

The Milk River Watershed Council Canada – **OUR WATER, OUR LEGACY**

BY TIM ROMANOW, EXECUTIVE DIRECTOR, MILK RIVER WATERSHED COUNCIL



The north fork of the Milk River is augmented by diversion water from the St. Mary River in Montana; seasonal fluctuations are a challenge for riparian communities; uplands are dotted with diverse native grasslands.

PHOTO: © K. ROMANOW

The Milk River watershed is a unique drainage located in the most southern part of Alberta. It is distinctive, not just because of its extraordinary dry landscapes and diverse plant and wildlife communities, but also for the direction in which the Milk River flows. The Milk River is the only watershed in Alberta that drains south to the Gulf of Mexico. Alberta shares this watershed with Saskatchewan and Montana, a relationship presenting equally unique challenges.

Water shortages are common in our dry, arid watershed. As the problem of water scarcity grows, proper water and watershed management is critical. In 2005, community discussions lead to the formalization of The Milk River Watershed Council Canada (MRWCC). Its intent was to create a broad partnership of interested and informed people living and working in the watershed to provide local leadership in watershed management

and planning. Early on, we realized that a broad partnership would need to be formed between government and non-government agencies, industry, and watershed residents to provide comprehensive watershed planning for a sustainable future.

The MRWCC supports the Alberta *Water for Life Strategy*; we provide State of the Watershed reporting; we are working on developing a watershed management plan; we are working with our community to proactively promote stewardship of our watershed. Our first State of the Watershed Report was completed in 2008. In the spirit of cooperation and community we developed the report with key agency partners and local expertise instead of parachuting in outside consultants. This approach produced a reference document the entire community is proud of. The report balanced scientific content with interesting information about our watershed. We think it's a model for how

to deliver effective and cost effective messaging to both decision makers and the general public.

The Milk River watershed is a transboundary watershed; we foster good relationships with our Montana

The Milk River Watershed Council

Canada is an independent organization that supports the goals of Alberta's *Water for Life Strategy* in the Milk River Watershed. These goals are:

- **Safe, secure drinking water supplies,**
- **Reliable water supplies for a sustainable economy, and**
- **Healthy aquatic ecosystems.**



In the shadow of the Sweet Grass Hill, Writing on Stone Provincial Park is a cultural and archeological gemstone in the Milk River Watershed; hoodoos and cottonwoods are critical habitat for numerous songbirds and species-at-risk.

PHOTO: © T. ROMANOW

neighbours for the continued co-management of the Milk River waters. Our headwaters are reliant on the nearly 90-year old St. Mary Diversion siphons and infrastructure near Babb Montana. The 1909 Boundary Waters Treaty mandates sharing the Milk's waters with our American partners. The MRWCC is currently working on a number of projects, some current highlights include:

2013 State of the Watershed Report – Growing Transboundary Cooperation

The Council is working towards updating its 2008 State of the Watershed Report (SOWR) and plans to release the 2013 SOWR next spring. As befits a transboundary resource the report will include information about the Alberta, Saskatchewan, and Montana portions of the watershed. The Project intends to develop a factual, educational, and interesting document that will be read by the scientific community and the general public. The SOWR will be used as a tool to support watershed management. The report will also identify data and knowledge gaps within the watershed, as well as outline projects and activities that have been initiated in the watershed since the first edition of the SOWR.

Local technical expertise has been employed in all three jurisdictions with Alberta taking a coordinating role. Working across borders is a challenge. The number of jurisdictions and other actors is multiplied and there are also challenges when it comes to adopting consistent mapping and monitoring techniques. Watch for updates on the project this winter and join us next spring for the final release of the report at our 2013 Annual General Meeting.

2012 Groundwater Well Synoptic Survey

In preparation for the 2008 State of the Watershed Report, a project was initiated to investigate well water quality within the four counties composing the Alberta portion of the watershed. Ten wells were selected as representative wells from each municipality and an extensive set of parameters were analysed. The landowners received a complete report and the data was summarized to protect confidentiality. The project provided a general overview, a baseline, of groundwater quality throughout the watershed.

With the assistance of Agriculture and Agri-Food Canada AESB we revisited most of these sites this past December and January and sampled the same wells again. Generally speaking, two samples over five years makes it difficult to make assumptions regarding changes in water quality or trends. A number of wells indicated elevated levels of heavy metals and in general, elevated salts; these data are important to document in the context of future changes, for example, changes in area land use over time.

Identifying Sources of Fecal Coliforms on the Milk River

At times over the last few years, there has been increased public concern regarding potential sources of fecal contamination in a few locations on the Milk River. The most visual and publicly scrutinized site has been at Writing-on-Stone Provincial Park. Park staff sample the public beach site there weekly and the samples are analyzed for total coliform levels at the Provincial Health Laboratory. The beach has been subject to occasional health risk advisories due

to E. coli concentrations that exceeded recommended guidelines for recreational use.

Some blamed, without evidence, the local farming and ranching community for the elevated concentrations. The MRWCC responded by approaching Alberta Agriculture and Rural Development (ARD) to create a project to investigate the coliform concern and research the fecal contamination issue within the watershed. This discussion led to establishing a microbial source-tracking project. The study will examine all the potential sources of elevated coliform levels in the Milk River. These sources include wildlife, humans, pets, livestock, and non-fecal related, naturally occurring environmental strains. It will identify and quantify the major sources of fecal contamination and will utilize E. coli fingerprinting as a microbial source tracking method.

The study also will consider the relationship between E. coli levels and environmental conditions such as low water flows, high water temperatures, and sediment load. Since sand has been identified as a significant reservoir of naturally occurring E. coli strains the uniquely high sediment load in the Milk River may complicate the situation further.

Four sites have been selected along the river for sampling and monitoring this season and we are currently assisting Alberta Agriculture to build a DNA marker library of various wildlife and livestock sources that are found in the watershed. This will allow ARD to more closely determine sources. If successful, the project may be expanded to help direct and adjust stewardship project implementation within areas of the watershed that offer opportunities for improvement.

This is the first time a DNA source tracking project has been attempted at a larger watershed scale within the province. Watch for future updates on the project.

Draft Milk River Integrated Watershed Management Plan - Making Progress

The Milk River Integrated Watershed Management Plan (IWMP) will be a tool to provide guidance to resource managers working in the Milk River watershed. It will address the management of water supply and quality (surface water

and groundwater), riparian areas and wetlands, biodiversity, and land use to ensure that resources are available for future generations.

In 2010, the Milk River IWMP Terms of Reference (the Terms of Reference set the direction for the plan) was endorsed by municipalities and the public and supported by Alberta Environment. Since then the IWMP Planning Team has met to draft targets, thresholds, and recommendations for each of the resource areas using a scientific approach that incorporates local knowledge and research from the Milk River watershed.

Draft water quality objectives (WQOs) for four reaches of the Milk River were developed using data collected from the on-going surface water monitoring program. Draft WQOs were established for salts, nutrients, sediment, and bacteria. New monitoring data will be compared to the WQOs to determine if future water quality trends are stable, improving, or degrading. Water quality objectives reflect natural differences in water quality in the four reaches due to channel characteristics such as bed material (e.g., gravel or sand) and position in the watershed (e.g., upstream or downstream position). Currently, the draft WQOs only reflect the open water season that is represented by the period when St. Mary River water is diverted to the Milk River and the period of natural flow.

Draft riparian management objectives and recommendations were developed for riparian areas and wetlands located in five reaches of the watershed (the same four reaches delineated for water quality objectives plus the eastern tributaries) using historical, pooled riparian health assessment data. The riparian health target that will be proposed is a score greater than or equal to 80 using the Cows and Fish riparian health assessment protocols for streams and small and large rivers and the threshold that will be proposed is a score of 70. The target score represents the “healthy” riparian category and suggests that there are little or no impairments to riparian function. The threshold score falls within the “healthy with problems” category and suggests some impairment to riparian functions due to human or natural causes. Current riparian health data suggests there is room to improve on riparian conditions in the Milk River watershed.



The MRWCC hosts an annual canoe trip for local residents and our partners to explore the Milk River.

PHOTO: © M.LUPWAYI

Recommendations are provided that address the management of invasive weed species and the conditions needed to establish woody vegetation in riparian areas in order to protect stream banks and reduce erosion.

Managing for biodiversity is another important aspect of watershed management as it is interconnected with land and water management. Many of the fish and wildlife species present in the Milk River watershed rely on the river, tributaries, riparian areas, and wetlands for part or all of their life cycles. Species rely on good land-use management to provide essential habitats that include water and associated riparian vegetation, large, contiguous tracts of native grassland and unique habitats like sagebrush. When habitat (or land-use) change occurs in the watershed, the quality and quantity of both the water in the Milk River, and the water stored in riparian areas and upland wetlands are also affected. The presence and abundance of fish and wildlife species can thus be used as indicators for overall watershed health. In the Milk River IWMP, indicator species include native fish, amphibians, birds, and ungulates.

The Milk River IWMP will also make recommendations for range management, river access management, and commercial/industrial activities in the watershed. The IWMP Team continues to work on developing appropriate instream flow needs recommendations that are required for Milk River channel maintenance, riparian vegetation recruitment and function, fisheries, and recreation. Groundwater recommendations will also be developed and will be based on the findings of the Milk River Transboundary Aquifer Project.

The Milk River IWMP is currently being developed. When the draft plan is released later this fall all stakeholders will have a chance to review the document and provide comment. A technical review of the targets, thresholds and recommendations was planned for May through September 2012. A public meeting is anticipated in the Fall of 2012 to receive public feedback to ensure that the IWMP reflects local expectations for watershed management. Thereafter, municipalities will be asked to provide comments on the draft plan and offer suggestions on how the recommendations may be implemented. The MRWCC intends to have the Milk River IWMP completed and adopted in 2013. The IWMP will be a living document that is updated as new information becomes available.

Members of the MRWCC should feel positively about what the council has achieved so far. Its success should be attributed to the broad range of partnerships it's been based on - our rural municipalities, conservation groups, provincial and federal agencies, and most importantly our local community have played vital roles.

For more information on the MRWCC feel free to check out our website at www.milkriverwatershedcouncil.ca All MRWCC publications and research projects may be found in our online library; or when traveling through our watershed stop by our office in Milk River to pick up a copy. 📖

Tim became Executive Director of the MRWCC in October 2011 after working in Cardston County on the county's sustainable agriculture program. Tim, a graduate of the University of Lethbridge and Lethbridge Community College, lives with his wife Kristie near Spring Coulee.