THE GLQO WATERSHED JOURNAL

The Gull Lake Watershed includes Gull Lake, Little Long Lake, Grassy Lake, Little Gull Lake, Miller Lake, Bullhead Lake, Duck Lake, Backus Lake, Dake Lake, Elliston Lake, Mud Lake, Wintergreen Lake, and Prairieville Creek.



University of Minnesota Study on Wakesurf Boats Published

By Gary Mittelbach

In 2020, the GLQO helped fund research conducted by the University of Minnesota's College of Science and Engineering to measure the size and power of waves generated by "wakesurf boats" in comparison to those produced "non-wakesurf boats". Our financial contribution was modest (\$500), but combined with others it has allowed researchers to collect data on the maximum wave height, total wave energy and total wave power produced by four different types of boats under various operating conditions. The results of the University of Minnesota's study were recently released and as promised, we are sharing these results with our members. You can find the full study report on the GLQO website (https://glqo.net/). The full report is quite lengthy and technical. Also available on our website is a shorter version that highlights the main findings of the study in the format of FAQ's (frequently asked questions).

I encourage you to read the FAQ's version as it provides a good summary of the main results. Not surprisingly, the researchers found that the size and power of waves produced by wakesurf boats is much greater than those produced by non-wakesurf boats (this is, after all, what wakesurf boats are designed to do). The study did allow the researchers to directly quantify the magnitude of the differences in waves produced. To quote the report, "When comparing the boats under typical operating conditions at a distance of 100 ft from the boat, the wakesurf boats produced maximum wave heights that were ~2-3 times larger, total wave energies that were ~6-9 times larger, and maximum wave powers that were ~6 to 12 times larger than the non-wakesurf boats".

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Winter/Spring 2022

In This Issue:

The Gull Lake Quality Organization is an all-volunteer organization. Our mission is to address concerns and provide education regarding the use of natural resources of the Gull Lake Watershed.

It's A Double Issue!

Your eyes are not deceiving you. This issue of the GLQO Watershed Journal covers both Winter and Spring, 2022. There's much to share with you, Dear Reader, so read on, and Happy 2022!!

Note: Keep up to date with the GLQO by visiting us at <u>www.glqo.net</u> or by joining our Facebook Group.



The question of whether the waves generated by wakesurf boats negatively impact shorelines and docks and at what distance, was not addressed in the current study. This is perhaps the question of greatest interest to riparians. It is also a question that the U. of Minnesota researchers hope to address in the future, specifically asking "How do large wake waves interact with the lake environment, including the lake bottom, shorelines (natural and riprap), structures in the water like docks and lifts, vegetation, and fish habitat?"

The Boat Wash - A Collaborative Effort to Control the Spread of Invasive Aquatic Species in Gull Lake

In 2015, the Gull Lake Quality Organization initiated efforts to have a boat wash installed at Prairieville Township Park to limit the spread of aquatic invasive species into and out of Gull Lake. Construction and management of the boat wash was completed in 2017 and was funded as a collaboration between the GLQO and Prairieville Township Parks and Recreation committee. The township contributed \$10,000 toward the \$63,000 cost of construction and it also passed an ordinance requiring all watercraft leaving the park be washed. Maintenance of the boat wash, as well as training and hiring of summer help is the responsibility of the GLQO. Currently the boat wash is staffed on weekends and holidays.



The boat wash at Prairieville Township Park (left) just after it was completed in 2015 and (right) being used by boaters entering and leaving Gull Lake.

Controlling the spread of aquatic invasive species is a major challenge in inland lakes in the Great Lakes region. The University of Notre Dame's Center for Aquatic Conservation recently estimated that the loss of ecosystem services directly attributed to Aquatic Invasive Species (AIS) is costing the Great Lakes region more than \$200 million per year.

Washing boats that come into and leave a lake is an important tool in reducing the spread of AIS into inland lakes. Research has shown that up to 98% of AIS can be cleaned off boats and trailers by proper boat washing, including emptying the bilge.

Over 3,500 boats are launched from Prairieville Township Park into Gull Lake each year. Data collected by the GLQO over the past 5 years at the boat wash revealed that boats coming into Gull Lake from this site have been used on over 125 lakes.

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The Gull Lake Watershed Journal





It's important to wash every boat.....even an amphibi-car!

The GLQO regularly monitors the occurrence of AIS in Gull Lake and coordinates efforts to treat areas where they are found. Invasive species detected in GL include: zebra mussels, and the aquatic plants starry stonewort, Eurasian and hybrid watermilfoil, curly leaf pondweed and invasive phragmites. So far, the combination of monitoring for early detection and spot treating infected areas has been successful in controlling the spread of these species throughout Gull Lake.

The Curious Case of the Disappearing Zebra Mussels

By Gary Mittelbach

Zebra mussels first showed up in Gull Lake in the early 1990s and in a very short time they had spread throughout the lake. In Little Long Lake, which is connected to Gull Lake via a small stream, zebra mussels appeared about 10 years after they were found in Gull Lake. Zebra mussels may have colonized Little Long Lake from Gull Lake via the stream connecting the two lakes or they may simply have been introduced accidently by people. When we moved to



Little Long in 2006, I recall finding zebra mussels most everywhere - attached to rocks, plants and even the shells of crayfish, large dragonfly larvae and our native mussels (see photo). An unfortunate legacy of zebra mussel invasions, even if lasting only a few years, is that they kill off the native mussels, which has happened in both Little Long Lake and Gull Lake. A few years ago, however, I noticed that zebra mussel numbers were declining in Little Long Lake and in a big way.

I mentioned this apparent disappearance of zebra mussels to Prof. Steve Hamilton (MSU/KBS) a couple of years ago. Steve is a world expert on zebra mussels and he has studied them in Gull Lake and many other places. I could tell that Steve was skeptical about my observation that zebra mussels seemed to be gone from Little Long Lake. This past summer when Steve was visiting us he took the time to snorkel a large part of the shallows of Little Long Lake looking for zebra mussels. I still recall what he said when he got back from his snorkeling survey. "Gary, I've seen lakes with no zebra mussels and I've seen lakes with thousands of zebra mussels, but I've never seen a lake with just one zebra mussel". That's what Steve found in his snorkel survey - one adult zebra mussel in Little Long Lake! Steve knows of no other lakes that have had been invaded by

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zebra mussels, only to see them disappear sometime later. Zebra mussels may sometimes decline in abundance after their initial invasion peak, but they never disappear completely.

I was hesitant to write this article for fear that I would jinx things and that the zebra mussels might come back to Little Long Lake in abundance. That could still happen, because there is no clear explanation for why they have disappeared. But for now, we are happy to see them gone! With luck and time, perhaps our native mussels may even make a comeback.

Michigan DNR Says Fish Kills May Be Common During Spring Thaw Article reprinted with permission from the Michigan DNR. Contact: Gary Whelan, 517-242-2764 or Sierra Williams, 517-230-8788

After ice and snow cover melt on Michigan lakes this spring, it may be more likely for people to discover dead fish or other aquatic animals. While such sights can be startling, the Department of Natural Resources reminds everyone that this is normal, since winter conditions can cause fish and other creatures such as turtles, frogs, toads and crayfish to die.

"Winterkill is the most common type of fish kill," said Gary Whelan, DNR Fisheries Division Research manager. "As the season changes, it can be particularly common in shallow lakes, ponds, streams and



canals. These kills are localized and typically do not affect the overall health of the fish populations or fishing quality."

Shallow lakes with excess aquatic vegetation and soft bottoms are more prone to this occurrence, particularly when a deep snowpack reduces sunlight for the plants. Canals in urban areas also are quite susceptible due to the large amounts of nutrient runoff and pollution from roads and lawns and septic systems that flow into these areas, especially from large storm events.

Fish and other aquatic life typically die in late winter but may not be noticed until a month after the ice leaves lakes. That's because the dead fish and other aquatic life are temporarily preserved by the cold water. Fish also may be affected by rapid changes in water temperature due to unseasonably warm temperatures leading to stress and, sometimes, mortality. That could be the case this year with the record or near-record cold temperatures and the large snowfalls Michigan experienced this month and any rapid warming in the coming months.

Fish can become easily stressed in winter due to low energy reserves because feeding is at a minimum in winter. They are then less able to handle low oxygen and temperatures swings.

"Winterkill begins with distressed fish gasping for air at holes in the ice and often ends with large numbers of dead fish that bloat as the water warms," Whelan said. "Dead fish and other aquatic life may appear fuzzy because of secondary infection by fungus, but the fungus was not the cause of death. The fish actually suffocated from a lack of dissolved oxygen from decaying plants and other dead aquatic animals under the ice."

Dissolved oxygen is required by fish and all other forms of aquatic life. Once daylight is greatly reduced by ice and snow cover, aquatic plants stop producing oxygen and many die. The bacteria that decompose *Continued on next page...*

organic materials on the bottom of the lake use the remaining oxygen in the water. Once the oxygen is reduced and other aquatic animals die and start decomposing, the rate that oxygen is used for decomposition is additionally increased – that means that dissolved oxygen levels in the water decrease even further, leading to increasing winterkill.

For more information on fish kills in Michigan, visit <u>Michigan.gov/Fishing</u>. The public is welcome to report fish kills at <u>Michigan.gov/EyesInTheField</u>; such reports are valuable to the DNR's ability to manage the state's aquatic resources. If you suspect a fish kill is due to non-natural causes, call the nearest DNR office or Michigan's Pollution Emergency Alert System at 800-292-4706.

Membership Update!

Membership for 2022 in the GLQO is running apace with past years and to date (March 1) we have over **350 members**, including **20** Lifetime **members**. We expect that we will have more renewals in the coming months, as people begin to plan for another fun summer of recreation on and around Gull Lake!

We are planning some Outreach activities to reach out to new and prior members to let them know about the important work done by the GLQO to monitor and maintain water quality of Gull Lake and the surrounding watershed, including controlling the spread of invasive species. Watch for updates on <u>our website</u> and our Facebook page.

Spread the word and encourage your neighbors and friends to join the GLQO today! Your contributions help assure that Gull Lake and its surrounding waters can be enjoyed by residents, their guests, and visitors today and into the future.

Joining is easy: <u>Click here</u> to access the on-line application form that you can mail or email to the GLQO. Membership dues and contributions can be made by check or <u>via PayPal</u>.

Seasonal Help Needed for Boat Wash at Prairieville Township Park

The boat wash at Prairieville Township Park is maintained by the GLQO to make sure that boats entering and leaving the lake at this site do not have any plant material, an important way to prevent the spread of aquatic invasive species.

The boat wash is staffed weekends (Friday 12-6; Saturday & Sunday 9-6) and holidays; the other hours it is self-serve. This year we are looking for a Coordinator (25-30 hrs/week) and 2-3 hourly assistants (10-15 hrs/wk) to staff the boat wash from mid-May through September, but hours will be less after mid-August. The hourly assistants will be paid \$12-\$15 per hour depending on experience; the Coordinator can be paid hourly or monthly @ ~\$25/hour. Arrangements can be made to have the Coordinator position be developed into a paid internship. In addition to maintaining and staffing the boat wash, there will be opportunities to assist with outreach activities of the GLQO.

This is an important (and fun!) summer job, that helps prevent the spread of aquatic invasive plants into Gull Lake. No specific skills are needed, beyond a willingness to get wet, interact with the public, and learn about how to control aquatic invasive species in lakes! Training in operation of the boat wash and information about aquatic invasive species will be provided. This job involves frequent interactions with the boating public and so interpersonal and communication skills are important.

For more information, a complete job description and application, email <u>info@glqo.net</u> and include Boat Wash Summer Job in the email. Applicants for the hourly position should include a brief description of why they are interested in this position, availability, and past work or volunteer experiences. Applicants for the Coordinator position should also include a summary of past supervisory experience(s).

Thank you to the 2022 GLQO Corporate Members

† denotes Lifetime Member

Boudeman Farmers, LLC Dan Wood Company Gull Lake Country Club Gull Lake Ministries Hawks Hollow Builders† Mac's Garage, LLC Michigan Lawn Services, Inc. Serafino's Southwest Michigan Land Conservancy

Thank you to the 2022 Individual and Family Members

† denotes Lifetime Member

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DISCOVER THE GULL LAKE DIFFERENCE



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The Gull Lake Quality Organization

P.O. Box 144 / Richland, Michigan / 49083 Website: glqo.net Contact: info@glqo.net





Upcoming Events

Upcoming Board Meetings

Tuesday, May 10th Tuesday, June 14th

Carriage House Classroom W.K. Kellogg Biological Station 3700 East Gull Lake Drive Hickory Corners, MI

If there are ideas or issues that you think GLQO should address please contact any of the board members or communicate through our Facebook page or website.

2021-2022 Board of Directors

Kay Gross (23-1) *President* Steve Keith (23-2) *Vice President* Gary Mittelbach (23-2) *Secretary* Don Paulson (22-1) *Treasurer*

John Etzcorn (22-2) Rick Hebert (23-1) Joe Lukeman (23-2) Sera Gesmundo (22-1) Dustin Perrin (22-1) Martin Ranly (23-1) Margo Rebar (22-1) Linda Shierlaw (22-2) Doug Smith (22-1) Brook Wilke (23-2) GLQO by-laws allow volunteers to serve as directors for two consecutive threeyear terms. After each Director's name are two numbers: the **year** their current term expires, and the **number** of the current term.

We welcome you to volunteer for committee work (of your choice) and to participate in our board meetings.

The Gull Lake Watershed includes Gull Lake, Little Long Lake, Grassy Lake, Little Gull Lake, Miller Lake, Bullhead Lake, Duck Lake, Backus Lake, Dake Lake, Elliston Lake, Mud Lake, Wintergreen Lake, and Prairieville Creek.