

## **District of Lakeland #521 2025 Water Quality Program Summary**

The 2025 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 Lawrence Haid at Anglin Lake, Wayne Bartel, Rob and Treena McAlpine at Christopher Lake, Craig Foster at McPhee Lake. The Emma Lake program is reported on separately.

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 the downward trend in the Christopher Lake transparency over the last ten years has continued. Anglin and McPhee Lakes continue to show a slight increase in their transparency trends.

The Emma Lake sampling program consisted of six visits to all three of the Emma lakes which included one from ice cover. During these visits, the same data that was collected at the other District Lakes (Anglin, Christopher, Anglin) was collected plus a water sample was obtained for nutrient analysis by the Saskatchewan Research Council in Saskatoon. The September sample was also analyzed for several chemical analytes and none of the parameters demonstrated any pronounced changes over time. The four members of the Emma Lake Stewardship Study; Keith Dahl, Daryl Jessop, Tom Laxdal and Wayne Hyde continued to collect bi-weekly transparency readings on all three of the Emma lakes. The Study team maintained its invaluable relationship with its science advisor, David Halstead, Research Chair, Natural Resource Technology, Saskatchewan Polytechnic, Prince Albert. 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. The transparency of the Lower and Middle Emma lakes only showed a slight downward trend. The Upper Emma Lake average transparency of 0.55m was much below the provincial standard of 1.2m.

The presence of extensive algae blooms this summer appeared to be less than in previous years. Significant emergent weed growths were again observed in some areas that had experienced them in previous years. New areas of growth were also observed, and, in some cases, previous years' beds increased in size and thickness while others were noted to be not as thick. A weed cutting project was initiated by some ratepayers and the Water Security Agency approved a milfoil removal pilot project. A private Manitoba company was contracted to uproot the aquatic vegetation. The aquatic vegetation removed was dumped at the District of Lakeland transfer station and members of the Stewardship Study group observed the materials removed. The materials contained not only substrate materials but also several different weeds that were cut or torn into smaller pieces and it was estimated that the amount of weeds with roots was in the 10% range. After the cutting was done, a considerable volume of small pieces of weed was observed floating in the lakes, on the shore or caught up on docks, boats and bullrushes. An increase in the amount of suspended substrate material was also observed in the water column.

The symptoms of the reduced water quality being observed is not only related to natural lake aging and climate change but also to a lack of cultural stewardship. Efforts to reduce or remove sediment input to the lakes must be intensified to reduce the nutrient loading. Sediment and fertilizer input from individual lots must also be closely watched and the installation of silt fences must be strictly enforced. Education on the negative effects of the use of all types of boats on water quality and the aquatic ecosystems must be increased to improve the public's awareness of how they may reduce environmental impacts by the use of responsible practices.

The plans are to continue this program in 2026 on all the lakes.

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