

STAR LAKE

ASSESSMENT REPORT

Introduction to Lake Assessment Report

Star Lake was fortunate in 2014 to receive a very comprehensive Lake Assessment Report, prepared by the East Otter Tail Soil and Water Conservation District (EOSWCD) in Perham, and the RMB Lab in Detroit Lakes. They used data from our water samples, and Secchi Disc water clarity readings our volunteers collect every few weeks during the summer.

Additional information contained in the report was provided by:

- The Minnesota Pollution Control Agency (MPCA) regarding the "lakeshed" that drains into Star Lake,
- The Department of Natural Resources (DNR) reference our fishery,
- Otter Tail County information on septic compliance, parcel data, and other lake related issues.

EOSWCD was able to cover the cost of this report with a grant they applied for from the Clean Water Land & Legacy Funds, generated through sales tax revenues.

This report summarizes over 15 years of water quality data indicating whether Star is improving, staying the same, or declining in quality. The study looks at land utilization surrounding the lake to identify any possible sources of Phosphorus runoff that might get into the lake and degrade its water clarity. Additionally the report looks at future projected development as it might affect the lake's health, and makes recommendations about what steps we each can take at our shorelines to improve the water quality even further.

Summary of Lake Assessment Report

So, what kind of "report card" did Star receive? Overall, our lake is considered to be in "good" condition (I'm thinking that's, like, a "B")!! As you look through the first 10 pages of the report, you'll see part of the reason. Our levels of Phosphorus (food for algae) and algae itself (chlorophyll a) are in a middle range, and staying steady.

The clearness of the water, measured by the Secchi Disc lowered into the water, is very good, and is showing an improving trend! Look on page 8 for a fun-sounding reason for this: Large "particulates" (read "dirt") that hang out with the algae make the algae level look worse, or certain "zooplankton" (animals that seem like plants) graze on the algae to take it away and clean up the water. Does this sound like science fiction, or what?! How the heck can we breed these dang zooplankton so we have billions of them (since they are really small!)? Additionally, Star looks a bit better compared to similar lakes in our ecoregion (Central Hardwood forest), so that adds emphasis to our good rating.

Next, we have to look at the area around Star ("its "lakeshed") to see where our water comes from, what's growing there, and how that land is being used, in order to identify any risks for Phosphorus runoff getting to us to degrade our water (see pages 11—15). Good news, again, since 89% of our lakeshed has low phosphorus runoff potential (basically forest, the lake itself, pastures and wetlands).

We have to stay vigilant to the 11%, which is developed land, row crops, and feedlots. We'll be getting a map of where the 5 feedlots are in our lakeshed to see how close they are to the lake, and can take a look at the row crop acreage to see whether it's protected by vegetation or a slant away from the lake to keep its runoff from causing problems.

Also, we have already started to take a look one of the inlets bringing water into Star (from Ditch 25); good news again, since tests show no more Phosphorus than would be expected from such a stream entering a lake (We'll keep track of this in the future as this is such a good way to be ahead of the game. If our Phosphorus levels would ever turn badly worse, we would want to check all of our inlets to find any problem inflows into the lake.

The last helpful data in this report were the maps showing where around the lake our most troublesome shorelines would be. Figure 22 on page 20 could be named our "call to action" map, since it shows several areas on the North, Northeast, and South parts of the lake that are the most risky for Phosphorus runoff. I view this information as probably the most critical stuff provided by this whole report.

The other most critical news is that each of our shorelines needs to be evaluated by its owner, to ensure bare dirt is NOT washing into the lake. Some people use deep-rooted landscaping at the lake, or rain gardens, or riprap for this. See SLPOA Member Janet Moore's article on Shoreline Restoration for more specific information on this topic.

Bottom line, all property owners need to fully engage to reduce storm-water runoff, minimize the use of fertilizers/herbicides, and insure their septs are within compliance.

We hope all of our Star Lake residents will find this report interesting and educational! The complete report is available by clicking on the Lake Assessment button above. The report will become part of our ongoing Lake Management Plan, and is a great tool for us to keep Star Lake the fabulous resource we have at our doorsteps (or "beachsteps"?).

-Carolyn Herron, SLPOA President and Water Quality committee