CRE Study of Lake Louisa-2006

Below is a translation of the interpretation of the test results only. For a full report of the study, please refer to the French original. Here you will find graphs and tables as well.

The July 27th, 2006 sampling results show that Lake Louisa is thermally stratified. At the four sampling stations, the water temperature of the upper layer is higher than 22 degrees C, thus higher than the Quebec criteria for the quality of water for the protection of aquatic life.

At the four stations, the measured oxygen levels of the upper layer (epilimnion), intermediate layer (metalimnion) and inferior layer (hypolimnion) are within the Quebec criteria for the quality of water for the protection of aquatic life. The higher concentrations of dissolved oxygen observed in the metalimnion result from the photosynthesis produced by the algae, which is a phenomenon often observed in the lakes in summer.

Regarding the pH, this parameter is not a limiting factor for aquatic life at Lake Louisa, The pH levels at the beginning of this summer are within the norms for the protection of aquatic life, that is between 5,0 and 9,0.

The specific conductivity values are similar to those normally found in the lakes of the Laurentian Region which generally vary between 0,015 and 0,050 mS/cm.

The September 12th, 2006 sampling results show that Lake Louisa is thermally stratified, but less than at mid-Summer (the surface water layer is cooler). The temperature of the totality of the water column is within the Quebec criteria of the quality of water for the protection of aquatic life (< 22°C). Therefore, the temperature, at the time of the sampling, is not a limiting factor for aquatic life in this lake.

At the four sampling stations, the upper layer and the intermediate layer (the epilimnion and the metalimnion) are well oxygenated. As a matter of fact, levels observed are higher than the threshold to protect aquatic life. However, in the deeper zones of the hypolimnion, at the second and fourth sampling stations, the level of dissolved oxygen observed is slightly inferior to the Quebec criteria for the quality of water for the protection of aquatic life. In other words, the concentration of dissolved oxygen measured in the hypolimnion is below the critical concentration threshold of 7 mg/l for water temperatures varying between 5 and 10°C. Regarding the pH, this parameter is not a limiting factor for aquatic life at Lake Louisa. The pH data for the two samplings is within the norms for the protection of aquatic life, that is between 5,0 and 9,0.

As in July, we note that the specific conductivity values are similar to those found in other lakes of the Laurentian region.

RECOMMENDATIONS

Here are a few simple things lake dwellers can do to limit the deterioration of the quality of the lake water:

- Adopt horticultural practices which avoid the use of fertilizers and lawn feed on shoreline of lakes, waterways and ditches..

- Conserve a shoreline band of vegetation around the lake and the effluents. The role of the shoreline band is multiple: it retains the sediment filled water, protects against erosion and naturally filters fertilizers, nutrients and pesticides.
- Ensure the adequate functioning of septic installations and their emptying according to the regulations.
- Use products that do not contain phosphorus, a nutrient that favors proliferation of aquatic plants and algae. Dishwasher detergents are an important source of phosphorus that can be reduced by choosing brands with no phosphorus.

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