

What Next?

1. Basin Approach to Goals & Monitoring:
 - Explore a Water Quality Compact, to be signed by all jurisdictions.
 - Monitoring strategies:
 - Establish more real time monitoring stations on the Red River.
 - Establish more sites for monitoring on the tributaries and mainstem.
 - MN will be doing more biological monitoring.
 - Lake Winnipeg:
 - Update the % and establish a better base line for Lake Winnipeg reductions goals and set new time line.
 - Develop strategies for the nutrient reductions that will benefit Lake Winnipeg.
2. Restoration of Impaired Water Bodies:
 - Assessments in MN and ND.
 - TMDL's in MN and ND – begin/ do.
 - Begin improvements to impaired waters in MN and ND.
3. Reducing Pollution:
 - Strategies for CRP acres going back to cropland (corn, etc.) and increased nutrient runoff.
 - Strategies to address increasing population.
 - Leadership Summit on Lake Winnipeg in spring of 2008.



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The Red River Basin Commission (RRBC) is a group of people from the Red River Basin working together to achieve common goals for water protection and management.

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Red River Basin Commission WATER QUALITY UPDATE January 2008

This is the 2nd annual update on water quality activities around the basin related to monitoring, restoring impaired water bodies, and nutrient reduction. We do not claim to have covered everything and expect this document to become more complete and comprehensive as we add to it year after year. We apologize for any activities we may have missed and for any other errors. If you identify an area that needs correction, please contact one of the offices.

What Are we Trying to Accomplish?

Goal # 9 in the Red River Basin Natural Resource Framework Plan (NRFP) is to maintain, restore and protect surface and ground water quality in the Red River basin.

Desired Future Outcome: "Existing water and biological quality will be maintained and protected and water quality improvements in the Red River Basin will be achieved by reducing point source and non-point source pollution in the mainstem, tributaries and Lake Winnipeg."

Why Are We Concerned?

- ◆ The Red River and its tributaries are a major source of drinking water.
- ◆ The Red River is a world class fishery for catfish.
- ◆ Lake Winnipeg is an excellent commercial fishery and has world class beaches and recreational areas.
- ◆ The Red River watershed has treasured recreational water resources.
- ◆ Poor water quality impairs beneficial uses of water.
- ◆ Poor water quality limits available drinking water.
- ◆ Poor water quality increases the costs of treatment of water.
- ◆ Pollution affects recreational fishing.
- ◆ Pollution affects fish consumption (e.g., mercury contamination).
- ◆ Pollution affects the use of water bodies for fish, wildlife, and people.
- ◆ Cleanup is expensive.
- ◆ Lake Winnipeg, the receiving water body for the Red River, is exhibiting signs of excessive nutrient loading from phosphorous and nitrogen.
- ◆ Algae blooms, some of which may contain toxins, occur on Lake Winnipeg.
- ◆ 43 MN rivers and streams (177 actual impairments) and 107 ND streams, rivers, and lakes in the Red River Basin are classified as impaired waters due to pollutants such as low oxygen, eutrophication, sediment, bacteria, or limited aquatic habitat. (Based on the 2006 Integrated Report for ND.)



Are We Making Progress?

1. Basin Approach to Goals & Monitoring:
 - ND & MN work cooperatively on water quality monitoring and assessment and most recently have added measures of biological and physical conditions to these activities. (MN-PCA, ND-DOH)
 - Environment Canada monitors at the international boundary and shares information with MB, MN, and ND.
 - Real time monitoring stations record flow and turbidity continuously at Fargo, Grand Forks, and Emerson. (MN-PCA, ND-DOH, USGS)
 - MB continues to monitor water quality at nine stations in the Red River Basin.
 - ND routinely monitors water quality at 17 sites in the basin.
 - Parasite and pathogen issues are being studied by the International Red River Board. (IRRB)

- Water quality managers are using Lake Winnipeg as the ecological endpoint for water quality measurement.
- A community based water quality monitoring network engages 27 MN and 12 ND high schools.
- Fisheries and Oceans Canada, in conjunction with the University of Manitoba, monitors fish pathogens and diseases in the Red River.



Grand Beach, Lake Winnipeg - east shore of the South Basin in early August, 2007 Photo by Lori Volkart

2. Restoration of Impaired Water Bodies:

- MN and ND assess water quality biennially; waters not meeting standard may be listed as impaired pursuant to the Clean Water Act. (MN-PCA, ND-DOH)
- MN is conducting 38 impaired water studies in the Red River Basin to be completed by 2009. (MN-PCA)
- Lower Ottetail River has \$400,000 to implement best management practices on cropland near water bodies to reduce sediment load from erosion.
- Water quality modeling is being done on the Bois de Sioux, Mustinka, Buffalo, and Wild Rice watersheds in MN. (EERC, MN-PCA)
- Intensive stream surveys to improve fish habitat are being done in MN. (MN-DNR)
- Sturgeon are being reintroduced into the basin. (Red Lake and White Earth Reservations)
- Through funding provided by EPA's Section 319 grant program, ND's Nonpoint Source Pollution Management Program, approximately \$5 million annually is provided to watershed projects to apply Best Management Practices (i.e., on-the-land improvements) which target impaired waters and the reduction of pollution from animal and crop runoff. In the ND portion of the basin, there are currently 5 watershed assessments planned or underway and 6 Section 319 watershed implementation projects to address pollution and impaired water issues.
- Progress in MB on the Lake Winnipeg Action Plan continues with a commitment to reduce lake nitrogen and phosphorous loads to Lake Winnipeg to pre-1970's levels and recognition that nutrients are contributed by most activities in the drainage basin and reductions need to occur fairly and equitably across all sectors.

Action includes wastewater treatment, new regulations for septic fields, supporting the establishment and maintenance of riparian and wetland areas, and working with upstream jurisdictions and stakeholders across the watershed.

- Lake Winnipeg Stewardship Board (LWSB) had 135 recommendations to improve water quality in Lake Winnipeg. All recommendations were accepted in principle by the Province.
- Action on the majority of the 135 recommendations has begun across the watershed by MB.

3. Reducing Pollution:

- MN is working to reduce sources of nutrients through its continued efforts to complete 38 impaired waters studies, and to launch six new studies in the year ahead.
- MN is working with local governments to

reduce sources of phosphorus by acting on the Phosphorus Source Study. For the Red River Basin, the goals include wind barriers on all fields, buffer all riparian areas, nutrient management for fertilizer and manure application, upgrade ISTS and unsewered communities human waste by-products, and phosphorus limit for all WWTPs. Potential reduction if all strategies fully implemented: 103 tons/year.



fertilizers and pesticides that travel to watercourses.

- 12 full or partial ag waste systems installed in the basin in ND under Section 319.

Basin Accomplishments:

- A water quality workshop in 2006 to develop collaborative management strategies. (RRBC)
- In 2004, a recommendation was adopted for a basin approach to reduce Lake Winnipeg nutrient loading by 10% over next 5 years. (IRRB)
- A new real time super water quality station at Grand Forks has been developed and the one at Fargo continues. (East Grand Forks, Grand Forks, Fargo, Moorhead, MN-PCA, ND-DOH, USGS)
- Report: Restoring the Health of Lake Winnipeg: Canada's 6th Great Lake. (Lake Winnipeg Implementation Committee—federal/provincial reps, IISD, AMC, LWSB, LWRC, MB-Eco-Network, citizens, RRBC)
- Lake Winnipeg Forum (February 2007) brought together stakeholders to discuss the report from the Lake Winnipeg Implementation Committee and next steps (LWIC)
- "We are All Upstream Conference" (November 2007) brought together groups working on the main tributaries to Lake Winnipeg (Red, Assiniboine, Winnipeg, and Saskatchewan Rivers) to share information and network (PFSRB, RRBC)
- Nutrient Ion inventory (RRBC, IJC/IRRB) analysis and report (IWI, IJC/IRRB)
- 4 watershed assessment projects and 1 watershed implementation project, the Sheyenne River in Griggs County project, have been completed
- Fargo/Moorhead TMDL study completed. (MN-PCA, RRBC)
- MN Buffer Strip project completed. (MN-PCA, RRBC)
- MB introduced the Nutrient Management Regulation under The Water Protection Act to manage nutrient application to land from synthetic fertilizers, manure, and municipal wastewater sludge.
- This regulation complements amendments to include phosphorous in The Livestock Manure and Mortalities Management Regulation.
- MB established the MB Water Council to coordinate and oversee work of all provincial advisory bodies on water.
- MB initiated seven Integrated Watershed Management Plans (IWMP) in 2006.
- MB legislation proposed to restrict application of lawn fertilizers (similar to MN legislation).
- MB legislation proposed to virtually eliminate phosphorous from household automatic dishwashing detergent.
- In 2007, the LWSB released a report: "Reducing Nutrient Loading to Lake Winnipeg and its Watershed – Our Collective Responsibility and Commitment to Action."
- Grand Forks activated sludge mechanical waste water treatment completed and operating to treat 10 m gal/day.



While much has been accomplished, much remains.