

## **District of Lakeland #521 2023 Water Quality Program Summary**

The 2023 annual Water Quality monitoring program was carried out during the open water season and the program prime objectives remained unchanged:

- To ensure compliance with Saskatchewan Surface Water Quality Objectives for Recreation and Aesthetics and for the protection of Aquatic Life.
- To gather baseline physical and chemical parameter data that can be used for comparisons over time to determine trends and to monitor any parameter changes.

This program utilizes volunteers at each of the lakes to aid with the survey and to provide boat transportation to the sampling locations. The District of Lakeland #521 thanks the following individuals: Al Christensen and Dovona West at Anglin Lake, Wayne Bartel at Christopher Lake and Craig Foster at McPhee Lake.

Three sampling trips were made to Christopher, McPhee and Anglin Lake to collect physical parameter data at the established baseline sites located centrally on each of the lakes. The depth integrated data collected at each site by a YSI multiparameter meter included water temperature, pH, dissolved oxygen, and conductivity. As well, the water transparency and total depth was measured at each site using a Secchi disk.

All the data collected during the summer at Anglin, Christopher and McPhee lakes met the provincial objectives for Recreation and Aesthetics and for the protection of Aquatic Life. In September, a water sample was obtained at the baseline site at these three lakes which was analyzed by the Saskatchewan Research Council in Saskatoon for physical and chemical parameters. The chemical analyte data collected at all the sampling locations remained very consistent with the previous years data obtained at these sites. At all three locations, the transparency data collected was plotted along with the known historical data. It was noted that there is a downward trend in the Christopher Lake transparency over the last ten years while Anglin and McPhee Lakes show a slight increase in their transparency trends.

The regular Emma Lakes annual sampling program was also maintained with additional physical parameter, transparency measurements and nutrient sampling conducted to supplement the ongoing Stewardship study on the three Emma Lakes initiated in 2018. Four members of the District Environmental Advisory Committee; Keith Dahl, Daryl Jessop, Tom Laxdal and Wayne Hyde collected additional bi-weekly transparency readings on all three of the Emma lakes. Monthly nutrient samples were collected on the three Emma Lakes throughout the summer and there were three migratory bird surveys and one boat count conducted over the summer.

Several extensive algae blooms were observed this summer on Middle and Lower Emma Lakes. As well, several emergent weed growths were observed in some areas that had not experienced them previously. Efforts to reduce or remove sediment input to the lakes must be continued but preferably intensified to reduce the nutrient loading. Sediment input reduction from individual lots must also be closely watched and the installation of silt fences must be strictly enforced.

The plans are to continue this program in 2024 on all the lakes.

Wayne Hyde  
Environmental Advisory Committee