

INTRODUCTION 1



Credit: Brad Steckart

1.1 BACKGROUND AND PURPOSE

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

The contribution of surface water resources to economic development, recreational activity, and scenic beauty is immeasurable. With over 14,000 acres of open waters, 80 named lakes, and over 50 public launches and access points within a 90 minute drive for almost 2 million people, Waukesha County contains some of the most heavily used water bodies in the state. As shown in Map B.7, There are 48 lakes over 30 acres in size, the most in southeast Wisconsin, and over 300 lineal miles of perennial named streams. Aquatic Invasive Species (AIS) have a strong hold in many Waukesha County lakes and threaten the future of local

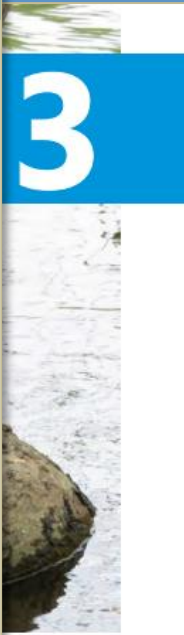
Aquatic invasive species (AIS) gained attention on a national and statewide scale in the early 1990s after the passage of the federal Nonindigenous Nuisance Prevention and Control Act of 1990 (NANPCA) and the subsequent National Invasive Species Act (NISA) of 1996. Section 1201 of NANPCA established the National Aquatic Nuisance Species (ANS) Task Force, which was charged with coordinating government efforts related to AIS issues with those of the private sector and other North American interests. The ANS Task Force recommends technical assistance, research, and education as strategies for prevention, detection,

4.1 INTRODUCTION

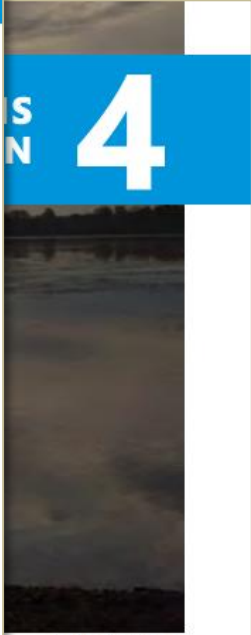
This chapter expands on recent outreach, education, and prevention steps through the identification of goals, objectives, and recommended actions. This chapter also prioritizes planned actions and identifies entities responsible for implementing recommended actions over the next five years. Accomplishing goals in this chapter will lead to successfully combating AIS, benefiting many stakeholders throughout the County.



Credit: Brad Steckart



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1 INTRODUCTION

- Background/purpose
- Process and format
- General AIS descriptions
- AIS program to date
 - Accomplishments
- AIS regulations



AQUATIC INVASIVE SPECIES AND WATER RESOURCES IN WAUKESHA COUNTY

2



Credit: Brad Steckart

2.1 INTRODUCTION

The contribution of surface water resources to economic development, recreational activity, and scenic beauty is immeasurable. With over 14,000 acres of open waters, 80 named lakes, and over 50 public launches and access points within a 90 minute drive for almost 2 million people, Waukesha County contains some of the most heavily used water bodies in the state. As shown in Map B.7, There are 48 lakes over 30 acres in size, the most in southeast Wisconsin, and over 300 lineal miles of perennial named streams. Aquatic Invasive Species (AIS) have a strong hold in many Waukesha County lakes and threaten the future of local

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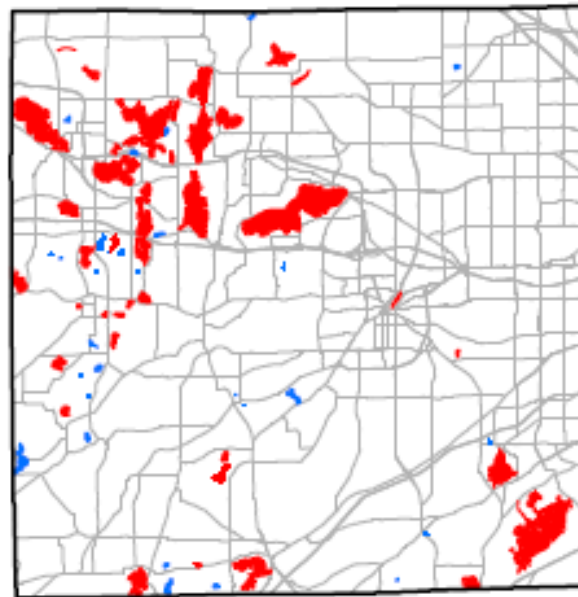
Credit: Brad Steckart

2

AQUATIC INVASIVE SPECIES AND WATER RESOURCES IN WAUKESHA COUNTY

- Updated inventory data and AIS distribution maps (presence/absence)
- Updated species photos & lists

Waukesha County Lake Distribution of Eurasian Watermilfoil: 2017



Eurasian Watermilfoil



Zebra Mussel Cluster



Java Waterdropwort

Table 2.1
Lakes (30 Acres or Larger) in Waukesha County and Identified AIS: December 2017

Number on Map	Water-Body Name	Surface Area (acres)	Maximum Depth (feet)	Waterbody with No AIS Reported or Documented	Aquatic Invasive				
					Eurasian Water Milfoil	Curly-Leaf Pondweed	Zebra Mussel	Starry Stonewort	I C
1	Ashippun Lake	94	35	--	X	X	X	--	--
2	Bass Bay Lake	104	23	--	X	X	X	X	--
3	Beaver Dam Lake	36	6	X	--	--	--	--	--
4	Beaver Lake	313	46	--	X	--	X	--	X
5	Crooked Lake	51	16	--	X	X	X	--	--
6	Dutchman Lake	33	43	--	X	--	--	--	--
7	Eagle Spring Lake	279	8	--	X	X	X	--	X
8	Fowler Lake	97	50	--	X	X	X	--	X
9	Genesee Lake, Lower	63	45	--	X	--	X	--	--
10	Genesee Lake, Middle	98	40	--	X	X	X	--	X
11	Genesee Lake, Upper	32	27	X	--	--	--	--	--
12	Golden Lake	252	44	--	X	X	X	--	X
13	Grass Lake	30	8	--	X	--	--	--	--
14	Hunters Lake	54	36	--	X	X	X	--	--

PRESENT ABSENT

2

AIS Species Already in Waukesha County

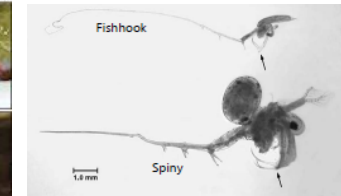
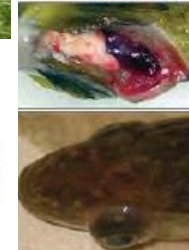
- NR 40 Classification
- Identifying Characteristics
- Look-alikes
- History
- Life Cycle
- Impacts
- Control



2

AIS Threatening Waukesha County

- NR 40 Classification
- Identifying Characteristics
- Look-alikes
- History
- Life Cycle
- Impacts
- Control



2

Summary of AIS Presence/Absence in Waukesha County (2017)

Lakes > 30 acres

- 38/42 lakes had "some" AIS
- **90% Eurasian watermilfoil**
- **69% curly-leaf pondweed**
- **71% zebra mussels**
- 62% purple loosestrife
- 36% mystery snails
- 7% rusty crayfish
- 7% starry stonewort
- 7% phragmites

Lakes < 30 acres

- 16/41 lakes had "some" AIS
- **34% Eurasian watermilfoil**
- **10% curly-leaf pondweed**
- **2% zebra mussels**
- 2% phragmites
- 0% purple loosestrife
- 0% mystery snails
- 0% rusty crayfish
- 0% starry stonewort

INTRODUCTION 1

AQUATIC INVASIVE SPECIES 2

EXISTING AND POTENTIAL ACTIONS AGAINST AIS 3

4

1.1 BACKGROUND

Aquatic invasive species (AIS) have a significant impact on the distribution and abundance of native species in the Waukesha Waterbody. This document provides information on how to protect and manage these species.



Credit: Brad Steckart

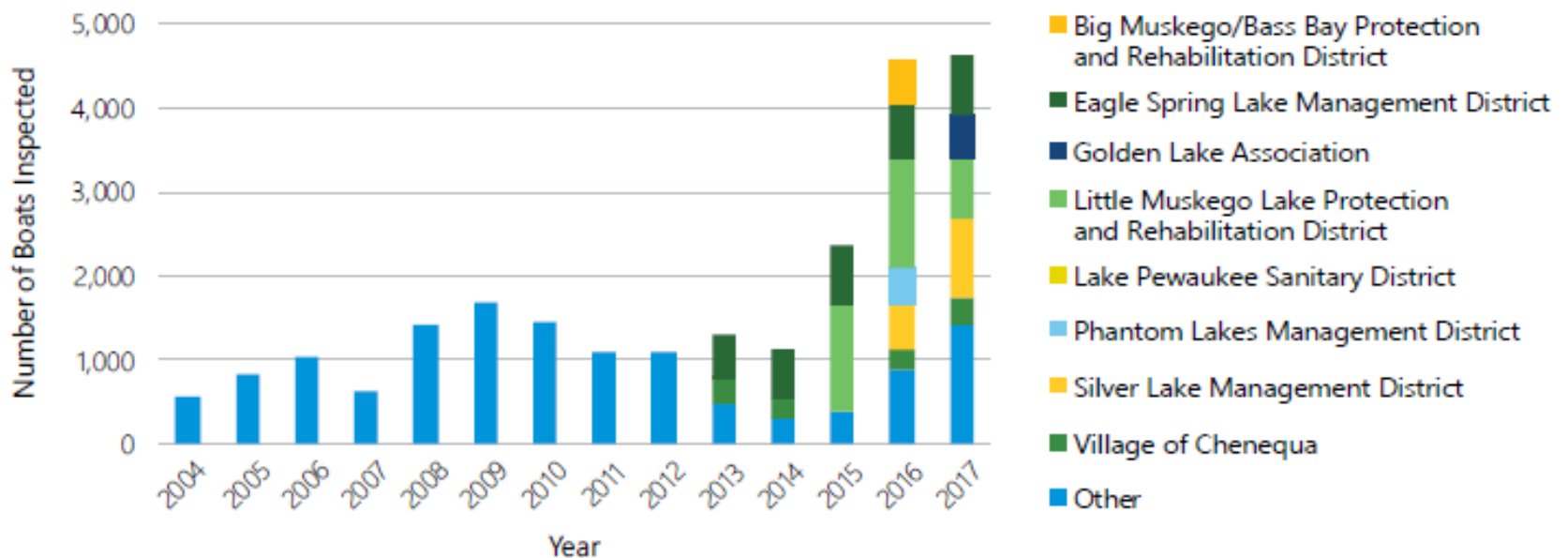
3.1 INTRODUCTION

Aquatic invasive species (AIS) gained attention on a national and statewide scale in the early 1990s after the passage of the federal Nonindigenous Nuisance Prevention and Control Act of 1990 (NANPCA) and the subsequent National Invasive Species Act (NISA) of 1996. Section 1201 of NANPCA established the National Aquatic Nuisance Species (ANS) Task Force, which was charged with coordinating government efforts related to AIS issues with those of the private sector and other North American interests. The ANS Task Force recommends technical assistance, research, and education as strategies for prevention, detection, and control of AIS. This chapter will lead to successfully combating AIS, benefiting many stakeholders throughout the County.

3

Updated Graphs of CBCW Efforts to 2017

Figure 3.2
Watercraft Inspection Efforts in Waukesha County: Boats Inspected (2004-2017)



Source: WDNR and SEWRPC

3

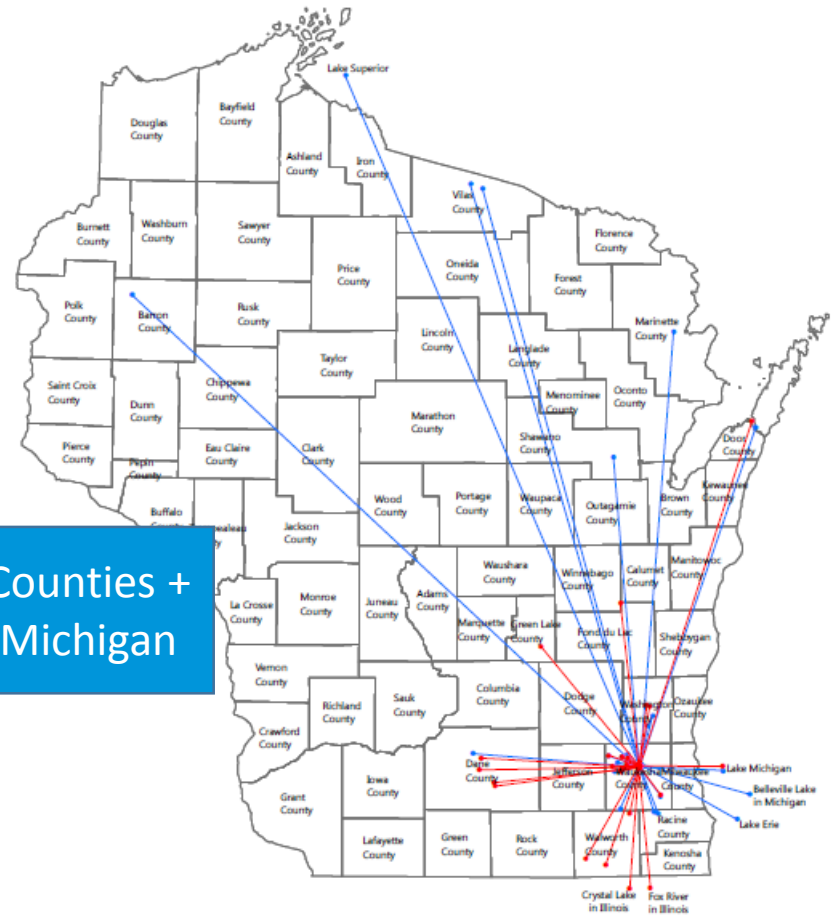
Example CBCW maps: 5-day Boater Travel

Map 3.1
Boats Used on a Different Waterbody in the 5 Days Prior to Coming to Little Muskego Lake



2016
2017

Map 3.2
Boats Used on a Different Waterbody in the 5 Days Prior to Coming to Pewaukee Lake



2016
2017

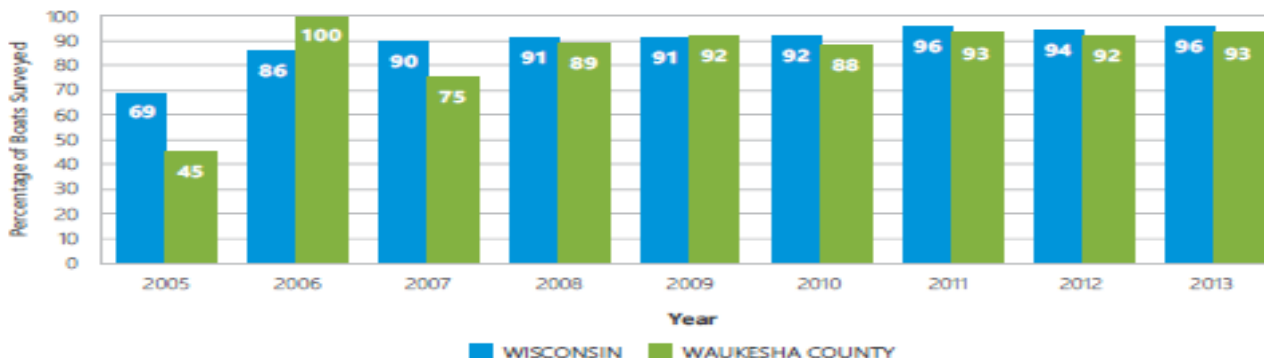
3

AIS Laws & Public Awareness of Them

Example WI laws:

- Prohibit AIS possession, transportation, introduction (NR 40)
- Drain boats & equipment when leaving WI waters (NR 19.055)
- Bait restrictions - type, origin, use, possession, distribution (NR 20.08)

Figure 3.5
Percentage of Surveyed Boats in Wisconsin and Waukesha County
Aware of Laws Intended to Prevent AIS Spread: 2005-2013



Source: WDNR and Waukesha County

3

AIS Monitoring & Control Methods

- Monitoring projects/recent efforts:
 - * Snapshot Day
 - * Landing Blitz
 - * Drain Campaign
 - * Meander/P.I. Survey
 - * Project R.E.D.
 - * CLMN
- Control methods/recent efforts:
 - * Manual Removal
 - * Chemical Treatment
 - * Mechanical Removal
 - * Biological Methods
 - * Drawdown
- Prevent spread through:
 - * Bait Sales
 - * Aquaculture
 - * Aquariums

3

Establish AIS Program Goals

AIS Advisory Committee Brainstorming Activity

1. **Educate** water users (residents/visitors) and the general public about the existence and impacts of AIS
2. **Prevent** the spread of AIS to/from local waters
3. **Collect** AIS population/distribution/density data
 - Map, maintain database, and analyze for county waters (regular updates)
4. **Reduce/manage/control** existing or new AIS populations in locally targeted areas
5. **Network/collaborate** with other entities on AIS efforts
6. **Sustain** the implementation of the AIS Strategic Plan
 - Including formulating revised action items based on successes/failures and changing condition



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AQUATIC INVASIVE SPECIES AND WATER RESOURCES 2

RECOMMENDATIONS AND IMPLEMENTATION 4

3

Credit: Brad Steekart

Brad Steekart

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RECOMMENDATIONS AND IMPLEMENTATION

- Tables contain notes, goals, and/or timelines depending on the action

Educate

Prevent

Collect, map,
and Analyze

Reduce,
Manage, and
Control

Network and
Collaborate

Sustain
Implementation

Goal 1

Educate Water Users, Both Residents and Visitors, and the General Public About the Existence and Impacts of AIS

Action Item	Notes/Goals/Timeline
Facilitate CBCW programs among county lakes. Initiate and maintain CBCW activities at lakes lacking the program.	37 of 42 lakes greater than 30 acres did not have active CBCW program in 2017
Attend and present at local and state conferences: <ul style="list-style-type: none"> • Wisconsin Lakes Partnership Convention • North American Lakes Management Society Symposium • Local lake groups, civic groups and youth groups 	Present latest program efforts, accomplishments, and challenges. Most are annual events.
Maintain outreach to fishing and hunting clubs	4 hunting and fishing clubs in Waukesha County.
Target lakes with fishing tournaments. Have volunteers present to educate anglers about AIS and prevention techniques.	33 DNR permitted fishing tournaments occurred in Waukesha in 2016. Aim to target 5 per year.
Display AIS information at boat retail and rental shops and include AIS information in packets upon purchase or rental	5 retail and 9 rental shops in Waukesha County. Target every spring before recreational season starts.
Create a Waukesha County AIS website with educational information, a portal for reporting infestations, and links to AIS-related webpages.	Complete by December 2018
Present AIS information consistent with grant goals via guest lectures at local schools, adult civic group meetings (Rotary, Lions), and youth group activities (4H, Scouts)	Target 10 clubs/schools per year
Utilize the Department of Parks and Land Use (PLU) social media footprint to share information and target AIS messaging. Encourage local governments, lake associations, and local business to join.	PLU maintains Facebook and Twitter accounts that already have a large following
Improve signs at boat launches by simplifying language, emphasizing laws and potential fines, and emphasizing AIS threatening Wisconsin.	Goal: 5 lake accesses per year Status: 7 signs were installed in 2016/2017.

New AIS Cleaning Station Signs

- Size: 4 ft. x 4 ft.
- Aluminum
- Cost: \$112/each
- County will help install if needed

AQUATIC INVASIVE SPECIES

AIS REMOVAL STATION

BEFORE LEAVING, YOU ARE REQUIRED BY LAW TO:

- ▶ **INSPECT** boats, trailers and equipment
- ▶ **REMOVE** all attached aquatic plants, animals and mud
- ▶ **DRAIN** all water from boats, vehicles and equipment including livewells
- ▶ **NEVER MOVE** plants or live fish away from a water body*

*Limited exceptions apply. Visit DNR.WI.GOV and search for "BAIT LAWS."

Optional steps include:

- ▶ Pressure wash areas indicated for at least 90 seconds to help remove invasive species that are hard to see and remove by hand
 - Keep the nozzle at a 90° angle to the boat and at least 12 inches away from the boat to prevent removing decals
- ▶ Treat live wells with a mild bleach or salt solution
 - ½ oz bleach/quart of water or ½ cup salt/gallon of water
 - Spray the inside of the live well and rinse before next use

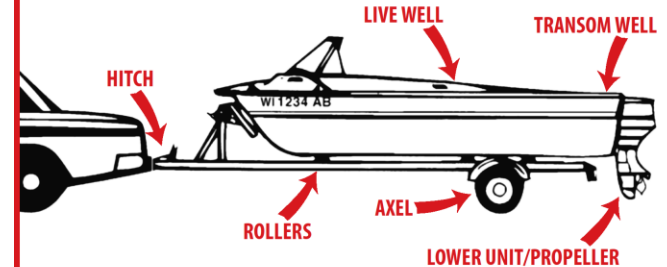


STOP AQUATIC HITCHHIKERS!

Prevent the spread of invasive species. It's the Law!



CHECK THESE LOCATIONS FOR INVASIVE SPECIES:



TOOLS

- Use tools to remove vegetation
- Place vegetation in the grass
- Dispose of unwanted bait in the trash at home

These tools help protect our lakes.
Please replace them when finished!

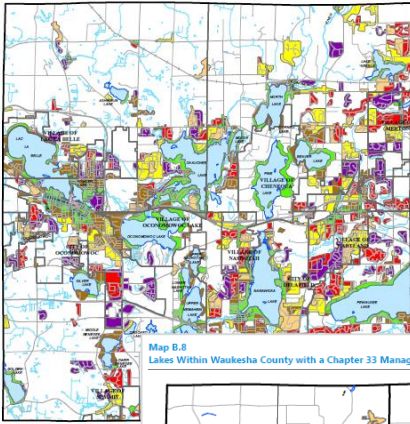
Policy Recommendations

- **Continue funding AIS Coordinator** – critical to program success
 - Continue Partnership with Washington County
- **More research** needed on AIS control, such as starry stonewort.
- **More technical training** needed on AIS control methods.
- **Permanent decontamination stations** (and staffing) may be necessary at boat launches.
- **More AIS law enforcement** needed (local level).
- **Improved access to AIS monitoring data** needed (and training)

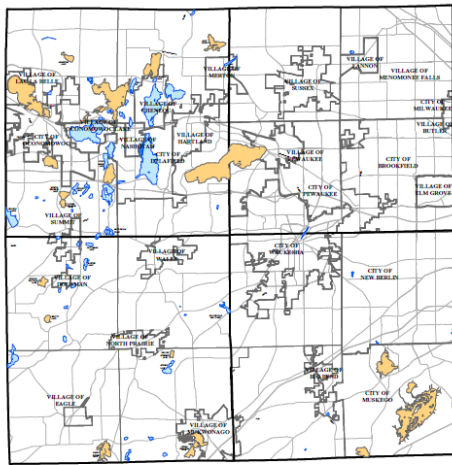
APPENDIX B

WAUKESHA COUNTY CHARACTERISTICS

Map B.2
Historical Urban Growth Within the Northwest Quadrant of Waukesha County: 1850-2010



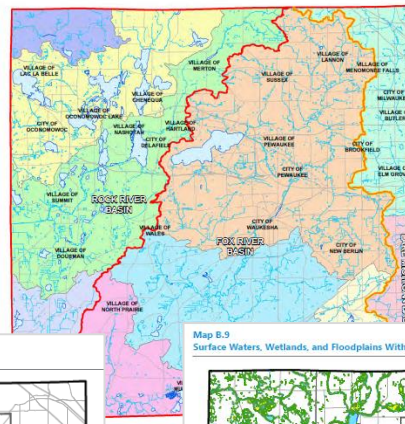
Map B.3
Lakes Within Waukesha County with a Chapter 33 Management District: 2017



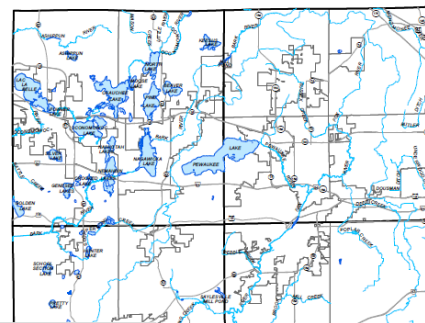
NOTE: As of December 2017, 20 lakes in Waukesha County over 30 acres in size are managed by a Lake District. Pewaukee Lake is organized as a Sanitary District.

LAKE WITH A MANAGEMENT DISTRICT
 LAKE WITHOUT A MANAGEMENT DISTRICT

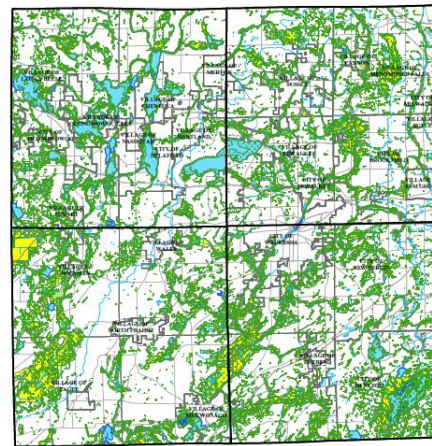
Map B.6
Major Watersheds Within Waukesha County



Map B.7
Major Lakes and Streams Within Waukesha County

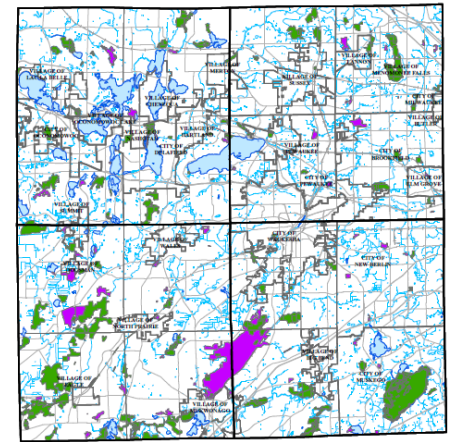


Map B.9
Surface Waters, Wetlands, and Floodplains Within Waukesha County



ONE PERCENT ANNUAL-PROBABILITY (100-YEAR RECURRENCE INTERVAL) FLOODPLAIN
 WETLAND
 SURFACE WATER
 STREAM

Map B.10
Natural Areas and Critical Species Habitat Located Within Waukesha County: 2010



NATURAL AREA
 CRITICAL SPECIES HABITAT
 SURFACE WATER
 STREAM

Source: SEWRPC

Source: SEWRPC

Source: SEWRPC

APPENDIX C

AIS RESOURCES



A WDNR PUBLICATION THAT PROVIDES TIPS AND DETAILED PHOTOS FOR IDENTIFYING BIGHEAD, SILVER, BLACK, GRASS, AND COMMON CARPS

dnr.wi.gov/files/pdf/pubs/wt/wt0999.pdf



HOW TO REPORT POSSIBLE AIS

While prevention is the most effective approach to Aquatic Invasive Species, early detection and response is critical to eradication or control before invasive species become widespread. Monitoring reporting locations of invasive species is also vital to preventing the spread of aquatic invaders.

If you think you have found a possible AIS:



WAUKESHA COUNTY AQUATIC INVASIVE SPECIES STRATEGIC PLAN

EXECUTIVE SUMMARY

Waukesha County's aquatic ecosystems are experiencing negative impacts from existing aquatic invasive species (AIS) and continue to be threatened by new invasions. Since the 1960s, local residents have noticed detrimental changes in lakes often caused by the presence of AIS. Because AIS affect natural resources, human health, recreation, and ecosystem services throughout the County, their control has become a driving force for the formation of many Lake Associations and Lake Districts. AIS also have significant economic impacts on utilities, tourism, and the value of waterfront property.

AIS enter, and are distributed throughout, Waukesha County by human-assisted vectors including recreational boating, hunting, fishing, tourism, development activities, and the trade of live organisms. Conservation staff and volunteer groups have partnered to invest thousands of hours combatting new invasions of AIS by implementing educational programs to increase awareness of, and compliance with, AIS related laws. Surveying lakes, conducting boater behavior surveys, and talking to specific user groups has allowed County staff to improve awareness of AIS issues among stakeholders, identify and report lakes contaminated with AIS, and begin developing recommendations to prevent the spread of AIS to more lakes, rivers, and streams.

In February 2017, Waukesha County was awarded a three-year grant to continue a cooperative AIS education, prevention, and control program with adjacent Washington County. Additional financial support from local lake groups made it possible to complete this Strategic Plan and hire a second intern to monitor boat launches for AIS at several lakes around the County during the summer. This plan describes how AIS affect recreation, ecology, and the economy of the County as well as the benefits of stopping the spread of AIS. The plan also maps specific AIS in local lakes, informs the public of management options, and provides recommendations for AIS education, prevention, and control.



Credit: Katelin Helm



Credit: Brad Steckart



Credit: Brad Steckart



Credit: Brad Steckart

WAUKESHA COUNTY AQUATIC INVASIVE SPECIES STRATEGIC PLAN

EXECUTIVE SUMMARY

Waukesha County's continued success with AIS prevention, containment, and control requires the establishment of priorities. The broad spectrum of challenges, combined with a limited amount of resources, requires that a strategic approach be taken to combat AIS. Working through a local advisory committee, this plan establishes a set of goals and action items to guide the implementation of an AIS program in Waukesha County through 2023. The goals include the following:

- Goal 1: Educate water users, both residents and visitors, and the general public about the existence of AIS
- Goal 2: Prevent the spread of AIS to and from local waters
- Goal 3: Collect, map, analyze, and periodically update AIS population, distribution, and density data within Waukesha County to monitor program effectiveness and identify new AIS threats
- Goal 4: Reduce, Manage, and Control new and existing AIS populations within Waukesha County
- Goal 5: Network and Collaborate with other entities on AIS efforts
- Goal 6: Sustain the implementation of the AIS Strategic Plan and utilize it as a living document

To accomplish each of the above goals, detailed action items are described in Chapter 4 of this plan. The spread of AIS can be successfully prevented and managed in Waukesha County through an effective outreach and education program, appropriate control measures, targeted AIS law enforcement, and a robust partnership with local governments, lake districts, conservation groups, and other volunteers. This plan recommends how these items can be carried out. To be effective, the recommended actions require a coordinated effort around the County and the continuation of program funding, either through grants or other more reliable funding sources.



Credit: Brad Steckart



Credit: Wikimedia Commons User Liz West



Credit: Paul Skawinski



Credit: D. Jude, University of Michigan



Waukesha County **Aquatic Invasive Species (AIS) Strategic Plan (2018-2023)**

COMMUNITY ASSISTANCE
PLANNING REPORT NO. 333

WAUKESHA COUNTY AQUATIC INVASIVE SPECIES STRATEGIC PLAN



SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

BACKGROUND

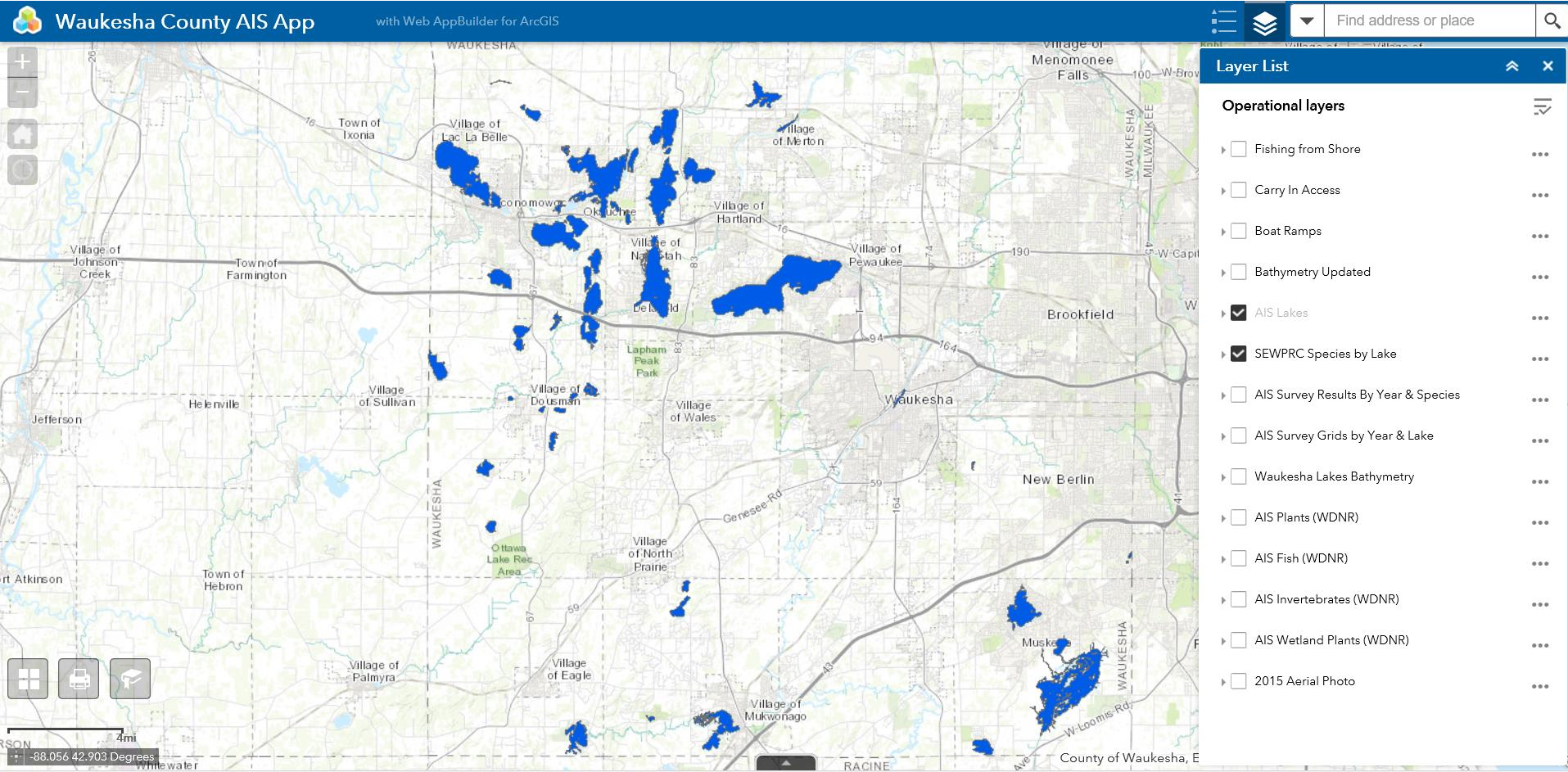
- Timeline:
 - 2016 AIS data gathering
 - 2017 plan preparation & mapping
 - 2018 (Feb) published
- Planning advisory committee
 - 11 members (+ agency staff)
- Funded by:
 - WDNR
 - Local lake/conservation groups (thank you!)
- SEWRPC planners

Goals and Objectives for the Strategic Planning Maps

- Serve as strategic planning tool for future AIS surveys, CBCW efforts and outreach
- Document changes over time
- Facilitate field data entry (GIS App) & mobile ready
- Link to other data sources (i.e. WDNR)



Waukesha County AIS GIS APP



Waukesha County AIS GIS APP

Waukesha County Aquatic Invasive Species Strategic Plan

AIS GIS App Tools

<http://arcg.is/2Eu5pbe>



Lake List: Pick a lake name from the list and the app will pan & zoom to that lake



Layer List: Click the box to turn on or off boat launch locations, lake topo maps, AIS presence layers and aerial photos for your map



Legend: The legend will explain the map information that is being displayed on the screen



Print: Create a .pdf map that you can print and take with you



Search: Enter a key word in the search box then click on the magnifying glass to help you find what you're looking for

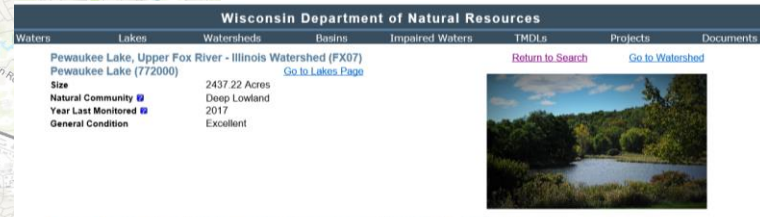
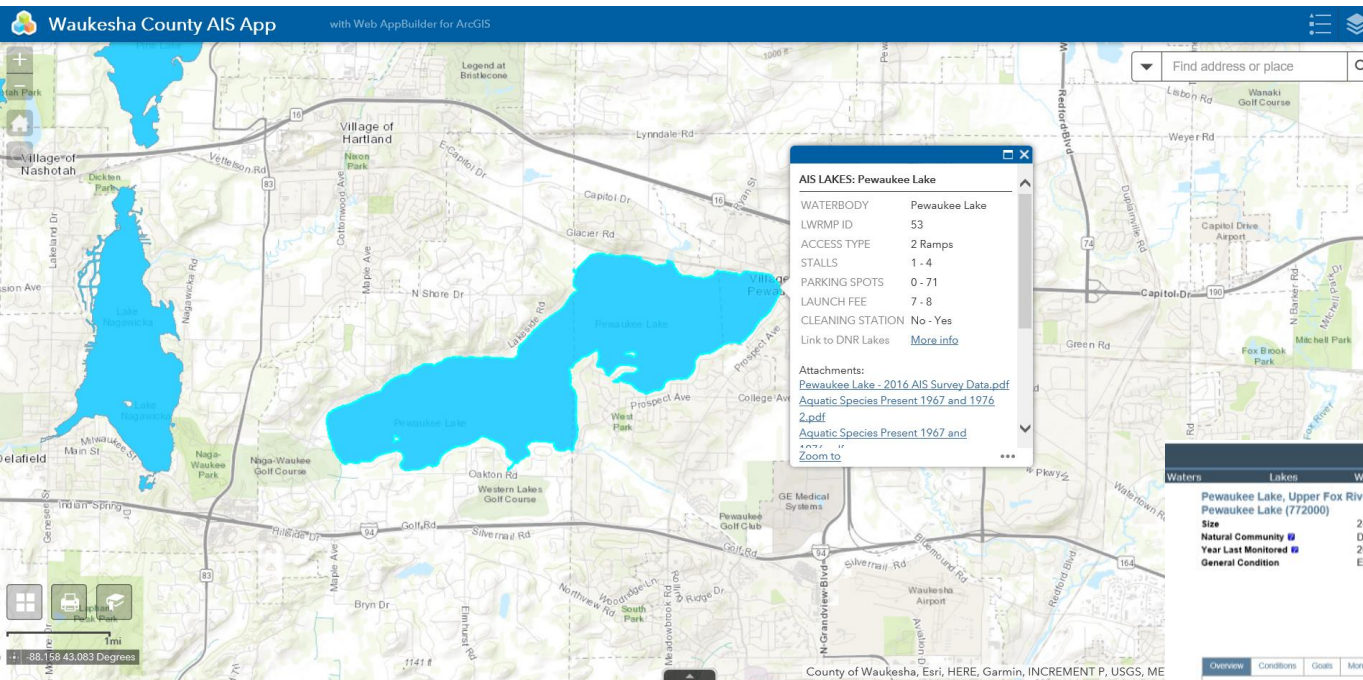


Basemap Gallery: Change the background of the map by picking between a number of different options.

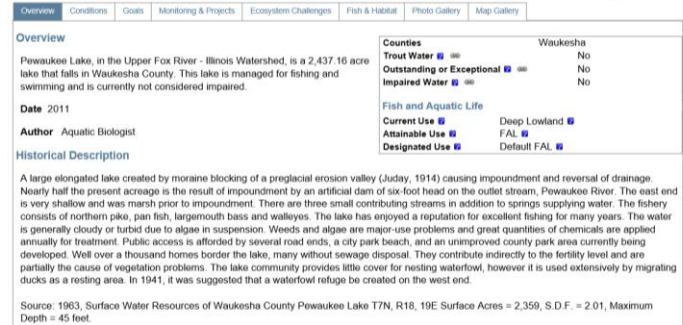


Home: Click to zoom back out to the county-wide view

Waukesha County AIS GIS APP



- Boat Launch Information
- Links to published maps
- Links to DNR website

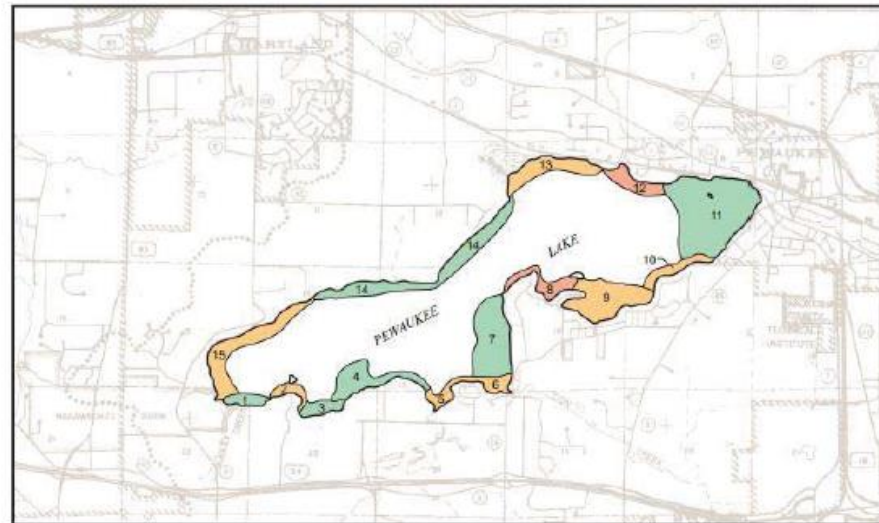


Waukesha County AIS GIS APP

- Historic Vegetation Maps
- Example: Aquatic Plant Communities from 1976

Map 15

AQUATIC PLANT COMMUNITY DISTRIBUTION IN PEWAUKEE LAKE: 1976

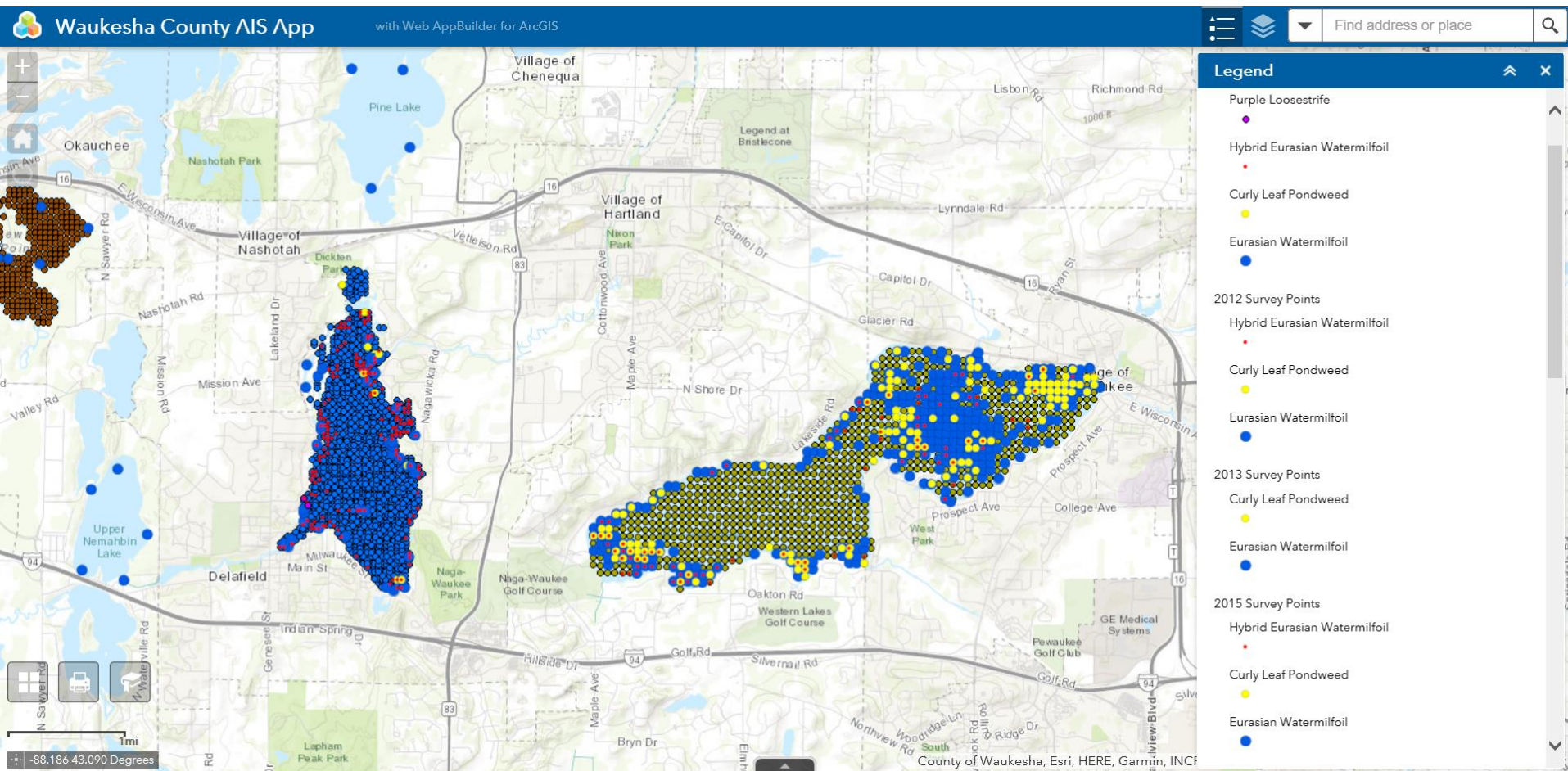


RELATIVE ABUNDANCE BY LAKE AREA

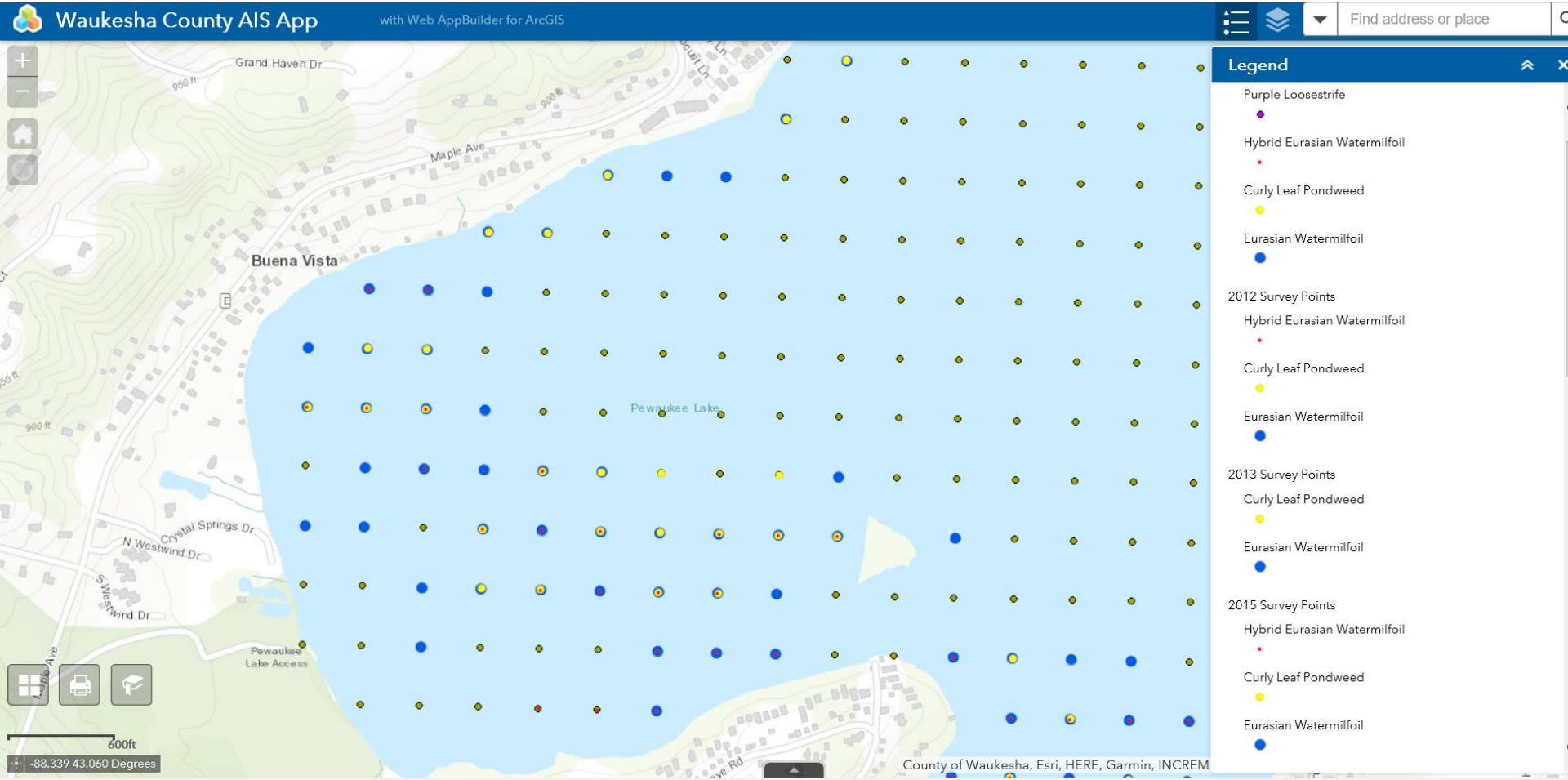


Source: SEWRPC

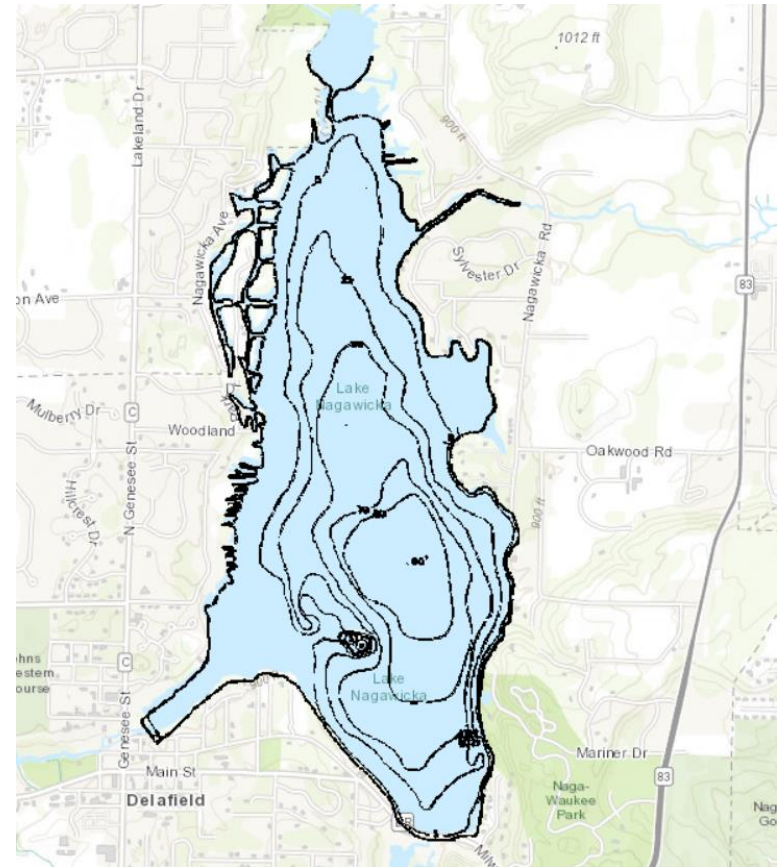
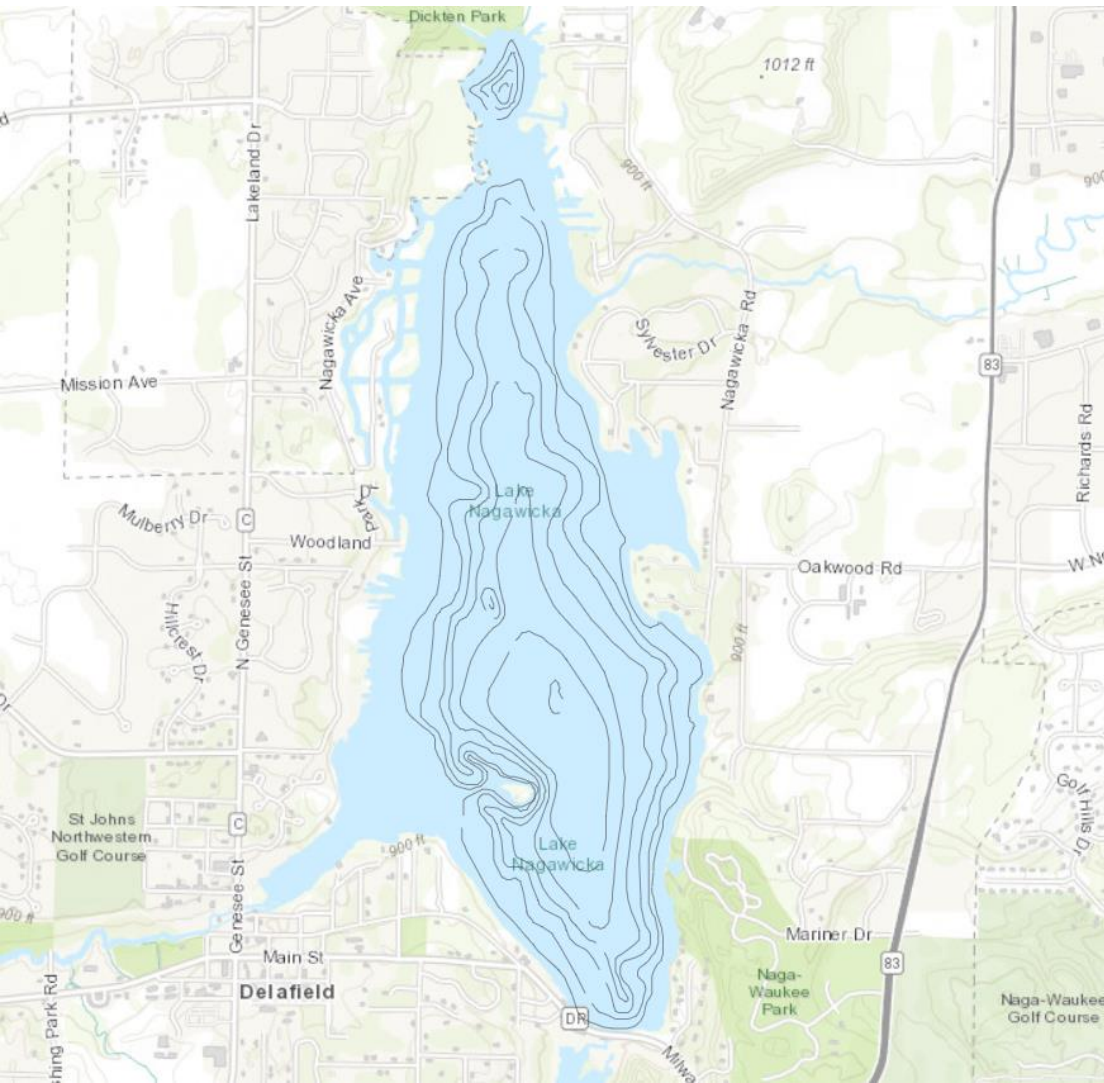
Waukesha County AIS GIS APP



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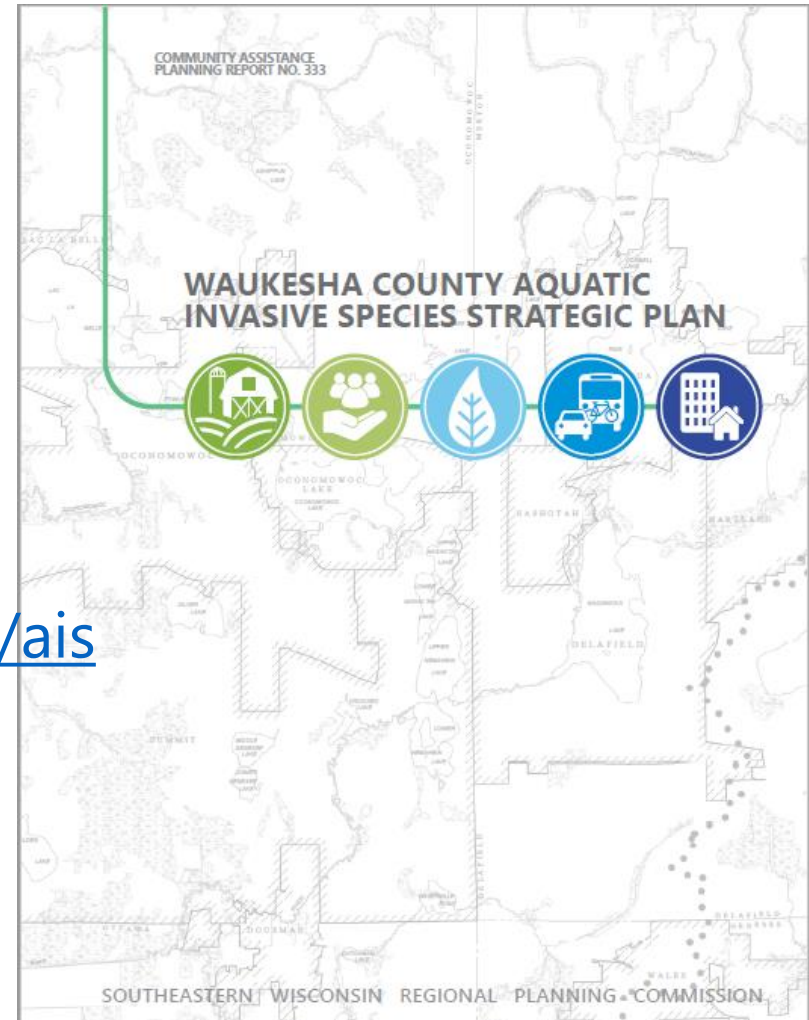


Waukesha County AIS GIS APP



Next Steps

- Public Forum:
March 27th at 7pm
Delafield Brewhaus
- County Board: May 2018
- Living Online Document
 - www.waukeshacounty.gov/ais
 - Annual reviews
 - 5-year updates



Thank you!

www.waukeshacounty.gov/ais

Brad Steckart, AIS Coordinator

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