

Northern Waters:  
A Guide to Designing and Conducting  
Water Quality Monitoring  
in Northern Canada

by the Northern Ecological Monitoring and Assessment Network

(EMAN-North)



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## Preface

The northern Ecological Monitoring and Assessment Network (EMAN-North) held a special session on water monitoring at their annual meeting in November 2001. A key recommendation from that meeting was that EMAN-North should develop a basic guide for monitoring freshwater and marine water quality in northern Canada. Meeting participants saw a need for a monitoring manual written in plain language for people who are not specialists in water quality monitoring, but who have an environmental background and responsibility for designing and conducting monitoring and assessment projects.

The Northern Water Quality Manual is designed to assist with water quality and aquatic system studies in northern Canada. It provides key information that most northern personnel require to answer questions on water quality issues and to design water quality monitoring and assessment projects.

The manual:

- Provides information on freshwater and marine systems, system processes, and characteristics that must be taken into consideration when designing water quality monitoring programs.
- Explains guidelines for water quality.
- Identifies key parameters for assessing water quality.
- Provides guidelines for designing monitoring programs, including the steps required and factors which should be considered.
- Includes information on field sampling techniques, handling of samples, and working with a laboratory.
- Supplies guidance for interpreting water quality data and understanding laboratory reports.
- Describes statistics for analyzing data and tools to help understand the results, such as graphs and a water quality index.
- Describes northern water quality issues including the quality of drinking water, ways to protect drinking water sources, and human activities and natural events that affect northern water quality.

Colour illustrations and examples of specific situations help to explain concepts, techniques, and issues. Definitions of terms are provided in the chapter in which they are first used. All definitions are also listed in a glossary at the back of the manual. The first time each term is used, it is italicized and bolded in blue (such as ***hydrologic cycle***) to show that a definition is provided in that section of the chapter.

We hope the Northern Water Quality Manual will help northerners monitor and protect that most precious natural resource – clean water. The manual is available on the EMAN-North website at [www.emannorth.ca](http://www.emannorth.ca). Updates will be posted on the website when they are produced.

