



# June 2023 AIS Update

## Comfort Lake–Forest Lake Watershed District

### Lake Management Districts:

#### Bone Lake District

- Moody Lake
- Bone Lake

#### Little Comfort Lake District

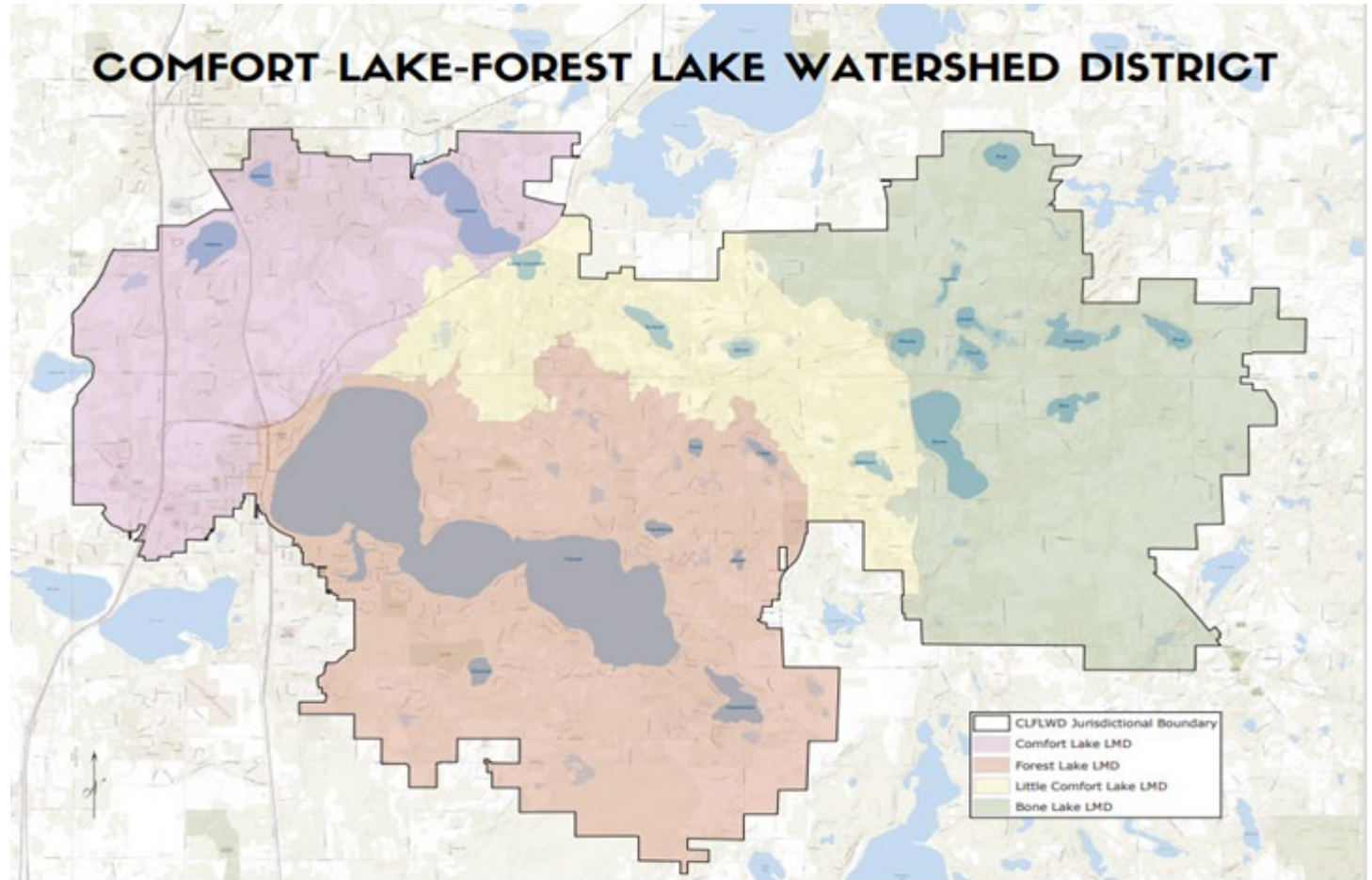
- Little Comfort Lake

#### Forest Lake District

- Shields Lake
- Lake Keewahtin
- Forest Lake

#### Comfort Lake District

- Comfort Lake



Comfort Lake – Forest Lake Watershed District

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6/13/2023

# AIS Budget Summary



Lake	Funding Sources		Estimated Yearend Expense Totals			Balance**	Littoral Acreage	Expense/Littoral Acre
	CLFLWD Local	Grants/Cont.	Blue Water Science	Contractor/ Other	EOR			
District-Wide*	\$5,000			(\$2,500)	(\$2,500)	\$0		
Moody	\$1,500	\$0	(\$3,100)	\$0		(\$1,600)	22	\$140.91
Bone	\$14,500	\$6,500	(\$4,700)	(\$16,704)		(\$404)	124	\$172.61
Little Comfort	\$0	\$0	\$0	\$0		\$0	16	\$0.00
Shields	\$3,500	\$1,500	(\$3,100)	(\$1,347)		\$553	22	\$202.14
Keewahtin	\$800	\$0	\$0	(\$800)		\$0	67	\$11.94
Forest	\$113,000	\$38,636	(\$15,800)	(\$79,609)		\$56,227	1,531	\$62.32
Comfort	\$14,000	\$5,000	(\$3,200)	(\$15,000)		\$800	90	\$202.22
<b>Total</b>	<b>\$152,300</b>	<b>\$51,636</b>	<b>(\$29,900)</b>	<b>(\$115,960)</b>	<b>(\$2,500)</b>	<b>\$55,576</b>		

\*\* Remaining Balance

EOR AIS Program Management Costs		
Month of Services	Invoice #	Expense
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
	Running Total	\$ -

### Budget Notes

\*District-wide budget line items include General Program Mgmt (includes EOR time), Comprehensive Plan & Policy Development, AIS Prevention at Boat Launch Sites, AIS Rapid Response

\*\* Unspent funds from budget



**CLFLWD**  
WATERSHED DISTRICT

# Moody Lake

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## Management Narrative

**Aeration system: (No update since last meeting)** The winter aerator was activated for the season on January 5, 2023, and remained active until the week of April 3<sup>rd</sup>. After deactivating the system, District staff collected each of the thin ice signs and placed them in dry storage. The purpose of the aeration system is to keep Moody Lake's dissolved oxygen levels above the thresholds needed to support game fish species over the winter, which will help keep rough fish populations in check.

**Curly-leaf pondweed (CLP): (No update since last meeting)** On April 25<sup>th</sup>, Blue Water Science (BWS) conducted a delineation point intercept survey to assess the CLP population. Out of 85 sampling locations, only 17 sites of growth were found. Growth was primarily light, with only a couple locations of moderate and heavy projected. For this reason, no treatment was recommended again this year. For reference, no CLP was treated on Moody Lake in 2022 or 2021, 3.11 acres in 2020, and 7.81 acres in 2019.

**Fish Survey:** The Minnesota Department of Natural Resource's Hinckley Area Fisheries office has communicated to staff that their management plan for Moody Lake no longer calls for regularly scheduled fish surveys.

**Native Aquatic Plant Transplanting Project:** Since early-2022, District staff have had conversations with the DNR, Blue Water Science, and EOR staff regarding transplanting native aquatic plants into other waterbodies. Moody Lake's improving water quality and currently low plant diversity make it a good candidate to test a transplanting project. Staff are working with researchers and partners to develop a plan this June for implementation later this summer.

# Moody Lake AIS Budget Summary



		Revenues		Expenses		Annual Balance	Timeline (2023-2024)											
		CLFLWD	Grants	BWS	Other		April	May	June	July	August	September	October	November	December	January	February	
		\$ 1,500	\$ -	\$ (3,100)	\$ -	\$ (1,600)												
Curly-Leaf Pondweed	Work Task	CLFLWD	Grants	BWS	Other	Total Expense												
	Surveys-Report			\$ (3,100)		\$ (3,100)	BWS						BWS					
	Permitting/Public Notice	\$ 1,500				\$ -	WD											
	Management					\$ -	Lake Mgmt Inc.											
	Total	\$ 1,500		\$ (3,100)	\$ -	\$ (3,100)												
Aeration System	Work Task	CLFLWD*	Grants	BWS	Other	Total Expense												
	Permitting					\$ -	WD											
	Setup - Public Notice					\$ -							WD					
	Operation/Inspections - Electricity					\$ -	WD						WD					
	Total	\$ 1,500	\$ -	\$ (3,100)	\$ -	\$ (3,100)												
Native Plant Transplanting	Work Task	CLFLWD*	Grants	BWS	Other	Total Expense												
	Planning and Permitting						WD/EOR											
	Implementation												WD					
	Project Monitoring and Reporting												WD					
	Total	\$ -	\$ -	\$ -	\$ -	\$ -	WD/EOR											
2023 General Program Management							WD/EOR											

Figures in italics are cost estimates/haven't been invoiced yet

\*Aeration system dollars removed because not under AIS Program in budget (under 3010 - Operations and Maintenance)

2022 Work	Status Summary
Aeration system	Deactivated on March 29, 2022.
Curly-leaf pondweed	Blue Water Science did not find sufficient CLP to warrant treatment this year on Moody Lake.

2023 Work	Status Summary
Aeration system	Activated on January 5, 2023 and deactivated during the week of April 3rd.
Curly-leaf pondweed	No treatment needed this season
Native Aquatic Plant Transplanting Project	Staff will attempt a native plant transplanting into Moody this Summer.

Moody Lake Water Quality Goals & Measured Averages			
	2031 Goal	5-Year Avg (2018-2022)	Long-Term Trend
Water quality rating at or above	C	C	N/A
Mean summer phosphorus concentration below (µg/L)	40	55.9	Significantly Improving (-79%) since 2013
Mean summer secchi depth at or above (ft)	4.6	3.8	Improving since 2005

- Improving or declining trends means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, but NOT in a statistically significant way.
- Significantly improving or significantly declining means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, AND in a statistically significant way. The percent change in the parameter over the entire time period is reported for statistically significant trends.
- A scientific trend analysis of District lake water quality is available in the District's Draft 2022 Water Monitoring Report available at: <https://www.cflwd.org/>

DNR Lake Classification: Natural Environment



## Management Narrative

**Point-Intercept Macrophyte Survey (PI Survey): (No update since last meeting)** The last PI survey was performed on Bone Lake in 2018. Following the District's 5-year rotation for PI surveys, Bone Lake is due for another in 2023. Blue Water Science will again be hired to perform the survey and produce a thorough report detailing the aquatic plant community.

**Curly-leaf pondweed (CLP): (No update since last meeting)** The Blue Water Science performed a delineation survey for curly-leaf pondweed in Bone Lake on May 1<sup>st</sup>. Only five locations of light growth were found in the entire lake. No treatment is recommended for this season. For reference, past years' CLP treatments are as follows – 2022: No treatment, 2021: 4.38 acres, 2020: 5.14 acres, 2019: 3.88 acres, 2018: hand pulling only, 2017: treated 3.89 acres, 2016: no treatment, 2015: treated 2.45 acres.

**Eurasian watermilfoil (EWM): (No update since last meeting)** The District will hire Blue Water Science to conduct delineation and assessment surveys. Areas of heavy growth that pose an ecological threat (180 EWM stems per sq. meter or greater) will be managed by the District.

**Fish barriers: (No update since last meeting)** The inlet barrier will start to be actively managed once the surface water temperature of Bone Lake is 55 degrees F or higher and the lake level is less than 908.6 feet.

**Rough fish management: (No update since last meeting)** The 2023 budget does not contain any funding for rough fish management on Bone Lake. Observations of staff and lake homeowners have indicated that the carp population appears to be declining since the installation of the inlet and outlet fish barriers. Staff has been in communication with the DNR East Metro Fisheries Supervisor in order to coordinate fish survey scheduling and efforts. The DNR typically performs fish surveys on a 5-6 year rotation (except for Forest Lake which is on a 2-year rotation). The upcoming survey schedule for Bone Lake is as follows: June 2024 – standard survey, June 2027 – gill net only survey. Surveys are performed more frequently on Bone Lake than many other District lakes since the DNR stocks Bone Lake with walleye.

**Zebra mussels:** To date, no zebra mussels have been found in the lake since their initial 2019 discovery. District staff are currently working with the DNR and Matt Downing (WCD Staff) to conduct two veliger tow visits to the lake. In addition to DNR monitored locations, staff will include two other survey locations on the southern end of the lake. Results will help to determine the presence/absence of zebra mussels in the lake.

**Watercraft inspections: (No update since last meeting)** An estimated total of approximately \$15,000 will be available from the CLFLWD budget and project partners to support the 2023 watercraft inspection program on Bone Lake. The inspection program began on May 12<sup>th</sup> this year.

# Bone Lake AIS Budget Summary



		Revenues		Expenses		Annual Balance	Timeline (2023-2024)											
		CLFLWD	Grants/Other	BWS	Other		April	May	June	July	August	Sept	Oct	Nov	December	January	February	
		\$ 14,500	\$ 6,500	\$ (4,700)	\$ (16,704)	\$ (404)												
<b>Curly-Leaf Pondweed (CLP)</b>	<b>Work Task</b>	CLFLWD	Grants/Other	BWS*	Other	Total Expense												
	Surveys-Report			\$ (1,900)		\$ (1,900)												
	Permitting/Public Notice	\$ 2,600				\$ -												
	Management		\$ 1,500		\$ (1,704)	\$ (1,704)												
	<b>Total</b>	\$ 2,600	\$ 1,500	\$ (1,900)	\$ (1,704)	\$ (3,604)												
<b>Eurasian Watermilfoil (EWM)</b>	<b>Work Task</b>	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Surveys-Report	\$ 1,900		\$ (1,900)		\$ (1,900)												
	Coordination/Mgmt Assistance					\$ -												
	<b>Total</b>	\$ 1,900	\$ -	\$ (1,900)	\$ -	\$ (1,900)												
<b>Rough Fish Management</b>	<b>Work Task</b>	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Spawning Observations	\$ -				\$ -												
	Harvest					\$ -												
	<b>Total</b>	\$ -	\$ -	\$ -	\$ -	\$ -												
<b>Zebra Mussels (ZM)</b>	<b>Work Task</b>	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Samplers			\$ (900.00)		\$ (900.00)												
	<b>Total</b>	\$ -	\$ -	\$ (900.00)	\$ -	\$ (900.00)												
<b>Watercraft Inspections*</b>	<b>Work Task</b>	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Inspection Hours	\$ 10,000	\$ 5,000		\$ (15,000)	\$ (15,000)												
	<b>Total</b>	\$ 10,000	\$ 5,000	\$ -	\$ (15,000)	\$ (15,000)												
<b>2023 General Program Management</b>																		

Figures in italics are cost estimates/haven't been invoiced yet

\*Planned watercraft inspection funding sources include:

- CLFLWD levy: \$10,000 (1 access)
- Washington County AIS Prevention grant rec. award: \$1,000 (same as last year)
- Bone Lake Association: \$2,500
- City of Scandia: \$1,000
- Scandia Lions Club: \$500

2022 Work	Status Summary
CLP surveys and management	No CLP treatment needed in 2022
EWM surveys and coordination	Mostly light growth found along the perimeter of the lake
Zebra mussel early detection	A zebra mussel veliger tow occurred in July. Analysis of the samples found no veligers.
Carp management	Continued operation of fish barrier per O&M.
Watercraft inspections	In 2022, 542.5 hours worth of inspections were performed on Bone Lake.

Bone Lake Water Quality Goals & Measured Averages			
	2031 Goal	5-Year Avg (2018-2022)	Long-Term Trend
Water quality rating at or above	B	B	N/A
Mean summer phosphorus concentration below (µg/L)	30	24.9	Significantly Improving (-39%) since 2013
Mean summer secchi depth at or above (ft)	7	5.9	Significantly Improving (85%) since 2013

- Goals shown in green are currently being met according to their latest 5-year average
- Improving or declining trends means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, but NOT in a statistically significant way.
- Significantly improving or significantly declining means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, AND in a statistically significant way. The percent change in the parameter over the entire time period is reported for statistically significant trends.
- A scientific trend analysis of District lake water quality is available in the District's Draft 2022 Water Monitoring Report available at: <https://www.clflwd.org/>

2023 Work	Status Summary
CLP surveys and management	No treatment is needed this year
EWM surveys and coordination	BWS will conduct delineation and assessment surveys for EWM in 2023.
Zebra mussel early detection	Another zebra mussel veliger tow is scheduled for the lake this summer.
Point-Intercept Macrophyte Survey	Blue Water Science is scheduled to perform a PI Survey this summer.
Watercraft inspections	District inspections began on May 12th

**DNR Lake Classification:** Recreational Development



**CLFLWD**  
WATERSHED DISTRICT

# Little Comfort Lake

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## Management Narrative

**Curly-leaf pondweed (CLP): (No update since last meeting)** The 2023 budget does not contain any funding for curly-leaf pondweed management in Little Comfort Lake. Staff will conduct a meandering survey to assess CLP's growth within the lake.

**Zebra mussels: (No update since last meeting)** Staff have not heard any reports of zebra mussels in Little Comfort Lake yet, although it is listed as infested by the DNR due to its connectivity with Comfort Lake. During lake monitoring and AIS survey visits, staff will continue to monitor the lake for any presence of zebra mussels.

# Little Comfort Lake AIS Budget Summary



		Revenues		Expenses		Annual Balance	Timeline (2023-2024)												
		CLFLWD	Grants	BWS	Other			April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
		\$ -	\$ -	\$ -	\$ -	\$ -													
Curly-Leaf Pondweed (CLP)	Work Task	CLFLWD	Grants	BWS	Other	Total Expense													
	Survey					\$ -		WD											
	Summary					\$ -		WD											
	Total	\$ -	\$ -	\$ -	\$ -	\$ -													
Zebra Mussels (ZM)	Work Task	CLFLWD	Grants	BWS	Other	Total Expense													
	Samplers					\$ -		WD											
	Total	\$ -	\$ -	\$ -	\$ -	\$ -													
2023 General Program Management								WD/EOR											

2022 Work	Status Summary
CLP survey	Staff conducted a survey on August 2nd.
Zebra mussel early detection	No volunteer was found in 2022.

2023 Work	Status Summary
CLP survey	Staff will survey the lake this summer
Zebra mussel early detection	Staff will monitor the lake for the presence of zebra mussels

Little Comfort Lake Water Quality Goals & Measured Averages			
	2031 Goal	5-Year Avg (2018-2022)	Long-Term Trend
Water quality rating at or above	B	C+	N/A
Mean summer phosphorus concentration below (µg/L)	30	42	Significantly improving since 2013 (-48%)
Mean summer secchi depth at or above (ft)	7	5.9	Improving since 2013

- Goals shown in green are currently being met according to their latest 5-year average
- Improving or declining trends means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, but NOT in a statistically significant way.
- Significantly improving or significantly declining means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, AND in a statistically significant way. The percent change in the parameter over the entire time period is reported for statistically significant trends.
- A scientific trend analysis of District lake water quality is available in the District's Draft 2022 Water Monitoring Report available at: <https://www.clflwd.org/>

**DNR Lake Classification:** General Development





# Shields Lake

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## Management Narrative

**Aeration system: (No update since last meeting)** The winter aerator was activated for the season on January 5, 2023, and remained active until the week of April 3<sup>rd</sup>. After deactivating the system, District staff collected each of the thin ice signs and placed them in dry storage. The purpose of the aeration system is to keep Shields Lake's dissolved oxygen levels above the thresholds needed to support game fish species over the winter, which will help keep rough fish populations in check.

**Fish barrier: (No update since last meeting)** The mechanical fish barrier was installed in August 2019. District staff will continue to operate the electric fish barrier as is, pursuant to Administrator discretion in 2023.

**Curly-leaf pondweed (CLP):** Blue Water Science (BWS) conducted a CLP delineation on April 25<sup>th</sup> and identified two treatment areas totaling 3.07 acres. Treatment occurred on May 22<sup>nd</sup> and left no viable CLP in the entire lake. For reference, 3.27 acres of CLP were treated in 2022.

**Rough Fish Management: (No update since last meeting)** In 2022, the District contracted WSB to update the lake's common carp population assessment. Results indicated Shields Lake is very near its carp population management threshold of 100 kg/ha. For 2023, District staff are discussing low-cost in-house options for carp management to ensure the population remains below that threshold.

# Shields Lake AIS Budget Summary



		Revenues		Expenses		Annual Balance	Timeline (2023-2024)										
		CLFLWD	Grants	BWS	Other		April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Fish Barrier*	Work Task	CLFLWD	Grants	Staff/EOR	Other	Total Expense											
	Retrofit Project					\$ -											
	Planning/Inspections/Oversight					\$ -											
	<b>Total</b>	\$ -	\$ -	\$ -	\$ -	\$ -											
Zebra Mussels	Work Task	CLFLWD	Grants	BWS	Other	Total Expense											
	Samplers					\$ -		<b>WD</b>									
	<b>Total</b>	\$ -	\$ -	\$ -	\$ -	\$ -											
Curly-Leaf Pondweed	Work Task	CLFLWD	Grants	BWS	Other	Total Expense											
	Surveys-Report			\$ (3,100)		\$ (3,100)		<b>BWS</b>									
	Permitting/Public Notice	\$ 1,500				\$ -		<b>WD</b>									
	Management		\$ 1,500		\$ (1,347)	\$ (1,347)		<b>Lake Mgmt. Inc.</b>									
	<b>Total</b>	\$ 1,500	\$ 1,500	\$ (3,100)	\$ (1,347)	\$ (4,447)											
Rough Fish Management	Work Task	CLFLWD	Grants	BWS	Other	Total Expense											
	Survey	\$ 2,000				\$ -		<b>Contractor</b>									
	<b>Total</b>	\$ 2,000	\$ -	\$ -		\$ -		<b>WD/EOR</b>									
<b>2023 General Program Management</b>							<b>WD/EOR</b>										

Figures in italics are cost estimates/haven't been invoiced yet

Shields Lake Water Quality Goals & Measured Averages			
	2021 Goal	5-Year Avg (2018-2022)	Long-Term Trend
Water quality rating at or above	C	C	N/A
Mean summer phosphorus concentration below (µg/L)	60	84	Significantly Improving Since 2013 (-92%)
Mean summer secchi depth at or above (ft)	4.3	4.7	Improving Since 2013

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- A scientific trend analysis of District lake water quality is available in the District's Draft 2022 Water Monitoring Report available at: <https://www.clflwd.org/>

**DNR Lake Classification:** Natural Environment

2022 Work	Status Summary
Zebra mussel early detection	Staff monitored for zebra mussels by checking lake debris and man-made structures
Curly-leaf pondweed planning	Full lake control of CLP was achieved again in 2022
Rough fish management	An updated common carp population estimate suggests carp are near the 100 kg/ha management threshold

2023 Work	Status Summary
Zebra mussel early detection	Staff will monitor the lake for the presence of zebra mussels by checking lake debris and man-made structures.
Fish barrier	Operate per O&M manual.
Curly-leaf pondweed	Treatment had whole lake control again this season
Rough fish management	Staff are researching low cost options to maintain or reduce the current common carp population in Shields Lake



**CLFLWD**  
WATERSHED DISTRICT

# Lake Keewahtin

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## Management Narrative

**AIS early detection survey: (No update since last meeting)** District staff will perform an early detection survey at Lake Keewahtin this summer. During this survey, staff will look for new invasive species such as Eurasian watermilfoil, flowering rush, or starry stonewort and monitor the distribution of existing invasive species, purple loosestrife and curly-leaf pondweed.

**Purple loosestrife: (No update since last meeting)** In late-August of 2022, the District performed a purple loosestrife treatment around the perimeter of the lake. In 2023, staff will assess the effectiveness and will likely schedule another round of treatments.

**Zebra mussels: (No update since last meeting)** No zebra mussels have been detected in Lake Keewahtin to date. If a volunteer can be found, a sampler plate will be deployed on the lake to help monitor for their presence.

**Curly-leaf pondweed (CLP): (No update since last meeting)** District staff will conduct a meandering survey to map the distribution and abundance of CLP in the lake if present.

# Lake Keewahtin AIS Budget Summary



		Revenues		Expenses		Annual Balance	Timeline (2023-2024)											
		CLFLWD	Grants	BWS	Other		April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
		\$ 800	\$ -	\$ -	\$ (800)	\$ -												
Purple Loosestrife	Work Task	CLFLWD	Grants	BWS	Other	Total Expense												
Check-Up Assessment						\$ -												
Treatment		\$ 800			\$ (800)	\$ (800)												
Total		\$ 800	\$ -	\$ -	\$ (800)	\$ (800)												
AIS Detection Survey	Work Task	CLFLWD	Grants	BWS	Other	Total Expense												
Survey																		
Total		\$ -	\$ -	\$ -	\$ -	\$ -												
Zebra Mussels	Work Task	CLFLWD	Grants	BWS	Other	Total Expense												
Samplers				\$ -		\$ -												
Total		\$ -	\$ -	\$ -	\$ -	\$ -												
Curly-leaf Pondweed	Work Task	CLFLWD	Grants	BWS	Other	Total Expense												
Hand pulling						\$ -												
Total		\$ -	\$ -	\$ -	\$ -	\$ -												
2023 General Program Management																		

2022 Work	Status Summary
AIS early detection survey	Conducted on July 29th
Purple loosestrife check-up	Treatment performed on August 31st
Curly-leaf Pondweed	None found during survey

Lake Keewahtin Water Quality Goals & Measured Averages			
	2021 Goal	5-Year Avg (2018-2022)	Long-Term Trend
Water quality rating at or above	A	A	N/A
Mean summer phosphorus concentration below (µg/L)	20	15.3	Improving since 2013
Mean summer secchi depth at or above (ft)	10	12.9	Declining since 2013

- Goals shown in green are currently being met according to their latest 5-year average
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- Significantly improving or significantly declining means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, AND in a statistically significant way. The percent change in the parameter over the entire time period is reported for statistically significant trends.
- A scientific trend analysis of District lake water quality is available in the District's Draft 2022 Water Monitoring Report available at: <https://www.clflwd.org/>

2023 Work	Status Summary
AIS early detection survey	Staff anticipate conducting a summer survey
Purple loosestrife	Another treatment is anticipated
Zebra mussel early detection	Find a volunteer
Curly-leaf Pondweed	Survey will be conducted looking for CLP

**DNR Lake Classification:** Recreational Development



# Forest Lake

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## Management Narrative

**Curly-leaf pondweed (CLP):** Blue Water Science performed a delineation survey of curly-leaf pondweed in Forest Lake on May 9<sup>th</sup> and identified eight treatment locations totaling 61.55 acres. A treatment was performed by Lake Management Inc. on May 22<sup>nd</sup>. Blue Water Science will perform a treatment assessment by the end of June. For reference, past years' CLP treatments are as follows – 2022: 103.96 acres, 2021: 120.34 acres, 2020: 58.29 acres, 2019: 99.12 acres, 2018: 16.6 acres, 2017: 169 acres, 2016: 114 acres, 2015: 88 acres.

**Eurasian watermilfoil (EWM): (No update since last meeting)** The District will hire Blue Water Science to conduct delineation and assessment surveys. The Forest Lake Lake Association applied for several grants and will likely conduct their own EWM treatment as needed.

**Flowering rush (FR): (No update since last meeting)** The flowering rush management program that has been implemented by the CLFLWD since 2014 has been successful and will continue in 2023. The details of the program have gone through a few iterations and improvements year after year. The proposed program for 2023 is roughly as follows: spot treatment #1 (Mid to Late July), follow-up survey (Late-July or Early-August), spot treatment #2 (Mid-August), follow-up survey (Late-August), spot treatment #3 (Optional- September). Staff will perform frequent surveys of the lake and remove all seed heads found. In addition, staff will be implementing their own spot treatments to help manage hard to reach growth sites, such as areas in shallow water or on shore.

**Zebra mussels: (No update since last meeting)** Zebra mussels have now been detected throughout all of 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Lakes. The sampling plate program will continue in 2023 in order to provide information about zebra mussel population densities post-colonization.

**Purple Loosestrife (PL): (No update since last meeting)** The District has been managing large populations of purple loosestrife on Forest Lake since 2020. After 3 years of treatment, staff are seeing a reduction in the overall abundance of purple loosestrife in these areas. A staff performed PL survey will be conducted this summer and a treatment is anticipated to follow.

**Watercraft inspections: (No update since last meeting)** An estimated total of \$54,126 will be available from the CLFLWD budget and project partners to support the 2023 watercraft inspection program on Forest Lake. The inspection program began this year on May 12<sup>th</sup>.

**Plant Harvester:** The harvester began operation for the season on June 12<sup>th</sup> and will run until early-September.

**Point-Intercept Macrophyte Survey (PI Survey): (No update since last meeting)** The last PI survey was performed on Forest Lake in 2018. Following the District's 5-year rotation for PI surveys, Forest Lake is due for another in 2023. Blue Water Science will again be hired to perform the survey and produce a thorough report detailing the aquatic plant community.

**Rough Fish Management: (No update since last meeting)** Staff are working with WSB to coordinate a common carp population assessment survey on Forest Lake this summer.

# Forest Lake AIS Budget Summary



		Revenues		Expenses		Annual Balance	Timeline (2023-2024)											
		CLFLWD	Grants/Other	BWS	Other		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
		\$ 113,000	\$ 38,636	\$ (15,800)	\$ (79,609)	\$ 56,227												
Curly-Leaf Pondweed	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Delin-Report			\$ (2,900)		\$ (2,900)	BWS											
	Permitting/Public Notice	\$ 57,000				\$ -	WD											
	Management		\$ 7,714		\$ (19,025)	\$ (19,025)	Lake Mgmt Inc.											
	Total	\$ 57,000	\$ 7,714	\$ (2,900)	\$ (19,025)	\$ (21,925)												
Flowering Rush	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Delin-Report			\$ (6,300)		\$ (6,300)	BWS											
	Permit/Outreach/Pub. Notice	\$ 13,000	\$ 7,000		\$ (1,014)	\$ (1,014)	WD											
	Management				\$ (4,000)	\$ (4,000)	PLM											
	Total	\$ 13,000	\$ 7,000	\$ (6,300)	\$ (5,014)	\$ (11,314)												
Eurasian Watermilfoil	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Surveys-Report	\$ 7,000		\$ (3,200)		\$ (3,200)	BWS											
	Coordination/Mgmt Assistance					\$ -	WD											
	Total	\$ 7,000	\$ -	\$ (3,200)	\$ -	\$ (3,200)												
Purple Loosestrife	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Survey Work and Treatment	\$ 2,000			\$ (1,648)	\$ (1,648)	WD											
	Total	\$ 2,000	\$ -	\$ -	\$ (1,648)	\$ (1,648)												
Watercraft Inspections*	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Inspection Hours	\$ 30,000	\$ 23,922	\$ -	\$ (53,922)	\$ (53,922)	WD/Chisago Co.											
	Total	\$ 30,000	\$ 23,922	\$ -	\$ (53,922)	\$ (53,922)												
Plant Harvester	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	DNR Aquatic Plant Mgmt Permitting					\$ -	WD/FLLA											
	Harvester Operation					\$ -	City of Forest Lake											
	Total	\$ -	\$ -	\$ -	\$ -	\$ -												
Macrophyte Survey	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Point-Intercept Survey	\$ 4,000		\$ (3,400)		\$ (3,400)												
	Total	\$ 4,000	\$ -	\$ (3,400)	\$ -	\$ (3,400)												
2023 General Program Management							WD/EOR											

Figures in italics are cost estimates/haven't been invoiced yet

\*Watercraft inspection funding sources include:

CLFLWD levy: \$30,000 (3 accesses)

Washington County AIS Prevention grant rec. award: \$14,150

Forest Lake Lake Association:

City of Forest Lake: \$9,772 in 2022

Forest Lake Water Quality Goals & Measured Averages					
	2031 Goal	5-Year Avg (2018-2022)	Long-Term Trend		
Water quality rating at or above	B	B-	Forest- West	Forest- Middle	Forest- East
Mean summer phosphorus concentration below (µg/L)	30	32.7	Sig. Improving (-38%) since 2013	Declining since 2013	Declining since 2013
Mean summer secchi depth at or above (ft)	7	6.7	Sig. Improving (+116%) since 2013	Declining since 2013	Improving since 2013

- Goals shown in green are currently being met according to their latest 5-year average
- Improving or declining trends means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, but NOT in a statistically significant way.
- Significantly improving or significantly declining means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, AND in a statistically significant way. The percent change in the parameter over the entire time period is reported for statistically significant trends.
- A scientific trend analysis of District lake water quality is available in the District's Draft 2022 Water Monitoring Report available at: <https://www.clflwd.org/>

**DNR Lake Classification:** General Development

2022 Work	Status Summary
CLP surveys & management	The May 24th treatment on 103.96 acres was very successful.
EWM surveys & coord.	The FLLA contracted PLM to perform a 22.3 acre EWM treatment. No viable EWM found in lake after treatment.
FR surveys & management	The final assessment only found 0.29 acres of FR left in the lake.
Watercraft inspections	Conducted 2,071 hours of inspections on Forest Lake.

2023 Work	Status Summary
CLP surveys & management	61.55 acres were treated on May 22nd. An assessment survey will be performed by the end of June.
Watercraft Inspections	District inspections began on May 12th
EWM surveys & coord.	The FLLA is anticipated to treat EWM again this year.
FR surveys & management	The District will continue its management approach of 2 to 3 herbicide applications throughout the summer and early fall, in conjunction with seed head removals and staff performed spot treatments. ☐
Purple Loosetrife	Survey the treated populations of PL from 2022 and coordinate another treatment if needed



# Comfort Lake

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## Management Narrative

**Curly-leaf pondweed (CLP): (No update since last meeting)** Blue Water Science performed a delineation survey of curly-leaf pondweed in Comfort Lake on April 24<sup>th</sup>. Only four locations of light growth were identified in the entire lake. No treatment is necessary this season. For reference, CLP hasn't been observed in high enough densities to warrant treatment since 2015 when the District treated 1 acre.

**Eurasian watermilfoil (EWM): (No update since last meeting)** The District will again hire Blue Water Science to conduct a point intercept survey. Areas of heavy growth that pose an ecological threat (180 EWM stems per sq. meter or greater) will be managed by the District. In addition, the Comfort Lakes Association (CLA) has been performing their own EWM treatments for several years. However, the CLA performed a whole-lake Fluridone treatment in 2022, so EWM is not expected to be an issue in 2023.

**Zebra mussels: (No update since last meeting)** Zebra mussels were discovered in Comfort Lake in 2017. The sampling plate program will continue in 2023 in order to provide information about zebra mussel population densities post-colonization.

**Watercraft inspections: (No update since last meeting)** An estimated total of \$15,000 will be available from the CLFLWD budget and project partners to support the 2023 watercraft inspection program on Comfort Lake. The inspection program began on May 12<sup>th</sup> this year.

# Comfort Lake AIS Budget Summary



		Revenues		Expenses		Annual Balance	Timeline (2023-2024)											
		CLFLWD	Grants/Other	BWS	Other		April	May	June	July	August	September	October	November	December	January	February	
		\$ 14,000	\$ 5,000	\$ (3,200)	\$ (15,000)	\$ 800												
Curly-Leaf Pondweed	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Surveys-Report			\$ (1,400)		\$ (1,400)	BWS										BWS	
	Permitting/Public Notice	\$ 2,000				\$ -	WD											
	Management (N/A)					\$ -												
	Total	\$ 2,000	\$ -	\$ (1,400)	\$ -	\$ (1,400)												
Eurasian Watermilfoil	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Surveys-Report	\$ 2,000		\$ (1,800)		\$ (1,800)	BWS										BWS	
	Coordination/Mgmt Assistance					\$ -	WD											
	Total	\$ 2,000	\$ -	\$ (1,800)	\$ -	\$ (1,800)												
Zebra Mussels	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Samplers					\$ -	WD											
	Total	\$ -	\$ -	\$ -	\$ -	\$ -	FALSE										FALSE	
Watercraft Inspections*	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Inspection Hours	\$ 10,000	\$ 5,000	\$ (15,000)	\$ (15,000)	\$ (15,000)	WD/Chisago Co.											
	Total	\$ 10,000	\$ 5,000	\$ -	\$ (15,000)	\$ (15,000)												
Macrophyte Survey	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Point-Intercept Survey					\$ -												
	Total	\$ -	\$ -	\$ -	\$ -	\$ -												
2023 General Program Management							WD/EOR											

\*Planned watercraft inspection funding sources include:  
CLFLWD levy: \$10,000 (1 access)

Chisago County AIS Prevention Funds: \$5,000  
Comfort Lake Association: X  
Wyoming: TBD

Comfort Lake Water Quality Goals & Measured Averages			
	2031 Goal	5-Year Avg (2018-2022)	Long-Term Trend
Water quality rating at or above	B	B+	N/A
Mean summer phosphorus concentration below (µg/L)	30	27	Improving since 1994
Mean summer secchi depth at or above (ft)	7	6.6	Significantly Improving (+52%) since 2013

- Goals shown in green are currently being met according to their latest 5-year average
- Improving or declining trends means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, but NOT in a statistically significant way.
- Significantly improving or significantly declining means that the water quality parameter is consistently increasing or decreasing from year to year over the time period, AND in a statistically significant way. The percent change in the parameter over the entire time period is reported for statistically significant trends.
- A scientific trend analysis of District lake water quality is available in the District's Draft 2022 Water Monitoring Report available at: <https://www.clflwd.org/>

**DNR Lake Classification:** General Development

2022 Work	Status Summary
CLP surveys & management	Blue Water Science's survey did not find sufficient CLP growth to warrant treatment this year.
EWM surveys & coordination	The CLA conducted a whole lake Fluridone treatment in 2022. No EWM was found in the lake following.
Watercraft inspections	The District performed 643.5 hours of inspections.

2023 Work	Status Summary
CLP surveys & management	No treatment needed this year
EWM surveys & coordination	The District will again hire BWS to perform the surveys. No management is anticipated this year.
Zebra mussel monitoring	The District will continue the zebra mussel plate program in 2023 on Comfort Lake.
Watercraft inspections	District inspections began on May 12th