
THE CULLEN CURRENTS

Winter, 2023



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 14th 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, 2022.

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 9, 2023 we have 172 paid members. Of these, 9 are associate members (former owners, family members of owners, or owners of property in the Cullen Lakes watershed). Membership letters for 2023 were mailed in late November to allow for those wanting to use a donation for 2022 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 or by emailing the information to Ann Beaver or me (email addresses on the last page of this newsletter). **Also, it is very helpful if we have your email address on record for the rare occasion we need to contact you.**

Curly leaf pondweed (CLP) management donations update

The CLA Board of Directors thanks all who have already contributed to the 2023 CLP treatment fund. The very positive response is impressive.

Here are some of the statistics as of January 9:

- *137 property owners and family members have made a CLP donation. There are 172 dues paying CLA members so far this year, so that's an impressive 80%!
- *52 contributed the \$250 suggested in the membership mailing.
- *25 contributed more than the suggested \$250.
- *Contributions have ranged from \$25 to \$975.
- *Contributions so far total \$28,100.

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.

You are eligible for \$100 under a new CLA grants program

by C.B. Bylander, Education Committee chair

Do you want to help our lakes? If so, please consider participating in a new Cullen Lakes Association program. Called the Shoreline Grants Initiative, this innovative effort will pay you \$100 if you meet with a local conservation expert to discuss options for managing your land, especially land near the water's edge.

Such a visit, offered by the Crow Wing County Soil and Water Conservation District, costs \$125. So, this is a \$100 saving. Long-term, your \$25 share of the cost could result in even greater savings. That's because a site visit is the first step in obtaining government cost-sharing funds if you implement an approved soil and water conservation project. Not all projects receive cost-sharing funds, but those that do commonly receive hundreds or thousands of dollars. This makes doing a project on your property far more billfold friendly.

Why are we doing this? Four reasons.

*One, we, like you, want the Cullens to be the best they can be. Managing shorelines wisely is a great way to do this.

*Two, our grant program puts you in direct contact with a local conservation expert. That expert will write-up recommendations that, among other things, can reduce shoreline erosion, minimize runoff, resolve root-eating muskrat problems, resolve ice heave issues, capture precipitation in a rain garden and enhance fish, wildlife and pollinator habitat. Hopefully, this \$100 nudge will motivate those who have considered tackling a lake-friendly landscaping project but didn't know where to start.

*Three, Crow Wing County is expected to receive considerable lakeshore restoration cost-sharing funds in the years ahead, thanks largely to the 2008 Legacy Amendment to the Minnesota Constitution. This means property owners who have had a site visit, developed a property plan and have earned the approval of the SWCD Board could be near the front of that funding line.

*Four, our new grants program supports the dreams of former association members who generously bequeathed money from their estates to our association. These people – Lowell & Morraine Norden and Joe & Barbara Hogan – so loved the Cullens that they entrusted the Association to put their money to good use. We believe this program honors that trust.

So how does the program work? Participation is voluntary. Those who want to participate should register online at the SWCD website at <https://www.cswcd.org/requestanonsitevisit>.

Site visits will begin in the spring of 2023. When you meet with a CWSWCD staffer, tell that person you are eligible for a \$100 lake association reimbursement. That person will inform the Association that a site visit has been conducted and we will send you a \$100 reimbursement check.

You are under no obligation to enact site visit recommendations. The \$100 reimbursement is yours whether you move forward with a project or not. To us, simply helping association members discover their options is a good investment. The Association has authorized \$2,000 in grants, which means 20 \$100 site visit reimbursements are available.

The SWCD can handle only 50 to 70 site visits per year for the entire county, and interest in this service is high. Therefore, if you want a site visit you should submit your request sooner rather than later.

Property owners have three options following a site visit. One, you can do nothing. Two, you can implement all or a portion of the recommendations at your own expense. Three, you can obtain cost estimates for your project and submit a restoration/construction plan to the SWCD office by early autumn. The SWCD board typically meets in November to determine which projects are approved for cost-sharing for the following construction season. Typically, citizens submit more projects than funds available, but available funds are expected to increase in the years ahead.

Please contact Association President Ann Beaver if you have questions. This is a new effort. We haven't figured everything out. But we are here to help you. And if our help saves you money while doing something good for our lakes, well, that's a win for you, the Association and our environment. Ann can be reached by emailing her through the Cullen Lakes Association website at <https://cullenlakesassoc.org/contact/>

Do know that site visit recommendations typically involve natural solutions, meaning the use of long-rooted native plants that hold soil in place, rain gardens, buffers and so-called soft armoring, which protects shorelines from erosion losses without using riprap or boulders. The SWCD has found that natural shoreline protection can cost 25 percent less than riprap.

Finally, if you do request a SWCD site visit, feel free to give Ann a heads-up. This isn't a requirement, but we'll be talking about this initiative at our May board meeting and it would be good to have a sense of how much interest there is in this effort.

Wild turkey buffet

by Ann Beaver

Our backyard bird feeder took on a whole new dimension one day in late December!



Eleven wild turkeys stopped by to clean up all the seeds scattered or dropped by the many birds that had been feeding earlier in the afternoon. The rest of the group of turkeys was under a nearby red pine cleaning up whatever the squirrels had dropped from the tree.

The turkeys started wandering away after about 20 minutes of cleaning up the fallen seeds.

Since this original sighting, the turkeys have been visiting the neighborhood on a regular basis, usually several days a week. They rarely stay for long but they check the area for things to eat. Fortunately for us but not for them, the birds and squirrels have not been leaving much on the ground lately. We definitely do not want to encourage them to consider our yard their yard.

Here are some facts about them from the DNR web site:

*Wild turkeys are about 3 feet in length and weigh 10-25 lbs. They have a 4-foot wingspan.

*They mate from April to May. Hens lay 10-12 eggs which hatch in about 28 days. The young are able to fly in 3-4 weeks, but they stay with their mother for up to four months.

*They eat almost anything they can catch or find, including ferns, grasses, grain, buds, berries, insects, acorns, and even frogs and snakes.

*Their predators include great-horned owls, eagles, coyotes, and foxes.

Fun facts:

*Wild turkeys form flocks of 6-40 birds that roost in trees each evening,

*In 1782, the turkey lost by a single vote to the bald eagle to become the national bird!

What is a lake and what can go wrong?

from a North American Lake Management Society (NALMS) publication

A lake is a depression in the landscape that holds water. Lakes are formed by glaciers, volcanic eruptions, the movement of the Earth's crust, etc. They are also formed by humans when they build dams and impound the water into artificial lakes. Lakes are considered temporary features in the landscape because all lakes eventually disappear as they slowly fill in with soil, dead plants and fish, and other materials. This process takes hundreds or even thousands of years depending on the lake's size, surrounding geology, and other factors.

A lake's ecosystem is home to many creatures, including people. The lake's water, the land surrounding it, the plants, animals, minerals, and all the water draining into the lake are part of the lake ecosystem. The components of a lake ecosystem interact with one another in very complex and interdependent ways.

Lakes have interrelated physical, chemical, and biological properties. Disruptions in one property affects the others. For example, when rain washes chemical fertilizers off your lawn and into the lake, this alters the chemical properties of the lake. The altered lake chemistry can result in new conditions in the lake that may, for example, increase the growth of algae and zooplankton and help certain types of fish species prosper while others decline. Thus the changed chemistry can actually increase the biological productivity of the lake. This may not be good.

Plants, especially algae, are the foundation of the food web in a lake ecosystem. Green plants use sunlight in a process called photosynthesis to create oxygen and sugar from water and carbon dioxide. Fish and other lake organisms use the oxygen to breathe, and bacteria and fungi use it to decompose plant and animal matter on the bottom of the lake.

Lakes age just like people, only their natural life span is much longer. Over hundreds or thousands of years they fill in with plants and debris and gradually get shallower and shallower. This process of natural aging is called eutrophication, a Greek word meaning well-nourished. Humans can't stop this process, but they can work to slow or stop the negative effects of their actions on land, especially lakeshore, have on the natural process.

So remember, our actions on land can definitely speed up the aging process of our lakes, making the changes of the lakes' natural aging process happen in decades instead of hundreds and thousands of years.

Currents on the Cullens

Deaths

Gladys Englund — Lower Cullen (L96)

This and That

*Several people are still asking that the CLA Board do something about the width and depth of the channel between Middle and Lower Cullen Lakes. Reality is that the Board has looked into this matter several times through the last decades, always with the same result. The DNR will not allow any dredging of the channel or the lakebed of Lower Cullen and the channel can't be widened because both of its sides are private property. Depending on the lakes' water level, which varies throughout the open water season and from year to year, you can usually get through the channel with most watercraft. The biggest challenge is with a large pontoon. So, if you want to successfully make it through from one lake to the other, be sure to choose an appropriate watercraft for the existing conditions.

*To clarify the misconceptions of some Cullen Lakes property owners, donations for the treatment of curly leaf pondweed are only used for the spring treatment of DNR-approved areas of curly leaf pondweed. The money cannot be used to treat other aquatic vegetation (a.k.a. "weeds") or to rid the lake of mucky bottom material. If property owners would like to remove or have removed other aquatic vegetation off their shoreline, they may apply for a DNR permit to do so and pay whatever costs are involved.

Be a smart salter

from the MN Conservation Volunteer, Jan.-Feb., 2023

Using salt as a winter pavement de-icer has a hidden downside: harmful chloride pollution that ends up in Minnesota's lakes, rivers, and wetlands. Keep yourself and your guests safe from slips and falls while protecting our waters with these tips:

***Shovel early and often.** The more snow and ice you remove, the less salt you'll need.

***Sprinkle sparsely.** Leave 3 inches between salt grains.

***Go lean.** A coffee mugful is adequate for a 20-foot driveway or 10 sidewalk squares.

***Use a tool.** A handheld spreader can apply salt consistently.

***Wait for warmer weather.** When ground temperatures are below 15 degrees, it's too cold for ordinary sodium chloride to work.

***Use the right de-icer.** Calcium chloride works at much lower temperatures than sodium chloride.

***Sweep up extra salt.** If it's visible on dry pavement, it's not doing anything and will be washed into water bodies.

Don't contribute to ice litter

from an article by Moriya Rufer,
RMB Environmental Laboratories

Litter that is left on the ice or shoved down fishing holes does not just go away. It ends up sinking to the bottom of the lake or washing up on shore in the spring.

Litter at the bottom of the lake disturbs habitat for fish, aquatic insects, and water birds. Monofilament fishing line can wrap around a boat's propeller and get tangled around or ingested by fish and waterbirds. Cigarette butts contain filters made of a plastic that is slow to degrade. These plastic pieces have been found in the stomachs of fish, birds, and other creatures that mistake them for food. Plastics can take hundreds of years to break down, so any plastic litter may continue to impact habitats year after year.



Litter that floats, such as plastic bags and boards, can interfere with spring boating and recreation. This litter is not only ugly and harmful to aquatic animals, it also costs private homeowners time and money to clean up when it washes up on shore. It also costs boat owners who wreck their props and have to have them repaired or replaced.

Any kind of litter has environmental, economic and aesthetic impacts. The next time you're out enjoying a day or evening of ice fishing, remember to take your litter home with you. At the end of the season, take a garbage bag with you and clean up any debris you see lying around. Both the human and animal community will thank you.

St. Anthony Falls Laboratory, UMN Healthy Water Initiative Phase 2 Update

This Phase 2 study, conducted in Lake Minnetonka, is focused on characterizing the propeller wash produced by motorized recreational boats and their potential environmental impacts. The project team tested the propeller wash of five boats, with two being wakesurfing boats. The field work involved driving boats over water velocity sensors that were deployed on the lake bottom at two different water depths. The team also collected water samples before and after the boat passes to measure any changes in water quality. They will spend much of the winter analyzing the data and writing a report that will be released next summer. If Phase 3 funding is approved by the State Legislature, the project will expand its research on impacts of boat generated wake waves and propeller wash impacts to lakes smaller than Lake Minnetonka.

Cullen Lakes water quality report

by Ann Beaver, Water Quality Committee chair

As I mention each year, 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.

Through the 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 part of the range, and their chlorophyll *a* is also usually in the low 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, although this year it was worse than usual; and its chlorophyll *a* is usually in the high part of the range. We will have to pay special attention to the next few years' TP readings to see if this is the beginning of a trend.

Once again, this year's water testing results were fairly consistent with those of past years. The table below shows this year's data as well as the average over the last ten years. There is no data for May because the late ice out prevented volunteers from doing the testing.

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.	2022 aver.	previous 10 yr. aver.	Typical for ecosystem
Secchi (ft.)		12	8	5.5	7	8.1	8.9	8 to 15
Chl. <i>a</i> (ug/L)		5.9	2.4	16	20	11.1	10	max. of 14.5
TP (ug/L)		23	27	32	34	29	20.8	14 to 27
Middle	May	June	July	Aug.	Sept.	2021 aver.	10 yr. aver.	Typical for ecosystem
Secchi (ft.)		15	12	13.5	10.5	12.8	12.5	8 to 15
Chl. <i>a</i> (ug/L)		2.7	2.7	2.7	4.3	3.1	5.3	max. of 14.5
TP (ug/L)		10	14	16	13	13.3	14.8	14 to 27
Lower	May	June	July	Aug.	Sept.	2021 aver.	10 yr. aver.	Typical for ecosystem
Secchi (ft.)		15.5	16.5	15	16.5	15.9	12.2	8 to 15
Chl. <i>a</i> (ug/L)		2.7	10	3.7	3	4.9	5.2	max. of 14.5
TP (ug/L)		<5	13	15	14	16	11.8	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.

SWCD holds its 24th annual tree and plant sale

The Crow Wing Soil and Water Conservation District (SWCD) is offering high quality native trees, shrubs, flowers and grasses for sale. The deadline for ordering is February 25.

Native trees for sale include white pine, white spruce, American wild plum, paper birch, red oak and more. To order and for pictures and descriptions of all the trees, plants and seed mixes, visit www.cwswcd.org.

The trees and plants will be available for pickup from 8 a.m. to 5 p.m. May 11-12 at the Crow Wing County Fairgrounds in Brainerd.

Save the Date!
CLA Annual Meeting
Saturday, August 12

9:00 a.m at
Lutheran Church of the Cross,
Nisswa

CULLEN LAKES ASSOCIATION
P.O. BOX 466
NISSWA, MN 56468

To protect, preserve, and enhance the three Cullen Lakes and their environs in order to ensure the continued vitality of the lakes, high quality fish and wildlife habitat, safe and healthful family living, and the survival of these natural gifts for future generations.

CLA BOARD 2022-2023

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