

Mackenzie River Basin Board

Report to the Ministers 2004-2006





Mackenzie River Basin Board Annual Report 2004-2006

To:

The Honourable John Baird
Minister of the Environment
Government of Canada
Ottawa, Ontario

The Honourable Jim Prentice
Minister of Indian Affairs and Northern
Development
Government of Canada
Ottawa, Ontario

The Honourable Tony Clement
Minister of Health
Government of Canada
Ottawa, Ontario

The Honourable Rob Renner
Minister of Environment
Government of the Province of Alberta
Edmonton, Alberta

The Honourable Guy Boutilier
Minister of International, Intergovernmental
and Aboriginal Relations
Government of the Province of Alberta
Edmonton, Alberta

The Honourable Bill Barisoff
Water, Land and Air Protection
Government of the Province of British
Columbia
Victoria, British Columbia

The Honourable David Forbes
Minister Responsible for Saskatchewan
Watershed Authority
Government of Saskatchewan
Regina, Saskatchewan

The Honourable Michael McLeod
Minister for Environment & Natural
Resources
Government of the Northwest Territories
Yellowknife, Northwest Territories

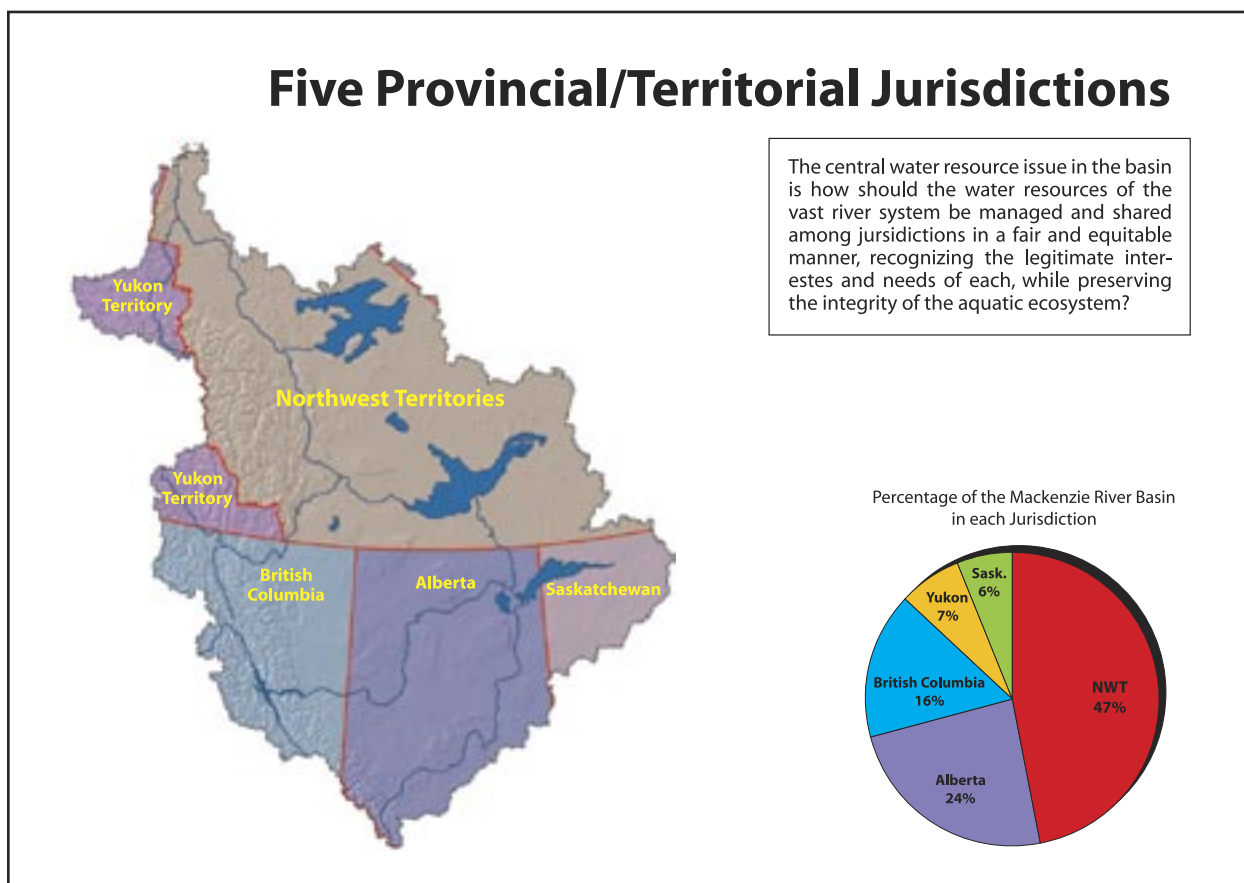
The Honourable Dennis Fentie
Minister of Environment
Government of the Yukon Territory
Whitehorse, Yukon Territory

This is a report to the Ministers on activities of the Mackenzie River Basin Board which was established under the Mackenzie River Basin Transboundary Waters Master Agreement. It covers two fiscal years April 1, 2004 to March 31, 2005 and April 1, 2005 to March 31, 2006.



The Agreement establishes the Mackenzie River Basin Board with the responsibility to implement the terms of the Agreement and to serve as a forum where all governments can cooperate in an effort to maintain the ecological integrity of the Basin's aquatic ecosystem. A staff arm for the Board, called the Secretariat, was also set-up to carry out the programs, basic administrative duties and any investigations required by the Board.

The Board has 13 members, three representing the Government of Canada and two from each province and territory. One of the two provincial and territorial members has been appointed to represent Aboriginal organizations in each jurisdiction.



Mackenzie River Basin State of the Aquatic Ecosystem Report 2003

During the period of this report, the Board completed, published, printed and delivered its first State of the Aquatic Ecosystem Report (SOAER). This is one of the primary deliverable results required by the Master Agreement to be completed every five years.



The Mackenzie River Basin State of the Aquatic Ecosystem Report 2003

Introduces the Board and describes the Basin. It asks whether or not the Board's Strategic Goals (as explained in the Board's Strategic Plan) are being met in the Basin as a whole and in each of the Basin's six major Sub-Basins.

Both traditional ecological knowledge and scientific knowledge systems were used to evaluate indicators of environmental health.

The assessment of these indicators was used to determine if Board goals are being met in each sub-basin and in the Basin as a whole.

The Strategic Goals of the Board are to:

- Ensure human **health** and **safety**.
- Ensure **healthy, abundant and diverse aquatic species** and **habitats**.
- **Improve water quality**.
- Ensure sufficient water **quantity**.
- Sustain **in-stream** water uses.
- Ensure a knowledgeable and **involved public**.

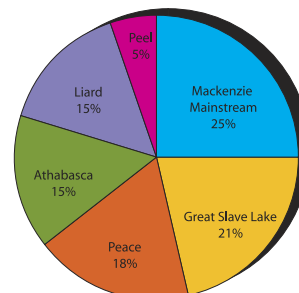
Sub-Basins of the Mackenzie River Basin



Sub-Basin Total Area Km2

Athabasca	268,623.97
Peace	323,017.15
Liard	274,793.85
Great Slave Lake	379,159.00
Mackenzie Mainstream	475,145.71
Peel	74,271.32
Total	1,795,011.00

Percentage of the Mackenzie River Basin in each of the Sub-Basins








In the 2003 State of the Aquatic Ecosystem Report, the Board concluded that the Basin is “**generally healthy**” while urging action on key issues and information gaps. The report raises concern about environmental trends, information gaps, and certain management practices that should be addressed to protect the Basin’s long term environmental quality.

Changes to the Board’s conclusions and advice will be addressed in future annual reports and the next *State of the Aquatic Ecosystem Report (2008)*.






DEFINITION OF SYMBOLS

 Environmental quality is favourable or improving or pressure on the environment is decreasing.

 Environmental quality is intermediate or there is no clear trend in environmental quality because of 1. insufficient information or 2. the presence of mixed (positive and negative) signals.

 Environmental quality is unfavourable or deteriorating or pressure on the environment is increasing.

Summary of overall assessments of indicators for climate change and contaminants in the Mackenzie River Basin. Symbols and their definitions are shown above.

	Indicator	Overall Assessment
CLIMATE CHANGE	Traditional Knowledge	
	Spring Melt of River and Lake Ice	
	Permafrost	
CONTAMINANTS	Mercury	
	Chlorinated Dioxins and Furans	



Here are the Board's **key findings and advice**.

Improved Knowledge

Improved monitoring programs and compatible data systems are needed to support better water management decisions throughout the basin.

Traditional Ecological Knowledge

Community based knowledge about the land and water was critical to the Board's research. Priority should be given to updating, infilling and integrating this information, as required for future state of the aquatic ecosystem assessments.

External Sources of Pollution

Airborne pollutants from far away are a threat to the quality of water and country foods. Governments should continue research and international discussions on pollution prevention to resolve these issues.

Climate Change

Climate change has brought a warming trend and altered precipitation across the basin, affecting river flows, lake levels, habitats, pollutant concentrations, and transportation routes and subsistence lifestyles. All governments should intensify research and cooperation to help us understand and prepare for climate change.

Water Quality

Overall, water quality is good and capable of supporting all the Basin's native aquatic plants and animals. This does not mean that the water can be used for drinking without treatment.

All water, no matter how pristine, should be properly treated before people drink it.

Different jurisdictions report on water quality in different ways, making it difficult to describe water quality conditions across the basin in a consistent fashion. The Board plans to investigate this issue in more detail to promote better consistency between jurisdictions.

Industrial Wastes

Since the 1980s, the quality of treated effluent discharges from industries and communities has greatly improved. Yet a few concerns remain, including pulp mill loadings, oil sands tailings, abandoned uranium mines around Lake Athabasca, Yellowknife's underground arsenic storage sites, and abandoned metal mines in the Northwest Territories. All responsible governments should speed up plans for managing or removing these serious threats.

Groundwater

There is very little information about groundwater in the Board's report. Yet, many basin residents rely on groundwater, making it a very important resource. Governments and industry should join forces to improve the groundwater knowledge base and ensure a safe and secure supply to all users.

Source Water Protection

Protecting drinking water sources is a high priority for all of the Board's member jurisdictions. Implementation of recently adopted policies and programs on source water protection should be actively supported by government, industries and individuals.



Country Food Safety

Many basin residents consume local fish and waterfowl as part of their daily diet. Efforts to monitor contaminants, assess health risks, and distribute consumption advisories for such country foods vary widely across the basin. All of these steps need more systematic attention, with special emphasis on getting useful and timely information into the hands of people who regularly eat country foods.

Protection of Aquatic Ecosystem Biodiversity

The biodiversity of aquatic ecosystems in the Basin appears to be good. Nevertheless, the lack of adequate and reliable data makes this conclusion uncertain. Research-based water quality and quantity guidelines, designed to protect diverse, well-functioning aquatic ecosystems, are required to help assess the effect of increasing demand for water withdrawals and effluent discharges. The development and widespread adoption of such ecosystem guidelines should be a high priority among all partners and industries.

The Peace-Athabasca, Slave and Mackenzie Deltas

Traditional and scientific knowledge assessments agree that changes are occurring in the ecological health of the Basin's three great river deltas - the Slave, Mackenzie, and Peace-Athabasca. Impacts from altered flow regimes and climate change are among the factors needing further research. These, in turn, should be used by respective jurisdictions to prepare comprehensive management plans for each delta.

Bilateral Agreements

Bilateral agreements between neighboring jurisdictions provide the cornerstone for sound aquatic ecosystem management within the Basin. So far, only the NWT and Yukon have completed an agreement. The Board encourages other member jurisdictions to follow suit, using this report as a valuable aid to this process.

Watershed Approach

A watershed approach to river basin planning and management is the best way to link land use practices with the health of aquatic ecosystems. The Board is pleased to see that every jurisdiction is moving in this direction and encourages all partners, industries and Basin residents to support this integrated approach.

The full report and a Highlights version of the report were released simultaneously to the Ministers and the public in July 2004. Copies of the report were delivered to each of the jurisdictions for local distribution and a supply was retained at the MRBB Secretariat where it was made available upon request. An electronic edition of the Highlights version of the report was made available in both French and English on the Board's website (*www.mrb.ca*). The full report was made available in electronic format on the British Columbia Water Portal (*http://wlapwww.gov.bc.ca/wat/*).

The Board's communication plan for the SOAER included the development of a press release and a media advisory / questions and answers document. The Secretariat also prepared a PowerPoint presentation for delivery at public events.



SUMMARY OF OVERALL ASSESSMENTS OF INDICATORS FOR THE SIX SUB-BASINS OF THE MACKENZIE RIVER BASIN

MRBB GOAL	Indicator	Athabasca	Peace	Liard	Peel	Great Slave	Mackenzie Great Bear
IMPROVE WATER QUALITY	Traditional Knowledge	▼	☒			☒	
	Dissolved Phosphorus	▼					
	Dissolved Oxygen	▼					
	Absorbable Organic Halides		☑				
	Organic Matter in Pulp Mill Effluent		☑				
	Sewage Effluent		☑				☑
	Arsenic in Yellowknife					▼	
	Water Quality Guidelines and Indices	☑	☑	☑	☑	☑	☑
ENSURE SUFFICIENT WATER QUANTITY	Traditional Knowledge		☒			☒	▼
	Flow in Rivers	☑	▼▼	▼▼	▼	▼	☑
	Water Level of Lake Athabasca	☑					
	Timing of Spring Freshet					▼	
SUSTAIN IN-STREAM WATER USES	Traditional Knowledge	▼	☒				
	Water Allocations	☑	▼	☑			☑
	Fishing	☑	☑	▼	☑	☑	☑
	Harvest of Fur-Bearers	☑					
	River Tourism				☑		
	Transportation (Ferries and ice Bridges)						☑
	Hydroelectric Facilities					▼	
ENSURE HEALTHY, ABUNDANT AND DIVERSE AQUATIC SPECIES AND HABITAT	Traditional Knowledge	▼	☒	☒	☑	☒	▼
	Fish Populations				☒	▼	
	Waterfowl Populations		←▼→				←▼→
	Species at Risk	☑	▼	▼			←☑→
ENSURE HUMAN HEALTH AND SAFETY	Traditional Knowledge	☒					
	Fish Consumption Advisors	▼	▼			▼	▼
	Flood Hazard Management			☑			☑

Arrows indicate that assessment covers more than one sub-basin



Mackenzie River Basin Board Meetings: 2004 - 2006

The Board met frequently by teleconference as the SOAER approached completion. Final editing and approvals were required at various points until the manuscripts were sent to the publishers.

Meeting #19 was held in Inuvik NWT from 15-18 November 2004. In these meetings the Board reviewed the SOAER and identified a number of issues that will require further study. These include emerging pressures in the Basin from development activities, changes to climate and possible threats to biodiversity. The Board discussed its operational plans for the next five year cycle leading up to the publication of the next SOAER. The Board also began the process of reappointing and reactivating its Technical Committee.

At the request of the Members who wanted to make progress toward completing bi-lateral water agreements, blocks of time were set aside for members to hold bi-lateral discussions.

The Board co-hosted a community dinner with the Beaufort Delta Interim Regional Council at the Midnight Sun Recreational Complex. Copies of the SOAER were made available and the Secretariat provided a presentation on the Board and the SOAER. The Board issued a press release at the conclusion of the meeting.

The Board took a flight tour of the Mackenzie Delta including Aklavik and the Richardson Mountains, Shallow Bay and the Beaufort Sea, the anchor gas fields on Kendall Island and the harbor at Tuktoyaktuk.

The Executive Director remained in Inuvik until 20 November, to give a presentation on the Board and the SOAER to the Northern Territories Water and Waste Association Annual Conference 2004. This was a well attended meeting of the water system and waste water managers from communities in the three northern territories.

Meeting #20 was held in Banff Alberta, 13-14 June 2005. The timing and venue were chosen to coincide with the 58th Annual National Conference of the Canadian Water Resources Association that took place in Banff, 14-17 June. The focus of this meeting was to reorganize and provide direction to the Board's committees. The Board's Technical Committee met concurrently to draft new Terms of Reference and to begin work on setting priorities and establishing a work plan for the Committee.

The Operations, Communications and State of the Aquatic Ecosystem Committees also reported to the Board and submitted work plans for the fiscal year.



The Board received an update on the activities of National Parks in the Mackenzie River Basin from Kathryn Emmett of Parks Canada. The Board discussed the Deh Cho First Nations proposal for a Deh Cho Watershed Gathering. The Board also received agency reports outlining activities and issues in each of the jurisdictions.

Meeting #21 was held in Edmonton Alberta, 05-07 December 2005. The Board received reports and reviewed the work plans of each of the Committees. The Board received agency reports from the jurisdictions and discussed progress on bi-lateral agreements.

Dr. Ming Ko Woo, MAGS Program Leader for the GEWEX-MAGS research program, gave a presentation on the legacy of the Mackenzie global weather experiment project. The project had studied the global energy and water cycle of the Mackenzie River Basin for 10 years concluding in 2005.

Board Committees

Much of the work of the Board was carried out by the Board's Committees.

Operations Committee

The Operations Committee focused on the development of short and longer term operational plans for the next five year cycle of activity. The committee reviewed the Board's minutes, strategic plan and the Transboundary Waters Master Agreement to develop a comprehensive list of activities requiring action from the Board. These were assigned to the appropriate committee and the committees were directed to set priorities and develop work plans to accomplish their tasks.

Technical Committee

The Technical Committee was reorganized and revitalized during 2005-2006. New members were appointed by each of the jurisdictions and a new chairperson was appointed. With direction from the Board and the Operations Committee the Technical Committee developed new Terms of Reference, prioritized its work and organized itself into sub-committees to accomplish specific tasks.

The mandate of the Technical Committee is; to provide technical support and advice to the Board; address monitoring and reporting requirements of the Master Agreement and bilaterals; and provide support and advice to the preparation of the next SOAER report.



The Technical Committee established three sub-committees.

- The Hydrology Sub-Committee provides advice and support to the Board and the bilateral negotiating teams on matters relating to the hydrology of the Basin. The first assignment of the sub-committee was to develop and maintain a hydrologic model of naturalized and scenario flows at various locations throughout the Basin. The Committee developed Terms of Reference and identified a modeling team to carry out the assignment, but was unable to start the actual modeling exercise in 2004-05. The Hydrology Model project was carried forward into 2005-06.

- The Water Quality Protocol/Standards Sub-Committee examines jurisdictional protocols and standards for measuring water quality. During 2005-2006 members were named and a draft work plan was developed.

- The Information Sub-Committee is preparing a list of information sources and libraries with holdings that are relevant to the Mackenzie River Basin. During 2005-2006 members were named and a draft work plan was developed.

The Technical Committee and Alberta Environment organized a Peace - Athabasca Delta Technical Workshop that was held in Edmonton 29-30 September 2005. Approximately 65 scientists and water managers met to discuss the results and recommendations from multi-year studies of various aspects of water management and ecology of the Peace - Athabasca Delta.

Communications Committee

The Communications Committee arranged for a reprinting of the Mackenzie River Basin Transboundary Waters Master Agreement. The Committee also directed the development of new GIS and Landsat image based communications graphics including a Landsat image based poster map of the Mackenzie River Basin. The Committee continued to distribute the SOAER electronically from the Board's website and from websites of several of the jurisdictions. Printed copies of the full report and the Highlights version of the report were provided to the public upon request. The Secretariat has distributed approximately 1400 copies of the full report and 4400 copies of the Highlights version. The report was also available in electronic format on CD. A PowerPoint presentation based on the SOAER was delivered to a variety of stakeholder groups including: the Northern Territories Water and Waste Association (NWTTA); the Peel Watershed Planning Commission (PWPC); The Canadian Water Resources Association (CWRA); the Mackenzie Study Group of the Global Water and Energy Cycle Experiment (GEWEX_MAGS); and the Peace - Athabasca Delta (PAD) workshop.



SOAER Committee

After the completion, publication and distribution of the Board's first State of the Aquatic Ecosystem Report, the SOAER Committee performed an evaluation of the process and the report that was produced. The committee organized a workshop entitled "Looking Back to Move Ahead" on September 28th, 2005 in Edmonton, Alberta. Eight Board and Committee members discussed the lessons learned from the SOAER 2003 to inform how the Committee and the Board should proceed with the planning and development of SOAER 2008.

The Committee presented the Board with a summary of what was learned from the first SOAER and advice on how to proceed with the second SOAER. The workshop advice for the second SOAER included: a proposed work schedule; recommendations on team membership; recommendations on style, format, content, translation, inclusion of Traditional Knowledge and inclusion of participants from other sectors. The workshop identified potential audiences for the SOAER and requested the Board's direction.

The Board identified a new Board Champion for the SOAER Committee and established an ad hoc Steering Committee of Board Members to develop a framework for development of the next SOAER. The SOAER Steering Committee will continue as a three to five person committee consisting of Board Members and chaired by the Champion (no delegates). The Steering Committee develops objectives, determines timelines and approves work-plans including budgets developed by the Working Group. The Steering Committee will provide final approval of the draft report and make a recommendation to the Board for approval of the final report.

The Steering Committee also recommended the formation of an SOAER Working Group consisting of representatives of all members of the Board and including at least two Aboriginal representatives. The Chair will be selected by the Steering Committee. This group is to prepare a Work Plan that sets tasks, budget and timelines to draft the individual chapters for the next SOAER for approval by the Steering Committee. The Working Group is expected to work closely with the Technical Committee and may seek information from that group to use to prepare the draft report. This group will form the writing team for the next SOAER.



Looking Forward 2006-2007

Committee work plans for fiscal year 2006-2007 include;

- the phased development of a hydrology model of the Mackenzie River Basin directed by the Technical Committee;
- the implementation of the framework for the development of the next cycle of SOAER by the SOAER Steering Committee and Working Group;
- the continued updating and distribution of the Board's communication tools by the Communications Committee.

In the new year the Board will rewrite its Strategic Plan. The Board will hold a workshop on the inclusion of Traditional Knowledge in the work of the Board. The Board will expand its role as advocate for the ecological health of the Basin by preparing interventions and testimony into hearings, environmental assessments and planning processes recommended by the jurisdictions.

Financial Report

The Board's financial report for 2004-2005 and 2005-2006 is attached as Appendix 1.

Yours sincerely,

Jim Vollmershausen
Chairperson, Mackenzie River Basin Board

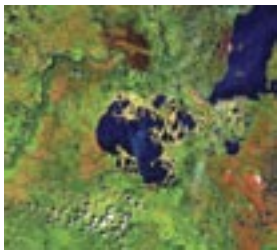


Appendix 1
Mackenzie River Basin Board Expenditure Reports
April 01 2004 to 31 March 2005 • April 01 2005 to 31 March 2006

	2004-2005	2005-2006	Comments
Budget	\$280,000.00	\$280,000.00	As specified in the Master Agreement
MRBB Expenditures			
Payroll	\$135,203.74	\$142,951.36	Wages and benefits for the Executive Director and Secretary
Travel	\$8,220.31	\$20,099.95	Travel expenses
Shipping and Postage	\$4,669.64	\$1,669.89	Air freight and postage
Telecommunication	\$6,715.49	\$7,242.98	Telephone and Internet
Advertising	\$100.00	\$0	
Publishing and Printing	\$32,502.86	\$2,247.99	Posters and Reprint of Master Agreement
Professional Services	\$1,962.40	\$14,492.19	Honoraria and Expenses For Aboriginal Members
Other Services	\$2,225.77	\$2,551.18	Meeting facilities, hospitality, dues
Rentals	\$25,834.80	\$23,057.11	Office space
Purchased Supplies	\$6,903.84	\$3,610.50	Books, subscriptions, office supplies
Equipment	\$13,190.04	\$1,160.74	Computer equipment
Other Expenses	\$7.86	\$85.90	Miscellaneous
Grand Total	\$237,536.75	\$219,169.79	
Free Balance	*\$42,463.25	**\$60,830.21	

* The free balance from 2004-05 was divided among the seven funding contributors and invoices for 2005-06 were reduced accordingly.

** The free balance from 2005-06 has been retained to assist in funding the Technology Committee's Hydrology Modeling Project.



Mackenzie River Basin Board Secretariat
95 Conibear Crescent
Fort Smith, Northwest Territories, X0E 0P0

Tel: (867) 872-2375
E-mail: Jack.VanCamp@EC.GC.CA
Website: www.MRBB.ca