

Outcomes Document: Ann Lake Treatment - Public Forum

**Fri. Aug. 10, 1-3 pm
102 N Hill Ave.
Ogilvie MN 56358**

Purpose: Provide a public discussion for a proposed treatment on Ann Lake for better water quality. The treatment is meant to reduce the high nutrients, (Phosphorus) in the bottom lake sediment.

***Public & Lakeshore Owners Invited to Attend**

Agenda Topics - Presented by Kanabec Soil and Water and lake residents:

- Review of the Ann Lake Study with options to address the high phosphorus load.
- Present our findings in vetting an aluminum sulfate treatment.
- What are the next steps in going forward, pursuing a treatment?
- What challenges are there in seeking funding & planning multiple treatments?
- What are the environmental impacts?
- What can we expect after the treatments?
- Any Questions? Comments?

Thank You for your Interest in the **Water Quality of Kanabec County!**

Questions Please Call:

320-679-3982, Deanna Pomije, Kanabec SWCD

Deanna@KanabecSWCD.org

Outcomes from the Ann Lake Treatment - Public Forum 8/10/18

Questions Posed & Answers Presented:

1. Are there still questions on the wild rice sulfate standards?
2. Will this standard change?
 - The wild rice standard did not change last year, it reverted to the old standard of 10 mg/L as the allowable sulfate limit.
 - The proposed new standard was site specific, depending on further testing of the lake resources. This is an idea to voluntarily figure out the new standard for Ann Lake going forward, to address this concern.
3. How long will the Alum. treatment last?

20-30 years
4. Is there a difference between winter and summer sediment rates?

No, past samples were pulled in the winter and summer. This is just when the sampling was convenient to do. The samples were then exposed to similar conditions for testing.
5. What time of year is best for the Alum. Treatment?

When the water is cool (spring, fall)
6. Is the Phosphorus still declining, as indicated by the 3-year study?

No, new data (after 2010) has been published for Phosphorus on Ann Lake. However, the most recent water monitoring data gathered is from 2018. This data will be available in the spring of 2019, after the quality review has been finished.
7. Is the MPCA still doing monitoring, if so what is the recent data?

Yes, the MN Pollution Control Agency is still doing monitoring, not necessarily every year. Currently there is no more recent data for Ann Lake, besides what is shown below. However, the most recent water monitoring data gathered is from 2018. This data will be available in the spring of 2019, after the quality review has been finished.
8. Does Ann Lake only flow into Fish Lake, or other lakes?

Here's the flow downstream: Ann Lake -> Ann River -> Fish Lake -> Snake River -> Cross Lake -> Pokegama Lake -> Snake River -> St. Croix River -> Mississippi River
9. Was Knife Lake dredged?

No
10. Will Alum. change the oxygen level in the lake?

No, an alum. treatment will decrease the phosphorus, increasing the water clarity of the lake and raise oxygen levels.
11. Have you talked with the Board of Water & Soil Resource agency about funding?

Yes, there are grant funding options and possibly 2 phase grants for this long-term project. Additional grants from different funding sources may be needed to help cover the matching funds required on grants of this size.
12. Who decides which treatment we'll choose to apply?

Ann Lake Watershed Alliance (ALWA) & Kanabec SWCD They are researching the best option.
13. Can you apply Alum. over a longer time-frame? For example, if funding is delayed from the original 14-year plan.

Yes
14. How do you address liability of a treatment?

Will plan to confirm the contracted company to do the treatment has sufficient insurance coverage. ALWA and the Kanabec SWCD have insurance. Kanabec SWCD staff will be present during the application to monitor the water.

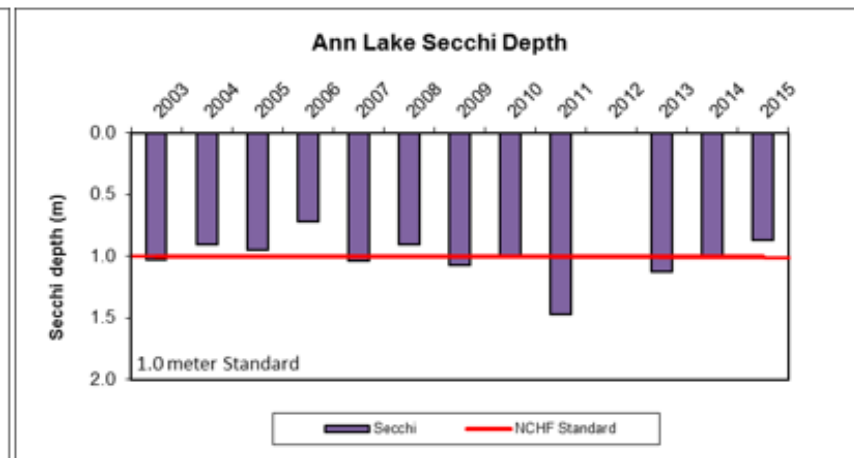
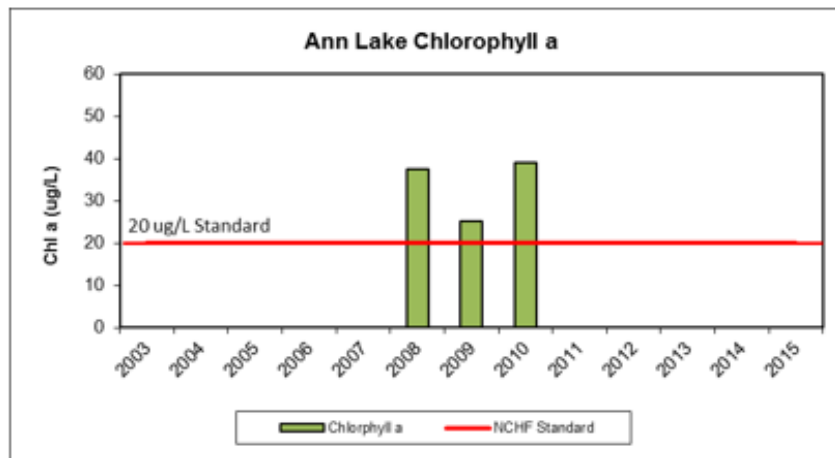
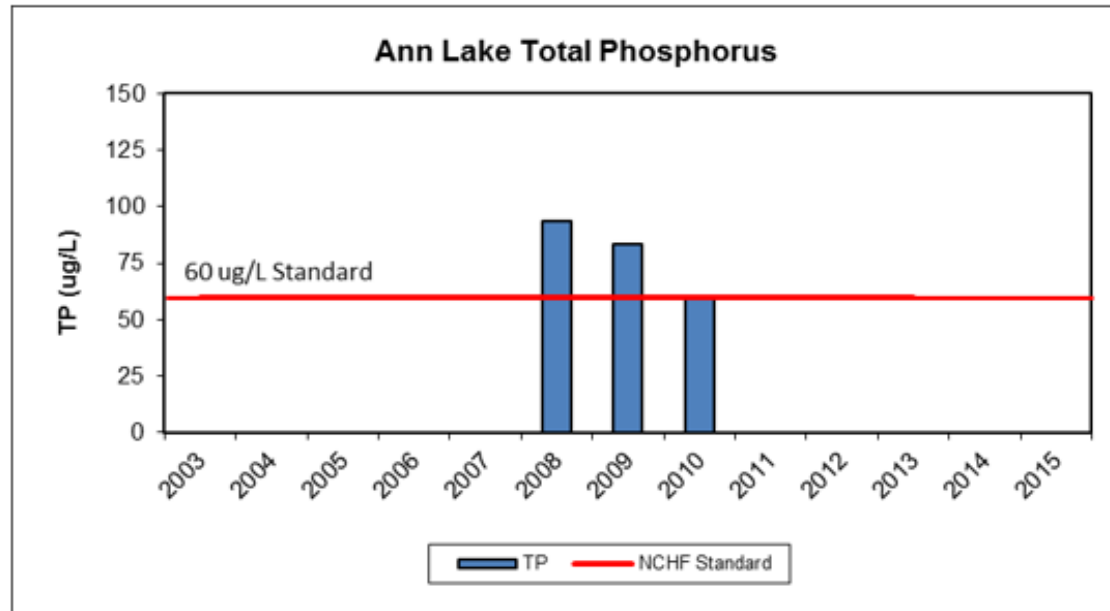
15. How is the Alum. applied?
In liquid form.
16. Will an over-abundance of carp effect the treatment?
Yes, potentially but carp are generally not at the depths (>10') where the treatment is planned.
17. When would be the first planned treatment?
The earliest would be in 2020.
18. Has the phosphorus been checked in Ann River as it enters the lake?
It was checked at the bridge, about a mile upstream of the lake.
19. Is the phosphorus in the bottom lake sediment man-made or natural?
We don't know. It is uncertain where it came from; only speculation that it maybe came from the old logging era or is coming from wetlands in the watershed.
20. Do the shoreland owners around Ann Lake get a vote on a proposed treatment?
We are not planning to have a vote. We plan to do more outreach / public forums and mailings to all lake residence explaining the project. We will encourage the public to contact their various representatives for voicing any concerns on this project. Will rely on current representatives (such as Ann Lake Twp. Officials, ALWA, SWCD Supervisors and County Commissioners) to be informed and give their comments on the project.
21. Have there been discussions on how to raise the funds if no grant funds are awarded?
Yes, this discussion has been started. It would be hard to raise the funds without grant funding.
22. Would a no-wake area on the lake be required with an Alum. treatment?
This has been discussed with state grant agencies and Wenck, the author of the feasibility study. We don't believe a no-wake are will be required, as the treatment area will be >10' deep. At this depth boat traffic is not believed to cause an impact to the treatment that would prevent it from working.

It was announced to invite anyone interested in joining the small group of people researching these treatment and funding options to contact Deanna Pomije with the Kanabec SWCD.

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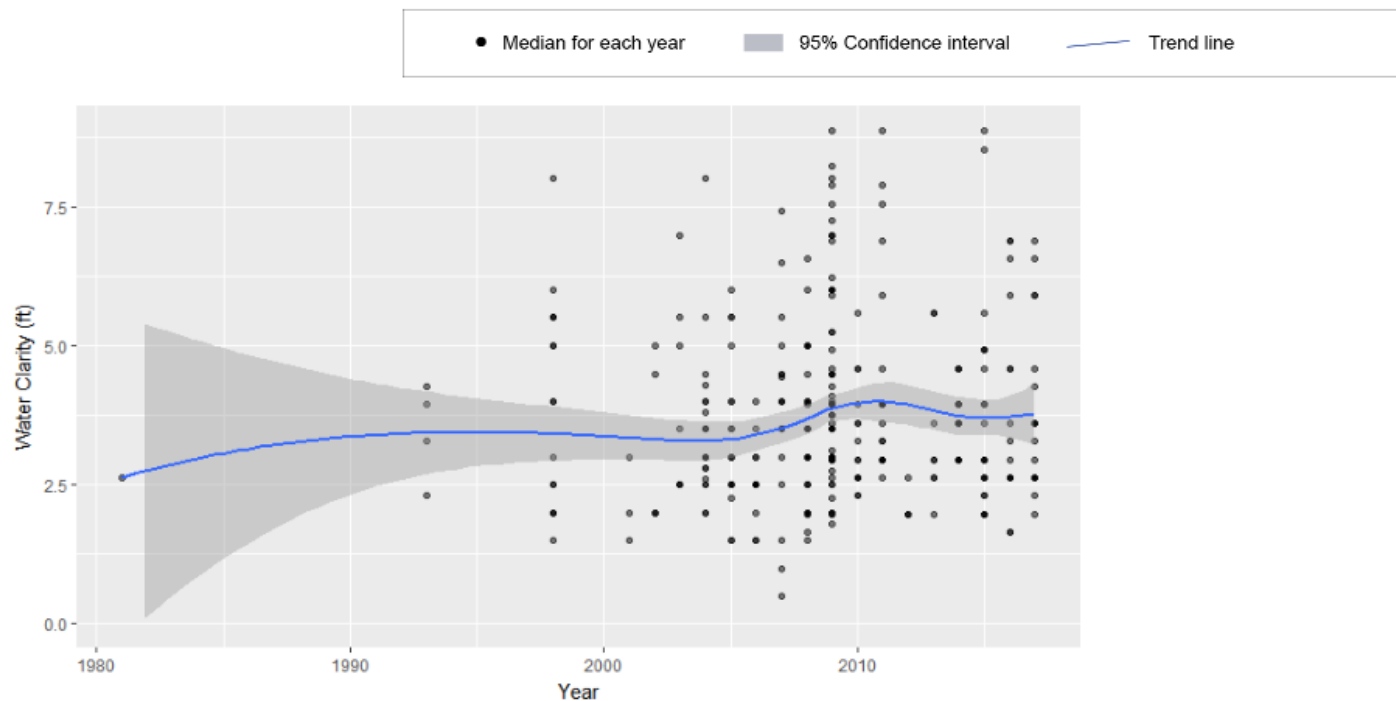
Ann Lake Water Quality



Lake clarity trend

These graphs show statistical changes in clarity over time at this site and across its watershed. For sites and watersheds with at least 8 years of data, the graphs include a trend line, which shows the direction of detected changes in clarity (increasing, decreasing, or no change).

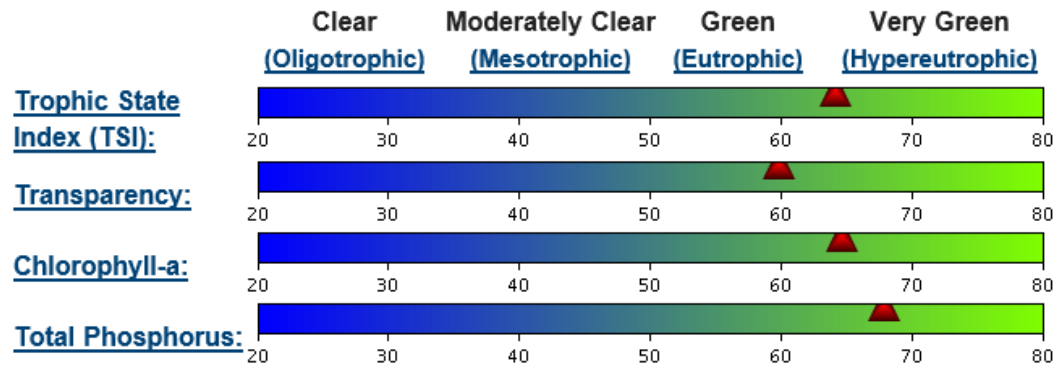
Trend analysis result: For years 1981 to 2017 there is no evidence of a detectable trend regarding water clarity on this lake. For the most recent year of the analysis, median water clarity was 0.16 feet lower than the watershed median.



Water clarity is an excellent indicator of water quality, and the majority of these data are collected by volunteers. Many years of data are needed to detect trends in water quality, and we are always looking for new volunteers. Join the MPCA's [Citizen Lake Monitoring Program](#) and help collect this important information for your lake.

Recreational suitability measures

The **Trophic State Index (TSI)** is a number that summarizes a lake's overall nutrient richness. Nutrient richness ranges from clear lakes, low in nutrients (oligotrophic), to green lakes, with very high nutrient levels (hypereutrophic). The chart below shows the overall TSI rating for this lake (top bar), followed by TSI ratings for the individual parameters that contribute to nutrient richness. The TSI calculations are based on data collected between June and September 2008 to 2017.



Overall Trophic State Index for This Lake: 64

Parameter	10-Year average of all summer samples	Parameter TSI	Expected TSI range for lakes in same ecoregion	Number of samples
Transparency (meters)	1	60	N/A	78
Chlorophyll-a (parts per billion)	33	65	N/A	21
Total Phosphorus (parts per billion)	83	68	N/A	22

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Minnesota Pollution Control Agency website:

<https://cf.pca.state.mn.us/water/watershedweb/wdip/waterunit.cfm?wid=33-0040-00&tab=Data>