



Aquatic Invasive Species Landing Blitz Comes to Gull Lake in June

Citizen volunteers and aquatic invasive species experts will team up to educate boaters about preventing the spread of harmful species during Michigan's Aquatic Invasive Species Landing Blitz on June 6 and 7, 2014, at boat landings around the state. The Landing Blitz is sponsored by the Michigan Departments of Environmental Quality, Natural Resources, and Agriculture and Rural Development, in partnership with local organizations to kick off Michigan's annual Aquatic Invasive Species Awareness Week.

The Gull Lake Quality Organization is proud to be sponsoring the local Landing Blitz, to be held at **Prairieville Park** at Gull Lake's north end, on **Friday, June 6th**. Check our website, <http://www.glqo.net>, or our Facebook page, for specific times and directions, as we get closer to the date.

Boaters will learn simple steps they can take to help prevent the spread of unwanted aquatic plants and animals such as Eurasian watermilfoil and zebra mussels by cleaning, draining, and drying boats and equipment.

Aquatic invasive species crowd out native species, disrupt lake ecosystems, and interfere with boating, fishing, and other recreation. Boaters can unknowingly transfer invasive species and fish diseases, such as viral hemorrhagic septicemia (VHS), to new waters when they don't clean boats, trailers, and other recreational equipment. To prevent the spread of aquatic invasive species and protect Michigan's aquatic resources, boaters, anglers, and others enjoying Michigan's waters are required to:

- Remove aquatic plants from boats, boating equipment, and boat trailers before launching a boat.
- Drain live wells, bilges, and all water from boats before leaving a boating access site.
- Dispose of unused bait in the trash. Do not release bait into the water.
- Never transfer fish to water bodies other than where they were caught.

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The Mission of the Gull Lake Quality Organization is to address concerns and provide education regarding the use of natural resources of the Gull Lake Watershed

The Value of Long-term Data

By Gary Mittelbach

This year the ice came off of Gull Lake on April 13th, marking one of the longest periods of ice cover in the past 100 years (see graph below). Ironically, just two years ago, we published an article in this Journal entitled "Skating on Thin Ice", noting that the 3 days of ice cover in 2011-2012 was one of the shortest on record for Gull Lake. What do we conclude from all this? Well, one thing is that averages are often made up of extremes. I'm reminded of the joke about a Republican, a Democrat and a statistician out deer hunting. A buck jumps up. The Republican shoots far to the right, the Democrat shoots far to the left, and the statistician hollers out "We got him"! More to the point, if we look at any short (5-10 yr) period in the graph to the right, we can't

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June Aquatic Invasives Landing Blitz (continued)

In addition to the planned educational activities onsite that day, the GLQO has secured the DEQ's first mobile boat wash demonstration unit, available to boaters during the day of June 6th (see photo below).

For more information about aquatic invasive species in Michigan, visit <http://www.michigan.gov/AquaticInvasives>.

Volunteers Needed!

We are looking for volunteers for the June 6th event at Prairieville Park. If you would like to help out, email us at info@glqo.net, or call Eric Reid at 269.629.7228.



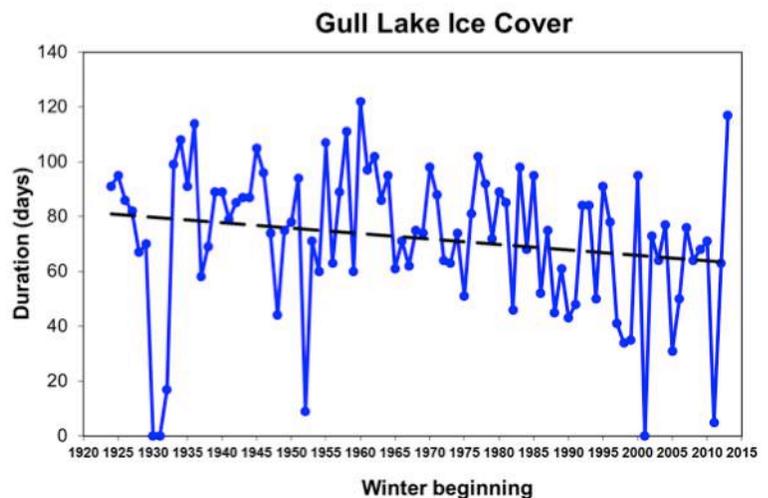
The Landa ECOS Mobile Wash and Recovery Unit
Photo courtesy Landa Corporation

The Value of Long-term Data (continued)

detect a trend in the duration of ice cover on Gull Lake - each year is too different. However, when we look across the now almost 100 year record of ice cover recorded by these fateful observers of nature, we see that on average, the duration of ice cover on Gull Lake has declined significantly (the trend line on the graph), as it has in most mid-western lakes. This corresponds with the long-term trend of warmer winters, which again we wouldn't recognize from the winter of 2013-2014 (which we might all want to forget).

Scientists prize such long-term data. They allow us to see patterns that are "invisible" in a single person's lifetime. I'd suggest that there are two other important "events" in the history of Gull Lake that also merit the vigilance of long-term data collection. The first of these was the observation by Gull Lake residents that water quality was declining drastically in the 1960's, most likely as the result of increased inputs of phosphorus, a nutrient that stimulates algal growth. These observations catalyzed a partnership between Gull Lake residents and scientists at the Kellogg Biological Station. This story is wonderfully told in the 1984 Kalamazoo Gazette article reprinted in this issue of the journal. In short, data collected by a graduate student at KBS documented that septic systems were the major source of phosphorus inputs to Gull Lake. These data provided the ammunition needed for concerned citizens (spearheaded by the "Ladies of the Lake") to rally support (and then funding) for construction of the sewer system that now encircles Gull Lake. It was this sewer system that turned the tide on declining water quality, as the installation of the sewer succeeded in reducing phosphorus inputs to about 25% of their previous levels (see graphs below showing the dramatic change in the Gull Lake phosphorous budget before and after construction of the sewer).

Today the GLQO and scientists at KBS continue to monitor phosphorus levels in Gull Lake and as part of



Continued on page 5

Watershed News You Can Use!

By The Editor

2014 GLQO Annual Meeting!

The Annual Meeting of the Gull Lake Quality Organization will be held on Tuesday, August 12th, at 7:00PM at the Richland Area Community Center on CD Ave.

We will have several speakers on topics of interest to Watershed residents. We will also be taking nominations for new Board Members for the 2014-2017 term.

Make your plans to attend!

GLQO Sponsors KBS Dessert With Discussion on May 14th

The GLQO is proud to be one of the sponsors of the May 14th "Dessert With Discussion" at KBS. Dr. Elena Litchman will be giving an update on her work in and around Gull Lake, including some fascinating work with robotic fish!

For more information, please check out the Dessert With Discussion page at KBS's website, www.kbs.msu.edu.

Spring Fish Stocking in Gull Lake

Kregg Smith of the Michigan DNR reports that 5200 yearling Lake Trout were introduced into Gull Lake in early April. This number is lower than the initial request, in part due to *epitheliotropic disease virus* (EEDv) affecting stock in Michigan's state hatcheries this year.

GLQO to Fund 2014 Watershed Monitoring Report

For the fourth consecutive year, the GLQO Board has approved funding for water quality monitoring on major Watershed lakes. Once again, PhD student Jeff White will be conducting the research. Combined with the yearly CLMP monitoring work that our own Mike Gallagher coordinates on Gull Lake, this will add to the growing database of water temperature, quality and clarity information, as well as giving a better idea of the extent of invasive species in our lakes.

Winter Fish Kill - Normal or A Concern?

The GLQO was alerted last month to a significant fish 'die-off' on Wintergreen Lake (in the KBS Bird Sanctuary). While the sight was startling, our own Dr. Gary Mittelbach assures us that such winter fish kills are natural events, especially in shallow, weedy lakes, where oxygen in the water can drop to low levels as heavy snow blocks out the sun. A smelly mess, to be sure, but normal in the life cycle of many lakes (the 'big blizzard' winters of 1977 and 1978 also caused significant fish kills).

Improving Lake Shore Habitats – Advise From A Professional

By Bruce Snyder, Gull Lake Landscape Co.

[Editor's Note: We asked local lakescaping professional Bruce Snyder for some advice and pointers for those riparian property owners interested in improving their shorelines.]

While I can go toe to toe with anyone knowledgeable about lakeshore erosion, stabilization, and restoration, sometimes it's beneficial to offer alternative sources of information. Yes, I am a Michigan Certified Natural Lakeshore Professional, and yes we do the type of work proposed by Michigan State University, MDEQ, and most lake associations, but sometimes I feel there is a conflict of interest. It's kind of like a plastic surgeon telling you how bad you need a nose job. So when I speak to a lakefront property owner about a restoration, I suppose I am trying to sell a job. But more importantly, I'm trying to educate them. With that said, I'd like to reserve the rest of this space for re-printed articles and how to find out more information about this topic.



Posted on December 5, 2012 by Bindu Bhakta, Michigan State University Extension: According to the U.S. Environmental Protection Agency's (EPA) National Lake Assessment, the biggest problem in the nation's lakes, including those in Michigan, is poor lake shore habitat. With more than 11,000 inland lakes in Michigan, there are many threats to the shoreline and shallow water areas of lakes that provide essential habitat for many fish and wildlife species. Over time, increased shoreline development has resulted in the removal of native vegetation at the shoreline, which has often been replaced by highly maintained lawns down to the water's edge, beach areas and seawalls, all of which negatively impact lake ecosystems.

One way to encourage healthy lake ecosystems is through the implementation of alternative landscaping technologies such as bioengineered erosion control and naturalized landscape design. These practices can create a stable shoreline that is protected from waves and erosion, serve as a natural filter to prevent runoff and provide suitable habitat for fish and wildlife.

Formed in 2008, the **Michigan Natural Shoreline Partnership** (MNSP)'s mission is to promote the use of natural shorelines through use of green landscaping technologies and bioengineered erosion control for the protection of Michigan's inland lakes. The MNSP connects technical expertise and organizational support to address informational, educational and policy needs related to natural shoreline development. It is a public/private partnership which consists of governmental agencies, industry associations and representatives, academic institutions and environmental and nonprofit organizations that promote natural shoreline management. Michigan State University Extension and the Michigan Native Plant Producers Association are just two of the diverse partners.

For More Information:

Natural Shoreline Landscapes on Michigan's Inland Lakes: Guidebook for Property Owners (MSU Extension bulletin #E3145).

MNSP: http://michiganlakes.msue.edu/michigan_natural_shoreline_partnership (Facebook: MNSP1)

MDEQ: <http://www.michigan.gov/deq>

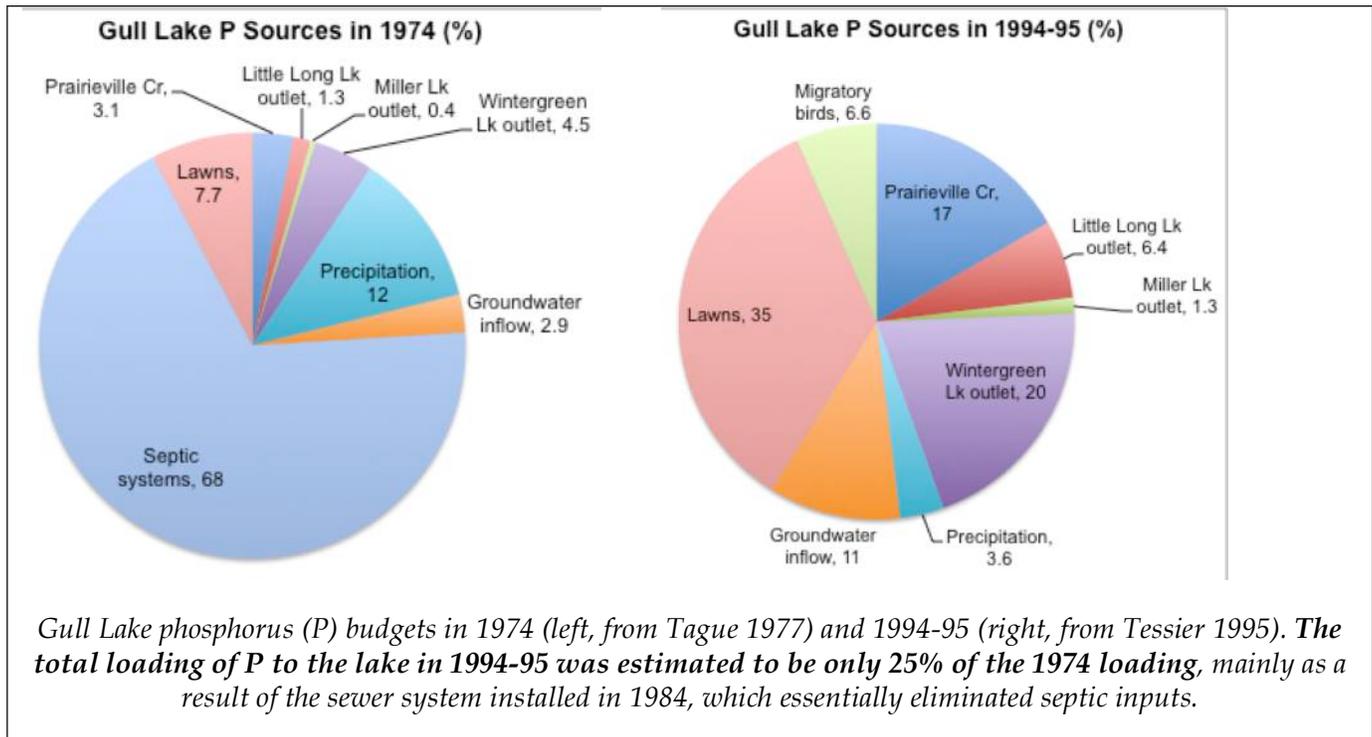
Michigan Water Stewardship Program: www.miwaterstewardship.org/

An article from The Mining Journal: <https://www.miningjournal.net/page/content.detail/id/575950/DEQ-s-advice-for--lakescaping-.html?nav=5140>

Michigan Native Plant Producers Association: www.mnppa.org

The Value of Long-term Data (continued)

these monitoring efforts, Dr. Steve Hamilton and MSU Ph.D. student Jeff White are collecting data this year to construct a new phosphorus budget for Gull Lake, marking the third 20 year interval in which this has been done (1974, 1994, and 2014). It will be interesting to see whether the large fraction of phosphorus input from lawns noted in 1994-1995 is now declining, since phosphorus was banned from most lawn fertilizers in 2012.



The invasion of zebra mussels in 1994 marks another major “event” in the life of Gull Lake. The sharp edges of these invaders has caused many a painful cut to swimmers, but the most dramatic effects of these invaders are felt by the tiny algae (phytoplankton) that form the base of the food chain that leads from phytoplankton to zooplankton to fish. Long-term residents of Gull Lake will remember the summer of 1996 (shortly after the invasion of zebra mussels), when the surface of Gull Lake was covered by a nasty green scum. This “scum” was produced by millions of cells of *Microcystis* (a blue-green alga or more accurately, a cyanobacterium), which can rise to the surface. In lakes like Gull, *Microcystis* blooms are uncommon in the absence of zebra mussels. However, research by MSU and KBS scientists has shown that zebra mussels enhance the growth of *Microcystis*. Thus, their invasion was the most likely cause of the *Microcystis* bloom in 1996. The abundance of zebra mussels in the shallow waters of Gull Lake has decreased in recent years (see 2013 GLQO Water Quality report) and there have been no blooms of *Microcystis* to match those of 1996. However, again the need for long-term data is critical, as this system may or may not be stable. Thus, KBS scientists and the GLQO continue their cooperation to monitor the status of zebra mussels and *Microcystis*. Moreover, an even nastier invader, the quagga mussel has invaded all of the Great Lakes, where it has displaced the zebra mussel and is causing dramatic and unwanted changes in in the food supply for sport fish. Quagga mussels could easily get into Gull Lake. Thus, it is important that we do everything possible to keep them out (see article on boat wash). But, should they invade, it is equally important that we have the long-term data to understand their potential impacts.

Looking Back: 1984

[Editor's note: Our friends at Kellogg Biological Station recently unearthed a couple of articles from the Kalamazoo Gazette from May 2, 1984. Thirty years hence, Jeanne Baron's articles on Gull Lake and the citizens who helped to reverse its decline serves to show us all that we **can** make a difference. You can find a copy of the original article on our website – we've included excerpts below]

Kellogg scientists predicting cleaner Gull Lake water

GULL LAKE - A flood washes over a town. A tornado crushes a department store. Michigan is not stranger to sudden catastrophes such as these. But human activities can result in catastrophes as well, and sometimes year can elapse before man-made environmental disasters become obvious.

Gull Lake is a case in point, but one headed for a happy ending if common sense and vigilance prevail [...]

On a scale of one to 10, Gull Lake is a five in terms of biological health, according to George Luff, director for education and biological science programs at Michigan State University's Kellogg Biological Station [...]

For Gull Lake, the primary problem has been phosphorus enrichment from detergents, lawn fertilizers and most notably, septic system drainage fields [...]

"If all goes well, in 10 to 15 years the lake could be back to the conditions that existed in 1930" - Robert Wetzel [...]

Grass roots effort was driving force in sewer project

GULL LAKE - If Gull Lake once again becomes the crystal clear body of water it once was, a big share of the credit will belong to the 270-member Gull Lake Quality Organization. The group, molded by a handful of women in the 1960s, has been the driving force in winning public support for the Gull Lake sewer project as well as educating lake residents about the hazards of contaminating the lake water with phosphorus [...]

Fred Buckley, a past organization president, said the push for a sewer was mounted in 1973. "That was 10 years ago before we actually broke ground," he noted [...]

The GLQO continues to meet periodically on an as-needed basis and holds an annual meeting each June. Membership dues, which are \$2 per year, pay for mailings to the 1100 residents around the Lake [...]



Lauff (standing) and Wetzel look over shoreline water.

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Frequently Asked Questions About GLQO Dues

- **Dues apply to the calendar year (January 1 to December 31)**
- **An asterisk next to your name on any of our mailings means you're a paid 2014 member**
- **Want to receive newsletters via email only? Send an email to email_only@glqo.net or make note below (this saves us money in printing and postage!)**
- **Only current, paid members receive our Summer and Fall newsletters**

Your dues help fund the GLQO's numerous initiatives, including—but not limited to—Water Quality and Marine Patrol efforts

**Gull Lake Quality Organization
2014 Dues / Donation Request**

The mission of the Gull Lake Quality Organization is to address concerns and provide education regarding the use of natural resources of the Gull Lake Watershed.

Name: _____

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Street: _____

City: _____ **State:** _____ **Zip:** _____

Phone: _____ **Mobile Phone:** _____

I do not wish to have my name published on the GLQO website

I wish to receive the GLQO newsletter via email **Address:** _____

I wish to have my donation level kept confidential

Member Information

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___ General Donation \$ _____

___ Sheriff's Patrol \$ _____

___ Water Quality Testing \$ _____

Additional Donations

Total \$ _____

Total \$ _____

Please mail this form and your check to: GLQO, P.O. Box 34, Hickory Corners, MI 49060

THE GULL LAKE QUALITY ORGANIZATION

P.O. Box 34 / Hickory Corners, Michigan / 49060
http://www.glqo.net
info@glqo.net



Upcoming Events

May 14th 7:30PM
Dessert With Discussion
KBS Auditorium
Sponsored by the GLQO

June 6th 10:00AM on
Boat Wash Demo, as part of
Michigan Aquatic Invasive Species Week
Prairieville Park

June 10th 7:00PM
GLQO Board Meeting
Richland Area Community Center

July 15th 7:00PM
GLQO Board Meeting
Richland Area Community Center

August 12th 7:00PM
GLQO Annual Meeting
Richland Area Community Center

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*GLQO by-laws limit Directors to two consecutive three-year terms. After each Director's name are two numbers: the **year** their current term expires, and the **number** of the current term.*