

# Muskoka Lakes Association Water Quality Initiative:

2003 Annual Report



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## Executive Summary

2003 marked the end of the Muskoka Lakes Association's pilot project in nearshore water quality. Over the three year pilot project, the Association has realized great successes both technically and socially. As a result, the Board of Directors has made a long term commitment to the initiative.

Building on results of the 2002 programme, two distinct functions of the water quality programme developed in 2003. A research function focused attention on nearshore measurements of total phosphorus, and how different intensities of residential development affected those levels. The main body of this report is dedicated to the statistical and scientific analysis of this research. A monitoring function also emerged. Results of bacteria, phosphorus, water clarity and temperature are available on the MLA website at <http://www.mla.on.ca>. Website users are able to compare the quality of water in one location with provincial water quality objectives, other areas tested and with previous years' results. Using this online interface, community members are able to see changes in their water quality and when it might be appropriate to take mitigative action.

Two hypotheses that form the basis of results analysis are that a) mean nearshore total phosphorus levels are higher than mean offshore total phosphorus levels as b) nearshore total phosphorus measurements are more varied than offshore total phosphorus measurements. Research showed that offshore total phosphorus levels increased in 2003 over levels observed in 2002, whereas nearshore levels remained approximately equal. Due to this change, the two hypotheses did not generally hold true as they had in 2002.

Even though a definite cause of this important change in observations was not apparent, it is strongly suggested that sampling continue through 2004 with only slight changes to protocol. This would act to confirm either the results observed in 2002 or those observed in 2003. Further, another focus of the research programme, such as resorts, golf courses or townsites may be chosen since these land uses may be associated with more explicit affects to nearshore water quality and may therefore be more easily documented.

Long term knowledge generation and community sustainability is dependent on the research function of the programme, but the monitoring function is very important to community members in the short term. Several interested parties, including those from lakes other than Muskoka, Joseph and Rosseau have expressed a desire to participate in the programme. With the help of funding from external sources such as the Ontario Trillium Foundation, it is recommended that the monitoring function of the programme be expanded to engage more volunteers, sample water from more areas and involve more communities.