

Pipe Lake and North Pipe Lake

Nature Notes

Water... Land... Animals

PIPE LAKE AND NORTH PIPE LAKE: A WATER QUALITY REVIEW & UPDATE

By Dick Hollar

I began collecting lake water data 22 years ago to answer just 3 questions:

1. What is the condition of our water?
2. What causes this condition?
3. What can we do about it?

It took about 13 years of collecting and analyzing data plus 3-4 grants from the Wisconsin Department of Natural Resources (WDNR) to find answers to these questions. Today, we have many answers to the questions but have not found all the answers.

Today, we know what is happening on Pipe Lake and what we can do about it. But, we need your help.

The vast majority of the pollutants entering Pipe Lake are due to runoff from your land and your neighbor's land. Take a trip around the lake and count the number of properties that have lawns running right down to the lake, resulting in unobstructed flow or run-off. How can we prevent pollutants from entering the lake? It is easy – stop the run-off. If we do not protect our shorelines, we will see more and more run-off into our lake – more sediment, more phosphorus, more of the many things we do not want in our lake.

There are at least 4 techniques that can be used to limit this run-off and still result in a pleasing property.

1. Native planting along the shoreline in the area where the majority of runoff occurs. This will slow and absorb the run-off.
2. Diversion—divert the run-off streaming down your property into a wooded area along the side of your property. The wooded area will then act as a filter.

3. Construct a rain garden or two, creating a low spot where run-off will collect and be absorbed into the ground.
4. Construct a rock filtration pit where run-off will flow into the pit and be absorbed.

The WDNR sponsors a program, The Healthy Lakes Program, which allows a lake resident to do one or more multiple small projects on the property. The goal of this program is to “improve habitat and water quality with simple and inexpensive projects”.

Here are some details about the program. No changes need to be made to your deed; just agree to maintain your project for 10 years. Since these projects are designed to be small (a maximum of 350 sq. ft for the native planting) and the cost of any one project cannot exceed \$1000. The Lake District can apply for a grant to help pay for any project you want. This is a sharing grant, meaning the grant can pay for 75% of the total cost and the resident pays 25%. Thus, if your project costs \$1000, you pay only \$250. If you have 3 separate projects for a total cost of \$3000, you pay only \$750.

Now, let’s move on to North Pipe Lake. While taking a ride around Pipe Lake, extend that ride to go around North Pipe Lake and study the shoreline and compare it with Pipe Lake. I think that you will see only 1-2 properties that have grass all the way down to the shoreline on North Pipe Lake. Most properties have woods and native vegetation that extends to the shoreline. So, unlike Pipe Lake, run-off is thought to be generally not a problem on North Pipe Lake.

There are more intermittent streams that flow into North Pipe Lake than into Pipe Lake. The Water Quality Committee found two streams that contain a high level of phosphorus. We built a large holding pond to capture the water from these streams. So, if phosphorus input into North Pipe Lake is not coming from run-off or stream flow, where is it coming from? That is the \$64000 question.

External Recycling vs Internal Recycling

External recycling refers to the recycling of phosphorus from external sources into the lake, such as run-off, stream flow, etc. Internal recycling refers to the recycling of phosphorus from sources within the lake such as sediments, springs, etc.

The committee theorized that the phosphorus introduction that is causing issues in North Pipe Lake is coming from within the lake, or through internal recycling, since we have ruled out external sources. However, proving this is not an easy task and science often leads to unexpected conclusions.

We secured the services of Prof Bill James from the Center of Limnological Research at UW Stout and Prof Joe Magner, a Research Professor at The University of Minnesota. These two along with Jeremy Williamson, Water Quality Specialist, formally with Polk County LWRD, Tim Larson a District Board member and formerly with Minnesota Pollution Control Agency, Larry Bresina and Dick Hollar have

been working on a plan to analyze the internal recycling of phosphorus within North Pipe Lake. Finally they will review if the phosphorus load can be reduced.

Bill James spent 2019 studying the waters of North Pipe Lake.

His final conclusion:

1. There is no evidence of significant internal recycling of phosphorus within North Pipe Lake and no treatment of the sediment on the bottom is necessary.
2. If the phosphorus is not coming from internal sources and we believe it is not coming from external sources, where the heck is the phosphorus coming from that causes the algae problems we experience and the decreased visibility?

Prof Joe Magner, University of Minnesota, has spent 2019 and 2020 studying and analyzing the groundwater that flows mainly underground into and around and maybe under both Pipe Lake and North Pipe Lake so as to determine if this is a source of phosphorus. Joe has not yet completed his study, but is suggesting that groundwater may contain more phosphorus than we thought and that run-off may be greater than we thought. Joe is scheduled to complete his part of the project in 2021.

The ultimate goal of these two projects is to reduce the amount of phosphorus in North Pipe Lake and ask the DNR to remove it from the list of impaired lakes. This effort is costing us about \$50,000. We have received a DNR grant which will pay for 67% of this cost.

If you have any questions or comments regarding this historical review of our lakes or our future plans, please contact Dick Hollar at dickhollar@gmail.com. For questions regarding the Healthy Lakes Program or your desire to participate, please contact Jan Breyer at jbreyer@cp-limited.com

We hope that you have gained a better understanding of our lakes from this historical review. We appreciate your continued support and cooperation to help us in our continuing efforts to preserve our water resource.

Dick Hollar, author, is a Water Quality Commission Committee member who has served on this committee for many years.