



# 2022 AIS Prevention & Management Plan

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## Comfort Lake–Forest Lake Watershed District

### Lake Management Districts:

#### Bone Lake District

- Moody Lake
- Bone Lake

#### Little Comfort Lake District

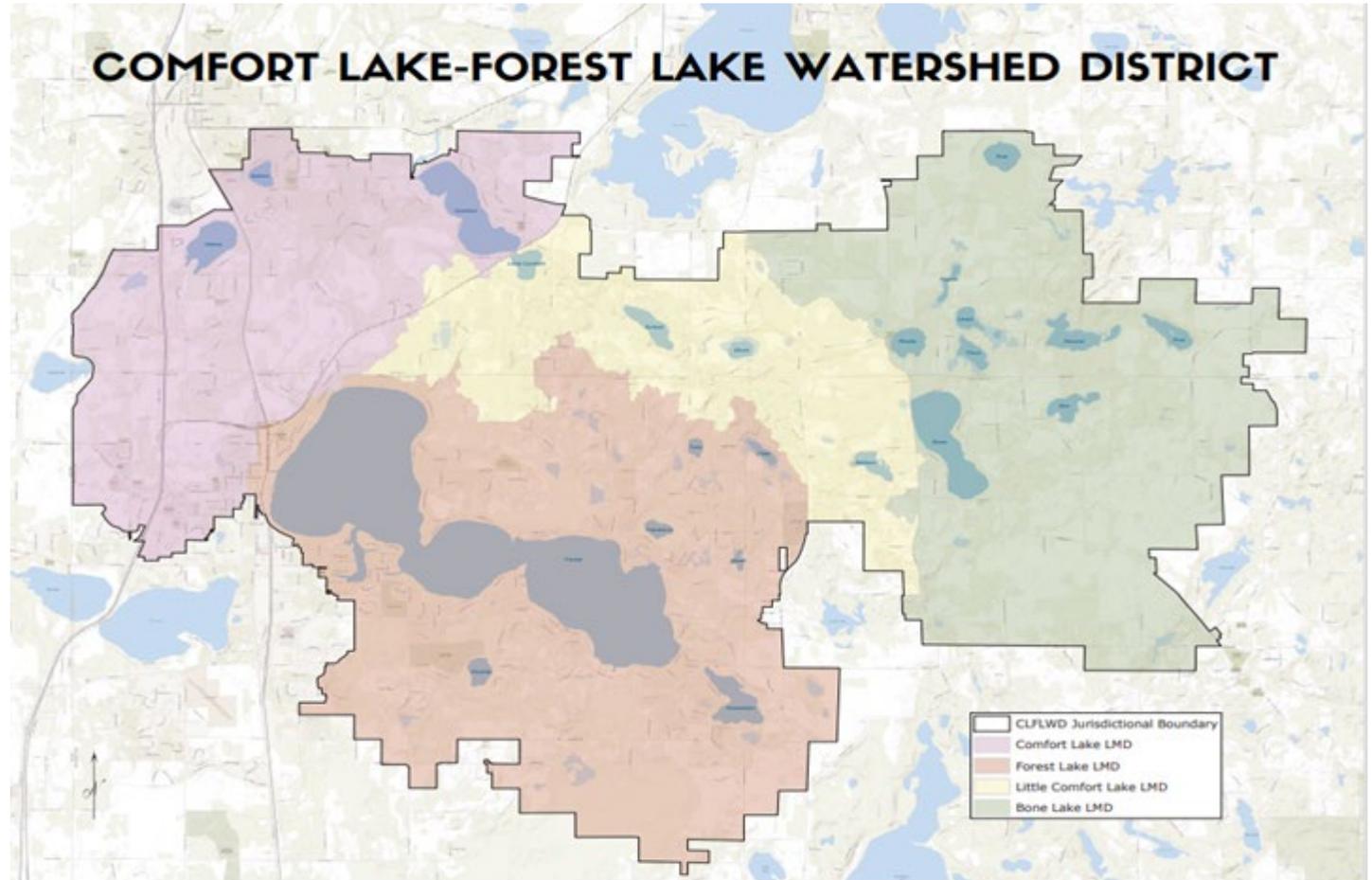
- Little Comfort Lake

#### Forest Lake District

- Shields Lake
- Lake Keewahtin
- Forest Lake

#### Comfort Lake District

- Comfort Lake



Comfort Lake – Forest Lake Watershed District

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# 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	\$3,400	\$0	(\$3,100)	\$0		\$300	22	\$140.91
Bone	\$10,500	\$4,500	(\$4,300)	(\$12,204)		(\$1,504)	124	\$133.10
Little Comfort	\$0	\$0	\$0	\$0		\$0	16	\$0.00
Shields	\$5,300	\$0	(\$3,100)	(\$1,575)		\$625	22	\$212.50
Keewahtin	\$0	\$0	\$0	\$0		\$0	67	\$0.00
Forest	\$77,000	\$14,354	(\$12,200)	(\$60,233)		\$18,921	1,531	\$47.31
Comfort	\$10,000	\$5,500	(\$3,200)	(\$11,500)		\$800	90	\$163.33
<b>Total</b>	<b>\$111,200</b>	<b>\$24,354</b>	<b>(\$25,900)</b>	<b>(\$88,012)</b>		<b>\$21,642</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



# Moody Lake

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## Management Narrative

**Aeration system:** The winter aerator was activated for the season on January 5, 2022 and will remain active until all ice has melted on the lake. After deactivating the system, District staff will collect each of the thin ice signs and place 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):** The 2022 budget contains \$3,400 for Moody Lake AIS Management. Shortly after this season's ice out, Blue Water Science (BWS) will conduct a pre-treatment point intercept survey to determine the size and location of treatment areas, if any. Following any possible treatment, another point intercept macrophyte survey will be conducted by BWS to remain compliant with the Minnesota DNR's variance permit for Moody Lake's CLP management. For reference, no CLP was treated on Moody Lake in 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 Moody Lake is due for a bluegill gill-netting fish survey but could not provide a definitive date.

# Moody Lake AIS Prevention and Management



		Revenues		Expenses		Annual Balance	Timeline (2022-2023)									
		CLFLWD	Grants	BWS	Other		April	May	June	July	August	September	October	November	December	January
		\$ 3,400	\$ -	\$ (3,100)	\$ -	\$ 300										
Curly-Leaf Pondweed	Work Task	CLFLWD	Grants	BWS	Other	Total Expense										
	Surveys-Report			\$ (3,100)		\$ (3,100)	BWS								BWS	
	Permitting/Public Notice Management	\$ 3,400				\$ -	WD									
						\$ -	Lake Mgmt Inc.									
	Total	\$ 3,400		\$ (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	\$ -	\$ -	\$ -	\$ -	\$ -										
2022 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)

2021 Work	Status Summary
Aeration system	Deactivated on march 29, 2021.
Curly-leaf pondweed	Blue Water Science did not find sufficient CLP to warrant treatment this year on Moody Lake.

2022 Work	Status Summary
Aeration system	Activated on January 5, 2022 and will operate until ice melt.
Curly-leaf pondweed	Blue Water Science will conduct a point intercept macrophyte survey to determine treatment locations for CLP.

Moody Lake Water Quality Goals & Measured Averages					
	2020 Goal	2030 Goal	2040 Goal	5-Year Avg (2016-2020)	Long-Term Trend
Water quality rating at or above	C	C	C	D	N/A
Mean summer phosphorus concentration below (µg/L)	60	40	40	78	Significantly Improving (-69%) since 2005
Mean summer secchi depth at or above (ft)	3.3	4.6	4.6	2.5	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 2020 Water Monitoring Report available at <https://www.cflwd.org/documents/Agendaitem6e-Draft2020MonitoringReport.pdf>

**DNR Lake Classification:** Natural Environment



# Bone Lake

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## Management Narrative

**Curly-leaf pondweed (CLP):** Blue Water Science will perform a delineation survey of curly-leaf pondweed in Bone Lake shortly after the ice has melted from the lake. Following the delineation survey, the need for CLP treatment will be assessed. For reference, past years' CLP treatments are as follows – 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):** As was the case in 2021, the District's 2022 budget does not contain any funding for Eurasian watermilfoil treatment. The District will again hire Blue Water Science to conduct and EWM delineation and assessment surveys. From 2020 to 2017, the District has not treated EWM on Bone Lake. In 2016, the District treated 0.69 acres of EWM.

**Fish barriers:** The barriers 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. The latest stop log information can be found using this link: [Bone Lake Fish Barrier Operations Log](#).

**Rough fish management:** The 2022 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:** Since the initial zebra mussel discovery on May 28, 2019, no more zebra mussels have been observed in Bone Lake. Periodic lake surveys will continue throughout the open water season in 2022. Additionally, District and WCD staff plan to perform a zebra mussel veliger tow to assess the population size in Bone Lake.

**Watercraft inspections:** An estimated total of approximately \$10,500 will be available from the CLFLWD budget and project partners to support the 2021 watercraft inspection program on Bone Lake. This would support an estimated 500 hours of inspections. In 2021, 542.5 inspection hours and 747 inspection surveys were completed. Inspector shifts will prioritize weekend and holiday hours to ensure that program funds are being spent efficiently. The inspection program will run from May to mid-October.

# Bone Lake AIS Prevention and Management



		Revenues		Expenses		Annual Balance	Timeline (2022-2023)									
		CLFLWD	Grants/Other	BWS	Other		April	May	June	July	August	Sept	Oct	Nov	December	January
		\$ 10,500	\$ 4,500	\$ (4,700)	\$ (12,204)	\$ (1,904)										
Curly-Leaf Pondweed (CLP)	Work Task	CLFLWD	Grants/Other	BWS*	Other	Total Expense										
	Surveys-Report			\$ (1,900)		\$ (1,900)	BWS									
	Permitting/Public Notice	\$ 2,600				\$ -	WD									
	Management				\$ (1,704)	\$ (1,704)	Lake Mgmt Inc.									
	Total	\$ 2,600	\$ -	\$ (1,900)	\$ (1,704)	\$ (3,604)										
Eurasian Watermilfoil (EWM)	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense										
	Surveys-Report	\$ 1,900		\$ (1,900)		\$ (1,900)	BWS									
	Coordination/Mgmt Assistance					\$ -	WD									
	Total	\$ 1,900	\$ -	\$ (1,900)	\$ -	\$ (1,900)										
Rough Fish Management	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense										
	Spawning Observations	\$ -				\$ -	WD									
	Harvest					\$ -	TBD									
	Total	\$ -	\$ -	\$ -	\$ -	\$ -										
Zebra Mussels (ZM)	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense										
	Samplers			\$ (900.00)		\$ (900.00)	WD									
	Total	\$ -		\$ (900.00)	\$ -	\$ (900.00)										
Watercraft Inspections*	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense										
	Inspection Hours	\$ 6,000	\$ 4,500		\$ (10,500)	\$ (10,500)	WD/Chisago Co.									
	Total	\$ 6,000	\$ 4,500	\$ -	\$ (10,500)	\$ (10,500)										
<b>2022 General Program Management</b>							WD/EOR									

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

\*Planned watercraft inspection funding sources include:

- CLFLWD levy: \$6,000 (1 access)
- Washington County AIS Prevention grant rec. award: \$1,000 (same as last year)
- Bone Lake Association: \$2,000
- City of Scandia: \$1,000
- Scandia Lions Club: \$500

2021 Work	Status Summary
CLP surveys and management	4.38 acres of CLP was treated on May 26th. This year the treatment had full lake control.
EWM surveys and coordination	EWM was mostly observed as light growth this year.
Zebra mussel early detection	Two surveys were performed this year and both found no signs of zebra mussels
Carp management	Continued operation of fish barrier per O&M.
Watercraft inspections	This year 747 inspections were performed over the course of 542.5 hours.

Bone Lake Water Quality Goals & Measured Averages					
	2020 Goal	2030 Goal	2040 Goal	5-Year Avg (2016-2020)	Long-Term Trend
Water quality rating at or above	C	B	B	B-	N/A
Mean summer phosphorus concentration below (µg/L)	40	30	30	30.4	Significantly Improving (-39%) since 2011
Mean summer secchi depth at or above (ft)	4	7	7	5.1	Significantly Improving (55%) since 2011

- 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 2020 Water Monitoring Report available at <https://www.clflwd.org/documents/Agendaitem6e-Draft2020MonitoringReport.pdf>

**DNR Lake Classification:** Recreational Development

2022 Work	Status Summary
CLP surveys and management	The District has approximately \$2,600 budgeted for CLP surveys and treatment this year. Staff anticipate a grant will be awarded to cover the rest of the expenses.
EWM surveys and coordination	BWS will conduct delimitation and assessment surveys for EWM in 2022.
Zebra mussel early detection	A zebra mussel veliger tow is scheduled for the lake this summer.
Common carp management	Continued operation of fish barrier per O&M.
Watercraft inspections	There are approximately 500 inspection hours budgeted for Bone Lake in 2022.



# Little Comfort Lake

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## Management Narrative

**Curly-leaf pondweed (CLP):** The 2022 budget does not contain any funding for curly-leaf pondweed management in Little Comfort Lake. Staff anticipate conducting a simple meandering survey to assess CLP's growth within the lake. Dependent upon abundance, location, and staff availability, a hand pulling event could take place this Spring.

**Zebra mussels:** Staff continues to seek a volunteer who will monitor a sampler plate on their dock. 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.

# Little Comfort Lake AIS Prevention and Management



		Revenues		Expenses		Annual Balance	Timeline (2022-2023)									
		CLFLWD	Grants	BWS	Other		April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Jan.
		\$ -	\$ -	\$ -	\$ -	\$ -										
<b>Curly-Leaf Pondweed (CLP)</b>	<b>Work Task</b>	<b>CLFLWD</b>	<b>Grants</b>	<b>BWS</b>	<b>Other</b>	<b>Total Expense</b>										
	Survey					\$ -										
	Summary					\$ -										
	Total	\$ -	\$ -	\$ -	\$ -	\$ -										
<b>Zebra Mussels (ZM)</b>	<b>Work Task</b>	<b>CLFLWD</b>	<b>Grants</b>	<b>BWS</b>	<b>Other</b>	<b>Total Expense</b>										
	Samplers					\$ -										
	Total	\$ -	\$ -	\$ -	\$ -	\$ -										
<b>2022 General Program Management</b>																

2021 Work	Status Summary
CLP survey	Staff conducted a survey on July 22nd.
Zebra mussel early detection	No volunteer was found in 2021.

Little Comfort Lake Water Quality Goals & Measured Averages					
	2020 Goal	2030 Goal	2040 Goal	5-Year Avg (2016-2020)	Long-Term Trend
<b>Water quality rating at or above</b>	C	C	B	C	N/A
<b>Mean summer phosphorus concentration below (µg/L)</b>	40	40	30	49	Improving since 2011
<b>Mean summer secchi depth at or above (ft)</b>	5	7	7	4.5	Declining since 2011

2022 Work	Status Summary
CLP survey	Staff will survey the lake this summer
Zebra mussel early detection	Continue to try to find a new volunteer to monitor a zebra mussel sampler plate on their dock in order to monitor zm spread from Big Comfort Lake

- 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 2020 Water Monitoring Report available at <https://www.clflwd.org/documents/Agendaitem6e-Draft2020MonitoringReport.pdf>

**DNR Lake Classification:** General Development



# Shields Lake

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## Management Narrative

**Fish barrier:** 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 2022.

**Curly-leaf pondweed (CLP):** The 2021 budget contains \$4,700 for Shields Lake AIS Management. Blue Water Science (BWS) will conduct a CLP delineation in early spring to determine potential treatment areas. Following treatment, BWS will also conduct a point intercept macrophyte survey. For reference, 3.17 acres of CLP were treated in 2021.

**Rough Fish Management:** A common carp removal was attempted in the Fall of 2019, resulting in lower than expected removal numbers. According to WSB's "Shields Lake: 2019 Carp Removal Project Report" there are still between 364 and 630 individual carp that need to be removed from the lake in order to reach management goals. In 2020, the District implemented an experimental carp removal project which ultimately failed. In 2022, District staff will continue its research and conversations with partners to find alternative removal options that are cost effective and yield better results.

# Shields Lake AIS Prevention and Management



		Revenues		Expenses		Annual Balance	Timeline (2022-2023)									
		CLFLWD	Grants	BWS	Other		April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Jan.
		\$ 5,300		\$ (3,100)	\$ (1,575)	\$ 625										
<b>Fish Barrier*</b>	<b>Work Task</b>	<b>CLFLWD</b>	<b>Grants</b>	<b>Staff/EOR</b>	<b>Other</b>	<b>Total Expense</b>										
	Retrofit Project					\$ -										
	Planning/Inspections/Oversight					\$ -										
	<b>Total</b>	\$ -	\$ -	\$ -	\$ -	\$ -										
<b>Zebra Mussels</b>	<b>Work Task</b>	<b>CLFLWD</b>	<b>Grants</b>	<b>BWS</b>	<b>Other</b>	<b>Total Expense</b>										
	Samplers					\$ -										
	<b>Total</b>	\$ -	\$ -	\$ -	\$ -	\$ -										
<b>Curly-Leaf Pondweed</b>	<b>Work Task</b>	<b>CLFLWD</b>	<b>Grants</b>	<b>BWS</b>	<b>Other</b>	<b>Total Expense</b>										
	Surveys-Report			\$ (3,100)		\$ (3,100)										
	Permitting/Public Notice	\$ 5,300				\$ -										
	Management				\$ (1,575)	\$ (1,575)										
	<b>Total</b>	\$ 5,300	\$ -	\$ (3,100)	\$ (1,575)	\$ (4,675)										
<b>Rough Fish Management</b>	<b>Work Task</b>	<b>CLFLWD</b>	<b>Grants</b>	<b>BWS</b>	<b>Other</b>	<b>Total Expense</b>										
	Survey					\$ -										
	<b>Total</b>	\$ -	\$ -	\$ -	\$ -	\$ -										
<b>2022 General Program Management</b>																

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

2021 Work	Status Summary
Zebra mussel early detection	No volunteer was found in 2021.
Curly-leaf pondweed planning	3.17 acres of CLP were treated on May 26th. Results of the treatment were very good, with only a couple light patches left.
Rough fish management	Staff is researching alternative carp removal options for possible future attempts.

Shields Lake Water Quality Goals & Measured Averages					
	2020 Goal	2030 Goal	2040 Goal	5-Year Avg (2016-2020)	Long-Term Trend
Water quality rating at or above	D	C	C	D-	N/A
Mean summer phosphorus concentration below (µg/L)	100	60	60	153	Improving since 1993
Mean summer secchi depth at or above (ft)	4.26	4.26	4.26	2.6	Significantly Declining (-59%) since 1993

- 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 2020 Water Monitoring Report available at <https://www.clflwd.org/documents/Agendaitem6e-Draft2020MonitoringReport.pdf>

**DNR Lake Classification:** Natural Environment

2022 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	The District's budget contains \$4,700 for CLP surveys and treatments on Shield Lake in 2022.
Rough fish management	Staff is researching alternative carp removal options for 2022.



# Lake Keewahtin

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## Management Narrative

**AIS early detection survey:** District staff plan to 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:** In the Fall of 2021, the District performed a purple loosestrife treatment around the perimeter of the lake. In 2022, staff will assess the effectiveness and will likely schedule another round of treatments.

**Zebra mussels:** 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):** District staff will conduct a simple meandering survey to map the distribution and abundance of CLP in the lake. Dependent upon abundance, location, and staff availability, a hand pulling event could take place this summer.





# Forest Lake

## Management Narrative

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**Curly-leaf pondweed (CLP):** Blue Water Science will perform a delineation survey of curly-leaf pondweed in Forest Lake shortly after the ice has melted from the lake. For reference, past years' CLP treatments are as follows – 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.

Blue Water Science performed calculations in 2017 which showed that whole lake control of curly-leaf pondweed can be achieved when 131 acres are treated. This means that the concentration of chemical in the water throughout the entire lake is high enough to control CLP if 131 acres are treated. For this reason, staff recommends that the CLFLWD does not treat more than 131 acres of CLP in years going forward unless extenuating circumstances present themselves.

**Eurasian watermilfoil (EWM):** As was the case in 2021, the District's 2022 budget does not contain any funding for Eurasian watermilfoil treatment. The District will still 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. In 2017, the District treated a total of 33.4 acres of EWM. In 2016, the District treated a total of 13.9 acres of EWM.

**Flowering rush (FR):** The flowering rush management program that has been implemented by the CLFLWD since 2014 has been successful and will continue in 2022. The details of the program have gone through a few iterations and improvements year after year. The proposed program for 2022 is roughly as follows: spot treatment #1 (Mid to Late-June), follow-up survey (Late-July or Early-August), spot treatment #2 (Mid-August), follow-up survey (Late-August), spot treatment #3 (Optional- September), manual flower removal #1 (August), manual flower removal #2 if necessary (August/September), final effectiveness survey (September).

**Zebra mussels:** 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 2022 in order to provide information about zebra mussel population densities post-colonization.

**Watercraft inspections:** An estimated total of \$33,354 will be available from the CLFLWD budget and project partners to support the 2021 watercraft inspection program on Forest Lake. This would support approximately 1,659 hours of inspections. In 2021, 2,454.5 inspection hours and 7,605 inspection surveys were completed (includes DNR inspections). Inspector shifts will prioritize weekend and holiday hours. The inspection program will run from mid-May to mid-October.

**Plant Harvester:** Staff have worked with the City and the Forest Lake Lake Association to develop a harvesting map that avoids all Eurasian watermilfoil and flowering rush beds. Harvesting typically occurs in mid-late summer after the curly-leaf pondweed has died back, regardless, curly-leaf pondweed beds are avoided as much as possible.

# Forest Lake AIS Prevention and Management



		Revenues		Expenses		Annual Balance	Timeline (2021-2022)											
		CLFLWD	Grants/Other	BWS	Other		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
		\$ 77,000	\$ 14,354	\$ (12,200)	\$ (60,233)	\$ 18,921												
Curly-Leaf Pondweed	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Delin-Report			\$ (2,900)		\$ (2,900)	BWS											
	Permitting/Public Notice	\$ 44,356				\$ -	WD											
	Management				\$ (22,535)	\$ (22,535)	Lake Mgmt Inc.											
	Total	\$ 44,356	\$ -	\$ (2,900)	\$ (22,535)	\$ (25,435)												
Flowering Rush	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Delin-Report			\$ (6,100)		\$ (6,100)	BWS											
	Permit/Outreach/Pub. Notice	\$ 11,444			\$ (921)	\$ (921)	WD											
	Management				\$ (4,423)	\$ (4,423)	PLM											
	Total	\$ 11,444	\$ -	\$ (6,100)	\$ (5,344)	\$ (11,444)												
Eurasian Watermilfoil	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Surveys-Report	\$ 3,200		\$ (3,200)		\$ (3,200)	BWS											
	Coordination/Mgmt Assistance					\$ -	WD											
	Total	\$ 3,200	\$ -	\$ (3,200)	\$ -	\$ (3,200)												
Zebra Mussels	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Samplers					\$ -	WD											
	Total	\$ -	\$ -	\$ -	\$ -	\$ -												
Watercraft Inspections*	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Inspection Hours	\$ 18,000	\$ 14,354	\$ -	\$ (32,354)	\$ (32,354)	WD/Chisago Co.											
	Total	\$ 18,000	\$ 14,354	\$ -	\$ (32,354)	\$ (32,354)												
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					\$ -												
	Total	\$ -	\$ -	\$ -	\$ -	\$ -												
<b>2022 General Program Management</b>							<b>WD/EOR</b>											

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

\*Watercraft inspection funding sources include:

CLFLWD levy: \$18,000 (3 accesses)

Washington County AIS Prevention grant rec. award: \$14,354

Forest Lake Lake Association: ?

City of Forest Lake: ?

Forest Lake Water Quality Goals & Measured Averages							
	2020 Goal	2030 Goal	2040 Goal	5-Year Avg (2016-2020)	Long-Term Trend		
Water quality rating at or above	C	C	B	C+	Forest- West	Forest- Middle	Forest- East
Mean summer phosphorus concentration below (µg/L)	37	30	30	36.8	Sig. Improving (-49%) since 2011	Declining since 2011	Declining since 2011
Mean summer secchi depth at or above (ft)	5	7	7	6.2	Sig. Improving (+86%) since 2011	Improving since 2011	Improving since 2011

- 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 2020 Water Monitoring Report available at <https://www.clflwd.org/documents/Agendaitem6e-Draft2020MonitoringReport.pdf>

**DNR Lake Classification:** General Development

2021 Work	Status Summary
CLP surveys & management	120.34 acres of CLP were treated on May 26th with good results. However, a couple patches in Forest Lake 1 and 3 were missed.
EWM surveys & coord.	Some EWM control may have occurred due to the District using Diquat for it's CLP treatment this year. FLLA treated light growth patched in the west basin of the lake.
FR surveys & management	The final assessment only found 0.13 acres of FR left in the lake.
Watercraft inspections	7,605 surveys and 2,454.5 hours worked.

2022 Work	Status Summary
CLP surveys & management	Blue water science will perform a meandering survey this Spring. Results of this survey will indicate how many acres of CLP will need to be treated in 2022.
Watercraft Inspections	The budget currently has funding to support approximately 1,659 hours of inspections this year on Forest Lake.
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 flowering seed head removals. ☐
ZM population monitoring	Continue working with volunteers to monitor population
Purple Loosetrife	Survey the treated populations of PL



# Comfort Lake

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## Management Narrative

**Curly-leaf pondweed (CLP):** Blue Water Science will perform a delineation survey of curly-leaf pondweed in Comfort Lake shortly after the ice has melted from the lake. For reference, CLP hasn't been observed in high enough densities to warrant treatment since 2015 when the District treated 1 acre. Feasibility of District staff hand-pulling CLP will be assessed following BWS's surveys.

**Eurasian watermilfoil (EWM):** As was the case in 2021, the 2022 budget does not contain any funding for Eurasian watermilfoil treatment. However, the Comfort Lake Association has been performing their own EWM treatments since 2020 and is expected to treat again in 2022. The District will still hire Blue Water Science to conduct delineation and assessment surveys. In 2017, the District treated a total of 3.2 acres of EWM in Comfort Lake. In 2016, the District treated a total of 7.5 acres of EWM.

**Zebra mussels:** Zebra mussels were discovered in Comfort Lake in 2017. The sampling plate program will continue in 2022 in order to provide information about zebra mussel population densities post-colonization.

**Watercraft inspections:** An estimated total of \$11,500 will be available from the CLFLWD budget and project partners to support the 2022 watercraft inspection program on Comfort Lake. This would support an estimated 520 hours of inspections. In 2021, 554 inspection hours and 825 inspection surveys were completed. Inspector shifts will prioritize weekend and holiday hours to ensure that program funds are being spent efficiently. The inspection program will run from mid-May to mid-October.

# Comfort Lake AIS Prevention and Management



		Revenues		Expenses		Annual Balance	Timeline (2022-2023)											
		CLFLWD	Grants/Other	BWS	Other		April	May	June	July	August	September	October	November	December	January	February	
		\$ 10,000	\$ 5,500	\$ (3,200)	\$ (11,500)	\$ 800												
Curly-Leaf Pondweed	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Surveys-Report			\$ (1,400)		\$ (1,400)												
	Permitting/Public Notice	\$ 2,000				\$ -												
	Management (N/A)					\$ -												
	<b>Total</b>	\$ 2,000	\$ -	\$ (1,400)	\$ -	\$ (1,400)												
Eurasian Watermilfoil	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Surveys-Report			\$ (1,800)		\$ (1,800)												
	Coordination/Mgmt Assistance	\$ 2,000				\$ -												
	<b>Total</b>	\$ 2,000	\$ -	\$ (1,800)	\$ -	\$ (1,800)												
Zebra Mussels	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Samplers					\$ -												
	<b>Total</b>	\$ -	\$ -	\$ -	\$ -	\$ -												
Watercraft Inspections*	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Inspection Hours	\$ 6,000	\$ 5,500		\$ (11,500)	\$ (11,500)												
	<b>Total</b>	\$ 6,000	\$ 5,500	\$ -	\$ (11,500)	\$ (11,500)												
Macrophyte Survey	Work Task	CLFLWD	Grants/Other	BWS	Other	Total Expense												
	Point-Intercept Survey					\$ -												
	<b>Total</b>	\$ -	\$ -	\$ -	\$ -	\$ -												
<b>2022 General Program Management</b>																		

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

\*Planned watercraft inspection funding sources include:

CLFLWD levy: \$6,000 (1 access)

Chisago County AIS Prevention Funds: \$5,000

Comfort Lake Association: \$500

Wyoming: TBD

Comfort Lake Water Quality Goals & Measured Averages					
	2020 Goal	2030 Goal	2040 Goal	5-Year Avg (2016-2020)	Long-Term Trend
Water quality rating at or above	C	C	B	C+	N/A
Mean summer phosphorus concentration below (µg/L)	40	30	30	32.4	Improving since 1994
Mean summer secchi depth at or above (ft)	5	7	7	5.6	Significantly Improving (+52%) since 2011

- Goals shown in green are currently being met according to their latest 5-year average
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- A scientific trend analysis of District lake water quality is available in the District's Draft 2020 Water Monitoring Report available at <https://www.clflwd.org/documents/Agendaitem6e-Draft2020MonitoringReport.pdf>

**DNR Lake Classification:** General Development

2021 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 performed two treatments and the BWS treatment assessment found EWM growth around the perimeter of the lake.
Zebra mussel monitoring	3 individuals volunteered this year.
Watercraft inspections	This year 825 inspections were performed over the course of 554 hours.

2022 Work	Status Summary
CLP surveys & management	Blue Water Science will survey for CLP this Spring but no treatment is anticipated again.
EWM surveys & coordination	The CLA is anticipated to perform an EWM treatment this year. The District will again hire BWS to perform the surveys.
Zebra mussel monitoring	The District will continue the zebra mussel plate program in 2022 on Comfort Lake.
Watercraft inspections	There are an estimated 520 hours budgeted for Comfort Lake this season.