



So, what is the State of the Lake?

Little Sand Lake water quality is excellent and has been improving. This spring/summer secchi disk readings have been off the charts! Our Healthy Lake Volunteers have reported secchi depths of 37 ft., 35 ft., and 28 ft.! (A secchi disk is used to measure the clarity of the lake water.)

Are you passionate about Little Sand Lake?

It seems that everyone I talk to about our lake whether property owner or visitor—**loves** Little Sand Lake, brags to their friends about how it is one of the clearest lakes in Minnesota, and enjoys its beauty!



Are you just as passionate about keeping the lake healthy?

We all want Little Sand Lake to remain one of the clearest lakes in Minnesota. Protecting lake water quality is an ongoing process. Bruce Paakh with the MPCA reports that lakes with excellent water are sensitive to change. Sensitive lakes like Little Sand must be rigorously protected to maintain the water quality condition.



Watercraft Inspection

One of the many ways we protect our lake is watercraft inspection at our public access. Several area lakes are infested with aquatic invasive species, including zebra mussels, Eurasian milfoil, and starry stonewort. Unfortunately, more lakes are added to this list every year. The Hubbard County Environmental Services Department coordinates boat launch inspections with funds provided by LSLAA and Emma Township. *(These inspections are the largest expense LSLAA has.)*



What can you do to help protect Little Sand Lake?

Our lake is fortunate to have volunteers who

- routinely monitor lake quality and collect and report related data,
- check on the stormceptors near the bridge on CR 7, and
- prepare informational communication pieces to educate our residents and guests and to develop a sense of community.

Everyone who uses the lake or owns property on the lake benefits from the work these volunteers do and from the monetary donations given to the lake association. *(LSLAA is a 501(c)(3) nonprofit organization and all donations and dues are tax-deductible.)*

I do get that you can be passionate about the lake, but think that you are not able to help. Even if you are not here full time, here are some possible things you can do –

- assist with short-term volunteer projects,
- be a dues-paying member of LSLAA,
- provide additional financial support/donations to LSLAA,
- maintain your property in a way that supports a healthy lake. For example, use the DNR's "Score Your Shore" tool. See <https://www.dnr.state.mn.us/scoreyourshore/index.html>.
- consider a shoreline restoration project, such as rain gardens. *(SWCD can help with design and implementation, and cost-share funding is available.),* and
- **thank the volunteers** who work so diligently for all of us!

Little Sand Lake Water Quality Report 2017

At our 2017 Annual Meeting, the attending members voted to have a study done by RMB Environmental Laboratories of Detroit Lakes. The final report was submitted by Aquatic Ecologist, Moriya Rufer, MS. The full 22-page report is posted on the LSLAA website, and it was emailed to our members and property owners on November 1, 2017. Below are key takeaways and recommendations excerpted from the report:

Overall Conclusions

Little Sand Lake is an outstanding water resource. It is an oligotrophic lake (TSI=35) with an improving water quality trend in both transparency and phosphorus. Four percent (4%) of the lakeshed is in public ownership, and 22.8% of the watershed is protected, while 22.1% of the watershed disturbed. Half of the private land area is covered in forest.

Little Sand Lake is improving in transparency and phosphorus; it is unclear why. Sometimes these trends are due to the natural environment. Little Sand Lake has a high watershed to lake area ratio (137:1), which means there is a lot of area draining into the lake. If the Little Sand Lake area is very sandy, as the name suggests, it could be that the nutrients from the watershed are just draining through the sand and not affecting the lake.

Big Sand Lake is improving in clarity and phosphorus as well, and Big Sand drains into Little Sand, so the trends on these two lakes could be linked. Lakewide septic system upgrades were completed on both lakes in the mid-1990s, so this could be another possible explanation for the water quality improvement.

There are two stormceptors at County Highway 7 at the south end of Little Sand Lake. When the stormceptors overflow during a storm event, they have the potential to contribute nutrient and sediment loading to Lake Ida, which flows into Little Sand Lake.

Priority Impacts to the Lake

As noted, overall, the lake's water quality has been maintained and is improving. However, this does not mean the lake is resistant to future changes in water quality. Because Little Sand Lake is such an outstanding water resource and fishery, there is a high degree of development pressure. From 1990-2000, the impervious surface increased by 96% (28 acres). Most suitable first tier land parcels have been developed. This could mean that future development would occur in the second tier, which can have impacts to the drainage around the lake. The population in the Lake Emma Township is projected to grow another 25% in the next 10 years.

Monitoring Recommendations

Water transparency monitoring should be continued annually. It is important to continue transparency monitoring weekly or at least bimonthly every year to enable year-to-year comparisons and trend analyses. Phosphorus and chlorophyll *a* monitoring should continue, as the budget allows, to track future water quality trends.

Although zebra mussels have not been discovered in Little Sand Lake to date, lake residents should be vigilant to make sure that their boats, docks, and hoists are zebra mussel-free prior to entering the lake. Zebra mussels, and other aquatic invasive species, can dramatically change the lake ecosystem if they establish populations in Little Sand Lake. Water quality (e.g. Secchi depth, chlorophyll *a*, and total phosphorus) can change significantly when zebra mussels become established in a lake, altering the fisheries and creating problems near shore (e.g. sharp shells can hurt when stepped on).

Protecting the Lake

The management focus for Little Sand Lake should be to protect the current water quality.

Protection efforts should be focused on managing and/or decreasing the impact caused by additional development, including second tier development, and impervious surface area. Deliberate planning should focus on the placement of development infrastructure and its resulting drainage patterns. Project ideas include protecting land with conservation easements (forest stewardship enrollment), enforcing county shoreline ordinances, smart development, shoreline restoration, rain gardens, and septic system maintenance.

Native aquatic plants stabilize the lake's sediments and tie up phosphorus in their tissues. When aquatic plants are uprooted from a shallow lake, the lake bottom is disturbed, and the phosphorus in the water column gets used by algae instead of plants. This contributes to "greener" water and more algae blooms. Protecting native aquatic plant beds will ensure a healthy lake and healthy fishery. If a swimming area is necessary in front of people's docks, clear only a small area of plants. Clearing a whole 100 foot frontage is not necessary and can contribute to additional algae blooms.

What are the next steps as far as these recommendations?

The Board has reviewed these recommendations and will continue to establish priorities, make appropriate plans given the resources we have with which to work, and communicate those to LSLAA members. Again, please consider how you can contribute to maintaining our lake and share your thoughts with the LSLAA Board or our Healthy Lakes Committee Members.

And, winter, spring, summer, or fall... PLEASE ENJOY LITTLE SAND LAKE!



Happy Fall!

MaJeana and the LSLAA Board

Photo Credits: Some of these photos were taken from the Little Sand Lake Facebook Page. Thanks to our Little Sand photographers!