

Washington County Aquatic Invasive Species Strategic Plan

Executive Summary 2/12/13

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Aquatic Invasive Species (AIS) Strategic Plan Advisory Committee on 12/03/12
and the
Washington County Land Conservation Committee on 12/19/12

Adopted by:

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Control Grant from the Wisconsin Department of Natural Resources*



**Prepared under the Jurisdiction of the Washington County
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ACKNOWLEDGEMENTS

Development of the Washington County Aquatic Invasive Species Strategic Plan involved a diverse group of individuals representing lake protection and rehabilitation districts as well as lake property owner associations from around the County.

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ACRONYMS

AC	Aquatic Invasive Species Strategic Plan Advisory Committee	LUD	County Planning & Parks Department – Land Use Division
AIS	Aquatic Invasive Species	LWCD	County Planning & Parks Department – Land & Water Conservation Division/ Aquatic Invasive Species Coordinator
ANS	Aquatic Nuisance Species	LWRMP	Land & Water Resource Management Plan
AOA	As Opportunity Arises	NA	Natural Area
APMP	Aquatic Plant Management Plan	NANPCA	Nonindigenous Aquatic Nuisance Prevention and Control Act
CBCW	Clean Boats, Clean Waters Program	NRCS	Natural Resources Conservation Service
COBO	Washington County Board	PCPC	Planning, Conservation and Parks Committee
DATCP	Wisconsin Department of Agriculture, Trade and Consumer Protection	PD	County Planning & Parks Department – Planning Division
EPA	Environmental Protection Agency	PPD	County Planning & Parks Department
EWM	Eurasian Watermilfoil	RSC	Red Swamp Crayfish
FEMA	Federal Emergency Management Agency	SEWRPC	Southeastern Wisconsin Regional Planning Commission
GIS	County Planning & Parks Department – Geographic Information Systems Division	USDA	United States Department of Agriculture
LCC	Land Conservation Committee	UWEX	University of Wisconsin – Extension (Washington County)
LG	Washington County Local Governments	VHS	Viral Hemorrhagic Septicemia Virus
LO	Lakes Organizations/Associations	WDNR	Wisconsin Department of Natural Resources
		WWA	Wisconsin Wetlands Association
		YFH	Yellow Floating Heart

BACKGROUND AND PURPOSE

Aquatic invasive species (AIS) are non-native species that threaten the diversity or abundance of native species and the ecological stability, human health and safety, commercial, agricultural, aquaculture, or recreational activities dependent on the natural lakes and waterways. The lakes and rivers of Washington County are important natural resources enjoyed by the public for recreation and natural beauty. Waterbodies within Washington County also have a significant impact on the local economy and should be afforded protection from infestation of aquatic invasive species.



The lakes and rivers of Washington County are important natural resources enjoyed by the public for recreation and natural beauty.

In August 2010, Washington County received an Aquatic Invasive Species Control Grant through the Wisconsin Department of Natural Resources (WDNR).¹ As a requirement, Washington County developed the *Washington County Aquatic Invasive Species Strategic Plan* which is summarized in this document. The strategic plan includes an overview of Washington County waterbodies, describes how AIS can be detrimental to aquatic ecosystems, and pin points where AIS have been identified in the County. The plan also recommends goals and strategies for combating AIS and engaging in AIS education and outreach as well as identifying entities responsible for plan implementation. Through the grant's funding, Washington County also employs an AIS Coordinator.

DESCRIPTION OF AQUATIC INVASIVE SPECIES (AIS)

In general, an invasive species is a non-native species whose introduction has or is likely to cause economic, recreational, or environmental harm to human, animal, or plant health. Invasive species threaten the diversity, abundance, and stability of native plants and animals in a particular ecosystem. In their native environments, there are typically predators, parasites, pathogens, and competitors that keep these invasive species in check. However, when they are transported to a new environment, the natural checks are usually left behind. This gives invasive plants and animals an advantage to out-compete and displace the native species and their dominance reduces species diversity and forever changes the ecosystem.

AIS are an on-going concern throughout Wisconsin. They have been increasing at a steady rate throughout the past two decades. Non-native plants and animals are typically introduced through carelessness or lack of knowledge. To date, most aquatic and animal-type vertebrate AIS have entered through the Great Lakes shipping canals via ballast water and have then spread to inland waters primarily through boating activity. The other main source of introduction is through dumping of live bait and aquarium species. The non-natives that can adapt and survive usually flourish and become invasive by stressing the host ecosystem causing ecological, economic, and recreational harm.

Well-coordinated training, education and outreach to the residents and visitors of Washington County's water resources are vital to controlling the spread of AIS throughout the County as well as Wisconsin. Many AIS common to the region are already present in Washington County lakes. The challenge is keeping non-infested lakes clean of AIS and preventing new AIS from entering lakes and streams in Washington County. Addressing present and future AIS concerns on a local and county level is important. The plan focuses on how AIS can be controlled at a County level and at local government levels along with efforts from lake protection and rehabilitation districts as well as related non-profit conservation organizations.

¹ Grant funding was awarded through the NRI98 grant program and is further described in Chapter I of the plan.

AIS ADVISORY COMMITTEE

As part of the AIS Strategic Plan process, an Advisory Committee (AC) was established to guide the preparation of the AIS Strategic Plan. The AC reviewed the plan chapters and identified recommendations for plan goals, objectives, and actions. The AC is comprised of members from lake protection and rehabilitation districts and lakeowners associations throughout Washington County.



An Advisory Committee was established to guide the preparation of the AIS Strategic Plan.

AIS COORDINATOR

As part of the AIS Control Grant, the Washington County Planning and Parks Department hired a three quarter-time County AIS Coordinator. The purpose of the position is to increase citizen awareness and to keep the WDNR abreast of AIS specific to Washington County. The AIS Coordinator organizes and implements AIS activities throughout the County. This involves working with lake associations to coordinate efforts to control AIS and provide a rapid response plan against invasive species. The position also serves as the coordinator for Clean Boats, Clean Water (CBCW) watercraft inspection activities. This involves planning and executing training workshops, properly equipping boat landings with educational information and a means of AIS disposal, and keeping a presence at the landings through volunteer efforts. The AIS Coordinator maps lakes and wetlands where AIS exists, provides controlling and treatment strategies, and serves as an educator and primary contact concerning AIS throughout the County.



The AIS Coordinator is responsible for conducting educational workshops and training sessions to inform the public about AIS management.

AIS ISSUES AND GOALS

The AIS Advisory Committee (AC) believes that in order to be successful in the fight against AIS in Washington County, five primary issues must be addressed: education, prevention, monitoring, control, and sustained planning.

EDUCATION

AIS education and awareness has increased in recent years, but many boaters and riparian/shoreline property owners are still not fully aware of AIS laws and their potential ability to spread AIS. In order to address this issue, the AIS Advisory Committee (AC) identified numerous approaches to disseminate educational information including emphasizing how AIS can affect property values, make a waterbody unusable for recreational purposes, and negatively impact the local economy.

Thoroughly informing and educating the public can be accomplished through improved signage, publications, enforcing regulations, and increased volunteer efforts. Many of these efforts can be initiated by the County's AIS Coordinator but the longevity of effectiveness largely relies on volunteer efforts, local governments, and property owners. Funding is commonly an inhibiting factor in the combat against AIS, therefore obtaining grant funds is essential.

GOAL: Educate residents and visitors of the County about the existence and impacts of AIS.

PREVENTION

Although many of the major lakes in Washington County have been confirmed as having some type of AIS present in them, there are still many waterbodies that remain uninfested or contain specific AIS populations that can still be contained or eliminated. Key prevention measures must be taken for them to remain uninfested or plans implemented to eradicate the AIS populations. Such measures include ensuring boats are thoroughly cleaned when leaving an infested waterbody, maintaining an inventory of AIS information, curbing the threat of AIS being spread from Lake Michigan and other lakes to Washington County, bolstering funding efforts, and communicating and coordinating with other entities.



Smith Lake is the only major lake (50 acres or larger) in Washington County without a documented AIS in it. Preventative measures must be taken for it to remain that way.

GOAL: Prevent the spread of AIS to waterbodies that are currently uninfested, keep existing AIS populations in check and eradicate them if possible.

MONITORING

Effectively monitoring AIS populations largely depends on education and the actions of many. Although the County's AIS Coordinator may monitor many waterbodies for AIS, long-term countywide monitoring will depend on proactive measures taken by public volunteers. Public interest and knowledge of AIS has increased in recent years but must continue to be enhanced. To effectively monitor AIS populations within the County, the public must first be motivated to look for AIS, be able to positively identify species, have avenues for reporting their findings, and reported information must be confirmed, documented, and maintained.



The County's AIS Coordinator monitors many waterbodies for AIS, but long-term countywide monitoring will depend on proactive measures taken by public volunteers.

GOAL: Monitor and maintain an inventory of existing AIS populations.

CONTROL

Once AIS populations are identified and monitored, they must then be controlled and if possible, eradicated to prevent further spread within a waterbody or to a separate waterbody. To successfully control AIS populations, actions must be conducted swiftly via a plan of action that is in place before problems escalate, become extremely costly, and often impossible to overcome. It is important to recognize that all AIS are unique and require different measures to successfully control.



To successfully control AIS populations, actions must be conducted swiftly via a plan of action that is in place before problems escalate, become extremely costly, and often impossible to overcome.

GOAL: Control the spread of AIS populations.

SUSTAINED PLANNING

As action is taken to address goals and objectives within the plan, the County must be proactive through a sustained planning effort to combat AIS. This includes keeping key policy makers and government officials abreast of AIS laws and issues and communicating, collaborating, and coordinating efforts with numerous organizations. Funding is perhaps the most common inhibiting factor in successfully combating AIS.

GOAL: Sustain the implementation of the AIS Strategic Plan.

AIS GOALS, OBJECTIVES AND PLANNED ACTIONS

*Notes: Planned actions under each goal were prioritized by the AIS Advisory Committee. Statuses of planned actions are listed as **ongoing** or as **the opportunity arises (AOA)**. The agency assumed to provide the lead role is indicated with **bold font**. If no agency is listed in bold, responsibility is assumed to be shared equally among those listed. Agency acronyms are listed on Page 2.*

EDUCATION

GOAL: Educate residents and visitors of the County about the existence and impacts of AIS.

WORK PLAN OBJECTIVES	PLANNED ACTION	STATUS OF PLANNED ACTIONS	MAIN AGENCY	PRIORITY
1. Inform boaters so they are fully aware of AIS related laws, fines, and penalties, and their potential ability to spread AIS.	Improve signage at boat launches by making language on signs more concise, emphasizing potential fines and penalties, promoting an “AIS of the month” with photos and facts about a specific species found in or threatening the waterbody, and notifying launch users of AIS known to be in the waterbody.	ONGOING	LG, LO, LWCD , WDNR	High
	Utilize local media to spread the AIS message, especially before summer holidays, including radio interviews and submitting articles to local newspapers. Also, invite media to AIS workshops and functions held in the County.	AOA	LG, LO, LWCD , WDNR	High
	Enhance the AIS message by emphasizing how AIS can affect someone personally (such as negatively impacting property values and making a waterbody unusable).	ONGOING	LG, LO, LWCD , PPD, WDNR	High
	Confirm that bait retailers, landscapers, pet shops, water garden stores, and other related businesses are not selling AIS and encourage them to post AIS information in their retail outlet.	ONGOING	LWCD , WDNR	High
	Present AIS information via guest lectures at local schools, adult civic group meetings (Rotary, Lions), and youth group activities (4-H, Scouts).	AOA	LWCD	High
	Inform the public about how to properly check equipment to prevent the spread of AIS.	ONGOING	LG, LO, LWCD , WDNR	
	AIS flashcards and other informational materials should be available at boat launches for people to take.	ONGOING	LG, LO, LWCD , WDNR	
	Establish mass AIS emailing and postal mailing lists for disseminating AIS information.	ONGOING	LG, LO, LWCD , WDNR	

1. <i>Continued.</i>	Publish lake newsletters that include information regarding AIS.	ONGOING	LO, LWCD, WDNR	
	Spread the AIS message at lake association meetings by distributing fact sheets and inviting guest speakers (make the message personal and describe economic impacts).	AOA	LG, LO, LWCD, WDNR	
	Work with UW-Extension of Washington County in disseminating AIS information through its publications.	AOA	LWCD, UWEX	
	Work with utilities and local governments who regularly distribute mass mailings to include an AIS insert periodically.	AOA	LG, LO, LWCD	
	Work with UW-Extension to develop marketing/educational tools for riparian property owners that inform them of actions that help prevent accidental introductions of AIS.	AOA	LO, LWCD, UWEX, WDNR	
	Conduct informational workshops for specific audiences: local governments, lake associations, watercraft retailers, sporting good stores/bait dealers, resort owners, local tourism organizations and chambers, fishing guides, and others.	AOA	LG, LO, LWCD, WDNR	
	Publish annual AIS newsletter for citizens, boat owners, local governments, lake associations, schools, media outlets, chambers, and other local groups.	AOA	LWCD	
	Create a Washington County AIS website with educational information; a portal for reporting infestations and links to AIS-related State and Federal webpages.	ONGOING	LWCD, PD	

PREVENTION

GOAL: Prevent the spread of AIS to waterbodies that are currently uninfested, keep existing AIS populations in check and eradicate them if possible.

WORK PLAN OBJECTIVES	PLANNED ACTION	STATUS OF PLANNED ACTIONS	MAIN AGENCY	PRIORITY
1. Institute a watercraft inspection program at all frequently used boat launches in <i>(continued)</i>	Enforce existing regulations and encourage waterbody users to report violations. Consider a joint effort with WDNR water guard wardens and Washington County Sheriff Department to conduct several enforcement days at the busiest boat launches during the open water season.	ONGOING	WDNR, LO	High

the County and enhance watercraft equipment cleaning efforts to fully eliminate any potential spread of AIS.	Install boat decontamination facilities at the most frequently used boat launch sites and at launch sites on waterbodies known to be the most heavily infested with AIS.	AOA	LCC, LG, LO, LWCD, WDNR	High
	Identify alternative sources for long-term funding of watercraft inspection programs and seasonal staff.	ONGOING	LCC, LG, LO, LWCD, WDNR	High
	Utilize Maps 2 and 20 in the plan and work with the WDNR, and private and public entities that own or operate boat launches to identify and prioritize which boat launches should be targeted for increasing AIS awareness and monitoring efforts.	ONGOING	LG, LO, LWCD, WDNR	High
	Encourage and assist local governments, lake associations, or other organizations to establish and maintain watercraft inspection programs.	AOA	LG, LO, LWCD, WDNR	

2. Maintain communication between the County, neighboring counties, local governments and the State concerning AIS issues.	Communicate with counties on the Lake Michigan shoreline to discuss efforts to prevent AIS from leaving the lake and potentially spreading to other counties. Actions should include encouraging counties or local governments on the Lake Michigan shoreline to install boat decontamination facilities at boat launches.	ONGOING	LG, LWCD, SEWRPC, WDNR	High
	Keep abreast of new and review existing State AIS legislation and respond accordingly.	ONGOING	COBO, LCC, LWCD, PPD	
	Include local governments, WDNR State AIS Coordinator, and all County Board Supervisors on mailing lists for AIS specific newsletters and related mailings.	ONGOING	LWCD	

3. Encourage donations/ funding from various entities to fund AIS activities.	Encourage that a portion of boat launch fees be allocated to AIS activities such as adding facilities to clean boats at launch sites.	ONGOING	LG, LWCD, PCPC, PPD, WDNR	High
	Encourage lake groups to request donations via their newsletters.	AOA	LG, LO, LWCD	
	Encourage local governments to raise funds to support AIS activities.	ONGOING	LG, LWCD, WDNR	

4. Maintain an inventory of each landing and regularly check for adequate AIS signage and maintenance of that signage.	Provide local governments with a list and map of publicly-used waterbodies in their jurisdiction that displays the type of access (trailer or carry-in only) and recommended AIS signage.	AOA	LG, LWCD, WDNR	
	Encourage local governments to establish a volunteer corps of lake users who visit the lakes often and can collect AIS data.	AOA	LG, LWCD, WDNR	
	Contact local governments each spring using a standardized form of feedback to ensure proper AIS signage is posted at their landings.	ONGOING	LWCD, WDNR	

5. Encourage AIS monitoring and prevention for all special events held on waterbodies within Washington County.	Communicate with the regional WDNR Fisheries Biologist regarding fishing tournaments or other permitted activities held on local waterbodies.	AOA	LG, LO, LWCD	
	Communicate with resorts/businesses/other organizations that host tournaments or other recreational activities on local waterbodies.	AOA	LG, LO, LWCD	

6. Encourage lake groups and homeowner associations to apply for available AIS grant funds.	Send regular email broadcasts of grant types and deadlines to local governments and lake organizations.	ONGOING	LWCD, WDNR	
	Establish a web page of helpful hints, links, and other resources for grant writing.	ONGOING	PPD, WDNR	
	Develop a contact list of individuals around the County that will assist others with grant applications.	ONGOING	PPD, WDNR	

MONITORING

GOAL: Monitor and maintain an inventory of existing AIS populations.

WORK PLAN OBJECTIVES	PLANNED ACTION	STATUS OF PLANNED ACTIONS	MAIN AGENCY	PRIORITY
1. Encourage and support efforts to monitor waters for the presence of AIS.	Solicit public interest via press notices for assistance with lake monitoring programs.	ONGOING	LG, LO, LWCD, WDNR	High
	Utilize fishing forum websites such as <i>Lake-Link.com</i> to promote AIS awareness.	AOA	LWCD, LO	High
	Publicize the County's AIS Identification and Response Guide for reporting newly discovered AIS.	ONGOING	LCC, LG, LO, LWCD, PPD, WDNR	High
	Verify newly discovered AIS as reported through the County's AIS Identification and Response Guide and initiate follow-up action or recommend actions for local entities to conduct.	AOA	LWCD	High

1. <i>Continued.</i>	Hold two public lake monitoring workshops per year in the County.	ONGOING	LWCD, PPD	
	Explore an “Adopt-A-Lakeshore/Landing” program on lakeshores to monitor invasive species.	ONGOING	LG, LO, LWCD	
	Solicit civic groups (such as Rotary and Scouts) to contribute time and effort to monitor for invasive species.	ONGOING	LG, LO, LWCD	

2. Maintain an inventory of waters in the County and existing AIS populations.	Continue to update the inventory portion of the plan as AIS conditions change on lakes. As maps are updated, include on County website.	AOA	GIS, LWCD, PD	
	Encourage private pond owners to report AIS existing in their ponds.	ONGOING	LWCD	
	Coordinate with the WDNR and other AIS-related organizations adding to and using their AIS inventory databases.	ONGOING	LWCD, WDNR	

CONTROL

GOAL: Control the spread of AIS populations.

WORK PLAN OBJECTIVES	PLANNED ACTION	STATUS OF PLANNED ACTIONS	MAIN AGENCY	PRIORITY
1. Identify, contain, and eradicate (if possible) AIS populations to prevent further spread within a waterbody.	Increase AIS awareness among riparian landowners to increase AIS identification during early establishment stages.	ONGOING	LG, LO, LWCD, PPD, WDNR	High
	Encourage riparian landowners to be proactive by removing AIS populations themselves if they are able or work with lake organizations to contract out for chemical treatment of lakes and other waterbodies.	ONGOING	LG, LO, LWCD, WDNR	High
	Increase organized volunteer efforts for the physical removal of AIS and to monitor launch sites.	AOA	LG, LO, LWCD, WDNR	High
	Seek dedicated funding for rapid response of pioneer and established AIS infestations.	AOA	LG, PPD, WDNR	High
	Encourage the AIS Coordinator to seek, obtain and /or maintain a chemical applicator status for chemical treatment of wetlands.	AOA	PPD	
	Publicize the County’s AIS Identification and Response Guide and educate citizens and relevant entities on how to utilize it.	ONGOING	LCC, LWCD, WDNR	
	Publicize the WDNR hotline at boat launches and encourage launch users to report any illegal AIS activities they may witness.	ONGOING	LWCD, WDNR	

2. Keep documentation of the infested waters in the County, the level of infestations and management.	Maintain a database within the LWCD with locations of infestations in collaboration with the WDNR SWIMS database.	ONGOING	GIS, LWCD, WDNR	
	Communicate with lake groups on their management activities and record locations and types of management.	ONGOING	LG, LO, LWCD	

SUSTAINED PLANNING

GOAL: Sustain the implementation of the AIS Strategic Plan.

WORK PLAN OBJECTIVES	PLANNED ACTION	STATUS OF PLANNED ACTIONS	MAIN AGENCY	PRIORITY
1. Continue to seek funding for staff (especially the AIS Coordinator position) to continue AIS activities.	Seek dedicated AIS staff time under the Land and Water Conservation Division.	ONGOING	LCC, LWCD	High
	Explore the potential of utilizing a portion of the County sales tax to fund AIS management efforts on local lakes.	AOA	COBO, LCC, PPD	High
	Pursue short and long-term grant funding opportunities.	AOA	COBO, LCC, LG, LO, PPD, WDNR	High
	Explore the potential of local governments funding a position for a permanent AIS Coordinator in Washington County.	AOA	LG, LWCD	High
	Incorporate recommendations of this Strategic Plan into the County's Land & Water Resource Management Plan and County Comprehensive Plan.	AOA	PPD, PD, LWCD	High
	Assist local groups and organizations with grant writing and submission.	AOA	LWCD, WDNR	

2. Educate decision-making bodies and policy makers about the importance of AIS management.	Present facts to the County Board and local government officials about the economic impact of local lakes and how AIS can affect their communities through local businesses, tourism, and property values.	AOA	LWCD	High
	Garner and publicize support for the plan from relevant organizations throughout the County.	ONGOING	LWCD, PPD	
	Publicize the positive effects resulting from AIS management efforts.	AOA	LWCD, PPD, WDNR	

3. Update this AIS Strategic Plan as needed to <i>(continued)</i>	Integrate relevant local lake district management plans and information into the County's AIS Strategic Plan as plan is updated.	AOA	AC, LCC, LO, LWCD, PD	
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maintain its effectiveness and to sustain AIS awareness in Washington County.	Integrate recommendations of the County AIS Strategic Plan into lake district management plans as they are updated.	AOA	LO, LWCD	
	Update this AIS Strategic Plan every five years.	AOA	AC, COBO, GIS, LCC, LWCD, PD, WDNR	
	Collaborate with representatives from each lake association in the County to develop a countywide lake association committee in order to efficiently spread AIS information, share resources, and work together as one body in the fight against AIS.	AOA	LG, LO, LWCD, PD, WDNR	
	Reconvene the Washington County AIS Advisory Committee to update the plan.	ONGOING	AC, LWCD, PD, WDNR	

TOP TWELVE HIGHEST PRIORITY PLANNED ACTIONS

Of the planned actions listed above, the AIS Advisory Committee selected the twelve planned actions that they considered to be of the highest priority. The Planning and Parks Department should consider these priority actions when planning for future staff resources and programs. The list is not organized by priority and actions should be considered of equally high priority.

- Improve signage at boat launches by making language on signs more concise, emphasizing potential fines and penalties, promoting an “AIS of the month” with photos and facts about a specific species found in or threatening the waterbody, and notifying launch users of AIS known to be in the waterbody. (EDUCATION ISSUE)
- Install boat decontamination facilities at the most frequently used boat launch sites and at launch sites on waterbodies known to be the most heavily infested with AIS. (PREVENTION ISSUE)
- Enforce existing regulations and encourage waterbody users to report violations. Consider a joint effort with WDNR water guard wardens and Washington County Sheriff Department to conduct several enforcement days at the busiest boat launches during the open water season. (PREVENTION ISSUE)
- Verify newly discovered AIS as reported through the County’s AIS Identification and Response Guide and initiate follow-up action or recommend actions for local entities to conduct. (MONITORING ISSUE)
- Increase AIS awareness among riparian landowners to increase AIS identification during early establishment stages. (CONTROL ISSUE)
- Seek dedicated AIS staff time under the Land and Water Conservation Division. (SUSTAINED PLANNING ISSUE)



Improving signage at boat launches is a high priority planned action.

- Incorporate recommendations of this Strategic Plan into the County's Land & Water Resource Management Plan and County Comprehensive Plan. (SUSTAINED PLANNING ISSUE)
- Utilize local media to spread the AIS message, especially before summer holidays, including radio interviews and submitting articles to local newspapers. Also, invite media to AIS workshops and functions held in the County. (EDUCATION ISSUE)
- Communicate with counties on the Lake Michigan shoreline to discuss efforts to prevent AIS from leaving the lake and potentially spreading to other counties. Actions should include encouraging counties or local governments on the Lake Michigan shoreline to install boat decontamination facilities at boat launches. (PREVENTION ISSUE)
- Utilize fishing forum websites such as *Lake-Link.com* to promote AIS awareness. (MONITORING ISSUE)
- Encourage riparian landowners to be proactive by removing AIS populations themselves if they are able or work with lake organizations to contract out for chemical treatment of lakes and other waterbodies. (CONTROL ISSUE)
- Pursue short and long-term grant funding opportunities. (SUSTAINED PLANNING ISSUE)



Utilizing local media to spread the AIS message and inviting media to AIS workshops and functions held in the County is considered of the highest priority.

AIS IN WASHINGTON COUNTY'S LAKES

Numerous lakes in Washington County contain populations of various aquatic invasive species. It is also important to document and manage existing AIS populations on small waterbodies, private ponds and small wetland areas. Even a minor AIS infestation could spread to other uninfected waterbodies. The table on Page 14 summarizes known AIS populations that have been identified in the County's lakes. All waterbodies in Washington County with identified AIS are displayed on Page 15. As new reports of AIS are documented and maps are created, they will be added as the plan is updated in the future. It is also important to note that seasonal occurrences of AIS may occur throughout the County's lakes.

AQUATIC INVASIVE SPECIES AND WASHINGTON COUNTY

Most Washington County residents appreciate the abundance of lakes, rivers, scenic landscapes and variety of wildlife the county exhibits, however, many residents are unaware of what aquatic invasive species are or that they are present. These invasive plants, animals and microscopic organisms are transforming local ecosystems and reducing species diversity throughout Washington County. Invasive species can create serious and often irreversible damage to lakes. Eradication of some established infestations may be nearly impossible and control measures can become controversial and expensive. Although each species has unique characteristics, they all portray common harmful impacts. They are successful because they have few natural predators, and are aggressive, prolific and mature early. AIS are spread mainly through boaters launching and transporting trailers and equipment, and also through anglers, water garden and aquarium owners, sea planes and natural dispersal. Educating the public and addressing AIS concerns on a state and local level is essential, considering the potential for them to transfer from one waterbody to the next is centered around people and their activities.

Waterbodies in Washington County with Identified AIS

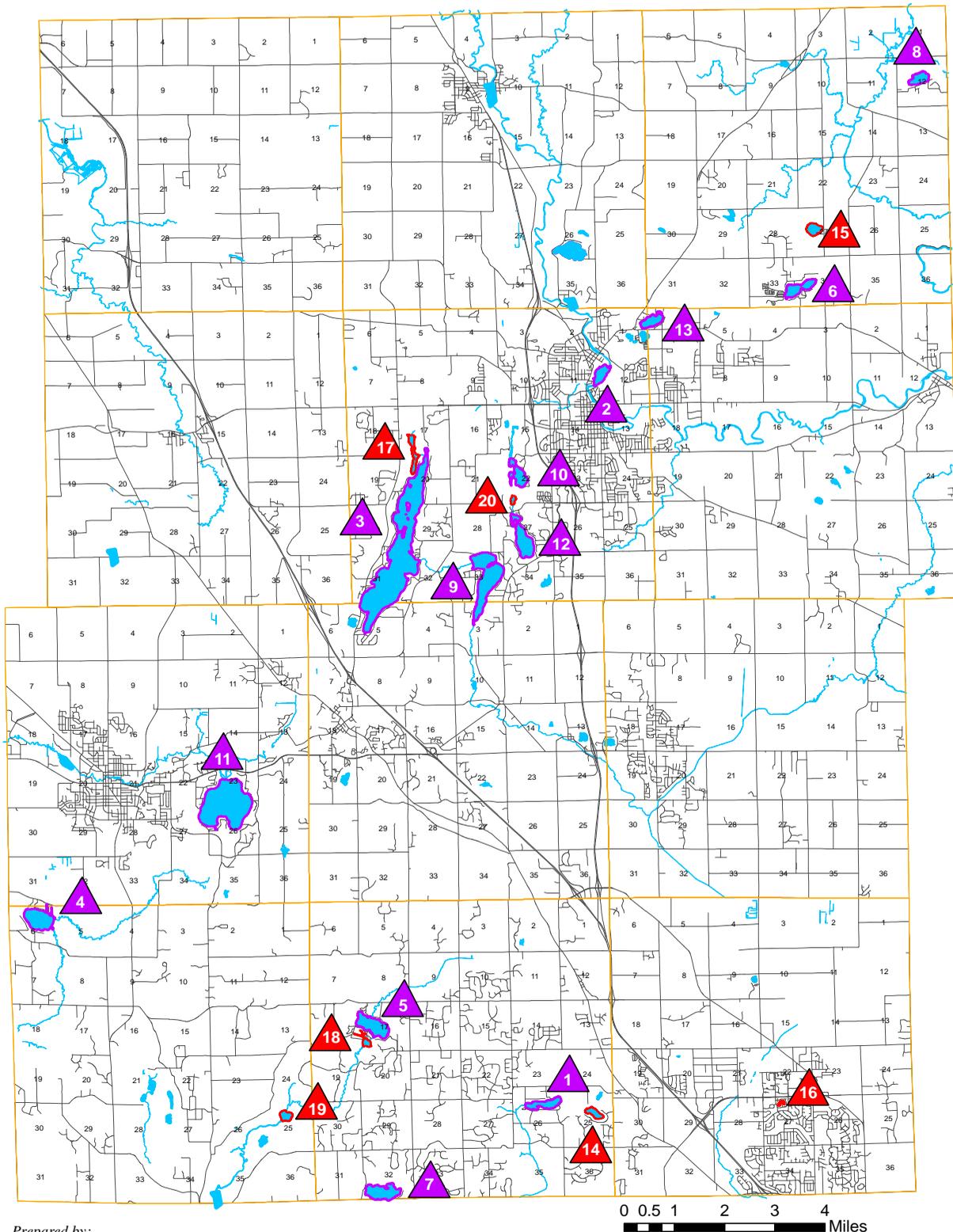
Number on Map	Waterbody Name	Surface Area (acres)	Volume (acre-feet)	Length of Shoreline (miles)	Maximum Depth (feet)	Mean Depth (feet)	Under 3 Ft. (%)	Over 20 Ft. (%)	Subwatershed Area (acres)	Surface Elevation (feet)	Aquatic Invasive Species						
											Curly-Leaf Pondweed	Eurasian Water-milfoil	Rainbow Smelt	Zebra Mussel	Rusty Crayfish	Red Swamp Crayfish	Chinese & Banded Mystery Snail
1	Bark Lake	65	868	1.8	34	14	15.9	31.1	3,043	973.7		X					
2	Barton Pond	63	189	1.2	5	3	51.7	-	44,120	890.8					X		
3	Big Cedar Lake	937	31,983	11	105	34	7	47	6,641	1,304.4	X	X	X	X			
4	Druid Lake	122	3,000	1.7	53	25	21.6	62.2	6,870	969.6	X						
5	Friess Lake	121	3,102	2.3	48	26	13	68	12,374	955.5	X	X			X		
6	Green Lake	70	1,207	1.8	37	17	11.4	37.8	550	868.7	X	X					X
7	Lake Five ^a	104	1,100	1.9	23	11	-	-	930	972.3		X					
8	Lake Twelve	45	318	1.3	20	6	34	-	320	801.2		X					
9	Little Cedar Lake	260	3,198	4	56	13	16.9	37.3	7,565	1,013.0	X	X			X		
10	Lucas Lake	69	468	2.8	15	7	20	-	560	994.3	X	X					
11	Pike Lake	461	2,349	3.8	45	5	-	-	8,100	992.9	X	X			X		
12	Silver Lake	122	2,306	2.7	47	20	12	56	305	998.7	X	X			X		X
13	Wallace Lake	54	558	1.2	35	11	15.6	18.6	370	899.1	X	X			X		
14	Amy Belle Lake	30	-	-	37	-	-	-	-	-							X
15	Erler Lake	35	-	-	34	-	-	-	-	-		X					
16	Esquire Estates Pond	5	-	-	12	-	-	-	-	-						X	
17	Gilbert Lake	43	-	-	30	-	-	-	-	-	X	X					
18	Little Friess Lake	16	-	-	34	-	-	-	-	-		X					
19	Loew's Lake	24	-	-	23	-	-	-	-	-	X	X					
20	Paradise Valley Lake	9	-	-	35	-	-	-	-	-		X					

^aThere are 13 major lakes located entirely within Washington County. Lake Five is located partially in Washington and partially in Waukesha County.

Note: Not all waterbodies listed in this table have been inventoried by Washington County. Not all information in this table has been confirmed by Washington County and information listed is not all-inclusive.

Source: Wisconsin Department of Natural Resources and Washington County.

Washington County Waterbodies Identified with AIS



Prepared by:
 Washington County
 Planning & Parks Department
 Land & Water Conservation Division
 Dated 11/30/12

Source: Wisconsin Department of Natural Resources &
 Washington County

This information is issued subject to errors and
 omissions and is not certified by Washington County.



- Legend**
- Surface Water
 - Major Waterbodies (greater than 50 Ac.) with AIS
 - Other Waterbodies (less than 50 Ac.) with AIS

Note: Rusty Crayfish found throughout various streams.

AIS Found in Washington County Waters

AIS	History	Identifying Characteristics	Life Cycle	Impacts	Image
<p style="text-align: center;">Eurasian Watermilfoil <i>(Myriophyllum spicatum)</i></p>	<ul style="list-style-type: none"> - Introduced to Wisconsin in the 1960's. Originated in Europe, Asia, and North Africa. 	<ul style="list-style-type: none"> - Submersed aquatic plant. - Feather-like leaves lay flat along its stem when pulled out of the water. - Usually 12-21 leaflets per leaf arranged in whorls (circles). Native milfoils typically have 7-11 leaflets. - Upper part of the plant can have a red or pinkish color. 	<ul style="list-style-type: none"> - Begins growing earlier than the native water milfoils. - The main method of reproduction is through vegetative fragmentations from boats and wave action. 	<ul style="list-style-type: none"> - Forms thick vegetative mats that spread horizontally across a lake's surface, and intertwines with native vegetation. - Shades out native vegetation used by fish, waterfowl and other animals. - Inhibits recreational uses like fishing, boating, and swimming, and can lead to degraded water quality and algae blooms. 	 <p style="text-align: center;">Source: WDNR</p>
<p style="text-align: center;">Curly-leaf Pondweed <i>(Potamogeton crispus)</i></p>	<ul style="list-style-type: none"> - Introduced to Wisconsin in 1905. - Originated in Eurasia, Australia and Africa. 	<ul style="list-style-type: none"> - Submersed aquatic plant. - Stiff reddish-green "lasagna-like" looking leaves. - Leaves are about 3 inches long, finely toothed along the edge, and alternate along the stem. - Flat and reddish-brown stem. 	<ul style="list-style-type: none"> - Spreads by seed. - Starts growing under the ice before any other plant. - Tolerant of disturbance and can grow in most water conditions. 	<ul style="list-style-type: none"> - Can out-compete native plants. - Forms thick mats across the surface, interfering with aquatic recreation. - Dies off in the summer, which can cause severe algae blooms and unpleasant smells. Plant die-offs also result in a loss of dissolved oxygen, an essential component for all aquatic life forms. 	 <p style="text-align: center;">Source: WDNR</p>
<p style="text-align: center;">Purple Loosestrife <i>(Lythrum salicaria)</i></p>	<ul style="list-style-type: none"> - Detected in Wisconsin in the early 1930's. - Originated from Europe. - Now widely dispersed. 	<ul style="list-style-type: none"> - Wetland plant. - 3-9 foot semi-woody plant that has a square stem with smooth, opposite leaves. - Showy purple to pink flowers with 5-6 petals bloom from July to September. 	<ul style="list-style-type: none"> - Spreads mainly by seeds, but also by its large underground taproot. - Can release more than 2 million seeds in a single year. 	<ul style="list-style-type: none"> - Grows faster and taller than most native wetland plants. - Displaces native plants and reduces wildlife habitat. Rare plants are often the first to disappear. - Thick stands can choke out recreational waterways, and eventually overrun large acres of wetlands. This can result in a loss of open water habitat. 	 <p style="text-align: center;">Source: WDNR</p>
<p style="text-align: center;">Zebra Mussel <i>(Dreissena polymorpha)</i></p>	<ul style="list-style-type: none"> - Introduced through ballast water from Eurasian boats. - Discovered in a Lake Michigan harbor in 1990. 	<ul style="list-style-type: none"> - Most are smaller than an inch, but can reach a maximum of 2 inches in length. - Yellowish-brown alternating light and dark stripes. - Usually grow in large clusters in shallow, algae-rich water. 	<ul style="list-style-type: none"> - Reproduce sexually from spring to late fall and form microscopic larvae called veligers. - Can produce 30,000 to 1,000,000 eggs in one year. 	<ul style="list-style-type: none"> - Remove plankton from the water, which is an essential food source for other aquatic organisms. Clearer water can cause more aquatic plant growth. - Can clog water intake pipes. - Attach to piers, boat lifts and boats, causing damage and costly repair. Attach to native mussels, smothering them. - Sharp shells can cut beach walkers and swimmers. 	 <p style="text-align: center;">Source: USGS</p>

AIS	History	Identifying Characteristics	Life Cycle	Impacts	Image
<p>Rusty Crayfish (<i>Orconectes rusticus</i>)</p>	<ul style="list-style-type: none"> - Likely introduced into Wisconsin by anglers using them for bait. - Native to the Ohio River Basin states. 	<ul style="list-style-type: none"> - Adults are generally 3-5 inches long. - Rust-colored spot on each side of their body. - Claws are typically larger and smoother than native crayfish. - Black bands on the tips. 	<ul style="list-style-type: none"> - Inhabit lakes, streams and ponds. - Need fairly clean water and inhabit both pool and riffle-like areas. - Can be prolific, laying 80-575 eggs. 	<ul style="list-style-type: none"> - Adult Rusty crayfish eat about 4 times the amount of food a native crayfish eats. - If eating Eurasian water-milfoil, they spread fragments in the water. - More aggressive than native crayfish, eventually displace them from an area. 	 <p>Source: USGS</p>
<p>Red Swamp Crayfish (<i>Procambarus clarkia</i>)</p>	<ul style="list-style-type: none"> - Native to the gulf coastal plain. - Used primarily in aquaculture or culinary purposes. - Introduced mainly through human release. 	<ul style="list-style-type: none"> - Typically dark red in color with raised bright red spots covering the body and claws. Claws and body may also be blue in color. - Dark wedge shaped strip on the top of the abdomen. 	<ul style="list-style-type: none"> - Very adaptive to many environments including highly fluctuating water levels. - Highly prolific and can also brood twice a year. Lay as many as 650 eggs. 	<ul style="list-style-type: none"> - Out-compete native crayfish for food and habitat. - Carry a fungus plaque which is a disease that damages the muscles of native crayfish. - Extensive burrowers that can penetrate over six feet into shorelines leading to extensive erosion. 	 <p>Source: Gary Engberg Outdoors</p>
<p>Chinese and Banded Mystery Snail (<i>Cipangopaludina chenesis</i>)</p>	<ul style="list-style-type: none"> - Native to China and other Asian countries. - Introduced to the United States as a food source. - Later distributed through the aquarium industry. 	<p><u>Chinese Mystery Snail:</u></p> <ul style="list-style-type: none"> - Smooth, cone-shaped, spiral-shaped shell with uniform light to dark olive-green coloration and 5-7 whorls. - Grows about 2 inches in length and has an operculum (trap door). <p><u>Banded Mystery Snails:</u></p> <ul style="list-style-type: none"> - Reddish-brown bands circling the shell. Grows to 1-1.5 inches. 	<ul style="list-style-type: none"> - Found in shallow, slow moving, or stagnant waters, staying partially buried in the mud. - Sexual reproduction occurs, and females give birth twice a year. - Mature after one year and can live 3 to 5 years. 	<ul style="list-style-type: none"> - Eat native zooplankton, filter feed on suspended matter, and compete for space with native species. - Serve as vectors for the transmission of various parasites and diseases such as flukes, which can infect humans. Unlike native snails, will not serve as a host for swimmers itch. - Shells clog water intake pipes, inhibiting the flow of water. 	 <p>Chinese (left) and Banded (right) Mystery Snail Sources: lsgcp.org (left) and lwipa.blogspot.com (right)</p>
<p>Rainbow Smelt (<i>Osmerus mordax</i>)</p>	<ul style="list-style-type: none"> - Entered the Great Lakes from an inland lake in Michigan. - Began to spread to Wisconsin's inland waters in the 1980's. 	<ul style="list-style-type: none"> - Mature to 7-9 inches. - Pale green back with a silvery iridescent purple, blue, or pink on their sides. - Conspicuous silvery streak along each side. - Give off the smell of cucumbers when removed from the water. 	<ul style="list-style-type: none"> - Very prolific and will spawn in mass numbers along shorelines and inlets. May produce 33,000 to 75,000 eggs. - Both males and females mature in 2 years and will live beyond 5 years of age. 	<ul style="list-style-type: none"> - Adult smelt compete directly with juvenile walleye and will also eat young of the year trout, whitefish, and cisco, directly impacting the base fishery of many cold water/deep basin lakes. - Rich in thiaminase, an enzyme that destroys thiamin. This inhibits the development of fish embryos from female fish that consume smelt. 	 <p>Source: Department of Game, Fish, and Parks, South Dakota</p>

Note: Detailed descriptions of AIS listed above were provided by the Wisconsin Department of Natural Resources.
Source: Wisconsin Department of Natural Resources and Washington County.

Potential AIS Threatening Washington County

(AIS Identified In Nearby Counties or Other States In The Midwest)

AIS	History	Identifying Characteristics	Life Cycle	Impacts	Image
<p>Yellow Floating Heart (<i>Nymphoides peltata</i>)</p>	<ul style="list-style-type: none"> - Very aggressive exotic plant from Asia. - Documented in six private ponds in Wisconsin. - Introduced to Wisconsin primarily as a water garden plant. - YFH was discovered in two stormwater detention ponds in Walworth County in 2007 and also Marinette County. 	<ul style="list-style-type: none"> - It is identified by its round heart shaped leaves that are up to six inches in diameter and have sculpted edges. Many of the floating leaves are purple underneath. - The flower sits on a stalk about two inches above the water and is yellow with five fringed pedals. 	<ul style="list-style-type: none"> - Spreads through fragmentation and seed movement from high water as well as bird and animal movement. 	<ul style="list-style-type: none"> - It develops very thick mats that cover complete water surfaces limiting sunlight and oxygen to the water below. - Very difficult to control; mechanical removal with heavy equipment and lining with heavy duty, thick plastic lines is most effective. - Chemical treatment has shown to be ineffective and also drastically effects other aquatic vegetation in the area. 	 <p>Source: WDNR</p>
<p>Viral Hemorrhagic Septicemia Virus (VHS)</p>	<ul style="list-style-type: none"> - Mutated from the original virus discovered in the 1930's that infected European trout farms. - Caused large fish kills in several eastern Great Lakes in 2005 and 2006. - First found in the Lake Winnebago system and confirmed in Lake Michigan in 2007. - Infects the internal organs and cells that line the blood vessels of fish, causing severe hemorrhaging (bleeding) causing death. - Fish can be infected when they eat an infected fish. 	<ul style="list-style-type: none"> - Bulging eyes, external and internal hemorrhaging, swollen or pale organs, or bloated abdomens. - Infected fish shed the virus through their reproductive fluids and urine. - Grows best when the water temperature is between 37-54° F. - Most infected fish die at 37-41° F but rarely die above 59° F. - The virus can survive in water for at least 14 days. - Some infected fish may not show any signs, but transporting these fish to new locations could spread the disease to unaffected waters. 	<ul style="list-style-type: none"> - Not applicable. 	<ul style="list-style-type: none"> - About 45 fish species are known to be susceptible to VHS. - VHS is not a threat to people who handle or eat infected fish. - Can potentially cause massive fish population die offs and can severely impact the billion dollar fisheries industry. 	 <p>Source: WDNR</p>
<p>Spiny Waterflea (<i>Bythotrephes longimanus</i>) and Fishhook Waterflea (<i>Cercopagis pengoi</i>)</p>	<ul style="list-style-type: none"> - Both species of waterfleas entered the Great Lakes through ballast ship water from Europe. - The spiny waterflea arrived in the 1980's, followed by the fishhook during the 1990's. 	<ul style="list-style-type: none"> - Both species are about ¼ to ½ inch long. Both species will appear as a white slimy glob on fishing line. <u>Spiny waterfleas:</u> - Long tail spines. - Tails usually have 1 to 3 barbs. <u>Fishhook waterfleas:</u> - Smaller barbs on their tails. - End of the tail has a "fishhook" appearance. 	<ul style="list-style-type: none"> - Reproduce sexually and asexually in the summer. No males are required; therefore a single female can start a new population herself. - Eggs can be transferred to new waterbodies through boating, fishing and other water recreational equipment. - Resting eggs can survive long after the adults are dead, even under extreme environmental conditions. 	<ul style="list-style-type: none"> - Reproduce very rapidly, leading to large increased populations. - Eat smaller zooplankton, including the native daphnia (native waterfleas) which are an important food source for young fish. - Young fish have trouble eating these waterfleas due to their long spiny tails. - Gather in thick gloppy masses on fishing line and downrigger cables, clog eyelids of fishing rods and damage a reel's drag system, all of which can prevent fish from being landed. 	 <p>Source: WDNR</p>

AIS	History	Identifying Characteristics	Life Cycle	Impacts	Image
<p>Quagga Mussel (<i>Dreissena bugensis</i>)</p>	<ul style="list-style-type: none"> - Transported here through ballast water most likely in the late 1990's. - Confirmed in Lake Superior and Lake Michigan in 2005. 	<ul style="list-style-type: none"> - Adult Quagga Mussels are larger than Zebra Mussels and can be up to 2 inches in length. - The shell is more rounded than the Zebra Mussel and will roll over if placed on its hinge side. - The shell is a light cream color with dark concentric rings. - Will survive in a much broader range of water temperature and depth. 	<ul style="list-style-type: none"> - Reproduce sexually from spring to late fall. - Form microscopic larvae called veligers. 	<ul style="list-style-type: none"> - Quagga Mussels have much the same impacts that Zebra Mussels do but to a greater extent due to their ability to survive in deeper colder water. - Cause matting of filamentous algae reducing fish habitat and environmental concerns when mats of algae drift ashore. 	 <p>Source: Sea Grant Michigan</p>
<p>Round Goby (<i>Neogobius melanostomus</i>)</p>	<ul style="list-style-type: none"> - Originally from the Caspian Sea. - Introduced via ballast water. - First discovered in the Great Lakes in 1990. - Once established, the population rapidly spread. 	<ul style="list-style-type: none"> - Bottom dwelling. - Large head. - Can grow to 10 inches, more commonly 4-6 inches. - Fused suction cup like pelvic fin, and the front dorsal fin has a large dark spot. 	<ul style="list-style-type: none"> - Spread easily through swimming and currents. - Can reproduce up to 6 times a summer. - Fierce competitors and can feed in total darkness. - Known as voracious egg predators. 	<ul style="list-style-type: none"> - Take over prime spawning sites and habitat of native sculpins and log perch. - Will consume the eggs of any species, raiding nests temporarily vacated by bass or other panfish. - Will also consume the eggs of broadcast spawners. 	 <p>Source: North American Native Fishes Association</p>
<p>Asian Carp, Bighead (<i>Hypophthalmichthys nobilis</i>) and Silver (<i>H. molitrix</i>)</p>	<ul style="list-style-type: none"> - Brought to North America from China in the early 1970's to improve water quality in aquaculture ponds and were marketed as fish food. - Entered the Mississippi River through a high water event and started moving upstream at a rate of 50 miles per year. 	<ul style="list-style-type: none"> - Low set eyes with large upturned mouths and no barbells. - Their heads have no scales, while the scales on their bodies are very small. <u>Bighead Carp:</u> - Dark blotches along the top of its body. <u>Silver Carp:</u> - Primarily silver in color. 	<ul style="list-style-type: none"> - Very prolific and fast growing to a length of more than 4 feet. - Female Bighead Carp can produce between 200,000 and 1 million eggs in their lifetime. - Silver Carp produce between 300 and 5,000 eggs. - Both are filter feeders and can consume their weight in plankton daily. 	<ul style="list-style-type: none"> - Drastically diminish the base food for native fish because they are such efficient feeders, thus disrupting the entire food chain. - Renowned for leaping out of the water when disturbed by watercraft, potentially injuring boaters. 	 <p>Bighead Carp Source: D. Riecks</p>  <p>Silver Carp Source: L. Lovshin</p>

Source: Wisconsin Department of Natural Resources and Washington County.

MANAGEMENT MEASURES AND TECHNIQUES¹

There are three basic measures or techniques for managing or eliminating AIS populations – physical, biological, and chemical. Depending on the species, severity of the infestation and many other variables, a certain technique may be much more effective and cost-efficient than another. The Table on Page 21 describes various AIS management techniques.

The appropriate entity responsible for taking action on an AIS infestation depends on the species, severity of the infestation, level of threat to the surrounding ecosystem and various other factors. Proper protocol for reporting a new plant or animal AIS infestation is outlined in the “Aquatic Invasive Species Identification and Response Guide for Washington County Citizens” (Appendix A in the plan and available online at www.co.washington.wi.us/lcd). The County AIS Coordinator can determine how to handle the infestation and who should be involved.

Examples of AIS Management Techniques



Physical (Manual)
Hand pulling weeds such as Eurasian Watermilfoil.



Physical (Mechanical)
Harvesting weeds with machines.



Physical (Mechanical)
Trapping vertebrates such as Rusty crayfish.



Physical (Physical Manipulation)
Drawdown of water level to expose littoral zone of waterbody.



Biological
Using one plant or animal as a means to control another such as the Purple Loosestrife Beetle (shown above).



Chemical
Using chemical herbicides or pesticides to treat unwanted species.

¹ Much of the information in this section is derived from “Aquatic Invasive Species, A Guide for Proactive & Reactive Management 2006,” published by the Wisconsin Department of Natural Resources available on-line at: <http://dnr.wi.gov/Aid/documents/AIS/AISguide06.pdf>.

Management Measures and Techniques for Controlling Aquatic Invasive Species

Some management techniques may require permits, related fees, and prior approval of an Aquatic Plant Management Plan (APMP).¹ Implementation of any of the below management techniques should be preceded with communication with a Wisconsin Department of Natural Resources professional.

Technique	Description	Considerations
Physical	Utilizes manual or mechanical manipulation of the environment to control unwanted aquatic species.	<ul style="list-style-type: none"> - Caution must be used when a physical method of control is selected to assure that no damage to existing native plant habitat occurs during treatment.
Hand Pulling (Manual)	Manual removal of invasive plants in small areas may be accomplished by hand pulling or raking out the plants.	<ul style="list-style-type: none"> - Economical but can be labor intensive. - May need to be repeated periodically during the growing season as the plants grow back. - Care must be taken to collect plant fragments and protect the native vegetation.
Harvesting (Mechanical)	Involves the use of a machine that cuts the plants and gathers them up for disposal on shore. Plants are cut to depths of three to five feet below the water surface. May not eradicate plants rooted to the bottom of a waterbody, but is often utilized to maintain aesthetic beauty and keep a waterbody usable for recreational purposes.	<ul style="list-style-type: none"> - Labor intensive because it typically involves larger areas and densities of plant infestation, and needs to be repeated during the growing season. - Several points need to be considered when selecting this method of treatment: the cost of equipment; harvester operations and scheduling; transportation, storage, maintenance of equipment; and details related to the disposal of cut vegetation. - When dealing with Eurasian watermilfoil (EWM), weed-cutting machines can create plant fragments that are not removed by the machine and can spread to other parts of a waterbody resulting in newly-established populations of EWM in previously uninfested portions of the waterbody.
Drawdown (Physical Manipulation)	Involves the lowering of the water level of a waterbody for the purpose of disrupting normal plant growth within the littoral zone (shallow, near-shore areas of the lake where most aquatic plants grow). Following a drawdown, bottom sediments within the near-shore areas are exposed to air, dry out, and freeze over the winter months.	<ul style="list-style-type: none"> - Water level drawdown is only feasible for bodies of water that have operational water level control structures. - Affects all plants and animals that reside in the near-shore area and not just the unwanted species. - The outcomes of drawdown procedures in controlling aquatic invasive species may be variable and inconsistent. - The water level drawdown is a physical manipulation of the aquatic environment and several factors must be considered prior to use of this option (such as the attributes of unwanted species and critical timing of drawdown procedure to lessen negative environmental impacts).
Trapping (Mechanical)	Intended to reduce problematic rusty crayfish; not eradicate. The goal is to reduce the large adult population enough to minimize the potential negative impacts on the lake ecosystem.	<ul style="list-style-type: none"> - Crayfish trapping will need to be a continuous and consistent annual effort in order to be of any significance in population control of rusty crayfish. - This method used in conjunction with catch and release fishing (top-down food chain management) can help to reduce the rusty population within a lake.
Biological	Utilizes one plant or animal as a means to control another plant or animal that resides within the same environment.	<ul style="list-style-type: none"> - Caution must be taken when a biological method of AIS control is selected as a treatment option as the unwanted target species might vanish following the introduction, but the newly introduced species could become the driving force of the next environmental problem. - The desired result of biological control is to reduce the spread and weaken the unwanted population to allow native species to regenerate. - Results are not immediate. It is normal for a considerable amount of time to pass before suppression becomes noticeable.
Chemical	Utilizes chemical herbicides or pesticides to treat unwanted aquatic species.	<ul style="list-style-type: none"> - Do not assume that the use of pesticides is safe or without risk. Realistic decisions must be made that will determine the potential effectiveness of a chemical treatment or continued treatments within a lake.

Note: More information regarding each management technique and techniques commonly utilized to combat specific species is included in Chapter V of the plan.

¹ For details and planning guidance on the Wisconsin's Aquatic Plant Management program, visit: <http://www.uwsp.edu/cnr/uwexlakes/ecology/APMguide.asp>.

PLAN REVIEW AND ADOPTION

For any planning process, it is good practice to hold public informational meetings on recommended plans and hold public hearings before their adoption. Such actions provide opportunity to acquaint residents and landowners with the recommended plan and solicit public feedback about the plan. The plan may then be modified to reflect any pertinent new information and incorporate sound and desirable new ideas presented at these meetings. Accordingly, a public hearing was held before the Washington County Land Conservation Committee (LCC) on December 19, 2012. The LCC recommended approval of the plan to the Washington County Board of Supervisors on December 19, 2012. The plan was adopted by the County Board by resolution on February 12, 2013. The plan is a guide to be used by County officials and staff in making aquatic invasive species management decisions.



PLAN UPDATES

This plan is intended to undergo an annual evaluation by staff and update process every five years. During the updating process, the AIS Advisory Committee (AC) will reconvene to analyze the progress of plan implementation. Inventory information, goals, recommended actions, and accomplishments will be evaluated and updated as necessary. Once approved by the AC, the updated plan will undergo the same approval and adoption process as it did upon its original inception.

PLAN MONITORING AND MONITORING OF WATER RESOURCES

The best evaluation of whether or not AIS goals are being met is by directly monitoring the County's aquatic resources. In addition, monitoring data shows where, why and to what degree water resources are suffering from AIS infestations. This type of evidence is the best way to encourage behavioral modifications among County waterbody users and riparian property owners. It is also essential to justify the amount of staff and grant money being spent on AIS education and management efforts.

The Land and Water Conservation Division (LWCD) will evaluate achievements of goals, objectives, and planned actions outlined in this plan by 1) Administrative reviews and 2) Monitoring the County's aquatic resources. Results from each of these components will be presented to the County Land Conservation Committee (LCC) which oversees the operations of the LWCD.



REPORTING AQUATIC INVASIVE SPECIES (AIS) INFESTATIONS IN WASHINGTON COUNTY

Protocol if you find a suspected Invasive PLANT Species

Collect Specimens and Take Pictures

- 1) Collect, press and dry a sample. This method is best because a plant expert can then examine the specimen; or
- 2) Collect a fresh sample and enclose it in a plastic bag with a moist paper towel and refrigerate until examined by an expert.
- 3) Take detailed photos of specimen.
- 4) Note location of found specimen (see suggestions below for recording location).

Provide as much information as possible. Try to include details like: flowers, seeds or fruit, buds, full leaves, stems, roots and other distinctive features. In photos, place a coin, pencil or ruler for scale. Deliver or send specimen and/or photos ASAP.

Protocol if you find a suspected Invasive ANIMAL Species

Collect Specimens and Take Pictures

- 1) Place in a jar with water, put on ice or transport to refrigerator. Collect up to five specimens, if possible.
- 2) Take a digital photo of the animal in the setting it was found, if possible.
- 3) Transfer specimen to a jar filled with rubbing alcohol (except jellyfish – leave in water).
- 4) Note location of found specimen (see suggestions below for recording location).

Provide as much information as possible. In photos, place a coin, pencil or ruler for scale. Deliver or send specimen and/or photos ASAP.

Note Location Details - Provide one or more of the following:

- 1) Latitude & Longitude
- 2) UTM (Universal Transverse Mercator) coordinates
- 3) County, Township, Range, Section, Quarter-Section
- 4) Precise written site description with address, noting nearest city & road names, landmarks, local topography

If possible, give the exact geographic location using a GPS (global positioning system) unit, topographic map, or the Wisconsin Gazetteer map book. If using a map, include a photocopy with a dot showing the location the specimen was found. You can use the DNR WebViewer (<http://dnr.wi.gov/maps/gis/appwebview.html>) to find the precise location on a digital topographic map. Click the cursor on the exact collection site and note the coordinates (choose UTM or Latitude/ Longitude).

Report your information to:

Paul Klein, Washington County AIS Coordinator

333 E. Washington Street, Suite 2300

West Bend, WI 53095

Phone: (262) 335-4806 Cell: (920) 517-0249

Email: paul.klein@co.washington.wi.us

Please complete an AIS "Identification and Response Report Form" available at:

<http://www.co.washington.wi.us/uploads/docs/lcd-aisrapidresponseform.pdf>

For more information about AIS in Washington County, please visit: www.co.washington.wi.us/lcd

Aquatic Invasive Species Resources

Washington County

Land & Water Conservation Division

www.co.washington.wi.us/lcd

Wisconsin Department of Natural Resources

General AIS information

<http://dnr.wi.gov/lakes/invasives/>

AIS Prevention

<http://dnr.wi.gov/topic/Invasives/prevention.html>

Volunteer Opportunities

<http://dnr.wi.gov/volunteer/waterPublicLands/AquaticInvasives.html>

AIS Grants

<http://dnr.wi.gov/lakes/invasives/Grants.aspx>

<http://dnr.wi.gov/Aid/AIS.html>

AIS Outreach and Education

<http://dnr.wi.gov/lakes/invasives/EducationOutreach.aspx>

Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP)

Endangered Species: Protection Guidelines, Invasives Control

http://datcp.wi.gov/Farms/Endangered_Species/Protection_Guidelines_Invasives_Control/index.aspx

University of Wisconsin Extension

AIS Education Handbook

<http://www.uwex.edu/erc/aquainvhandbook.html>

