

**Northwest Territories Cumulative Impacts Monitoring Program
2005/06 Project Reporting
NORTHERN WATER QUALITY MANUAL
PRINTING OF ADDITIONAL COPIES**

Douglas Halliwell
March 31, 2006

1.0 General Project Information

1.1 EMAN-North & Northern Water Quality Manual

Ecological Monitoring & Assessment Network (EMAN) - North is a Pan-Northern organization involving five federal government departments (Environment Canada (EC), Indian & Northern Affairs Canada (INAC), Department of Fisheries and Oceans (DFO), Natural Resources Canada (NRCan), Parks Canada (PC)), three territorial governments, academic organizations and volunteer organizations. EMAN-North defines "northern Canada" as Northern Ecosystem Initiative (NEI) does. "Northern Canada" includes Yukon Territory, Northwest Territories (NWT), Nunavut Territory, Labrador, as well as northern portions of Manitoba, Ontario and Quebec. EMAN-North's goal is to improve understanding of ecological change in northern Canada through promoting, coordinating and communicating the results of long-term ecological monitoring. EMAN-North's 22 sites lie within 10 different terrestrial ecozones across the broad geographical scope of NEI's (and EMAN-North's) "northern Canada".

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Using strong multi-disciplinary partnerships, EMAN-North has coordinated the writing of manuals for northern, national (Canadian) and international (circum-Arctic polar) use. The goal is to standardize ecological monitoring techniques and protocols. The *EMAN-North Northern Water Quality Manual* is an example of one such manual. Other examples of EMAN-North coordinated manuals include *Plant Watch North* Manuals for Yukon, NWT, Nunavut, and northern Manitoba; as well as *CANadian Tundra & Taiga EXperiment (CANTTEX)* Manuals involving plant phenology/timing and climate change/climate variability. The latter is also used elsewhere in the Circum-Arctic World in Alaska (*American Tundra EXperiment, AMTEX*), Russia (*Russian Tundra Experiment, RUSSTEX*) and Scandinavia (*NORDTEX*).

The concept of EMAN-North Northern Water Quality Manuals was developed during a Special Water Session held at the Explorer Hotel in Yellowknife, NT during a November 2001 EMAN-North Annual Meeting co-chaired by Joan Eamer of EC's Pacific & Yukon Region (PNR) and Doug Halliwell of EC's Prairie & Northern Region (PNR). Representatives of EC, INAC, Parks Canada and DFO present at the meeting agreed unanimously at the Meeting that the writing of a Northern Water Quality Manual would be a useful and timely undertaking. It was agreed that the ultimate product would be a "Plainer Language Northern Water Quality Manual" designed for a target audience of "people who are not specialists in water quality monitoring, but who have an environmental background and responsibility for conducting monitoring and assessment projects".

As an interim product, a "Technical Northern Water Quality Manual" was written between January 2002 and March 2003 by a well-known expert on northern water quality monitoring, Dr. Dennis

Gregor, then of *MDA Consulting*. He was assisted by a team from EC, INAC, Parks Canada, DFO, NRCan, Yukon Territorial Government (YTG), Government of Northwest Territories (GNWT), Government of Nunavut (GNunavut), Yukon College, Aurora Research Institute (ARI) and Nunavut Research Institute (NRI). Team members met face-to-face for two days at the Federal Building in Iqaluit, Nunavut during the January 2003 EMAN-North Annual Meeting and continued discussions during several teleconference calls held thereafter. In addition to services-in-kind by representatives of all 11 collaborating partners, formal funding for the contractor was supplied by EC's NEI, Environmental Conservation Branch (ECB) and Meteorological Service of Canada (MSC); as well as INAC's NWT Cumulative Impacts Monitoring Program (CIMP) and DFO.

The same 11 collaborating partners were also involved in the writing, colour illustration, layout, and EMAN-North website (<http://www.emannorth.ca>) preparation, printing and binding of the "Plainer Language Northern Water Quality Manual" between November 2003 and March 2005. Fifty hard binder copies were prepared in April 2005. French translation, illustration labeling, layout, website preparation and printing were completed by the November 2005 EMAN National Science Meeting in Penticton, BC. In February-March 2006, some additional 150 English and 25 French hard (binder) copies were prepared, in part funded by NWT CIMP.

1.2 Project Manager and Organization (2nd Print Run, Water Quality Manual)

Douglas Halliwell, Ecosystem Health Assessment Section, Ecological Science Division, Environmental Conservation Branch, **Environment Canada**, 301-5204 50th (Franklin) Avenue, 3rd Floor, Diamond Plaza, Yellowknife, NT, X1A 1E2.

1.3 Project Team (2nd Print Run, Water Quality Manual)

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Leslie Wakelyn, EMAN-North Coordinator, Western Arctic Section, Canadian Wildlife Service, Northern Conservation Division, Environmental Conservation Branch, **Environment Canada**, 301-5204 50th (Franklin) Avenue, 3rd Floor, Diamond Plaza, Yellowknife, NT, X1A 1E2.

1.4 Start and Completion Date (2nd Print Run, Water Quality Manual)

Start Dates:

- **December 15, 2005.** D. Halliwell informed by C. Kippenhuck of INAC that \$10,000 was available from NWT CIMP for printing of Plainer Language Northern Water Quality Manuals, following proposal submission by D. Halliwell.
- **December 21, 2005.** D. Halliwell informed by L. Wakelyn of EMAN-North that approximately \$8,400 was also available from NEI for printing of Plainer Language Northern Water Quality Manuals.
- **February 13, 2006.** Interdepartmental/Intergovernmental Letter of Agreement between EC and INAC was fully executed.

Completion Dates:

- **March 8, 2006.** Printing of 150 additional hard (binder) copy English and 25 additional French Plainer Language Northern Water Quality Manuals was completed, and these copies were received at Environment Canada Yellowknife Office.
- **March 29, 2006.** Contract was completed for payment of printing contractor prior to EC and INAC deadlines.

2.0 Plain Language Summary

2.1 Project Summary

The concept was developed during a November 2001 EMAN-North Annual Meeting. Representatives of EC, INAC, Parks Canada and DFO agreed unanimously at the Meeting that the writing of a Northern Water Quality Manual would be a useful and timely undertaking. The ultimate product would be a “Plainer Language Northern Water Quality Manual” designed for a target audience of “people who are not specialists in water quality monitoring, but who have an environmental background and responsibility for conducting monitoring and assessment projects”. The project focused on improving water quality methods and standardization, quality science-based and community-based ecological monitoring, and training for northern scientists and technicians.

A technical version was prepared in 2002-2003, involving a contractor (*MDA Consulting*), five federal government departments, three territorial governments and three academic institutions. These partners were also involved in the writing, colour illustration, layout, EMAN-North website preparation and binding of the “Plainer Language Northern Water Quality Manual” by March 2005. Fifty hard binder copies were prepared in April 2005. A French version was completed by the November 2005 EMAN National Science Meeting in Penticton, BC. By March 2006, some additional 150 English and 25 French hard (binder) copies were prepared, in part funded by NEI.

3.0 Background (Context of Project)

The Plainer Language Northern Water Quality Manual relates to NWT CIMP priorities (i.e. monitoring, contaminants, capacity-building). The target audiences include northern peoples and communities in response to their concerns with regard to the water & sediment quality valued ecosystem component (VEC), described in the NWT CIMP state of knowledge reports. The Plainer Language Northern Water Quality Manual was designed to help build and enhance the capacity of Canadians to address ecosystem priorities in northern Canada.

The Manual is readily available on the EMAN-North and NWT CIMP websites for use by government employees and communities alike. The Manual will be used in the educational curriculum at Yukon College in Whitehorse, YT. It will be used in the INAC one- and two-week water quality training courses, for Environmental and Water Monitors and Technicians and others, held at the Taiga Environmental Laboratory in Yellowknife, NT. The utility of the Manual is expected to continue after NEI funding ends

4.0 Project Objectives and Results

4.1 Project Objectives

It was agreed that the ultimate product would be a “Plainer Language Northern Water Quality Manual” designed for a target audience of “people who are not specialists in water quality monitoring, but who have an environmental background and responsibility for conducting monitoring and assessment projects”. Given the target audience(s) described above, the project focused on: (1) improving water quality methods and standardization, (2) quality science-based and community-based ecological monitoring, and (3) training for northern scientists and technicians. Early indications are that the project is already meeting, and may very well exceed, objectives of the original project as described.

4.2 Significance of New Information & Tools

Prior to the printing of additional copies of this Manual, this new information and tools were available on EMAN-North/NEI and NWT CIMP websites only, since the first print run of 50 English copies went only to authors, collaborating partners and funding partners. The Manual uses examples from northern Canada and is designed for Pan-Northern application, combining protocols from across northern and western Canada (e.g. EC's PNR and PYR).

4.3 Contribution to Partnerships & Capacity-Building in Northern Canada

Ecological Monitoring & Assessment Network (EMAN) - North is a Pan-Northern organization involving five federal government departments (Environment Canada (EC), Indian & Northern Affairs Canada (INAC), Department of Fisheries and Oceans (DFO), Natural Resources Canada (NRCan), Parks Canada (PC)), three territorial governments, academic organizations and volunteer organizations. All of the above-mentioned partners contributed in some degree to the writing, illustration, layout, French translation and printing of the Manual. All of the above-mentioned partners have individuals on the distribution list for hard, binder copies. Some of the above-mentioned partners had never collaborated on any projects before.

5.0 Products

The 200+ page hard copy (binder) publication, also available electronically and in both official languages of Canada on websites, is the product generated. The product is available on the EC-coordinated EMAN-North website (in both official languages of Canada), <http://www.emannorth.ca>, and the INAC-coordinated NWT CIMP website, <http://www.nwtcimp.ca>.

The Manual will be periodically updated. A small number of CD-ROM versions of the Manual may be made available, though this was not a popular suggestion on the sign-up sheet made available to participants at the November 2005 EMAN National Science Meeting in Penticton, BC.

6.0 Communication of Results

Doug Halliwell and Leslie Wakelyn gave a Power Point presentation on the Northern Water Quality Manual at the EMAN National Science Meeting in Penticton, BC in November 2005. Doug had previously given a similar Power Point presentation to Parks Canada staff at the Parks Canada Northern Bioregion Workshop in Winnipeg, MB back in March 2005. This was immediately prior to the first printing and release of the Plainer Language Northern Water Quality Manual. The November 23, 2005 Power Point presentation and five slides/photos are available upon request.

7.0 Leveraging

A total of 150 English and 25 French binder hard copy Northern Water Quality Manuals were printed, using EC and INAC funding, at a total cost of \$26,959.45, as follows:

DEPARTMENT	BRANCH/DIVISION	PROGRAM	AMOUNT
Environment Canada	ECB/NCD (CWS)	EMAN-North/NEI	\$8,440.00
Environment Canada	ECB/ESD (Water Quality)	Ecosystem Health Assess.	\$8,519.45
Indian & Northern Affairs Canada	E&C	NWT CIMP	\$10,000.00

8.0 Conclusions and Recommendations

The demand for hard, binder copies of the Plainer Language Northern Water Quality Manual as solicited by EC and INAC alone warranted the printing of 200 English and 25 French copies within the first year of English release and six months of French release.