

# Canadian Experience with Watershed Management



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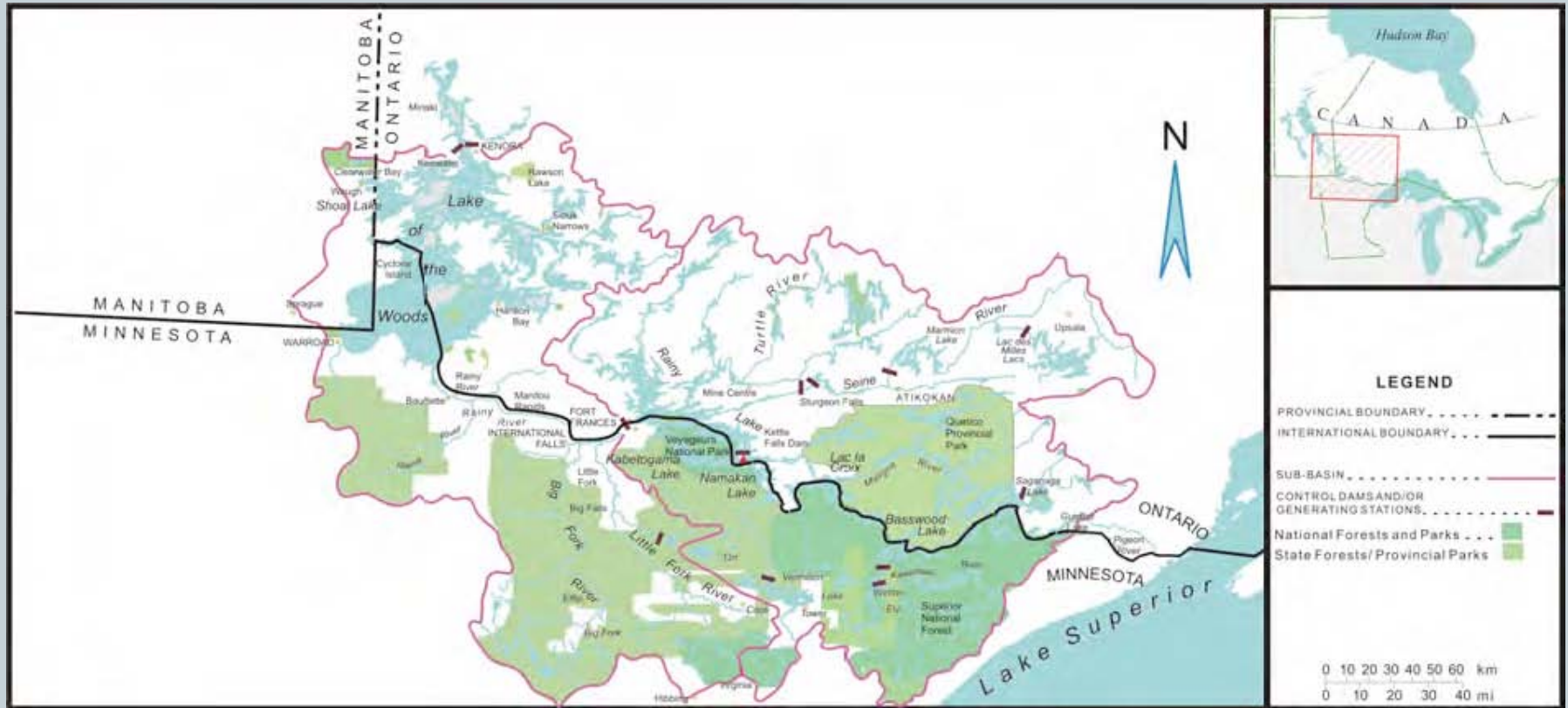
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**BALTIMORE, MARYLAND**  
**JULY 2012**

2 February 2012

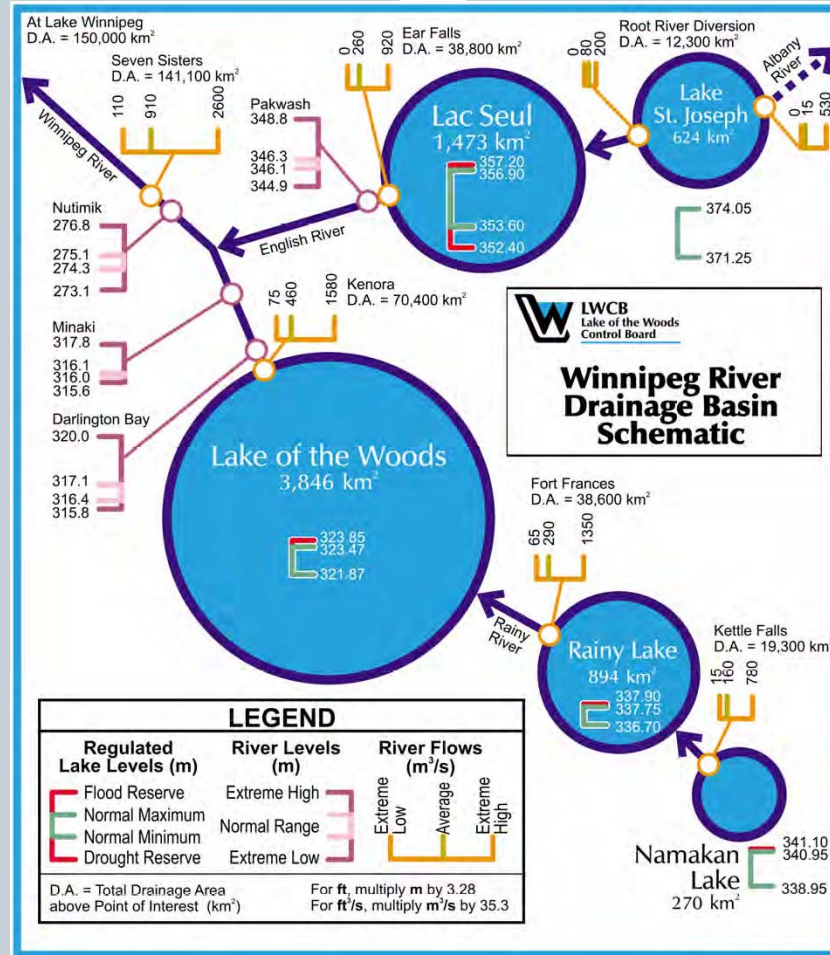


**International Joint Commission  
Issues Report on  
Governance  
of  
Lake of the Woods – Rainy River  
Watershed**

# Lake of the Woods-Rainy River Watershed



# Winnipeg River Drainage Basin - Schematic



# IJC Recommendations



- 1. International watershed board with expanded geographic water quality mandate;**
- 2. Water quality plan of study for the basin;**
- 3. Lake of the Woods water levels study;**
- 4. Summit on the Future of the LoW R/R watershed;**
- 5. Bi-national watershed management plan;**
- 6. Streamlining Administrative appointments;**
- 7. Resolution of Treaty #3 grievances.**

# Lake of the Woods/ Rainy River Recent Developments



**Lake of the Woods Water Sustainability Foundation,  
2004;**

**State of the Basin Report, 2009;**

**International Multi-agency Working Group, 2009;**

**IJC Task Force Interim Report 24 February 2011;**

**Draft Final Report 12 May 2011;**

**Final Report 15 July 2011**

**International Joint Commission recommendations to  
governments of Canada and the United States  
January 2012**

# Issues noted by the Task Force



“Issues such as blue-green **algae blooms** (at times toxic) in Lake of the Woods and excessive **erosion** along its south shore; introduction and impact of **aquatic invasive species** throughout the watershed; impacts of climate change; **impacts of fluctuating water levels** on traditional practices, shorefront properties, and sturgeon spawning and migration; **effects of mining and hydropower development** projects on water quality; and the ecological impacts of application of the 2000 rule curve.”

Task Force, Final, 15 July 2011,1

# Getting Here



**NAFTA: Ontario-Minnesota Fish Wars**

**Mercury Contamination – 1970 ongoing**

**Experimental Lakes Area – 1968 ongoing**

**1959 Rainy River and Lake of the Woods Pollution  
Reference**

**1938 Rainy Lake Convention**

**1920s Lake of the Woods Control Board(s)**

**1914 Shoal Lake Diversion**

**1912 Lake of the Woods IJC Reference**



# Boundary Waters Treaty 1909



For the purpose of this treaty boundary waters are defined as the waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but **not including tributary waters** which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.

# International Joint Commission



- *1909 Boundary Waters Treaty* between Great Britain and the United States

the Commission's main purpose is to prevent and resolve disputes regarding water issues

# Adding Science to the Legal Landscape



Ecosystem

Basin

Surface – groundwater continuum

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# IJC Watershed Initiative



# Numerous IWI Projects Underway, 2009



- **Transboundary Water Quality Health Issues in the Rainy**
- **Lower Pembina River Modelling**
- **Statistical Analysis of Trends in the Red River**
- **How Are We Living with the Red? (assessment of flood mitigation measures)**
- **Literature Review of Apportionment Procedures for the Red River**
- **Devils Lake Fish Pathogens and Parasite Survey**
- **Watershed Backgrounder for the Souris River**
- **Modelling Impervious Surfaces in the St. Croix Basin**
- **Transboundary Harmonization Mapping Initiative**

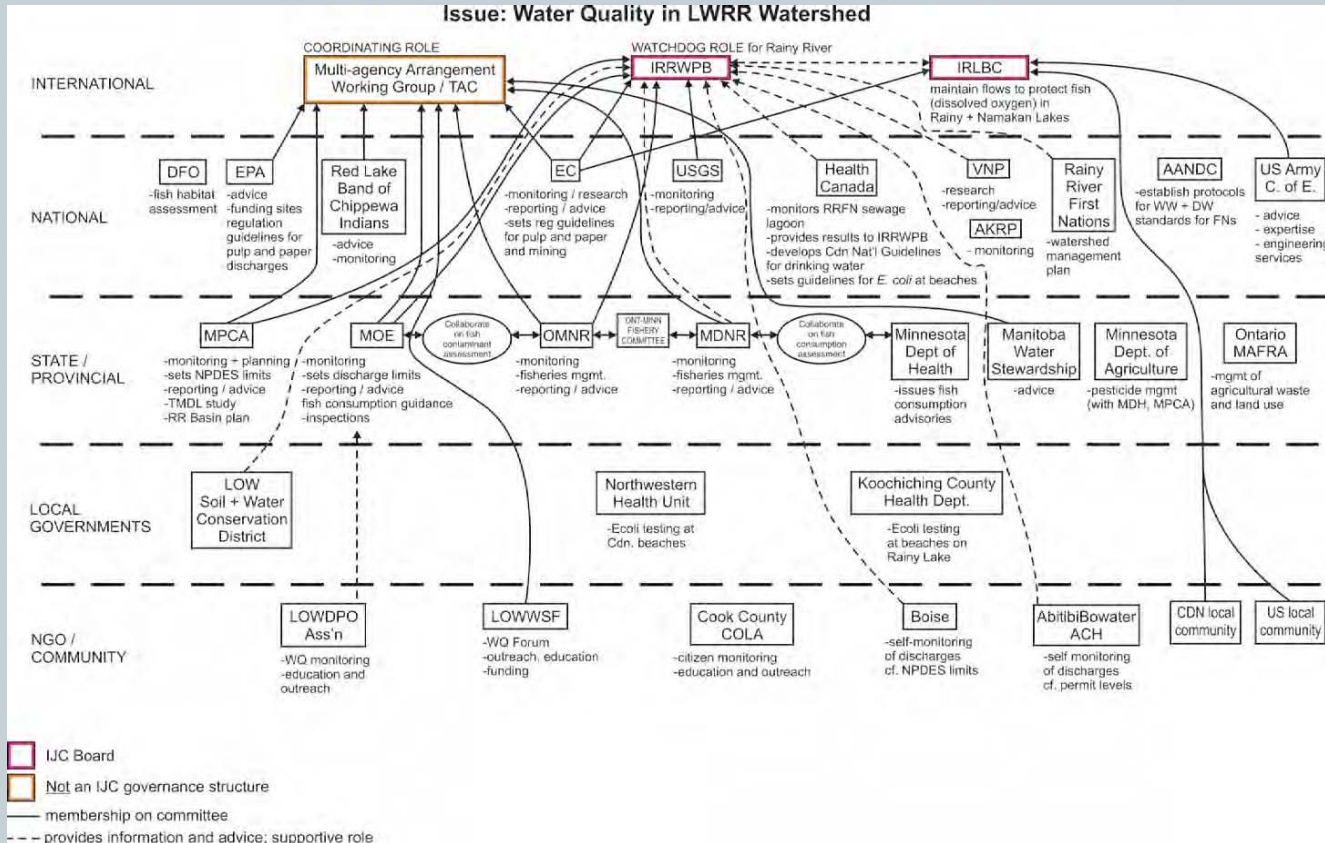
# More in the works, 2010



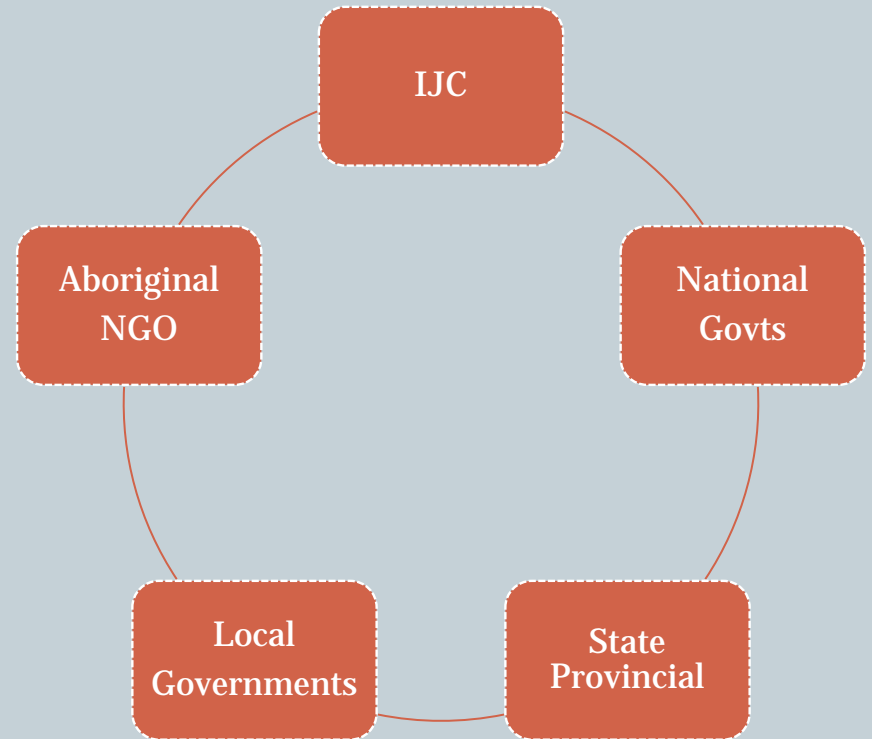
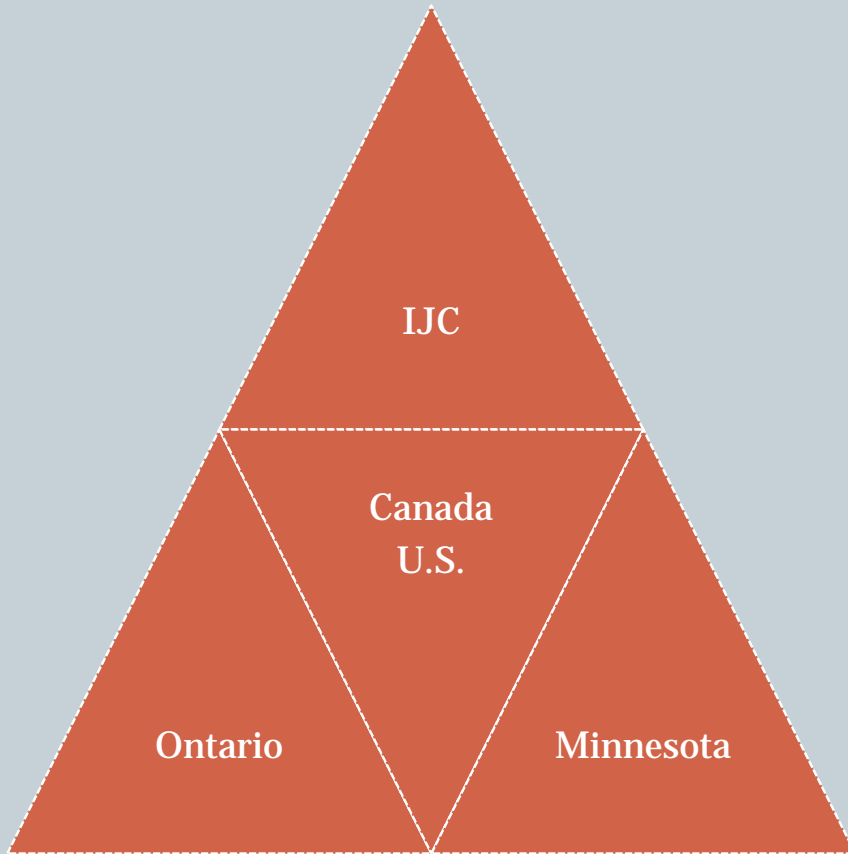
- **GIS Data Harmonization Workshop for the Okanogan Basin**
- **Milk River Natural Flow and Apportionment Computation Spreadsheet**
- **ADCP Bathymetry of Upper Rainy River**
- **A Hydrologic/Hydraulic Model for the Souris River**
- **Evaluation of the Water Quality Program for the Souris River**

# What are we getting ourselves into?

## Water Quality in LofW RR



# Re-configuring the Watershed Community





# *Canada Water Act*



- **Preamble: “An Act to provide for the management of the water resources of Canada, including research and the planning and implementation of programs relating to the conservation, development and utilization of water resources”**

# Canada Water Act s. 4



“For the purpose of facilitating the formulation of policies and programs with respect to the water resources of Canada and to ensure the optimum use of those resources for the benefit of all Canadians, having regard to the distinctive geography of Canada and the character of water as a natural resource, the Minister may, with the approval of the Governor in Council, enter into an arrangement with one or more provincial governments to establish, on a national, provincial, regional, **lake or river-basin basis**, intergovernmental committees or other bodies

# Canada Water Act, s. 5



Subject to this Act, the Minister may, with the approval of the Governor in Council, with respect to any waters where there is a significant national interest in the water resource management thereof, enter into agreements with one or more provincial governments having an interest in the water resource management of those waters, providing for programs to ...

and establishing or naming joint commissions, boards or other bodies empowered to direct, supervise and coordinate those programs.

# *Ontario Clean Water Act (2006)*



- The *Clean Water Act* is aimed at the protection and management of existing and future sources of drinking water
  - Source water protection is primarily a provincial responsibility
- Per Section 2 of the *Clean Water Act*, each source protection area shall have a lead source protection authority
  - Source Protection Committees are established for each source protection area and shall include a chair and committee members prescribed by the regulations
  - This is the means by which municipalities assess and respond to threats to local water sources



**Section 14.1: If a source protection area contains water that flows into the Great Lakes, the terms of reference for the preparation of an assessment report and source protection plan for the source protection area shall be deemed to require consideration of the following documents:**

- 1. The Great Lakes Water Quality Agreement of 1978 between Canada and the United States of America, signed at Ottawa on November 22, 1978, including any amendments made before or after this section comes into force.
- 2. The Great Lakes Charter signed by the premiers of Ontario and Quebec and the governors of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin on February 11, 1985, including any amendments made before or after this section comes into force.
- 3. The Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem 2002 entered into between Her Majesty the Queen in Right of Canada and Her Majesty the Queen in Right of Ontario, effective March 22, 2002, including any amendments made before or after this section comes into force.
- 4. Any other agreement to which the Government of Ontario or the Government of Canada is a party that relates to the Great Lakes Basin and that is prescribed by the regulations. 2006, c. 22, s. 14 (1).

# *The Lake Simcoe Protection Act (2008)*



- **Provides a legislative framework for protecting the Lake Simcoe watershed**
  - To protect, improve and restore water quality, hydrology, heritage features and key hydrologic features
  - **Lake Simcoe Science Committee:**
    - ✦ **Reviews and reports on the overall ecological health, threats and conditions**
  - **Lake Simcoe Coordinating Committee:**
    - ✦ **Plans and identifies issues related to the implementation of the Lake Simcoe Protection Plan**
    - ✦ **Represents a variety of interests in Lake Simcoe including First Nations, conservation, environment, government and planning**

# Alberta *Water Act* (2000)



- Water management plans authorized for water management planning areas including reference to major river basins;
- Alberta has started to create water conservation plans for several water basins including: the Bow River Sub-Basin, the Oldman River Sub-Basin, the Red Deer River Sub-Basin and the South Saskatchewan River Sub-Basin

# Mackenzie River Basin Board (MRBB)



- **The Mackenzie River Basin Board was created in 1997 to oversee the *Mackenzie River Basin Transboundary Waters Master Agreement***
  - The *Agreement* establishes common principles among jurisdictions for effective management of the river basin and ecosystem
  - Establishes an administrative process for implementation and negotiation of bilateral water management agreements
  - Provides a dispute resolution mechanism
  - Has 13 members (3 federal, 10 from the provinces and territories including 1 Aboriginal representative for each)
  - Utilizes 4 working committees:
    - ✦ Operations Committee
    - ✦ State of the Aquatic Ecosystem Report (SOAER) Committee
    - ✦ Communications Committee
    - ✦ Technical Committee



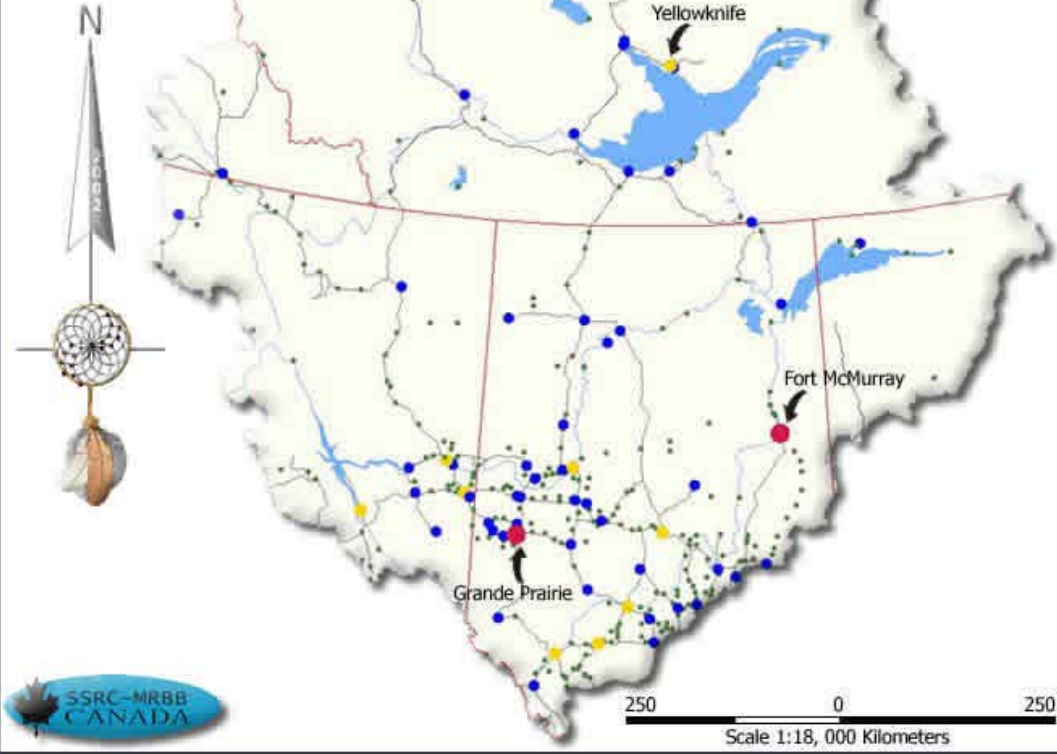
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MACKENZIE RIVER BASIN

# POPULATION

Population Distribution: 1996

- 0-499
- 500-4999
- 5000-24999
- 25000-50000

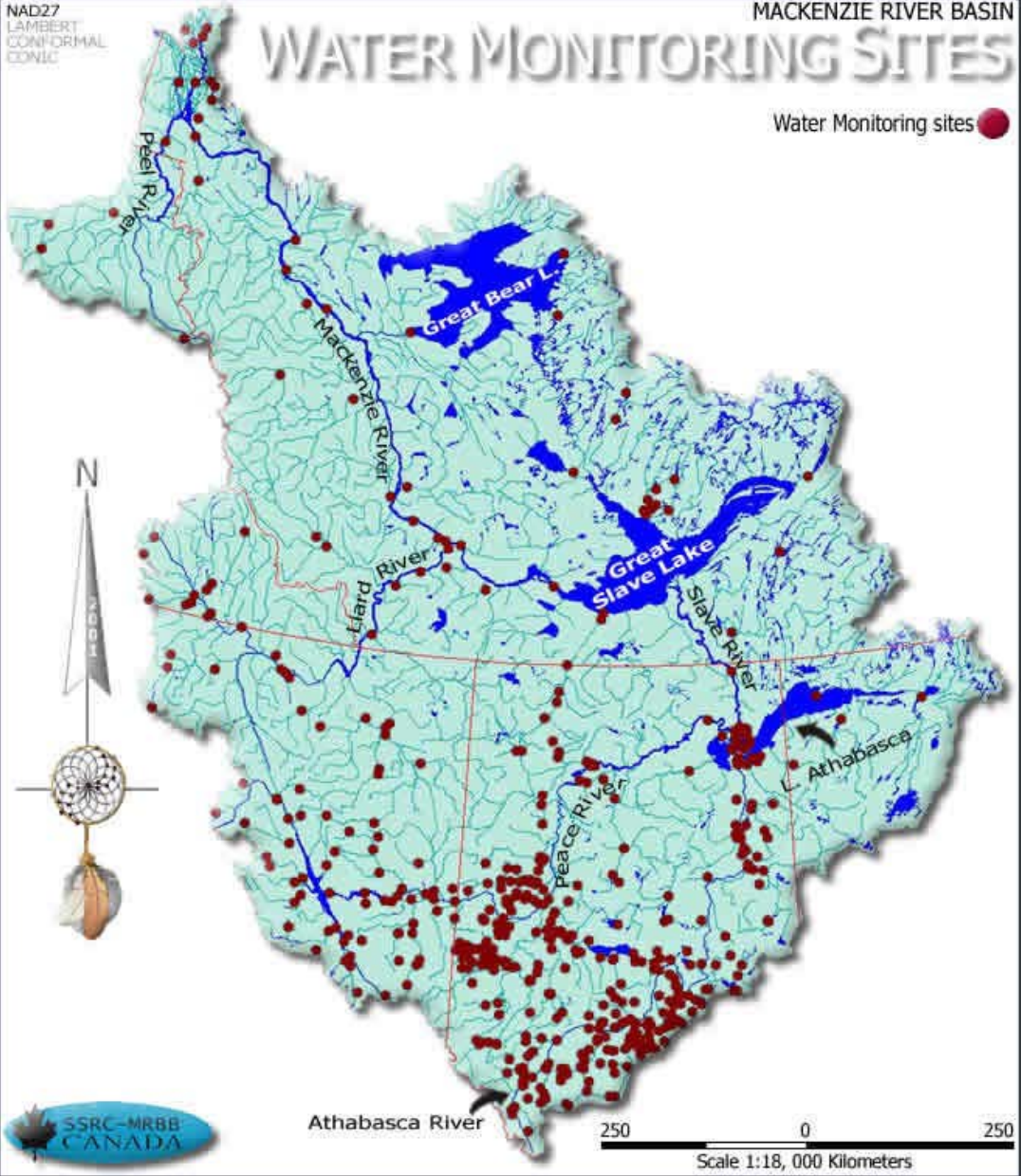


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MACKENZIE RIVER BASIN

# WATER MONITORING SITES

Water Monitoring sites 



Athabasca River

250 0 250  
Scale 1:18, 000 Kilometers

# Fraser Basin Council



- **The Fraser Basin Council (1997) a non-profit collaboration between federal, provincial, local and First Nation governments**
  - Its purpose is to advance sustainability of the Fraser River Basin
    - ✦ The Fraser Basin covers 240,000 square kilometres and one quarter of the province of British Columbia
    - ✦ There are 13 main watersheds and it is the fifth largest drainage area in Canada
  - The FBC follows the Charter for Sustainability developed in 1997 to further its goals of:
    - ✦ Understanding Sustainability
    - ✦ Caring for Ecosystems
    - ✦ Strengthening Communities
    - ✦ Improving Decision-Making

# Quebec Water Policy



- **Quebec introduced its first national water policy in 2002 with its main purpose of:**
  - Recognition of water as a collective heritage of Quebecers
  - Protection of public health and aquatic ecosystems
  - Integrated management of water with a view to sustainable development
    - ✦ The gradual introduction of a watershed-based management system
    - ✦ Further restoration of the St. Lawrence River and an emphasis on integrated management with transboundary organizations