



District of Powers Lake NEWSLETTER

Published for all those who use and love Powers Lake

JANUARY 2014

WATER QUALITY STUDIES

For historical background, some water quality information was recorded for Powers Lake in 1966 and 1977 by the Wisconsin DNR. Data indicated that Powers Lake had good water quality and little evidence of pollution or excessive fertilizations. In 1985, the DPL decided to do long range comprehensive water quality monitoring to provide background information to manage the lake. Beginning in 1986, we began yearly studies by the U.S. Geological Survey. Here are some of the results comparing early studies to the most recent results.

Water Temperature:

1990 water temperature ranged from 34 to 83 degrees Fahrenheit.

2011 water temperature ranged from 35 to 83 degrees Fahrenheit.

Phosphorus:

SEWRPC recommends that total phosphorus concentrations in lakes not exceed 0.02 mg/l during spring turnover. This is the level considered necessary to prevent nuisance algae and macrophyte growth.

Spring turnover in 1986-89, total phosphorus ranged from 0.007 to 0.029 mg/l, indicating good water quality.

Spring turnover in 2011, total phosphorus ranged from 0.015 to 0.018 mg/l also indicating good water quality.

Water Quality:

Transparency gives an indication of the overall water quality. Measured by the Secchi disk, the readings may fluctuate daily and annually because of the changes in weather and nutrient loadings. The readings for our lake ranged from 6.6 m in August 1986 and July of 1987 to 19.7 m in April of 1987. The average Secchi disk reading for the 1986-1989 study period was 10.9 m. These values indicate good to very good water quality compared to other lakes in southeastern Wisconsin. The readings for our lake in 2011 ranged

from 1.90m to 6.60m indicating from good to very good water quality. The average reading for 2011 was 3.675m indicating very good water quality.

Chlorophyll a:

Chlorophyll a is the major photosynthetic pigment in algae and the amount present is an indicator of the biomass of live algae in the water. Open water chlorophyll a concentrations ranged from a low of 1.0 ug/l in April 1989 to a high of 6.0 ug/l in August 1986, October 1986, and August 1987. These values are within the range of other lakes in the region and indicate good water quality.

2011 values ranged from a low of 1.71 ug/l in April to a high of 4.50 in July. These values are within the range of other lakes in the region and indicate very good water quality.

POWERS LAKE GAUGE

You may have noticed two new water level gauges on or near the outlet of the lake on Powers Lake Road. One gauge is mounted on the upstream headwall to the outlet and the other gauge is mounted on a pole farther out into the water. The first gauge is to measure the water level of the lake when there is outflow from the lake; the second gauge is to measure the water level of the lake when there is no outflow, as during the drought in 2012.

Nancy Michael of the DPL Board is taking weekly water level readings on the same days that she performs E-coli testing during the summer and she will measure the water level once a month during other times of the year. The measurements taken on the gauge that is mounted on the headwall will be used to determine "slow no wake" (SNW) restrictions for the lake.

For the gauge on the headwall, 1.2 ft. would indicate SNW restrictions for Jefferson Bay, and 1.5 ft. on the gauge would indicate

SNW restrictions for the entire lake. Corresponding readings for the gauge on the pole in the lake of 2.91 ft. would indicate SNW restrictions for Jefferson Bay, and 3.24 ft. would indicate SNW restrictions for the entire lake.

Aquatic Plants in Your Lake -a letter from Audrey Green, Lake Specialist / Aquatic Invasive Species Coordinator for Walworth County Land Use & Resource Management

Stanley Nichols stated in the introduction to his book "Distribution and Habitat Description of Wisconsin Lake Plants", that "Lake plants as a group are not well understood, but the need for understanding them is great". This was true in 1999 and although there has been much education success, it is still too often true today. While studies have shown that many lake users understand that aquatic plants are essential to a balanced and healthy lake ecosystem, they are often unhappy about lake plants that cause them any kind of inconvenience. It is important that lake lovers, lake residents and lake managers understand that a healthy lake must have a diverse, native aquatic plant population. There are many different types and species of aquatic plants. And, while it is true that there can be times when some species can grow to nuisance levels, for the most part, they provide a wide range of benefits for the lake.

Of the native plants and plant like species in lakes, algae are frequently the most vilified, but algae are in fact important components of the lake ecosystem. Planktonic algae are microscopic, free-floating species that are found in the first couple of feet in the water column and may escape notice until high concentrations, called 'blooms' change the water color and reduce visibility. These algae form the base of the food chain by producing energy through photosynthesis. This energy is then passed on when the algae are consumed by tiny invertebrates, which are eaten by baby fish. The energy moves up the food chain when smaller fish are eaten by larger fish. Filamentous algae are also single celled species but they form long chains and often look like mats of wet wool in the water. These mats are usually attached to the lake bed, rocks or plants but when they die and are decaying, they often float to the top of the water looking like big black blobs. Although filamentous algae are not eaten, they

do provide habitat for aquatic invertebrates which are eaten by fish and waterfowl. Chara and Nitella, also known as stoneworts, are complex algae that grow in a fashion resembling vascular plants. The branched structure of Stoneworts provide habitat for invertebrates and the rhizoids, rather than true roots, anchor these algae to the sediments which helps stabilize the lake bottom. Algae can and does become problematic in many lakes but with good best management practices that reduce the amount of nutrients going into the water, algae blooms can be reduced.

The plants that most people notice in the lakes are the vascular aquatic plants, also known as macrophytes. Native macrophytes provide several important benefits for water bodies. Root systems can stabilize sediments, which helps improve water clarity. Leaves growing above or floating on the water surface absorb erosion causing wave energy and provide shade which helps stabilize water temperature. In addition, aquatic plants produce oxygen during photosynthesis, which is essential to all lake creatures. Plants in the lake help reduce algae blooms by using excess phosphorous and nitrogen. Macrophytes also provide essential habitat and food sources for fish, aquatic invertebrates and other wildlife such as ducks, geese, deer, beaver and muskrats.

Aquatic plant populations, like lakes, are sensitive to weather, water levels and nutrients. Since these elements change often, changes within lakes are also common. A recent example is the 2012 drought. During the latter part of 2011 and through 2012 the lack of precipitation resulted in low lake levels. Many area lakes saw a huge increase in aquatic plant growth because when water levels decrease, sunlight is able to penetrate areas of the lake that it can't under normal water levels. The increase in plant growth caused concern for lake residents but once the drought ended many of the issues that came with it ended as well. However, some issues will take a little more time. Cattails thrive in shallow water and the drought provided a larger shallow area in many lakes so, in some areas cattails expanded. According to Heidi Bunk, Lakes Biologist for the WI Department of Natural Resources (DNR), we can expect that, with a few years of normal water levels, most of those cattails that crept out during low water levels

will recede to previous boundaries.

Lakes, and the life in them, are not static. It is not unusual to see some changes every year. Lake monitoring, via the Wisconsin Citizen Lake Monitoring Network (CLMN), is an excellent way to keep track of what's happening on your lake. Any interested citizen can receive free training to monitor for water quality, native plants or invasive species. For more information please feel free to contact Audrey Greene, Lake Specialist / Aquatic Invasive Species Coordinator for Walworth County Land Use & Resource Management at (262) 741-7902 or agreen@co.walworth.wi.us.



ICE ON / FISHING DERBY

The entire lake was covered with ice on December 9th, 2013. This hopefully will set a wonderful stage for the Annual Powers Lake Sportsman's Fishing Derby on Sunday, February 9th, 2014. Raffles, food, and prizes await those competing and attending.

HELP WANTED: DPL RECORDING SECRETARY

Our board is looking for someone who would be interested in attending our 4 quarterly and 1 annual meeting and then transcribing the minutes. We have a voice recorder available. It would be ideal if this person had some familiarity with lake issues but it is not necessary. Training and familiarization with the process would be provided. Minutes would be entered into a Word document. Meetings usually run one to two hours and transcription would then follow. The DPL would pay \$100 per transcription. If you know of someone or if you are interested, please contact Nancy Michael at 262-279-3952 or nankmich@charter.net

GREAT GIFT IDEA

The much awaited sequel by Dee Wells is completed. **"After the First Hundred Years"**, the history of Powers Lake, Lake Benedict and Tombeau Lake from just before WWII to present is now available. Written and researched by Dee Wells, it contains many pictures, plots and interesting stories. At \$25.00 tax included, this non-profit publication is available at the Wells-Osborn Spiral Stairways in Genoa City and Solid Brass Fine Antiques on Broadway in Richmond. You can order by mail from Dee Wells, P.O. Box 133, Genoa City WI 53128 for \$30.00 to cover postage.

QUARTERLY BOARD MEETING

Our next DPL board meeting will be held Friday, January 10th, at 5:00 p.m. The meeting is open to the public at the Randall Town Hall, 34530 Bassett Road, Bassett, WI.



DISTRICT OF POWERS LAKE MISSION STATEMENT

Within the scope of the powers vested in it under Chapter 33 and in furtherance of the Public Trust Doctrine of Wisconsin, the mission of the District of Powers Lake is:

To support, protect, preserve and enhance the native ecosystem of the watershed, shoreline, and waters of Powers Lake as a natural resource for generations to come;

To be responsive to the interests and concerns of the district residents and the public; and

To proactively advocate when faced with potential damage to Powers Lake's environmental values, wildlife, natural beauty, peacefulness, safety and/or recreational value.



THE
DISTRICT OF
POWERS
LAKE

P.O. Box 462
Powers Lake, Wisconsin 53159

Elected Commissioners:

Jim Michels, Chair
Nancy Michael, Sec.
Brooke Jensen, Treas.
Neal Kuhn
Mary Adams

Appointed Commissioners:

Judy Jooss, Kenosha Co.
Michael Halvorson, Randall Twp.