THE CULLEN CURRENTS

Fall, 2022

2022 CLA Annual Meeting

Fifty plus people attended this year's Annual Meeting on Saturday, August 13. Coffee and refreshments were available throughout the meeting and various exhibits were on display.

CLA president Ann Beaver called the meeting to order at 9:00 a.m. After referring members to the minutes in the meeting booklet they received upon signing in, she asked for and received a motion and second to approve the minutes of the August 14, 2021 Annual Meeting which then passed unanimously.

Carol Lindahl reviewed her treasurer's report, which was also printed in the meeting booklet. A motion was made, seconded and passed to approve this report.

Paul Beilfuss, Nominating Committee chair, presented the slate of candidates for reelection/election to the Board for two-year terms. There was one nomination from the floor. The amended slate of candidates was elected by unanimous vote.

The by-laws regarding the fiscal year (FY) were reviewed by Ann Beaver, as a change in the FY requires approval by the membership. The Board proposed changing the FY to October 1 through September 30. A motion to do so passed unanimously.

Paul Beilfuss, Budget and Finances Committee chair, reviewed the proposed operating budget for the coming FY as contained in the meeting booklet and noted a balanced budget projection. He also thanked members for their continued strong financial support for the annual treatment of curly leaf pondweed. He then reviewed the Legacy Funds and opportunities for CLA inclusion in estate planning. A motion to approve the proposed coming FY budget passed unanimously.

Randy Steenholdt presented the Board's idea of providing further educational/informational opportunities on topics of interest to the membership. Members had received a form upon signing in on which to write topics that would be of interest to them. These forms were collected at the end of the meeting. Members indicated the best format for these opportunities would likely be Zoom or Webinar, both of which could then be archived for membership access from a CLA website link.

C.B. Bylander, Educational Committee chair, reviewed the website revamp project highlighting the format, content, layout, and access. The intent was to make it timely, relevant, and be certain content is easily accessible. He went on to illustrate the key features and content.

A drawing was held to select a dozen or so attendees to receive a CLA logo mug or glass. Mugs and glasses were also for sale after the meeting.

The meeting concluded with a very informative and engaging presentation on loons by Mike Pluimer of the National Loon Center in Crosslake. He also explained the current development underway of the National Loon Center and the programs/information it already has undertaken, as well as sharing the final project projections.

Following the adjournment of the meeting, board members met to elect officers for the coming year. The following slate of officers was elected:

President — Ann Beaver
Vice president — Debi Oliverius
Secretary — John MacGibbon
Treasurer — Carol Lindahl

Middle Cullen shoreline restoration

by Drew Farrell

If someone used the phrase shoreline management when my grandparents arrived to Middle Cullen in 1935, it would likely imply something completely different than today's meaning. For my grandparents it was about removing bullrushes and weeds to make way for fishing boats and swimmers, or removing some trees to enhance lake views. In our near-century timeframe my family's shoreline has undergone some significant transformations.

Gone are the many birch trees that lined our shoreline, succumbing to old age and birch-born disease in the late 1980s. At or around the early 1990s we also began to experience both shoreline erosion and softer ground in the main yard. At first it was easy to blame the pesky burrowing muskrats for some of it, but it became evident some additional action needed to be taken. Starting in the mid 1990s I began to plant a variety of trees close to or at the shoreline. Spruce, river birch, a smaller willow, and paper birch are some of the varieties we've chosen. Their root systems have certainly made a difference.

While the planted trees have all grown in nicely we also started adhering to a four foot buffer zone on the shoreline to allow for natural vegetation to grow in. My mother reluctantly acquiesced to keep her 2 hp weed trimmer (complete with multiple blades) from this area! We were quite surprised and pleased that over the years a basswood, maples and other trees started growing in the zone. In addition to trees are some flowers such as golden rod and various grasses.

photo by Drew Farrell

Most recently, we made the decision to put coconut fiber coils on a 40' - 50' stretch of our shoreline that's been impacted the most by erosion. These biodegradable logs made of coconut fiber are anchored in the shoreline by wood stakes. While we did consider the option of riprap (boulder and rock placement), we felt the coils option was best, as it allows for more vegetation to grow.

Our first installation was three years ago and is now completely part of the shoreline, with lake sediment settled into the decomposed coils, and many plants growing out of it. This past summer we put in another set.

Finally, as a result of the Highway 18 expansion we were able to get a several Iris plants from a friend whose property was impacted. As shoreline foliage, they bloom lovely colors of yellow and purple in the late spring, and add a nice touch to the buffer zone. All said, we've measured about 3 - 4 more feet of shoreline from when we started noticing more severe erosion in the early 2000s. Our boys and family friends who come up to visit have gotten in on the installation of the coil logs, which are easy to work with and install. We followed this Crow Wing County Shoreline Restoration video, and purchased the coconut fiber coils from Brock White in Baxter.

https://youtu.be/71q6eH0WTkQ

Coming in 2023!

At its October meeting, the CLA Board of Directors authorized the use of $2,500 of Legacy Fund money to "create, implement and promote a shoreline improvement grants program for Cullen Lakes property owners to be implemented in 2023." The Board hopes this grants program will incentivize lake-friendly shoreline restorations/developments. The money will be used to underwrite $100 of the $125 cost that property owners pay for a site visit/site plan by an environmental expert who works for the Crow Wing County Soil and Water Conservation District (SWCD).

The grants program will have several benefits, including:
*It makes a site visit and ensuing site plan very affordable.
*It puts property owners in direct contact with trusted natural resource experts.
*Property owners will get accurate and timely information about rules, contractors, best practices, costs, cost-sharing opportunities, invasive species control, etc.
*A site plan can lead to additional cost-sharing from the SWCD or other entities, thereby providing yet another saving to our property owners.
*Natural shorelines, reduced erosion, less chemical-laden runoff is good for our lakes.

Watch for more information on this grants program in the winter newsletter and on the CLA web site.

Hungry bears are on the roam

Bears have been reported all around the Cullen Lakes shorelines this fall. Just as in past years, they are serious about fattening up before hibernation and are raiding garbage containers and especially bird feeders. If you are at the lake and feeding the birds, it would be wise to bring your feeders in before dusk and put them out again in the morning. That would at least reduce the chances of them destroying your feeders while trying to get at the food, although they have been known to stop by during the day.

What is a Watershed?

by Jodi Eberhardt
www.loveyourlake.info

It doesn't matter if you live on the shores of a lake or not; your actions can have an impact on water quality because we all live in the watershed of a lake or stream and our collective actions on the land near the shore and within the watershed will determine the future quality of our waters.

A watershed is the area of land that drains to a particular waterbody. Think of a watershed as a funnel with a glass at the bottom representing a lake. Anything that falls into the funnel will find its way in to the glass at the bottom.

Now think about what happens when it rains or snow melts. Some of the water evaporates back into the atmosphere, some of it soaks down into the ground to replenish groundwater, and the rest runs off the land as stormwater. How we use the land within the watershed affects the types of sediments, nutrients, and other pollutants that can be picked up with stormwater and eventually washed into the lake. Runoff from parking lots, highways, streets, parks, lawns, farms and feedlots, forests, and wetlands all impact water quality.

The bottom line is—everyone lives in a watershed and we're all interconnected by water. A healthy lake depends on a healthy watershed. A healthy lake doesn't just happen. It comes about when shoreline property owners and others living in the watershed take steps to ensure the lake's ecological health.

Currents on the Cullens

New Owners:
Terrence Seaton, Lower Cullen (L29)
Jodi & Todd Jenson, Middle Cullen (M63)

Year end report
(fiscal year ended 9/30/22)

by Carol Lindahl, treasurer

Income	
CLP Donations	$43,595.00
Membership Dues	6,400.00
General Support Donations	2,370.00
Interest	364.56
Merchandise Sales	15.00
Grants	1,650.00
Legacy Fund donations	20,000.00
Total	**$74,394.56**
Expenses	
Administration Committee	
Annual Meeting/Supplies	$317.81
Annual Meeting Speaker	100.00
Room Use Donation	250.00
MN Lakes & Rivers Membership	200.00
LARA Membership	75.00
Soteroplos Scholarship	250.00
Sub Total	**$1,192.81**
CLP Treatment	**$35,201.85**
Water Quality Monitoring	**$624.00**
Education	
Guide/Map Update	$183.55
Newsletter Postage/Labels	543.96
Newsletter Printing	854.70
Web Site Management	1,453.84
Sub Total	**$3,036.05**
Membership	**$552.36**
Other	
Board Liability Insurance	$898.00
Misc.: Postage, PO Box	113.10
Transfer to Legacy Fund	20,000.00
Sub Total	**$21,011.10**
Total	**$61,618.17**
Current Assets	
Checking Account	$ 3,868.75
Business MM — General Fund	70,256.86
	$74,125.61
Brainerd Lakes Area Community Foundation Investment Funds	
CLA Legacy Fund	$ 66,559.45
CLA Activities Fund	$92,992.12

Editor's note: Following are the committee reports that were presented at the 2022 Annual Meeting.

Administration Committee
Debi Oliverius, chair

The Administration Committee organized the 2022 Annual Meeting in conjunction with the full Board of Directors. 260 meeting reminder cards were mailed to members in July. Mike Pluimer from the National Loon Center was contacted to speak for the educational component of the meeting. Programs were printed, refreshments and general organization of the meeting was completed.

Education Committee
C.B. Bylander, chair

The Education Committee updated and completely reorganized the Cullen Lakes Association website. The newly designed website went live in July. The redesign involved evaluating every bit of website content, then making decisions on what should stay, be removed or updated. We also identified what content didn't exist on our website but should and created or linked to that content as well.

The new website is designed to be user-friendly and helpful. To that end, from the home page you can easily get the latest newsletter, take a video tour of the Cullen Chain and view our member survey and lake management plan. The new design also includes many easy-to-use links that take you to helpful information, including:

- Fishing regulations
- Boating regulations
- Child life jacket regulations
- Aquatic plant identification
- Zoning ordinances for Nisswa, Pequot Lakes and Crow Wing County
- Shoreline, dock, riprap and other regulations
- Invasive species regulations and advice
- Curly leaf pondweed identification and answers to common questions

Also, a new "Family Histories" section has been added to the website. Currently, seven family histories are posted. These lake-and-family memories are fun to read, many with old-timey photos. We encourage anyone who would like to write their family history to do so. Just put some words together, add a photo or two and send to Association President Ann Beaver. We'll get it posted for others to enjoy.

Environmental Issues Committee
John Maguire, chair

We assume folks around the Cullens are using best shoreline practices to help keep the lakes as healthy as possible. Please find good environmental information on the CLA website including:
*CLA Lake Management Plan of 2021
*2020 Cullen Lakes Property Owners' Survey
*U of MN Best shoreline and lakescaping resources
*MN DNR Maintaining and restoring natural shorelines
*MN DNR Score Your Shore shoreline description survey
*Native plant finder
*Aquatic invasive species prevention
*Curly leaf pondweed Information
*Purple loosestrife information

In 2019, Dorothy Whitmer initiated a Gull Chain of Lakes Steward Program to protect the quality of the Gull Chain. The program explains the value of native plants, natural shorelines, caring for the land and monitoring to have a positive impact on water quality. Minnesota Lakes and River Advocates (MLR) saw value in the Lake Steward Program and is continuing to pilot the program that began last year. Thirty Minnesota lake associations have taken the Lake Steward Program training to date.

Fisheries Committee
C.B. Bylander, chair

The Fisheries Committee reviewed the Department of Natural Resources fish population assessment that was conducted during the summer of 2021 and shared this information with association members via the summer newsletter. If you missed the newsletter, you can find it on the CLA website. The committee also added links on the CLA website that take you directly to the survey information on the DNR's website.

Invasive Species Committee
Carol Lindahl and Ann Beaver, co-chairs

Curly leaf pondweed (CLP) In early 2022 co-chair Carol Lindahl filed the paperwork with the DNR to renew our Invasive Aquatic Plant Management permits for treatment of CLP in the three Cullen Lakes. She also applied for DNR grants for the treatment in all three lakes. Only Upper Cullen received a grant this year through the lottery system that is used. The grant was $1,650. Unfortunately, the DNR is still requiring a survey be done by a contractor other than the treatment company used, so the $1,000 cost of the extra survey left only $650 to be applied to the cost of the treatment. Our contractor, Clarke Aquatic Services, conducted the treatment of CLP the last full week of May. They treated 12.7 acres in Upper Cullen, 6.9 acres in Middle Cullen, and 20.3 acres in Lower Cullen. Clarke conducted a post treatment survey/assessment in mid June and found the treatments to be largely successful. Unfortunately, the very late and cool spring inhibited all aquatic plant growth and many areas that we know to be problems did not have enough CLP growth to qualify for treatment this year.

Purple loosestrife We make our annual request that you monitor your shoreline for this invasive plant. When in bloom it's beautiful, but one mature plant can produce up to 2.7 million seeds annually. So, if this invasive species is not dealt with, our shorelines can be taken over by it. There is a display on this plant at this meeting. You can also find information on the CLA and DNR web sites. *If purple loosestrife is on your shoreline, it is your responsibility to get rid of it.*

Zebra mussels This invasive species has become widespread in Lower Cullen and is establishing itself in Middle Cullen, too. Zebra mussels attach themselves to anything solid, even an aquatic plant, and their microscopic offspring can hitch a ride in any water from the lake and thus be unknowingly transported in a bait bucket or watercraft. As many people have discovered the hard way, zebra mussel shells are very sharp and can easily cut hands, feet, and legs. Do your utmost to prevent the further spread of this invasive species.

Land Development Committee
Ann Beaver, chair

This year there were two land use applications that the committee submitted comments on. The request before the Nisswa planning commission was to subdivide a parcel at the west end of Lower Cullen with over 900 feet of shoreline into nine individual residential lots. The request met all the requirements of the Nisswa land use ordinance, so we had no reason to oppose it. We did, however, submit a letter with several suggestions for the developer, since the parcel is separated from the lake by Lower Cullen Road and the Paul Bunyan Trail and has a steep shoreline along a very shallow and heavily vegetated part of the lake. The request was approved.

The second application was before the Crow Wing County board of adjustment. It was for an after-the-fact variance to allow for a brick grill structure within the setback from the ordinary high waterline (OHW) of Middle Cullen Lake. We objected to the request, as we do for almost all after-the-fact variances. It is the responsibility of all shoreline property owners to ensure their land use projects follow the requirements of the land use ordinance of the jurisdiction in which the property is located. This application was approved with several conditions that required other existing non conforming structures to be moved or resized as well as the implementation of a stormwater management plan by December 1, 2022.

Membership Committee
Carol Lindahl, chair

CLA membership currently stands at 259. This includes 240 current property owners, 12 associate members, and 7 complimentary memberships (new owners). We are grateful for the on-going support and participation of our members.

Nominating Committee
Paul Beilfuss, chair

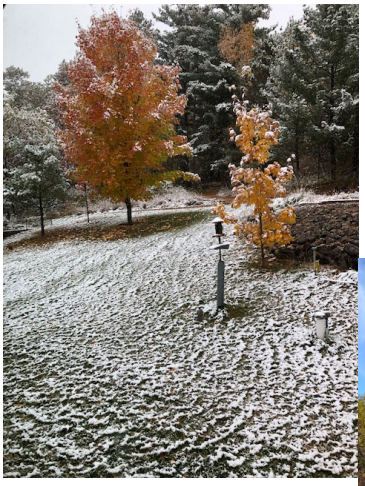
It is a pleasure to nominate the following current Board members for election to regular two-year terms during the August 13 Annual Meeting: Ann Beaver, C.B. Bylander, Carol Lindahl, John MacGibbon, and Denny Opsahl. In addition to the incumbents, Peter Miller, Lower Cullen, is nominated for election to the Board for a regular two-year term. It is recommended that a unanimous ballot be cast for the aforementioned individuals.

The Board elects its officers immediately following the Annual Meeting.

Water Quality Committee
Ann Beaver, chair

The results of our water sampling since the last annual membership meeting show the water quality of the Cullen Lakes continues to fall within the normal range for lakes in our ecoregion. Monthly results vary from year to year due to weather conditions, but the overall condition of the Cullen Lakes remains fairly consistent. This places them in the mesotrophic range, which means they are generally clear but have occasional and temporary algae and aquatic plant problems. A more detailed report will be included in the winter 2023 newsletter.

Fall in Minnesota lake country



October 14, 2022
9:15 a.m.

October 14, 2022
3:45 p.m.

Same trees and yard, just a different angle.

FY 2023 Operating budget

Paul Beilfuss, Budget & Finances Committee chair

The following budget was approved by the membership at the August 14 Annual Meeting.

Income	
Membership Dues	$ 6,000
Donations (Curly-leaf Pondweed)	40,000
Interest income	300
Total Estimated Income	**$46,300**
Expenditures	
Administration Committee	
Annual Meeting:	
Supplies, Postage, Printing	$250
Food	75
Board Meeting Room Donation	250
LARA Membership	75
Soteroplos Scholarship	250
MN Lakes & Rivers Advocates Membership	200
Guest Speaker	300
	$1,400
Water Quality Committee	
Water Quality Monitoring	**$750**
Education Committee	
Map/Guide Update	$ 200
Newsletter Postage	600
Newsletter Printing	1,000
Web Site Management	425
	$2,225
Aquatic Invasive Species Committee	
AIS Annual Control (Clarke)	**$40,000**
Membership Committee	
Supplies and Printing	$250
Postage	350
New Owner Packets	60
	$660
Other	
Board Liability Insurance	$900
Miscellaneous	225
	$1,125
Total Expenditures	**$46,160**
FY 2023 Budget Balance	**$140**

(Estimated income less estimated expenditures)

CLA Committees — 2022-2023

Administration
Debi Oliverius — chair
Paul Beilfuss
Joel Knutson
John MacGibbon

Budget & Finances
Paul Beilfuss — chair
Lora Graumann
Joel Knutson
Carol Lindahl
Pete Miller

Education
C.B. Bylander — chair
Ann Beaver
John MacGibbon
Debi Oliverius
Randy Steenholdt

Environmental Issues
John Maguire — chair
Lora Graumann
Patty Hicks
Dan Hurley
Denny Opsahl

Fisheries
C.B. Bylander — chair
Joel Knutson
Pete Miller

Invasive Species
Ann Beaver — co-chair
Carol Lindahl — co-chair
C.B. Bylander
John Maguire
Debi Oliverius
Denny Opsahl

Lake Management Planning
president — chair
all committee chairs

Land Development
Ann Beaver — chair
Patty Hicks
Julie Johnson
Pete Miller
Randy Steenholdt

Membership
Carol Lindahl — chair
Ann Beaver

Water Quality
Ann Beaver — chair
Eric & Denise Whitson
Debi Oliverius
Denny Opsahl

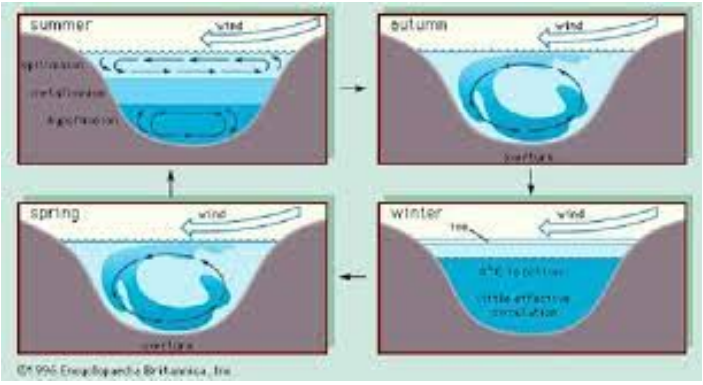
Lake turnover — how and why does it happen?

from a former DNR series of lake related articles

Lake waters turn over in the fall and spring. So, what does that mean and why is it important? The reasons for the turnover are water density and air temperature. Water is most dense (heaviest) at 39 degrees F. As the water temperature increases or decreases from 39 degrees F. it becomes increasingly less dense (lighter).

In summer and winter, the water in most lakes is stratified, with less dense water at the surface and more dense water near the bottom. Because of the difference in density, the water does not mix well between these layers. But in late summer and autumn, air temperatures cool the surface water, causing its density to increase. The heavier water sinks, forcing the lighter, less dense water to the surface, until the water temperature at all depths reaches approximately 39 degrees F. Because there is very little difference in density at this stage, the waters are easily mixed by the wind. In the spring, the process reverses itself.

So why is this important? Over the summer, surface waters are warmed by the sun. Winds and storms cause some mixing of water, but because of the density-temperature relationship, in many lakes the middle layer acts as a barrier to any mixing of the deeper waters. By the end of summer, the deep water becomes quite depleted of oxygen because no mixing has taken place.



As the days get shorter and cooler, water cools and sinks. When the majority of the water in the lake reaches an approximately uniform temperature, storms and winds begin to overturn and mix all of the water in the lake.

The deep water contains decaying matter and sulfurous gases. When it reaches the surface, it produces an odor that indicates the mixing has begun. Eventually the turnover mixes the entire lake, replenishing the deep waters with life-giving oxygen and cleansing the sulfurous fumes from the water. This allows fish to return to the depths where they will spend the winter months.

When and how do lakes freeze over?

by Moriya Rufer
RMB Environmental Laboratories

Now that it's too cold to swim in our lakes, we can look forward to the next great lake season – winter sports! Bring on the cold and snow so we can ski, skate, snowshoe, ice fish and snowmobile.

As you all know, water freezes at 32 degrees Fahrenheit. That doesn't mean, however, when the air temp reaches 32 the lakes freeze. Water is a great insulator and good at holding heat, which is why the lake temperature doesn't fluctuate much day to day like the air does. Therefore, below freezing temperatures are needed for a week or more to form ice on a large lake.

Water is a unique substance in that the solid form (ice) is lighter than the liquid form (water). For most substances, the solid form is heavier. Our lives would be much different if ice sank instead of floated. If ice sank, lakes would freeze from the bottom up and the fish and other aquatic creatures wouldn't survive the winter!

Since water is good at holding heat, the more water there is, the more heat it will hold. This is why large deep lakes take longer to freeze and melt than small shallow lakes. Water freezes from the perimeter of the lake to the center. It happens this way because the water is shallower at the lake's edge so it cools off faster. Water is most dense at 39 degrees Fahrenheit, so when it gets colder than that, the cold, lighter water floats on top of the lake. This top layer of water interfaces with the cold air, which cools the top of the lake even further until it freezes. Windy days cool the lake surface off faster because the cold air moving over the water cools the lake faster.

Since ice-in does not occur in one day like ice-out usually does, it is hard to keep accurate records. The ice can form around the edge of the lake, and then a warm sunny day can come along and melt it again. There are historical records for many lakes in Minnesota held by local agencies. It’s also a fun thing to keep track of yourself.