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VOLUME 22, ISSUE ONE

LAKE LINES

Burnett County Lakes & Rivers Association
University of Wisconsin-Extension/Burnett County

You Can Help Stop Zebra Mussel Spread

By Wisconsin DNR and Mike Kornmann, UW Cooperative Extension

Zebra Mussels were found last fall in Big McKenzie Lake. While not good news to start out the year, there are things each of us can do to stop the spread of zebra mussels and other aquatic invasive species to other lakes and rivers. A phrase can guide us when we use our area lakes and rivers: “Inspect, remove, drain, and never move.” And we should share this phrase with friends and family who use area lakes too. More online zebra mussel information can be found at burnettcounty.com/lakes.

In October 2016, an alert property owner found two zebra mussels on the southern shore of Big McKenzie Lake. The Wisconsin DNR’s follow-up inspections found one more at the same location and six at the northeast corner of the lake. Also in October, a single zebra mussel was found in Polk County’s Deer Lake. The likelihood of zebra mussels infecting a lake is based on the calcium content in the water to support the mussel. On page 7, there is a zebra mussel suitability list for lakes in Burnett County.

There is no known selective treatment for zebra mussels at this time. The negative impacts of zebra mussels are both environmental and economic. Zebra mussels compete for food with the immature and smaller prey species of fish. This can lead to a collapse or severe impairment of the fishery food chain from the bottom up. In addition, zebra mussels encrust boats, motors, docks, and water intake systems. Their shells are very sharp and cut the feet of humans who are swimming or walking along the beaches bare-foot.

Our best pro-active response to all invasive species is to stop their spread by eliminating aquatic threats from our boat and trailer. Inspect, remove, drain, and never move (aquatic plants). If we visit a lake that already has zebra mussels in it, decontamination activities are highly recom-

mended. (See page 4 for step-by-step instructions.)

Clean boats, clean waters activities are not just for visitors to lakes. They are prevention activities for all lake users including kayakers and canoers, duck hunters, lakeshore property owners, families and friends, resort visitors, and boat/dock service providers.

The local lakes partnership team of UW-Extension, Burnett County Lakes and Rivers Association, WI DNR, and Burnett County Land and Water Conservation have been in communication with local boat/dock service providers and have been encouraging them to implement clean boats, clean waters procedures. Emphasis has been on implementing decontamination procedures for equipment used on Big McKenzie Lake. Please let your provider know you expect clean boat, clean waters procedures to be used.

Our collective effort can make a significant difference in stopping the spread of zebra mussels and other aquatic invasive species.

ADVISORY

Zebra mussels found in Big McKenzie Lake. Decontaminate boat after use. Inspect, remove, drain, and never move invasive species. Look for hot water pressure washers at the three boat landings on Big McKenzie Lake.



Image of Big McKenzie Lake from https://dnrmaps.wi.gov/H5/?viewer=SWDV&runWorkflow=search¶m=LAKE_WATERBODY_WBIC.2706800



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LakeLines is featured online at www.burnettcounty.com/LakeLines

4-H Summer Camp Scholarships Available from BCLRA

Burnett County Lakes & Rivers Association (BCLRA) has partnered with the Burnett County UW-Extension 4-H Youth & Family Educator, Beth Rank, to provide scholarships for youth to attend 4-H sponsored summer camps. Burnett County 4-H Summer Camp will be Tuesday, July 11th - Friday, July 14th at Camp Burnett on Lake 26. The rustic camp features eight cabins, each with eight bunks, and pit toilets. The 2017 theme is yet to be determined by the older 4-H youth who serve as counselors and counselors-in-training, and volunteer adult chaperones. The camp fee is \$40 per camper and bunks are filled on a first-come, first-served basis with priority given to Burnett County 4-H youth first. Interested in learning more about scholarships? Contact Beth Rank at 715-349-2151 or email her at beth.rank@ces.uwex.edu.



Donate to BCLRA and Keep Burnett County Lakes Healthy

Burnett County Lakes and Rivers Association helps to maintain healthy lakes in cooperation with local associations and other local partners. BCLRA provides funding for LakeLines to be received by all county lakeshore property owners. BCLRA also contributes to invasive species prevention, gear for summer camps, Clean Boats, Clean Waters interns, and recreation law enforcement. Your contribution is tax deductible and very much appreciated. You can write your check to BCLRA and mail it to BCLRA (care of Bob Baker) 7410 County Road K, #107, Siren, WI 54872

Wisconsin Lakes Trivia Game On Sale For \$14.89

Can a loon dive 200 feet deep? Can a single chemical turn a whole lake green? You'll learn the answers to these puzzlers, and to hundreds more, when you play the Wisconsin Lakes Trivia Game. A colored die will tumble you into a multitude of mysteries about the leisure life, wildlife, ecology, and history of Wisconsin lake country, and colorful trivia cards will reveal all. Wisconsin Lakes Trivia Game is the perfect pastime for evenings at the lake cabin. The rolling die will startle you and make you wonder...what famous gangster of the thirties had a shootout on Little White Star Lake? Are jellyfish found in Wisconsin waters?

Please call the Learning Store customer service (877-947-7827), 8:30 am to 4:00 pm, Monday through Friday, or visit <https://learningstore.uwex.edu/> to order.



Zebra Mussel (*Dreissena polymorpha*) Profile

By Wisconsin Sea Grant Institute

Where did zebra mussels come from?

- Zebra mussels are believed to have come from the Caspian Sea in Europe.
- They arrived in the late 1980s in the ballast water of ships.
- Zebra mussels have spread to 20 of the United States and the provinces of Ontario and Quebec.
- First found in Lake St. Clair, they have spread south to the Gulf of Mexico and north into southern Canada.

What do zebra mussels look like?

- Zebra mussels can be up to two inches (50 mm) long, but are usually the size of a fingernail.
- They have striped shells that look like a zebra's stripes, which is how they get their name.
- Zebra mussels can live for four to five years.
- Zebra mussels also have sticky byssal threads that they use to attach tightly to any hard surface.

Why are zebra mussels a problem?

- Zebra mussels are a problem because they filter water, up to a liter per day, to eat the plankton. Since the zebra mussels eat a lot of plankton, they compete with fish for food.
- They also clog pipes by forming colonies inside of the pipes. Then the water cannot flow through the pipes as easily.
- The cost to North American utilities to control the zebra mussels in water intake pipes from 1989 to 2004 was \$267 million (Connelly, et al 2007).

How do zebra mussels spread?

- Zebra mussels can reproduce by the end of their first year.
- They usually spawn in the early spring until winter, when the water temperature is about 68°F.
- A fertilized egg results in a free-swimming

planktonic larva called a veliger.

- Veligers are about the diameter of a human hair and are so small you can't see them without a microscope.
- The veliger floats in a water column for 1-5 weeks. As it grows it begins to sink and search for a hard surface on which to live and grow.

How do we control zebra mussels?

- Zebra mussels cannot be controlled in the wild.
- On intake pipes, chemicals can be used that will kill the larva. If these chemicals were used in an open lake, they would also affect fish and native mussels.
- The spread of zebra mussels can be prevented by draining all of the water from boats, motors, live wells and bait wells.
- Thoroughly inspect your boat's hull and trailer for any zebra mussels and weeds.
- Let equipment sit for 5 days or rinse with hot water.
- Never take fish or plants from one lake and put them in another.



Zebra mussel. Photo credit: U.S. Geological Survey

Clean Boats, Clean Waters Tips

Wisconsin Department of Natural Resources

Inspect and Remove – Examine your boat, trailer and towing vehicle. Remove all vegetation. Be sure to look across the bottom of the boat as aquatic plants can easily get caught under the middle of the boat. Consider using a reaching tool with an extension on it to pull plants out.

Did you just finish boating at Big McKenzie Lake? Then consider washing your boat and trailer with a hot water pressure washer or use a decontamination solution to wash your boat. See page 10 for “Decontamination Best Practices by Gear and Method”. There may be a hot water pressure washer at some high use boat landings. If you are at a resort landing, ask the owner or manager if they have washing equipment available.



Reaching tools are available in various lengths from many online and discount retail stores.



Look for a hot water power washer similar to this model at the Big McKenzie landing for boaters to decontaminate equipment.

Drain – All live wells and live bait containers should be drained. The bilge should also be drained and the plug left out. The easiest step to forget is to drop the lower unit on your outboard or inboard. Water will drain out. It is important to do this at the lake you just finished using as you don’t want to move water from one lake to another. And if you used lake water to keep fish alive in a cooler, that should be drained at the landing too.

**PREVENT THE SPREAD OF
INVASIVE SPECIES
IT'S THE LAW**

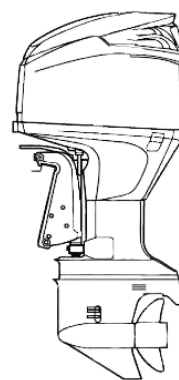
PENALTIES MAY EXCEED \$2000

Before launching and before leaving YOU MUST:

- ✓ **INSPECT** boats, trailers, and equipment.
- ✓ **REMOVE** all attached aquatic plants and animals.
- ✓ **DRAIN** all water from boats, vehicles, and equipment.
- ✓ **NEVER MOVE** plants or live fish away from a waterbody.*

STOP AQUATIC HITCHHIKERS!
Prevent the spread of invasive species, it's the law

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



When you drain your bilge, live wells, and live bait containers, remember to drain the lower unit of your outboard as well.

Lower Unit

Drain all live wells and live bait containers.



Never Move - Do not take live fish to a different water body. Diseases like VHS and others can be spread this way. Also, be aware of garden plants you buy and may plant near a lake or stream. Restricted species (e.g. purple loosestrife) can contribute to many challenges for your lake, wildlife, and you. If you are unsure, contact your county land and water conservationist, Dave Ferris, at 715-349-2186.

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Zebra Mussel Suitable Waters for Burnett County

By Mike Kornmann, UW-Extension Community Development Agent

While zebra mussels can be harmful to lakes, there are limits to where they can thrive. One of the key physical characteristics is the amount of calcium in the water column. At least seven studies have identified calcium levels as the limiting factor in determining if zebra mussels can reproduce and thrive in our lakes and rivers. A recent study by university researchers identified three classes of waters related to zebra mussels. The categories are: not suitable, borderline suitable, and suitable. The list as it applies to Burnett County's lakes and rivers is below. For people who love maps, you can view the Invasive Species Interactive Mapping System by going to: <http://www.aissmartprevention.wisc.edu/mappingtool.php>.

Suitable for Zebra Mussels

Bashaw Lake
Benoit Lake
Big Trade Lake
Buffalo Lake
Clam Lake
Clam River Flowage
Culbertson Lake
Dunham Lake
Holmes Lake
Indian Lake
Kent Lake
Lipsett Lake
Little Wood Lake
Little Yellow Lake
Lone Star Lake
Long Lake (T. Siren)
Lower Clam Lake
McKenzie Lake
Namekagon River (parts of)
Unnamed Lake (several)
Phernetton Lake
Pickle Lake
Rice Lake (T. Trade Lake; Hwy M)
Rice Lake (T. Rusk)
Rice Lake (T. Trade Lake; Hwy 48)
Sand Lake (T. Siren)
Silver Lake
Spencer Lake
Spirit Lake
Tamarack Lake
Tucker Lake
Wood Lake
Yellow Lake
Yellow River (parts of)

Borderline Suitable

Austin Lake
Bass Lake (T. Trade Lake)
Big Sand Lake
Birch Island Lake
Blomberg Lake
Bogey Lake
Briggs Lake
Burlingame Lake
Cadotte Lake
Cranberry Lake
Deer Lake
Des Moines Lake
Devils Lake
Dubois Lake
Eagle Lake (T. Rusk)
Eagle Lake (T. Swiss)
Falk Lake
Fawn Lake
Fish Lake
Gabrielson Lake
Gaslyn Lake
Glendenning Lake
Gull Lake
Hanscom Lake
Hunters Lake
Kapes Lake
Lind Lake
Little Bear Lake
Little Deep Lake
Long Lake (T. Webb Lake)
Loon Lake
Lost Lake (T. Sand Lake)

Lost Lake (T. Rusk)
Love Lake
Lower McKenzie Lake
Mallard Lake
Middle McKenzie Lake
Minerva Lake
Minnow Lake
Money Lake
Mud Hen Lake
Mud Lake (T. Swiss)
Mud Lake (T. Oakland)
Nicaboyne Lake
North Lang Lake
Pine Lake (T. Jackson)
Pokegama Lake
Put Lake
Robie Lake
Round Lake (T. Trade Lake)
Sand Lake (North)
Shoal Lake
Smith Lake
Swamp Lake
Tabor Lake
Twenty Six Lake
Upper Twin Lake
Webb lake
Wilson Lake

Zebra Mussel Resources

Visit burnettcounty.com/lakes for in depth information about Zebra Mussels and how to stop their spread.

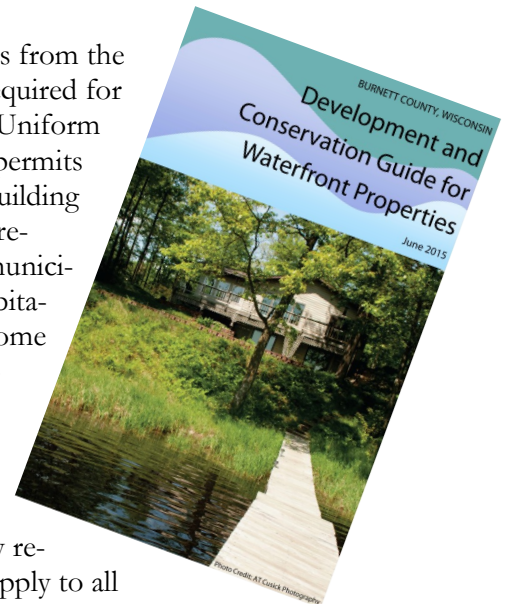


Eleven Revisions to the County Shoreline Ordinance

By Jason Towne, Burnett County Zoning Administrator

1. Lake classes can no longer be used to determine lot width or lake setback. Class 3 lakes used to require minimums of 300 feet lot width and a setback of 100 feet from the ordinary high water mark (Ordinary High Water Mark or OHWM). Now the lot width is determined based on the zoning district requirements and the setback is 75* feet from the OHWM. (*With one exception.)
2. For newly created lots, lot width is now determined by averaging the width at three locations. For a riparian lot it would be the OHWM, building setback and rear lot line. Lake lots with narrow shoreline width can now be created.
3. Boathouses are no longer prohibited, however there is a list of requirements that must be met in order to construct a new boathouse. This applies to “dry” boathouses which are regulated by the County. A “dry” boathouse is located entirely above the OHWM. “Wet” boathouses are still regulated by the DNR.
4. Setback averaging to the OHWM can now be used for new principal structures. In no case can the proposed structure have a setback less than 35 feet from the OHWM.
5. Lake access and viewing corridors are now 35% of the shoreline width and there is no maximum. So if someone owns 500 feet of shoreline they are allowed to clear 175 feet of the shoreline for an access and viewing corridor.
6. Impervious surfaces within 300 feet of the OHWM are now regulated. Impervious surfaces are buildings, decks, patios, sidewalks, driveways, etc., any surface that sheds water. Once a lot hits 15% of its total area as impervious surface then the owner will have to mitigate the increased impervious surfaces. Some examples of mitigation might be installing a vegetation buffer along the shoreline, installing a rain garden to collect water, diverting the water away from the lake, etc. The maximum impervious surface is 30% of the lot area.
7. Structure height beyond the 75 feet OHWM setback is now 40 feet; it used to be 35 feet.
8. Structures that were legally placed and are non-conforming to the OHWM setback may be maintained, repaired, or entirely replaced within the same footprint and can be vertically expanded up to 35 feet in height.
9. Structures that were approved by variance to reduce the OHWM setback are allowed to be replaced within the same footprint and can be vertically expanded up to 35 feet in height.
10. Mitigation can now be done by choosing from a menu of options; such as restoring shoreline buffers, removing legal nonconforming structures, diverting water from impervious surfaces, or treating water from impervious surfaces.
11. Camping units placed on a lot within the shoreland area for more than 30 days per year require a private on-site wastewater treatment system (POWTS) also known as a septic system.

Land Use Permits from the county are still required for projects. UDC (Uniform Dwelling Code) permits (also known as building permits) are still required from all municipalities for all habitable structures. Some municipalities require permits for other projects; such as driveways. Floodplain and sanitary requirements still apply to all structures.



Northlands Lakes Conference

Friday, June 16, 2017, Hayward High School, Hayward, WI

Conference Agenda

8:00 am Registration, Continental Breakfast and Exhibits

9:00 am Welcome, Opening Remarks and Recognition
- Adam Haecker, Northwoods Cooperative Weed Management Area

9:10 am The Alien of Wisconsin - Olivia McNally, Grantsburg Middle School

9:15 am Change Society, Change Individuals, Change Water Quality - Aaron Thompson, UW-Stevens Point and Nels Paulson, UW-Stout

10:00 am Break

10:30 am SESSION I

- Lake Surveys - Aaron Thompson, UW-Stevens Point and Nels Paulson, UW-Stout
- Dragonflies and Mercury: What's in Your Water? - Randy Lehr, Northland College
- Clam Lake: Carp Control and Wild Rice Management - Tony Havranek, WSB & Associates, Inc.

11:30 am Luncheon and Exhibits

12:15 pm SESSION II

- Limnology 101 - Randy Lehr, Northland College
- Putting a Measure to the Value of Water in Polk County - Mary Pardee, UWEX
- How the DNR Uses Citizen Volunteer Lake Monitoring Data - Katie Hein, WDNR

1:15 pm Break

1:30 pm SESSION III

- Lakeshore Restoration Success Stories - Dave Ferris, Burnett County LWCD

- Eurasian Water Milfoil Long-Term Trends - Alison Mikulyuk, WDNR

- Woody Habitat Science: Knowns, Unknowns and Current Studies - Greg Sass, WDNR

2:30 pm Break

2:45 pm SESSION IV

- Successful Lake Management Projects - Will Kiefer, Lake Nebagamon, Jim Giffin, Lake Minnesuing and Jan Breyer, Pipe Lake
- Zebra Mussels - Maureen Ferry, WDNR
- How Wildlife Use Shoreland Buffers - Patrick Goggin, UWEX

3:45 pm Adjourn

Northwest Lakes Conference

- Friday, June 16, 2017
- Hayward High School,
10408 N Greenwood Lane
Hayward WI
- \$45/attendee, students free
- Registration deadline: June 2, 2017
- Register online at
<https://www.northland.edu/sustain/soei/conferences-symposiums/lakesconference/>

AIS Decontamination Tips and Best Practices by Gear and Method

By Wisconsin Department of Natural Resources

The recommendations below to decontaminate equipment from AIS (Aquatic Invasive Species) are general. The most specific recommendations can be found on the Wisconsin DNR website at: <http://dnr.wi.gov/topic/Invasives/disinfection.html#general>.

Motors

After removing from the water, scrub sediments off the exterior of the motor and then tip the motor down and allow water to drain from engine.

For motors moored in water for several days or more, submerge the lower unit in a container of disinfectant and run the motor to ensure contact with all internal parts and allow for the appropriate contact time.

Next start the engine and run it just long enough to see the solution run out the exhaust and the tell-tale. Never run the engine without disinfectant or fresh water flowing into the lower unit.

Allow the solution to remain in the motor for the appropriate contact time.

Rinse external surfaces with clean water after disinfection.

Flush the motor with fresh water for two minutes following instructions outlined in the owner's manual.

While simple prevention methods, such as hand removal, can reduce the majority of AIS found on gear and equipment, additional decontamination methods are still required to get rid of any elements that may not be seen. These techniques are highly recommended if your boat has been on a lake known to have zebra mussels.

Hot Water

Hot water works by physically removing AIS and killing some AIS. While some species are killed at lower temperatures, the manual code requires hot water to be at least 140° F in order to kill the most species. Suggested contact time to kill the most species is 10 minutes. This method

becomes more effective when applied with high pressure.

It is important to note, most self-serve car washes do not get hot enough to meet the manual code's temperature requirement.

Virkon®

Virkon® Aquatic is a powder disinfectant in the peroxygen (hydrogen peroxide) family that is 99.9% biodegradable and breaks down into water and oxygen.

Virkon® Aquatic should not be used on items made of wood. Since the solution soaks into the wood, wood may carry residues that could be harmful to fish.

Labeling for Virkon® Aquatic says it is not corrosive at the recommended dilution, however, solutions have been shown to cause degradation to gear and equipment when used repeatedly.

Negative impacts of Virkon® can be reduced by rinsing equipment with clean water (municipal, bottled, well, etc.) after disinfection is complete.

Diluted Chlorine Solution

Use fresh chlorine solutions - chlorine concentrations in solutions deteriorate with time, exposure to light and heat, and on contact with air, metals, metallic ions and organic materials.

Chlorine solutions will begin to lose disinfecting properties after 24 hours, and the more diluted the chlorine solution, the quicker it will deteriorate. Based on this information, it is important to use 0.5% bleach solutions that are less than 24 hours old.

When using household bleach as a chlorine source, it is also important to be aware of bleach shelf life. If stored at a temperature between 50 and 70° F, household bleach retains its disinfection properties for about six months, after which it degrades into salt and water at a rate of 20% each year.

Chlorine solutions may have corrosive effects on certain articles of equipment, however, these effects can be reduced by rinsing equipment with clean water after disinfection is complete.



You can disinfect your equipment with a diluted chlorine solution. Bleach will kill zebra mussels and other aquatic invasive species.

Creating Loon Friendly Lakes

By Loon Watch, Northland College Sigurd Olson Institute

For so many people who visit or live in the north woods, loons are an integral part of the lake experience. So why do some lakes have loons and not others? Loons need healthy aquatic ecosystems with good water quality, abundant prey, irregular shaped shorelines or islands with native vegetation, and nursery habitat with little to no human disturbance.

Therefore loons are considered to be an indicator species, meaning that the presence of a loon may indicate that a lake they live on or frequently visit is healthy. Here are some things you can do to help protect the habitat and loons on your lake.

Practice Good Loon Etiquette

Watch loons from at least 200 feet away. Get a powerful lens for your camera, use binoculars or a spotting scope, and never explore a loon nest site. Close encounters can be deadly for swimming and nesting loons.

Avoid exploring or camping on islands before July 15 of each year. Loons prefer islands for nesting. Disturbance can cause a loon to abandon its nest.

Dispose of household garbage at a collection site. Garbage draws raccoons, foxes, gulls, and eagles, which prey on loon eggs. Trash can also ensnare wildlife, including loons.

Be an ethical angler. Never fish or cast near loon nests or swimming loons, properly dispose of extra bait and trash, and pick up monofilament line.

Keep dogs and cats away from loons and nests. Pets disturb nesting loons and can destroy loon eggs.

Be a responsible boater. Never chase loons or run motorboats or personal watercraft over areas where loons have been seen. Loons and loon chicks have died from being hit by boats and propellers. Boat wakes and waves may also wash eggs off of nests.

Practice and teach wildlife stewardship...always!

Protect and Restore Loon Habitat

Protect native vegetation on all shores. Loons nest on natural shorelines and use natural materials to build their nests. Native vegetation also protects water quality by slowing and absorbing runoff materials from entering the lake.

Use only phosphorus-free fertilizers on shorelands, and only if needed. Fertilizer that runs off into lakes increases aquatic plant growth, making it difficult for loons to swim and find food.

Protect loons from your pets. Keep dogs and cats away from loons and nests. Pets disturb nesting loons and can destroy loon eggs. And please clean up your pet's waste—pet waste can also contribute unwanted nutrients and bacteria to the water.

Pollutants from fertilizers, pesticides, streets, and rooftops are contaminating your lakes and rivers. If heavy rains collect in pools and puddles in

your yard, the easiest way to help water infiltrate into the ground rather than run off into storm sewers is by creating a rain garden and using rain barrels to collect rain water from your roof gutters.

Twelve New Loon Rangers in Burnett County

Last fall, LakeLines highlighted the lakes in Burnett County with people enrolled in the Loon Ranger Program. Since then, twelve new lakes have signed up. They are:

- Big Sand
- Bonner
- Crooked (T. Jackson/Oakland)
- Dubois
- Dunham
- Fish
- Fremsted
- Minerva
- Rooney
- Sand
- Silver
- Tabor

There are now 36 total lakes in Burnett County with Loon Rangers. Thank you to all the people who are committed to conserving the sound and spirit of our northwoods!



LakeLines
Burnett County Lakes & Rivers
Association

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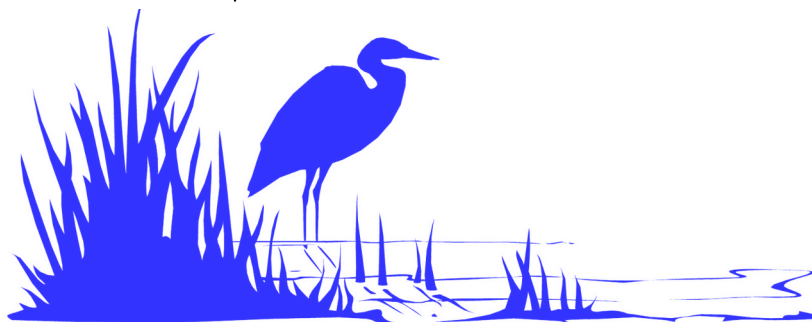
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In This Issue

- You Can Help Stop Zebra Mussel Spread
- Zebra Mussel Profile
- Clean Boats, Clean Waters
- AIS Decontamination Tips
- Burnett County's Waters Suitable for Zebra Mussels
- Revisions to the County Shoreline Ordinance
- Northwest Lakes Conference
- Creating Loon Friendly Lakes
- Odds and Ends

Visit burnettcounty.com/lakes for online zebra mussel resources.