

Ontario Benthos Biomonitoring Network

The Ontario Ministry of the Environment, in partnership with the province's Conservation Authorities, municipalities and Environment Canada, has created the Ontario Benthos Biomonitoring Network (OBBN).

The goal of the OBBN is to archive and index reference samples from healthy sample sites. Samples taken from impaired sites will be compared to the reference samples to determine the level of impairment, or how unhealthy the sample site is.

As more sites are sampled and tested, the health of a lake or stream system can be determined from the results. Sampling of impaired sites will begin in 2005, once a significant number of reference samples have been accumulated.



Mayfly larva

Other brochures in the Water Quality series:

- ◆ Protecting Muskoka's Water
- ◆ Design & Construction Along the Shoreline
- ◆ Eutrophication & Algae
- ◆ Stormwater Management for a Single Lot
- ◆ Guide to Healthy Shorelines

If you or your lake association are interested in benthic monitoring or any other monitoring programs offered by the District Municipality of Muskoka, please contact:



Planning and Economic Development Dept.

Phone:

(705) 645-2231

Websites:

www.muskoka.on.ca

www.muskokaheritage.org/watershed

Email:

watershed@muskokaheritage.org

Benthic Macroinvertebrate Monitoring



Lake Health Program



What is Benthic Monitoring?

Benthic macroinvertebrate monitoring is a component of the Lake System Health section of the Muskoka Water Strategy. The Strategy was developed by the District Municipality of Muskoka to enhance the existing Lake Health Monitoring Program by establishing a variety of monitoring protocols that can be carried out by individuals and lake associations. Benthic macroinvertebrate monitoring is one such protocol.

Benthic monitoring is the study of the bugs that naturally live in all lakes and streams and that form the base of the aquatic food chain.



Sampling for benthic macroinvertebrates in Muldrew Lake

Benthic macroinvertebrates, or benthos, are primarily aquatic insect larvae such as blackflies, mosquitoes, beetles and dragonflies.

Other benthos species include leeches, crayfish, snails and freshwater clams.

Midge larva



Adult and larval riffle beetles

Mite



Adult backswimmer



Damselfly larva



Sow bug

Stonefly larvae



Aquatic worm



Blackfly larva



The use of benthos data has proven to be a reliable monitoring tool because benthic macroinvertebrates are sensitive to subtle changes in water quality.



Volunteers picking benthos from a sample

Since most benthos have life cycles of six months to one year, the effects of short-term pollution, such as a spill, will not be

overcome in the population until the following generation appears.

Benthos accumulate small amounts of pollutants, which may be lower than standard water testing can detect.



Snail