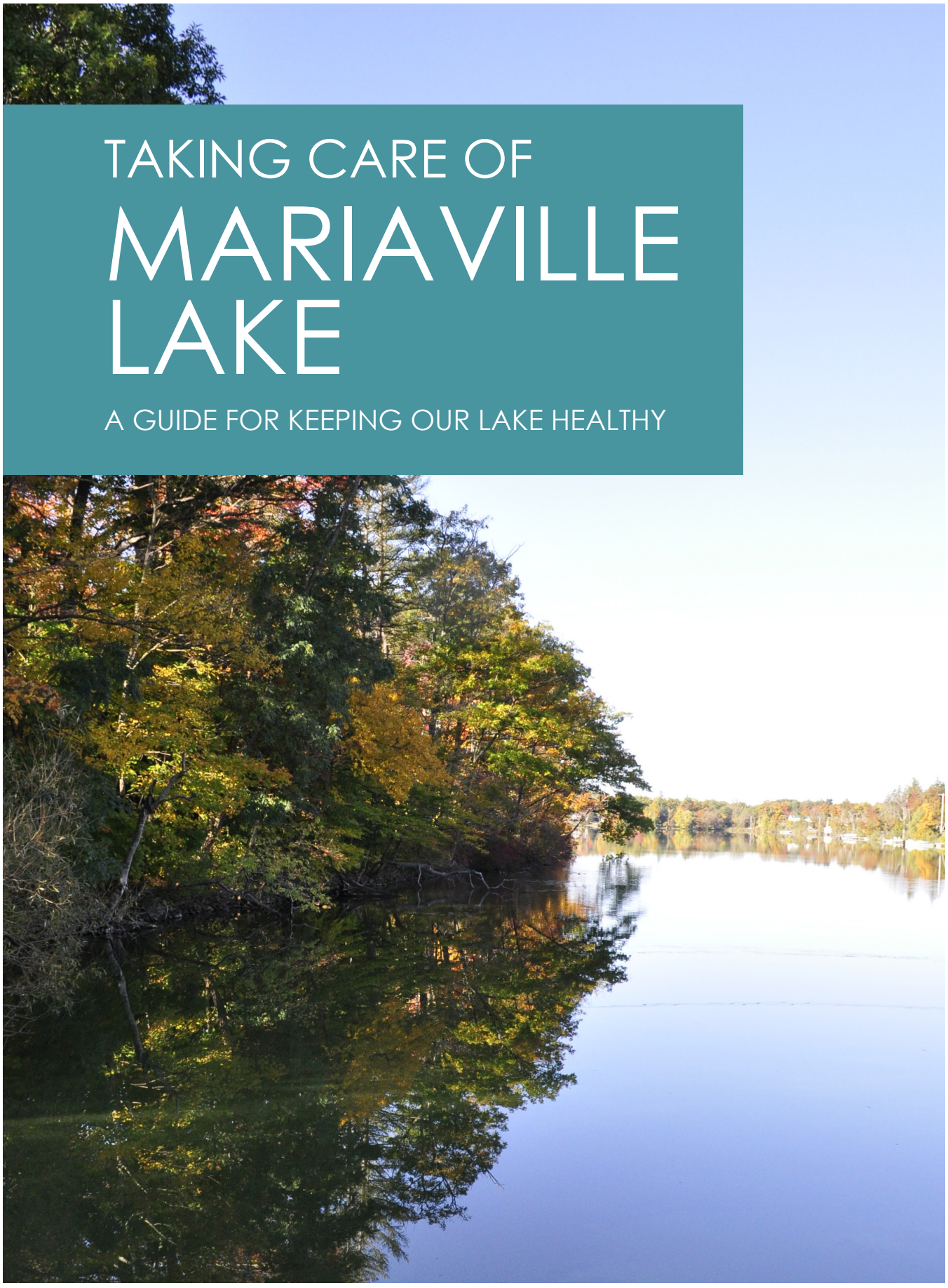
TAKING CARE OF MARIAVILLE LAKE

A GUIDE FOR KEEPING OUR LAKE HEALTHY



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MARIAVILLE LAKE CIVIC ASSOC.
MCA

This guide was created by the Mariaville Lake Civic Association. For questions or more information contact:

mariavilllelkmgt@gmail.com

Notice any difference?
You can see the difference between the large and small basins from the sky. The algae in the large basin make it almost as green as grass!

WHAT IS

THE MAIN ISSUE?

Mariaville lake is like a large bowl. And because of this, any pollutants or unwanted phosphate, nitrogen, or potassium can enter the lake from surrounding areas, streams, hill run-off, etc. All of these things affect the water quality and the lake's ecosystem. Remediation efforts are difficult and expensive.

The most cost-effective, timely approach is to ensure the land surrounding the lake (what is known as the watershed area) is free from the pollutants and nutrient loads we don't want.

Given our concerns, Total Phosphorus is the most important factor to track since it is the "limiting factor" for weed and algae growth. In other words, how many weeds and algae blooms the lake can "support" will depend on how much Phosphorus is in the water. And for those who don't know, too much weed and algae growth is a huge problem facing Mariaville Lake.

UNDERSTANDING WHY

WATERSHED IS IMPORTANT

Watershed is a land area that channels rainfall and snowmelt to creeks, streams, and rivers, and eventually to outflow points such as Mariaville Lake.

The Watershed Area is bigger than you think.

The watershed area is not only directly next to Mariaville Lake, it includes places as far as:

- Featherstonhaugh Lake
- Housing Development off Mariaville Road
- Any land that rain run off would end up in the lake.

HERE'S HOW

YOU CAN HELP

Here's a quick list of things you can do to help protect Mariaville Lake.

- If you are using lawn fertilizer, please ensure it contains no phosphorus and has low nitrogen.
- Pet waste and 'compost' substances can also affect water quality. Please bag and properly dispose of it in the trash.
- Create awareness with your friends and neighbors, and make sure everyone knows the impact and how simple it is to fix.

The NYS Fertilizer Law

New York State passed a fertilizer restriction law 10 years ago. Scan the QR code below to view it.

Shoreline Buffer Strips

Check out this link for those of you who have a shoreline and want to landscape it in an environmentally friendly way.

DETERMINING THE HEALTH OF THE LAKE USING THE WATER SAMPLING METHOD

This summary was created from current and historical data from water sampling.

Since 1999 (through 2018 and restarted in 2022), MCA volunteers have been participating in the "The Citizens Statewide Lake Assessment Program" (or CSLAP) to monitor the water quality of Mariaville Lake. Water samples have been taken from the West Basin (the large side of the lake) regularly to measure water clarity and the presence of nutrients (like phosphorus and nitrogen) that contribute to invasive weed growth and algae blooms. Since 1999 Mariaville Lake has been characterized as Eutrophic, or "highly productive." Water clarity is low, phosphorus levels are high, and algae blooms are expected in late summer. Water quality in early spring and late summer tends to be better (clearer, less phosphorus, fewer algae), but these conditions worsen by late summer.

To better understand conditions across the entire lake, this past June, MCA volunteers collected water samples from four additional sites: the West Basin, East Basin (the small side of the lake), South Shore Creek, and Mud Pond. They sent those samples to the Upstate Freshwater Institute to test for:

- Total Phosphorus
- Total Dissolved Phosphorus
- Nitrites + Nitrates
- Ammonia (as NH3)
- Total Nitrogen

The two most relevant nutrients for lake water management and most easily compared to our CSLAP data are Total Phosphorus and Total Nitrogen. Since the most significant issues we face on this lake are invasive weed growth and algae blooms, Total Phosphorus is the most important factor to track. It is the "limiting factor" for plant growth. In other words, how many weeds and algae blooms the lake can "support" will depend on how much phosphorus is in the water.

See next page for historical water sampling data and how to analyze it.

This summary was created from current and historical data from water sampling.

Below is a table incorporating some older CSLAP data (6/3/2018 and 6/8/2010) with this new data. Our CSLAP readings have all been taken from the West Basin. Note that the Upstate data was measured in micrograms per liter while our CSLAP data is reported in milligrams per liter. I converted the Upstate data to milligrams.

TIME/LOCATION OF WATER SAMPLING	TOTAL PHOSPHORUS *(Numbers are in milligrams per liter of water)*
2010 / West Basin	0.019
2018 / West Basin	0.016
2022 / East Basin	0.021
2022 / West Basin	0.021
2022 / South Shore Creek	0.078
2022 / Mud Pond	0.061

ANALYZING THE DATA

This is what we should take as the key results from this analysis:

1. Phosphorus levels at the West Basin are consistent with historical trends, which themselves have been relatively stable for the last twenty years.
2. Phosphorus levels at the East and West Basin are significantly lower than at the other sites but still high. A .02 milligram/liter Phosphorus level makes a lake susceptible to algae blooms and additional plant growth.
3. Much higher Phosphorus levels in Mud Pond (which feeds the East Basin directly and West Basin indirectly) and South Shore Creek (which feeds the West Basin directly) could be contributing to high Phosphorus levels. But to know that, we would also need data on the water flow rate from these "inputs" into the lake. It is also essential to remember that much of the water entering the East and West basins comes from the larger watershed around the lakes — i.e., from run-off.
4. .02mg/l (or 20 ug/l) is the upper limit for TP (Total Phosphorus) in lakes and ponded waters. But for the most part, by the time a lake gets to .20, it's already pretty green.

CONTACT THE MCA OR

JOIN THE MCA TODAY!

We hope you find this information helpful. Please spread this information to your neighbors. Any reduction in the nutrient load is beneficial to the lake and its ecosystem.

If you're not already a member of the MCA, consider joining, all the money raised goes to supporting a healthy Lake (DAM maintenance, Regulations, Water testing, remediation, etc.). Applications are available at www.MariavilleCivic.com, by email at mcamembership2022@gmail.com, or by scanning the QR code below.

Download the MCA Member Application

The MCA also coordinates various social activities that bring the community together. You can join the Social committee and be involved by emailing Mariavillesocial@gmail.com. Also make sure to check out the MCA website (www.MariavilleCivic.com). It's an excellent source for information about Mariaville Lake, meetings, and events. Make sure to bookmark it!

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