sandy soils that can support red and white pine, aspen, white birch, scrub oak, and jack pine forest communities. A few upland areas have loamier soils that support more mesic forest communities containing red oak.

Scattered wetlands and lakes on the property help protect water quality and provide habitat for a variety of fish, birds, insects, and plants, including many rare species.

About 92% of the Peshtigo River State Forest is uplands, 7% is wetlands, and 1% is exposed bedrock.

Governor Thompson State Park

In 2000, the Department of Natural Resources acquired 1,987 acres of land comprising Paust's Woods Lake Resort, plus about 200 acres of adjacent land fronting on Caldron Falls Reservoir from Wisconsin Public Service Corporation (WPS). Together, these two properties formed the core of the new Governor Thompson State Park. Since its establishment, three additional tracts of land were purchased, bringing the park to 2,415 acres. To provide for the long-term protection of key park resources and allow for improved delivery of recreational opportunities, the park boundary will be expanded by about 1,720 acres to a total 4,135 acres. Portions of the Peshtigo River State Forest along Caldron Falls Reservoir adjacent to the park will be included within the state park.

Development includes a modern 100-site campground, rustic walk-in campsites along Caldron Falls Reservoir, an indoor group camp, and an outdoor group camp. More than 20 miles of trails will include hiking, cross-county skiing, bicycling and snowmobiling. The existing boat landing has already been improved to provide better access to the reservoir.

Menominee River Natural Resources Area

Starting in 1997, the States of Wisconsin and Michigan purchased lands along the Menominee River from the Richard King Mellon Foundation, The Conservation Fund, Wisconsin Public Service Corporation and the Wisconsin Electric Power Company. Combined, these lands encompass a 17-mile stretch of undeveloped riverway surrounded by 9,767 acres of public land. The existing project protects 1,962 acres. Much of the area is forested with aspen, pine, oaks and swamp conifers.

The area lies within the Northeast Sands Ecological Landscape for which the Wisconsin Land Legacy Plan and Wisconsin Wildlife Action Plan have identified many unique conservation opportunities for a variety of species and habitats unique to Northeast Wisconsin.

Peshtigo Harbor Unit

Peshtigo Harbor Unit is part of the Green Bay West Shores Wildlife Area, a 4,894 acre property located in Marinette County. This area has extensive marshes at the mouth of the Peshtigo River and bottomland hardwood forests along upstream portions of the river. A little over half of the property is forested with a mixture of oak, aspen and red maple.

The Bloch Oxbow and Pines State Natural Area lies on a level sandy upland a few feet above the floodplain of the Peshtigo River, 2 miles upstream of its confluence with Green Bay. It protects one of the best remaining examples of northern dry-mesic forest - a type that was formerly widespread in northeastern Wisconsin, but is now reduced to small, often degraded remnants. Canopy dominants are red oak and red maple with super canopy white pine to 36 inches diameter at breast height. Bordering the Peshtigo River is a floodplain forest at the extreme northeastern edge of its range in Wisconsin.

Exotic species

Invasive exotic species have become a threat to northern forests (Gypsy Moths, Emerald Ash Borer, Japanese Knot-weed), lakes (Eurasian Water Milfoil, Zebra Mussels), and wetlands (Phragmites, Purple Loosestrife). Because our natural resources are so critical to tourism and quality of life, these exotic invaders threaten the economy of Marinette County by impeding navigation and use of our lakes and streams, and reducing native species diversity.

Exotic species have the ability to invade natural systems and dominate, and even sometimes eliminate, native competitors. Introduced species may compete directly with native species for nutrients, sunlight, or space. They also compete indirectly by altering the food web or physical environment. Native species with limited population size or range are particularly at risk. According to a Nature Conservancy report, exotic species have contributed to the population decline of 42 percent of threatened or endangered species in the U.S. Many exotic species pose a threat to agricultural areas, urban parks, yards, and roadsides.

Aquatic Invasive Species

Thirty-six Marinette County lakes and streams are known to contain Aquatic Invasive Species (AIS), an increase of six since 2010. Table 1 lists these water bodies and their known AIS.

Nutrient laden runoff from crop fields, failing septic systems, urban areas, and construction sites exacerbate aquatic invasive plant problems. Phosphorus from this runoff can support growth of exotic aquatic plant species, and sometimes native species, to nuisance levels. Marinette County will continue to help Lake Groups comply with WDNR Administrative Code Chapter NR 109, which requires creation of an aquatic plant management plan for each water body where extensive aquatic plant management is proposed.

With the growing popularity of water gardens, the likelihood of noxious AIS arriving in Marinette County along with out of state plants grows exponentially. In 2007, *Hydrilla verticillata* and Yellow Floating Heart (*Nymphoides peltata*) were discovered in a private pond. Using aggressive management techniques, was eradicated, but control of Yellow Floating Heart continues. The LWCD will continue to work closely with the WDNR Lakes and AIS Programs to respond quickly and eradicate these noxious plants where possible. The LWCD will also continue to focus on boater and landowner education to increase public awareness of the threat posed by these plants, as well as how to recognize them and prevent their spread.

Appendix 1 shows the locations of the boat landings in Marinette County. Boats and trailers that move between water bodies are vectors for transport of plant fragments of Eurasian water milfoil (EWM). Until EWM fragments are totally dry and dead, they remain viable and may result in a new infestation. Zebra mussels, which inhabit Green Bay and Lake Noquebay, survive as near microscopic larvae in bilges, live wells, and water trapped in boat trailers. Because of this ability, the LWCD and WDNR monitor

boat landings for new infestations. Appendix 2 shows water bodies known to contain AIS and lists the infested water bodies and what AIS they contain.

Common Reed (*Phragmites australis*) has become a particular nuisance for property owners in the City of Marinette and Town of Peshtigo along the shore of Green Bay. From 2010 to 2012 Marinette County participated in a Great Lakes Restoration Initiative grant project led by WDNR. More than 300 County landowners participated in the project. Almost 750 acres, along 15 miles of shoreline, were treated with herbicide.

Although the majority of the *Phragmites* infestations are along Green Bay and in Peshtigo Harbor, it is also moving inland. Isolated colonies exist in road ditches and wetlands across the southern half of the county. Appendix 3 shows known inland *Phragmites* locations as of 2013.

Table 1: Water Bodies Containing AIS as of January 2014

x = present	Eurasian Water Milfoil	Zebra Mussel	Rusty Crayfish	Banded Mystery Snail	Chinese Mystery Snail	Curly Leaf Pondweed
Bagley Flowage	x	x				
Barnes Lake	x					
Beaver Creek			x			
Beecher Lake	x			x		
Caldron Falls Reservoir	x			x		x
Chalk Hill Flowage	x	x				
Glen Lake				x	x	
Grand Rapids Flowage	x	x				
Green Bay (Source	x	x	x	x	x	x
High Falls Reservoir	x		x			
Hilbert Lake			x			
Johnson Falls Flowage			x			
Lake Mary	x					
Lake Noquebay		x		x		
Left Foot Lake				x		
Lindquist Lake				x		
Little Newton Lake	x			x		
Little Peshtigo River			x			
Menominee River	x	x	x			
Montana Lake	x				x	
Nelligan Lake					x	
Peshtigo Flowage	x	x		x		
Peshtigo River	x	x	x	x	x	
Phillips Lake	x					
Pike River			x			
Rat River			x			
Rosebush Lake	x	x				
Sandstone Flowage	x					
Scott Flowage, Lower	x					x
Scott Flowage, Upper	x					x
South Branch Little			x			
Thunder Lake	x					
Twin Bessies	x					
Upper Lake	x					
White Rapids Flowage	x	x				
Wiggans Lake					x	
	Totals					
36	23	10	11	10	6	3

Terrestrial Invasive Species

Garlic mustard, a scourge of upland mesic forest, exists in several Marinette County locations. Primarily through the work of WDNR Forestry and UW- Extension staff, these infestations are currently under control. Other terrestrial forest invasive species include but are not limited to: Japanese Barberry, Oriental Bittersweet, Glossy Buckthorn, Autumn Olive, Japanese Knotweed, European Marsh Thistle, Asian Honeysuckle, and Common Buckthorn.

State parks are recognized vectors for the spread of terrestrial invasive species. As usage of the Tommy G. Thompson State Park increases, with visitors from across the Midwest, introduction of Garlic Mustard and other invasive exotic plants is a certainty. Vehicles, logging activity, and even hiking can spread terrestrial invasive species. Transporting wood, from outside the area, to the cabin or campsite for an evening fire can introduce or spread Gypsy Moths, Emerald Ash Borer, or Asian long Horn Beetle. Garden plants may turn out to be highly invasive. Even introduced soil can harbor the next big problem invader.

Marinette County Efforts

Aquatic Invasive Species

Marinette County has working to control invasive species since 1990. Over that time span, DNR grants funded sixteen LWCD led AIS projects. The Table 2 below lists those Lake and AIS projects.

Grant No	Formal Name	Start Date
LPL-563	Peshtigo Flowage Riparian Study and Education	1-Oct-98
ALPL-017-04	Aquatic Invasive Species Study	1-Apr-04
LPL-1043-05	Sandstone Flowage Aquatic Plant Inventory	1-Apr-05
LPL-1005-05	Thunder Lake Aquatic Plant Management Plan Development	1-Apr-05
AIRR-033-08	Hydrilla Rapid Response Project Phase 1	2-Aug-07
AIRR-031-08	Newton Lakes EWM Rapid Response Project	3-Dec-07
AEPP-138-08	Beecher Lake AIS Education & Prevention Project	1-Apr-08
AEPP-171-09	AIS Coordinator Project	1-Oct-08
SPL-204-09	Sandstone Flowage APM Planning Project	1-Apr-09
AEPP-195-10	Peshtigo Flowage AIS Education, Planning & Prevention Project	1-Oct-09
ACEI-073-10	Beecher Lake EWM Control Project	1-Oct-09
AEPP-288-11	CBCW and AIS monitoring	1-Apr-11
ACEI-111-12	Sandstone Flowage AIS Control	1-Oct-11
ACEI-112-12	Marinette County Hydraulic Conveyor Project	1-Apr-12
AEPP-361-12	AIS Coordinator	1-Apr-12
AIRR-135-13	Yellow Floating Heart Rapid Response Control Project	1-Jul-13

Early AIS projects helped lake groups develop management plans for specific water bodies. At that time, the species of greatest concern was Eurasian Water Milfoil (*Myriophyllum spicatum*). As capability increased in these organizations, and as grant funding evolved, active management such as education and control became the focus.

In 2007, at the request of the DNR, Marinette County applied for Rapid Response grants to control Hydrilla (*Hydrilla verticillata*), which had been discovered in a private pond, and Eurasian Water Milfoil, discovered in Little Newton Lake. This new grant source provided the vital resources needed to control infestations while still small enough to be potentially eradicated.

Due to an increasing workload, in 2009 an AIS coordinator was funded and hired. The additional help proved critical to implementing a \$806,000 2010 Great Lakes Restoration Initiative grant to control Phragmites (*Phragmites australis*) along the shore of Green Bay. DNR was the grant sponsor, but partner counties contacted local landowners, provided outreach and other support activities. Without the additional staff, Marinette County could not have made the hundreds of contacts, maps, and educational effort the project called for.

Other major efforts by the Aquatic Invasive Species coordinator include:

- Updated AIS signage on 70+ boat landings
- Clean Boats Clean Waters trainings
- Participation in the formation of the Wild Rivers Invasive Species Coalition
- Citizen Lake Management Network workshops
- Mapping of inland Phragmites and Japanese Knotweed infestations
- Applying for and implementing the 3 year Watercraft Inspectors project

The AIS Coordinator was heavily involved with the creation of the Wild River Invasive Species Coalition (WRISC) and served on the board of directors. WRISC augmented the 2011 Clean Boats Clean Waters Inspectors grant with six-hundred additional hours and also provided a power washer for 2012. The LWCD continues to collaborate with WRISC on joint projects.

Aquatic Invasive Species grants also funded innovative management techniques. In 2011, the Beecher Lake District followed up herbicide treatments of Eurasian Water Milfoil (EWM) in Beecher and Uppers Lakes with a drawdown to freeze out the invasive plants. County staff designed and helped install siphons on dam that made this option possible. The Lake District is moving forward with efforts to install a low-level drain and dredge a portion of the lake to make future drawdowns easier.

A 2012 grant funded a hydraulic plant harvester mounted on a pontoon boat. This equipment gives the LWCD a real AIS rapid response capability. The harvester can also follow up aquatic herbicide applications where the remaining plants are small and scattered.

Terrestrial Invasive Species

Gypsy Moths are the only terrestrial invasive species the LWCD has actively worked to control. From 2002 to 2008, the LWCD locally supervised the WDNR Gypsy Moth Suppression Program, which provided 50% cost sharing to Marinette County (for cost sharing) and participating landowners (for spray costs). At its peak in 2003, the program sprayed more than 14,000 forested acres with the pesticide Btk. Federal aid to Wisconsin discontinued in 2006, so cost sharing was no longer available to program participants (for spray costs) or Marinette County (for administration). Since the end of the Gypsy Moth Suppression Program, a lack of financial resources has limited Marinette County's terrestrial activities education and monitoring.

General Invasive Species

Since 2003, the *Northwoods Journal* has spread the word about invasive species. Using a DNR Lake program grant, in 2004 the paper grew in size, was distributed free at businesses countywide, and published four times per year during the summer. Free distribution has continued since then. Approximately five-thousand papers are distributed in each addition.

Marinette County staff helped the Town of Stephenson develop criteria for providing cost sharing to local groups seeking to control invasive species.

Plan Priorities

When Marinette County first approved its Land & Water Resources Management (LWRM) Plan in 1999, invasive species were only given a brief mention. By 2005, **Goal #4: Manage and/or Prevent the Spread of Invasive Exotic Species** became part of the LWRM Plan. By 2010, invasive species management was the fastest growing program area.

Objectives:

A. Prevention

Prevention is the most efficient and cost effective invasive species management method. Education is the key to prevention. Marinette County is working through a number of avenues to help people identify invasive species, understand why they are harmful, and how to avoid introducing new invasive species.

B. Detection

Undetected infestations are impossible to manage. Marinette County is working through a number of avenues to publicize particularly egregious threats, identify invasive species that are nearing the county, and provide identification tools.

C. Rapid Response

Eradication of invasive species is most likely to succeed when the existing population is small. Marinette County has built and maintained the capacity to respond quickly to emerging threats from invasive species.

D. Control

Control of invasive species on a large scale is beyond the resources of most local governments. Marinette County has been a willing partner and active seeker of additional resources to control existing infestations and minimize their impacts.

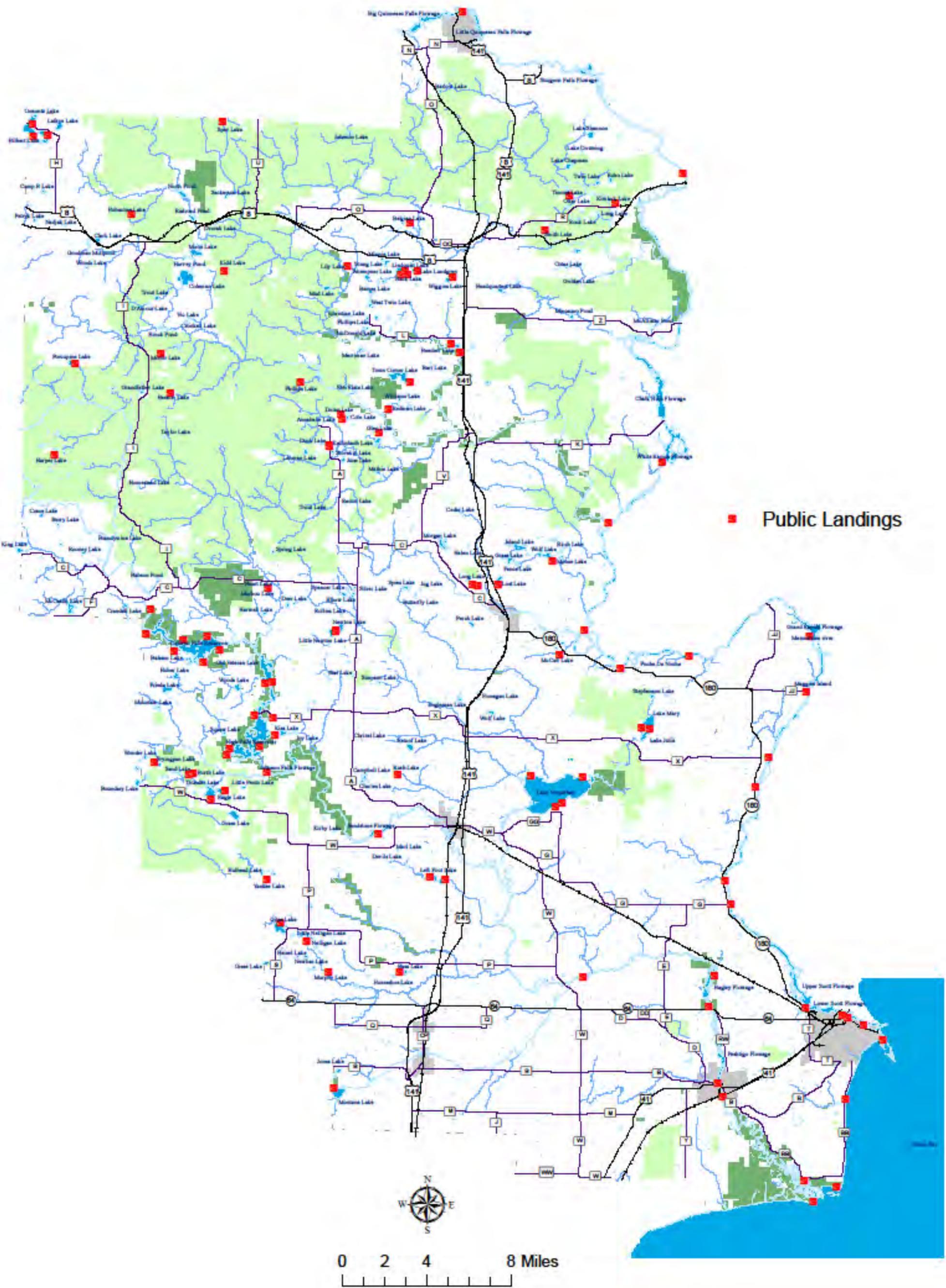
E. General

Marinette County has built relationships with local stakeholders to build their capacity and pool resources. Since invasive species are not bound by political boundaries, organizations such as the Wisconsin Land and Water Conservation Association and the Wild River Invasive Species Coalition are important state and regional partners.

Communication at all levels is important to spread the word about new infestations, develop control strategies, marshal resources, and coordinate efforts. The right information, delivered in a timely manner to the correct recipients will be critical for prevention, detection, rapid response and successful control.

Priority Objectives
Prevention
Continue and/or expand current educational efforts including the Teaching Outdoor Awareness and Discovery (TOAD) program, the <i>Northwoods Journal</i> , <i>Notes From the Shore</i> , and the Marinette County website
Continue to maintain and update AIS signage at County boat landings
Continue to create AIS management and control plans for County lakes
Continue to assist lake groups and local units of government with educational initiatives
Stress the need for keeping boats, ATV's and other vehicles, waders and other footwear, logging and construction equipment, etc. free of invasive species
Work with staff at the Tommy G. Thompson State Park to prevent invasive species infestations
Detection
Promote and facilitate volunteer monitoring of exotic species, including the Citizen Lake Monitoring Network
Continue to assist WDNR staff with monitoring
Establish a protocol for citizens, local governments, and agency partners to report new invasive species infestations
Develop resources to respond to aquatic and terrestrial invasive species infestations while they can still be eradicated
Rapid Response
Maintain capacity and resources to respond to emerging invasive species threats
Obtain and/or provide technical assistance and cost sharing
Continue to help the DNR by applying for AIS Rapid Response Grants
Maintain Commercial Pesticide Applicator certification
Use the hydraulic plant harvester for AIS control where appropriate
Control
Educate the public and decision makers about prevention and control of exotic invasive species
Continue to create AIS management and control plans for County lakes
Obtain and/or provide technical assistance and cost sharing
If it becomes County policy again, administer the DNR Gypsy Moth Suppression Program
Where appropriate, promote and facilitate the use of biological control of invasive species
Maintain capacity and resources to utilize external funding
Use the hydraulic plant harvester for AIS control where appropriate
General
Continue to encourage formation of lake associations and help lake associations become districts to facilitate better exotic species prevention and management
Continue participation in the Wild Rivers Invasive Species Coalition and the Wisconsin Land and Water Conservation Association
Increase interagency communication and cooperation
Increase the involvement of nongovernmental organizations in exotic species management
Help educate state and federal legislators on the need for additional resources
Continue assistance to local governments that want to manage invasive species
Continue the existence of the County Aquatic Invasive Species Coordinator as long as possible
Maintain and update Marinette County invasive species documentation and GIS map layers

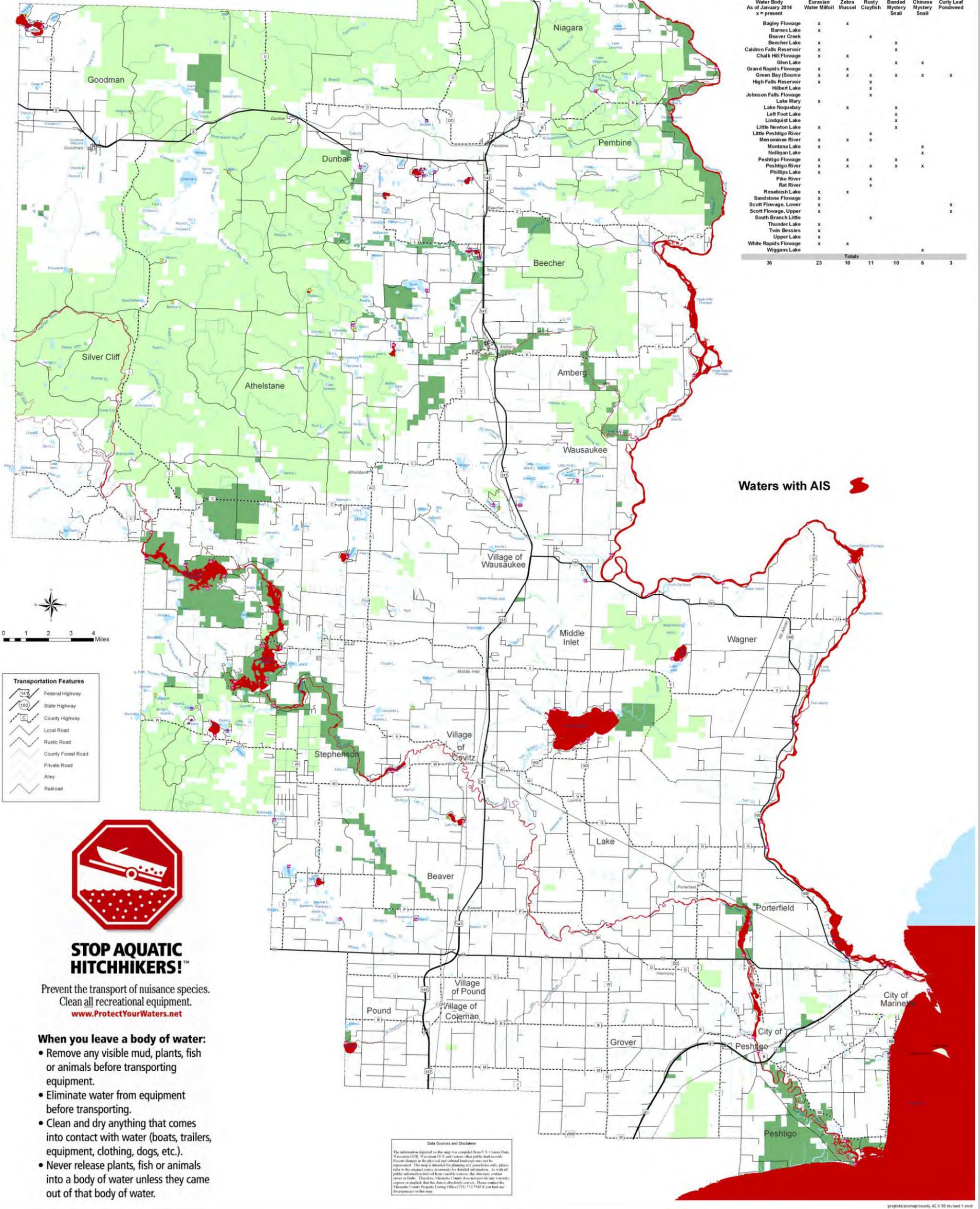
Appendix 1: Boat Landing Locations



Appendix 2: Water Bodies Known to Contain AIS



Marinette County Aquatic Invasive Species



Water Body As of January 2014 x = present	Eurasian Water Milloll	Zebra Mussel	Rusty Crayfish	Banded Mystery Snail	Chinese Mystery Snail	Curly Leaf Pondweed
Bagley Flowage	x	x				
Barnes Lake	x					
Beaver Creek	x		x			
Beecher Lake	x			x		
Caldron Falls Reservoir	x			x		
Chalk Hill Flowage	x	x				
Glen Lake	x			x	x	
Grand Rapids Flowage	x	x	x	x	x	
Green Bay (Source)	x	x	x			x
High Falls Reservoir	x		x			
Hilbert Lake			x			
Johnson Falls Flowage			x			
Lake Mary	x					
Lake Noquebay		x		x		
Left Foot Lake				x		
Lindquist Lake				x		
Little Newton Lake	x			x		
Little Peshtigo River			x			
Menominee River	x	x	x			
Montana Lake	x				x	
Nelligan Lake					x	
Peshtigo Flowage	x	x		x		
Peshtigo River	x	x	x	x	x	
Phillips Lake	x					
Pike River			x			
Rat River			x			
Rosebush Lake	x	x				
Sandstone Flowage	x					
Scott Flowage, Lower	x					x
Scott Flowage, Upper	x					x
South Branch Little			x			
Thunder Lake	x					
Twin Bessies	x					
Upper Lake	x					
White Rapids Flowage	x	x				
Wiggins Lake					x	
Totals	36	23	10	11	10	6

Waters with AIS



STOP AQUATIC HITCHHIKERS!

Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net

- When you leave a body of water:**
- Remove any visible mud, plants, fish or animals before transporting equipment.
 - Eliminate water from equipment before transporting.
 - Clean and dry anything that comes into contact with water (boats, trailers, equipment, clothing, dogs, etc.).
 - Never release plants, fish or animals into a body of water unless they came out of that body of water.

Data Sources and Disclaimer
The information depicted on this map was compiled from U.S. Census Data, Wisconsin DNR, Wisconsin DNR and various other public land records. Because changes in the physical and cultural landscape may not be represented, this map is intended for planning and general use only, please refer to the original source documents for detailed information. As with all public information derived from various sources, the data may contain errors or omissions. Therefore, Marinette County does not provide any warranty, express or implied, that this data is absolutely correct. Please contact the Marinette County Planning Office (715) 732-7545 if you find any discrepancies on this map.

