

The Chain Link

A Publication of the Sauk River Chain of Lakes Association

**To Mow or NOT
to Mow**

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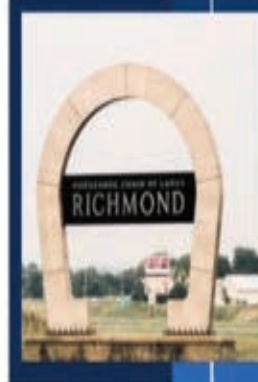
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*Cover photo taken by Susan Drucker
from her cabin on Little Cedar Island*

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President's Message

By Brad Matuska, SRCLA President



SRCLA President Brad Matuska

In every walk with nature, one receives far more than he seeks.
-John Muir

Like most issues, this issue of The Chain Link will describe a lot of the incredible work that your Sauk River Chain of Lakes Association (SRCLA) is doing to execute its mission. I am so thankful for the passion and talent of our Board and the countless volunteers that contribute their time to help! For example, Matt Noska is moving on after volunteering to join the Board in 2012.

Here is Matt's farewell:

It seems like only yesterday that I threw my name in the hat at the SRCLA Annual Meeting in 2012 to join this team. The mantra of the SRCLA, 'Stewards of the Sauk River Chain of Lakes', is one that I am passionate about and I believe the work of our association becomes more meaningful each year. This has been an incredible learning experience, and I am honored to have been a part of such a dynamic and impactful organization. Unfortunately, my personal and professional commitments have become too great for me to be able to fulfill my duties on the Board. At this time, it is best for me to make room for someone with the time and dedication to devote to our lakes. I have complete confidence in the continued success of the SRCLA, and I am committed to ensuring a smooth transition to whomever replaces me on the Board. I want to thank all of the lake home owners for the trust you have placed in me as both a Board member and past Vice President of the SRCLA. It has been such a privilege to work alongside the many dedicated individuals that have served this organization both now and in the past. I wish the entire board and the SRCLA continued success in their future endeavors.

Thank you Matt, and I am also very thankful for our members and other stakeholders that make it all possible.

In addition, this issue is about experiencing the beauty and wonder of the Sauk River Chain of Lakes. We asked you to submit cover photos and were overwhelmed by the quantity and quality of the pictures! There were so many examples of how people love and enjoy the Chain! Also, you are going to read about a kayak adventure on the Chain as well as a tour bus of about 60 people that visited "lakescaped" properties all along the Chain which are designed to reduce stormwater runoff and pollution. It seems that every time we go out on the Chain, we experience something beautiful and different. From watching an osprey dive into the water for its prey, to fishing as the sun goes down, to getting in that early morning waterski before work, the Chain is for everyone!

We hope you enjoy this issue of *The Chain Link* and please remember that we need your help! Please consider being a member, volunteering, and/or gambling a bit at Shady's. In addition, please consider not using fertilizers to manage your lawn. About 70% of fertilizers applied end up in the lakes! Last, please consider doing a lakescape project on your property. Lakescaping is our last line of defense in minimizing excessive plant growth in the Chain. Don't forget to continuously visit our website at srcl.org for resources and updates. And most of all, thank you for being a friend of the Sauk River Chain of Lakes!

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Vice President's Message

By Aaron Schwartz, SRCLA Vice President

Building on Our Foundation

This past spring, I wrote to you all with a vision of growing an active and vibrant community centered around the Sauk River Chain of Lakes. In that letter, I explained that we had partnered with a outside firm to manage and grow our social media presence. Since the spring issue of *The Chain Link*, we have seen an increase in our engagement both on Facebook and Instagram. I have been amazed at the response and the engagement we have been getting via these channels. We are looking to continue this momentum we are seeing and will look to expand our content. By the time you are reading this, we will have started to post local fishing reports. We will also be looking into adding an intern over the winter that will focus on community outreach and content creation.

With all the talk and focus on our social media offering, it is clear, however, that not all our membership utilizes these platforms. As we look to continue to build this community, we need to make sure we can connect with a diverse group of stakeholders. It is our responsibility to our membership that we provide access to our board members to answer any inquiries they may have. With that in mind over the next few months, we will be looking at several options to give our members a voice. A few of the options we are considering are monthly mini town halls that would give members a chance to interact face to face with our board members. We will also be sending out some surveys to the membership email addresses. We want to be mindful not to fill up your inboxes, but we do truly want some insight into what is on the minds of our membership.

Your input is important to us so please, if you see a survey come through or if you bump into a board member, take the time to share your thoughts.

There is one more group that I want to reach out to as well and that is our Business Membership. We value your membership and would like to know how we can be a better partner to you. We have had conversations with a couple businesses about promoting their events, but we have barely scratched the surface. We have an events calendar on our website that we would be happy to add your events to. We can also help bring attention to events you may be having through our social media pages. If you are interested in discussing this further, please feel free to reach out to me.

Thanks everyone, I look forward to seeing you all out on the water.

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Treasurer's Report

By Troy Atkinson, SCRLA Treasurer



For 2023, the Sauk River Chain of Lakes Association set a rather large budget of \$157,000 to be used for a multiple number of things to make your enjoyment of the lakes better. Thank you to every one of our members and business members as we could not do this without your help and support. Grants we received from Stearns County AIS, along with the gambling proceeds from Shady's Long Shots, have contributed to our budget to support our goals for the Chain.

So for 2023 so far, here's how the income numbers are stacking up:

Memberships Income - \$36,544

Grant Income - \$27,698

Gambling Income - \$37,500

Total Income (to date) \$101,742

We anticipate adding about \$5,000 more in membership income, \$8,500 in grant income and hoping for another \$20,000 in gambling income this year. So what did we do with all of this? Well, as I mentioned, we budgeted to spend \$157,000, and as of August, we have spent just more than \$98,000.

2023 Actual and Anticipated Spending	
Aquatic invasive plants: surveys, chemical treatments and mechanical removal	\$64,099
AIS prevention: I-LIDS operation at public landings	\$9,055
Water quality monitoring and dissolved oxygen sensor purchase	\$3,247
Social media marketing (we hired an outside firm for better social media presence)	\$6,200
Marketing & our bi-annual magazine	~\$15,000
Budget for a survey to see if our hybrid watermilfoil (HWM) treatment was effective	\$33,000

The remaining anticipated spending of \$26,000 for this year will be for administrative costs, water quality monitoring, land use grants, buoy removal and marketing expenses (such as sending out *The Chain Link*).

We did set our 2023 budget higher than our annual estimated income as we do have some additional cash assets saved from past years, so we can be more aggressive on our projects this year, especially with hybrid watermilfoil (HWM) management; we wanted to hit that hard but not take away funds from our other programs as they all work together for our long-term goals. If you or a neighbor are interested in becoming

a member, we have a secure online system to allow you to sign up for 2023. To use this payment option, simply go to srcl.org, click on "Become A SRCLA Member" on our home page, choose what membership level you would like for 2023, click on the one you prefer, select Purchase and then fill out your membership and payment information. If you would like to make a donation without signing up for membership, click on "Non-Membership Donation" as a way to donate to the SRCLA on behalf of an estate to leave a legacy, or just to contribute to our cause. You can also sign up by sending in the membership form included in this publication.

Thank you once again for your contributions and continuing to help us improve the Sauk River Chain of Lakes! Membership dues and donations fund projects to improve our lakes and help us communicate with our members and the community. The more members we have, the stronger our voice and the more we can accomplish! Anyone who uses the lake is welcome to join. For information on becoming a member of the association, please visit our website: srcl.org.



NEW MEMBERSHIP OR MEMBERSHIP RENEWAL FORM



Sauk River Chain of Lakes Association
www.srcl.org

PO Box 369
Richmond, MN 56368

Name:

Business Name:

Current Address (street, city, state, zip):

Lake Property Address (street, city, state, zip):

Lake you live on:

Home Phone:

Email Address:

Cell Phone:

MEMBERSHIP DUES CONTRIBUTION

Individual/Family Membership Level:

____\$40 Sunfish ____\$60 Crappie ____\$80 Walleye ____\$100 Catfish ____\$150 Bass
(All Individual/Family Memberships receive a **SRCLA Membership Decal**. See www.srcl.org for more information.)

Business Member: ____\$75 (Business name included in Membership Listings in the SRCL.org, Spring and Fall Newsletters.)

Business ELITE Member: ____\$150 (Business Member benefits PLUS your logo linked to your website/Facebook in SRCL.org's Membership Page.)

Donate an additional amount for a specific area? (please identify additional amount below)

Walleye Stocking: \$_____

Weed Control: \$_____

General Fund: \$_____

ARE YOU INTERESTED IN HELPING IN ANY OF THE FOLLOWING AREAS? (please indicate area below)

Invasive Species

Fisheries

Weed Control

Land Use

Water Quality

Road Cleanup

Gambling – Bingo night

Gambling – Meat Raffle night

Board Member

WHAT PROMPTED YOU TO PURCHASE YOUR MEMBERSHIP? (please indicate reason below)

Received Mailing

Email

Facebook/Social Media

Association Magazine (Chain Link)

Referred by a Friend

Other

Your contribution is tax deductible!



Water Quality Monitoring Report

By Gary Schnobrich, Water Quality Committee

Water quality monitoring for 2023 started in May and ends in September. Water samples were collected at six locations on the Chain. Horseshoe, Cedar Island, Schneider and Bolting Lakes, which are considered non-flowage bodies of water, and Krays and Knaus Lakes, which are flowage lakes because the main channel of the Sauk River flows through the heart of them, were also sampled. Water levels have dropped significantly over the course of the summer, and it will be interesting to see if that has an impact on the data that was collected. At the conclusion of the season, the Sauk River Watershed District will send us a report detailing the results of the 2023 monitoring season and compare it to previous years data to look for trends. This year we have added a new set of parameters to our monitoring. The SRCLA purchased a Digital Dissolved Oxygen and Temperature Meter that can determine the water temperature and amount of oxygen dissolved in the water column down to a depth of 20 meters (65 feet).

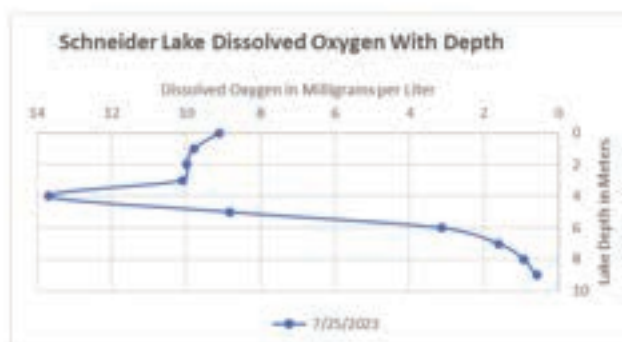
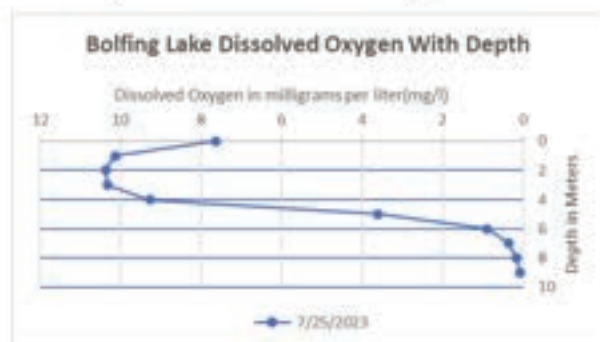
At each of the six sampling locations we now record the temperature and dissolved oxygen (DO) at the surface and at one-meter intervals down to the lake bottom. This is called a lake depth profile. This temperature and oxygen information gives us an idea of the depth at which there is no longer enough dissolved oxygen to support fish and other aquatic organisms. The term 'hypoxic zone', also called the 'dead zone', begins when the dissolved oxygen in the water drops below two parts per thousand or two milligrams per liter (mg/l). Hypoxia is strongly linked to eutrophication in aquatic systems as the decomposition of large amounts of organic matter (i.e., from excessive aquatic plants and algal blooms) leads to oxygen depletion. This may help us understand how nutrients that have been deposited over decades in the lake bottom sediments are reintroduced into the water column again and contribute to aquatic plant growth and algal scum. Most lakes roll or turn over each fall as the seasonal cold air cools the oxygenated surface water.

Colder water is denser and with the help of the wind sinks below the comparatively warmer, oxygen-depleted water from below which then comes to the surface. This can create a very stressful environment for fish and can move legacy nutrients like phosphorus upward in the water column. The Lilly Center for Lakes and Streams at Grace College in Indiana has created a web site which does a great job with visuals describing four ways turnover affects our lakes. It can be found at the following link:

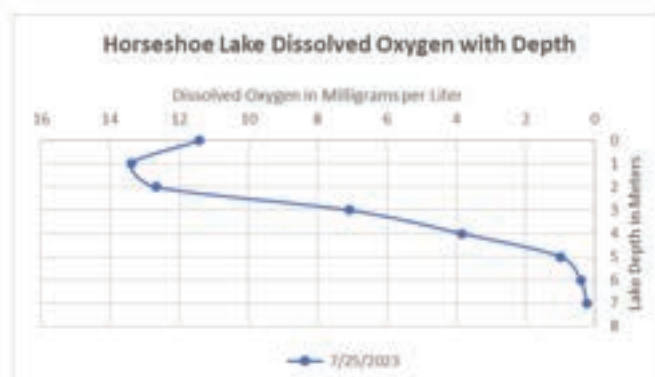
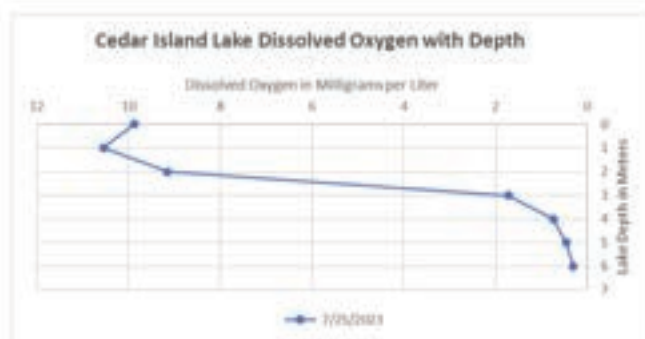
<https://lakes.grace.edu/4-ways-to-describe-turnover-and-how-it-helps-our-lakes/>. Their section titled "Beneath the Surface" is also very informative and applies to the Sauk River Chain of Lakes. If you enjoy ice fishing, click on the three bars in the upper right corner and go to "field notes." Then scroll down until you find the article, "What you should know about fish and their habitat during winter."



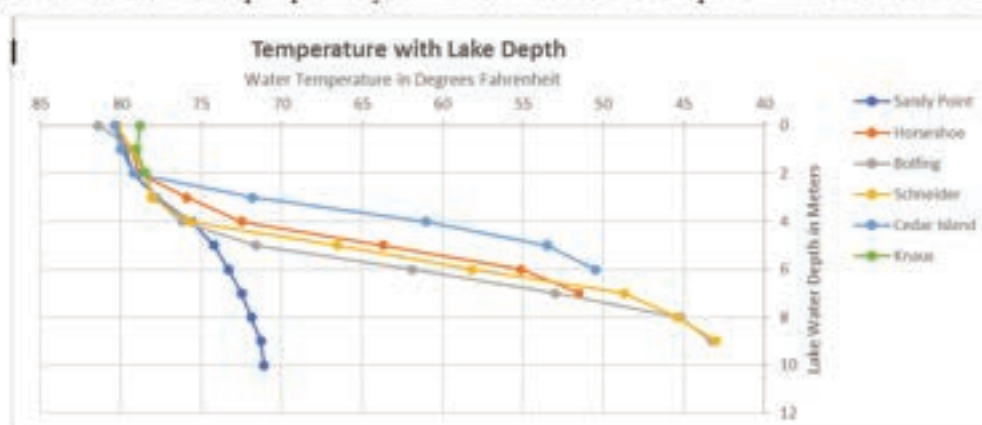
The following graphs illustrate the data collected on the four non-flowage lakes in July. Note that the dissolved oxygen levels begin to drop off significantly between the 3- and 4-meter levels. The exception is Schneider Lake which had a spike in the DO at the 4-meter level. We used two different probes to confirm the readings, and they both measured the same amount of DO. We did not see this in our June data, and at this time, we have not come up with an explanation for the spike. At six meters (18 feet), there isn't enough DO to support fish. Hypoxia (<2mg/l) was not reached at Krays or Knaus Lakes. Both sampling locations in these lakes are less than three meters deep and are in the main flowage of the Sauk River.



Water Quality continued...



The temperature profile graph below also provides evidence of the significant temperature drop in the deeper non-flowage lakes. Surface water temperatures were around 80 degrees at all locations and dropped more than 30 degrees as you approached the lake bottom. Out of curiosity, we decided to take readings at Sandy Point, which is the channel between Great Northern and Krays Lakes and is more than 35 feet deep. Note that there is not a significant temperature drop off (less than 10 degrees) even though it is the deepest location sampled. It appears that the flowage of the Sauk River provides enough mixing to not allow for a big temperature drop at that point. However, if you look at the DO depth profile you will see that the DO drop is similar to other non-flowage lakes.



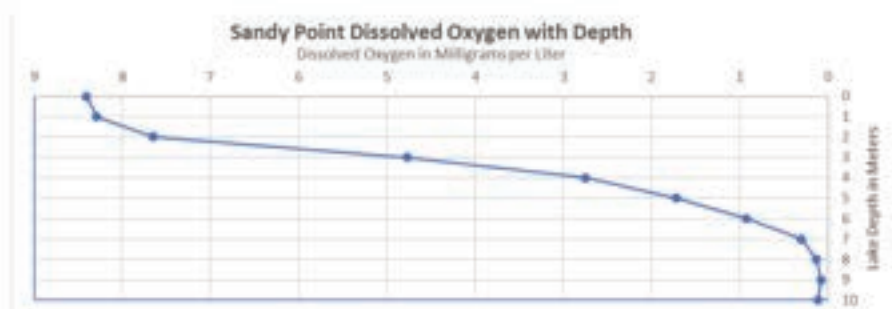
The oxygen drop off may be because the deep water is moving more slowly and sediment, detritus, and other organic material is still settling to the channel bottom. Thus, there is a buildup that is still being eaten by bacteria. The process of bacteria breaking down organic matter is

what depletes the oxygen and it occurs faster at higher temps due to the nature of bacterial respiration and metabolism. It is also possible that the flow is confined to the upper layers with little flow near the bottom of the basin allowing organic matter to deplete the oxygen.

Author's Note:

This article was written before the August, September and October samplings have been taken. To get a better understanding of the lake dynamics in the Chain, I plan to take DO and temperature readings at the deep holes in Schneider, Horseshoe and Cedar Island lakes in August.

I also intend to sample the deep holes in the flowage of Koetter and Zumwalde Lakes to see if they are like the Sandy Point profile. Then in late October, I will take DO and temperature readings at these sites as the lakes are about to turnover. Following that will be readings in January through the ice. Look for an update in the spring '24 edition of 'The Chain Link' magazine.



Aquatic Invasive Species (AIS) Committee Report

by Gene Krebs and Wayne Karg, AIS Committee

The Sauk River Chain of Lakes Association (SRCLA) continues to devote the majority of its budget to the control of aquatic invasive species (AIS). The budget came from membership dues, charitable gambling proceeds, DNR grants, and Stearns County grants. Please see the articles in this issue about Hybrid Watermilfoil (HWM) and Flowering Rush (FR) for the management details. In addition, the SRCLA hired Limnopro Aquatic Science and Weeds Up to chemically and mechanically control curly-leaf pondweed. According to Weeds Up, the areas that were done in previous years appeared to have less CLP present. More than 200 cubic yards of CLP was removed from our lakes. While there is still a lot of work to do, we feel we are heading in the right direction. Check our website at srcl.org under "Projects" for the maps of the approved and treated areas of curly-leaf pondweed.

Our website has a series of professionally-produced public service announcements to increase awareness of aquatic invasive species while sharing actions people can take to help stop the spread.

Private shoreline owners can receive permits to chemically and mechanically treat their dock areas. Contact the DNR to apply for a permit. Without a DNR permit, a property owner may remove aquatic plants in an area no larger than 2500 square feet along their shoreline, and lily pads in an area less than a 15 square feet. The Yellow Lotus is a protected variety and may not be removed. For resources on how to manage your frontage, go to "About Us" and then "Aquatic Plant Management" at srcl.org.

On August 19th, a team of volunteers participated in the Starry Trek and met at the Lake Koronis boat landing to receive instruction on aquatic plant sampling. The goal was to identify whether or not starry stonewort, or other AIS, are established at the public launches across Stearns County. The volunteers broke into 7 groups and each group was assigned to several of the 31 Stearns County public launches to be sampled. The sampling results will be compared to the previous years for new, increased or decreased AIS infestations.

Please remember to clean, drain and dry all your equipment when entering or exiting the water. Remember any dock or lift coming from another body of water must sit for 21 days before installation.

Any additional questions contact Gene Krebs gene.j.krebs@gmail.com or Wayne Karg ontaxtruckrepair@embarqmail.com



Hybrid Water Milfoil



Curly Leaf Pond Weed



Lily Pad



Yellow Lotus



Starry Stonewort

LET SIT RULE

Minnesota Law requires docks and boat lifts to be out of the water for at least 21 days before putting them into another body of water

Flowering Rush Management Update

By Amy Kay, Black Lagoon Pond and Lake Management

Flowering Rush (FR), an aquatic invasive plant that primarily lives along the edges of lakes, streams and wetlands, was identified north of the Sauk River Chain of Lakes in the Sauk River. Much like other invasive plants, FR can take over rapidly, outcompeting native vegetation and displacing habitat for fish and wildlife. The invasive species has an attractive pink flower that typically blooms in June making it easily identifiable at that time.

With support from Senator Jeff Howe, Representative Lisa Demuth, DNR, Stearns County, the Sauk River Watershed District, Limnopro Aquatic Science and the Sauk River Chain of Lakes Association (SRCLA), the Stearns Coalition of Lake Associations (SCOLA) secured a DNR grant to manage FR that included survey work to identify plant bed locations and densities, aquatic herbicide applications to the identified sites, and follow up survey work to evaluate efficacy. Initially, the plan was to target the FR via herbicide applications from a boat; however, with the low water level of the river, the contractor was met with multiple access issues. Aquatic herbicide applications via drone were considered for use and a plan

was developed once the contractor confirmed they would be able to access the sites. Habitat (imazapyr) herbicide was chosen to target the FR, because it could be applied aerially, and some success has been seen in other regions of the country where imazapyr had been used for this target species.

Applications were made by a licensed drone pilot who also holds an aquatic pesticide applicator's license on July 27th, July 28th and July 31st to approximately 40 acres of FR on the Sauk River. Post-management survey work to evaluate the efficacy of applications will take place in 2023 prior to the end of the growing season.



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Invasive Freshwater Golden Clams in Minnesota

By Megan M. Weber, Extension Educator, University of Minnesota

It's time to get acquainted with one of Minnesota's lesser-known aquatic invasive species, freshwater golden clams (*Corbicula fluminea*). Freshwater golden clams are small, freshwater bivalves (molluscs with two shells). They were likely introduced to North America as early as the 1920s and have been dubbed by some as "the most invasive freshwater species in the world." The most prevalent recorded impact of this species in its invaded range is to infrastructure due to clogging of water systems by shells. Raw water users such as power plants, water treatment plants, fire protection systems, irrigation systems, pulp and paper mills, and others have spent considerable amounts of money on maintenance and management due to biofouling from freshwater golden clam shells. Documented ecosystem impacts include alteration of food webs, reducing phytoplankton and chlorophyll in water columns, and causing changes to nutrient cycling in lakes.

Is it a freshwater golden clam or a native mussel?

Minnesota is home to a diverse group of native freshwater mussels that are critical parts of our freshwater ecosystems. Sometimes native mussels or clams can be confused with invasive species like freshwater golden clams. Here are some helpful tips to distinguish between them. You can reference the images here of a freshwater golden clam and a few native mussels and clams as you go through the tips to help get a better picture.

Look at the shape.

While there are many different shell shapes across the different species of native mussels, they all typically have some degree of irregularity to them. They can be oblong or even have a "crooked" look to them. Clam shells, on the other hand, typically look relatively symmetrical with two mirrored halves to each shell.

Look at the size.

While there is overlap in shell size as juveniles, native mussels are typically quite a bit larger than both freshwater golden clams and native pea and fingernail clams. If the shell you have is fitting in the palm of your hand versus in your fingertips, chances are you have a native mussel. Freshwater golden clams typically max out at 2 inches across.

Check the shell's thickness.

This tip is primarily for distinguishing between freshwater golden clams and fingernail or pea clams. Freshwater golden clams have robust shells. If the shell is fragile or thin, it's more likely a fingernail or pea clam rather than a freshwater golden clam.

Look for ridged concentric rings.

While some native mussels may have bumps or ridges on their shells, they don't typically have rows and rows of concentric rings. Fingernail and pea clams often do have these rings but they are closer together and fine rings. In freshwater golden clams, the rings are robust and deeply ridged and can easily be felt with a fingernail across the shell.

Where have freshwater golden clams been reported in Minnesota?

While the first record of freshwater golden clam in Minnesota dates back to 1978, they are not a widespread invasive species across the state. Minnesota sits at the edge of the predicted range for this species due to our cold winters, so most populations of freshwater golden clams in the state are limited to river systems where discharge of warmer waters from power plants, water treatment plants, or other industrial users creates a pocket of suitable habitat even through the winter months. Some river systems in Minnesota where freshwater golden clams have been documented include the Mississippi, St. Croix, St. Louis, Minnesota, and Otter Tail Rivers.

INVASIVE SPECIES

Freshwater Golden Clam



Why the renewed interest?

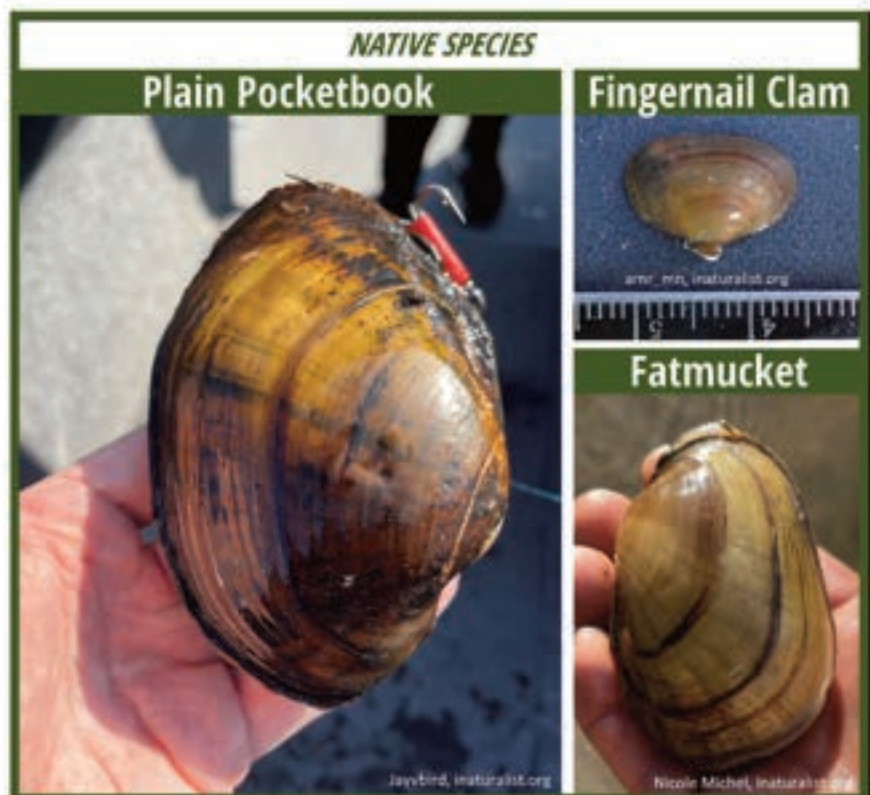
In 2020, a young participant of a volunteer aquatic invasive species early detection event

www.startrtrek.org found a live freshwater golden clam in Briggs Lake (Sherburne County). This was in an area without any known warm water discharges, which led to some questions about the extent of the infestation in Briggs Lake and how the population would respond to the following winter months. After a year of sampling, researchers documented hundreds of living freshwater golden clams near the Briggs Lake public water access and later found a few live individuals at nearby Big Lake. Analysis of the shell size over the study period suggests clams were also reproducing in the lake. You can learn more about this project at <https://maiscr.umn.edu/goldenclams>. Sherburne Soil and Water Conservation District and Minnesota Department of Natural Resources (DNR) staff have continued to monitor this population and in recent years have not found any more living clams at Briggs Lake, leaving additional questions as to what the future looks like for this species in Minnesota, particularly in a changing climate.

What should you do if you think you found a freshwater golden clam?

If you think you've found a freshwater golden clam in a water body it had not been previously recorded in, you should alert the DNR. You can view the current known distribution of freshwater golden clams by viewing the distribution maps on EDDMapS

www.eddmaps.org/project/midwest/distribution/. You can report a finding to DNR by contacting the AIS Specialist for your region www.dnr.state.mn.us/invasives/aais/contacts.html or by submitting a report via EDDMapS www.eddmaps.org/midwest. Good, clear photos of what you found are very helpful when submitting your report. Save the shell you found in a container (a zipper food storage bag is sufficient) in case the AIS Specialist for your area would like to examine what you found.



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Lakeshore Specialist

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Land Use Report

By Richard Gallea, Land Use Committee

The SRCLA was pleased to partner with the Stearns Co. Soil & Water Conservation District (SWCD), who sponsored a Shoreline Tour featuring six properties around the Chain. Approximately 60 people met at Lion's Park in Richmond on Thursday, August 10th and boarded a bus that toured properties that had engaged in shoreline restoration projects over a wide-ranging period of time, including one that's still in the planning stage.

The first stop was at Brad and Nichole Matuska's place. They executed a project just this summer to manage stormwater runoff and to convert much of their shoreline from mowed grass to native plantings (look for a feature article on the Matuska's project on page 26).

The second stop was at Randy Siem's place on Cedar Island Lake. Randy's project was done last year and involved the removal of a failing retaining wall, as well as several steps taken to control erosion and install a native buffer. Randy's project was highlighted in last fall's magazine.

Next up was a short stroll to Randy's next-door neighbors, Roger and Katie Theiler. The Theiler's project dates back to 2009 and involves a shoreline stabilization initiative that utilized cedar tree revetments along the shore and emphasized the preservation of a large area of natural vegetation on either side of their dock.

The fourth stop was to Hoobie and Bonnie Eskuri's home, also on Cedar Island Lake. The Eskuri's had an extensive project done in 2015 to stabilize a failing slope. Tile trenches were installed into the

slope to intercept surface and groundwater. A storage tank was installed to capture runoff, which is now used for irrigation purposes. In addition, the shoreline and adjacent slope were restored by regrading and planting with native vegetation.

Then the bus pulled up to John Rocky's home on Great Northern Lake. John's property was selected for the tour as he's currently working with the SWCD on a plan to convert much of his mowed shoreline to native plantings. Touring a "before" parcel like John's provided the participants with a chance to visualize how a shoreline project may enhance their own property.

The tour concluded with a stop at Richard and Mary Gallea's home on Great Northern Lake, which underwent an extensive project in 2006. In addition to converting 310 feet of lakeshore to native plantings, the Gallea's replaced mowed grass with a native prairie on an adjacent parcel. The SWCD provided pizza and beverages to wrap up what was a fun and informative day.



Top left: Greg Berg (SWCD) speaking at the Shoreline Tour. Top Right: Exploring the Gallea's native prairie. Bottom: Hoobie and Bonnie Eskuri's stabilization project



Lake Steward Initiative

By Richard Gallea, Land Use Committee

In the spring issue of The Chain Link, I described a program that was launched last year by Minnesota Lakes and Rivers (MLR), an advocacy group founded in 1993. MLR actively promotes many best practices for lakes and rivers, and has developed strong partnerships at the state legislature and with government entities like the Department of Natural Resources (DNR).

The Lake Steward program has been embraced by many lake associations across the state, with some groups having signed up dozens of shoreline owners. The first step is to take a 10-question quiz about your shoreline, which covers questions like:

- fertilizer & pesticide usage
- septic maintenance
- stormwater runoff
- percentage of native shoreline buffer
- aquatic plant management practices

If your responses meet MLR's criteria, you are considered a Lake Steward! After taking the quiz, an SRCLA volunteer is notified of your interest and will contact you to see if you have any questions about your shoreline (this is NOT mandatory).

Because we didn't receive any notifications of SRCLA residents having taken the quiz this past spring and summer, I reached out to MLR and discovered that, due to a clerical error on their part, the Sauk River Chain of Lakes was not added to the drop-down list that MLR uses to categorize quiz-takers by their home lake system.

So, if you took the quiz this year, your interest in the program wasn't forwarded to me as the program intended. If you took the quiz previously, **please consider retaking it!**

Homeowners that meet the Lake Steward criteria receive a cool metal sign that can be displayed at the end of their dock or along their shoreline.

The Chain has many unique sections of shoreline along its 78 miles, and even if you decide not to become a Lake Steward, you can still protect aquatic habitat and water quality. If you have any questions about general lakescaping or native buffer options, please contact me

rgallea@gmail.com

or Rick Reimer

rick.reimer@gmail.com



Take the Quiz Today! <https://mnlakesandrivers.org/lake-associations/lake-association-programs/lake-steward/>
(Sorry about the long URL! You can Google "MLR Lake Steward program" and find a direct link, if you'd prefer).

Caution Buoy Update

By Brad Matuska, SCRLA President

Under the direction of the Stearns County Sheriff's Office (SCSO), the SRCLA placed two 'Caution' buoys on an experimental basis at the confluence of Great Northern Lake and Krays Lake. This is not an enforceable 'No Wake Zone,' but the intent in placing the buoys is to improve safety. We have received more comments in favor of the continued use of the Caution buoys than against them. If you feel strongly - either for or against - these buoys, please let us know by emailing bradmatuska@gmail.com. We will continue to monitor your comments and act accordingly. Thank you!



This article is reprinted with permission from Stearns County Soil and Water Conservation District (SWCD)

WHAT IS SHORELINE RESTORATION?

The shoreline along lakes and rivers provides critical habitat for fish and wildlife, improves water quality, and the overall health of a lake or river. Erosion of streambanks and shorelines can significantly impact water quality and habitat in lakes and rivers.

Native vegetation along the shore acts as a buffer zone to help reduce runoff, erosion, and sedimentation. Natural materials such as wood and native plants along the bank are used to stabilize as well as restore a shoreline. Aquatic plants provide food and shelter for wildlife while reducing the problems caused by geese.

By creating/maintaining a buffer of native grasses, wildflowers, trees, and shrubs, you can diversify and enhance your shoreline while creating a beautiful landscape for years to come.



CREATING A SHORELINE BUFFER



Lake and river properties can be designed with ecology in mind that includes opportunities for human enjoyment. The approach for creating a natural look will include creating a native buffer (also called filter strips or a buffer zone) that separates the lawn from the lake.

The buffer zone is an unmown strip of native vegetation that extends both lakeward and landward from the waters edge generally 25-50 feet. Adding a buffer can restore many functions critical to the health of the lake that may have been eliminated previously by sod, hard structures, or mowing.

Native buffers typically include native grasses, shrubs, trees, aquatic plants, and wildflowers or flowers that bloom throughout the growing season. The native vegetation will provide beautiful habitat, filter out pollutants, and prevent soil erosion while still allowing a space for family activities.

Your shoreline buffer design will include (see example):

- Space for family recreation
- Maintain water access and recreational area near the water
- Shoreline stabilization
- Native plants and erosion control techniques for water quality, as well as fish and wildlife habitat

BENEFITS OF NATIVE PLANTS



BANK STABILIZATION

Native plants have dense, deep intertwined root systems that physically strengthen soil and stabilize banks from erosion. During wet periods, plants remove excess moisture making banks more resistant to erosion or slumping.



CLEAN WATER

Deep rooted vegetation intercepts rainwater runoff by slowing it down and filtering out much of the nutrients, soil particles, and other pollutants.



FISH & WILDLIFE HABITAT

Diverse shoreland vegetation and woody debris both on shore and within the water provides shelter, food, and migration corridors for fish and wildlife. Flowering plants provide nectar for important pollinators and other beneficial insects.



LOW MAINTENANCE

Once established, native plants do not need additional water or fertilizer. The plants are insect and disease tolerant, allowing homeowners more time to enjoy their property without the necessary maintenance of traditional lawns.



ADDS BEAUTY

Native buffers contain a variety of plants that can offer an array of colors and textures throughout the seasons.



HAVE A GOOSE PROBLEM?

Geese are less inclined to wander through a shoreline vegetative buffer to get to a lawn for fear of predators that may be hiding within the natural vegetation.

Shoreline Restoration continued on next page

SHORELINE PROPERTY PRACTICES

- Avoid mowing to the water's edge as turf grasses have shallow root systems, providing little soil stability. Deeper rooted plants are more beneficial at filtering out excess nutrients and runoff and provide habitat for fish and wildlife.
- Control stormwater runoff from hard surfaces and other areas to prevent stormwater from flowing into the lake.
- Get your septic system inspected to make sure it is working properly to avoid harmful bacteria entering the lake.
- Dispose of household hazardous waste products at the Stearns County Household Hazardous Waste Facility to keep soil and groundwater clean.
- For the contractors, dock, and lift installers out there, help decrease the spread of invasive species by properly cleaning equipment.

FINANCIAL ASSISTANCE AVAILABLE

The Stearns County Soil & Water Conservation District (SWCD) works with many federal, state, and non-profit conservation agencies to secure funding to offer financial assistance to Stearns County landowners who voluntarily want to improve and protect our natural resources. To qualify for financial assistance:

- A native vegetation buffer is required on at least 75% of your shoreline. The 25% maximum width or 25 feet remains open for access to the water or recreational area. Docks and lifts can also be stored on the native planting in the winter.
- The buffer must extend at least 25 feet landward or to the top of the nearest steep slope.
- The financial assistance often comes from public dollars. To get the most of these public dollars, the buffers are required to remain in place in perpetuity. Therefore, a deed restriction will be recorded upon completion of the project with the Stearns County Recorder's Office. This will inform the future owners of the buffer.

TECHNICAL ASSISTANCE AVAILABLE



The Stearns County SWCD has an experienced Riparian Resources Specialist, Greg Berg, available to work one-on-one with you to help determine the best methods for managing your shoreline. Assistance may include on-site consultations, one-on-one project design, cost estimation, and guidance throughout project installation and maintenance.

Greg Berg
Riparian Resources Specialist
Stearns County SWCD
Direct: (320) 345-6479

Phone: (320) 251-7800 x 3
Email: Greg.Berg@mn.nacdnet.net

For project examples: www.stearnscountyswcd.net/shoreline

DNR Restore Your Shore: www.dnr.state.mn.us/rsy/index.html

Maintaining and Restoring Natural Shorelines:

www.dnr.state.mn.us/lakescaping/maintaining-and-restoring-natural-shorelines.html

Shoreline Living Booklet:

www.midwestglaciallakes.org/resources/shorelineliving/

To Mow or NOT To Mow.....

By Nick Neuman, AICP

Sr. Environmental Specialist, Stearns Co. Environmental Services

....THAT is the question. Aside from lawncare companies and my mother-in-law, I've encountered very few people who enjoy mowing lawns. Especially when you would rather be on the lake enjoying the evening sunset. The last few years of drought have led many to wonder if all the watering, mowing, and fertilizing is indeed worth it. There really isn't an alternative, is there?

A recent trend has been a move to low- and no-mow lawns using fescue grasses. This low maintenance turf alternative functions like a typical lawn (and can look similar too), but it is made up of drought-tolerant species that require less water, fertilizer, and mowing than regular Kentucky bluegrass. Most of these low maintenance lawns include a mix of fine and/or tall fescues. There are a variety of grasses to choose from.

To learn more about low maintenance lawns, check out [University of MN Extension](#) and [Blue Thumb](#) websites.

You can learn how to choose the right fescues for your site, how to terminate your existing lawn, prepare your area for planting, and establish a lawn that will help you spend more time by the lake than by your lawn mower.

Even my mother-in-law can't argue with that!



Strong Creeping Red Fescue - Looks like regular Kentucky bluegrass.



A mixture of strong creeping red fescue, slender creeping red fescue, Chewings fescue, and hard fescue maintained as a minimal-to-no mow low-input turfgrass site.



Tired of WEEDS in the Chain? Designate a 5- to 10-foot buffer strip adjacent to any water body and apply a no-phosphorus fertilizer (or better yet, **NO fertilizer) to this strip.**

Too much nitrogen and phosphorus in the water causes algae to grow faster than ecosystems can handle.

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A Journey of Discovery

By Derek Thellin

Stearns County is home to one of Minnesota's largest chain of lakes. To those who've never heard of it, it's the Sauk River Chain of Lakes. However, to Stearns County residents, it has been and always will be called the Horseshoe Chain. The Horseshoe Chain officially contains 15 lakes, split between two of Stearns County's cities, Cold Spring and Richmond. Anyone who has ever visited either of these great cities or had the pleasure of gracing the waters of the Chain will agree that there's something special about these lakes. Something beyond what meets the eye. Something that can only truly be seen or felt by going out on the water and exploring. That's why it is imperative that we take immense care of this Chain and others like it; so that the generations that come after us can experience the same wonders and feel what it is to be one with nature.

One Cold Spring resident made it his mission for the summer of 2023 to come face to face with as much of the Chain as possible, all while in a kayak. Tim Thellin, who has been a resident of Cold Spring for three years, documented his many miles of travel so that others with a similar passion for exploration and for our lakes might take it upon themselves to start their own journeys into nature and not only external exploration, but internal exploration as well.

Every year since moving to Cold Spring, Tim has set himself a goal. This year, the goal was to circumnavigate the entire Chain by kayak and by kayak alone. However, Tim wasn't just focused on crushing his goal ASAP, he wanted to really soak in every moment along the journey,

making sure to follow the shoreline, reaching spots that bigger boats could never reach, traveling into every nook and cranny, and discovering parts of the lake that only a kayak could ever reach.

Day One took Tim 5.38 miles from his shore on the channel of Schneiders Lake all the way through Great Northern Lake and Krays Lake. The water was intensely calm, as if Tim wasn't even touching the water as he glided through it. A turtle came out to greet Tim and show off its gorgeous shell in the morning sun.

Day Two took Tim 7.33 miles from his home to both Park Lake and Bolfig Lake. He passed a few fishermen while traversing through Bolfig Lake and tried to hide the

fact that his arms were ready to give out as he passed. The nooks and crannies on day two were as nook and cranny as they get, so arriving home that day was bittersweet relief.

On Day Three, Tim went 8.05 miles from his home all the way to the Sauk River, and he was more than happy that he did. Along the way, a not so rare swimming lab had to come say hi to Tim and make sure his non-existent engine was running correctly. After that, our nation's majestic symbol flew over his head as if to reassure him that he had made the right decision that day. On the way back home, he spotted a shore full of zebra mussels and was reminded of just how complicated and beautiful life can sometimes be.



Turtle sunbathing on Great Northern Lake

Day Four was his longest day yet, traveling a total of 9.27 miles, starting from his home and trekking all of both Zumwalde Lake and Koetter Lake. He started to be more aware of the finer details of the lake and its inhabitants as the days went on. On this day, he once again spotted zebra mussels, but this time in places that he never noticed before. His eyes were adjusting to the nature around him and allowing him to see more than just what he wanted or expected to see.

Day Five took Tim 7.26 miles from a launch in Richmond where he primarily kayaked Becker Lake. The vegetation in this area was noticeably thicker, making it harder for Tim to reach any shoreline or the various crevices he had in days past. Tim sat and wondered for a while at what invisible worlds might lie behind the high reeds bursting out from below the water.

Day Six took Tim to parts of Horseshoe Lake that he had yet to explore in his years of pontooning the Chain. He kayaked every inch of East Lake's shore and beyond, reaching just about every shore on the lake. The wind was a bit of an unwanted guest on this day, but Tim chose to see himself as the unwanted guest and kept pushing on. After just over 8 miles of kayaking and three inlets that took Tim into waters that he never even knew existed, he finally succumbed to the wind and decided that nature was having an off day of sorts, which we're all allowed to have.

Day Seven served as more than just another day of kayaking on the beautiful waters of the Chain for Tim. It also served as another reminder to take care of our environment. The journey on this day took 7.74 miles, but the journey became less about the Chain specifically and more about the Earth in general. Visibility was quite low this day due to the Canadian wildfires. He thought about all of the wildlife that he's seen through seven days and how their cousins up north were in the midst of a literal hell.



Zebra Mussels in Koetter Lake

Nearly everything that was viewable to the naked eye was reflected upon the water like one giant mirror beneath him.



Duckling Brigade on Schneiders Lake

On Day Eight, Tim started earlier than usual because of a heat wave that was supposed to pass through during the day. He traversed through Cedar Island Lake and brought along his drone to get some neat shots from above. Because he left so early, he was out there all by himself. Just him and the wildlife at one with each other. They had become familiar with each other after the past eight days, and by doing so, had become comfortable with each other.

However, the recent news of the Canadian wildfires was still on the surface of Tim's mind. As Tim drifted through the water and thought about his precious planet, he spotted something floating in the water that didn't belong. As he paddled up to the object, his heart sank as he began to recognize the bright reflection from the sun that was coming from the object. He picked up the crushed up beer can and threw it into his kayak in disgust.

Day Nine was the calmest day yet. Tim paddled for 7.14 miles on the smoothest water that he had ever experienced in his life. It was like he was kayaking on a cluster of clouds that refused to ripple even with the fiercest of splashes. Nearly everything that was viewable to the naked eye was reflected upon the water like one giant mirror beneath him. The reflections gave a whole new layer to the beauty upon the lake that he had yet to fully appreciate. However, the reflections also reflected the worst of humanity back to him. He saw more trash reflected in the waters than he had ever seen before as if nature was shoving humanity's flaws right back into its own face in order to shame it. Tim certainly felt that shame as he collected said trash into his kayak and carried it home.

**Tim's Journey continued
on next page**

Day Ten served as a bit of a rest day. Tim went only a few miles from his shore and back in order to circumnavigate the part of The Chain that Tim lives on, Schneiders Lake. It was another hot day, which was a big factor in only kayaking 1.86 miles, but he didn't let that stop him from discovering new parts of the very lake that he looks at every morning and night. He's traveled through those waters so often that he had never truly taken the time to take a thorough tour of his home lake.



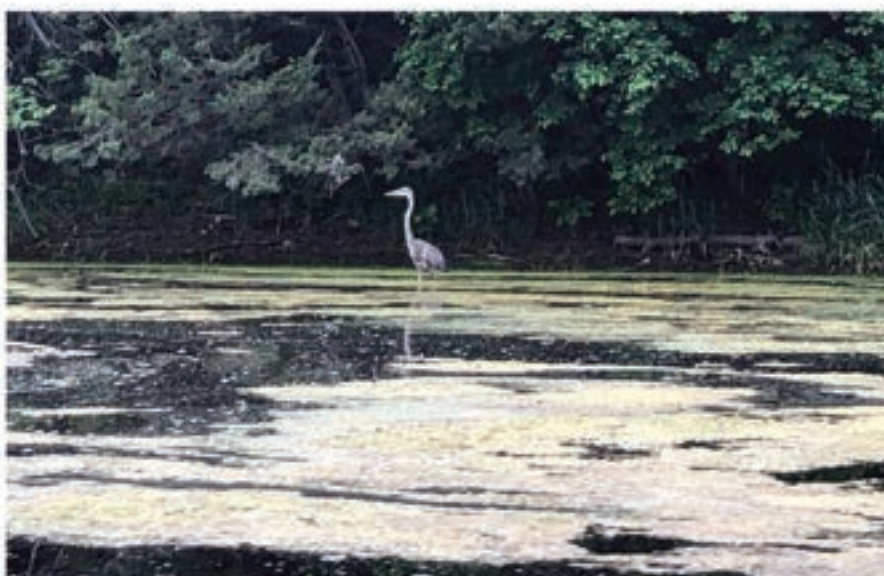
Bridge on West side of Long Lake

Day Eleven marked the second to last day on Tim's journey. It was bittersweet knowing that he had almost reached his goal that he had been thinking about for the last couple years, but he decided to focus on the sweet as he traveled another 6.47 miles through both Horseshoe Lake and Long Lake. This route took Tim under multiple bridges that all seemed to have their own take on what a proper bridge should look like.

The last day on Tim's journey was a special one. It was as if the wilderness he had gotten close to after twelve days knew that it was the last time they might see him in his turquoise kayak this summer. Tim was greeted by herons, pelicans, and a bald eagle that all seemed to say, "see you next time." As Tim finished his trek on Long Lake and returned home, he couldn't help but feel closer with nature than he ever had in his life.

It's one thing to know the facts of the lakes, but it's another entirely to know the ins and outs of the lakes as if they were the back of your hands. Not only does this knowledge give you a better understanding of the place you call home, it will also develop inside you a greater appreciation for the minutiae of life and the complex ecosystem that exists just beyond our comfortable homes. Maybe Tim's journey will inspire you too.

About the Author: Derek Thollin is a recent graduate of Winona State University with a double major in English and Film Studies. He and his dog, Kira, recently moved in with his parents, Tim and Kersten Thollin, which isn't so bad if you're living on the Chain. Derek's dream is to become a great writer and share his passion for storytelling with the rest of the world.



Meet Tim: Tim is a retired engineer, enjoying the outdoors here in MN and traveling this wonderful country of ours, hiking, biking and of course, kayaking. After living their entire lives in the Twin Cities, Tim and his wife, Kersten, feel blessed to have landed on the Chain.

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Aquatic Awareness & Prevention Report

By Steve Weeres, Aquatic Awareness & Prevention Programs Committee

I-LIDS Update

Managing the problem of Aquatic Invasive Species (AIS) in the Sauk River Chain of Lakes requires a multi-pronged approach of measurement, control and prevention. As part of our preventive strategy, the SRCLA continues to maintain the Internet Landing Installed Device Sensors (I-LIDS) at the four public access points on the SRCL: Highway 23, Highway 22, County Road 71, and Long Lake. The I-LIDS are designed to increase the boater's awareness of the need to prevent the spread of Aquatic Invasive Species (AIS). When the presence of a rig is detected, I-LIDS plays audio educational messages and triggers the camera

to capture and transmit high-resolution videos of the boat's condition over the internet to a remote server.

There, the videos are reviewed by trained personnel as part of an ongoing service provided by Environmental Sentry Protection. Videos are reviewed for compliance with state law relating to the transfer of aquatic plants on the boater's equipment. Videos of potential violations are further reviewed and posted on a secure website where we can review the videos for confirmation. The SRCLA board has established a collaborative agreement with the Stearns County Sheriff's office to investigate AIS violations and issue a warning or citation to the boater.



In this case, the Sheriff's Office issued a citation to the watercraft owner. This image is an example of the capability of the I-LIDS system and the review process. The Board believes that the presence of the I-LIDS at our access points emphasizes the importance of proper cleaning and inspection procedures needed to ensure the AIS-safe launch and retrieval. From the data above, we note a low number of violations indicating that there is a consistent effort to Clean-Drain-Dry.

The Association is committed to continued investment into strategies to create awareness of this simple message. We can all do our part, both with our own activities and reminding visitors of the importance of following proper procedures when launching and retrieving watercraft.

We are always looking for new ideas to promote awareness of AIS transfer. If you have an idea or are aware of effective methods others have implemented, contact the author at SteveSRCLB@gmail.com.

For the time period May-August 2023, I-LIDS observed the following number of boat launches by location:

Highway 23 access point: 719 launches

Highway 22 access point: 1041 launches

Co. Rd 71 access point: 608 launches

Long Lake access point: 580 launches

This is a total of 2,948 launches into the SRCL for the season. Each time a boat is launched into the water it is an opportunity to insert AIS into the ecosystem. With this high level of activity, it is paramount that we do all we can to ensure that those launching craft do the right thing and prevent the introduction of invasive species by inspecting their rig before entering the water. Correspondingly, there is a boat retrieval for every launch. It is equally important to emphasize proper procedures to prevent the export of invasive species. So far this season, eight violations have been detected by video review and reported to the Sheriff's Office for review and potential action.

**CLEAN
DRAIN
DRY
YOUR BOAT
AND
TRAILER**

**Help stop the spread of
Invasive Species**

Gambling Committee Update

By Karla Smetana, Gambling Volunteer Coordinator

We are looking forward to another great season with our gambling operations at Shady's Long Shots. Pull-Tabs and E-Tabs are available year-round, but starting Mid-October and ending in March, we are excited for a season of Horse Racing on Sunday afternoons, BINGO on Wednesday nights and the Meat Raffle on Friday nights.

It is true that many hands make light work. In an effort toward that end, I am asking for your help. I am looking for 6 – 8 people to assist with our gambling activities. You will be fully trained and very much appreciated. For information on gambling volunteer opportunities, please call or text me at 320-492-6244.

Between October 1, 2022 and March 31st, 2023, we transferred \$30,000 from the SRCLA Gambling Fund into the SRCLA Operations account. These proceeds will allow the SRCLA to continue to fund projects aimed at protecting and improving our Sauk River Chain of Lakes. Please continue to support Shady's Long Shots and thank them for supporting our SRCLA Association!

Thank you to the volunteers who signed up to help with another season of Bar Bingo, the Meat Raffle, and Horse Racing.

Support the Sauk River Chain of Lakes Association

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Optimizing Lake Access While Promoting Good Lakeshore Stewardship

By Brittany Lenzmeier, Stearns Co. SWCD

Brad and Nichole Matuska had a vision when they bought their house on the Chain of Lakes: to prioritize lake access and be responsible lakeshore stewards. Adopting this mindset meant they had to reconsider how they managed their shoreline and stormwater runoff.

"After we bought the house, we noticed we had a babbling brook from our driveway down to the steps and would wash out to an area around our patio," said Brad. "The questions were how are we going to stabilize stormwater and reduce runoff into the lake?"

With Brad's tenure with the Sauk River Chain of Lakes Association, he has acquired a wealth of knowledge regarding the Chain's water quality as well as solutions to protect and improve it. "There is a need to reduce the nutrient load in the lakes," he said. "The best tool for a long-term solution is to restore the shoreline. In addition, it prevents erosion and provides habitat for all kinds of critters." Combining Brad's knowledge and tools, the solution was simple – restoring the shore back to its natural habitat.



The Matuskas sought technical and financial assistance from the Stearns County Soil & Water Conservation District (SWCD) to address their concerns. The Stearns County SWCD provides free technical assistance and up to 75% cost-share for shoreline restoration projects that meet the standard requirements.

Working closely with Greg Berg, SWCD's Riparian Resources Specialist, the Matuskas received comprehensive assistance from the beginning to the end of the project. As a result, 75% of their shoreline was successfully restored to its natural habitat, and stormwater runoff problems were addressed. "It was easy and fun," said Brad about the project and process. "Greg is knowledgeable and great to work with."

The project consists of a few different components, including a break for stormwater. The break was designed at the point of the washout area and consists of a rock bed that absorbs and slows the stormwater flow and then follows a berm that directs the stormwater into a buffer of native plants. Additionally, a buffer zone of native plants was installed on the opposite side of the property that absorbs the stormwater coming off the roof via a downspout. Brad, a plant enthusiast, took this project one step further and not only restored the shore with a buffer, but continued the project upland, creating an additional habitat area for pollinators and wildlife.



BEFORE



AFTER
(newly planted)

The Matuskas get to enjoy the best of both worlds – keeping some lawn for paths and play areas, but also enjoying the beauty that native grasses and wildflowers provide. “We are excited to see the critters it will attract like birds, butterflies and honeybees,” said Brad. “In addition, it will be fun to see the flowers and seed heads from the various plants throughout the growing season.” Not only will the shoreline restoration project beautify their property, it will also help protect the lake's ecosystem, improve water quality by filtering pollutants and reduce erosion. “I’ve done a lot of direct research and ecological work over the years around the value and role of native plant life in habitats,” said Brad. “There is so much evidence and science that supports the concept of shoreline restoration. It’s just that our cultural practices such as manicured lawns and landscapes need to meet the science.”

With the shoreline restoration project complete, it allows the Matuskas to spend less time mowing and maintaining their yard and more time on things that they love and enjoy doing – water skiing and playing chess.



Brad and Nichole Matuska

“It makes so much sense, is so easy and affordable, with so many options, all while adding value to your property and positively influencing the water quality of the Chain,” said Brad. “It was a no-brainer for us.”

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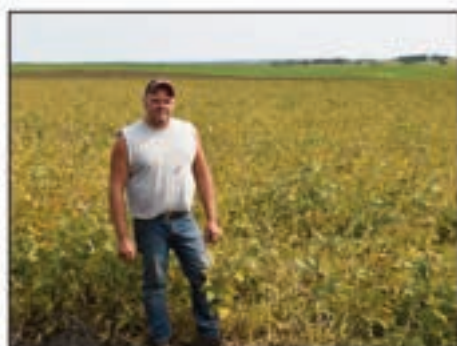
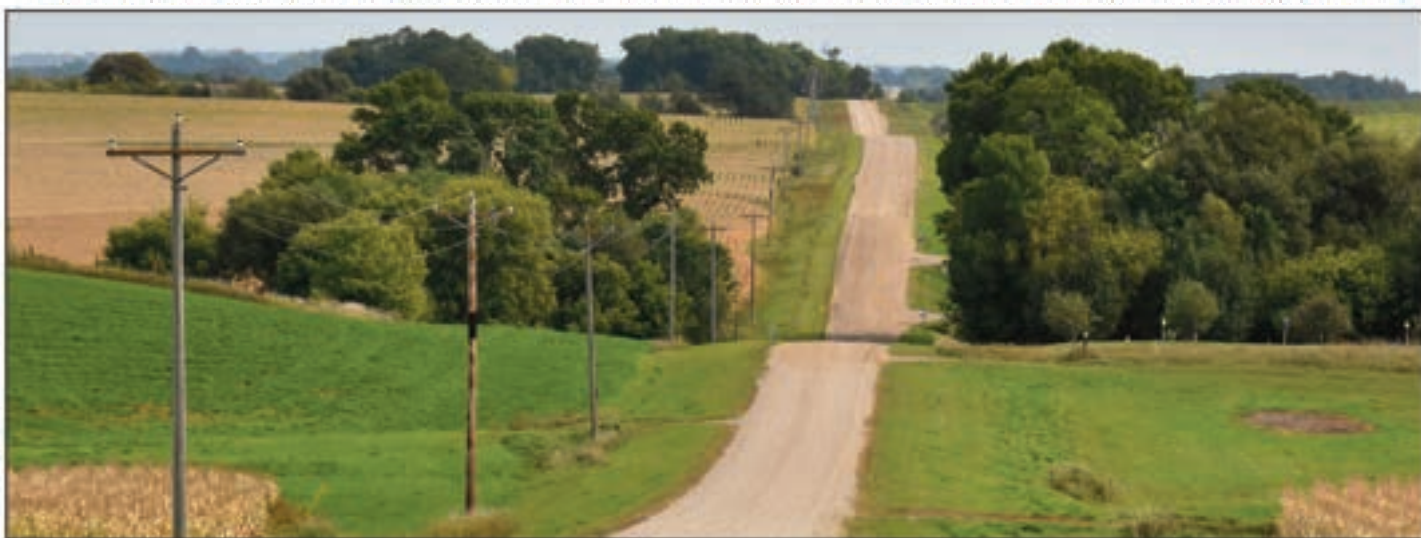
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Sauk River Chain of Lakes water-quality solutions start with livestock producers



The \$392,500 Clean Water Fund grant BWSR awarded to the Stearns County SWCD in 2017 was designed to address Sauk River and Sauk River Chain of Lakes nutrient impairments via feedlot fixes.

PAYNESVILLE — Eleven Stearns County livestock producers within the Sauk River watershed have installed manure storage solutions and adopted management plans that curb runoff and benefit water quality in the nutrient-impaired Sauk River Chain of Lakes.

What started with a \$392,500 Clean Water Fund grant from the Minnesota Board of Water and Soil Resources targeting five feedlots most susceptible to runoff grew to a \$1.9 million endeavor that leveraged nearly \$1.5 million in Environmental Quality Incentives Program (EQIP) assistance from the USDA's Natural Resources Conservation Service.

“Producers are trying to do the right thing out here environmentally, to protect water quality.”

— Mike Hemmann, NRCS civil engineering technician

Across those 11 farms, Stearns County Soil & Water Conservation District and NRCS staff worked with producers to install eight stacking slabs and seven manure storage basins, and to implement nutrient management plans affecting 1,664 acres.

“You’re reducing nutrients, runoff from fields,” said Stearns County SWCD

Top: Rolling topography and the region’s high water table made the Stearns County feedlots targeted for Clean Water Fund and NRCS-supported improvements more susceptible to runoff. The Stearns County SWCD-led effort within the Sauk River watershed benefits the Sauk River, **bottom, center,** and the Sauk River Chain of Lakes.

Photo Credits:
Ann Wessel, BWSR

Shirley and Kevin Klaphake, **left**, raise chickens, hogs and cattle on 320 acres in Spring Hill Township. In September 2020, they paused outside a poultry barn a short distance from the covered stacking slab that gave them 12 months of manure storage space. David J. Meyer, **right**, seen in September 2020 in a soybean field near a recently built stacking slab, added poultry to the family’s 1,000-acre crop and cattle farm in 2015.



Left, from left: Shirley and Kevin Klaphake told Mike Hemmann, a Stearns County-based NRCS civil engineering technician, and Stearns County SWCD Project Management Supervisor Nathan Hylla how a newly constructed, roofed stacking slab built to store 12 months of poultry litter fit into their operation. **Right:** Meyer, seen here shortly after a 40-by-100-foot covered stacking slab was constructed near the poultry barn on his Lake Henry Township farm, said having 12 months' storage made it possible to incorporate that nitrogen source in the fall.

Project Management Supervisor Nathan Hylla, who has since left the SWCD to start his own business.



Hylla

"Producers get long-term storage for their manure — whether it be poultry, beef or dairy — and then they utilize those nutrients when they can use them, and then incorporate them so they're not running off into our streams, lakes and rivers."

The region's high water table and rolling topography made the targeted feedlots more susceptible to runoff.

Clean Water Funds supported the [technical assistance](#) SWCD engineers made available to farmers. At four of the 11 sites, the state grant provided cost-share for construction. Seven sites tapped only EQIP assistance to offset construction costs.

"These Clean Water funded projects just add a lot of flexibility," said Stearns County SWCD Conservation Planning Team Manager

“ I always had to watch when it was going to rain, if there was a snowstorm coming. Now I can come out of the barn and into this building and place the manure in here without having to handle it three times. ”

— David J. Meyer, crop and livestock producer

Mark Lefebvre, referring to a list of potential projects that await funding, and to competition for EQIP assistance. "Even if they would be funded in EQIP, with the increased cost of some of these projects, some of these farmers aren't going to go through with it unless they get supplemental funding."

In September 2020, Hylla and Mike Hemmann, a Stearns County-based NRCS civil engineering technician who has since moved to NRCS' Glencoe office, visited two farms where stacking slab construction had just finished. At both sites — the Kevin and Shirley Klaphake farm, and the David J. and JoAnn Meyer farm — the slabs were built to store poultry manure.

"I wanted to be environmental-safe. Instead of putting our manure on



VIDEO: "Stearns County Feedlot Fixes," featuring a visit to the Klaphake farm in September 2020

the ground all the time and stacking it for a whole year, I wanted to have a stacking slab so water doesn't leach into the ground," said Kevin Klaphake. "We probably wouldn't have been able to do this project without the assistance."

With his wife, Shirley, and father, Eldred, Klaphake raises chickens, hogs and cattle on 320 acres in Spring Hill Township. Adding poultry in 1990 and then hogs 10 years later allowed Klaphake to sell the 35-cow dairy herd but stay on the

family farm. The Klaphakes typically raise six batches of 42,000 chickens a year.

The 56-by-96-foot covered stacking slab near the poultry barns holds 12 months' storage. Previously, poultry manure was stored on the ground until fall when it could be spread on the fields. Nearly three years after construction finished, Klaphake reflected on another benefit:

"When you clean the barn out, you don't have to worry about mud," Klaphake said in July 2023. "It's worked out very good. In the fall, too, when you haul it away, you're always on dry cement. You're not outside if it rains or something, trying to load in the mud."

A couple of miles down the road in Lake Henry Township, David J. and JoAnn Meyer added poultry to their 1,000-acre crop and cattle farm in 2015.

"We were looking to diversify a little bit to help pay our medical insurance. That was what we could do to have a steady monthly income," David J. Meyer said.

continued next page

The Meyers had worked with Hemmann on a previous project. They, too, had been storing litter from six batches of 42,000 chickens a year on the ground.

"I always had to watch when it was going to rain, if there was a snowstorm coming," Meyer said in September 2020. "Now I can come out of the barn and into this building and place the manure in here without having to handle it three times."

Having 12 months' storage makes it possible to incorporate that nitrogen source in the fall. Dry manure is also easier to load and spread in the field.

"I think the value of the manure is worth a lot more to me now, being it's more consistent and it's more dry and it's more of an even spread in the field," Meyer said in July 2023. Previously, manure sometimes had to be spread when it was wet, resulting in too much in some spots and not enough in others. Now, Meyer said, "How you set your spreader — that's what you get when you apply."

One drawback: This winter, Meyer said snow drifted into the roofed 40-by-100-foot stacking slab, an issue he fixed with a stack of bales. Like Klaphake, Meyer also appreciated the convenience.

"It seemed like this past winter every time our birds



Details

SAUK RIVER CHAIN OF LAKES:

The 14-lake chain south of Cold Spring and Richmond, including Horseshoe Lake, **above**, draws anglers, boaters and other recreation-seekers. A [Minnesota Pollution Control Agency report](#) in 2021 noted a 68% reduction in phosphorus at the Richmond inlet to the chain of lakes. The report credited

25 years of local, state and federal partners' nutrient and sediment reduction programs.

REDUCTION ESTIMATES:

Annual reduction estimates tied to the four Clean Water Fund-backed projects include 242 pounds of nitrogen and 82 pounds of phosphorus. Reduction estimates are not calculated for EQIP-supported projects.

went out (to be processed) it was either a snowstorm or a rainstorm or bitterly cold, so it was nice to have that building. We were able to get the barn cleaned out right away," Meyer said.

The Meyers' three daughters — ages 21, 19 and 16 — and their 11-year-old son also help on the farm.

"I'm hoping doing this building will help with the

next generation coming up," Meyer said.

While they may decide to farm one day, Meyer said he encouraged his children to explore other options. One daughter is studying to become an English teacher; one is studying to become a nurse.

The Klaphakes, too, were looking ahead when they installed the stacking slab and tried new practices.

"Farmers are trying to do the best they can to keep the waters clean — your rivers and creeks. We want to prepare for the future, so things are there for the youngest generation to take over," Klaphake said.

"We're working on our tillage, what can we do to help keep our soil intact instead of the wind or rain washing it away," Klaphake said of his work with Lefebvre. "We've been slowly working with him to change how we're farming. Years ago, my grandpa and dad plowed everything."

One of the changes Klaphake made to become certified through the Minnesota Agricultural Water Quality Certification Program: On 120 acres, he switched from moldboard plowing to chisel plowing, which leaves some residue on the field. So far, Klaphake said he's liked the smoother fields but has concerns about weed suppression.

On his own, Klaphake started working with cover crops. For the fourth consecutive season, after this summer's oat harvest he planned to hire an air-flow applicator to seed a radish-turnip cover crop on about 35 acres where he'll plant corn next spring.

"Producers are trying to do the right thing out here environmentally, to protect water quality," Hemmann said.



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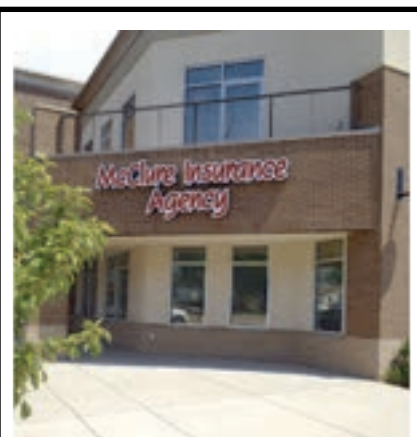
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Lake Level Monitoring Report

By Steve Weeres, Aquatic Awareness & Prevention Programs Committee

Electronic monitoring of the SRCL level and water temperature using the LAKESCOUT data bouy(www.winrectech.com) was installed in July 2022 and has provided continuous readings of lake levels since then. The LAKESCOUT data bouy is installed on Horseshoe Lake and is shown below. The link to the portal to view the real-time elevation and water temperature is available on SRCL.org. Year to date and historical measurement summaries are also available. The year-to-date lake level is shown here. An obvious event was the flooding that occurred in April 2023. The lake level reached a peak of 1091.62 feet. Comparing the lake level with the Sauk River level measured at St. Martin, the river level reached its peak three days earlier. We will use this data to develop models to be able to predict the peak level of the lake in future extreme events giving stakeholders an advanced notice to prepare. The data from both 2022 and 2023 has also provided information on how long the lake level takes to recover to normal levels after an extreme event. This data will be valuable in order to predict when the lake level will be suitable for normal recreation.



Over the summer months, the lake level has trended below the ordinary high water level of 1086.5 feet. The average level over the period of July-August 2023 was 1086.26 feet. The average level over the same period in 2022 was 1086.56 feet. We can use this historical data to better determine what normal levels are and levels during seasons with reduced precipitation.

Electronic monitoring of lake level provides short term benefits of real-time lake level and potential changes. Plus, it provides a historical database that will support both the management of the lake and surrounding landscape.

If you have any questions or comments, or have ideas for other measurements and analysis, please contact the author at SteveSRCLB@gmail.com.

SRCL Lake Elevation Portal:
<https://www.srcl.org/water-level-horseshoe>



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The Meaning of Harmful Algal Blooms (HABs)

By Dan McEwan, PhD/CLM, Limnopro Aquatic Science, Inc.

Think of sipping your favorite hot beverage, maybe a nice cup of coffee as you sit outside in the morning, looking out over the lake. A “sip” contains approximately 10-15 milliliters of hot beverage. A milliliter is a typical volume used to express densities of microscopic algae in the water. Most algae are organisms that you need a microscope to see, although the green tint of the water gives away the fact that they are there (Fig. 1). On average, depending on time of year, a milliliter of lake water contains anywhere from 50,000 to over 1,000,000 individual algae. A sip of lake water then may contain over 15 million algae cells! It might be good to keep your mouth closed during your next swim.



Fig. 1. Typical algae collected from a lake magnified under a microscope by 200 times

Algae are an important and normal part of any lake. They are a foundational part of the food chain. Algae feed zooplankton (microscopic animals), and zooplankton feed both insects and small fish, while insects and small fish feed...you guessed it...big fish! However, too many algae, or the wrong kind of algae, can cause problems from making the lake unappealing to look at or even unsafe to be in.

There are two basic kinds of algae. Those that are bacteria and those that are not. The kind that are bacteria are sometimes referred to as “blue-green algae” because they have an additional pigment besides chlorophyll, which is the pigment that makes nonbacterial algae green. Blue-green algae are sometimes, and probably more appropriately, called cyanobacteria (“cyan” is the color blue green). Cyanobacteria have both chlorophyll and another pigment that is called “phycocyanin” gives it a brighter green color with a hint of blue (Fig. 2).

A sip of lake water may contain over 15 million algae cells!



Fig. 2. A common type of blue-green algae bloom in a lake. Note that the color is actually more green than blue. The blue just tints the color.

One unique characteristic of cyanobacteria is that they have the potential to create and release toxins that in high enough concentrations can make humans and pets sick or in extreme cases cause death (Table 1). There are four main toxins produced by a broad range of different types of cyanobacteria. When cyanobacteria that are known to produce toxins form blooms during the summer, agencies and scientists will generally refer to them as “harmful algal blooms” or “HABs” for short.

Type	Toxin	Genus (Type of Cyanobacteria)	Short Term Health Effects	Long Term Health Effects
Hepatotoxin (Liver toxin)	Cylindrospermopsin	Aphanizomenon, Cylindrospermopsis, Dolichospermum, and Raphidopsis	Gastrointestinal, liver inflammation, and hemorrhage, pneumonia, or dermatitis	Malaise, anorexia, or liver failure
Hepatotoxin (Liver toxin)	Microcystin	Anabaenopsis, Arthrospira, Aphanizomenon, Dolichospermum, Gloeotrichia, Microcystis, Nostoc, Oscillatoria, Phormidium, Planktothrix, and Woronichia	Gastrointestinal, liver inflammation, and hemorrhage and liver failure, pneumonia, or dermatitis	Tumor promoter or liver failure
Neurotoxin (Nerve toxin)	Anatoxin	Aphanizomenon, Dolichospermum, Microcystis, Oscillatoria, and Planktothrix	Tingling, burning, numbness, drowsiness, incoherent speech, or respiratory paralysis	Cardiac arrhythmia
Neurotoxin (Nerve toxin)	Saxitoxin	Aphanizomenon, Dolichospermum, Lyngbya, Microcystis, Oscillatoria, Phormidium, Planktothrix, Raphidopsis, and Woronichia	Tingling, burning, numbness, drowsiness, incoherent speech, or respiratory paralysis	Unknown

Table 1. Cyanobacterial toxins, the types that can produce them (Paerl 2001, Frustachi et al. 2008), and human health effects (Harnness 2005, Falconer 2005).

Within the last few weeks, we noticed a cyanobacteria bloom in Horseshoe Lake while out monitoring plant populations. We collected a water sample and determined it to be a bloom of the cyanobacteria *Microcystis* (Fig. 3). *Microcystis* is one type of cyanobacteria that can produce both microcystin and anatoxin toxins. That same sample had low densities of *Aphanizomenon*, *Anabaenopsis*, and *Dolichospermum*, all potentially toxigenic types. The observance of the bloom was not necessarily unusual as these come and go during the year.

Visual evidence of algae bloom that have a blue-green tint to them at any point during the year should prompt caution about contacting water in lakes.

Visual evidence of algae bloom that have a blue-green tint to them...should prompt caution about contacting water in lakes.

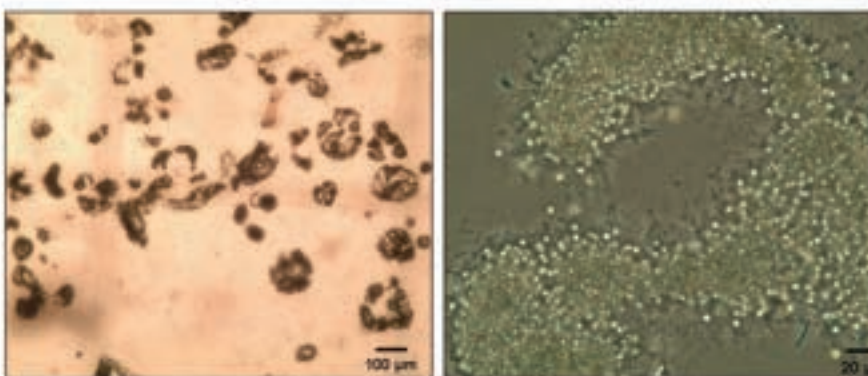


Fig. 3. A microscopic view of Microcystis bloom from water sample collected on Horseshoe Lake during August 2023. Shown left is the bloom at 40X and on the right is a close-up at 200X. Each of the round cells represents one individual. Each colony contains thousands of cells. Other potentially toxic genera in lower densities identified in the sample included Aphanizomenon, Anabaenopsis, and Dolichospermum. There was a virtual absence of nonbacterial types present

While microscopic assessment by trained workers is required to determine whether a particular algae is capable to producing toxins, you can perform simple tests to determine whether certain blooms of algae are toxic forming groups by using the “jar” test and the “stick” test as pictured in Fig. 4 below.

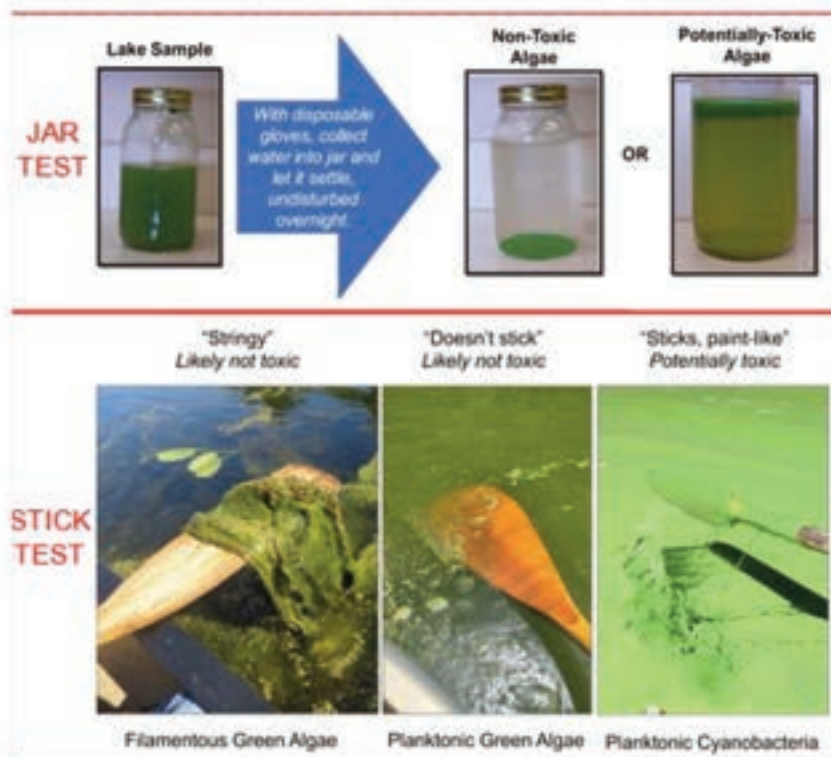


Fig. 4.

To determine likelihood that an algal bloom is potentially toxic, collect a sample of the bloom, being sure to wear disposable gloves and place in a refrigerator overnight. If when checking the jar after 24 hours, there is a clear layering at the bottom, it is likely not toxic. If the layer floats to the top, it is potentially toxic. If the lake sample does not produce layering, transfer a small amount of the water to a new jar and fill with regular water to dilute it. Repeat until you see layering. The “stick (or paddle) test” (bottom) to determined whether a surface scum of algae is potentially toxic. If the algae pulled up stays on the stick and hangs off, it is likely non-toxic. If the stick moves through the scum and you pull it out and no algae sticks to the stick, it is likely nontoxic. If you pull it through the water and it appears to be covered like a paint, it may be toxic.

continued next page

Just because you have a cyanobacteria bloom in the lake at a given time, it does not necessarily mean it is producing toxins. Sometimes they produce toxins and other times they do not. Scientists are still working out why this is the case, but so far have not been able to come up with a satisfactory answer. For this reason, we say that types of cyanobacteria that can produce toxins are potentially toxigenic. There are test sticks you can buy online specific for the toxins that can give you some indication of whether there are toxins in the water at any time in high enough concentration to cause problems. Under most conditions, nonbacterial algae outcompete cyanobacteria, and you have more of the former compared to the latter. Nonbacterial algae are better at using nutrients in water and getting to light when compared with cyanobacteria under most conditions. Three main conditions lead to cyanobacteria outcompeting non-bacterial algae, which can lead to blooms.

First, cyanobacteria will bloom under prolonged still-water conditions. With little to no water movement, nonbacterial algae will begin to sink while the cyanobacteria will use their gas vacuoles to float to the top. Still conditions will occur in wind-sheltered areas of the lake and during prolonged periods of heat with little wind. During these periods or in these locations, creating some water movement such as with an Aquathruster or other aeration system may help with keeping the cyanobacteria down. Second, cyanobacteria will outcompete nonbacterial algae if nitrogen levels in the water become temporarily reduced. This does not happen often but can occur for short periods of time as the nonbacterial algae gobbles up all available nitrogen. Cyanobacteria can actually use nitrogen from the air, something nonbacterial algae cannot do. Third, in lakes with zebra mussels, zebra mussels preferentially eat the nonbacterial algae and leave Cyanobacteria behind.

Cyanobacteria are not palatable to them. As a consequence, lakes with zebra mussels often see a reduction in nonbacterial algae with an increase in frequencies of cyanobacteria blooms. As zebra mussels have arrived in the Chain of Lakes recently, the future may show an increased rate of cyanobacteria blooms. I realize this all may seem a little scary but keep a few things in mind. First, cyanobacteria have always been part of lakes worldwide and a variety of them are always in the water at low levels. This is not necessarily a new threat. If you have not seen the consequences to this point, it is likely that will continue to be the case going forward. Second, even if cyanobacteria can potentially produce toxins, they may not, even when they are dense. Finally, known sicknesses and/or death of pets much less human is not highly reported. So, while cyanobacteria have the potential to cause problems, it does not seem to happen often. Nonetheless, the general adage of "When in doubt stay out!" is a good one to live by.

"When in doubt stay out!" is a good one to live by.

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Hybrid Watermilfoil Management Update

By Amy Kay, Black Lagoon Pond and Lake Management

The Sauk River Chain of Lakes Association (SRCLA), with support from their service providers and the Minnesota Department of Natural Resources, has implemented a plan for the management of Hybrid Watermilfoil (HWM) on the Sauk River Chain of Lakes. HWM was identified in both Horseshoe and Cedar Island Lakes in recent years and a management plan using the aquatic herbicide, ProcellaCOR (florpyrauxifen-benzyl) was chosen. ProcellaCOR is a selective, systemic aquatic herbicide meaning it has a tendency to control only the targeted species while having minimal to no impact on any other aquatic vegetation. Implementing the use of ProcellaCOR supports the objective of selectively managing the HWM to minimize the spread and establishment of invasive species while promoting an environment to support native plant growth.

Research shows that ProcellaCOR is more effective than conventional technologies, particularly as they relate to the control of HWM, and may provide longer term (multiple seasons) of control. In 2022, ProcellaCOR applications were made to infestations identified by



Eurasian Watermilfoil



HWM Management Sites on Horseshoe and Cedar Island Lakes

the SRCLA and their survey provider, Limnopro Aquatic Science, on Horseshoe Lake. This project resulted in successful control in the management sites. Additional infestations were found following the 2022 project on both Horseshoe and Cedar Island Lakes which the SRCLA chose to manage in 2023 following additional survey work to confirm

and refine targeted sites of HWM. On July 13, 2023, licensed aquatic pesticide applicators applied ProcellaCOR to 29 sites totaling 24.5 acres. Additional survey work is planned to evaluate the effectiveness of the ProcellaCOR applications, monitor prior application sites and locate any new infestations on the Chain.



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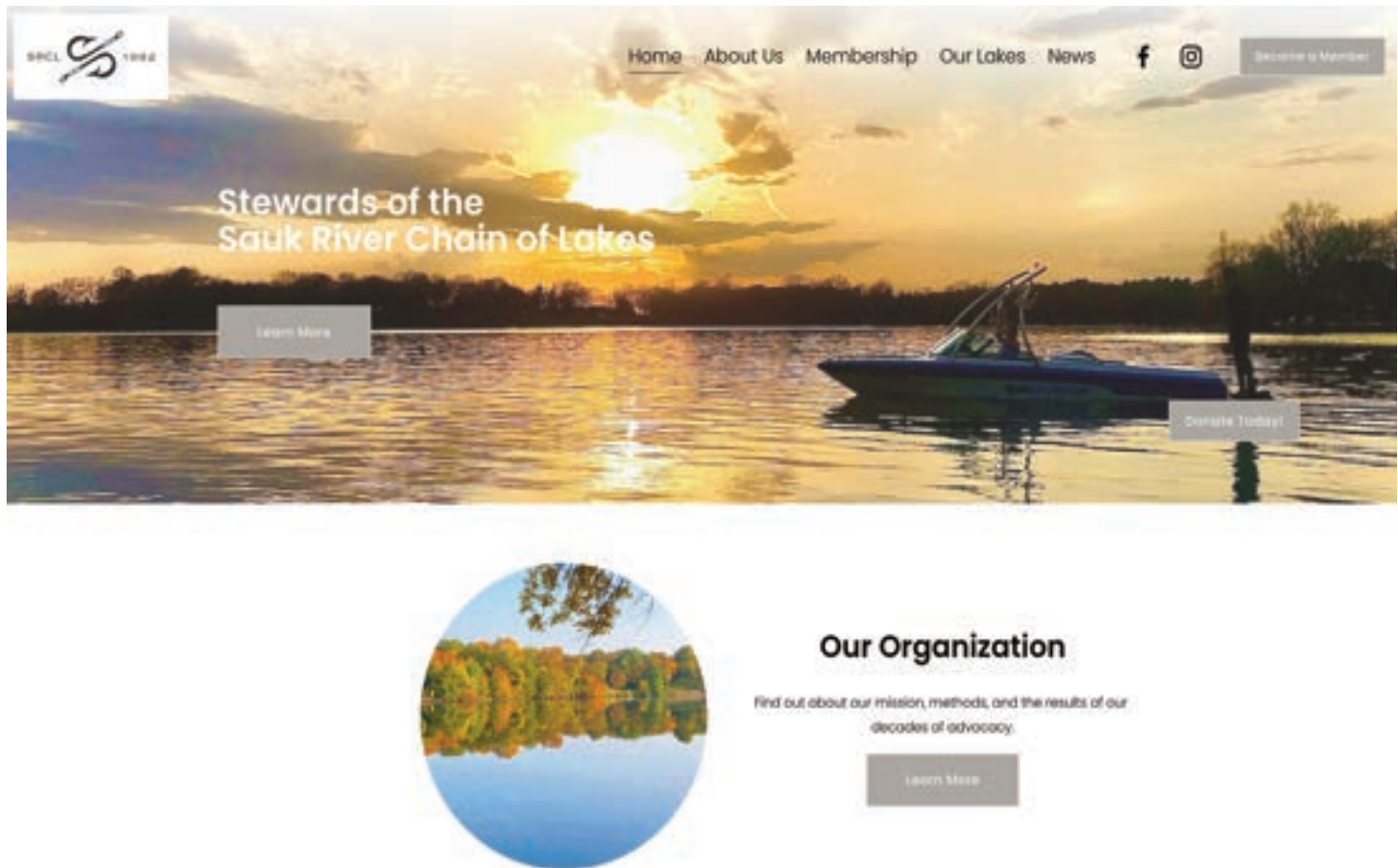
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Sauk River Chain of Lakes Association Vision

To be a passionate group of volunteers that strive to be good stewards of the Sauk River Chain of Lakes by working with all of its stakeholders to preserve and protect water quality, wildlife, and lake life while also promoting improvements through learning, education, and assistance.

Check out our updated website at www.srcl.org!



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- Attend monthly board meetings
- Contribute to newsletters
- Actively lead a committee such as Marketing, Community Outreach, Fisheries, Charitable Gambling, Aquatic Invasive Species, Land Use, Water Quality, Road Clean-Up, or Local Business Partnerships etc.
- Represent the Sauk River Chain of Lakes Association Board at occasional external events
- Partner with peers such as the Minnesota Department of Natural Resources, Sauk River Watershed District, Stearns County Government Representatives, etc.



If you believe you can add value to the Chain of Lakes and you would like to be an active participant with our group, we have a volunteer opportunity that you could fill. In particular, we are currently looking for charitable gambling and roadside/bridge clean-up help. Please reach out to SRCLA President Brad Matuska at bradmatuska@gmail.com to volunteer. We look forward to hearing from you!



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