NORTH FORK CROW RIVER WATERSHED DISTRICT

2017 Lake Koronis Report

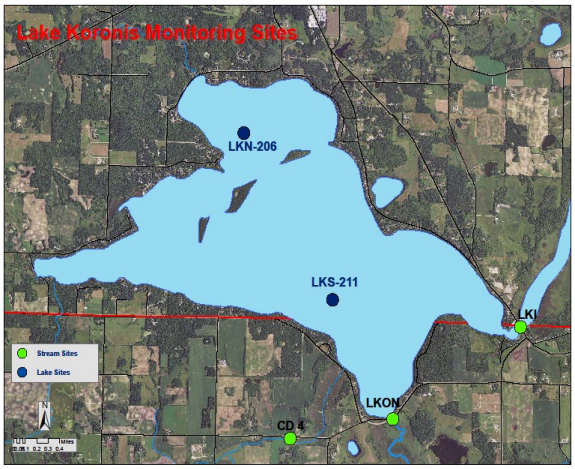
Lake Koronis 2017 Monitoring Summary

Open water season started early in 2017 with an ice out on March 31st, 2017.
Lake sites are monitored monthly May-September. Lake monitoring is accomplished through a cooperative effort between lake association volunteers and NFCRWD staff.

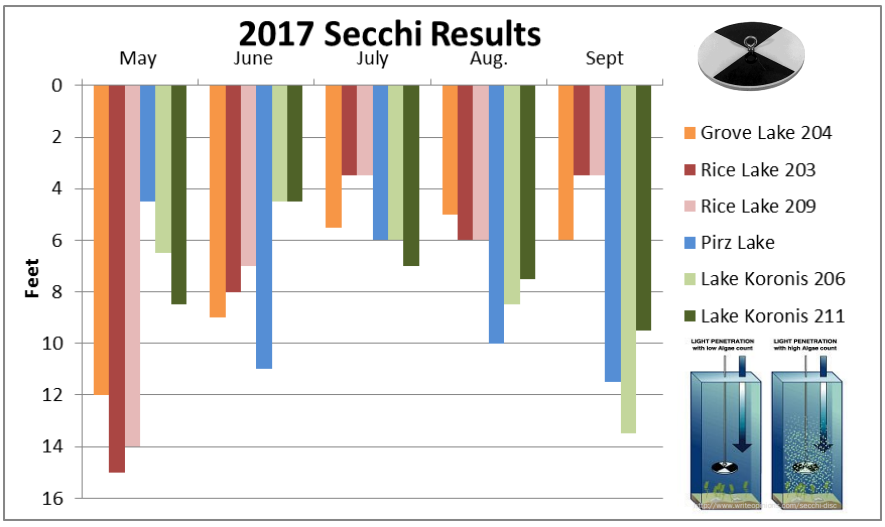
During the 2017 open water season the NFCRWD along with volunteers collected lake samples at two locations (LKS-211 and LKN-206). (see map)

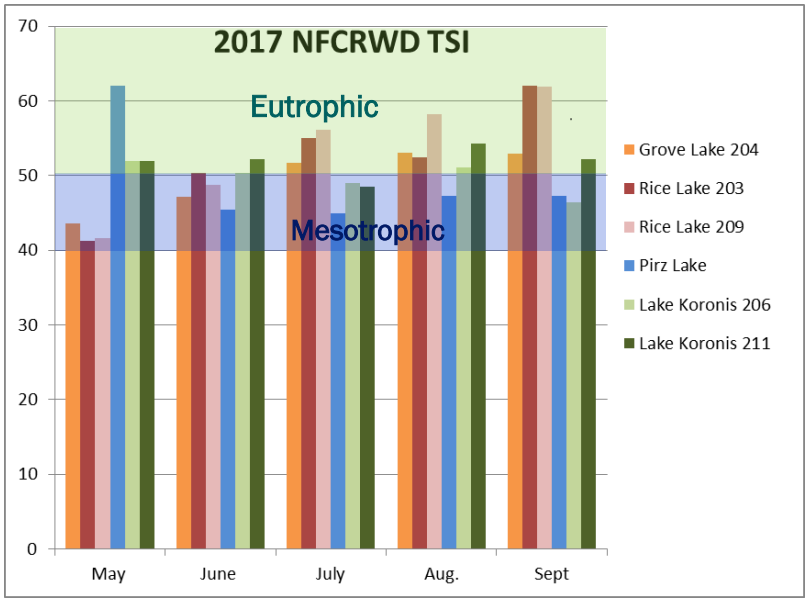
In this report you will find a summary of the monitoring results for 2017, along with long term trends. If you have any questions about these results please contact NFCRWD Chris Lundeen, 320-346-2869, technfcrwsd@tds.net.

You can find out more information about all the programs and projects on the NFCRWD Website. (nfcrwd.org)



Lake sites are monitored every month during the open water season for water clarity (Secchi disk); temperature, pH, dissolved oxygen, conductivity (YSI multipurpose probe); chlorophyll A and phosphorus (Lab samples) contained in the water. Phosphorus content is the primary benchmark used to determine whether lakes are overly inundated with nutrients while chlorophyll-A is useful in determining the amount of algae in a lake. Lake monitoring is accomplished using a cooperative effort between lake association volunteers and NFCRWD staff.



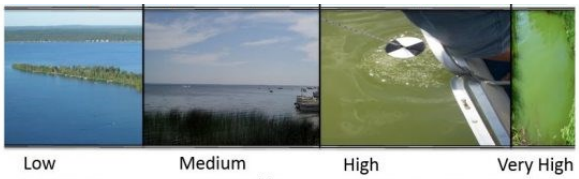


A measure used to quantify these results is Carlson's Trophic Status (TSI), which is a benchmark for lake water quality.

Carlson's Trophic Status (TSI)

Eutrophic (TSI 51-70): Decreased transparency, lack of oxygen in the lower levels during the summer, weed problems evident, warm-water fisheries only.

Mesotrophic (TSI 41-50): Water moderately clear; some probability of no oxygen in the lowest levels during summer.



Low Oligotrophic | Medium Mesotrophic | High Eutrophic | Very High Hypereutrophic

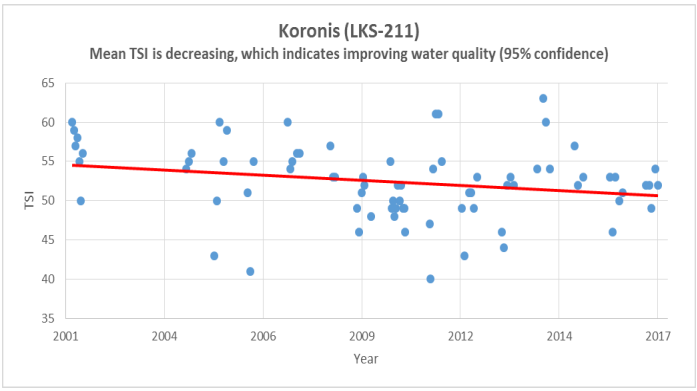
https://micorps.net/wp-content/uploads/sites/63/2017/12/TSI-spectrum-1-e1464896562349.jpg

Lake Koronis Water Quality

Long Term Lake Koronis Trends

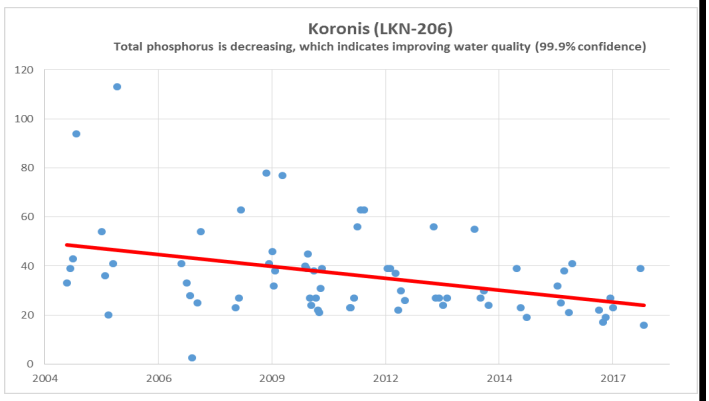
Trends LKS 211 (South Site)

Years Monitored: 2001 - 2017
Total Phosphorus: Improving with 95% confidence.
Chlorophyll-a: No significant trend exists.
Secchi Depth: No significant trend exists.
Trophic State Index: Improving with 95% confidence.



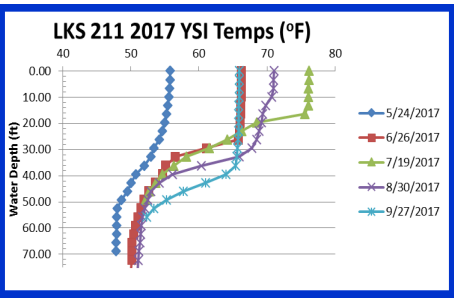
Trends LKN 206 (North Site)

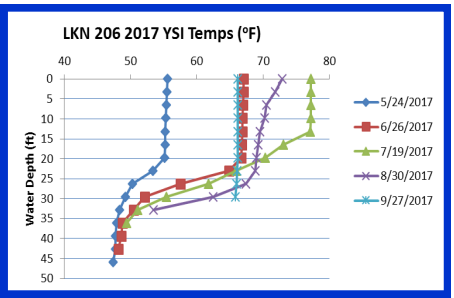
Years Monitored: 2004 - 2017
Total Phosphorus: Improving with 99.9% confidence.
Chlorophyll-a: No significant trend exists.
Secchi Depth: No significant trend exists.
Trophic State Index: No significant trend exists.

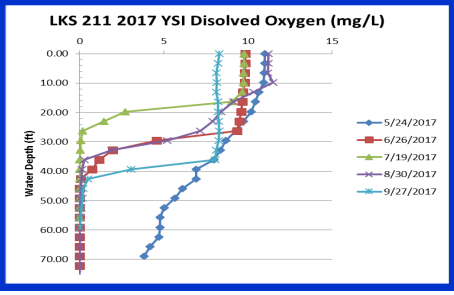


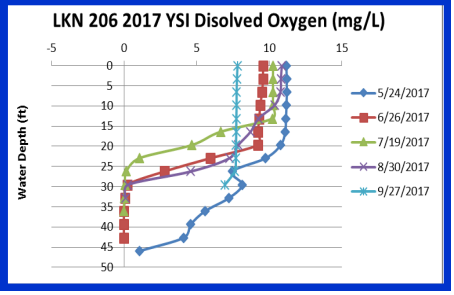
YSI Multi parameter probe, is an instrument used to collect water chemistry data. The instrument is lowered into the water column. At each meter the temperature, dissolved oxygen (DO), pH and conductivity, is recorded. The graphs to the right show the temp. and DO readings from 2017.

A healthy lake in this region will have an oxycline during the summer months, this process starts in the spring. Which is shown in the graphs when the DO levels read around zero. This oxycline layer also helps keep the nutrient (phosphorus) rich soil from mixing with the top layer of water, where the phosphorus can increase algae growth during the growing season. During fall the lake turns over and the lake mixes from top to bottom, seen in the graphs, where the temp and DO are more uniform from the top of the water column to the bottom.









What can you can do to improve Water quality?

Native Shorelines – Native plants can be a good way to decrease erosion and reduce runoff. Native plants have deeper roots than turf grass, which will help in reducing erosion on you shoreline. When most people think of native grasses they think of weeds, but many native grass and flowers can provide a visually appealing shoreline. Native plants also attract wildlife. Taller grasses and flowers will also deter geese from coming on your shoreline.

No-Mow Zone (buffer zone) – A cheaper version to planting a native shoreline, but will take a longer time for the native plants to grow. There is a seed bank in most shorelines, so even though your shoreline could be turf grass right now, if you stop mowing or weed wiping a stretch of shoreline (5-10 feet or more from the waterline), the native plants and flowers will have a chance to grow.

Other Practices: Rain Gardens, Rain Barrels, low or no fertilizer

There many be cost share dollars to install these practices on your property. Contact the NFCRWD for more information.

https://www.dnr.state.mn.us/lakescaping/index.html

All water monitoring data is provided to the Minnesota Pollution Control Agency each fall and combined into a database for use in water quality assessment (https://www.pca.state.mn.us/quick-links/eda-surface-water-data). Current and historical lake data for each site monitored by the district is available online by visiting RMB Labs at www.rmbel.info and utilizing the lake data portion of that site.

Thank you to the lake associations and their members who assisted with water quality monitoring this year, especially John Hanson, Al Schmidtbauer, Karen Langmo and Tom Weber.

NORTH FORK CROW RIVER WATERSHED DISTRICT

Board Meetings are the second Monday of each month.
7 p.m.
April– November
1 p.m.

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