
THE CULLEN CURRENTS

Winter, 2021



Important notice to all Cullen Lakes property owners

Areas of the aquatic invasive species curly-leaf pondweed (CLP) will again be treated this spring in all three Cullen Lakes using the DNR approved herbicide Aquathol K. This will be the twelfth year of CLP management.

If you DO NOT WANT this treatment to take place within 150 feet lakeward of your shoreline, YOU MUST NOTIFY the Cullen Lakes Association in writing via email (beaver@uslink.net) or U.S. mail (PO Box 466, Nisswa, MN 56468) no later than April 1, 2021.

If you have an irrigation system for your yard that uses lake water, you should have it turned off until a week after the CLP treatment has taken place. The exact timing of the treatment is hard to predict, since it is dependent on spring ice out and the lake water warming into the 50s. When CLA learns of the intended treatment date, we will post it on the CLA web site: www.cullenlakesassoc.org. You can also email Ann Beaver at the aforementioned address and ask her to email you the date when the treatment will take place.

CLA membership

by Carol Lindahl, Membership Committee chair

As of January 31, 2021 we have 199 paid members. Of these, 9 are associate members (former owners or family members of owners). We also have 7 complimentary members (new property owners). Membership letters for 2021 were mailed in late November to allow for those wanting to use a donation for 2020 tax purposes to do so.

If you haven't already sent in your \$25 membership dues (and hopefully a contribution towards the treatment of curly-leaf pondweed), please take the time now to write your check, make any necessary corrections to your personal data on the membership letter you received, and mail them both to CLA, PO Box 466, Nisswa, MN 56468.

In addition, We encourage all co-owners of a property to become members of CLA. Doing so will ensure they are kept informed of all important news around the lakes.

Important: Please help us keep our membership records current by sending any changes in your mailing address, email address, or change in ownership of your property to me in care of the CLA PO box.

Curly-leaf pondweed (CLP) management donations update

The CLA Board of Directors heartily thanks all who have already contributed to the 2021 CLP treatment fund. The very positive response is truly impressive.

Here are some of the statistics as of January 31:

159 property owners and family members (there are 199 dues paying CLA members so far this year, so that's 80%!) have made a CLP donation.

*65 contributed the \$250 suggested in the membership mailing.

*30 contributed more than the suggested \$250.

*Contributions have ranged from \$25 to \$1,250.

*Contributions total \$33,750.

We are thankful for all donations, no matter the amount! If it were not for the generous donations of our members each year, the lake association would quickly run out of funds for CLP management and the lakes would become less suitable for boating, fishing, and water sports.

CLA establishes policy for investment of funds

by Paul Beilfuss

During summer 2019, the Cullen Lakes Association (CLA) Board approved a policy with respect to the investment of CLA funds. The policy allows the Board to safely invest association funds with local area philanthropic organizations to gain solid investment returns in order to grow the association's funds. For example, the commingling of association funds with a community foundation creates investment leverage under a single framework to create efficiencies, greater returns, and to utilize financial expertise.

Most recently, CLA funds, including the Legacy Fund, were invested in money market bank accounts, which were being eroded by inflation and low rates of return. During the summer of 2020 the Board's Budget/Finances Committee sought to improve the return on investment of funds to benefit CLA. The committee explored local area philanthropic organizations (e.g. community foundations) to safely invest CLA monies to earn the greatest rate of return and to benefit our association's generous donors by enhancing their gifts. The committee performed its due diligence exploring local area philanthropic organizations, and as a result recommended that the Legacy Fund and a majority of operating funds be invested with the Brainerd Lakes Area Community Foundation (BLACF). The Board approved the Budget/Finance Committee's recommendation during its October 2020 meeting.

The committee further recommended that the funds be invested in BLACF's Socially Responsible Investment Pool. The investment pool is a mix of equities (mutual funds) and fixed income accounts. The pool invests in equities and fixed accounts that participate in a "green economy", choosing environmentally friendly companies that practice socially responsible endeavors. For example, investors would pursue corporations that are attuned to alternative energy sources, such as wind and solar energy producing companies, as well as conserving and maintaining important natural resources. The investment pool appears to resonate with our CLA's mission, and it has a history of reasonable returns, ranging from 5.8% to 8.6% over the last three years with low expenses.

The CLA Board made the decision to invest our funds to earn a better rate of return and to grow our investments for our generous members so we can maintain the vitality of our lakes by addressing threats to water quality, fish and wildlife habitats, and recreational opportunities for our families.

In addition, we desire to fund special projects that enhance the lakes for our current members and future generations. We believe these investments will benefit all of us as we continue to address aquatic invasive species and other potential dangers to our lakes' environments that will be costly in the future. We know that our members are supportive and generous, and we want to be good stewards of our CLA funds. It appears to be a good time to take advantage of pooling our investments with community foundations in order to be prepared to address future challenges to preserve our lakes and to build the communities we serve.

The Brainerd Lakes Area Community Foundation (BLACF) is part of CommunityGiving, which is a corporate, non-profit entity, headquartered in St. Cloud. The broader foundation serves nine communities and Carver County, and offers the strength of a \$150,000,000 foundation base. A partial list of organizations for which the BLACF currently maintains funds includes the Brainerd Family YMCA, Brainerd Public Schools, Kinship Partners, United Way of Crow Wing and Southern Cass Counties, Lutheran Church of the Cross, Nisswa Fire Department, and Lakes Area Habitat for Humanity. You may wish to learn more about BLACF by going online at www.communitygiving.org.



Planning on renting out your lakeshore property?

For those of you thinking about or planning on renting out your lake property, remember that as of January 1, 2021 you are required to obtain an annual short-term rental license from Crow Wing County. (The County short-term rental ordinance covers the entire county, even its cities.)

This ordinance covers any home, cabin, etc. that is rented to the public on a nightly, weekly, or monthly (30 days or less) basis.

The purpose of the ordinance is to continue the allowed use of short-term rentals while mitigating possible adverse impacts to the health, safety, welfare, and quality of life of surrounding properties as well as to water and environmental quality. The ordinance outlines the owner's responsibilities to abide by rules concerning septic systems and solid waste, occupancy, noise, parking, and conformity with existing county and state requirements.

The full text of the ordinance can be found on the County's web site — www.co.crow-wing.mn.us.

Cullen Lakes water quality report

by Ann Beaver, Water Quality Committee chair

As many of you know by now, the water quality of a lake is determined by sampling three parameters May through September: water clarity (Secchi disk reading), total phosphorus (TP), and chlorophyll *a*. A lake is then categorized as oligotrophic (clear), mesotrophic (moderately clear), eutrophic (green), or hypereutrophic (very green). Most lakes in the Brainerd Lakes area fall into the mesotrophic category.

Over the last twenty plus years, **Lower and Middle Cullen Lakes** have consistently fallen into the mid mesotrophic range. Their water clarity is very good for lakes in this area, their total phosphorus is usually in the low to middle of the range, and their chlorophyll *a* is usually in the low to middle part of this range. Over the same time period, **Upper Cullen** has fallen into the high mesotrophic range. Its water clarity is in the low part of the range, its total phosphorus is usually in the middle of the range, and its chlorophyll *a* is usually in the high part of the range.

This year's water testing results were fairly consistent with those of past years, although we have no data for May since the Covid-19 pandemic delayed people's arrival at the lake and thus our testers didn't have their boats in the water yet. The table below shows this year's data as well as the average over the last ten years.

For Secchi disk readings a high number is desirable. For Chl. *a* and TP a low number is wanted. There are a lot of factors and variables that affect water quality, however, so what we look for over the years are any trends that become evident.

Upper	May	June	July	Aug.	Sept.	2020 aver.	10 yr. aver.	Typical for ecosystem
Secchi (ft.)	no test	11.5	8.5	8.5	7	8.9	9.1	8 to 15
Chl. <i>a</i> (ug/L)	no test	6	5.9	5.9	16	8.5	12.3	max. of 14.5
TP (ug/L)	no test	6	24	20	26	19	21.4	14 to 27

Middle	May	June	July	Aug.	Sept.	2020 aver.	10 yr. aver.	Typical for ecosystem
Secchi (ft.)	no test	18	13.5	14	10	13.9	12.2	8 to 15
Chl. <i>a</i> (ug/L)	no test	3.7	3.2	4.3	9.1	5.1	6.1	max. of 14.5
TP (ug/L)	no test	15	11	13	32	17.8	14.5	14 to 27

Lower	May	June	July	Aug.	Sept.	2020 aver.	10 yr. aver.	Typical for ecosystem
Secchi (ft.)	no test	16	12.5	13.5	12	13.5	11.8	8 to 15
Chl. <i>a</i> (ug/L)	no test	2.1	2.1	2.7	3.2	2.5	5.8	max. of 14.5
TP (ug/L)	no test	13	10	16	21	15	15	14 to 27

I want to thank our water quality monitors (and family members who often help them) for their dedication to the job: Denny Opsahl, Upper Cullen; Debi Oliverius, Middle Cullen; and Denise and Eric Whitson, Lower Cullen.

Help wanted!

The Cullen Lakes Association sends new lakeshore property owners a welcome letter and a new owner's packet containing many informative and helpful brochures and handy AIS identification cards, as well as the most recent newsletter and property owner map/guide.

Sometimes we don't learn of a change in property ownership for several months. Please help us by letting us know if you sell your property and who the new owners are. If a new neighbor moves in near you, introduce yourself and let CLA know who they are.

Thanks!

Save the Date!
CLA Annual Meeting
Saturday, August 14

In person, Zoom, by mail —
to be determined
based on pandemic status

Updates from the Minnesota Aquatic Invasive Species Research Center (MAISRC) from the 2020 MAISRC Research Report

*In 2019, MAISRC moved a zebra mussel suppression project using a low dose of copper from the lab to lake. In 2020, the team revisited the treatment site to assess recruitment of zebra mussels and recovery of non-target species one year later. Results have been promising and have led to a third phase of the project where researchers will attempt to dial in the lowest possible dose of copper to still be effective while minimizing non-target impacts.

[MAISRC.umn.edu/copper-control](https://maisrc.umn.edu/copper-control)

*MAISRC researchers are expanding a study examining how zebra mussels and spiny water fleas interrupt an infested lake's natural food web. As of the 2020 field season, over 1,700 tissue samples from walleye and perch were collected and analyzed to assess their feeding behaviors (nearshore versus open water). Researchers are also using the samples to quantify mercury concentrations in the tissues to identify pathways of mercury bioaccumulation and how it is influenced by zebra mussel-induced shifts in food web configuration. With food availability and growth being large determining factors of survival for young fish, this study will help assess the outlook on the future of sport fishing in Minnesota.

[MAISRC.umn.edu/walleye-ais](https://maisrc.umn.edu/walleye-ais)

*Exciting preliminary field testing of enzyme-based coating has shown a significant decrease in biofouling on the treated surfaces over 22 months of underwater submersion. The new coatings are environmentally friendly and contain no heavy metals. By decreasing biofouling, we can reduce the settlement of zebra mussels. If successful, this project could help protect boats and underwater infrastructure — including water intake pipes — from being clogged with zebra mussels and save property owners and companies from costly maintenance and repairs.

[MAISRC.umn.edu/coatings](https://maisrc.umn.edu/coatings)

Currents On the Cullens

New Owners

Bob & Deb Anderson, Lower Cullen (L23)
Jeff & Ashley Camosci, Middle Cullen (M29.5)
Tom & Lora Graumann, Middle Cullen (M31)
Aaron Jillson, Lower Cullen (L3)
William & Dion Kopp, Middle Cullen (M60)
Matt & Kayla Perlinger, Middle Cullen (M127)
Ryan & Kelly Rydell, Middle Cullen (M42)

Deaths

Sharon Baker, Lower Cullen (L8)

A Cullen COVID winter

by Tom Beaver

The Beavers, like all well informed folks, are following COVID protocol, but that doesn't mean locking down behind four confining walls. Our milder than average winter here in central Minnesota has provided an outlet from the new virtual world. Though this area is classified as a dry zone, we have had enough snow so far to enjoy all winter activities, both on and off our power toys.

Lake ice formed later this year and is still of varying thicknesses due to the seesawing temperatures. This has caused lake water to seep through fishing holes and cracks in the ice and, combined with spring fed areas along some shorelines, has created slushy sections which in turn freeze like bomb craters. I'm guessing all this may be keeping transient anglers off the lakes, but not the locals. They are so addicted they were fishing during the NFL playoffs! I have no idea if they are catching fish, but they likely aren't catching COVID out there on the lake.



I've heard that Martins in downtown Nisswa still has some skis and ski boots for sale, but you can't buy a pair of snowshoes anywhere around here.

Since this old guy is no longer grooming the cross country ski trail on the county and DNR land north of Middle Cullen, I am fortunate to have found three volunteers to take over this project: Dale Jordan of Nisswa, Marcy McCauley of Lower Cullen Road in Nisswa, and Nick Lesmeister of Lower Cullen Lake. All three are avid cross country skiers. Dale and Marcy were with me on Sunday, January 17 to learn how to set the trail with my equipment. Skiers were almost standing in line waiting for us to finish setting a new trail after the latest light snowfall.



It didn't take long for Cullen Lakes property owners who don't live at the lake year round to figure out the lakes and trails "up north" are a winter safe haven from the crowds elsewhere. It's not too late to enjoy our socially distanced winter sports on and around the Cullen Lakes!

Need a permit?

If you're planning a building project in the coming year, be sure to check the land use ordinance or contact the zoning office of the jurisdiction governing your property (Nisswa, Pequot Lakes, or Crow Wing County) to learn what permits may be required and what restrictions may exist.

Where did Minnesota's lakes come from?

excerpted from a lakeology series by Richard Gray,
founder of the Freshwater Foundation

Three main areas of Minnesota were formed by glacial action or the lack of it. The southeast corner of the state was relatively untouched by glaciers, explaining its lack of lakes. The northwestern portion of Minnesota, which also lacks lakes, was once a lakebed formed by the huge glacial lake called Agassiz. Today it is the fertile Red River Valley. The rest of the state was covered by at least one glacier, sometimes several.

Glacial deposits formed lakes in three ways. First, ice-block lakes were formed as the glaciers grew weak in their southward advance and began ragged retreats to the north. Huge chunks of ice from the tip of the ice tongue would crack off at random, like icebergs at sea. They were surrounded and buried by the dirt and rock which the glacier carried in its pockets. When these inland icebergs melted they left gaping holes which filled with water and formed 85% of Minnesota's lakes. Gull Lake and Lake Minnetonka are examples of ice-block lakes.

Second, at times the glaciers followed old river valleys as they shrunk homeward, leaving strings of ice blocks in their wake, now strings of lakes. The Fairmont chain of lakes in southern Minnesota is a classic example. Third, lakes such as Lake Mille Lacs and Leech Lake were formed by water dammed when the glacier, wounded by the warming climate, dumped more ballast. The end of a drainage basin was cut off by this deposit of soil. As water collected ahead of it in the years to follow, another type of lake, dams glacial moraines, was created.

Lakes which owe their origin to other than glacial action are relatively minor. Exceptions include Big Stone Lake on the western border and Lake Pepin, south of Red Wing, in the Mississippi River, both of which were formed by a tributary stream damming rivers at that point, causing them to widen and form a lake. Vast inland seas which were here before the glaciers erased them were mothers to other lakes. Lake of the Woods and Upper and Lower Red Lake have this origin. A few lakes were formed when a bay of a larger lake gradually became isolated, splitting off from another lake. And, there are floodplain lakes created by rivers periodically flooding and artificially dammed lakes.

There are four basic kinds of lakes in the world as defined by soil type, water quality, fish, plants and animals along their shore. Minnesota has all four kinds, one of the few areas in the world which does. Rock lakes of the northeast typify the first kind of lake. The surrounding soil is mostly bedrock with little surface soil, waters are relatively uncontaminated, soft, clear and oxygen-rich.

A shoreline of pine and spruce defines the second category, coniferous lakes. They occur in the north and north central regions. These lakes are moderate in minerals and have very specific species of fish. The third type is hardwood lakes, which have hard water and occur in the central and south central portions of the state. The fourth kind is the prairie lake, found in the south and southwest. These lakes are very fertile from the rich agricultural land flowing into them, have hard water with panfish, carp and bullheads common.



Like children, lakes grow and change from the day of the glacial birth. No lake is the same from one day to the next — waves, wind, shifting materials, animals and man are constantly working away at them. All are moving towards their natural grave, or accelerated grave aided by man's actions.

Prolonging the life of Minnesota's glacial legacies will depend on sound lake management for the future.

Soteroplos Scholarship recipient sends her thanks

Cullen Lakes Association board member Ted Soteroplos died in 1998 after a difficult battle with cancer. He was not trained in environmental sciences, but he taught himself what he needed to know and became the association's best advocate for protecting the quality of the Cullen Lakes. Using the substantial memorials from family and friends, in October of that year the board of directors established a scholarship at Central Lakes College for a student studying environmental science. Through the years the CLA board of directors has made an annual contribution to the scholarship fund. Interest generated by the fund is used each year to award a scholarship to a deserving student. CLA received the following thank you note from the 2020 recipient of the Soteroplos Scholarship at Central Lakes College:

I am sincerely humbled and overwhelmingly grateful to be receiving this financial blessing. Thank you for providing me with this great opportunity and for your generosity. This scholarship will help me substantially in pursuing my goals, minimizing my additional student debt, and following my dreams in conservation science and natural resource science. Although I will be working part time to pay my living expenses, a weight has been lifted knowing that my school finances are secured. Thank you again for your contribution to my future and your generous gift.

*Sincerely,
Victoria Shaffner*