

# 1989-2001 Clean Water Partnership Process

- 1) **Scientific Study of the Chain of Lakes**
- 2) **Synthesis of Citizen Input**
- 3) **Goal Setting based on scientific recommendations**
- 4) **Implementation of Projects and Programs**

1994- Isles shoreline erosion work completed, and grit chambers installed

1996- Cedar Meadows constructed, and alum treatment completed.

1997- Isles alum treatment

1999- Cedar shoreline revegetation

## **Ongoing Programs:**

- Lake Monitoring
- Beach Monitoring
- Stormwater Monitoring
- Goose Management
- Environmental Education
- Minneapolis and MPRB Street Sweeping
- Watershed Cleanup

# MPRB Lake Sampling Program

**Table 1-4. Methods and reporting limits used for parameter analysis in the 2021 Minneapolis lakes monitoring program.**

Parameter	Method	Reporting Limit
Alkalinity	Standard Methods 2320 B	2.00 mg/L
Ammonia	USGS I-3520-85	0.250 mg/L
Chloride	Standard Methods 4500-Cl <sup>-</sup> B	2.00 mg/L
Chlorophyll-a	Acetone extraction/spectrophotometric determination (pheophytin corrected) SM 10200 H	0.500 µg/L
Conductivity	Hydrolab Minisonde 5a Multiprobe & YSI EXO1 (field)	0.1 µS/cm
Cylindrospermopsin	Enzyme Linked Immunosorbent Assay (ELISA)	0.05ug/L
Dissolved oxygen	Hydrolab Minisonde 5a Multiprobe & YSI EXO1 (field)	0.01 mg/L
Escherichia coli	Colilert Quanti-Try, IRI	1 MPN/100 mL
Hardness	Standard Methods 2350 C	5.00 mg/L
Microcystin	Enzyme Linked Immunosorbent Assay (ELISA)	0.15 ug/L
Nitrate/Nitrate Nitrogen	Standard Methods 4500-NO <sub>3</sub> E	0.030 mg/L
Silica	Standard Methods 4500-SiO <sub>2</sub> C	0.500 mg/L
Soluble Reactive Phosphorus	Standard Methods 4500-P E	0.003 mg/L
Sulfate	ASTM D516-90	5 mg/L
Temperature	Hydrolab Minisonde 5a Multiprobe & YSI EXO1 (field)	0.01 °C
Total Kjeldahl Nitrogen	ASTM D3590 A-02	0.500 mg/L
Total Nitrogen	Standard Methods 4500 N C Alkaline persulfate oxidation/automated cadmium reduction method.	0.500 mg/L
Total Phosphorus	Standard Methods 4500-P E	0.010 mg/L
Turbidity	Hydrolab Minisonde 5a Multiprobe & YSI EXO1 (field)	1 NTU
Transparency	Secchi disk	0.01 m

**Table 1-2. Schedule of sampled parameters for most lakes in 2021.**

Parameters	Sampling frequency
Chloride, Chlorophyll-a, Conductivity, Dissolved oxygen, pH, Phytoplankton, Secchi Transparency, Temperature, Total Phosphorus, Soluble Reactive Phosphorus, Total Nitrogen, Turbidity	Once - Winter Once March - April Twice per month May - September Once October - November
Silica	Once - Winter Once March - April Once per month May - September Once October - November
Zooplankton	Once - Winter Once March - April Twice between May - September Once October - November
Alkalinity, Ammonia, Hardness, Sulfate, Total Kjeldahl Nitrogen, Nitrate/Nitrite	Once May - September
Escherichia coli	Once May - September



# Importance of Lake Management Plan Recommendation

**Define projects that will help achieve goals that the subcommittee has affirmed.**

**Project prioritization, order, and ranking to achieve maximum benefit and lifespan.**

**Ability to form partnerships that can take projects beyond MPRB's area of influence.**

## Current MPRB Aquatic Plant Harvesting Goals:

Manage aquatic invasive species such as Eurasian watermilfoil and curly-leaf pondweed

Preserve recreational access to the lakes

- Angling, paddling, sailing, swimming, bird-watching, etc.

Preserve ecological integrity of the lakes



Cedar Lake littoral zone: 68 ac  
 Permitted harvest zones: 13 ac  
 Permitted % littoral zone har

DNR Lake Number: 27003900



Lake of the Isles littoral zone: 92 acres.  
 Permitted harvest zones: 38 acres.  
 Permitted % of littoral zone to harvest: 41%  
 DNR Lake Number: 27004000  
 S32 T29 R24  
 S32 T29 R24

Harvest

## Aquatic and Shoreline Vegetation Recommendations

- Support for Aquatic Invasive Species (AIS) prevention program (prevent today rather than treat tomorrow)
- Uplift ecology at shoreline and in the lake where invasives can be managed
- Multifunctional shoreline to discourage geese and have an ecological benefit
- In some cases, project initiation may occur when MPRB policy or technology has caught up to the masterplan



Invasive phragmites prior to treatment



# Bacteria Management

## Goose management

- Program Began ~1982
- Key MPRB action: Discourage resident geese via shoreline restoration starting in the 1990's
- Goose Management Plan
  - Integrated management path
- Resident goose population has reduced over time.
  - Working with USDA using best management practices

## Education:

- Canines for Clean Water

## Stormwater Management

- Promote infiltration and pollutant settling

## Beach Maintenance

Ecological Systems Plan Recommendation 4.7

# Cedar Beaches

- Weekly bacteria sampling at 13 beaches
- Most years have very good water quality/bacteria level and NO beach closures
- Closures historically have been due to vandalism or releases in the watershed
- Online WQ map is the most up-to-date information

[Beach Water Quality Status](#)

[bit.ly/mplsbeaches](http://bit.ly/mplsbeaches)

