COOPERATIVE LAKES MONITORING PROGRAM
TRAINING FOR
Secchi Disk Transparency
and
Total Phosphorus

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The Self-Help Legacy

- **1974**: Secchi disk - second oldest program in country.
- **1993-1998**: added spring overturn total phosphorus, late-summer total phosphorus and summer chlorophyll.
- **2000**: added Dissolved oxygen/Temperature.
- **2001**: added Aquatic Plant Surveys
- **2011**: added Exotic Aquatic Plants
- **2016**: added Score the Shore

CLMP Goals- Education

- Build and educate a constituency of citizens to practice sound lake management at the local level and build public support of lake quality protection.
Spread the word

Fact Sheets are available for each CLMP parameter

Want to make a presentation for your lake association? Use this as a base:
micorps.net → Lake Monitoring → CLMP Documents → Create Your Own Data Presentation

CLMP Goals- Data

☐ Provide baseline information and document trends in water quality for individual lakes

☐ Provide a cost-effective process for the DEQ to increase baseline data for lakes in Michigan
CLMP – Monitoring, Not Management

- The CLMP deals with baseline lake monitoring.
- This doesn’t mean we aren’t interested in management, but this is a larger, more complicated discussion.
- Today we are talking about monitoring.

Training Videos and Documents

- Procedures, schedules, data forms
- Videos for most of the parameters

micorps.net → Lake Monitoring → CLMP Documents
Some other resources to be aware of

- CLMP Manual- Read procedures section once a year and keep handy as a reference.

- Quick-reference procedures— bring them out on the boat with you and use it as a checklist.

Trophic State Indicators

- Transparency
- Total Phosphorus
- Chlorophyll $a$
- Dissolved Oxygen and Temperature
Transparency

- Secchi disk measurements
- Evenly spaced monitoring through May 12-Sept 21.
- *At least 8 measurements*
- Seasonal variability
Secchi Disk Measurement

Where to monitor?
Lake Sampling Site (Field ID) Number

Listing at
micorps.net → Lake Monitoring → CLMP Documents
1. Slowly lower disk until it disappears from view
2. Slowly raise disk until it reappears

3. The official measurement is the average of the 2 depths.
1. Don’t use sunglasses!

2. Pick the shadow!
3. Be consistent in weather and timing!

8 Measurements Required across whole summer:
Lakes change over time!

Seasonal Succession of Lake Algae in a Mesotrophic Lake

Abunance

Winter  Spring  Summer  Fall  Winter

Credit: Water on the Web
<table>
<thead>
<tr>
<th>WEEKLY SAMPLING INTERVAL</th>
<th>DATE SAMPLED</th>
<th>TIME OF DAY</th>
<th>SECCHI DEPTH (to nearest 1/8 foot)</th>
<th>WEATHER CONDITIONS (sunny, cloudy, windy)</th>
<th>UNUSUAL CONDITIONS (secchi disk is on bottom of lake, heavy rain, boating, etc.)</th>
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</thead>
<tbody>
<tr>
<td>May 12-18</td>
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<td>May 19-25</td>
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<td>May 26-June 1</td>
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<td>June 2-8</td>
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<td>June 9-15</td>
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<td>June 16-22</td>
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<td>June 23-29</td>
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<td>June 30-July 6</td>
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<td>July 7-13</td>
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<td>July 14-20</td>
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</tbody>
</table>

- In the box below draw an outline of your lake (i.e. lake map)
- On the lake map outline, mark your Secchi disk sampling location (this should be at the deepest basin in the lake) and write in the total LAKE DEPTH at this location.
- Surface Area of Lake (if known): ________________ (acres)

DATA ENTRY
Check ONE box:
☐ The data have been entered into the MCorps Data Exchange (before October 30)

☐ The data have not been entered into the MCorps Data Exchange.

DATA SHEET TURN IN
We must what box you check above, please do the following:
Make a copy of your records, and mail data form by October 30 to:
MCTA, P.O. Box 363, Long Lake, MI 48745
MiCorps Data Exchange Network

- Online data entry and data search of volunteer monitoring data collected by MiCorps member programs
- All volunteers are encouraged to use the online data entry system
  - Data Entry Drawing
- Data search website open to the public
- Contact MiCorps staff to sign up for a username and password to enter your data!
  - midata@glc.org

MiCorps Data Exchange Entry Point
https://micorps.net
Get your login/password from: midata@glc.org

Log in to MiCorps Data Exchange

User name:
Password:
Submit

Secchi Disk Transparency Sampling Data

Required Fields = *
1. *Date Sampled
2. *Time Sampled
3. *Secchi Depth - Round to nearest half foot.
5. Weather Conditions - Check all that apply.

Sunny
Cloudy
Partly Cloudy
Rainy
Windy
Foggy
Other (describe)
Get a data report in early 2020
Questions?
COOPERATIVE LAKES MONITORING PROGRAM
TRAINING FOR

Total Phosphorus

What you get in the mail

- Monitoring instructions (if you asked for it)
- Sampling and sample turn-in schedule and locations (if you asked for it)
- Data form
- Bottle labels (3)
- Two 250ml bottles with caps on
Other materials needed: Cooler bag, ice pack, zip lock baggies of different sizes, a pencil/Sharpee

Spring Overturn

- Within 14 days after ice-out (March/April/May)
- Volunteer determines ice-out
- Surface grab sample
- Representative of whole lake
Summer Stratification

- Late summer - early fall (Aug. - Sept.)
- Surface grab sample
- Indicates the phosphorus available to plants/algae in the growing season.

Spring P: Turn in June 18 before noon
Summer P: Depends on your location in the State
Phosphorus Labels.. Pencil or sharpee

Rinse Bottle Twice
Pour water out until bottle is filled to here to avoid cracking the bottle when frozen.
Datasheet goes into its own baggie and then into the baggie with the samples.
SPRING OVERTURN PHOSPHORUS

Lake Name: Country: Township: 

Lake Sampling Site (Field ID) Number: (see reverse and mark location on map)

Circle

Latitude: Longitude: GPS / Map

Volunteer Monitor Name(s): 

Date of Ice-Out: 

Date Sampled: Time: 

Weather Conditions (sunny, cloudy, windy, etc.): 

Unusual Conditions (heavy rain, boating, etc.): 

Date of Sample Turn-In: 

Comments:

- In the box below draw an outline of your lake (i.e. lake map)
- On the lake map outline, mark your total phosphorus sampling location (this should be at the deepest basin in the lake) and write in the total LAKE DEPTH at this location. (Note: If you sample at more than one location in the lake, use a separate data form for each location.)
- Surface Area of Lake (if known): acres

DATA ENTRY

Check ONE box:

☐ The field notes have been entered into the MIcorps Data Exchange (before October 31)

Date entered: 

☐ The field notes have not been entered into the MIcorps Data Exchange.

DATA SHEET TURN IN

No matter what box you check above, please do the following:

Make a copy for your records, put the data sheet in a baggie, and turn in the frozen sample and data sheet as directed by your procedures sheet.
Freezer Storage until Turn-in Date
Common Reasons for Sample Rejection

- Sample collected at the wrong time
  - Spring P – samples collected >2 weeks after ice-out will be flagged for error, >4 weeks will be rejected.
  - Summer P – samples collected more than a week outside the assigned interval will be rejected
- Incorrect delivery
  - If you forget or can’t turn your samples to the drop-off location on the assigned date, that can cause problems. CONTACT US for instructions on safe shipping. Unexpected shipments will thaw and be rejected.
- Cracked bottles/caps
  - Be sure to leave headroom in the bottle for expansion

Wrong bottles used
- We ONLY accept samples in the sterile bottles we send you
There is a data entry component for Phosphorus, too.

www.micorps.net

MiCorps Data Exchange

One of the key components of the MiCorps program is the MiCorps data exchange (MDE) platform, which provides online access to volunteer monitoring data through a searchable database. This system fulfills a critical role by allowing others to gather and exchange valuable and meaningful water quality data for water resources management and protection programs at the state and local level.

Prior to 2015, the MDE was comprised of monitoring data collected by MiCorps member organizations and others who completed the necessary training with MiCorps staff. To submit data to the MDE, monitors must demonstrate their capacity and willingness to adhere to specific MiCorps quality assurance and operating procedure criteria.

Now in its second decade, the MDE has been expanded to accept data based on a tiered-based data classification system:

- **Tier 1**: Data generated under the MiCorps (or equivalent) Quality Assurance Project Plan (QAPP) (includes current and former MiCorps grant recipients with a MiCorps-approved QAPP and current MiCorps participants collecting data under the approved QAPP monitoring procedures)
- **Tier 2**: Data generated under another acceptable QAPP
- **Tier 3**: Data generated with acceptable Standard Operating Procedures (SOPs), but no QAPP

Due to resource limitations under the program, monitoring data will only be accepted from entities willing to comply with the MiCorps data entry protocols, which may require entities to reformulate their datasets. The MDE will also only accept data for the monitoring parameters currently supported under the MiCorps program for lake and

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**COOPERATIVE LAKES MONITORING PROGRAM**

**SPRING TOTAL PHOSPHORUS**

Corey Lake (St. Joseph Co.), 750142

![Graph showing spring total phosphorus levels from 1990 to 2020 for Corey Lake in St. Joseph County, Michigan. The graph indicates a decreasing trend in phosphorus levels over time.](image-url)
Evaluation Forms

- Yellow form- fill it out throughout the day!

- You can leave them in the box by the door when you are done.

Aquatic Invasive Species- Decontaminate!

- Following any removal of your watercraft from a water body:
  - Clean
  - Drain
  - Dry

- Clean Boats, Clean Waters

- Let’s not contribute to the very problem we are trying to stop!
Working together to protect lakes!

Questions?