

Three Lakes Development Association

Water Sampling Results

July 2020

We sampled our lakes again this year, on July 20th, under near perfect conditions of partly cloudy skies, light winds, with temps in the 60's. Thanks again to Bill Kubiak, Roger LaFlamme, Elizabeth Simonson, and Jim Burho for doing the collecting and/or allowing the use of their pontoons and boats. **Pace Analytical Laboratories**, on Oneota Street in West Duluth, is the lab we contract to both analyze the samples *and* report results directly to the Minnesota Pollution Control Agency (MPCA).

We have good data going back to the first sampling of the Three Lakes Water Quality Committee in 1995. Some of those sampling campaigns were done in cooperation with the North St Louis County Soil and Water Conservation District office in Virginia. They sampled at various depths for dissolved oxygen, as well as the ***top-2-meters-depth*** samples for nutrient levels (phosphorus and chlorophyll) as we do today. There were several years prior to 2011 where sampling was done monthly on all of the lakes. The data displayed on the graphs below are using average values for those years where multiple samples were taken per lake. Since 2011, one sample has been taken per lake per year.

The MPCA is the keeper of these data, and their complete information that they have accumulated can be accessed thru the Minnesota Department of Natural Resources (MNDNR) **LakeFinder** webpage. Links to these pages for our lakes can be found on our Three Lakes website, under the Government Links tab - MNDNR page, FYI...

All of our lakes have unique identifier numbers that are used by the MPCA and the MNDNR and everyone who collects information from these lakes. They are listed below, in numerical order, for handy reference in case you want to look for the lake elsewhere:

69-0521 – Lake Elora

69-0522 – Winkle Lake

69-0523 – Dodo Lake

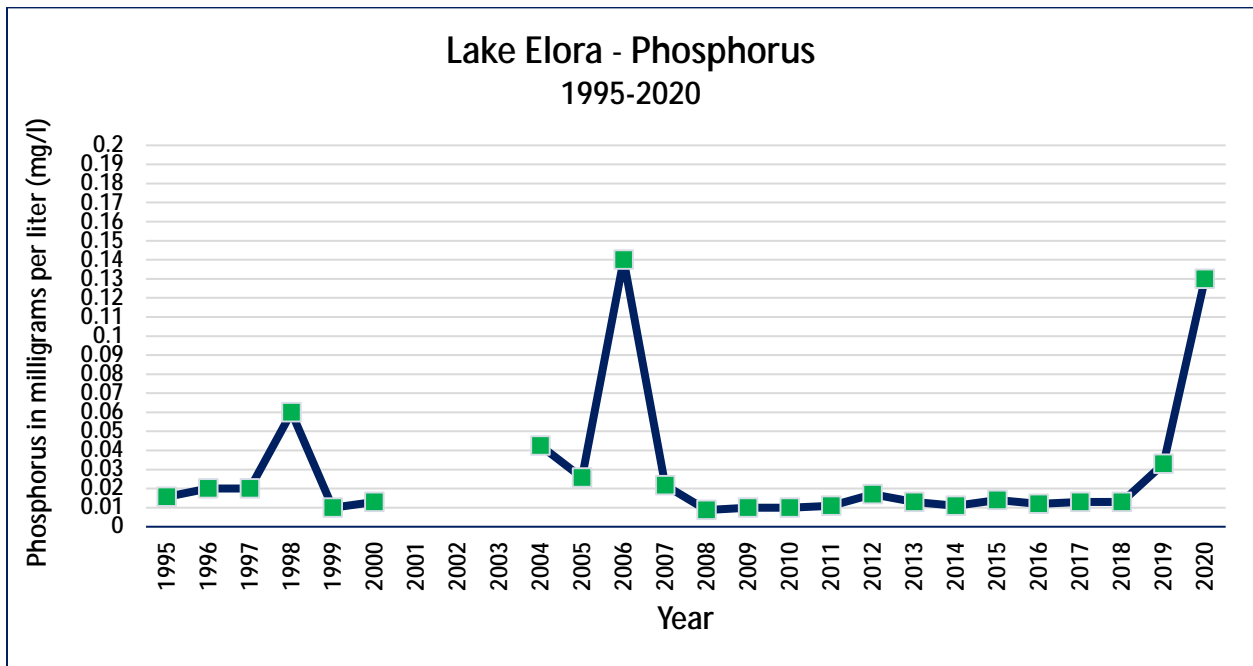
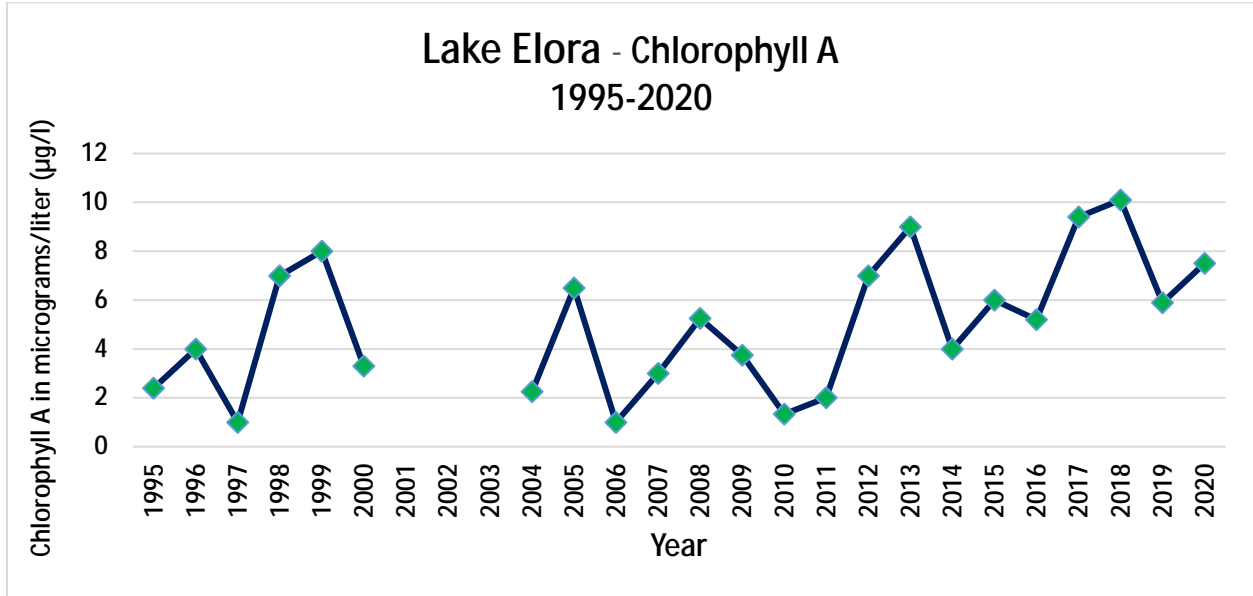
69-0525 – Rose Lake

69-0529 – Strand Lake

Below find the graphs per lake with the data we have collected, since 1995, for the two principal nutrient variables, **Chlorophyll A** and **Phosphorus**. Sampling takes place in the same location each year, parked above the deepest point known.

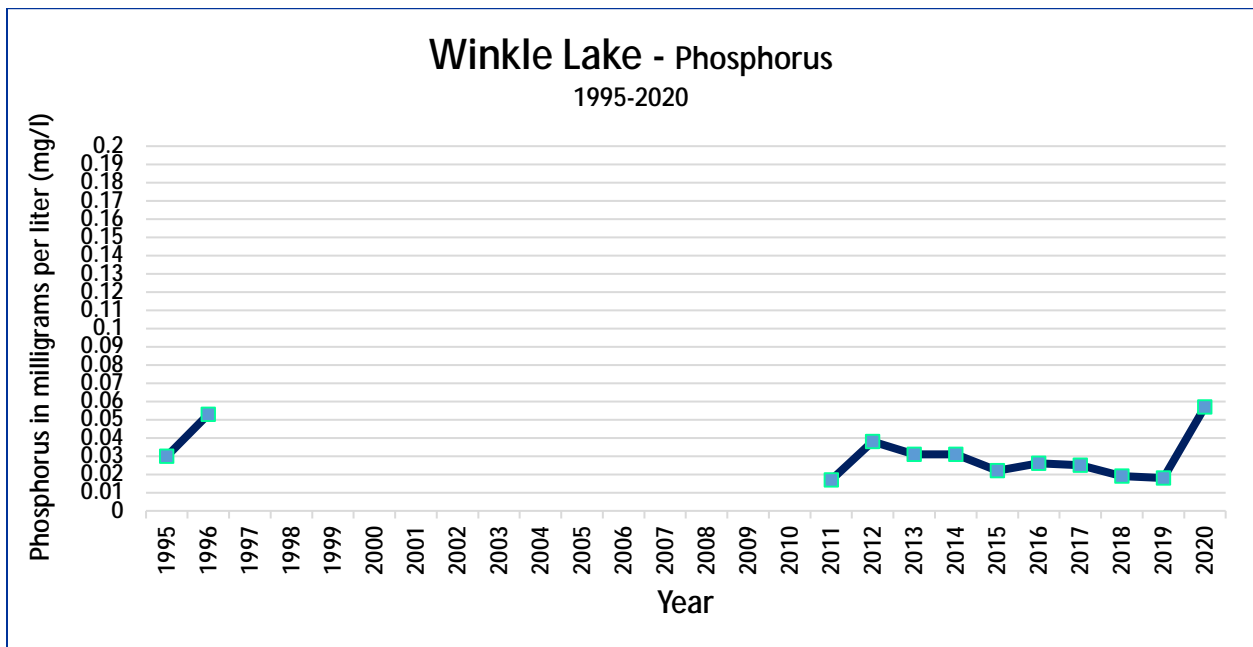
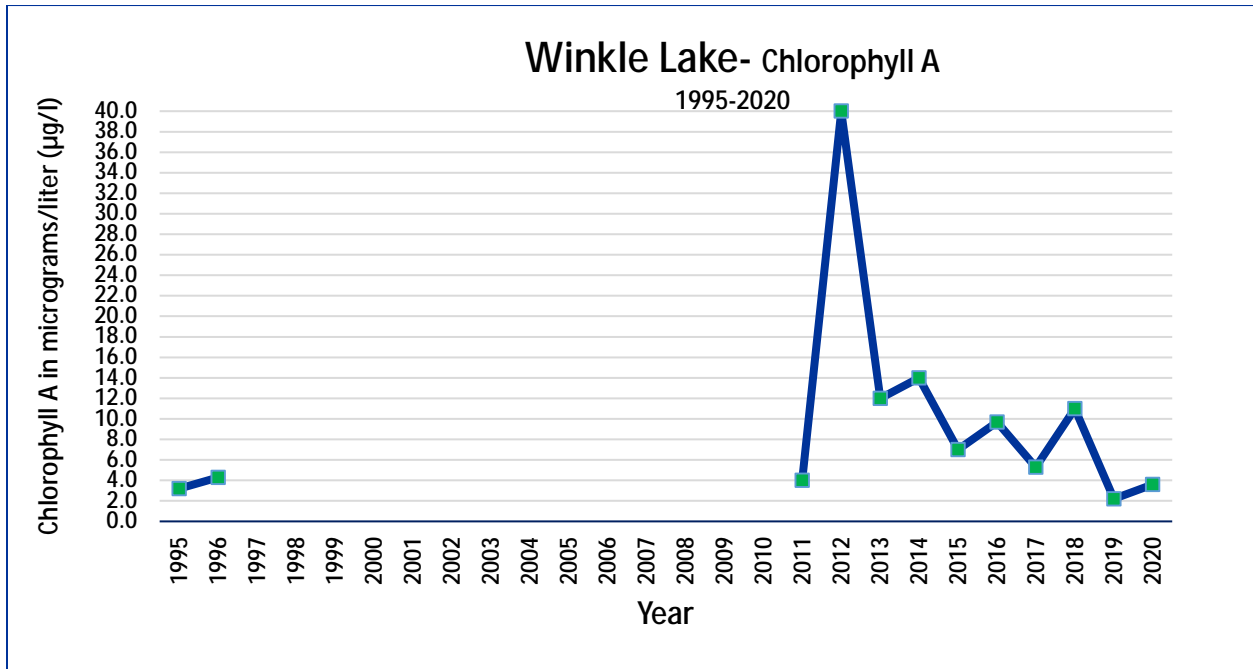
Lake Elora – 69-0521

There is a noticeable trend *upwards* in both variables for Lake Elora, a reminder that we can all participate in keeping our lakes healthy and clean for present and future use. Sampling takes place right where the ice-fishing houses appear every winter. Max depth is ~35'. Surface area is 276 acres.



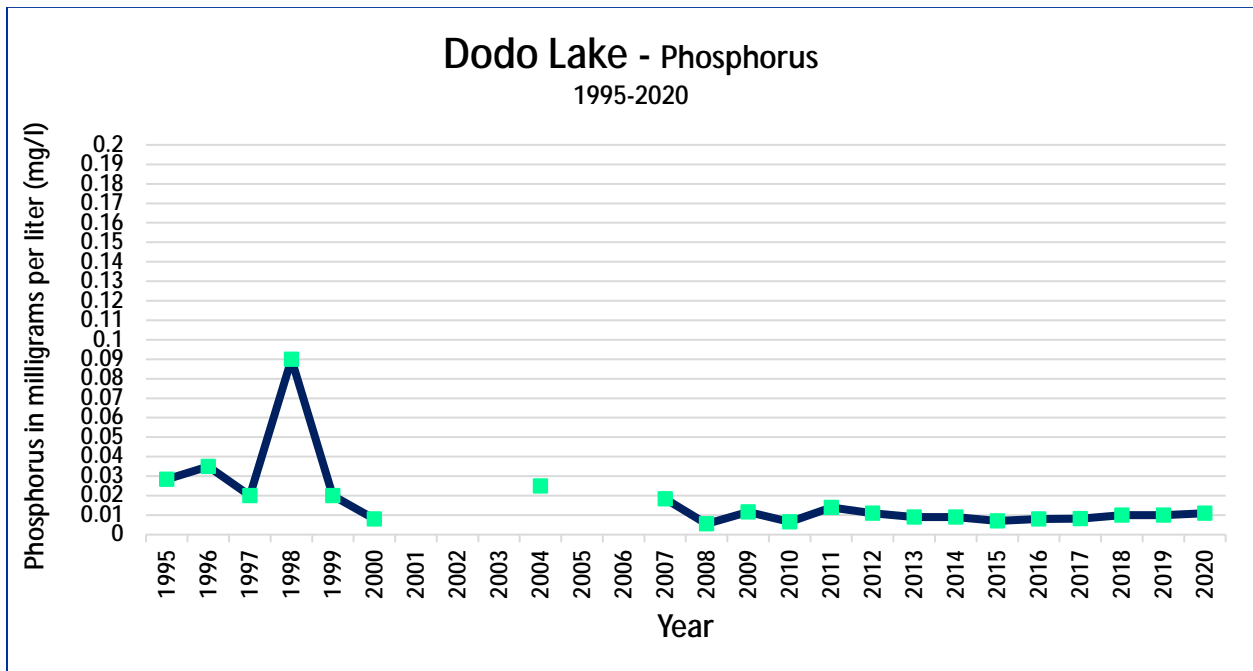
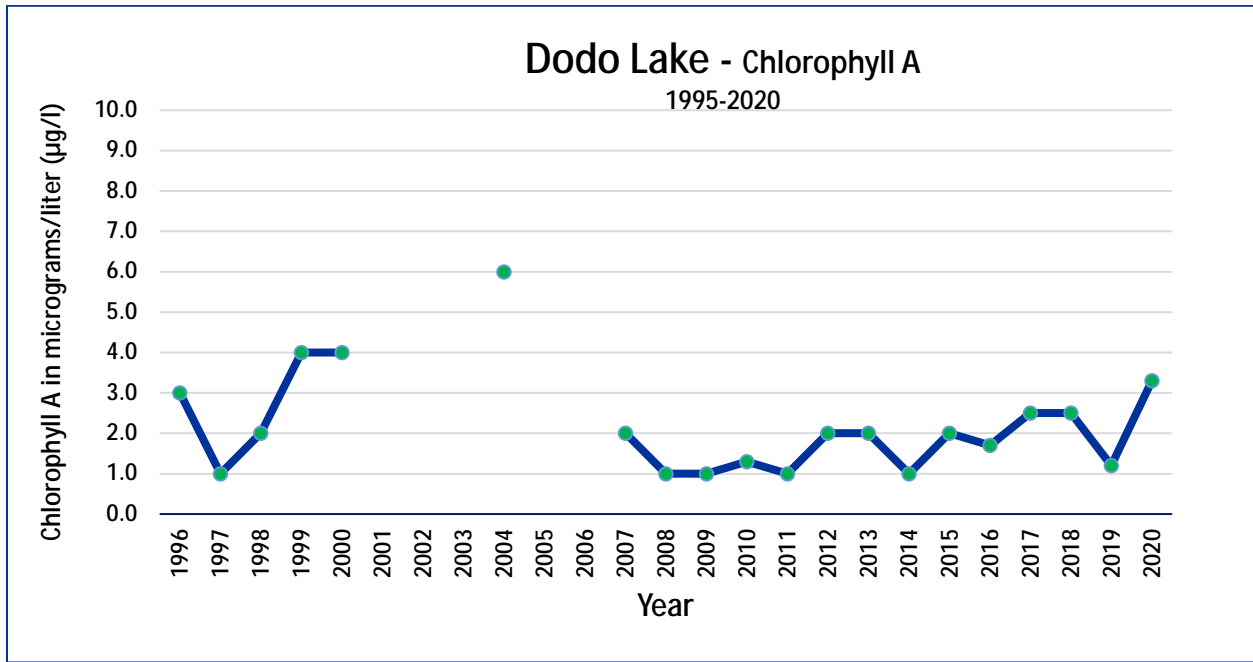
Winkle Lake – 69-0522

Winkle Lake was sampled early in the collection program, then skipped for a bunch of years until 2011. Despite the anomalous very high chlorophyll sample from 2012, Winkle Lake shows a noticeable **downward** trend in chlorophyll over the last eight years. Phosphorus levels have been (generally) trending down as well. Winkle Lake is the shallowest lake we sample, max depth 14 feet, with smallest surface area of 27+ acres.



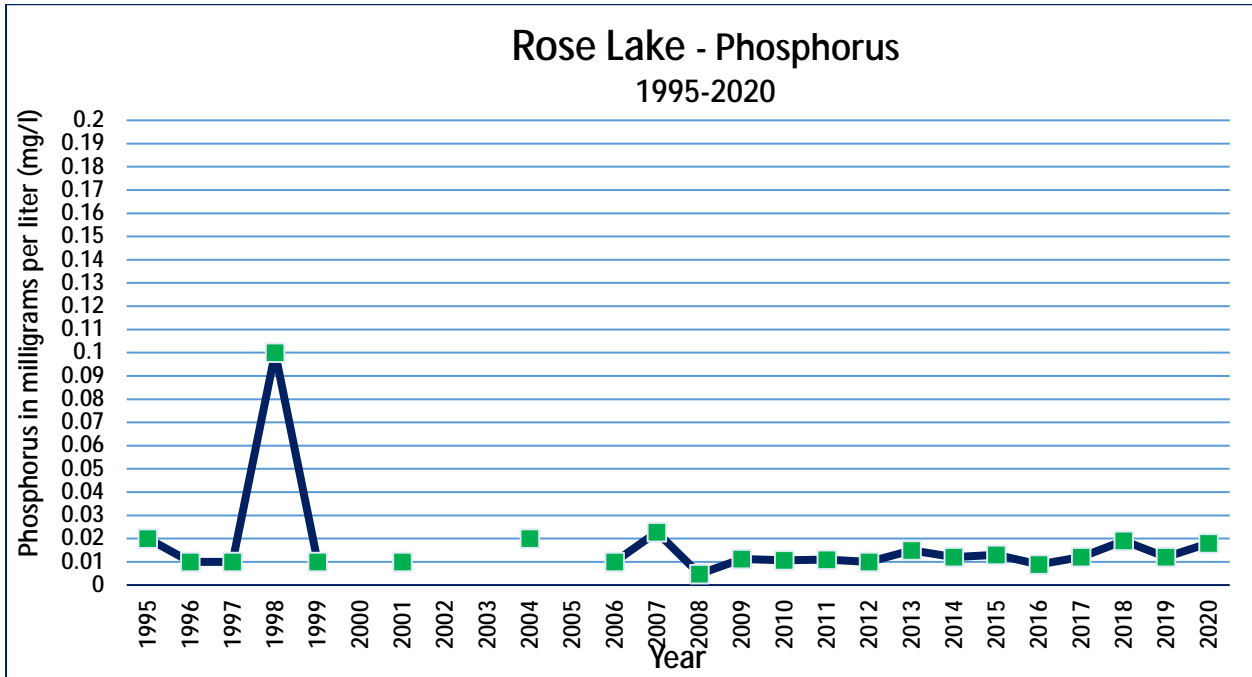
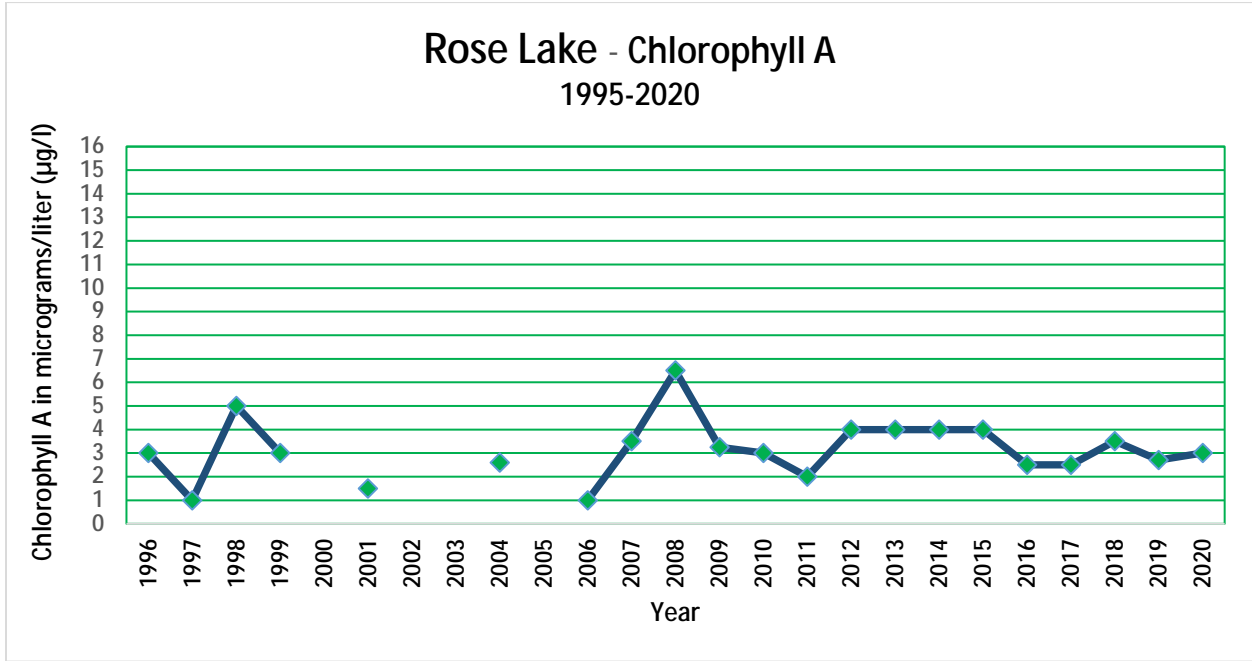
Dodo Lake – 69-0523

Dodo Lake is the deepest lake we sample, listed at 53' on the DNR lake-bottom-contour map. Unofficial readings of 60' have shown up on fish locator devices. Surface area is approx. 90 acres. Low levels of both chlorophyll and phosphorus continue.



Rose Lake – 69-0525

Rose Lake continues to return low values for both chlorophyll and phosphorus, an encouraging sign. Deepest spot is between 35'-40', with a surface area of about 60 acres.



Strand Lake – 69-0529

Strand Lake is the largest in surface area (334 acres) and has a max depth of 16'. The chlorophyll values from Strand Lake show the most variability, perhaps due to the large surface area of shallow water, and the variety of landforms that border the lake and feed it. Phosphorus levels remain steady.

