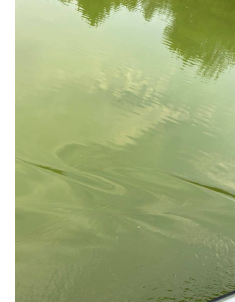


September 3, 2021

Dear Lake Helen Property Owners,



If you've been at the lake during the months of July or August, you should have noticed a significant difference in the water quality. Our normally clear lake was very green, with some very thick slimy areas. The water clarity has decreased significantly. In May the water Secchi disk measurement (used to measure water clarity) was at 18 feet, In June it was 11 feet, and in August at 5 feet. Here are a few pictures of what the algae looked like on parts of the lake.



### **What is the problem?**

We have been working with the DNR, Portage County, and UWSP. All of the issues are the result of an algae bloom. The most significant slimy green areas were tested and found to be "Blue-Green Algae", (cyanobacteria/blue-green algae; common genus *Microcystis*) (BGA), which can be very toxic. Health warning signs were posted at the park's beach as well as on the "Lake Helen Our Happy Place" Facebook page. The Portage County Health Department published a media release article in the July issue of the Rosholt Record entitled "Harmful Algal Blooms Identified in Portage County". You can read the article by Googling the title.

### **What's the cause?**

The algae blooms are caused by high levels of nitrogen and phosphorus. The DNR biologist has said that there is no single cause of BGA. To our knowledge, there have not been blooms like this before. According to the experts, there has not been weather like we experienced this year either. We had a cool spring, so the native plants started growing later than normal. Then we had a hot June, with warm temperatures continuing throughout the summer months. In addition, our area has had 125-150% of the normal precipitation. He said if we add in the nutrient loading, we had a perfect storm that resulted in the algae bloom. The DNR was surprised because the marl (grey muck) usually binds the phosphorus, so it is not available for the algae to come to the surface.

We have been doing weekly reading of several factors in the water along with multiple chemical tests that are being analyzed by UWSP. We are working with the DNR to learn more about the cause. We will continue the analysis through the month of September. All of the collected data is available for anyone to view on the Surface Water Data Viewer (SWDV) at <https://dnrmaps.wi.gov/H5/?Viewer=SWDV>. Just zoom in on Lake Helen.

### **What causes increase levels of nitrogen and phosphorus in the lake?**

These unwanted nutrients have been entering the lake for a lot of years. They are caused by

- Run off from the roads, yards, fields, and via ground water
- Fertilizers that contain nitrogen and/or phosphorus entering ground water
- Use of soaps that contain phosphates that get into the ground water
- Leaking septic systems that get into the ground water.

There is not a single cause. But collectively the causes add to the problem.

A full lake study was done in 2007. The cyanobacteria comprised most of the algal population then. It's been in the lake for years, but not as concentrated as this year. Pages 10-11 and 13 of the study noted below show this information.

<https://www.co.portage.wi.us/department/planning-zoning/land-and-water-conservation/lakes-study/Lake-Helen>

### **What can be done to keep this problem from escalating?**

We as property owners need to do our part to stop the nitrogen and phosphorus from our properties entering the ground water or running directly into the lake.

- **LAWNS**
  - Do not mow or trim down to the water. **(See the included flyer for the details on the Portage County Ordinance, that specifies requirements for shoreland properties)**
  - Best practice: stop fertilizing your lake property lawn.
  - If you do fertilize, use a product that has low nitrogen (less than 10) and 0 phosphorus. (On the bags the first number is the amount of nitrogen, the second is the amount of phosphorus, and the third is the amount of potassium). Look for 10-0-x on the label.
  - If you insist on a green lawn, then we encourage you to get a soil test done on your lawn to determine if you really need to add any nutrients to it. (See the information below)
  - Water your lawn only to keep it green if we lack rain, as long as the water levels are normal.
- **SHORELINE**
  - Do not mow or trim down to the water. **(See the included flyer for the details on the Portage County Ordinance, that specifies requirements for shoreland properties)**
  - Best Practice: Keep no more than 35% of your shoreline in lawn for 35 feet back from the water. Create a filter/buffer area for filtering the nutrient runoff on the rest of your shoreline that is not lawn. Instead let it grow naturally or put in native plantings or other deep root plants.
  - Participate in the Healthy Lakes and Rivers Grant program. This grant program is a 25/75 cost share split, up to \$1,000 for the selected 5 best practices. These practices include 350 sq ft native shoreland planting, fish sticks, rain garden, rock infiltration and diversions. See [www.lakehelandistrict.com/shoreline-zoning.html](http://www.lakehelandistrict.com/shoreline-zoning.html) for details. Contact Tracy Arnold, [arnoldt@co.portage.wi.us](mailto:arnoldt@co.portage.wi.us), as soon as possible if interested in applying for a grant to be awarded in 2022.
  - You can find additional information on shoreline best practices at <https://dnr.wi.gov/topic/ShorelandZoning/documents/FH-429.pdf>
  - See the included "Impervious Surfaces" information on the flyer as well. You can find additional information online at <https://www.uwsp.edu/cnr-ap/clue/Documents/ImperviousSurface-5-2019-NoRecycle.pdf>
- **PLUMBING**
  - Ensure that your septic system, drain fields, and holding tanks are functioning properly and are not leaking. Have your pumper check them carefully.
  - Make sure that all sinks are hooked up to your septic system. (Some old cottages used to have their sinks drain [grey water] directly onto the ground.)
  - Make sure that any trailers or campers do not dump grey water (containing soap) or human waste anywhere except into proper septic systems.
  - Keep any waste from your pets out of the water.
- **BOATS**
  - "Keep it out and keep it deep" – Keep your boat motors raised away from the bottom when starting. Do not take off in shallow water. Doing so, stirs up the nutrient rich muck and brings the nitrogen and phosphorus to the surface.
  - Do not use "Thrusters". They are illegal if used to disturb the lake bottom. You can get a ticket and fine from the DNR for using them and disturbing the nutrient rich muck.
- **AERATORS**
  - The DNR has advised the Lake District not to turn on the aerators outside of the winter months.

They said this would cause the lake to prematurely flip, bringing the low dissolved oxygen water from the bottom to the surface, exacerbating the algae problem and possibly leading to a fish kill.

• **SOIL TESTING**

- You are encouraged to get your soil tested if you are interested in learning whether your lawn really needs any added nutrients.
- If you'd like to take a soil test, you can contact Tyne Hoffman via email at [thoffman@bushmanelectric.com](mailto:thoffman@bushmanelectric.com) or via phone at 715-581-9064. Tyne will give you information on how to obtain a sample kit and how to properly take a sample to submit for analysis. The cost is \$16 per sample.

**How can you stay informed?**

- All of you are encouraged to join the "[Lake Helen Our Happy Place](#)" Facebook group. Property owners are encouraged to learn and to actively participate with other families to keep abreast on what is going on around the lake. Excellent discussions have been taking place about the algae problem with pictures posted.
- Join the "[Portage County Lakes and Rivers](#)" Facebook group. This group provides helpful information from the experts and lake enthusiasts from across Portage County. Posts include grant opportunities/deadlines, field updates through the year, trends being seen, and education content on the water resources in and around Portage County.
- Check out the Lake District's web site at [www.lakehelandistrict.com](http://www.lakehelandistrict.com) for official information.
- Attend the [Commissioners meetings](#) to keep informed about the issues that the leadership team is addressing and how we are working with Portage County, the DNR, and other lake resource experts to keep our lake as healthy as we can. The meetings are announced on the website and notices are posted on the park bulletin board, in the post office, and usually in a Rosholt retail outlet. The next meeting will take place at the end of October. Many of the meetings can be attended remotely via Zoom.

**YOUR HELP IS NEEDED TO FURTHER UNDERSTAND THE PROBLEM**

We would appreciate your assistance in helping us understand some of the source of the nitrogen and phosphorus that are getting into Lake Helen. One of the sources is through lawn fertilization. (Note: there is nothing illegal about fertilizing, so this information will not be used against anyone). By answering these questions, you will help us understand the common practices of the property owners.

To take the survey go to the Home Page on our website [www.lakehelandistrict.com](http://www.lakehelandistrict.com) . Click on the SURVEY link; answer the simple questions there; and submit them to us. The survey asks questions about your fertilization practices in 2020 and 2021 and your plans for the future. You will be asked about the numbers on the bag of fertilizer that you used.

If you have questions, feel free to contact one of your commissioners (see the website for a list and their email addresses) or send an email to [mail.lakehelen@gmail.com](mailto:mail.lakehelen@gmail.com)

Sincerely,

Lake Helen Protection & Rehabilitation District Commissioners

Bill Pingel	– Chair	Tom Gerlikovski
Glen Bersie	– Treasurer	Keith Hoffman
Tyne Hoffman	– Secretary	

*PS. This letter will be posted on the home page of the [www.lakehelandistrict.com](http://www.lakehelandistrict.com) web site, with easy access to the links noted here.*