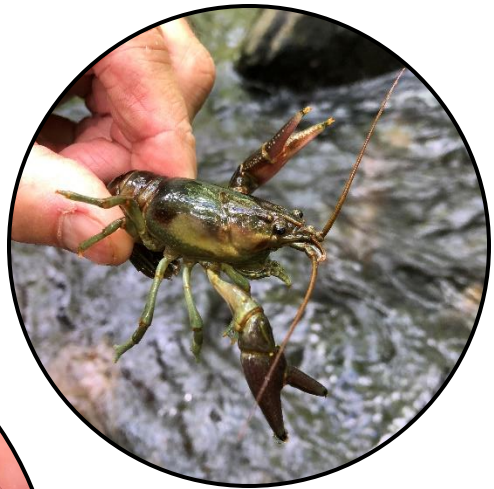


Burnett County 2020 AIS Annual Report

Prepared by Thomas Boisvert, AIS Coordinator



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Introduction

Burnett County has participated in Aquatic Invasive Species (AIS) education, prevention, and control efforts for decades. AIS are aquatic plants, animals, algae, or viruses that are not native to the region they were transplanted to. AIS could have been intentionally introduced to a non-native environment or transported unintentionally through various ways. No matter how they arrived to an area, AIS have a significant impact on the natural environment, the economy, and culturally significant resources.

The most common transportation vectors of AIS are through the aquaculture trade, recreational boater movements, hunters and anglers, and the pet trade. The Clean Boats, Clean Waters (CBCW) program in Wisconsin helps to target recreational boaters, anglers, and hunters. The other mechanisms of spread often have specialized programs developed by the Wisconsin Department of Natural Resources (WDNR).

Fortunately, Burnett County has relatively few forms of AIS when compared to other regions of Wisconsin and the United States. Burnett County is often referred to as “Wisconsin’s premier northwest,” and to keep this slogan relevant, AIS must be slowed or prevented from invading the County’s natural resources. The many pristine waterbodies in Burnett County drive the economy during the summer months, and are what keep people returning each season. If these water resources were to be impaired not only would the natural ecosystems suffer, but the region’s pocketbook as well.

To view the most common forms of AIS, or ones of considerable threat, please use the following link to view [AIS Fact Sheets](#) developed by Golden Sands RC&D and the Citizen Lakes Monitoring Network.

This summary document highlights the programs and work that Burnett County’s Land Services Department (BCLSD) completed during the 2020 field season, and what will continue for the year 2021. If additional information is desired about these programs, feel free to contact Burnett County’s AIS Coordinator, Thomas Boisvert, using the contact information below.

Thomas Boisvert

Burnett County Aquatic Invasive Species Coordinator
Conservation Division – Land Services Department
tboisvert@burnettcounty.org
(715) 349–2109 Ext. 2613



Burnett County's Current AIS Goals

Burnett County's main AIS goal is simple – stop the spread. However, there are some main objectives that keep this idea possible. These objectives and activities were written directly into the [Burnett County Land and Water Resource Management Plan](#).

Aquatic Invasive Species Objectives:

- A. Monitor and control Eurasian Water Milfoil, Purple Loosestrife, Asian Carp, Zebra Mussels, and other Aquatic Invasive Species.
- B. Protect native aquatic plants (especially wild rice) and aquatic habitat.
- C. Monitor and control terrestrial invasive species such as spotted knapweed, buckthorn, leafy spurge, and giant and Japanese knotweed.

Aquatic Invasive Species Activities:

- 1. Inspect watercraft and equipment at public access points to help prevent accidental spread of invasive species into additional lakes and rivers. Implement the Clean Boats, Clean Waters program and support ILIDS cameras.
- 2. Assist lake organizations with aquatic plant inventories and plans.
- 3. Support Burnett County Sheriff and lake association efforts to enforce the AIS Ordinance.
- 4. Develop rapid response plans for eradication of manageable infestations.
- 5. Monitor native and invasive aquatic plants at boat landings and other areas where invasive introductions are likely to occur.
- 6. Track purple loosestrife, zebra mussel, Eurasian water milfoil and other aquatic and terrestrial invasive species infestations.
- 7. Promote establishment of decontamination stations at surface water access points.
- 8. Monitor lakes for zebra mussels using veliger tows, eDNA, plate samplers, and other available methods in cooperation with Washburn County.

“Staff also educate residents and visitors regarding the identification, threats, and control of aquatic invasive species. Inspections of water craft at public access points help prevent accidental spread of invasive species into additional lakes and rivers. A comprehensive purple loosestrife identification and eradication program has been established and is currently underway in the county.” – Burnett County Land and Water Resource Management Plan.

Burnett County AIS Ordinance

The Burnett County AIS Ordinance was amended in 2018 from the original “Do Not Transport” ordinance. In the amendment, it is now specified that if decontamination materials are present at a waterbody access, they must be utilized by law. Burnett and Washburn Counties were the first two counties to adopt an AIS ordinance of this nature. Recently, Bayfield County and Barron County have adopted similar ordinances.

This amendment was the result of intense public pressure for Burnett and Washburn Counties to be proactive against the spread of zebra mussels and other AIS. This pressure came after zebra mussels were first identified in Big McKenzie Lake in 2016, and shortly after in Middle McKenzie Lake as well.

When brought to county boards for approval, the amendment was passed unanimously.

While the ordinances were being amended, Burnett and Washburn Counties applied for an AIS Rapid Response grant. This grant focused on preventing the spread of zebra mussels any further. A main goal of the grant was to purchase decontamination stations for local lake associations to install at water access points. Once the county ordinances were adopted the public was required to use these stations by law.

The general public accepted the decontamination stations, and were grateful to see that there are proactive measures in place to prevent the spread of AIS. However, there were some people that were not fond of this change. Since the ordinance is in place, the people that objected to these stations were reported and subsequently given warnings. In 2019, ordinance enforcement became much stronger, and there was a strong system in place for the 2020 season.

In 2020, the ordinance was revised to include higher fine amounts. This change was encouraged by local citizens and lake organizations that felt the previous fines were not high enough to deter violators. Burnett County was behind this change, and the new fine amounts were changed before the 2020 season – so far a citation has not needed to be issued. The public was notified of this change through public meetings and media releases.



Reporting a Burnett County AIS Violation

What you should be submitting:

AIS Violation Report Form

- A. [Violation Form](#) can be found on the UW-Extension Clean Boats, Clean Waters website and should be filled out with as much information as possible.
- B. Please remember to check the box stating law enforcement may contact you for more details regarding the incident. This will help law enforcement follow-up with the reported incident.

Pictures/Videos

- A. Pictures and videos can be the most effective way for showing an AIS violation. Photographic evidence of suspects leaving or entering a waterbody with plants, mud, or water can help issue a citation if one is warranted.
- B. Videos are also great tools to clearly show a violation, however, they may be more difficult to obtain.
- C. If you are in a public area, photos and videos are legal to obtain.

Where you should send the violation:

- A. Burnett County AIS Coordinator
Thomas Boisvert
tboisvert@burnettcounty.org
(715) 349-2109 Ext. 2613

What you should expect:

Law Enforcement Contact

- a. Law enforcement may wish to contact you for gathering more information, obtaining a personal statement, or to stand as a witness.
- b. By making your information as clear as possible when it was first submitted, law enforcement shouldn't need to contact you unless necessary.

Time

- c. Law enforcement is always busy, and they do their best to stay current on violations. However, be prepared to expect some time before follow-up.

Please remember:

[Never put yourself in a dangerous situation.](#) If an individual is hostile, safely gather as much information as you can and call law enforcement.

[Education is a powerful tool.](#) Some people truly may be unaware as to why they should be concerned about AIS, and you should do your best to calmly inform them why AIS laws are in place

Burnett County Decon Station Locations

Map created by Burnett County Land Services Dept.

Legend

- Decontamination Stations
- Town Road
- County Highway
- State Highway
- Rivers
- Lakes

Big McKenzie Lake (1)
Big Trade Lake (1)
Birch Island Lake (2)
Culbertson Lake (1)
Des Moines Lake (1)
Fish Lake (1)
Lake 26 (1)
Lipsett Lake (1)
Little Bear Lake (1)
Little Wood Lake (1)
Long Lake (1)
Loon-Cadotte Lakes (2)
Middle McKenzie Lake (1)
North Sand Lake (1)
Rooney Lake (1)
Shoal Lake (2)
Yellow Lake (3)

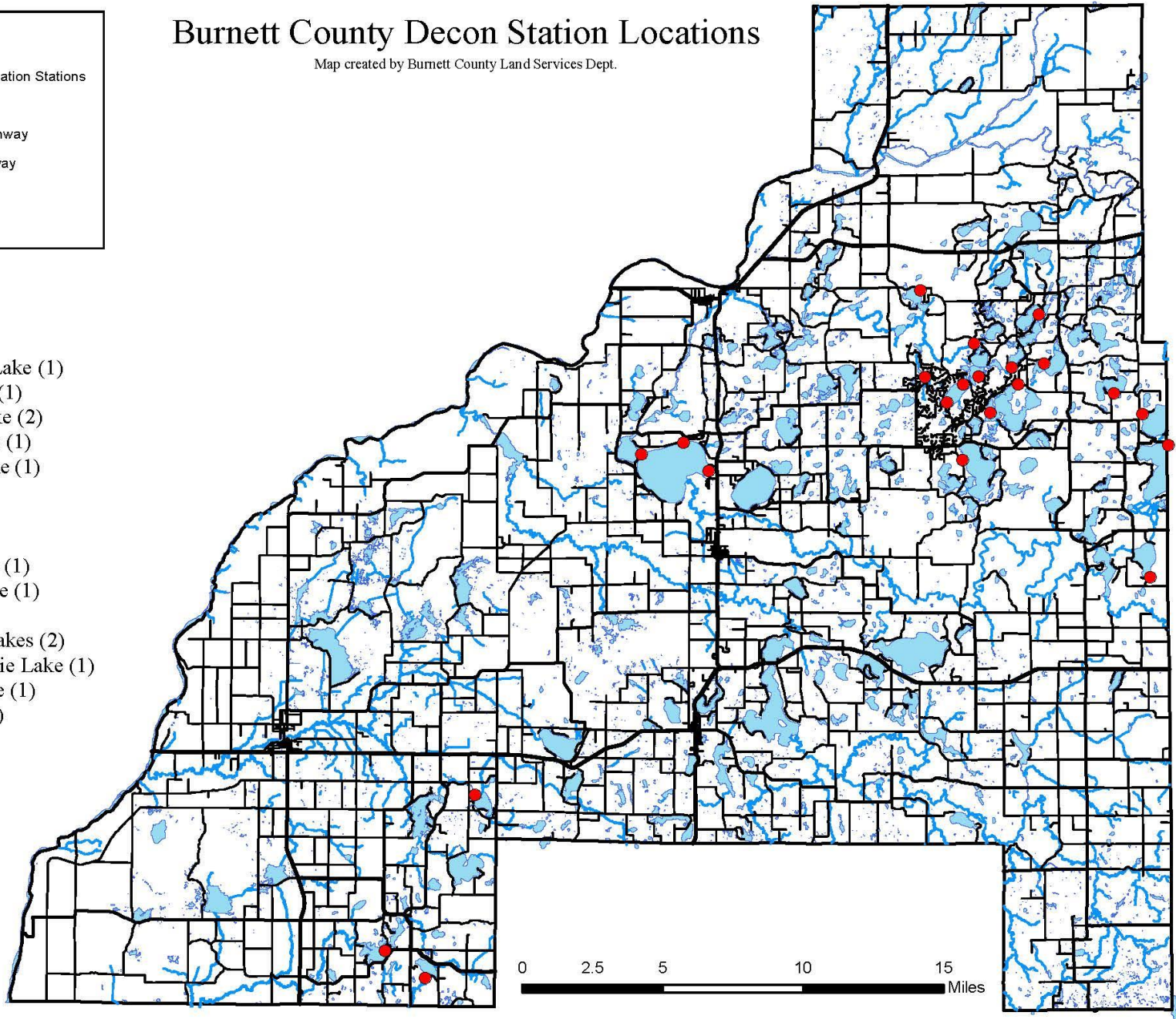


Figure 1: Burnett County Decontamination Station Locations

Zebra Mussel Response

In the fall of 2016, zebra mussels were discovered in Big McKenzie Lake. One year later in the fall of 2017, they were also discovered in neighboring Middle McKenzie Lake. These unfortunate discoveries propelled the public and natural resource agencies/organizations into an intense monitoring response.

Immediately after the discovery in 2016, Burnett and Washburn Counties applied for a rapid response grant. This rapid response grant was awarded by the WDNR, and it started to be administered in 2017. The funds from this rapid response grant were/are used to purchase decontamination stations, monitoring equipment and supplies, and outreach materials. Decontamination stations are placed at water accesses throughout Burnett and Washburn Counties, and a map of decontamination stations throughout Burnett County can be viewed in Figure 1 on the previous page.

Decontamination stations were purchased as a result of Burnett and Washburn Counties both passing a similar “decontamination ordinance.” This ordinance states that if decontamination materials are present, by law, they must be used. Burnett and Washburn Counties are currently the only two counties in Wisconsin that have a decontamination ordinance. Because of this, there has been a learning curve throughout the implementation of the ordinance.

Zebra mussel plate samplers were placed on the McKenzie Lakes to monitor the growth of the population yearly. In 2020, the population continued to surge in Big McKenzie, and Middle McKenzie is still showing significant growth as well. It will be interesting to see the progression of the population in 2021. Zebra mussel plate samplers are also placed throughout many lakes in Burnett and Washburn Counties for monitoring purposes. So far, Big and Middle McKenzie are still the only two lakes in Burnett and Washburn Counties that have zebra mussels.

The following page highlights the monitoring efforts and procedures from various organizations that were/are a part of this zebra mussel response effort. Together, these organizations created the McKenzie Lakes Area Zebra Mussel Management Team.



Burnett County Zebra Mussel Monitoring Efforts

Decontamination Station Locations

Big Trade Lake (1)
Birch Island Lake (3)
Culbertson Lake (1)
Des Moines Lake (1)
Fish Lake (1)
Lake 26 (1)
Lipsett Lake (1)
Little Bear Lake (1)
Little Wood Lake (1)
Long Lake (1)
Loon-Cadotte Lakes (3)
Middle McKenzie Lake (1)
North Sand Lake (1)
Rooney Lake (1)
Round Lake (1)
Shoal Lake (2)
Yellow Lake (2)

Burnett County Total: 23

Zebra Mussel Plate Sampler Lakes

Bashaw Lake (2018, 2019, 2020)
Big Sand Lake (2017, 2018, 2019)
Birch Island Lake (2018, 2019, 2020)
Clam Lake (2017, 2018, 2019)
Deer Lake (2017, 2018, 2019, 2020)
Des Moines Lake (2018, 2019, 2020)
Green Lake (2019, 2020)
Lily Lake (2019, 2020)
Lindy Lake (2019, 2020)
Lipsett Lake (2017, 2018, 2019, 2020)
Long Lake (Siren) (2019, 2020)
Long Lake (Webb Lake) (2018, 2019, 2020)
Loon-Cadotte Lake (2018, 2019, 2020)
Mystery Lake (2018, 2019, 2020)
Nicaboyne Lake (2019, 2020)
Rice Lake (2018, 2019, 2020)
Spirit Lake (2018, 2019, 2020)
Yellow Lake (2017, 2018, 2019)

Zebra Mussel Veliger Testing Lakes

Bashaw Lake (2017)
Benoit Lake (2017, 2018)
Big McKenzie Lake (2017, 2018, 2019, 2020)
Big McGraw Lake (2020)
Big Trade Lake (2018, 2019, 2020)
Big Wood Lake (2020)
Clam River Flowage (2018, 2019, 2020)
Des Moines Lake (2020)
Devils Lake (2019)
Dunham Lake (2017, 2018)
Falk Lake (2018, 2019, 2020)
Holmes Lake (2020)
Lake 26 (2020)
Lipsett Lake (2018)
Little McGraw Lake (2020)
Little Wood Lake (2017)
Long Lake (Webb Lake) (2020)
Love Lake (2018)
Memory Lake (2018, 2020)
Middle McKenzie Lake (2018)
Nicaboyne Lake (2019)
North Sand Lake (2019)
Rice Lake (2017, 2019)
Spirit Lake (2017)
Webb Lake (2019)
Yellow Lake (2018, 2019, 2020)

Environmental – DNA Testing (EDNA)

Bashaw Lake (2018)
Benoit Lake (2018)
Big McKenzie Lake (2018, 2019, 2020)
Clam River Flowage (2019)
Dunham Lake (2018)
Lipsett Lake (2019)
Middle McKenzie Lake (2018, 2019, 2020)
Rice Lake (2018)
Webb Lake (2019)

Washburn County Zebra Mussel Monitoring Efforts

Decontamination Station Locations

Bass Lake (Casey) (1)
Bear Lake (2)
Big McKenzie Lake (1)
Cable Lake (1)
Island Lake (1)
Long Lake (4)
Lower McKenzie Lake (1)
Mathews Lake (1)
Nancy Lake (1)
Potato Lake (1)
Spoonier Lake (1)
Stone Lake (1)
Washburn County Total: 16

Zebra Mussel Veliger Testing Lakes

Bass Lake (Casey Township) (2018, 2019)
Bear Lake (2020)
Big McKenzie Lake (2017, 2018, 2019, 2020)
Birch Lake (2017)
Deep Lake (2017)
Gull Lake (2020)
Island Lake (2019)
Long Lake (2020)
Lower McKenzie Lake (2019, 2020)
Matthews Lake (2020)
Middle McKenzie Lake (2018)
Nancy Lake (2019)
Pokegama Lake (2017, 2018, 2019)
Rocky Ridge Lake (2017)
Spoonier Lake (2018, 2019)
Tozer Lake (2017, 2018, 2019)
Trego Lake (2017)
Slim Lake (2019)
Stone Lake (2020)

Zebra Mussel Plate Sampler Lakes

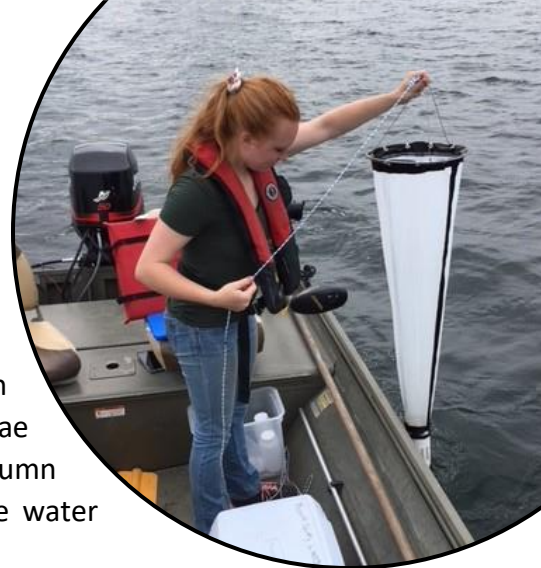
Balsam Lake (2020)
Bass Lake (Casey) (2018, 2019, 2020)
Bear Lake (2019, 2020)
Big McKenzie Lake (2017, 2018, 2019, 2020)
Chicog Lake (2017, 2018, 2019)
Gull Lake (2018, 2019, 2020)
Hemlock Lake (2020)
Horseshoe Lake (2019, 2020)
Long Lake (2017, 2018, 2019, 2020)
Lower McKenzie (2017, 2018, 2019, 2020)
Mathews Lake (2017, 2018, 2019, 2020)
McLain Lake (2017, 2018, 2019)
Middle McKenzie (2017, 2018, 2019, 2020)
Minong Flowage (2019, 2020)
Nancy Lake (2018, 2019, 2020)
Pear Lake (2017, 2018, 2019, 2020)
Pokegama Lake (2019, 2020)
Red Cedar Lake (2017, 2018, 2019, 2020)
Slim Lake (2019, 2020)
Spoonier Lake (2018, 2019, 2020)
Trego Lake (2017, 2018, 2019, 2020)
Twin Lakes (2017, 2018, 2019, 2020)

Environmental – DNA Testing (eDNA)

Bass Lake (Casey Township) (2018)
Big McKenzie Lake (2018, 2019, 2020)
Gull Lake (2018, 2019)
Long Lake (2018)
Lower McKenzie Lake (2018, 2019)
Middle McKenzie Lake (2018, 2019, 2020)
Tozer Lake (2018)
Trego Lake (2018)

What Are Veliger Tows?

Veliger tows are used for monitoring lakes for the presence/absence of zebra mussels. Veligers are an early larval stage of zebra mussels that are suspended in the water column. While in the water column they are intermixed with algae, zooplankton, and phytoplankton. Algae is the main source of food for the larva. Veligers stay in the water column for several weeks until they are large enough to settle out of the water column and attach themselves to hard substrates.



Veliger tows are conducted when veliger numbers should be the highest. In Wisconsin, the peak in this cycle happens mid to late summer. The net used during the tows is shaped like an inverted cone, and at the bottom is a weighted collection container. The net is lowered vertically around 9 feet and slowly retrieved to gather a sample. The mesh of the net has very small 63 micron pores to ensure veligers would be captured in a sample. Concentrated water from the collection container is collected into a sample bottle. This process is repeated several more times throughout the waterbody (depending on size) and the sample bottle that a lab analyzes (Burnett County uses RMB Laboratories) is a composite from several locations across the waterbody. Microscopes are needed to properly look for veligers in the sample.

What is eDNA monitoring?

Environmental DNA (eDNA) is the DNA of an organism that was left in the environment that it lives in – think of the organism “shedding” their DNA. Scientists can use the DNA found in an environment (in our case a waterbody) and determine if it belongs to a species of interest (in our case zebra mussels). Each organism has unique sequences inside their DNA, and these unique sequences are targeted by researchers. If a unique sequence is found from a target species, it was most likely in that environment in order to “shed” that DNA.

To collect eDNA monitoring samples for zebra mussels, water must be collected from the water column. Generally, surface water yields the highest probability of eDNA presence, but samples can be collected at varying depths. Multiple water samples are collected throughout the waterbody and composited to be representative. From here, water can be analyzed directly or pumped through micro-filters to hopefully help concentrate potential eDNA.



This method for zebra mussel monitoring is still very new, but it is showing high promises. Ongoing research is needed to show which eDNA collection and analyses methods are the best.

Calcium Research

The goal of this project was to take a closer look at the AIS Smart Prevention Tool, and its accuracy in a local setting. Conclusions drawn from this project will help guide future zebra mussel containment decisions. Priority monitoring locations can be identified with confidence, and AIS funding can be used appropriately. Burnett and Washburn County decided to monitor 30 waterbodies (15 in each County) in order to achieve a representative sample of this specific region. The lakes monitored are listed below in table 1.

Results at this time show that differences do exist between field data and the AIS Smart Prevention Tool. Findings will be presented at the 2021 Wisconsin Water Week, Wisconsin Land and Water Conference, and the Northwest Lakes Conference.

Table 1: Calcium Monitoring Lakes

<i>Lake Name</i>	<i>WBIC</i>	<i>County</i>
<i>Balsam Lake</i>	2112800	Washburn
<i>Bass Lake</i>	2451300	Washburn
<i>Bear Lake</i>	2105100	Washburn
<i>Big McKenzie Lake</i>	2706800	Washburn
<i>Big Sand Lake</i>	2676800	Burnett
<i>Big Trade Lake</i>	2638700	Burnett
<i>Big Wood Lake</i>	2649800	Burnett
<i>Birch Island Lake</i>	2453500	Burnett
<i>Birch Lake</i>	2113000	Washburn
<i>Deer Lake</i>	2460700	Burnett
<i>DesMoines Lake</i>	2674200	Burnett
<i>Devils Lake</i>	2461100	Burnett
<i>Fish Lake</i>	2464500	Burnett
<i>Gilmore Lake</i>	2695800	Washburn
<i>Lake 26</i>	2672500	Burnett
<i>Lipsett Lake</i>	2678100	Burnett
<i>Long Lake</i>	2674100	Burnett
<i>Long Lake</i>	2106800	Washburn
<i>Loon Lake</i>	2673500	Burnett
<i>Lower McKenzie Lake</i>	2706300	Washburn
<i>Matthews Lake</i>	2710800	Washburn
<i>Middle McKenzie Lake</i>	2706500	Washburn
<i>Minong Flowage</i>	2692900	Washburn
<i>Mudhen Lake</i>	2649500	Burnett
<i>Nancy Lake</i>	2691500	Washburn
<i>North Sand Lake</i>	2495100	Burnett
<i>Shell Lake</i>	2496300	Washburn
<i>Spider Lake</i>	1882500	Washburn
<i>Spirit Lake</i>	2650300	Burnett
<i>Spooner Lake</i>	2685200	Washburn

Purple Loosestrife Control

Biocontrol is one of the most successful forms of purple loosestrife control. Because of this, the Burnett County AIS Program has raised and released *Galerucella* beetles for decades. In 2020, the biocontrol program was continued and proved to be extremely successful. There were three mass rearing cages that were used in 2020: Siren School cage sponsored by Burnett County, Crex Meadows cage sponsored by WDNR, and a cage sponsored by the St. Croix Tribe. **In total, this collaborative effort released nearly 40,000 *Galerucella* beetles into highly infested areas of purple loosestrife.** A map of *Galerucella* release locations can be viewed in Figure 6.

Beyond biocontrol, Burnett County uses other methods when necessary. Manual removal methods are used on small populations when possible. Chemical treatments are used at moderate sites where manual removal is not feasible, and where no beetle damage was present. Approved aquatic herbicides are used (Ex: Rodeo).

To map the purple loosestrife infestations throughout Burnett County, an iPad was used. Downloaded on the iPad is *Fulcrum*, an app that allows field staff to GPS a location and enter associated data into a real-time map. This data then gets entered into Burnett County's *MapFeeder* software where it can be exported to make detailed maps (Figure 5). These maps are useful for tracking the spread of purple loosestrife, and clearly seeing how dispersal of the plant is possible. For example, the plant utilizes rivers and roads to further spread throughout the County.

Although Burnett County has its own AIS mapping system, field data was also entered into SWIMS using the appropriate WDNR forms. However, problems have occurred in the past where data has not been uploaded, or has simply been lost when reported to the WDNR. This can be clearly visible when looking at the state's [AIS Mapping System](#). The two different representations of Burnett County's purple loosestrife infestations are drastic.

In 2020, all visible points on the map (Figure 5) were visited. Not all of these sites received treatment, however, they are now mapped infestations that can be prioritized for future efforts. For 2021, beetles are once again planned to be raised to supplement the mapping, spraying, and cutting efforts in the County.

Purple Loosestrife was controlled on North Sand Lake, Long Lake, DesMoines Lake, and Mudhen Lake with the help of their associated lake associations during the 2020 field season. At all four lakes, many volunteers and County staff were involved in this process.



Figure 2: Brad Morris, AIS Consultant, Digging PL Rootstock



Figure 3: PL in Pools for Mass Beetle Rearing



Figure 4: Mudhen Lake Association Members Removing PL

2020 Known Purple Loosestrife Locations

Map created by Burnett County Land Services Dept.

Legend

- Purple Loosestrife Location
- Town Road
- County Highway
- State Highway
- Rivers
- Lakes

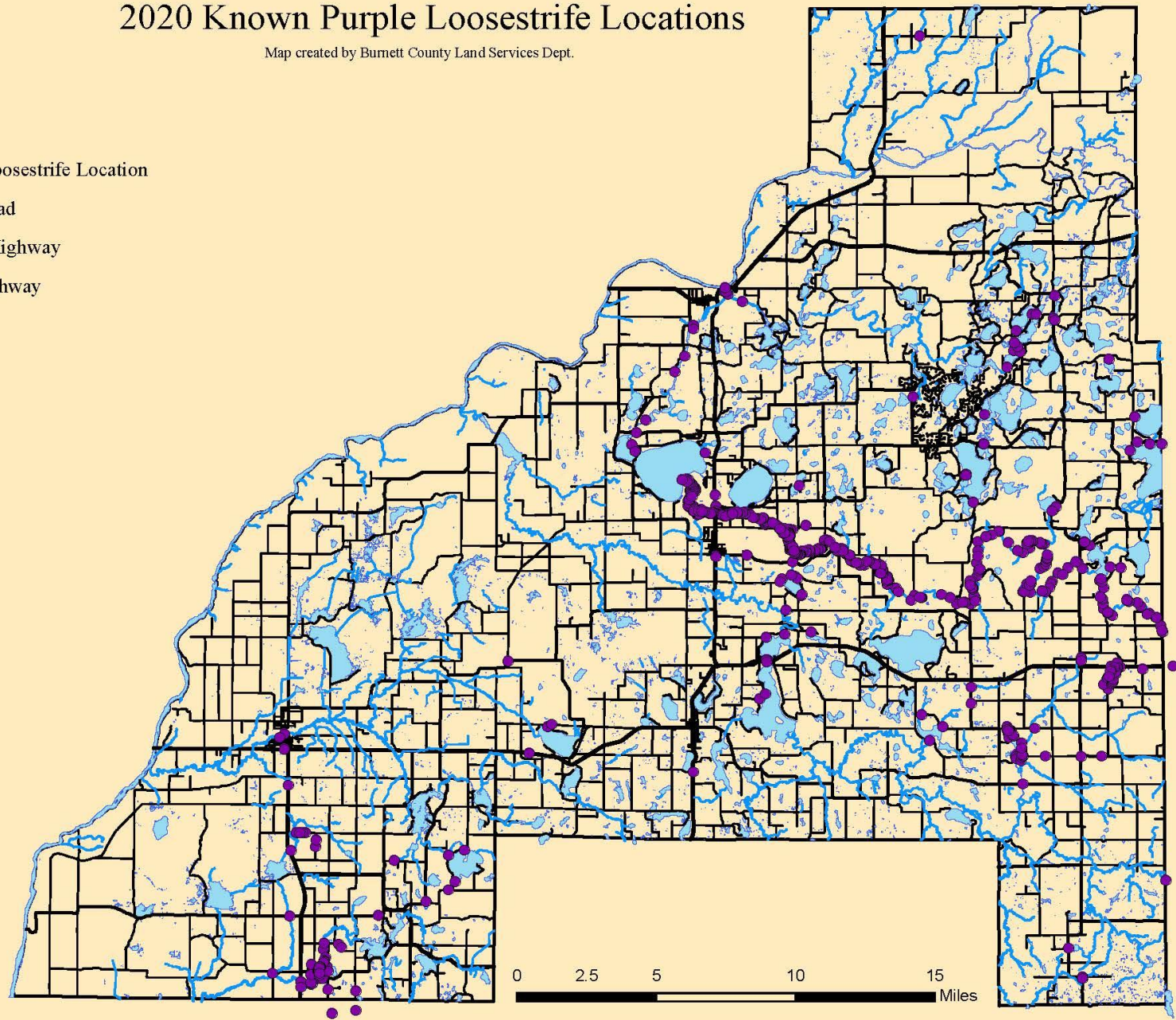


Figure 5: Known 2020 Purple Loosestrife Locations

2020 Galerucella Beetle Release Locations

Map created by Burnett County Land Services Dept.

Legend

- Galerucella Release Location
- Town Road
- County Highway
- State Highway
- Rivers
- Lakes

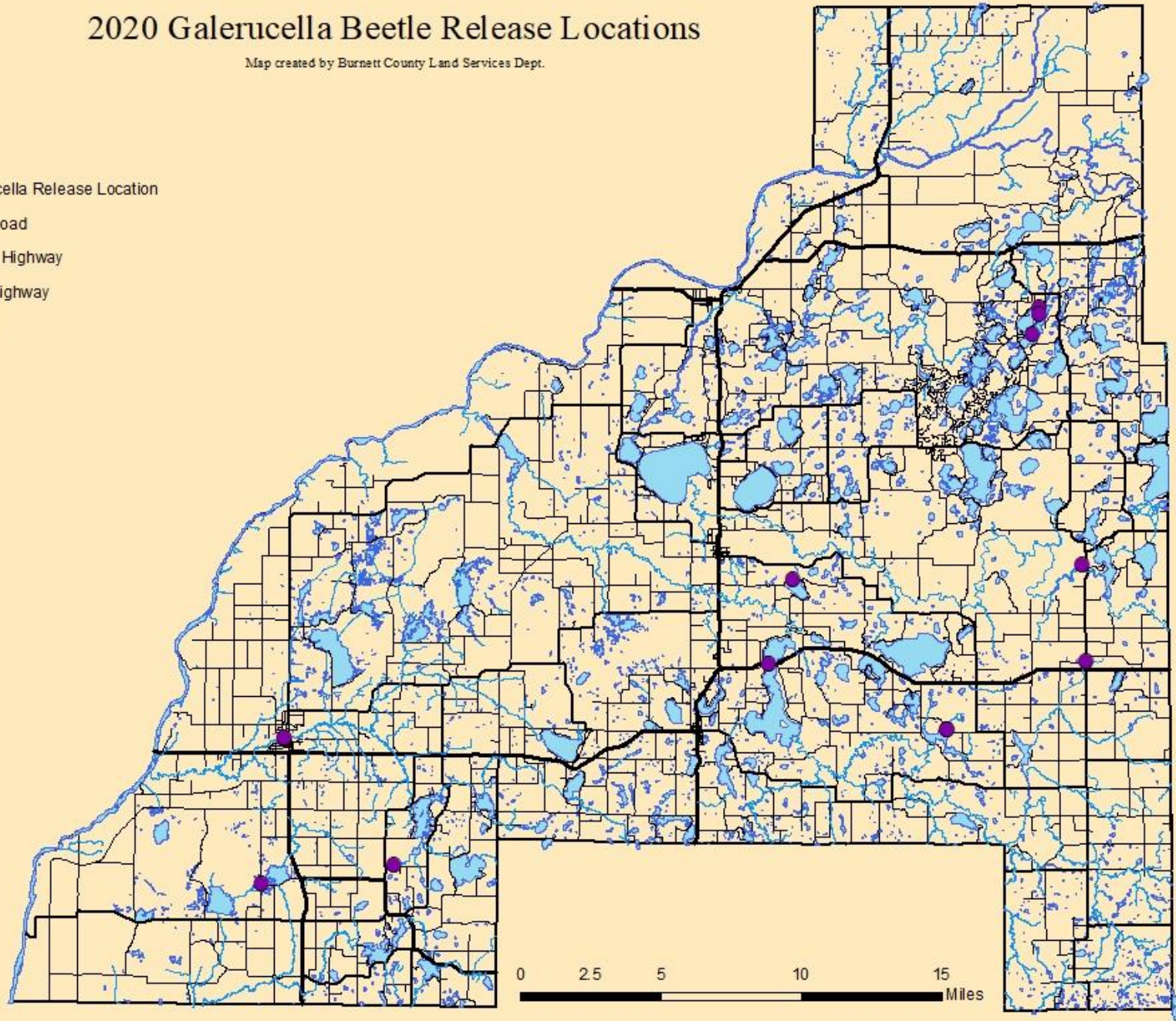


Figure 6: Galerucella 2020 Release Locations

Yellow Iris Management

Yellow Iris is a very aggressive, but beautiful species. Originally from Eurasia, it was brought to North America for ornamental purposes. Once planted, it can quickly spread and cause dense monocultures within wetlands and along riparian corridors. Primarily spreading by rhizomes, this plant has an extremely dense root structure making removal difficult. Beyond this, floating seed pods can disperse the plant long distances in rivers or on wind-blown lakes.

Unfortunately, Burnett County is now beginning to record occurrences of this plant more frequently. Generally, yellow iris has been confined to local river systems – namely the Yellow River, Namekagon, and the St. Croix. The St. Croix River Association (SCRA) and the National Park Service (NPS) have traditionally focused on these river infestations. SCRA and NPS have done a tremendous amount of work with mapping and controlling these river systems. River monitoring that Burnett County completes often supplements their efforts. These successful river projects by SCRA and NPS have now allowed Burnett County to focus on inland lakes more heavily.

Due to increased monitoring, yellow iris is now being observed on some Burnett County inland lakes. Big McGraw Lake has the most notable population within Burnett County. Big McGraw Lake shares a northern border with Douglas County which makes this issue a concern for Douglas County's AIS program as well.

In 2019 Yellow Iris was first recorded by Burnett County on Big McGraw Lake during a landing inspection. In 2020, the lake was surveyed specifically for yellow iris in order to map out the population. Unfortunately, the population is distributed throughout many parts of the shoreline and threatens some of the large wetland ecosystems surrounding the lake.

To help combat this problem, Big McGraw Lake landowners will be contacted in 2021 via mail to inform them about yellow iris and the dangers it poses to the lake. Encouragement will be given to remove this plant, and assistance can be given. There is hope that between landowners and both Burnett and Douglas County Conservation Departments, a noticeable impact on this yellow iris population can be made in the near future.

Beyond this planned effort on Big McGraw Lake, other lakes known to have yellow iris will be monitored more heavily in the future years.



Big McGraw Lake Burnett and Douglas Counties Yellow Iris Locations Surveyed June 30, 2020

Map created by: Burnett County Land Services Department

Legend



Boat Landing



Yellow Iris Locations



0 0.125 0.25 0.5 Miles

Figure 7: Big McGraw Lake Yellow Iris Locations

Japanese and Giant Knotweed

Japanese and Giant Knotweed have both been found in Burnett County, and in some neighboring counties as well. This infestation has been known about for some time, and several years ago there was a joint effort between Burnett and Polk Counties to map, treat, and hopefully eradicate populations of Knotweed. Education and outreach was also a part of this program, and this gave the public a better understanding of why Knotweed is extremely invasive.

Unfortunately, this program only lasted several years until grant funding diminished. Since 2015, there has been minimal Knotweed treatment in Burnett County. The Knotweed infestations that were treated during the last Knotweed treatment project were all cataloged. Because of great documentation, the Burnett County AIS Coordinator was able to re-establish contacts with the landowners previously involved with the program.

These sites have since been re-visited and a wide range of infestations were found. Thankfully, some sites previously treated in the original program have since been eradicated. However, there are many sites that have several plants left, rebounded to a larger extent, or even progressed further than previously known.

An informational letter about Knotweed as well as a “permission” letter were both sent in unison to landowners where Knotweed was found to be present on their properties. These letters can be viewed in [Appendix A: Letters](#). As of now, approximately 15 landowners have agreed for BCLSD to treat this invasive. At many properties, there are multiple sites of Knotweed. Fortunately, nearly all of these sites are in residential areas away from wetlands, streams, and lakes.

Interestingly, at most recorded sites Giant Knotweed is abundant in comparison to Japanese Knotweed. Many infestations were planted as an ornamental many years before this plant was considered an invasive, and many people still value the plants aesthetic qualities today.

Knotweed in Burnett County is treated using foliar herbicide applications by a certified Wisconsin pesticide applicator. Applications begin in early summer, and continue into the fall. Pesticide application rates are carefully considered to avoid over application and unnecessary usage of chemicals on the landscape. All areas that are treated will be properly marked, and nearby residents are informed if necessary. **In 2020, there were 5 Giant Knotweed locations that were treated with foliar herbicide.**



General AIS Monitoring

The Burnett County Land Services Department (BCLSD) uses different AIS monitoring methods for different situations. There are four main monitoring methods that are used, and for each monitoring method a report is written for that waterbody.

1. *AIS Point Intercept Surveys*
2. *Early Detection Monitoring*
3. *Waterbody Access Monitoring*
4. *River/Stream Road Crossing Monitoring*

Reports are written after each monitoring effort to establish a history for that waterbody as this can be useful in determining when certain problems may have occurred (EX: AIS introduction).

Table 2 (pages 23-25) references the waterbodies that received one or more of these monitoring activities during the 2020 field season. Reports for each waterbody can be produced upon request, and examples for each type of report are in Appendix C: Example Reports.

AIS Point Intercept Surveys

Using point intercept surveys to monitor for AIS may be the most effective and thorough way possible. Other methods may miss entire areas of a waterbody that might harbor AIS, whereas a point intercept approach achieves a representative sample of the entire waterbody. Beyond the point intercept survey grid, BCLSD also does a complete perimeter scan around the waterbody.

Many lake associations know the value of this monitoring technique and contract with BCLSD for the monitoring of their lake. Besides monitoring for pioneer populations of AIS, these surveys are commonly used in Burnett County to track the progress of a Eurasian Water Milfoil or Curly Leaf Pondweed infestation. Because of this, many AIS point intercept surveys are done early in the open water season before Curly Leaf Pondweed begins to die off. BCLSD suggests these surveys are completed approximately every 2-3 years to detect early AIS infestations.

In 2020, there were 6 waterbodies that received an AIS point intercept survey from BCLSD. All of these lakes were surveyed using a point intercept grid developed by the WDNR, and followed the WDNR protocols for point intercept surveys.

For 2021, a comparable number of AIS point intercept surveys will be completed.

Early Detection Monitoring

BCLSD also completes WDNR approved early detection monitoring using the protocols provided. However, these early detection surveys are usually conducted on smaller waterbodies where a canoe or small boat will be used. The larger waterbodies are reserved for the previously discussed AIS point intercept surveys.

In 2020, there were a total of 20 waterbodies monitored using the WDNR early detection protocols (18 lakes, and 2 stretches of a river). Each waterbody monitored had a completed WDNR early detection form that was then entered into the state Surface Water Integrated Monitoring System (SWIMS).

In 2021, a comparable amount of early detection surveys will be completed.

Waterbody Access Monitoring

BCLSD staff visit as many landings as possible throughout the open water season. Landings are generally visited at least once. BCLSD makes an effort to visit landings early in the season as well as at the end. This ensures that the proper signage is present, the landing is in a proper condition, and that no pioneer populations of AIS have established at the access points.

AIS Interns are tasked with monitoring landings and waterbody access points throughout the open water period. **In 2020, the AIS Interns reached a total of 101 landings.** The appropriate WDNR sign replacement forms are completed when necessary and entered into SWIMS. The landings that were not reached in 2020 will be the first priority in 2021.

In Burnett County there are approximately 175 waterbody access points, and this makes for an extremely large monitoring effort. Many of the accesses are remote which causes a challenge in itself. However, these remote accesses are still susceptible to AIS, and must be monitored the same as any other waterbody.

River/Stream Road Crossing Monitoring

There are many areas throughout Burnett County where small streams and rivers cross beneath a road. These areas are easy to travel to, and provide a glimpse of what these streams and rivers could be harboring in terms of AIS. Many of these river/stream crossings are access points for fishermen or waterfowl hunters that could be bringing AIS on equipment such as waders, light watercrafts, hunting equipment, bird dogs, and other various water equipment.

Culverts are used for water flow, and often times the edges of these culverts collect aquatic plants and animals as the water flow is not perfect. This collection of aquatic plants and animals is what is examined during these surveys, and additional rake tosses and visual scans are made

as well. In 2020, all accessible water crossings in the County were monitored by Burnett County AIS interns. **In total, there were 244 locations surveyed.**

AIS occurrences were documented at a fair amount of locations, and these findings were submitted to the WDNR and entered into the SWIMS database. The most common AIS observed at these sites was curly leaf pondweed and purple loosestrife. Although some of these species were identified in these rivers before, the WDNR divides rivers into different sections meaning the entire river is not listed as one waterbody. This led to new river sections including previously verified records.

Table 2: Burnett County 2020 AIS Monitoring Efforts

<i>Lake Name</i>	<i>WBIC</i>	<i>AIS Point Intercept</i>	<i>Early Detection Monitoring</i>	<i>Access Monitoring</i>
<i>Banach Lake</i>	2450100			✓
<i>Bashaw Lake</i>	2662400		✓	✓
<i>Bass Lake (Meenon)</i>	2451200		✓	✓
<i>Bass Lake (Union)</i>	2675000		✓	✓
<i>Benoit Lake</i>	2678300			✓
<i>Big Doctor Lake</i>	2453400	✓		✓
<i>Big Sand Lake</i>	2676800			✓
<i>Big Trade Lake</i>	2638700			✓
<i>Birch Island Lake</i>	2453500			✓
<i>Blackbrook Flowage</i>	2655000			✓
<i>Bonner Lake</i>	2454500			✓
<i>Briggs Lake</i>	2671900			✓
<i>Burlingame Lake</i>	2671400			✓
<i>Clam Lake</i>	2656200			✓
<i>Clam River</i>	<i>Multiple</i>			✓
<i>Clam River Flowage</i>	2654500			✓
<i>Clear Lake</i>	2457600			✓
<i>Connors Lake</i>	2458300		✓	✓
<i>County Rd. O. Flowage</i>	5515315			✓
<i>Crooked Lake (Jackson)</i>	2459200	✓		✓
<i>Crooked Lake (Siren)</i>	2459100		✓	✓
<i>Culbertson Springs</i>	2673300			✓
<i>Deer Lake</i>	2460700			✓
<i>DesMoines Lake</i>	2674200		✓	✓
<i>Devils Lake</i>	2461100			✓

<i>Lake Name</i>	<i>WBIC</i>	<i>AIS Point Intercept</i>	<i>Early Detection Monitoring</i>	<i>Access Monitoring</i>
<i>Dike 6</i>	2643500			✓
<i>Dubois Lake</i>	2461700			✓
<i>Dueholm Flowage</i>	2637200			✓
<i>Dunham Lake</i>	2651800			✓
<i>Eagle Lake</i>	2672100			✓
<i>Elbow Lake</i>	2463100		✓	✓
<i>Falk Lake</i>	2670900			✓
<i>Fenton</i>	2464100		✓	✓
<i>Fish Lake</i>	2464500			✓
<i>Fish Lake</i>	2636500			✓
<i>Frog Lake</i>	2465300			✓
<i>Gabrielson Lake</i>	2639200		✓	✓
<i>Gaslyn Lake</i>	2677700			✓
<i>Godfrey Lake</i>	2466300			✓
<i>Goose Lake</i>	2466500			✓
<i>Green Lake</i>	2467200			✓
<i>Gull Lake</i>	2671100			✓
<i>Holmes Lake</i>	2638400		✓	✓
<i>Johnson Lake</i>	3471600			✓
<i>Johnson Lake</i>	2471600		✓	✓
<i>Lake 26</i>	2672500	✓		✓
<i>Lily Lake</i>	2475300			✓
<i>Lipsett Lake</i>	2678100			✓
<i>Little Holmes Lake</i>	2638200			✓
<i>Little McGraw Lake</i>	2477000		✓	✓
<i>Little Round Lake</i>	2477600			✓
<i>Little Trade Lake</i>	2639300			✓
<i>Little Wood Lake</i>	2650900			✓
<i>Long Lake (Siren)</i>	2656400			✓
<i>Long Lake (Webb)</i>	2674100		✓	✓
<i>Loon Lake</i>	2673500			✓
<i>Lower Clam Lake</i>	2655300			✓
<i>Lower McKenzie Lake</i>	2706300	✓		✓
<i>Mallard Lake</i>	2480800			✓
<i>McGraw Lake</i>	2688800		✓	✓
<i>McKenzie Lake</i>	2706800	✓		✓
<i>Middle McKenzie Lake</i>	2706500	✓		✓
<i>Minerva Lake</i>	2670600			✓

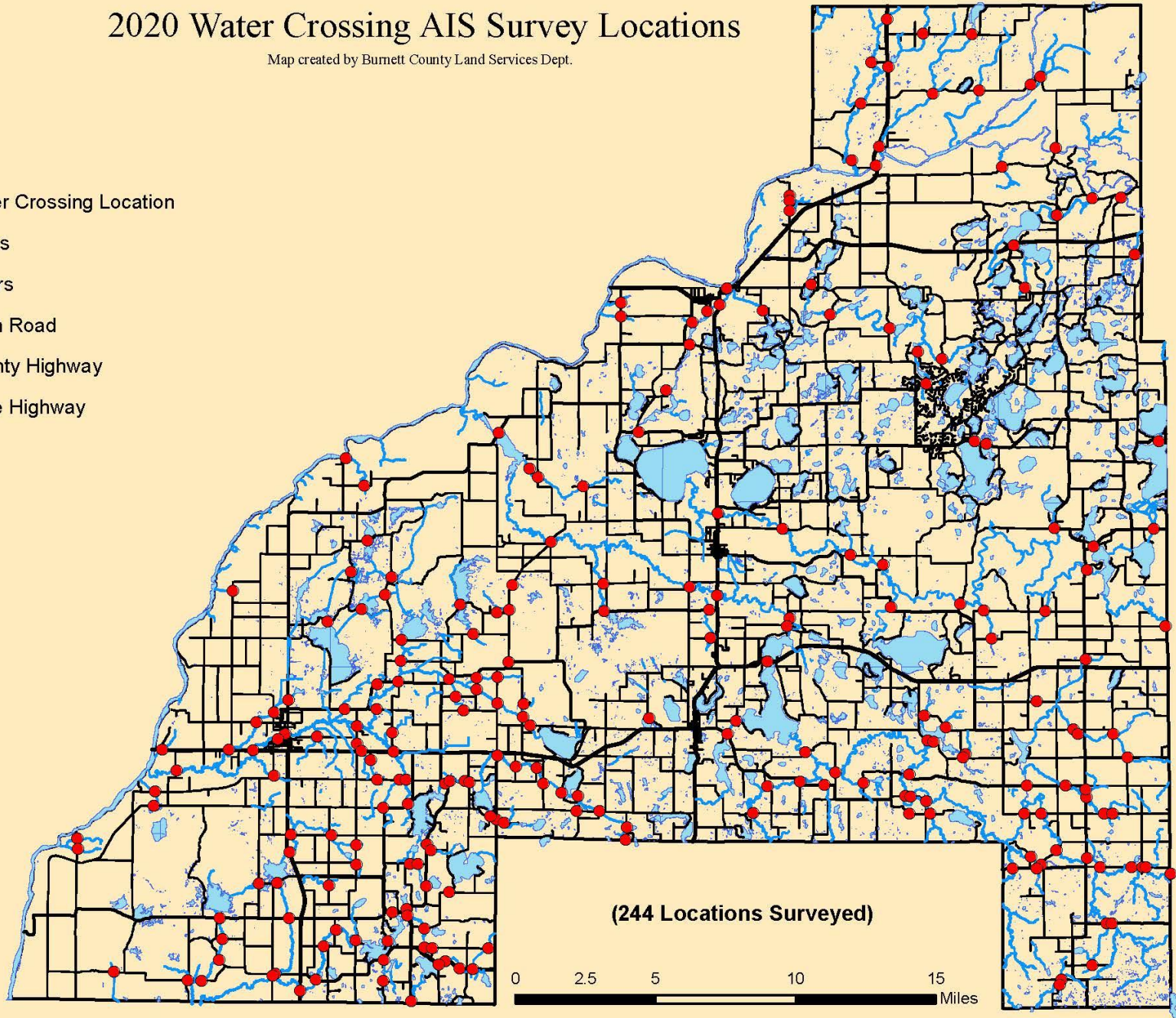
<i>Lake Name</i>	<i>WBIC</i>	<i>AIS Point Intercept</i>	<i>Early Detection Monitoring</i>	<i>Access Monitoring</i>
<i>Monson Lake</i>	2648200			✓
<i>Mudhen Lake</i>	2649500			✓
<i>Namekagon (McDowell)</i>	<i>Multiple</i>			✓
<i>Nicaboyne Lake</i>	2486100			✓
<i>North Fork Flowage</i>	2647300			✓
<i>North Lake</i>	2676100			✓
<i>North Sand Lake</i>	2495100			✓
<i>Peterson Lake</i>	2676000			✓
<i>Phantom Flowage</i>	2644100			✓
<i>Point Lake</i>	2490900		✓	✓
<i>Pokegama Lake</i>	2657200			✓
<i>Poquettes Lake</i>	2491100		✓	✓
<i>Prinel Lake</i>	2491500			✓
<i>Reed Lake</i>	2648100			✓
<i>Reisinger Flowage</i>	2645200			✓
<i>Rice Lake</i>	2677900			✓
<i>Robie Lake</i>	2671500			✓
<i>Rooney Lake</i>	2493100			✓
<i>Round Lake</i>	2477600			✓
<i>Round Lake</i>	2640100			✓
<i>Round Lake</i>	2493700			✓
<i>Spirit Lake</i>	2650300		✓	✓
<i>Spring Lake</i>	2664100			✓
<i>St. Croix River</i>	<i>Multiple</i>			✓
<i>Staples Lake</i>	2499200		✓	✓
<i>Tabor Lake</i>	2671500			✓
<i>Taylor Lake</i>	2655900			✓
<i>Trade River</i>	<i>Multiple</i>		✓	✓
<i>Upper North Fork Flowage</i>	2648900			✓
<i>Viola Lake</i>	2598600		✓	✓
<i>Warner Lake</i>	2677200		✓	✓
<i>Webb Lake</i>	2705400			✓
<i>Wood Lake</i>	2649800			✓
<i>Yellow Lake (IkeWalton)</i>	2675200			✓
<i>Yellow Lake (Jeffries)</i>	2675200			✓
<i>Yellow River</i>	<i>Multiple</i>		✓	✓

2020 Water Crossing AIS Survey Locations

Map created by Burnett County Land Services Dept.

Legend

- Water Crossing Location
- Lakes
- Rivers
- Town Road
- County Highway
- State Highway



(244 Locations Surveyed)

0 2.5 5 10 15 Miles

Figure 8: Water Crossing AIS Survey Locations

Aquatic Plant Management Plans (APMs)

Burnett County has been helping area lake associations develop and implement APMs for many years, and the 2020 season was no exception. For 2020, the Burnett County Land Services Department (BCLSD) finished APM plans for Birch Island and North Sand Lakes. These plans were sent to the WDNR for formal approval.

There are also two APM plans that are currently in development. Big Doctor Lake is receiving an APM plan update, and Lake 26 is having its first APM created. The field work has been completed for both lakes, and the plan writing and process for approval should be wrapping up next spring.

For 2021, the McKenzie Lakes are scheduled to update their APM plan for all three lakes. These updates are reviewed by the WDNR in the same manner as an original document.

In a general view, APM plans help give an understanding of the aquatic ecosystem, possible threats to the waterbody, management implications, plans for maintaining or advancing the health of the waterbody, and developing rapid response plans for the possible introduction of AIS. The BCLSD finds APM plans to be extremely beneficial not only to the lake associations funding their creation, but to the public users as well. APM plans are proactive instead of reactive, and this ultimately helps control large problems before they arise.

More information regarding the processes of developing an APM, what is included in an APM, how the information is gathered, and why they can be valuable, can be found in a document written by WDNR, UW-Extension, and others titled *Aquatic Plant Management*

The completed APMs are posted for the public to view on the Burnett County Webpage by navigating to Departments – Land Services Department – Conservation Division - Past Projects. All documents are in PDF format, and can be viewed on any platform.

Clean Boats, Clean Waters (CBCW)

CBCW efforts across Burnett County were strong for the 2020 season despite getting a later start than normal due to COVID-19. Two AIS interns and one contracted employee were able to bounce around Burnett County to a variety of landings. Most of the CBCW efforts were centered at busier accesses, however, some smaller waterbodies were visited to make a presence known in these areas as well. The hot-water pressure washer was used at the McKenzie Lakes when possible by either Burnett or Washburn County AIS interns.

As of December 2020, the CBCW statistics for Burnett County are listed below:

- ✓ **2,341 Boats Inspected**
 - BCLSD contributed 757
- ✓ **4,962 People Contacted**
 - BCLSD contributed 1,834
- ✓ **2,036 Hours Spent**
 - BCLSD contributed 376
 - 1,550 paid, 486 volunteer
- ✓ **1 CBCW Virtual Training In Partnership with Washburn County**
 - 25 participants

These numbers are slightly less than the average in years past. This can be attributed to the COVID-19 pandemic that is ongoing. Although some associations and volunteers did not participate in 2020, there was still a presence at most landings. All CBCW inspectors were advised to follow COVID-19 guidelines provided by the statewide CBCW coordinator. Nonetheless, the 2020 CBCW season was still successful, and the 2021 season should build upon the previous year.

Burnett County participated in the Landing Blitz and Drain Campaign for 2020. Due to COVID-19, these events were combined as opposed to separate events. Due to COVID-19, the participation among lake associations was mixed. The appropriate outreach materials (towels and ice packs) were distributed during this event. However, these materials were distributed as a self-serve option to limit contact with boaters.

Burnett County did not participate in the CBCW Boater Behavior Study during 2020 due to its cancelation once again due to COVID-19. This event is scheduled to resume in 2021.



AIS Snapshot Day

2020 was the second year that Burnett County had participated in AIS Snapshot Day, and it was a successful one! In 2021, Burnett County plans to grow this program, and hopefully acquire more volunteers for this event.

Here are some quick facts:

1. 11 different waterbodies were monitored
2. 2 new populations of AIS were found
3. 3 AIS populations were verified
4. AIS found included: Curly leaf pondweed, narrow leaf cattails, hybrid cattails, purple loosestrife, Chinese mystery snails, and banded mystery snails
5. 5 participants

Coordinated by River Alliance of Wisconsin, in partnership with UW Extension's Citizen Lake Monitoring Network, and the Wisconsin Department of Natural Resources, Snapshot Day entered its' 7th successful year. Information collected was provided to the WI DNR to inform and guide monitoring and response efforts. Volunteers are key to the success of the event.

Burnett County joined a larger network of over 20 conservation organizations helping to prevent the spread of invasive species across Wisconsin. Throughout the state nearly 200 volunteers joined the search for AIS.

Following a brief AIS identification training, participants dispersed to collect samples at critical monitoring sites, and then reconvened to report what they found. Participants were encouraged to bring any aquatic plant or animal back to the rendezvous site. All specimens collected were identified as either native or non-native, and this provided a learning opportunity for all participants. Wisconsin's aquatic communities are large, and this program is one way for the public to learn them.

If you have any questions about AIS Snapshot Day or would like to get involved in this free event, feel free to contact Thomas Boisvert, the Burnett County AIS Coordinator at (715) 349-2109 Ext. 2613 or tboisvert@burnettcounty.org



Burnett County Baitshop Initiative

Invasive species are plants or animals that are not native or indigenous to an area, and have a negative impact on the ecosystem and economy. A large amount of time, effort, and money is being used to prevent the spread of the already introduced AIS to lakes and rivers.

Due to this ongoing issue the Wisconsin Department of Natural Resources (WDNR) established an outreach program with bait dealers. Bait dealers, on a regular basis, are in contact with people who fish and/or use the lakes recreationally. These groups of people have the highest probability of spreading AIS. The reason for creating an outreach program with bait dealers is to increase the awareness and encourage the prevention methods needed to stop the spread of AIS.

Most boaters are aware of the AIS laws in place requiring them to clean, drain, dry, and never move. However, many people are unsure as to why these laws are in place. For this reason the WDNR has reached out to County AIS Coordinators and Land and Water Conservation Departments to create (if not started before) a relationship with bait dealers in their area.

Burnett County AIS interns made contact with 9 bait shops and 6 lake service providers to provide AIS outreach material. All businesses on the list were willing to take the information (AIS brochures, stickers, floating key chains, etc.) provided and were more than willing to chat about AIS. Places where selling bait and working with boaters is their main source of income (Trade Lake Store, Backwoods Bait Shop, etc.) were more than willing to take the materials and one even asked for more as the spread of invasive species could be particularly detrimental to their livelihoods. The most popular shops were given laminated “drain your live well” posters to hang in their store.

Continuing this initiative is a priority of the WDNR and Burnett County since the prevention of AIS is a major concern for the states abundant water resources. Bait dealers see many water users each day, and they can communicate the prevention of AIS message to a large audience that sometimes is hard to reach.

This program will be continued in 2021, and the same shops will be on the list for outreach materials distribution.



Waterfowl Hunter Outreach

Despite COVID-19, Burnett County continued the waterfowl hunter outreach program. To let the public know that this was occurring, several news releases were made leading up to the waterfowl opener on September 28th. These news releases can be viewed in [Appendix B: News Releases](#).

Crex Meadows Wildlife area was where all waterfowl hunter outreach occurred on opening weekend, and the Fish Lake Wildlife Area was visited later in the season. A portion of outreach supplies were given to the Crex Meadows visitor center, and the rest were utilized by BCLSD when approaching hunters in the field. All outreach supplies provided by the WDNR were utilized on opening weekend, and many hunters graciously took the items.

Distributed items included: camouflaged Stop Aquatic Hitchhiker (SAH) towels, SAH bird bands, boot brushes, brochures, and a handout developed by BCLSD. Overall, there were approximately 125 individual hunters contacted.

Comments were made that these hunters have rarely seen any agency/organization conducting hunter outreach even though they had been returning to Crex Meadows for decades. Since many of these hunters had never been approached by anyone to talk about AIS in relation to waterfowl hunting, there were many questions asked. Burnett County AIS intern, Sunny Cone, answered questions about AIS Management, the Burnett County AIS Program, and how other counties and organizations could become involved in this effort.

Crex Meadows and Fish Lake will once again be targeted for outreach efforts in 2021. In Crex Meadows there is a campground that hunters are able to use during the fall months which is a great opportunity to contact large groups of hunters. This campground is where much of the outreach happened as hunters were arriving back at camp after a morning hunt.

Beyond physical outreach efforts, AIS “protect the places you hunt” wader cleaning stations were installed at 12 locations throughout Crex Meadows and Fish Lake Wildlife Areas. Their locations can be viewed in Figures 9 and 10. The appropriate WDNR signage installation forms were completed and entered into SWIMS.

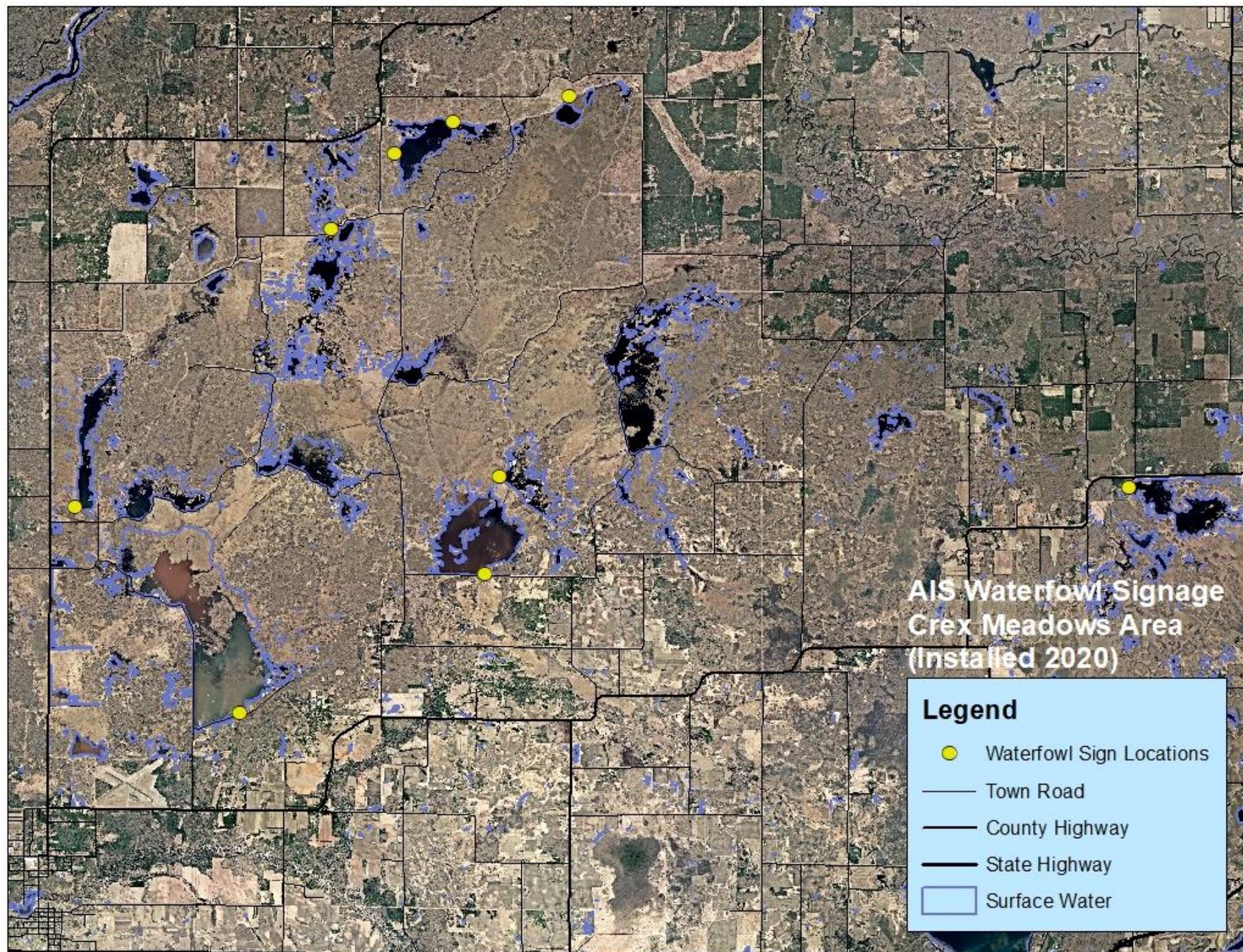


Figure 9: AIS Waterfowl Signage - Crex Meadows

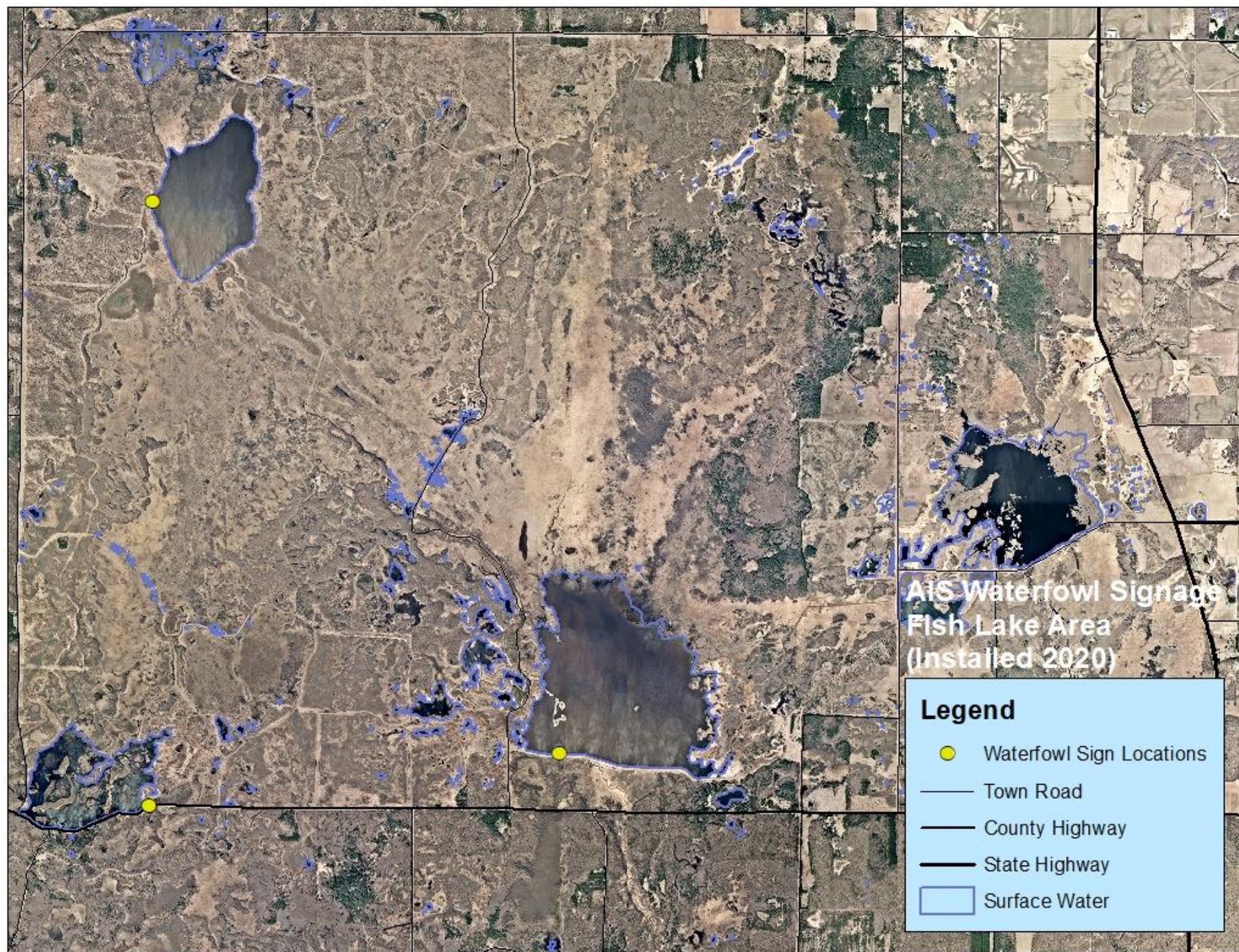


Figure 10: AIS Waterfowl Signage - Fish Lake

Lake Association Meetings

BCLSD attends as many lake association meetings as possible, and always welcomes associations to ask for special presentations, topics, or simply for a County representative to be present for questions. In 2020, lake association attendance was lessened due to COVID-19.

The most common AIS topics discussed at lake association meetings concern AIS identification, monitoring, susceptibility/suitability of certain AIS, and what residents can do to help. From this, CBCW and Citizen Lake Monitoring Network (CLMN) workshops often arise as a result.

BCLSD also attends every Burnett County Lakes and Rivers Association (BCLRA) meetings. This organization is an umbrella organization comprised of nearly all individual waterfront associations in Burnett County. BCLRA is extremely influential in starting large AIS projects that are entirely citizen driven. Burnett County is fortunate to have such a strong organization that is compassionate for water resources.

Lake associations that had appearances from BCLSD:

1. Des Moines Lake (Multiple)
2. Mudhen Lake (Multiple)

In 2019, this number was 14 – COVID-19 had a tremendous impact on Lake Association meetings and educational events.

If your lake association would like BCLSD to attend a meeting for any reason, please contact Thomas Boisvert, the Burnett County AIS Coordinator at (715) 349-2109 Ext. 2613 or tboisvert@burnettcounty.org

Appendix A: Letters

BURNETT COUNTY SHERIFF'S DEPARTMENT

7410 County Road. K, Room #122

Siren, WI 54872

(715)-349-2121



To:

From:

Date:

(NAME),

This letter is to inform you that on **DAY** of **DATE** at approximately **TIME** you were observed failing to use the provided decontamination materials to clean your watercraft at **LAKE**. When present, decontamination materials and their associated procedures must be used to comply with Burnett County ordinance number 2008-01. Information regarding this ordinance can be found in Burnett County's Code of Ordinances, Chapter 18, Article 5.

Aquatic invasive species (AIS) include plants, animals, or organisms that are not native to a body of water and cost the state of Wisconsin millions of dollars each year. The spread of such species affect not only the individuals who live on the lake but also public recreationalists. Aquatic invasive species have been known to damage personal property, impact local fish populations, and ultimately hurt the economy surrounding the lake. Many infested lakes around Wisconsin are very close to bodies of water that are free of invasive species. A local example of this would be Big and Middle McKenzie Lakes which have zebra mussels while the surrounding waterbodies do not. This makes preventing the spread of invasives crucial, and this is why there are laws and ordinances prohibiting the transport of aquatic plants and animals.

The state of Wisconsin requires waterbody users to remove all aquatic plants, animals, debris, and water before entering and leaving a waterbody. Burnett County requires this as well, but also goes one step further to require decontamination procedures to be used when materials are present. The state of Wisconsin and Burnett County are able to issue fines regarding issues that may spread AIS, and State Wardens and County Sheriff Departments enforce the regulations to full effect.

A citation will NOT be issued in this case, however, a second offense WILL carry a citation. Burnett County encourages you to spread this information on to your friends and family about aquatic invasive species and the laws and ordinances in place to help slow the spread. If you have questions about how AIS impacts Wisconsin's water resources, you may email Thomas Boisvert, Burnett County AIS Coordinator at tboisvert@burnettcounty.org.

Respectfully,

Deputy Greg Chafer
Burnett County Sheriff's Department



BURNETT COUNTY
LAND SERVICES DEPARTMENT
7410 County Road K, #120
Siren, WI 54872
Telephone: (715) 349-2109

April, 2020

Dear Lake Service Provider,

The open water season has arrived! Boats, docks, boat lifts, rafts, and other water structures are being installed at a fast pace. Although this is an extremely busy time, I would like to remind you to take special care whenever possible to help prevent the spread of Aquatic Invasive Species (AIS).

The Burnett County Land Services Department encourages a thorough inspection of the equipment being installed/removed. It is important to note that some equipment, docks, boats, etc. are bought second hand. Therefore, these items may have been in a different waterbody recently and should be checked thoroughly.

As always, please remember to properly clean and disinfect your equipment before moving to another waterbody. Inspect equipment for aquatic vegetation, mud, sand, mussels and snails. Remove anything that you may have found, and discard on the shore. Drain all excess water from equipment before transport, and dry the equipment if applicable.

As a reminder, some landings in Burnett County have decontamination stations, and the Burnett County decontamination ordinance states that equipment must be decontaminated using the provided materials before entering and exiting the waterbody. Washburn County has a similar ordinance requiring the same procedures.

Also, some local lake associations and businesses have purchased lake-specific trailers. In particular, some service providers have trailers designated for Big and Middle McKenzie Lakes **ONLY** due to the presence of zebra mussels. If your business would like to help prevent the spread of AIS, utilization of these trailer programs would be a great way to do so. **If your customer is a part of a local lake association, it may be worthwhile to see if their association has purchased a trailer designated for their lake ONLY.**

We are living in a crazy world during the COVID-19 global pandemic. In a way, COVID-19 can be related to AIS. Just like AIS, COVID-19 spreads fast, needs decontamination procedures, and impacts our local economies. Just like a disease, AIS should be prevented from spreading to reduce the impact on the environment and local economies.

I hope your business will be proactive in taking steps to prevent the spread of AIS. If any questions arise please feel free to contact me with the information below. Additional information is enclosed.

Thomas Boisvert

Burnett County Aquatic Invasive Species Coordinator

tboisvert@burnettcounty.org

(715)-349-2109 Ext. 2613



**BURNETT COUNTY
LAND SERVICES DEPARTMENT
7410 County Road K, #120
Siren, WI 54872
Telephone: (715) 349-2109**

Dear Lake Service Provider,

As the open water season winds down the time is ticking before watercrafts, docks, boat lifts, rafts, and other water structures are needed to be removed before ice season arrives. During removal, the Burnett County Land Services Department encourages a thorough inspection of the equipment being removed. The inspection being referred to is a careful scan looking for aquatic invasive species (AIS). In particular, equipment should be examined for signs of zebra and quagga mussels. Early detection of AIS is crucial for preventing their spread, and can help with their control.

Zebra and quagga mussels adhere themselves to hard surfaces which makes most water structures the perfect habitat. When removing these structures please look for any suspected mussels. Smaller zebra mussels may not be as obvious as the adults. However, they make a surface look rough, and the surface will feel like a coarse sandpaper. If any suspected mussels are found, please take a specimen and inform me using the contact information below.

Overall, these mussels are something that Burnett County does not need. Unfortunately, Big and Middle McKenzie Lakes already have established populations of zebra mussels. Because there are already zebra mussels present in Burnett County, monitoring is of high priority. By monitoring equipment when it is being removed, any new infestations could be addressed as quickly as possible.

As always, please remember to properly clean and disinfect your equipment before moving to another waterbody. Inspect equipment for aquatic vegetation, mud, sand, mussels and snails. Remove anything that you may have found, and discard on the shore. Drain all excess water from equipment before transport, and dry the equipment if applicable.

As a reminder, some landings in Burnett County have decontamination stations, and the Burnett County decontamination ordinance states that equipment must be decontaminated using the provided materials before entering and exiting the waterbody. Washburn County has a similar ordinance requiring the same procedures.

I hope your business will be a part of this monitoring effort, and if any questions arise feel free to contact me with the information below. Additional information is enclosed.

Thomas Boisvert

Burnett County Aquatic Invasive Species Coordinator
tboisvert@burnettcounty.org
(715)-349-2109 Ext. 2613



BURNETT COUNTY
LAND SERVICES DEPARTMENT
7410 County Road K, #120
Siren, WI 54872
Telephone: (715) 349-2109

Dear (name),

The reason I am contacting you is Japanese Knotweed was found to be present on the property:
(site address)

Japanese Knotweed is a highly invasive plant, and it is restricted in the state of Wisconsin. This means the sale and transport of this plant is prohibited by law. Additional information about the plant and its invasive tendencies can be found in the included brochure.

This population of Japanese Knotweed was found either through a previous Japanese Knotweed control project (which ended around the year 2015), or by an incidental observation made by myself.

During a period from 2011-2015 Polk and Burnett Counties received an early detection and rapid response grant from the Wisconsin Department of Natural Resources for the control of Japanese Knotweed and its associates. During this time, many properties throughout Polk and Burnett Counties received treatment for this invasive. Your property may have been involved in this project.

Until now, funds and staff have not been available for re-treatment of the original infestations. Some infestations were eradicated during the previous control project, however, many have rebounded to their original extent. Japanese Knotweed has an extensive root structure, and this causes multiple years of herbicide treatment before eradication is possible.

My goal is to begin re-treatment of Japanese Knotweed sites throughout Burnett County, and begin the long process towards eradication. To do this, I will need your permission to apply a foliar herbicide to the Japanese Knotweed population on your property. Enclosed is another letter describing the process, and a statement where you can sign giving Burnett County permission to treat your property. **This treatment is voluntary, and is at no cost to you.**

I hope you plan to take part in the fight against Japanese Knotweed, and if you have any questions please feel free to contact me.

Thomas Boisvert

Burnett County Aquatic Invasive Species Coordinator

tboisvert@burnettcounty.org

(715)-349-2109 Ext. 1382



BURNETT COUNTY
LAND SERVICES DEPARTMENT
7410 County Road K, #120
Siren, WI 54872
Telephone: (715) 349-2109

Dear (name),

Japanese Knotweed is a restricted plant and all sale or transport of this species is prohibited by law. I have enclosed some additional information on this particular invasive. Due to the environmental impacts of this species we hope to eradicate all known infestations.

This plant was originally introduced as an ornamental and planted in landscaping for many years. We are finding this plant to be escaping lawn areas and establishing wild populations, resulting in detrimental impacts to our natural resources and property values. State rule, Chapter NR 40, makes this plant illegal to transport, gift, trade, or cultivate for sale. Never attempt to dig this plant out and please be cautious when trimming back this plant. This plant can root from cut stems, and it has an extremely robust root structure underground. This stand should be controlled to prevent the risk of escape, and herbicide treatment is the most practical way to administer control.

The Burnett County Land Services Department recommends eradication of this stand and is willing to assist you in the eradication at no cost to you. Eradication is not easy and can take many years as this plant has an extensive root system that is very hard to kill. The most common form of eradication is through foliar application of an herbicide called Milestone. This herbicide is trans-located to the root system of the Japanese Knotweed.

Any trees or plants with root systems that are intertwined with Knotweed roots have the possibility of being affected, or killed by the herbicide application.

The Burnett County Land Services Department needs landowner permission to be able to treat your property. If you have any questions or concerns, please feel free to contact myself with the information below. All applications are done under direct supervision of a Wisconsin licensed herbicide applicator.

I _____ (Print Name) Do not hold the Burnett County Land Services Department Responsible for any un-intended affects the Herbicide has on my Property.

Signature _____ Date _____

Phone # _____

If you are willing to participate in managing your Japanese Knotweed with the above treatment, please sign and return this permission form in the pre-postage envelope provided.

Respectfully,

Thomas Boisvert

Burnett County Aquatic Invasive Species Coordinator
tboisvert@burnettcounty.org
(715)-349-2109 Ext. 1382



BURNETT COUNTY
LAND SERVICES DEPARTMENT
7410 County Road K, #120
Siren, WI 54872
Telephone: (715) 349-2109

Dear Big McGraw Lake resident,

During an aquatic invasive species (AIS) early detection survey, the Burnett County Land Services Department encountered yellow iris (*Iris pseudacorus*) on Big McGraw Lake. All yellow iris found was located on private property, and therefore Burnett County did not conduct management.

Although beautiful, yellow iris is an extremely invasive wetland plant. Due to its invasive tendencies, it is classified under NR 40 as a restricted species in the state of Wisconsin. All locations of yellow iris were located directly on the shoreline of Big McGraw Lake, and have not yet migrated into nearby wetland areas. There is an opportunity to control this species before ecological damage becomes apparent.

Please see the enclosed map to see if yellow iris was found on your section of shoreline. An identification guide for yellow iris is also enclosed.

Yellow iris generally spreads through rhizomes (root structures), and will expand its population yearly if not removed. Seed pods are also a source of concern as they can float to new areas and sprout additional colonies. When left unmanaged, yellow iris forms dense populations that crowd out native plants which destroys wildlife habitat as a result. Please refer to the identification sheet for more information on yellow iris.

If you find this plant on your property please manually remove the plant and its roots in their entirety. Plants that are removed should be placed in heavy duty garbage bags, sealed tightly, and disposed of in the trash.

I hope you will take part in helping to remove this species, and if you have any questions regarding yellow iris please feel free to contact me directly.

A handwritten signature in black ink that reads "Thomas J. Boisvert".

Thomas Boisvert

Burnett County Aquatic Invasive Species Coordinator

tboisvert@burnettcounty.org

(715)-349-2109 Ext. 2613

Appendix B: News Releases

Clean Boats, Clean Waters – summer 2020

No human virus is going to keep the fish from biting or summer from coming our way. However, due to COVID-19 Wisconsin's annual summer campaigns that revolve around the Clean Boats, Clean Waters (CBCW) program have undergone some changes. The annual Drain Campaign, normally held in early June, is being merged with the 4th of July week Landing Blitz. The combined campaigns run from June 28 to July 5, the same week as the Great Lakes Regional Landing Blitz that includes launches in every state and Canadian province in the Great Lakes Basin.

During the Drain Campaign, anglers are generally met by CBCW personnel at various boat landings throughout the state in early June. While helping anglers and boaters inspect their boat and equipment, CBCW inspectors talk with anglers about the importance of draining their live-wells and bait buckets to help prevent the spread of aquatic invasive species (AIS). CBCW personnel distribute ice packs as a reminder that ice is a safer alternative for transporting fish, and that it also keeps them fresh for the filet table.

During the Landing Blitz, boaters and anglers are usually met by CBCW personnel once again in July at various boat landings throughout the state. Like the Landing Blitz, CBCW personnel deliver messages that explain the importance of preventing the spread of AIS. Towels are distributed to remind water users to clean, drain, and dry their boat and equipment before it is used again in order to prevent the spread of AIS.

During the combined week, the Clean Boats, Clean Waters staff and volunteers will be giving away over 5500 hard-sided ice packs, and over 10,000 of the very popular Stop Aquatic Hitchhikers towels to boaters throughout the state. Burnett County alone will have approximately 300 ice packs and 500 towels available for distribution. Each ice pack is stamped with the reminder to Drain Your Catch. Any lake water added to your catch or water that comes in contact with the fish potentially carries disease or microscopic invasive animals, such as the larvae of zebra mussels. Draining your catch as well as your boat is important for keeping our waters healthy. Use the towels to help dry your boat and equipment, and wipe off any mud or debris before leaving the landing.

One ice pack or towel is given to each boat owner while supplies last. They will be available as a self-serve option to limit person to person contact. Wisconsin has approximately 300 launches participating (20 in Burnett County). No matter where you launch, always remember to:

- **Inspect** boats, trailers and equipment for attached aquatic plants or animals.
- **Remove** all attached plants or animals
- **Drain** all water from boats, motors, livewells and other equipment
- **Never move** live fish away from a waterbody

Following these steps also helps boaters comply with Wisconsin's state laws as well as the ordinances that Burnett County has in place to slow the spread of AIS. To learn more about invasive species and their impacts to Burnett County waterbodies, please contact Thomas Boisvert, Burnett County AIS Coordinator at (715) 349-2109 EXT. 2613 or tboisvert@burnettcounty.org

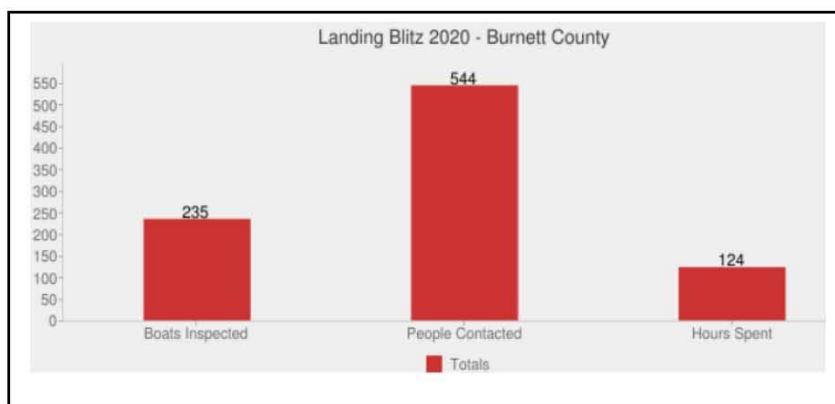
Landing Blitz 2020

Every 4th of July holiday, AIS staff and Clean Boats Clean Waters volunteers reach out to boaters across Wisconsin with a simple but powerful message:

"You have the power to protect lakes and rivers from aquatic invasive species".

The Landing Blitz is a statewide effort to remind boaters and other water lovers to take action to stop the spread of aquatic invasive species, which pose great risks to the health of our lakes and fisheries. Inspectors are stationed at boat landings around the county to speak with boaters about prevention steps they must take before they leave the water:

- **Inspect** your boat, trailer and equipment
- **Remove** all attached plants or animals
- **Drain** all water from boats, motors, livewells and other equipment
- **Never** move live fish away from a waterbody
- **Dispose** of unwanted bait in the trash
- **Buy** minnows from a Wisconsin bait dealer, and use leftover minnows only if you will be using them on that same waterbody or if no lake or river water or other fish were added to the container.



Following these steps also helps boaters comply with Wisconsin state law and the Burnett County Ordinance, which prohibit the transport of aquatic invasive species. Most boaters also understand the importance of the AIS rules and are great models for anyone who does not.

The 2020 Landing Blitz ran from June 28 to July 5. Due to Covid-19, the annual Drain Campaign normally held in early June had been merged into the Landing Blitz week.

During the week, Clean Boats, Clean Waters staff and volunteers gave away hard-sided ice packs to anglers and Stop Aquatic Hitchhikers! boat towels with logos that remind people to take aquatic invasive species prevention steps.

Any questions about the Landing Blitz, Drain Campaign, or any other AIS issues, please contact Tom Boisvert, AIS Coordinator at tboisvert@burnettcounty.org

Attention Burnett County Waterfowl Hunters

Once again, Clean Boats, Clean Waters boat inspectors will be at many of Wisconsin's launches for the waterfowl season opening weekend, September 26-27. If you are a hunter, it's not too soon to consider ways to slow the spread of invasive species into your favorite hunting spots.

Decoys with cracks or unnoticed holes can let water seep in that could carry tiny organisms, such as the larvae of invasive snails, clams, and mussels. By drilling a small hole in the tip of the tail and one at the tip of the bill, you can easily drain a decoy when removing it from the water. After hunting, also make sure to remove any mud and vegetation on decoy posts, keels, or anchors before you leave the area.

A hunting dogs' fur and vests can hide mud, seeds and even small snails. A jug or two of clean water, brushes and lint rollers are good tools to have in your cleaning arsenal. Of course, thoroughly cleaning your dog before you leave the hunting area can be extremely difficult. Wisconsin's invasive species law, NR40, asks that you put forth your best effort, understanding that perfection is not always possible or practical.

Many access points now have wader/boot cleaning stations with large roller brushers thanks to the Wisconsin Waterfowl Association, the River Alliance of Wisconsin, and other partners. It also pays to carry along a large stiff brush for trailers and boats, and to have a smaller brush on hand for the tread of your boots and waders. A grabbing tool for reaching under a boat on a trailer can make removing plants much easier. The tiny plants watermeal and duckweed, that seem to stick to everything, do not need to be thoroughly removed.

Waterfowl hunters should take special care when selecting vegetation for natural hunting blinds. There are many invasive species that grow in wetland environments, and waterfowl hunters should make a conscientious decision when selecting which plant species they use for coverage. Non-native *Phragmites* (common reed) has been known to be spread by waterfowl hunters, and is a prohibited plant in many areas of the state, including Burnett County. It's simply best to avoid *Phragmites*, regardless of it being the native or non-native species since they can be difficult to differentiate. If you do opt for using natural materials, the law states that you can only use dead stems, with no seed heads or roots attached. It may be easier to go with artificial blinds in some areas.

If you are a Burnett County waterfowl hunter that has additional questions about AIS, please contact Thomas Boisvert, Burnett County AIS Coordinator. Thomas can be reached through phone (715)-349-2109 Ext. 2613, email tboisvert@burnettcounty.org, and scheduled in-person meetings.

Hunters, please remember that every time you leave the water it is your duty to help protect Burnett County's resources for future hunting experiences. Please remember to complete the following steps:

Inspect boat, trailer, motor and hunting equipment. Don't forget your boots, blinds, and dogs, too!

Remove all plants, animals and mud.

Drain all water from decoys, boat, motor, and other hunting equipment.

Never move plants or live fish away from a water body.

Burnett County residents invited to help search Wisconsin's waters for invasive species on August 15th

Water lovers of all ages are invited to join the Burnett County Land Services Department on a search for aquatic invasive species (AIS), August 15th, 2020. This fun, hands-on effort, known as Snapshot Day, relies on participants to monitor streams and lakes at designated sites across the state, for signs of non-native plants and animals that pose risks to Wisconsin waterways and wildlife. An outside location at the Burnett County Government Center will serve as a primary location for this event.

Coordinated by River Alliance of Wisconsin, in partnership with Extension and the Wisconsin Department of Natural Resources, Snapshot Day is entering its 7th successful year. Information collected will be provided to the WI DNR to inform and guide monitoring and response efforts. Volunteers are key to the success of the event.

"More and more people want to know how they can help protect the local lakes, rivers and streams they love. Snapshot Day makes taking action a fun, efficient and community-building event," explained Natalie Dutack, former AIS Watershed Groups Manager at River Alliance of Wisconsin. "We've seen nature lovers, paddlers and anglers take part. We've also had families, troops of Scouts, and retirees come out. Everyone enjoys the hands-on opportunity to learn more about the waters near them, and by providing a venue and some training we can help them become stewards of their waters", Dutack continued.

This will be the Burnett County Land Services Department's second time hosting Snapshot Day. They join a larger network of over 25 conservation organizations helping to prevent the spread of invasive species across Wisconsin. Throughout the state nearly 200 volunteers are expected to join the search for invasive species, which will include escaped or intentionally released water garden and aquarium species that can choke out rivers and streams and impair vital habitat for native wildlife.

This year, there will be a few changes to ensure the event is safe for everyone who would like to participate. Training for the event will be provided virtually by River Alliance prior to Snapshot Day, and on the day of the event, social distancing will be maintained among all volunteers.

Volunteers will look for invasive species at critical monitoring sites, and potential invasive species will be verified and cataloged with the Wisconsin Department of Natural Resources to guide species removal and conservation plans.

No experience is necessary and training is provided virtually prior to the event. This is a free event. Recommended for ages 8 and up, minors must be accompanied by an adult.

Coordination of this event is made possible with generous support from the Wisconsin Department of Natural Resources through an Aquatic Invasive Species Education, Planning and Prevention grant.

EVENT DETAILS:

Saturday, August 15th
9:00 am-12:00 pm

Burnett County Government Center

7410 County Rd. K
Siren, WI 54872

REGISTRATION:

Register and see all event details at: <https://www.wisconsinrivers.org/statewide-snapshot-day>
Registration will remain open until August 12th.



SNAPSHOT DAY



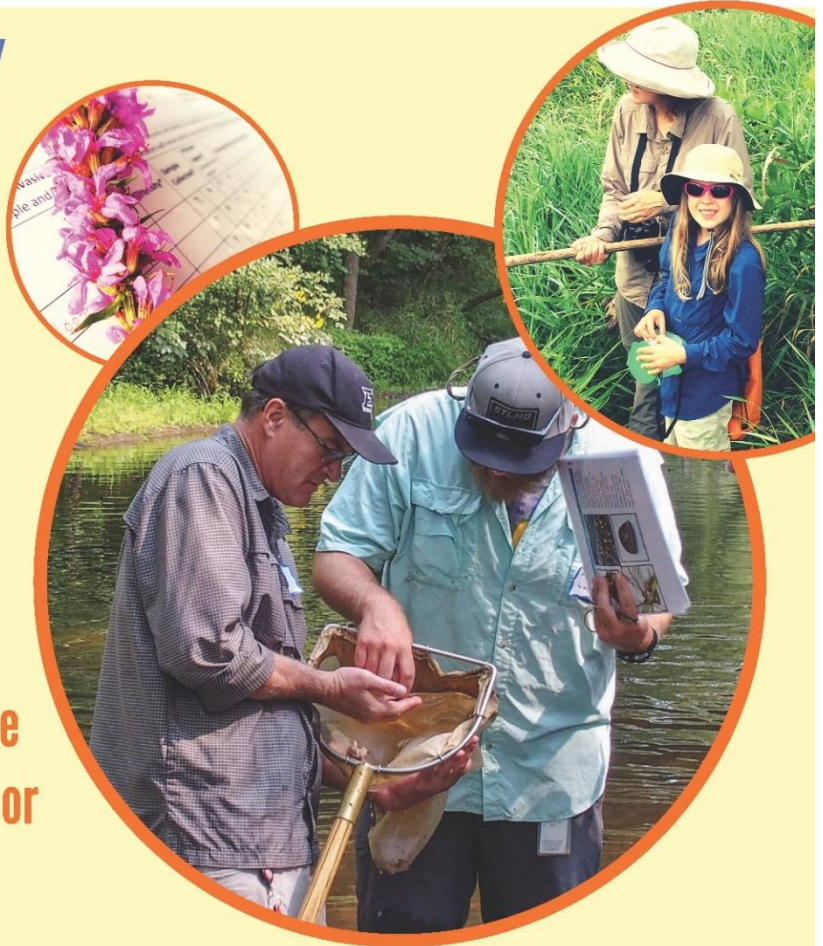
A statewide search for aquatic invasive species
Saturday August 15, 2020

VOLUNTEER OPPORTUNITY

From 9:00 am - 1:00 pm

Join us at:
Burnett County Gov. Center
7410 County Rd. K
Siren, WI 54872

All ages welcome - no experience required. If you want to wade in or stay dry, there is a site for you.



For more information contact: ais@wisconsinrivers.org

FREE EVENT! Register at: wisconsinrivers.org/snapshot-day

Hosted by River Alliance of Wisconsin in partnership with:



***Event modifications will continue to be made regarding COVID-19**

Aquatic Invasive Species Snapshot Day – What Was Found?

Water lovers of all ages were invited to join the Burnett County Land Services Department on a search for aquatic invasive species (AIS) on August 15th, 2020 at the Burnett County Government Center in Siren, WI. This fun, hands-on effort, known as AIS Snapshot Day, relies on participants to monitor streams and lakes at designated sites, for signs of non-native plants and animals that pose risks to Wisconsin waterways and wildlife.

Coordinated by River Alliance of Wisconsin, in partnership with UW Extension's Citizen Lake Monitoring Network, and the Wisconsin Department of Natural Resources, Snapshot Day entered its' 7th successful year. Information collected was provided to the WDNR to inform and guide monitoring and response efforts. Volunteers are key to the success of the event.

"More and more people want to know how they can help protect the local lakes, rivers and streams they love. Snapshot Day makes taking action a fun, efficient and community-building event," explained Natalie Dutack, former AIS Watershed Groups Manager at River Alliance of Wisconsin. "We've seen nature lovers, paddlers and anglers take part. We've also had families, troops of Scouts, and retirees come out. Everyone enjoys the hands-on opportunity to learn more about the waters near them, and by providing a venue and some training we can help them become stewards of their waters," Dutack continued.

This year was the Burnett County Land Services Department's second time hosting Snapshot Day. They joined a larger network of over 20 conservation organizations helping to prevent the spread of invasive species across Wisconsin. Throughout the state nearly 200 volunteers joined the search for AIS. In Burnett County, there were 5 participants for the 2020 event. The Burnett County Land Services Department is hoping this event will grow each subsequent year.

Following a brief identification training, participants dispersed to collect samples at critical monitoring sites, and then reconvened to report what they found. Overall, there were 11 different waterbodies monitored, 2 new populations of AIS that were found, and 3 AIS populations that were able to be verified. Several of the AIS found were: narrow leaf cattails, curly leaf pondweed, purple loosestrife, Chinese mystery snails, and banded mystery snails.



Besides searching for AIS, participants were encouraged to bring back a specimen of any plant or animal that they could not identify. This allowed participants to learn native species, and gain knowledge on aquatic plant and animal identification. All participants left with new knowledge on aquatic life.

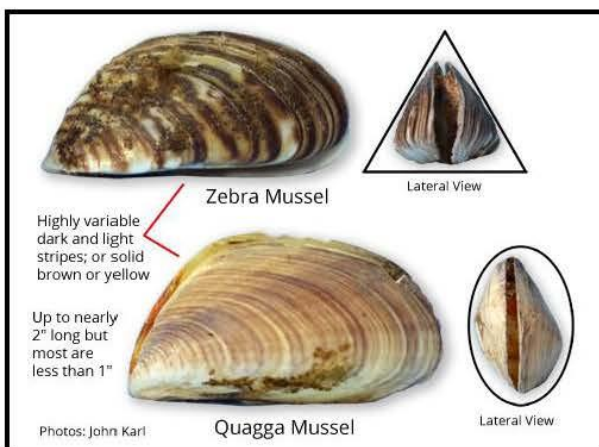
If you have any questions about AIS Snapshot Day or would like to get involved for 2021, feel free to contact Thomas Boisvert, the Burnett County AIS Coordinator at (715)-349-2109 Ext. 2613 or tboisvert@burnettcounty.org.

Attention Shoreline Property Owners

As the open water season winds down the time is ticking before docks, boat lifts, rafts, and other water structures are needed to be removed before ice season arrives. During removal, the Burnett County Land Services Department encourages a thorough inspection of the equipment being removed. The inspection being referred to is a careful scan looking for aquatic invasive species (AIS). In particular, shoreline owners that are removing structures should be examining their equipment for signs of zebra and quagga mussels.

Zebra and quagga mussels adhere themselves to hard surfaces which makes water structures the perfect habitat. When removing these structures please look for any suspected mussels. Early detection of AIS is crucial for preventing their spread, and can help with their control.

Zebra and quagga mussels are extremely invasive organisms that originate mainly from the Caspian Sea region. Through the shipping trade they moved into the Great Lakes via ballast waters, and from the Great Lakes they are then unintentionally transported through recreational watercraft movements.



Each zebra and quagga mussel filters approximately one liter of water per day. Often this clears the water in which they reside in, however, clear water does not always mean healthy water. Through this intense filtration, these mussels essentially “sterilize” the water of its nutrients and micro-organisms. This leads to a bottom-up effect on the food chain causing problems for much of the waterbodies’ organisms. There is also a strong correlation between zebra and quagga mussels and increased toxic blue-green algae blooms.

Besides the ecological effects of zebra and quagga mussels, they cost the U.S. Economy millions of dollars each year. They block water pipes and screens, cause watercraft engine problems, create large colonies on boat undersides, and can make beaches undesirable with their dead, sharp shells.

Overall, these mussels are something that Burnett County does not need. Unfortunately, Big and Middle McKenzie Lakes already have established populations of zebra mussels. Because there are already zebra mussels present in Burnett County, monitoring is of high priority. By monitoring equipment when it is being removed, any new infestations could be addressed as quickly as possible.

If you find something that is suspicious on your water structures when removing them this fall, feel free to contact Thomas Boisvert, the Burnett County AIS Coordinator at (715)-349-2109 Ext. 2613 or tboisvert@burnettcounty.org.

Appendix C: Example AIS Reports



Aquatic Invasive Species (AIS) Point Intercept Survey Report

Big McKenzie Lake

Middle McKenzie Lake

Lower McKenzie Lake

**Surveys Conducted by the Burnett County Land Services Department
(BCLSD)**

Funded mutually by BCLSD and the McKenzie Lakes Association (MLA)

[Report compiled by Thomas Boisvert, Burnett County AIS Coordinator](#)



What is a point intercept (PI) survey?

Using point intercept surveys to monitor for AIS may be the most effective and thorough method possible. Unlike other survey methods that primarily monitor shoreline areas, a point intercept survey examines the entire littoral zone (area of plant growth). In other words, the depths where plants reside are examined beyond shoreline areas – examples would be humps, points, and reefs that extend beyond the immediate shoreline.

A sampling grid developed by the Wisconsin Department of Natural Resources (WDNR) is utilized to survey the waterbody. Sampling grids are designed with each waterbody's unique characteristics in mind – shape, size, and depth are some examples of factors that are used in their creation. These sampling grids also allow a comprehensive template to map the results of the surveys. You can view the AIS survey results for Big, Middle, and Lower McKenzie Lakes later in this document.

This type of sampling grid is generally utilized for aquatic plant management plans, however, these grids can provide a thorough and systematic approach when used for AIS monitoring. Each point is sampled with a pole or throw rake, and the contents are examined upon retrieval. Examples of invasive plants that could be found during a sampling grid are: Starry stonewort (*Nitellopsis obtusa*), Eurasian water-milfoil (*Myriophyllum spicatum*), and curly leaf pondweed (*Potamogeton crispus*).

Beyond using the aforementioned sampling grid Burnett County also scans the shoreline areas when possible. This is done visually by looking for shoreline invasives such as purple loosestrife (*Lythrum salicaria*), yellow iris (*Iris pseudacorus*), invasive cattails (*Typha spp.*), and non-native Phragmites (*Phragmites australis subsp. australis*). Polarized sunglasses are also used to help scan for submergent plants and animals along immediate shoreline areas. Examples of animal species would be zebra mussels (*Dreissena polymorpha*), Chinese mystery snails (*Cipangopaludina chinensis*), banded mystery snails (*Viviparus georgianus*), and rusty crayfish (*Orconectes rusticus*).

Big McKenzie AIS Survey Results

Due to the large size of Big McKenzie, the lake was surveyed over the course of two days – June 17th and 18th, 2020. Using the methods outlined above, BCLSD surveyed all the appropriate sampling points on Big McKenzie Lake. During the survey, the invasive species that were found included: curly-leaf pondweed (*Potamogeton crispus*), yellow iris (*Iris pseudacorus*), Chinese mystery snails (*Cipangopaludina chinensis*), purple loosestrife (*Lythrum salicaria*) and zebra mussels (*Dreissena polymorpha*).

Curly-leaf pondweed (CLP) was recorded and mapped according to the density observed on the sampling rake. The majority of CLP is located in the southern bay of the lake, but there are isolated populations across the lake as well. Although CLP seems to be spread throughout the

lake, most populations were moderate to light. Dense native plant populations in these areas appear to be slowing the spread of CLP.

Yellow iris (YI) was mapped according to visuals that were gathered during the survey. There were only two populations of this plant spotted along the shoreline. Both populations appeared to be planted purposefully by the landowners. That being said, their knowledge of the invasive tendencies YI possesses may be unknown at this time. The population along the western point is the densest population, although neither population is large at this time. Due to the small populations of YI present on the lake, immediate action should be taken to remove these plants before the populations spread further causing ecological damage. YI is known to cause dense monocultures in wetland areas decreasing native species populations and lessening critical natural habitat. **Landowner permission must be obtained to remove these plants.**

Zebra mussels (ZM) were found in abundance on Big McKenzie Lake. Along many shoreline areas, their shells were visible in the sediment and attached to hard surfaces. Besides traditional hard surfaces, ZM were observed attached to Chinese mystery snails (cover photo), dragonfly nymphs, and a variety of vegetation in the lake. Interestingly, ZM preferred to attach themselves to northern watermilfoil (*Myriophyllum spicatum*) which may be attributed to its robust and rigid plant structure. Landowners on the lake are advised to lift boat motors out of the water when docked to prevent motor problems caused by ZM. Anyone entering and leaving the McKenzie Lakes are also required by law to use the decontamination stations provided at the launching points. The provided bleach solution is safe to use on all watercraft, and is proven effective to kill ZM that may be on the watercraft/equipment. BCLSD followed all appropriate decontamination procedures before and after monitoring the McKenzie Lakes. The McKenzie Lakes were also monitored in the following order to help minimize the possibility for ZM spread: Lower, Middle, and Big McKenzie Lakes.

Purple Loosestrife is also known to be in several locations around Big McKenzie Lake. Since this plant was not flowering at the time of the survey, it was difficult to spot. However, portions of the north shoreline are known to have established populations.

Middle McKenzie AIS Survey Results

Middle McKenzie Lake was surveyed on June 16th, 2020. Curly-leaf pondweed (CLP) was found and recorded according to the density observed on the sampling rake. There are isolated populations of CLP across the lake. Although CLP seems to be spread sporadically throughout the lake, most populations were moderate to light. Dense native plant populations in these areas appear to be slowing the spread of CLP.

ZM were not viewed in abundance during the Middle McKenzie survey. There were no ZM attached to the vegetation that was examined. It will be interesting to see the progression of the ZM population in Middle McKenzie in the future, and if the trends will follow the path of Big McKenzie.

Purple Loosestrife is also known to be on Middle McKenzie Lake. Since this plant was not flowering at the time of the survey, it was difficult to spot. An accurate depiction of where this plant still resides could not be given.

Chinese mystery snails were also observed on Middle McKenzie Lake.

Lower McKenzie AIS Survey Results

Lower McKenzie Lake was surveyed on June 11th, 2020. Curly-leaf pondweed (CLP) was found and recorded according to the density observed on the sampling rake. The only populations of CLP were found in the west bay. Populations observed were small and sporadic. Dense native plant populations in these areas appear to be slowing the spread of CLP.

There is a possibility to conduct some manual removal on Lower McKenzie Lake. Due to the mucky substrate, removal by hand may be feasible. Care must be taken to collect all portions of the plant during this process. Since CLP reproduces by turions, removal of these small populations may be needed for several years before a true reduction is noticed. That being said, there is an opportunity to reduce this population if interested individuals can be a part of this process.

Chinese and banded mystery snails were also observed on Lower McKenzie Lake. Although these species and CLP have been found in the past, the WDNR still does not have them listed as verified in Lower McKenzie Lake. BCLSD is working to resolve this issue.

Rake Fullness (Density)

Rake Fullness 1: There are not enough plants to cover the length of the rake in a single layer.

Rake Fullness 2: There are enough plants to cover the length of the rake in a single layer, but the tines are not covered.

Rake Fullness 3: The rake is completely covered with plants, and the tines are not visible.

Visual: Sightings of plants within six feet of the sample point.

Helpful Links:

[Banded Mystery Snail Identification](#)

[Yellow Iris Identification](#)

[Chinese Mystery Snail Identification](#)

[Zebra Mussel Identification](#)

[Curly-leaf Pondweed Identification](#)

[Other AIS Identification](#)

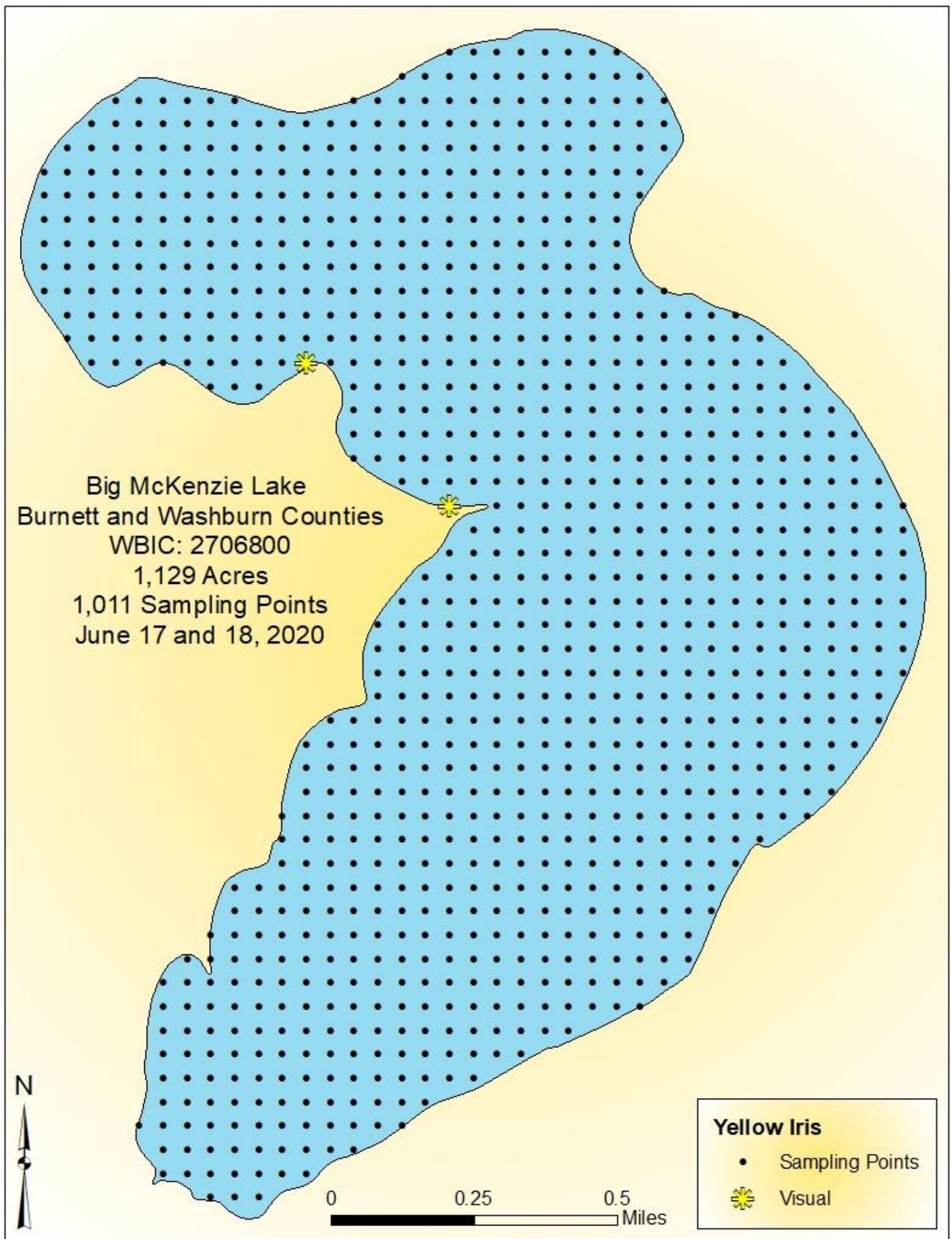
[Purple Loosestrife Identification](#)

Big McKenzie Lake
Burnett and Washburn Counties
WBIC: 2706800
1,129 Acres
1,011 Sampling Points
June 17 and 18, 2020



Yellow Iris

- Sampling Points
- ✱ Visual



Big McKenzie Lake
Burnett and Washburn Counties
WBIC: 2706800
1,129 Acres
1,011 Sampling Points
June 17 and 18, 2020



0 0.25 0.5 Miles

Potamogeton crispus

• Sampling Points

Rake Fullness

● 1

● 2

● 3

● Visual

Lower McKenzie Lake, Washburn County

WBIC: 2706300

206 Acres

290 Sampling Points

June 11, 2020



Legend

• Sampling Points

Potamogeton crispus

● Visual

0

0.25

0.5

Miles

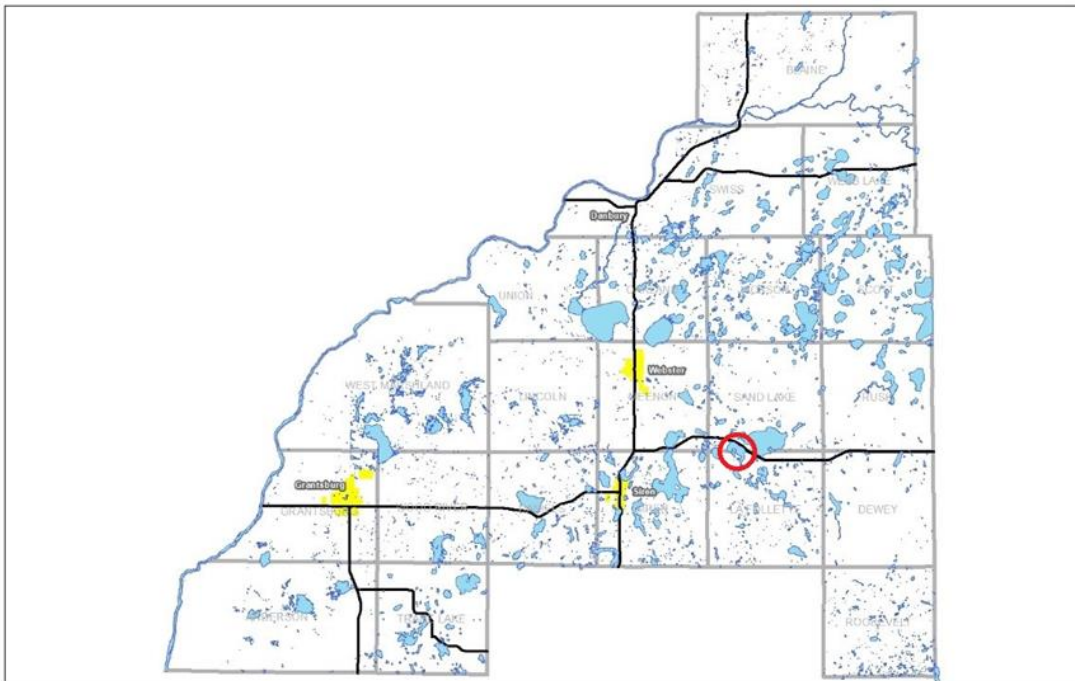




Viola Lake

AIS Early Detection Monitoring

July 23rd, 2020



Map 1 – Map of Burnett County with Viola Lake circled

VIOLA LAKE AIS EARLY DETECTION REPORT

Water Body Identification Code (WBIC): 2598600

Previous AIS Findings: Chinese Mystery Snail, Freshwater Jellyfish

New AIS Findings: Narrow Leaf Cattail

Field Crew: Shayna Vendela, Sunny Cone, (AIS Interns)

Field Date: July 23, 2020

Report By: Shayna Vendela

Viola Lake is located in Burnett County, WI and has one public boat landing off Larabee Subdivision Road. Viola Lake is 265 acres with a max depth of 34 feet. The Wisconsin Department of Natural Resources (WDNR) classifies the bottom substrate of Viola Lake to be composed of 70%, 30% gravel, 0% rock, and 0% muck. Viola Lake also supports a healthy fishery comprised of panfish, largemouth bass, northern pike, and walleye.

The AIS early detection monitoring protocol was provided by the WDNR, and all data is entered into the statewide Surface Water Integrated Monitoring System (SWIMS). Below are the different categories of field data that was collected, and each category is typically required by WDNR AIS Early Detection Monitoring protocol.

Boat Landing Search:

Viola Lake only has one public boat launch, and it was searched immediately when entering the lake. This area was shallow with dense aquatic vegetation, and therefore snorkeling was not warranted. The bottom substrate was clearly visible, and slightly deeper areas were searched thoroughly using a throw rake. Approximately 30 minutes elapsed for adequate sampling of the boat landing area.

Targeted Search Sites:

There were 5 targeted search sites selected on Viola Lake besides the initial survey at the landing. At each target site the throw rake was utilized extensively as snorkeling was not warranted due to shallow depths or extensive plant growth. Plants caught on the rake were scanned for any possible AIS. The target site locations were all recorded with GPS coordinates, and these can be viewed in Table 1. Each targeted search site was sampled for approximately 15 minutes, or until the area was adequately sampled.

Meander Survey:

In between the targeted search sites a meander survey was conducted from shallow depths to the edge of the littoral zone (where plant growth ceases). Once again, the throw rake was utilized extensively, and plants were examined. Polarized sunglasses were also helpful in identifying plants within eye sight.

Water Quality:

A secchi disk was utilized at the deep hole on Viola Lake to measure water clarity. The reading was 12 feet out of a 34 feet maximum depth.

While on Viola Lake very few areas were non-navigable by boat, and a thorough survey was able to be completed throughout the entire lake. The weather was fair with a light wind present at times. There was no adverse weather to impede our survey. Overall, Viola Lake appeared to be healthy.

Common plants found on Viola Lake were common bladderwort (*Utricularia vulgaris*), pickerelweed (*Pontederia cordata*), arrowhead (*Sagittaria latifolia*), common waterweed (*Elodea canadensis*), coontail (*Ceratophyllum demersum*), watershield (*Brasenia schreberi*), Northern Water Milfoil (*Myriophyllum sibiricum*), large leaf pondweed (*Potamogeton amplifolius*), fern pondweed (*Potamogeton robinsii*), and white pond lily (*Nyphaea odorata*). We found that aquatic plant growth continued throughout the lake.

Table 1: GPS Coordinates of Sample Areas

Site	Latitude	Longitude
Boat Landing	45.8167 N	-92.2567 W
Target Site 1	45.8122 N	-92.2456 W
Target Site 2	45.8188 N	-92.2523 W
Target Site 3	45.8115 N	-92.2440 W
Target Site 4	45.8174 N	-92.2424 W
Target Site 5	45.8197 N	-92.2615 W

Aquatic Invasive Species:

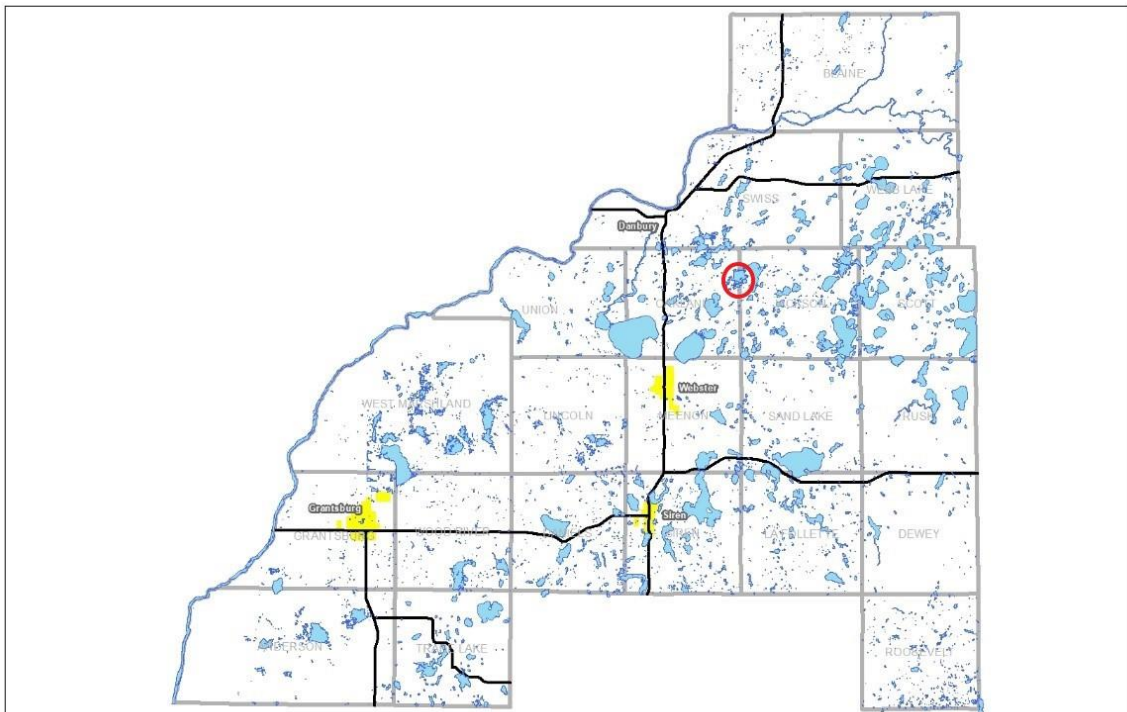
Narrow Leaf Cattail



Crooked Lake

AIS Point Intercept Survey

August 14th, 2020



Map 1 – Map of Burnett County with Crooked Lake circled

CROOKED LAKE AIS POINT INTERCEPT REPORT

Water Body Identification Code (WBIC): 2453400

Previous AIS Findings: Curly-Leaf Pondweed

New AIS Findings: N/A

Field Crew: Thomas Boisvert AIS Coordinator and Brad Morris, AIS Consultant

Field Date: June 9th, 2020

Report By: Sunny Cone

Crooked Lake is located in Burnett County, WI and has one public boat landing found on Sweger Road in Jackson Township, WI. Crooked Lake is 250 acres with a maximum depth of 13 feet and an average depth of 6 feet. The Wisconsin Department of Natural Resources (WDNR) has no notes on the waterbody's health. The substrate of Crooked Lake is composed of 99% sand. Crooked Lake also supports a healthy fishery comprised of panfish, largemouth bass, and northern pike.

The Aquatic invasive species (AIS) point intercept survey was conducted by utilizing a sampling grid developed by Michelle Nault with the WDNR. This type of sampling grid is generally utilized for aquatic plant management plans, however, these grids can provide a thorough and systematic approach when used for AIS monitoring. Each point is sampled with a throw rake, and the contents are examined upon retrieval. Examples of invasive plants that could be found during a sampling grid are: Starry stonewort (*Nitellopsis obtusa*), Eurasian water-milfoil (*Myriophyllum spicatum*), and curly leaf pondweed (*Potamogeton crispus*). The sampling grid utilized on Crooked Lake can be viewed below (Map 2).

Beyond using the aforementioned sampling grid Burnett County also scans the shoreline areas when possible. This is done visually by looking for shoreline invasives such as purple loosestrife (*Lythrum salicaria*), yellow iris (*Iris pseudacorus*), and non-native Phragmites (*Phragmites australis subsp. australis*). Submergent plants and invasive animals along shoreline areas are also visually scanned for with the aid of polarized sunglasses. Examples of animal species would be zebra mussels (*Dreissena polymorpha*), Chinese mystery snails (*Cipangopaludina chinensis*), banded mystery snails (*Viviparus georgianus*), and rusty crayfish (*Orconectes rusticus*).

While on Crooked Lake very few areas were non-navigable by boat due to excess vegetation or shallow water. Areas that were not navigable were visually surveyed and a thorough survey was completed. The weather was fair with no adverse weather to impede our survey. Overall, Crooked Lake appeared to have typically healthy plant growth.

Common plants found on Crooked Lake included fern pondweed (*Potamogeton robbinsii*), muskgrass (*Carra* spp.), large amounts of common waterweed (*Elodea canadensis*), large leaf pondweed (*Potamogeton amplifolius*), needle spike rush (*Eleocharis acicularis*), coontail (*Ceratophyllum demersum*), pickerel weed (*Pontederia cordata*), creeping bladderwort (*Utricularia gibba*), and bullheaded pond lily (*Nuphar variegata*).

Crooked Lake
 Burnett County
 WBIC 2459200
 T40N R16W S12
 263.0 acres / 106.4 ha
 430 Sampling Points
 50m between Points
 Site1: Lat. 45.95500497
 Long. -92.28780157



Created: 2020

0 0.2 0.4 0.8 Kilometers



Map 2 – Crooked Lake Sampling Grid

AIS Boat Landing Survey *(can be used for river/stream crossings as well)*

Waterbody Name: _____ **WBIC:** _____

Inspector(s): _____

Landing Location: _____

Date: _____

AIS Signage Present at the Landing? YES NO

Is the AIS Signage Current? YES NO

(When a new AIS sign needs to be installed, please complete and enter the appropriate form into SWIMS)

Where did the sampling occur? (Select all that apply)

Boat Ramp/Access Dock/Pier Adjacent Land/Shoreline Other? _____

What sampling methods were used? (Select all that apply)

Visual scanning Throw rake Wading Hand scoop/D-net Other? _____

Were any AIS observed? (If yes, please list below) YES NO

1. _____ 5. _____

2. _____ 6. _____

3. _____ 7. _____

4. _____ 8. _____

Native vegetation observed (please list below):

1. _____ 7. _____

2. _____ 8. _____

3. _____ 9. _____

4. _____ 10. _____

5. _____ 11. _____

6. _____ 12. _____

Additional Comments:

