

Executive Summary

2005 marks the fifth year of the Muskoka Lakes Association's long-term commitment on behalf of the community to monitoring, protecting and enhancing the environmental resources of the Muskoka Lakes area. Scientific protocols and analytical procedures used during the 2005 program were developed during the 3-year pilot project and remained unchanged from those used in 2004. Protocols and procedures may evolve in the future if necessary.

Research had two foci in 2005. The first research project focused on the effects of golf course landscapes on nearshore water quality (specifically, total phosphorus concentration). Data collected strongly suggested a difference between nearshore and offshore water quality, with statistical significance being evident at around 35% of sites monitored. This implies that the developed landscape has a significant impact on water quality. We recommend the golf course landscape study be continued in 2006, and expanded in scope to include: (1) a thorough literature review of best environmental management practices for golf course operators; and (2) the collection of fertilizer and pesticide application schedules, rainfall statistics and local hydrologic information. This information can then form the basis of a more thorough study of the effects of golf course landscapes on nearshore water quality.

The second research project compared offshore total phosphorus concentration measurements collected by the District Municipality of Muskoka to those collected by the Muskoka Lakes Association. The best conversion formula relating the data collected by the two groups has been calculated in Section 4.2.2 as:

$$[TP_{so}] = 0.67 [TP_{epi}] + 2.77$$

This conversion formula is based on a small amount of data, and therefore should continually be updated and calibrated in the coming years, in order to best integrate Muskoka Lakes Association total epilimnetic phosphorus concentration ($[TP_{epi}]$) data with District Municipality of Muskoka total spring turnover phosphorus concentration ($[TP_{so}]$) data and with the District of Muskoka's Lake System Health Program and Muskoka Water Quality Model.

Three new partner associations (the Clear Lake Association, the Bass Lake Association and the Moon River Property Owners' Association) were added to the program in 2005. Monitoring efforts grew to 152 sites monitored by over 80 volunteers. Results of the monitoring program are once again available online at <http://www.mla.on.ca>.

Several recommendations are made for consideration in 2006 including a continuation and expansion of the public education campaign associated with the water quality initiative to include several workshops around the Muskoka area, embracing the Muskoka Watershed Council's protocol for benthic community monitoring and the use of volunteers to analyze bacteria samples. More consultant and coordinator time should be devoted to advancing the program's long-term goals, workshops and volunteer training.

Overall, the 2005 monitoring season was successful as the database of water quality statistics grew, the community was effectively engaged in the analysis and understanding of the results, and significant advances in research were realized. The MLA should build on these successes in order to involve a wider community in the initiative, further develop knowledge based on the scientific research, and support, promote and facilitate responsible environmental stewardship in 2006.