

# THE CULLEN CURRENTS

Winter, 2024



## Important notice to all Cullen Lakes property owners

Areas of the aquatic invasive species curly leaf pondweed (CLP) will be treated this spring, weather conditions and DNR permitting, in all three Cullen Lakes using the DNR approved herbicide Aquathol K. This will be the 15th year since CLA began its efforts to manage nuisance areas of CLP.

***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](mailto:beaver@uslink.net)) or U.S. mail (PO Box 466, Nisswa, MN 56468) no later than April 1, 2024.***

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. If you want to be notified of the treatment date(s), please email Ann Beaver at the aforementioned address and let her know.

## CLA membership

by Carol Lindahl, Membership Committee chair

As of January 16, 2024 we have 168 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 2024 were mailed in late November to allow for those wanting to use a donation for 2023 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 2024 CLP treatment fund. The very positive response is impressive.

Here are some of the statistics as of January 16:

- \*133 property owners and family members have made a CLP donation. There are 168 dues paying CLA members so far this year, so that's an impressive 79%!
- \*66 contributed the \$250 suggested in the membership mailing.
- \*23 contributed more than the suggested \$250.
- \*Contributions have ranged from \$25 to \$550.
- \*Contributions so far total \$28,925.

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.

## Want to be a Lower Cullen loon monitor?



Our lake association is seeking a volunteer or several volunteers to monitor loons on Lower Cullen this coming spring through fall.

The task is quite easy. As an official Minnesota Department of Natural Resources loon monitor, at least once a month you count the number of loons on the lake, count the number of chicks hatched, count the number of chicks that survive and collect some nesting site data. This type of citizen science could be a fun project for you or your family.

On Lower Cullen one or two people could monitor the west and northwest portions of the lake where we know there are usually two nesting sites. One person could monitor the southeast portion of the lake where we know there is at least one nesting site. Similarly, one person could monitor the east portion of the lake where there is often at least one pair of loons attempting to nest and raise young.

Several lakeshore owners on Middle and Upper Cullen lakes have already volunteered to be monitors.

We're seeking volunteer monitors because the Cullen Lakes Association is participating in a newly created Loon Friendly Lake Registry (LFLR) program. This program is a successor to the DNR's Loon Watcher Survey, something lake association members participated in off and on for almost 40 years. The main purpose of the program is to identify management actions on the lakes that can protect loons and increase successful loon nesting and chick survival.

The DNR intends to host a training session for volunteers sometime this spring. Though specifics are still in the works, the training likely will be a webinar (so you can attend from wherever you are) and it will be offered at various dates and times. Volunteers from other lake associations will be part of the training as well.

So, if you'd like to be a volunteer please contact CLA President Ann Beaver at [beaver@uslink.net](mailto:beaver@uslink.net) or C.B. Bylander at [cb\\_bylander@hotmail.com](mailto:cb_bylander@hotmail.com).

## Sign up now for a shoreline evaluation

Now is the time to request a professional shoreline evaluation and get \$100 off the \$150 fee.

Like last year, the Cullen Lakes Association will pay \$100 of the \$150 fee for a Crow Wing County Soil and Water Conservation District expert to visit your property, identify recommended actions and write up a potential plan of action.

Last year, the first year of our shoreline grants program, about half a dozen property owners took advantage of this evaluation-and-rebate offer. If you want to participate, simply go to the Crow Wing County SWCD website at <https://www.cwswcd.org/requestanonsitevisit>. The online form is easy to use. You can request an on-site visit in no time at all. You are better off making your request sooner than later as staff can only handle about 75 evaluations for the whole county between spring and fall, and reservations for 2024 are already coming in.

The CLA initiated this grants program last year as a way to encourage shoreline restorations, rain gardens, native



plantings and other actions that can maximize water quality and minimize erosion. Program participants are under no obligation to follow through on SWCD staff

recommendations. Those who do may be eligible for government cost-sharing that will pay for up to 50 percent of your project. So, the reality is this: If you participate you get an on-site evaluation for one-third of the cost and potentially 50 percent off your construction project. It's a good deal for both you and our lakes. The association has allocated \$2,000 for site visit reimbursements in 2024. Reimbursements are paid following completion of the on-site visit.

This program is funded by former lake 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.

## Loon questions with answers by

**Natasha Bartolotta**

Stewardship & Outreach Manager at the National Loon Center in Crosslake and a Minnesota Master Naturalist Instructor

Q: This fall I saw groups of loons swimming together on our lake. What were they doing?

A: A raft is the name for a group of loons — a less common sight for a bird that spends most of the summer in a family unit. But by late summer loons start gathering in groups of five, 10 or even 20, especially on a lake with a healthy cisco population.

During the breeding season, loons are very territorial and defend their portion of the lake from intruding loons. But once they are successful in raising chicks, loons start to form “social gatherings.” Dr. Judy McIntyre, the “grandmother” of Common Loon research, first suggested that loons become more tolerant of each other after the nesting season and that group feeding facilitates cooperation among loons before migration. Dr. Jim Paruk, author of “Loon Lessons,” has also suggested that the gatherings help loons get information that will help them find a mate or territory the next year.

Biologists with the USGS recently studied the diets of loons rafting on the Whitefish Chain of Lakes in the late summer and early fall. Cisco was one of the prominent prey detected across the chain, leading to the hypothesis that loons sought cisco as a high-calorie prey prior to migration — likely a driving factor of their large gatherings on cisco refuge lakes. So, it’s very important that we maintain the water quality on these coldwater lakes — not only to help the fish population but also to help our beloved state bird prepare for its long journey south.

Q: Where do loons go in the winter?

A: The Common Loon was the first snowbird! Banded loons on the coast and migratory loon research from the USGS revealed that loons breeding in Minnesota and Wisconsin overwintered together along the Gulf and Atlantic coasts. To adapt to saltwater, loons have a salt gland that’s inactive during the summer but in the winter helps excrete the excess salt they ingest from eating saltwater fish and crustaceans.

But where exactly do Minnesota loons go? In 2015 the USGS tracked a juvenile loon born on Lower Hay Lake on the Whitefish Chain. It stopped in Iowa and Indiana on its journey south before spending the winter along Florida’s Gulf Coast. The next summer, that loon moved to the coast of North Carolina. Young loons often remain on the coastline for 2-5 years before returning north to find a breeding territory.

## Clear ice and aquatic plants

by Moriya Rufer, RMB Environmental Laboratories

Clear ice without snow on top allows sunlight to shine through the ice and be used by algae and plants for photosynthesis. This allows plants and algae to grow throughout the winter under the ice. This can be both good and bad for the lake.

It is good to have plants and algae growing under the ice, because when they photosynthesize they give off oxygen as a byproduct. This oxygen is then available for fish, aquatic insects and other aquatic animals to breathe. Since the ice cuts the lake off from the air in the winter, oxygen is harder to come by underwater unless plants and algae are producing it. Lack of oxygen under the ice is what can cause fish kills over the winter.

When clear ice can be bad is if you have curly leaf pondweed in your lake. Curly leaf pondweed is an aquatic invasive plant that is fairly wide-spread in Minnesota. It is a nuisance because it can form dense mats in spring and early summer that interfere with recreation. When it dies off in early July, it can wash up in thick piles on the shoreline and decompose on the lake bottom, providing nutrients for other aquatic plants. Curly leaf pondweed can grow through the winter if light is available, so if the ice is clear most of the winter, the curly leaf pondweed can get a good head start on growing and spreading.

*Editor’s note:* This winter the Cullen Lakes froze in late November, had a dusting of snow on the ice in the first half of December, then two inches of rain later in the month. There was no measurable snow covering the ice until early January, and then it was only a few inches. The curly leaf pondweed has had ample opportunity to get a head start on its spring growth.

### ***Currents on the Cullens***

#### ***New owners***

Jeff & Karen Steiner — Upper Cullen (U10)

#### ***Deaths***

Martha Bushey — Middle Cullen (M94)

Lois Fyle — Lower Cullen (L71)

Dennis Johnson — Lower Cullen (L41)

Jon Knochenmus — Middle Cullen (M18)

Sue Swift — Lower Cullen (L112)



## Beavers are busy on Middle Cullen

by C.B. Bylander, Education Committee chair

Beavers have been busy on the north end of Middle Cullen Lake.

They've built a large lodge at the tip of the north shore, just east of the culvert that connects to Upper Cullen.



They have felled a couple dozen trees north and south of the public access, and gnawed the heck out of others that are destined to tip over when a good wind comes a whipping.

You can see branches from previously standing trees rising from the ice in front of the lodge. These branches – a

stockpile of food – serve as a pantry of sorts. Beavers will dine on the submerged bark, twigs and soggy leaves until better vittles are available in spring.

Beavers are real lumberjacks in autumn because they must amass food for winter. If they take down trees when it is too warm, the wood could rot before the water freezes.

Conversely, if they are tardy, they may not store enough food for winter. Beavers spend most of the winter under the ice or in their lodge. So, they prefer to have their meals just a short swim away rather than having to find access to the surface and then scampering to a timbered shoreline.



I tell you this because the beavers that are doing harm now are the same rascals that will be out and about in spring. Clearly, beavers provide ecological benefits – their dams create wetlands used by herons, turtles, kingfishers and many other species – yet when you find your favorite shade tree in the prone position on your lawn their meritus countenance takes a real beating. And rightfully so. Trees that have taken decades to grow can be felled in minutes.

What to do? Here are some options.

One, wrap the base of trees with a metal cage or woven wire, preferably wire mesh a tad stiffer than chicken wire. This deterrent should be at least 30 inches tall, and 40 inches is better because we live in snow country. Beavers prefer trees within 50 feet of shore but sometimes fell trees two or three times that distance. So, if you have a tree that you'd hate to lose, you may want to protect it even if it seems an unlikely target.

Two, a more aesthetically appealing tactic – though less reliable than wire caging – is to apply an abrasive paint to the base of the tree. Typically, this means selecting a latex paint that matches the color of your tree, mixing mason sand into the paint and then painting the base up to 40 inches high. The suggested ratio is five ounces of sand per quart, which translates to 20 ounces of sand per gallon. It's best to mix small batches. If you add too much sand the sand won't stick. If you use too little sand, it won't be a toothy deterrent. If you get it right, you should be good for several years.

Three, plant conifers or juniper bushes along your shoreline. Beavers are no fan of them.

Finally, there's always the option of hiring a trapper or taking matters into your own hands. The Department of Natural Resources' Wildlife Office in Brainerd can provide you with the names of trappers who work with local governments and others to control beavers. Or you can remove beavers yourself so long as you follow certain conditions. Go to the DNR's website at [https://www.dnr.state.mn.us/livingwith\\_wildlife/beaver/index.html](https://www.dnr.state.mn.us/livingwith_wildlife/beaver/index.html) for details.

Minnesota trappers typically harvest 20,000 or more beavers a year without doing harm to the overall population. That's because beavers are quite adaptable and successful breeders. During winter, a beaver colony will often include two adults, their spring babies, and perhaps year-old beavers. This strong natural reproduction combined with modest interest in trapping (beaver trapping is not particularly lucrative) is what makes beavers a perennial nuisance or conservationist depending upon where and what they are up to.

## 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, and its chlorophyll *a* is usually in the high part of the range. 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.

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. One trend that is becoming obvious is that Lower Cullen's zebra mussels have been present long enough to be making the water quite a bit clearer. That's not all good because it allows sunlight to penetrate deeper and thus can cause more plant growth.

Upper	May	June	July	Aug.	Sept.	2023 aver.	previous 10 yr. aver.	Typical for ecosystem
Secchi (ft.)	6.5	12	13	10	10	10.3	12.6	8 to 15
Chl. <i>a</i> (ug/L)	9.6	8.5	3.7	4.8	7.5	6.8	9.9	max. of 14.5
TP (ug/L)	20	15	12	21	23	18.2	20.9	14 to 27

Middle	May	June	July	Aug.	Sept.	2023 aver.	previous 10 yr. aver.	Typical for ecosystem
Secchi (ft.)	9	14	14	14.5	13	12.9	12.3	8 to 15
Chl. <i>a</i> (ug/L)	2.1	2.1	2.7	2.1	2.7	2.3	5.3	max. of 14.5
TP (ug/L)	8	10	<5	12	16	10.2	14.9	14 to 27

Lower	May	June	July	Aug.	Sept.	2023 aver.	previous 10 yr. aver.	Typical for ecosystem
Secchi (ft.)	2	20.5	17.5	24	21.5	21.1	13	8 to 15
Chl. <i>a</i> (ug/L)	2.1	1.6	2.4	2.7	3.2	2.4	5	max. of 14.5
TP (ug/L)	8	8	<5	13	16	10	15.3	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 2024 pre-order tree and plant sale

Order online ([www.cswcd.org](http://www.cswcd.org)), in person (322 Laurel St., Suite 22, Brainerd), or by phone (218-828-6197) until February 20 or until products are sold out. No mail orders accepted.

Pick up: May 16 and 17 from 8 a.m. to 4:30 p.m., place to be determined.

For a list and descriptions of all the trees, plants and seed mixes, visit [www.cswcd.org](http://www.cswcd.org).

***Save the Date!***  
***CLA Annual Meeting***  
***Saturday, August 10***

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