

Water Quality Report

Client: Cross Lake – Snake River Association

Reference Method: MPCA Citizen Lake Monitoring Program

Site: MPCA Sites 102, 202, and 103

Collection Date/Time: 5/24/2024, 6/28/2024, 7/26/2024, 8/26/2024

Report Date: 9/12/2024


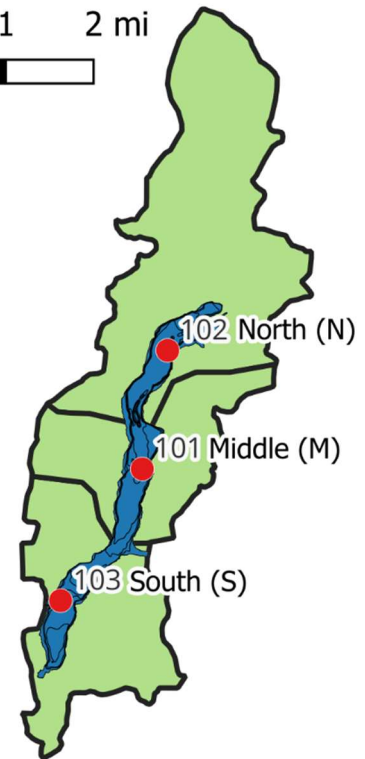
North (MPCA 102)	Impaired	May	Jun	Jul	Aug	Sep	Mean
Total phosphorus (ug/l)	>40	76	138	141	84		109.8
Chlorophyll a (ug/l)	>14	1.6	3.7	6.5	9.2		5.3
Secchi depth (ft)	<4.6	5.3	2.6	2.4	3.9		3.6
Temperature (°F)	NA	64.9	73.9	77.3	80.1		74.1
Dissolved Oxygen (mg/l)	NA	9.1	9.0	4.0	5.3		6.8

Middle (MPCA 202)	Impaired	May	Jun	Jul	Aug	Sep	Mean
Total phosphorus (ug/l)	>40	64	135	91	82		93
Chlorophyll a (ug/l)	>14	1.6	5.4	18	21		11.5
Secchi depth (ft)	<4.6	4.7	3.0	2.8	3.9		3.6
Temperature (°F)	NA	65.6	72.2	75.8	81.6		73.8
Dissolved Oxygen (mg/l)	NA	8.3	7.6	4.0	6.1		6.5

South (MPCA 103)	Impaired	May	Jun	Jul	Aug	Sep	Mean
Total phosphorus (ug/l)	>40	93	177	95	74		109.8
Chlorophyll a (ug/l)	>14	3.2	6.7	8.5	23		10.4
Secchi depth (ft)	<4.6	3.9	2.0	2.4	3.3		2.9
Temperature (°F)	NA	65.5	72.2	75.4	78.3		72.9
Dissolved Oxygen (mg/l)	NA	9.3	9.0	3.2	4.0		6.4

Average	Impaired	May	Jun	Jul	Aug	Sep	Mean
Total phosphorus (ug/l)	>40	78	150	109	80		104
Chlorophyll a (ug/l)	>14	2.1	5.3	11.0	17.7		9.0
Secchi depth (ft)	<4.6	4.6	2.5	2.5	3.7		3.4
Temperature (°F)	NA	65.3	72.8	76.2	80.0		73.6
Dissolved Oxygen (mg/l)	NA	8.9	8.5	3.7	5.1		6.6

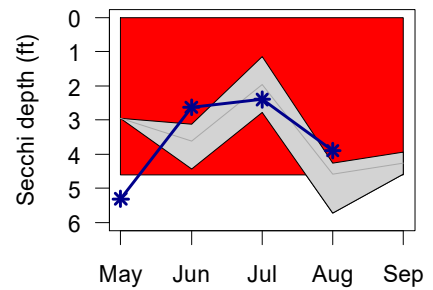
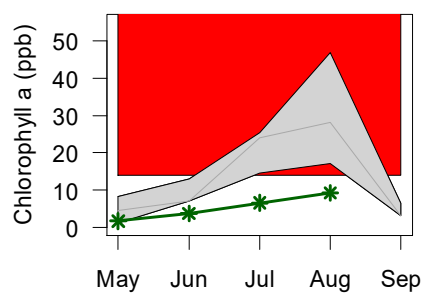
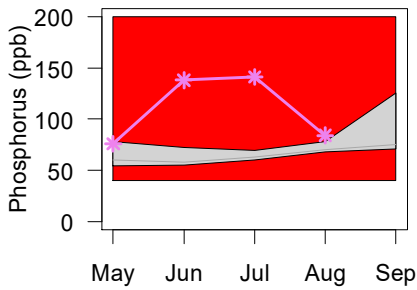
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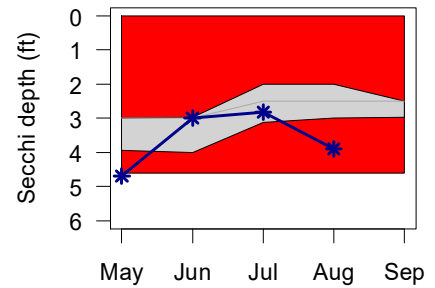
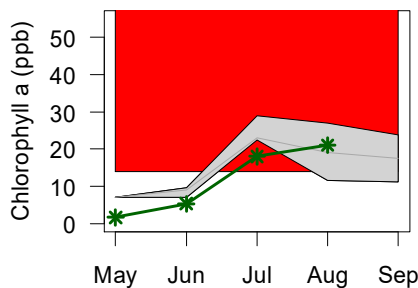
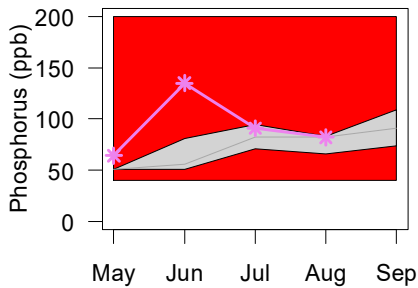
Notes: Sampling followed MPCA Citizen Lake Monitoring Program protocol, which collects a mixed sample using an integrated 2-m sampler at central deep areas of the lake monthly between May and September. Three areas are being monitored that represent each of the main lakeshed areas. All water chemistry is completed by AW Research Laboratories in Brainerd, MN. The impaired water thresholds are set by the Minnesota Pollution Control Agency for water quality and are reported for the North Central Hardwood Forests. Lakes that exceed the impairment thresholds are deemed poor for aquatic recreation. Cross Lake has been on the impaired waters list since 2003. The average (mean) value shown is only for measured months and will be most meaningful after the entire year's samples are collected and reported on.

CROSS LAKE WATER QUALITY 2024

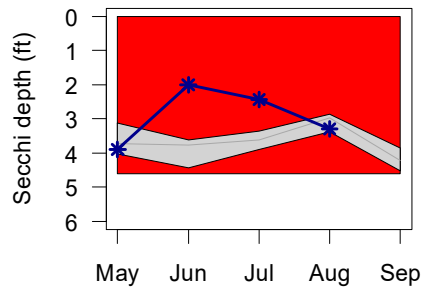
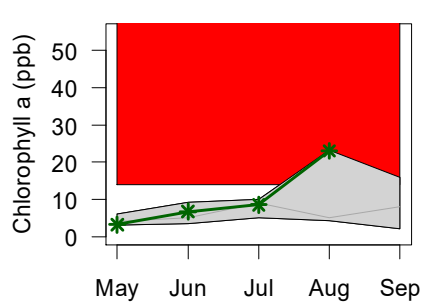
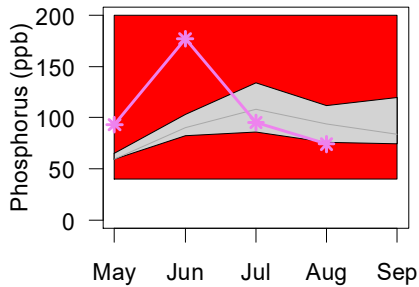
North (MPCA 102)



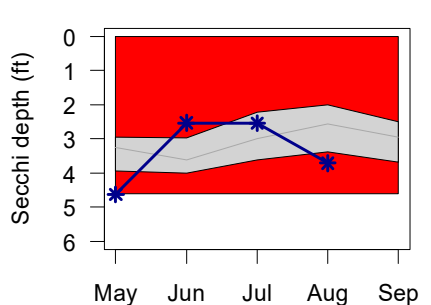
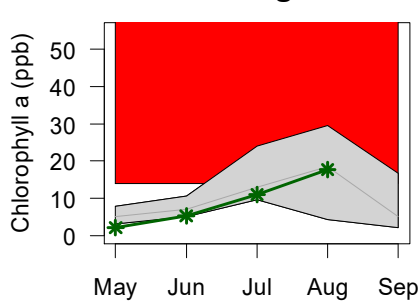
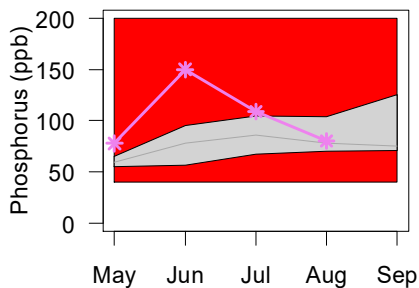
Middle (MPCA 202)



South (MPCA 103)



Average



Each plot shows a red region, which indicates MPCA designated water quality impairment and a gray area, which represents average conditions based on historical water quality data for Cross Lake. The gray areas are bounded by the lower 25th percentile, the median value, and the upper 75th percentile for all data on record with the MPCA. Data collected for 2024 are shown as an asterisk (*) connected with lines colored pink for phosphorus, green for chlorophyll a and blue for Secchi depth. For all plots, lower values on the graph indicate better water quality and higher values indicate poorer water quality.