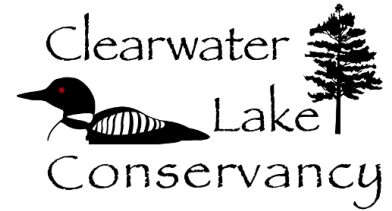




***Annual Homeowner's Meeting***  
***25 May 2024***

# Agenda

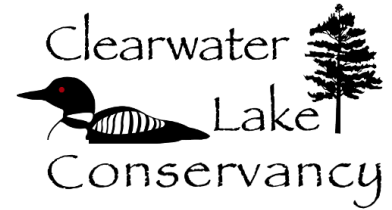
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- Welcome – *families introduce themselves*
- Clearwater Forest Camp Update
  - Camp Plans / Summer Events / Etc.
  - Donation Opportunities
  - Lake Support – Scholarship & Matching Grant
  - Volunteer Project Initiative
- Treasurer's Report
- Lake Management Initiatives
  - 2024 - Key Priorities
  - Lake water quality & levels
  - Aquatic plants & invasives review
  - What homeowners can do
- Fisheries Update
- Questions
- Adjourn

# Board Members - Volunteer

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- Paul Bergren – Co-Chair
- Ron Green – Co-Chair
- Barb Schmitz - Treasurer and Secretary
- Charles Lick - Lake Management Committee Chair
- Lance Baumann
- Gary Perkins
- Kathy Peterson
- Kevin Smith – Fisheries Committee Chair
- Katie Johnson

# Additional Volunteers

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- Loon Nesting – Jeff Zernov and family
- Rock Pile Buoys – Cisco Gonzales and Jeff Larsen
- Secchi disk readings – Julie Guth

**T-H-A-N-K Y-O-U !!!**



# Camp slides to be updated

## Clearwater Forest Camp & Retreat Center

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Erin J. Anderson,  
Executive Director

### Mission:

Clearwater Forest is a ministry of Christ called to provide **faith-building Christian programming**, nurture an **active Christian community**, and be a faithful steward of God's creation.

At Clearwater Forest we aim to change lives in God's woods & waters.



# Clearwater's Core Values:

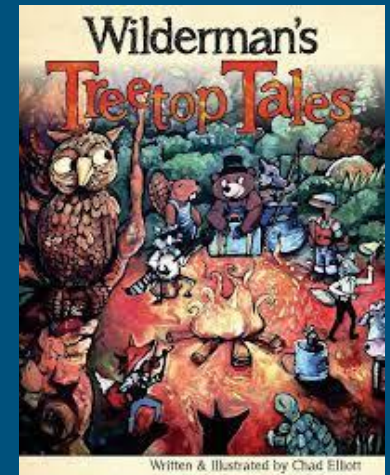
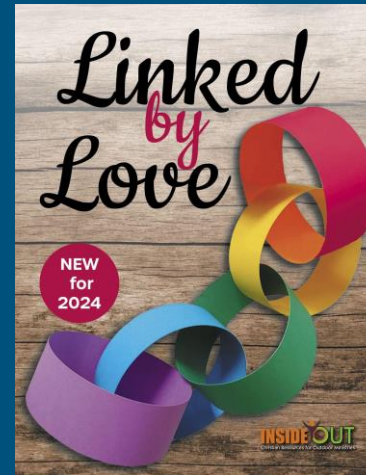
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- Leadership Development
- Experiencing God intentionally
- Acceptance of others through intentional Christian community
- Faith formation
- Appreciation of God's creation around them



# Clearwater's Programs: Summer Camp

- Summer Camp for All Ages
  - Discovery Campers (gr. 3-6)
  - Adventure Campers (gr. 6-9)
  - Senior High Camper (gr. 9-12)
- Grands Camp
- Camp Create 2024: Treetop Tales
  - Chad Elliott - songwriter, author, artist, educator
  - Creative Arts traditions: puppets, pottery, stained glass
  - Acting and Drama



# Clearwater's Programs: Day Camp

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Clearwater is hoping to grow our Day Camp Program this summer!

For kids who have completed grades K-5.





# Clearwater's Programs: Retreats

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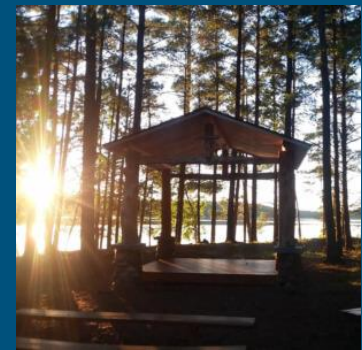
## Retreats led by Clearwater Staff:

- Snow Camp
- Women's Chrysalis
- Couples' Retreat: *Dare to Date...Your Spouse!*
- Seeds of Service



## Retreats can be led by non-Clearwater Staff:

- We can provide the accommodations
- You can provide everything else!



# Current Goals

---

- We have set goals for each Board Team:
  - ***Buildings & Property:*** Complete dump station and roofing project
  - ***Program:***
    - Successful host new retreats: Fall Youth Retreat, Snow Camp, Couple's Retreat, Seeds of Service
    - Hosted **300** campers during Summer 2023, host **493** campers Summer 2024
  - ***Funds Development:*** Host successful community event on July 13th. You are invited!

# Camp Scholarship Matching Funds Program

**Dec 31  
Deadline**

**Help us send 6 kids to camp and give them life-long memories.**

Clearwater Lake Conservancy Board has approved funding for up to 3 scholarships (\$1,980) to contribute to the health and sustainability of the Camp – the #1 reason the Lake is as unique as it is.

**Lake Homeowners** – requesting matching funds for additional 3 scholarships. One week of camp is \$660. Donations would go to the Clearwater Forest Scholarship Fund (look for link below found on camp website).

[Donate to Scholarship Fund](#)

Deadline for match is 12/31. Thank you for your generosity!

# Camp Volunteer Projects

---

Scheduled dates for Lake homeowners volunteer projects at the Camp.

- Spring – ½ day
- June/July – adults & kids 2-3 hour grounds clean-up project followed by Ice Cream Social!
- Aug/Sept – ½ day

Details to follow.



# Treasurer's Report – Barb Schmitz



# Treasurer's Report

## as of May 14, 2024



<b>2023 Actual &amp; 2024 Budget</b>					
<i>Period - June to May</i>	<b>Actual</b>		<b>Budget</b>		<b>Comments</b>
		<u>June '23-May '24</u>		<u>June '24-May '25</u>	
<b>Beginning Cash Balance</b>		<b>\$54,513</b>		<b>\$35,087</b>	
<b>Funding Sources</b>					
Donations - Homeowners	\$	6,750	\$	10,000	estimate
Grants					
> Crow Wing Country - Eurasian Milfoil	\$	3,500	\$	3,500	
<b>Total Funding Sources</b>	<b>\$</b>	<b>10,250</b>	<b>\$</b>	<b>13,500</b>	
<b>Expenses</b>					
Milfoil Management					
Survey - Freshwater Scientific Services	\$	1,350	\$	1,400	
Treatment, Dive Guys	\$	2,400			
Survey and 2 Treatments, PLM	\$	20,034	\$	12,000	<- assumes treatment needed in new areas
Water Levels					
Nokasippi Creek - Inspections and Clearing, Beaver Control			\$	2,500	< - range \$2,070 to \$2760
Monitoring					
Boat Inspections Public Access - Extra Hours	\$	2,393	\$	1,035	
Water Quality testing			\$	500	
Vegetation Survey			\$	2,900	
Association Activities					
Annual Meeting cost -food and supplies	\$	414	\$	-	< - '23 and '24 mtgs in Actuals
Donation to Camp for July Event	\$	1,000	\$	1,000	
Clearwater Forest Camp Scholarship - 3 matching donations	\$	1,980	\$	2,000	
Administrative Costs					
Website Renewal Fee					
Annual Filing Fee - MN Attorney General	\$	25	\$	25	
Board of Directors Conference Calls - telecom	\$	80	\$	85	
<b>Total Expenses</b>		<b>\$29,676</b>	<b>\$</b>	<b>23,445</b>	
<b>Ending Cash Balance</b>		<b>\$35,087</b>	<b>\$</b>	<b>25,142</b>	
<b>Cash Reserve Target</b>		<b>\$50,000</b>	<b>\$</b>	<b>50,000</b>	
> <b>Gap from target</b>	<b>\$</b>	<b>(14,913)</b>	<b>\$</b>	<b>(24,858)</b>	

# Treasurer's Report

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- Annual Dues for voting members of Clearwater Lake Conservancy, Inc. are \$50.00 per property.
- Suggested annual donation for environmental expenses is \$300.00.
- It is important and expected that homeowners donate annually to ensure that expenses/actions approved by the Board of Directors and Association members can be funded.
- Send checks to Barb Schmitz, 2643 New Century Pl. E, Maplewood, MN 55119 or click the “DONATE” button (PayPal) on the website: [clearwaterlakemn.org](http://clearwaterlakemn.org)

## Reserve

Board would like to designate \$50,000 as a reserve for any major environmental expenses needed to support the health of the lake. This reserve would be used only for significant expenses related to treating invasive species and any future expenses for outside services to help manage future issues for Clearwater Lake and the Nokasippi down to the culvert.

# Annual Boat Parade

- Saturday, July 6th
- 1 p.m. start;  
meet at Loon Point
- Two winners
  - Most Patriotic
  - Most Creative
- Win Prizes!
  - Trophies
  - Gift cards



2024 was the 29<sup>th</sup> consecutive year for Jeff and Paulette Zernov (and other helpers through the years) to place Artificial Loon Nesting Platforms (ANP) on Clearwater Lake. We have provided nesting habitat for over 356-eggs and hundreds of chicks.

Our efforts are part of the **Minnesota Loon Restoration Project** in conjunction with the Minnesota DNR.

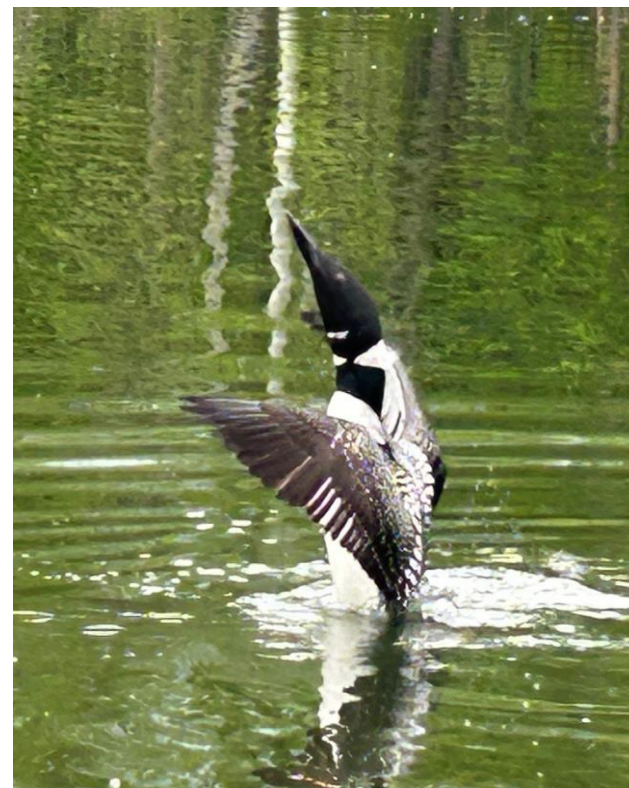




# Don't do a tail-dance and take our Clearwater loon nesting success for granted

Loon populations are declining in northern Wisconsin and Minnesota at an alarming rate.

Some scientists estimate the Minnesota loon population will drop 50% by the year 2050.



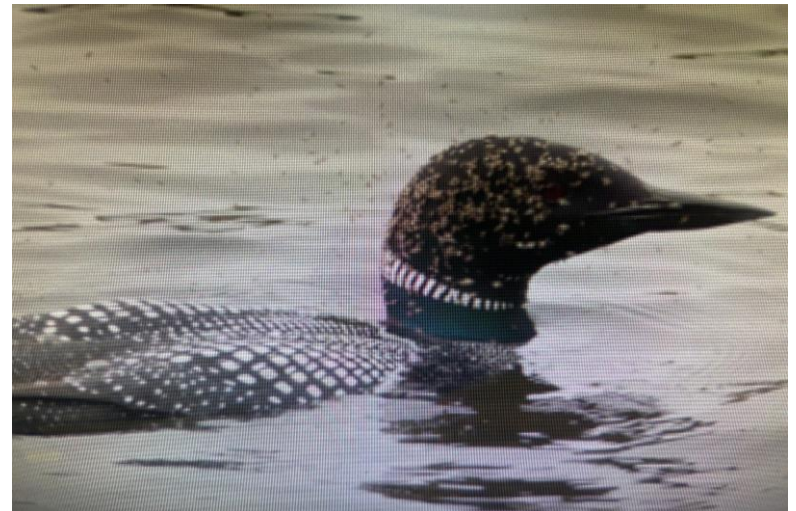


# Data on loon decline

- The loon population on one Ontario lake has been declining 6.3% per year for the past 40 years.
- The rest of Canada has seen a 1.4% annual decline since 1990 and is down 20%.
- Northern WI has seen a loon decline of 22% in the past 25 years.
- The body weight of MN loons has declined each year since 1995.
- In Crow Wing County the return rate of nesting adults should be 87%-88% but recent data shows it's in the low 80's and declining.
- Because of the long life span of loons, it takes 5-10 years for a real threat in the ecosystem to manifest in nature.

## Threats to Minnesota loons in 2024 and what we can/are doing about it

- **Water Clarity:** The single greatest risk to loons is water clarity. Loons burn more calories catching prey in dirty water resulting in fewer and smaller chicks, smaller and fewer eggs, and sterile eggs. Every Clearwater property owner needs to fully understand the run-off and nutrient load of their property and follow County ordinances on hill side and shore line projects. The lake elevation must be lowered and maintained!
- **Black Flies:** In 2014, 70% of loon nests in Wisconsin were abandoned due to a Black fly infestation. Black flies are a big problem on the Whitefish chain and first appeared on Clearwater this spring. Jeff is working with the USGS and has proposed to Kevin Kenow five R&D projects he'd like to test next spring for dealing with Black flies on loon nests.



# Threats continued.....

**Lead fishing lures:** up to 20% of loon mortality in the Midwest is the result of lead poisoning. For over 10-years Jeff Zernov has been researching a new metallurgy formula to eliminate lead from lures. This year launched his new metallurgy formula.



## ***National Loon Center***

*The National Loon Center is joining a first-of-its-kind coalition to take the Loons & Lakes Legacy Pledge, a commitment to lead free angling and leaving a legacy that protects our beloved wildlife and shared waters for generations. The National Loon Center is now working in concert with tackle designer, **Jeff Zernov**, and Lindy Fishing Tackle.*

**Acid-Mercury-Climate hypothesis theory:** A 2020 theory is now being researched by the scientific community. Jeff is currently working with the Minnesota Pollution Control Agency (MPCA) to identify a possible food-chain link between mercury, crawfish, smallmouth bass, walleyes and loons. MPCA is trying to get funding to study Jeff's theory.

**Clearwater loon chick threats:** Our 29-years of study has shown the three greatest risks to Clearwater loon chicks are 1) Eagles, 2) June storms shortly after hatching, and 3) water skiers.

# Nests at rest awaiting another try....

In the loon nesting challenge, one only has two-weeks to get everything perfect. If not, you wait 50-weeks to try again.



# Ice Out History



Year	Ice out	Freeze up	Loons back	Days of Ice cover
1998	6-Apr	20-Dec latest freeze up-tie		
1999	13-Apr	12-Dec		114
2000	30-Mar	1-Dec	10-Apr	109
2001	26-Apr	20-Dec latest freeze up-tie	21-Apr	146
2002	17-Apr	26-Nov	17-Apr	118
2003	15-Apr	23-Nov	14-Apr	140
2004	17-Apr	14-Dec	16-Apr	145
2005	12-Apr	31-Nov	11-Apr	119
2006	9-Apr	1-Dec	7-Apr	130
2007	22-Apr	1-Dec	23-Apr	142
2008	2-May	25-Nov	25-Apr	152
2009	21-Apr	6-Dec		147
2010	2-Apr	27-Nov		117
2011	24-Apr	5-Dec	21-Apr	148
2012	26-Mar	9-Dec		111
2013	12-May latest ice out	24-Nov	8-May	155
2014	29-Apr	19-Nov earliest freeze up	27-Apr	156
2015	10-Apr	19-Dec	7-Apr	142
2016	2-Apr	10-Dec		104
2017	3-Apr	22-Nov	2-Apr	114
2018	4-May	20-Nov	28-Apr	164-most
2019	24-Apr	1-Dec	23-Apr	155
2020	17-Apr	30-Nov	16-Apr	137
2021	4-Apr	7-Dec	2-Apr	124
2022	3-May	1-Dec	2-May	147
2023	3-May	10-Dec	30-Apr	152
2024	3-March earliest ice out			94-least
				124-avg

Nov 19 earliest freeze up,  
Dec 20 latest freeze up.  
Delta of 31 days.

March 3, 2024 earliest ice out.

Least number of days of ice cover to most days of ice cover. Delta of 70 days.

Ice cover calculation based on date of freeze-up to date of ice-off the following year. Reported as year ice goes off.

Data provided by Arnie Olsen, Al Kittock and Jeff Zernov



# Lake Management

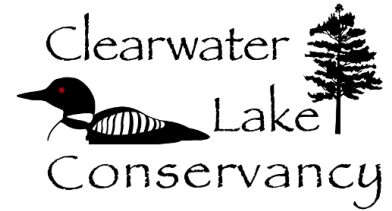
**Kathy Peterson**

**Charlie Lick**

**Paul Bergren**

# Lake Management Plan

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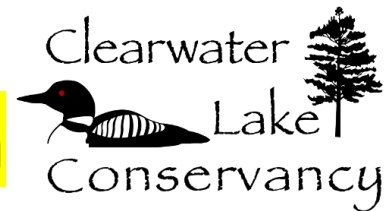


## On-Going Goals

1. Protect and improve fish and wildlife habitat
2. Minimize impact of aquatic invasive species (AIS)
3. Protect and preserve native aquatic vegetation
4. Ensure lake water quality is adequate for recreation, fishing, and wildlife

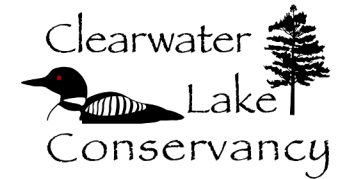
Continue working with subject matter experts supporting our Lake Management Plan (DNR, County, Consultants, etc.).

# Lake Health Calendar – 2024 Plan



Action Item	Purpose	Frequency	Timing	Owner	Cost
Nokasippi River Headwaters Management	Keep outbound water flowing by monitoring and requesting DNR or County input on best practices for beaver dam management, culvert clearing, etc.	Monthly	Year-round	Contractor	\$70/visit; debris removal \$20-50/visit
Loon Nesting	Provide safe habitat for loon nesting period	Annual	April - June	Lake volunteer	\$0
Secchi depth readings	Record water clarity / depth	Annual	May - Sept	Lake volunteers	\$0
Water Quality	3rd party lab testing; chemical composition and temperature readings; assess issues; trend analysis	5 years, 2011, 2016, 2021, 2026 or more frequently if needed	2024 monthly May - Sept	A.W. Research Lab, Brainer	\$289
Fisheries Catch Summary	Trend analysis	6-year survey cycle	2025, 2031, etc.	DNR	\$0
Aquatic Vegetation	Aquatic plant mapping	10 years; 1995, 2015	2025, 2035, etc.	DNR	\$0
	Identify aquatic plants, % frequency, distribution and density throughout lake.	3 years cycle, 2018, 2021	2024 – now 2025, 2027, etc.	RMB Labs, Detroit Lakes	\$2,900
Invasives/Milfoil Survey	Identify extent of invasive vegetation	Annual	Aug	Freshwater Scientific	\$1,450
Invasive Vegetation Treatment	Treat invasive vegetation	Annual or selective (when needed)	Sept/Oct		\$5-40k based on treatment area
Shore Survey	Lakeshore habitat identifying sensitive lakeshore and shoreland	2011, 2015	TBD	DNR	\$0
	Shoreline erosion; lake nutrient levels; septic leakage	2009 survey; 5 years?	TBD	TBD	TBD

# Lake Health - Clearwater



## DEPARTMENT OF NATURAL RESOURCES Watershed Health Assessment Framework: Lakes

<https://arcgis.dnr.state.mn.us/ewr/whaflakes/lakedetails/18003800/topic/summary>

Lake Health Score (▲): 70

Lake Health Grade: B

Lake Health Score Major Watershed Mean (●): 64

Lake Health Score Major Watershed Min/Max: 40/85



### Water Quality

Phosphorus: At or Above Goal

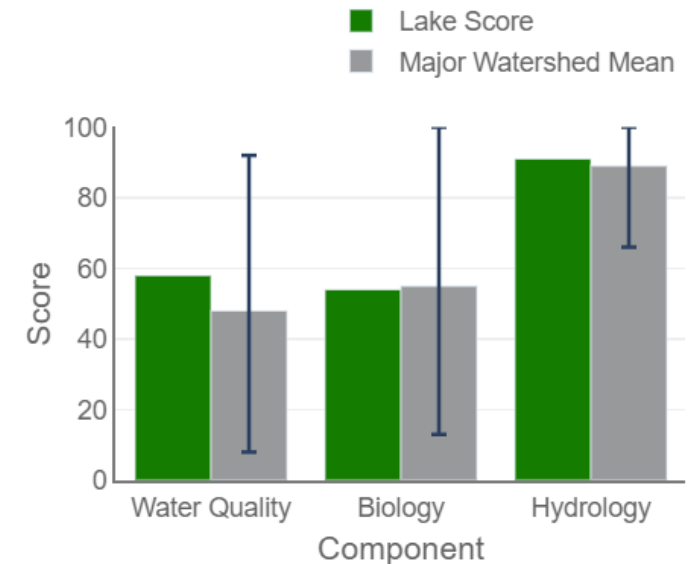
Water Clarity: At or Above Goal

### Biology

Fish Community Quality: At or Above Threshold

Lake Plant Community Quality: At or Above Threshold

Lake Health Component Scores



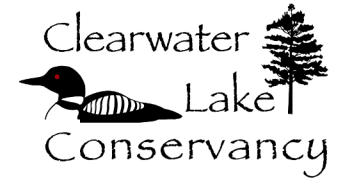
### Neighbor lake scores:

Bay: 70; Eagle: 75; Nokay: 65

Crooked & Hanks: 75; Portage: 60

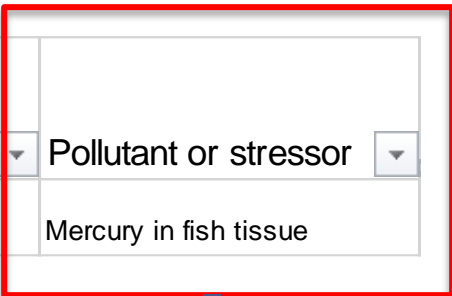
Serpent: 60; Farm Is: 60; Cedar: 75

# Lake Health - Clearwater



Only lake impairment

Water body name	Year added to List	AUID	County	Affected designated use	Pollutant or stressor
Clearwater	2010	<a href="#">18-0038-00</a>	Crow Wing	Aquatic Consumption	Mercury in fish tissue



Mercury in fish tissue

Source:

<https://www.pca.state.mn.us/air-water-land-climate/minnesotas-impaired-waters-list>



# Fish Eating Guide – MN Dept of Health

<https://www.health.state.mn.us/>

**Pregnant Women or those that could become pregnant; Children under age 15**

**Women not planning to become pregnant; Children over age 15; Men**



**Pregnant Women, Women Who Could Become Pregnant, and Children under Age 15  
STATEWIDE SAFE-EATING GUIDELINES**

**Every week eat some of these fish!**

<p><b>2 SERVINGS</b> of any of these fish</p> <p><i>Purchased fish</i></p> <ul style="list-style-type: none"> <li>▪ Catfish (farm-raised)</li> <li>▪ Cod</li> <li>▪ Herring ♥</li> <li>▪ Mackerel (Atlantic) ♥</li> <li>▪ Pollock</li> <li>▪ Salmon (Atlantic or Pacific; not Great Lakes) ♥</li> <li>▪ Sardines ♥</li> <li>▪ Shellfish (such as crab, oysters, scallops, shrimp)</li> <li>▪ Tilapia</li> <li>▪ Fish sticks and sandwiches</li> </ul> <p>♥ Higher in Omega-3 fatty acids</p>	OR	<p><b>1 SERVING</b> of any of these fish</p> <p><i>Purchased fish</i></p> <ul style="list-style-type: none"> <li>▪ Canned "light" tuna</li> <li>▪ Halibut</li> </ul> <p><i>Minnesota caught fish</i></p> <ul style="list-style-type: none"> <li>▪ Bullhead</li> <li>▪ Crappie</li> <li>▪ Inland trout (brook, brown, rainbow)</li> <li>▪ Lake herring (Cisco)</li> <li>▪ Lake whitefish</li> <li>▪ Sunfish (such as Bluegill)</li> <li>▪ Yellow perch</li> </ul>
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**And, 1 serving each month of any of these fish**

<p><i>Purchased fish</i></p> <ul style="list-style-type: none"> <li>▪ Canned "white" (albacore) tuna</li> <li>▪ Chilean seabass</li> <li>▪ Grouper</li> <li>▪ Marlin</li> <li>▪ Tuna (steak or fillet)</li> </ul>	<p><i>Minnesota caught fish</i></p> <ul style="list-style-type: none"> <li>▪ Bass</li> <li>▪ Catfish</li> <li>▪ Lake Trout</li> <li>▪ Northern pike</li> <li>▪ Walleye</li> <li>▪ Other Minnesota species not listed</li> </ul>
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**DO NOT EAT these fish!**

<p><i>Purchased fish</i></p> <ul style="list-style-type: none"> <li>▪ Swordfish</li> <li>▪ Shark</li> </ul>	<p><i>Minnesota caught fish</i></p> <ul style="list-style-type: none"> <li>▪ King mackerel</li> <li>▪ Tilefish</li> <li>▪ Muskellunge</li> </ul>
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**Men, Boys Age 15 and Over, and Women Not Planning to Become Pregnant  
STATEWIDE SAFE-EATING GUIDELINES**

**Every week eat some of these fish!**

<p><b>4 SERVINGS per week*</b> of these fish</p> <p><i>Minnesota caught fish</i></p> <ul style="list-style-type: none"> <li>▪ Bullhead</li> <li>▪ Crappie</li> <li>▪ Inland trout (brook, brown, rainbow)</li> <li>▪ Lake Herring (Cisco)</li> <li>▪ Lake whitefish</li> <li>▪ Sunfish (such as Bluegill)</li> <li>▪ Yellow perch</li> </ul>	OR	<p><b>1 SERVING</b> of any of these fish</p> <p><i>Minnesota caught fish</i></p> <ul style="list-style-type: none"> <li>▪ Bass</li> <li>▪ Catfish</li> <li>▪ Northern pike</li> <li>▪ Walleye</li> <li>▪ Other Minnesota species not listed</li> </ul>
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\*previously unrestricted

**And, 1 SERVING each month of any of these fish**

*Purchased fish*

- Swordfish
- Shark
- King mackerel
- Tilefish

# Boat Launch / Dam / Nokasippi Monitoring & Clearing

- Cleared boulders at boat launch – protecting props
- Renewed annual DNR permit to move obstructions
- New - outsourcing river inspections and clearing obstructions



Ordinary high-water level is about 4.6 gage

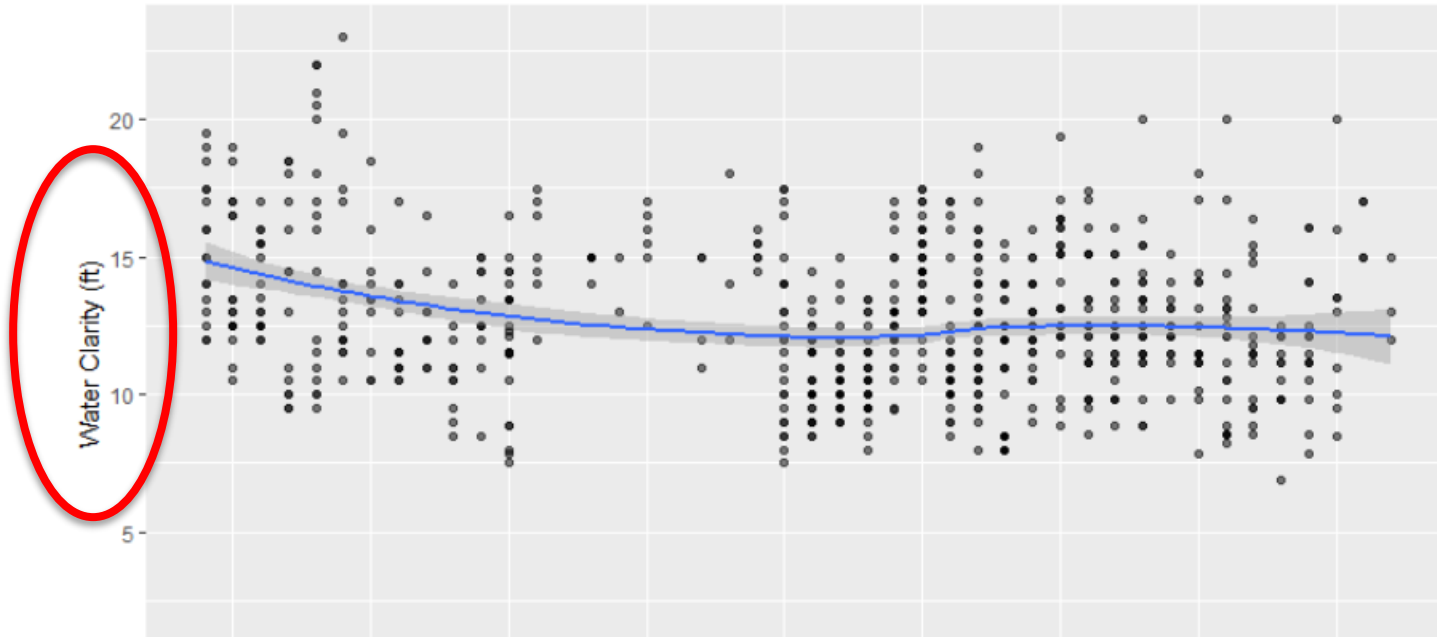
83-year average water level is 3.57 on the gage

# Water Clarity – Secchi disk readings YOY Improvement

**2023** Secchi readings - July: 14.5 ft.; Aug: 13.5 ft; Sept: 16 ft.

**2022** Secchi readings - July: 12 ft.; Aug: 13 ft; Sept: 15 ft.

*Thank you,  
Julie Guth!*



● Water clarity observation

■ 95% confidence interval

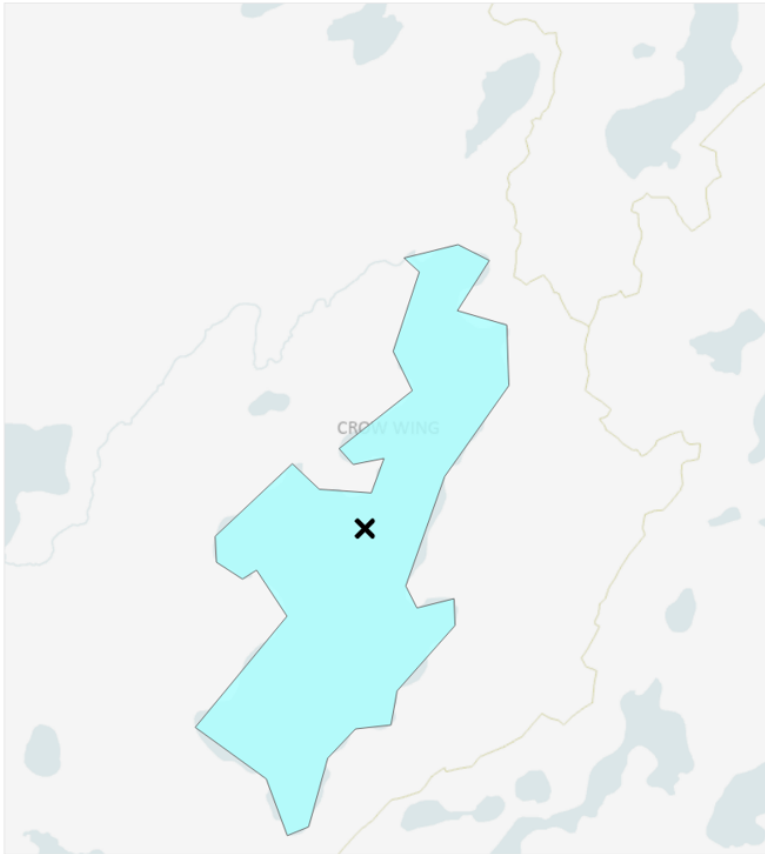
— Trend line

# Water Clarity – MPCA

## Water clarity trend map (through 2022)

Start by narrowing down the data by county, watershed, WID, or trends. Hover over lakes to see more information. Zoom in to see results in more detail.

Table of Contents



### Pick which clarity trends

#### to view:

- Degrading
- Improving
- Insufficient Data
- No Change
- No Trend

### Pick by County

Crow Wing

### Pick by Watershed

All

### Pick by Individual Lake (WID)

18-0038-00

Trends	
No Change	X 1 lakes

*Water clarity trends use all available lake secchi depth data from the Minnesota Pollution Control Agency's water quality database. The majority of data were collected by citizen scientists. The lake trend analysis was performed with a seasonal Mann Kendall test. Lake water clarity must change more than half a foot per decade to be considered a detectable change, or trend.*

<https://webapp.pca.state.mn.us/vmap/stations/18-0038-00-trends>

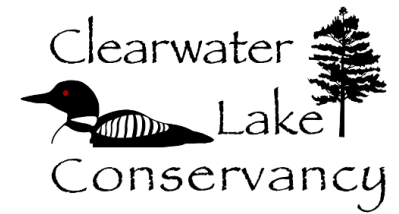
## Trend analysis

**result:** For years 1979 to 2022 there is evidence of no change in water clarity at this lake.

For the most recent year of the analysis, median water clarity was 2.90 feet higher than the watershed median.

# Aquatic Invasive Species (AIS) Strategy

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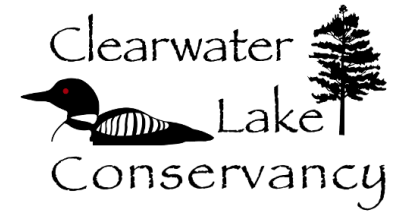


- Goal is to reduce its impact and prevent its spread; prefer native aquatic plants vs invasive plants
- Follow science, guidelines and guidance from:
  - MN DNR
  - MN Aquatic Invasive Species Research Center (MAISRC) at the U of M
  - Crow Wing County
  - 3<sup>rd</sup> party subject matter experts (consultants)
- Annual survey for invasives (mid to late July unless we see early large growth like last year)
  - Montana State University professor is studying genomes of EWM species. Potential goal: matching EWM genome to best herbicide for that genome.



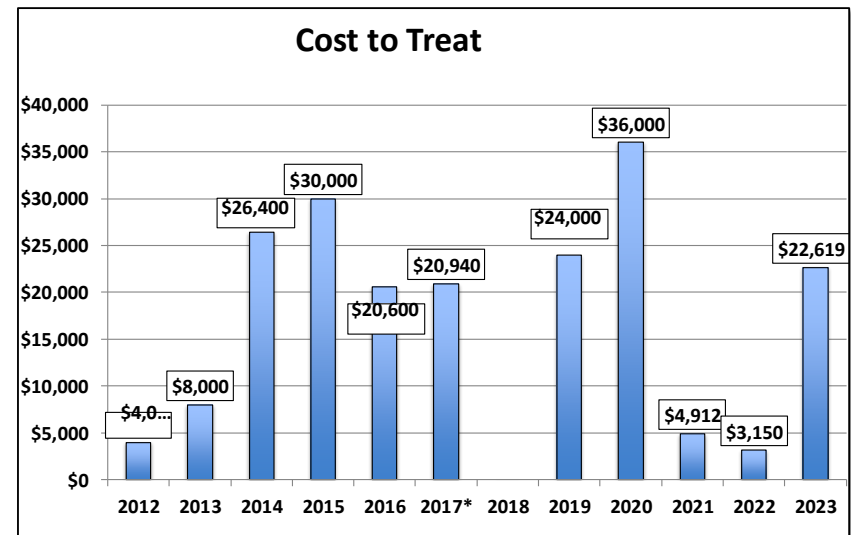
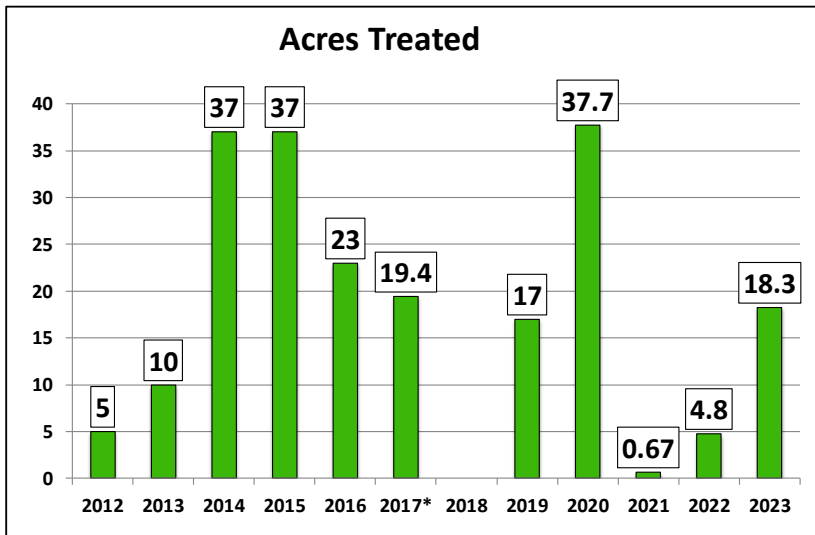
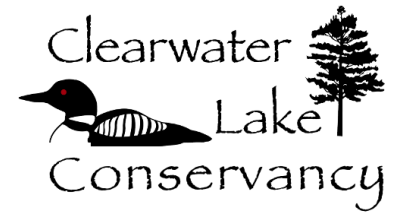
# EWM Summary 2023

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- Heavy infestation early
- June survey
- July hand-pulling of smaller areas by Dive Guys – determined hand-pulling not effective for variety of reasons
- August herbicide treatment
- Experienced continued growth in other areas not captured in first survey so could not treat
- Sept re-survey
- October herbicide treatment

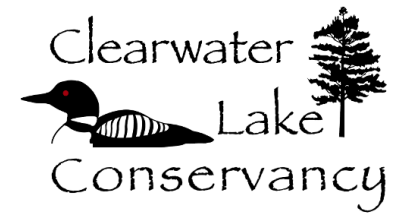
# Milfoil Historical Recap



*\* 2023 16.3 acres treated with herbicide and 2.0 acres hand-pulled  
2022 - all treated areas were hand-pulled  
2021 - 0.54 acres treated with herbicide, the remainder hand-pulled*

# Crow Wing County 2024 AIS Prevention Plan

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Mission: To provide leadership in preventing the introduction and limiting the spread of Aquatic Invasive Species (AIS) in Crow Wing County by coordinating inspections, decontamination, targeted treatment, and education efforts

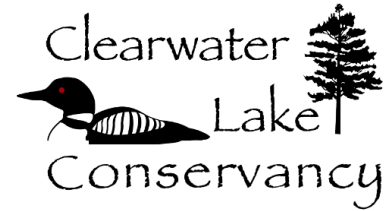
\$33,500 = Milfoil Treatment. AIS monies will pay for one survey and all treatments for control of Eurasian watermilfoil (EWM) up to \$3,500 total per-lake on 9 eligible infested lakes with a public access. Eligible lakes include Bay, Clearwater, Crooked (combined with Portage/Hanks), Kimble, Lower Mission, Ruth, Upper Mission, White Sand, and Upper South Long. Note: not awarded grant (randomized award process).

Lake Ossawinamakee and Lake Emily have not found EWM in recent years and have had great success in controlling the spread.

The County highly encourages local lake associations to apply for grant opportunities and staff are available to assist lake associations with their applications. Aquatic invasive species control grants cover treatment projects for Eurasian watermilfoil, curly-leaf pondweed, flowering rush, and starry stonewort.

# Crow Wing County Watercraft Inspections

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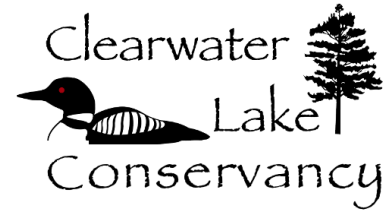


- 2024 - Clearwater Lake allotted 288 hours (32 days) for inspections on Saturday's and Sunday's Memorial weekend – Sept 1.
- Board approved additional 36 hours (5 days) of inspections including fishing opener for additional protection for the lake; cost: \$1,035.
- **2023 - more than 500 watercraft inspected entering Clearwater.**



# Aquatic Plant Management

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## Aquatic Plants

- Aquatic plants will come and go in lakes.
- In Sept, the plants pull loose from the bottom of lake, float around and re-seed the lakebed.
- Boat propellers that cut up plants throughout the boating season also contribute to this re-seeding. This is true for native and invasive species.
- The plants will come back – they just need time and low nutrient load (rusty's don't help).

## Recommendations

- Shoreline restoration focus to help improve water quality, aquatic plants and fisheries.
- Reduce nutrients going into the lakes – run-off is the biggest issue. Nutrients happen from man-made actions like building structures and other impervious surfaces (landscaping, etc.). Rain will bring nutrients into the lake.



# What Homeowners Can Do

## You can help protect our waters.

How to protect our waters — starting with your lake-shore property.



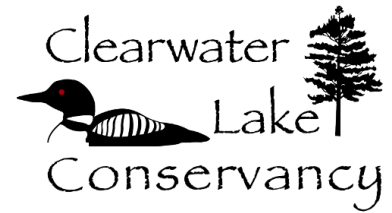
CROW WING COUNTY 2013-2023 WATER PLAN

A Watershed Protection Approach to Local Water Management



# Water Quality Reminder – Homeowner Actions for 2024

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- Plant native grasses, wildflowers, shrubs and trees along shorelines and slopes. These provide good habitat for fish and wildlife but also act as a buffer that soaks up runoff carrying harmful nutrients into the lake from grass clippings, driveways and other organic matter.
- Install rain gardens, rain barrels, berms, or natural depressions.

Before – no shoreline buffer

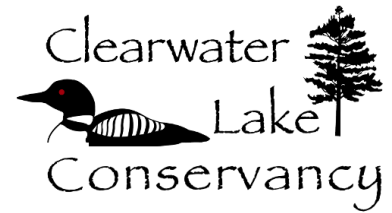


After



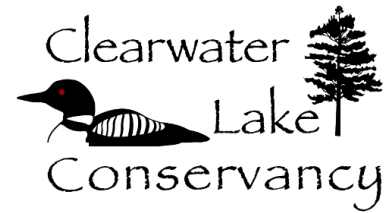
# Water Quality Reminder – Homeowner Actions for 2024

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- Don't burn brush or leaves on a slope where ashes can wash into the lake.
- Firepits – County says should be 20' from high water level; remove ash on a regular basis and dispose of properly so none of it can wash into the lake after a rainstorm (excellent in gardens). Recommend steel rings inside any rock-only pits.
- Regularly aerate your lawn to reduce soil compaction and improve rainwater infiltration.
- Use non-phosphorous containing fertilizers and dishmachine detergents.
- Check your water softener to make sure system is not leaking.
- Maintain septic system and look for leaking system once every other year. If you are installing new or upgrading construction, consider installing holding tanks, composting toilets, gray water systems.
- Don't use a garbage disposal – could plug drain fields.
- Wash only full loads of dishes or clothes; use water-saving showers and toilets.

# Environmental Impacts of Wakes



Large wakes produced by watercraft can result in a variety of negative environmental consequences, including:

- Shoreline erosion
- Impaired water quality resulting from increased sediment in the water
- Loss of shoreline vegetation, which helps stabilize the shore and provides important habitat for fish and wildlife.

These impacts are greater when water levels are high and shorelines are saturated.

Boaters must be aware that their actions directly impact the environment. They should take steps to reduce their wake when operating near shore or when water levels are high.



To learn more:

[Own Your Wake | Minnesota DNR \(state.mn.us\)](https://state.mn.us)



# Fisheries

- Rusty crayfish study this summer – looking for volunteers
- Possible lake fishing contest to benefit camp



# Local Happenings

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- **New - Deerwood Farmer's Market** – Thursdays during summer



- **Clearwater Lake logo items** – Curio in Deerwood selling Clearwater Lake stamped mugs, glassware, coasters, etc.



# Local Happenings

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- The Great Pages Circus – Halley Center, Crosby – Next Weekend

FREE KIDS TICKETS HERE

The GREAT PAGES CIRCUS

PONY RIDES  
AMAZING AERIAL SUPERSTARS!  
CLOWNS  
CAMEL RIDES  
CAMELS  
HORSES  
Now Featuring BUMBLEBEE

SCAN ME!

**CROSBY, MN**  
**FRI & SAT • MAY 31-JUNE 1**  
**FRI 4:30 & 7:30PM • SAT 3&6PM**  
**Halley Center**  
**470-8th St. NE**

SPOTLIGHT GRAPHICS - SARASOTA, FL

# Local Happenings

- **Milford Mine Disaster 100-Year Anniversary** – activities throughout the year at the memorial park (north of Crosby)





# Local Happenings

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- Cuyuna Country Scenic Overlook - Ironton



# Board – Making It Work!

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Areas we need help:

- **Fishing Quality** – those who have a passion for the quality of our Lake’s fishing. Contact Kevin Smith.
- **Rusty Crayfish Issue** – help with survey count. Contact Kevin Smith.
- **Invasive Eurasian Water Milfoil Management** – assist with our ongoing management. Contact Charlie Lick.
- **Social Media** – help with website content and our social media efforts. Contact Kathy Petersen.
- **Social Activities** – help bring back fun social events (e.g. ice cream social, other ideas, etc.). Contact Barb Schmidt and Katie Johnson.





**Thank you for your support and  
have an enjoyable summer  
season on the lake!**