

his spring the MRWCC completed a summary document intended to provide an objective review of past water supply investigations and supporting studies to establish a common understanding of the work completed among water managers and water users. The document may be used to guide future planning and decision-making to improve water security and drought resilience in the Milk River basin.

Securing adequate water supplies in the Milk River basin is essential to address the ongoing challenges caused by periodic and prolonged drought experienced in this largely semi-arid region of southern Alberta. Water shortages occur frequently and are expected to increase in response to changing climate. The most notable droughts were experienced in the 1940s, 1976, 1977, 2001, 2007 and 2017. The Milk River and its tributaries are a primary source of water for the Milk River community. The impact of drought is felt most by the

towns, rural water co-ops, and Milk River irrigators who rely on the river for their water supply.

The Milk River is sustained by foothills snowmelt in the headwaters, tributary inflows throughout the basin, and an inter-basin transfer of water from the St. Mary River to the North Fork of the Milk River via a diversion canal operated by the U.S.A. during the growing season. The diversion of water is made in accordance with the 1909 Boundary Waters Treaty and 1921 International Joint Commission (IJC) Order. A Letter of Intent allows each country to access more than they are entitled to for some specific weeks of the year, which increases the total water each country can access during the whole year. The St. Mary River diversion canal infrastructure was completed in 1917 and is increasingly at risk of failing. Failing infrastructure, combined with changing climate, increases uncertainty in water supply for existing water users, and limits the potential for economic growth and investment in the basin. It also impacts riparian and aquatic ecosystems.

A water supply project in the Milk River basin (AB) could mitigate the impacts of water shortages for existing water users, and potentially provide additional opportunities for the community and region. Past studies have investigated the feasibility of improving water supplies in the Milk River basin by way of onstream or offstream storage, or supplemental water supply from Ridge Reservoir to the Milk River. Most recently, the Joint Initiative Team completed a modelling exercise aimed at improving access to entitled shares of water for both Canada and the United States by way of administrative and structural measures. Canada uses an estimated 12% of its annual Milk River entitlement (54,000 dam3). The remainder of unused water (about 47,000 dam3/year) flows to the U.S.A.

Past studies indicate that water storage could secure water supplies for existing water users

in times of drought or during periods when the St. Mary diversion infrastructure is shut down. Water storage could also benefit new uses, including the irrigation of an additional 1,825 hectares to 13,500 hectares, depending on the future water supply option implemented. Based on a more recent study of the economic benefits of irrigation in Alberta, an increase in irrigable land could contribute as much as \$74 million to the provincial GDP, annually.

offstream water storage options (located on tributaries to the Milk River) provided significantly less capacity compared to onstream options, and had greater water quality problems (e.g., local salinity issues). Offstream options required pipeline/canal infrastructure to capture mainstem river flows that increased project costs without adding benefits. Multiple reservoirs could increase storage capacity, but costs would increase to construct, operate and maintain multiple facilities.

Continued on Page 3 -

MRWCC holds its 14th Annual General Meeting

On May 23, 2019, the MRWCC held its 14th Annual General Meeting. Although it is difficult to comprehend that 14 years have passed, the amount of important work the Council has carried out to protect watershed health is evident and can be witnessed throughout the watershed.

In January 2005, residents of the Milk River watershed were asked if they thought a Watershed Planning and Advisory Council that could address local watershed issues would benefit the region, over 95% of respondents supported a Council that would keep local people involved and informed, address water shortages, increase collaboration, increase funding opportunities and provide a forum to respond to international water management issues.

Following a public meeting held in Milk River on April 27, 2005, an interim Steering Committee was formed. This Committee drafted bylaws, goals and an action plan which ultimately resulted in the formation of the Milk River Watershed Council Canada.

Today, although the MRWCC has accomplished a lot to address some of the local watershed issues that are benefiting the region, there is still more work that needs to be done.

The Chairman of the MRWCC, John Ross gave the initial address at the meeting and talked about water security challenges the community is facing and the important work the MRWCC is doing to help address water security. He went on to discuss one of the major projects the Council has undertaken this past year: Summary of Past Water Supply Investigations in the Milk River Basin. The main goal of the summary is to provide an objective review of past water supply investigations and supporting studies and establish a common understanding of the work completed among water managers and water users. The document will be used to guide future planning and decision-making to improve water security and drought resilience in the Milk River basin.

John went on to discuss other programs the Council is undertaking to:



- Increase public awareness in watershed management initiatives
- Collect information about the watershed and identifying gaps in current knowledge to further understanding of the watershed health
- Develop an action plan that will identify knowledge gaps and improve information sharing with neighbouring jurisdictions for the better management of common watershed resources

Dan Bosters, Senior Manager, KPMG Enterprise MRWCC followed with a Financial Statements Presentation for year ending March 31, 2019 after performing a financial review of the MRWCC accounts and concluded that based on their review, nothing has come to their attention that causes them to believe that the financial statements do not present fairly, in all material respects, the financial position of Milk River Watershed Council Canada as at March 31, 2019, and its results of operations, changes in net assets and its cash flows for the year then

ended in accordance with Canadian accounting standards for not-for-profit organizations.

The Board of Directors elections followed. 2019/20 Board of Directors:

- Academia Dr. Lorraine Nicol, University of Lethbridge
- Commercial/Industrial Devon Ford, Granite Oil Corp
- Federal Government Dr. Ben Ellert, Agriculture and Agri-Food Canada
- Individual Member William King, Retired Area Rancher
- Towns/Villages Suzanne Liebelt, Councilor, Town of Milk River
- **Recreation** Darcy Wills, Southern Alberta Outdoorsmen.
- First Nation The First Nations seat is currently vacant until an appointment is made

Check out the Board of Directors' Corner to learn more about the elected and outgoing Board members.

Continued on Page 3

Chairman's Message

Water Security remains high on our agenda. Once again, the irrigators from the Milk River were faced with the risk of shutting off their much-needed water last year as Montana was unable to move sufficient water from the St Mary River to offset late summer deficits on the Milk River. After meetings with our government representatives, challenges were averted, with an improved understanding and working relationship with Federal water officers in both countries. During the first meeting it was determined that we needed to better understand and summarize previous water supply and storage studies in the Milk River basin, undertaken over the last 50 years in order to proceed with transparency of the costs and benefits when discussing long term and challenging solutions.

On-stream storage would not only support licensed irrigators, but also secure the instream flow needs for fish, flora and fauna and generate hydroelectricity. It would also provide more water security for our community. Storage will help us to work more closely with our American neighbours to reduce the cost of repairing their diversion structures and reduce sedimentation in the Fresno Dam.

We have produced a summary that is available in the MRWCC office or on our website at www.mrwcc.ca

Last August, there were discussions on expansion and re-designation of the Twin River Heritage Rangeland which was first proposed within the South Saskatchewan Regional Plan. The MRWCC supports the notion of the re-designation and expansion but would like to have it done in a more methodical way with a full management plan in place by a local committee before it proceeds.

We participated in a film project by the Alberta Council for Global Cooperation to support Sustainable Agriculture and Sustainable Communities and a healthy environment. Ross Ford and I were also interviewed for the Milk River Watershed Alliance's film project to help support funding for an upgrade of the diversion in Montana, and better understand the physical workings of our watershed. Both films will be available on our website.

We hosted another successful Community Appreciation Forum in the spring as well as our Science Forum in the fall, with great speakers and interesting topics. Youth Range Days continues to be a popular and successful program. Our hiking and canoe tours are also very popular ways of getting to know and learn about our watershed.

We are looking forward to working with the new government, and having another exciting year.

> John A. Ross Chairman, Milk River Watershed Council Canada



Board of Director's Corner!

The Milk River Watershed Council Canada is a broad partnership of interested and informed people living and working in the Milk River Watershed who provide leadership in watershed management and planning. The Council consists of 17 Board Members, 2 alternates and 1 vacant seat (First Nations). Directors are elected for a two-year term by MRWCC members.

The MRWCC is pleased to present the following 2019 elected Board Members:

Dr. Benjamin H. Ellert - Federal Government



Dr. Benjamin H. Ellert is a Research Scientist in Biogeochemistry with the Agriculture and Agri-Food Canada Research Centre in Lethbridge, Alberta. He studies carbon and nitrogen cycling in both cropland and rangeland ecosystems. He has expertise in quantifying soil carbon and nitrogen stocks, in investigating greenhouse gas emissions from soils, and in applying isotopic techniques to study the biogeochemistry of agricultural systems. He obtained a Ph. D. in Soil Science from the University of Saskatchewan, and was raised on a small mixed farm near Milk River.

Darcy Wills - Recreation



Darcy was born and raised in the Taber area, and owned and operated a mixed irrigated grain and cattle operation. In 1991, he moved to the Milk River watershed where he owns and operates a ranch on the Northern slope of the Sweetgrass Hills along the Alberta-Montana border. Being right on the border gives him a unique perspective on the international nature of the Milk River Watershed. One of his interests is the recharge area of the Milk River aquifer and the relationship of the aquifers and surface water. Darcy has a strong understanding of both the business and recreation aspects of the area. He is passionate about issues of landowner rights and recreational access to the Milk River and all water resources in the watershed. Darcy has been a member of the MRWCC Board of Directors since April 2011.

William King - Individual Member



Five generations ago, William's Grandfather came to the Aden area before Alberta was a province. He started farming and ranching in 1965 until 2011 when he moved into the Town of Milk River.

William has been a member of numerous groups including: The local Fish and Game Club since its inception and has received a lifetime membership award for over 40 years of service. He is also a founding member of the Grain Agricultural Society in 1973 where he served as president three times over the years. He is a founding member of the Border Surface Rights established in 1981. William also helped with the compilation of the Milk River Natural Areas and Kennedy Coulee Ecological Reserve Management Plan which commenced in 1990 to present time. He is a member of the Wildlife and

Nature Photography. Some of Williams's photographs are featured in the 2nd Edition Milk River Transboundary State of the Watershed Report. William loves the area and brings a worthy of knowledge and history of the Milk River watershed to the Board.

Suzanne Liebelt - Town/Village/Hamlet (Urban Municipality)



Suzanne was born and raised in Lethbridge Alberta. She moved to Milk River in 1991 where she got married and has since raised 2 boys. Suzanne and her husband own a business and have been active members of the Milk River Community Business Association since 2005. Suzanne was elected to council for the Town of Milk River in October 2013, and has been the town representative on the Milk River Watershed Council Canada for that period. She has enjoyed acquiring knowledge on watershed management and looks forward to learning more about the watershed and how it affects an affected by the community.

Dr. Lorraine Nicol - Academia



Dr. Lorraine Nicol originates from tiny Marquis, Saskatchewan where she grew up on a grain and cattle farm. She holds a Doctorate in Biosystems and Biodiversity, a Master's Degree in Agriculture, and a Master's Degree in Economics. She has worked for a diverse number of federal and provincial government departments including the Economic Council of Canada, Human Resources Development Canada, Saskatchewan Finance, and the Saskatchewan Public Service Commission. She and her husband Chris and their three children moved to Lethbridge in 2001. At that time Dr. Nicol developed an interest in water resources policy and management in Alberta and has worked in this field ever since. A significant amount of her research

has focused on studying irrigation water management. The Nicol family has a passion for competitive swimming with Dr. Nicol playing a voluntary role as president and board member of the L.A. Swim Club for many years. She continues to volunteer as a qualified swim official at swim competitions.

Industry - Devon Ford, Granite Oil Corp.

First Nations - Currently vacant

The MRWCC is still in search of a qualified individual to fill the First Nations seat. For more information about this position please contact Tim at 403-647-4342.



Back row, standing (Left to Right): Ross Ford, Ben Ellert, William King, Joan Hughson, Suzanne Liebelt, Brian Hills, Darcy Wills, Scott MacCumber, Lorraine Nicol, Aaron Domes, and Ed Sloboda. Front row, seated: Warren Cunningham, Will Lindeman, Ron McNeil, and

We wish to thank all Board members, past and present for their diligent, dedicated service to the MRWCC. Thank you for caring so much for your watershed, a quality all too rare. Yet you give of your time and expertise, for this watershed that is home to many. Thank you for making it not just about giving but also your way of life.

OUTGOING BOARD MEMBERS

The MRWCC wishes to thank the following outgoing members for their dedication to the Councils' ini-

Scott McGarty - Past Industry Rep



The Council wishes to thank Scott for his dedicated service in representing the industry sector since 2016. As a Pipeline and Facilities Construction Manager for Granite Oil Corporation. Scott brought a wealth of knowledge and experience in addressing industry issues especially in the area of exploration, development, and production of oil and natural gas to the Research and Monitoring Team and the Council. His passion in helping staff with fundraising projects will greatly be missed. The Council wishes Scott success in his future endeavors.

Roy Audet - Past Individual Member



Roy has been a member on the MRWCC Board of Directors since 2013 serving diligently on a number of projects. However, his journey with the Council started way before 2013 with his involvement in the past as a steering committee member. He assisted and provided feedback on a number of committees and projects including the Rocky Mountain Sculpin Recovery Strategy in 2012. His passion for river bank restoration and conservation helped the Council in promoting cottonwoods and riparian plant communities along the Milk River. Roy worked with the Milk River Ranchers, Cows and Fish, and others to protect trees and willows from not only livestock but wildlife. He was an active member of the Community Awareness & Involvement Team within the Council and he was always available to lend a hand. The Council wishes Roy and his family

success in their future endeavors as they globetrot.

Dennis Spackman - Provincial Government



Dennis joined the MRWCC in 2013 as the Provincial Government Rep. Dennis' experience in parks conservation projects and drinking water systems such as water treatment plants and water distribution systems was vital in addressing those issues within the Council. His contribution in the Research and Monitoring Team was invaluable especially with the water quality monitoring projects. He was employed by Alberta Parks as a Conservation Officer since 1982, and he joined Writing-On-Stone-Provincial Park in February of 2013, as the Park's Conservation Officer until he retired in 2018. The Council wishes Dennis happiness as he ventures into the next chapter of his life.

2019 Executive Board

At the Organizational Board meeting held on May 23, 2019, Council appointed the following as the 2019/20 Executive Board members of the MRWCC. We would like to congratulate and wish them success.



Chairman



Vice Chairman



Dr. Will Lindeman Treasurer



Warren Cunningham -Secretary



2019 Community Appreciation Forum

The 3rd Annual Community Appreciation Forum

- Another Successful Event! -

On March 19th, 2019 the MRWCC held its 3rd Annual Community Appreciation Forum.

This Forum presents an opportunity for the participants to celebrate the unique aspects of the Milk River Watershed, growing community involvement in managing the important areas, and learn about what's happening in the watershed. This year's discussions included:

- Important community partnerships: How our municipal partners are supporting community driven watershed initiatives
- What we need to know about the Chronic Wasting Disease, and how our Montana neigh-

bours are monitoring this disease

- Our Northern Alberta counterparts' approach to watershed management
- Pronghorn habitat and stewardship initiatives in the South East Region
- The importance of grasslands to amphibians and other critters in the watershed, and
- Success stories of local stewards within the watershed

The MRWCC wishes to thank all presenters, participants, and organizing committee. For more information on the presentations please visit our web at www.mrwcc.ca

Thank you to our sponsors and supporters!

We have accomplished a lot with your valuable donations. Without your support much of this accomplishment would not be possible.

Core opperations funding provided by: Alberta Environment and Parks



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 - Elise Walker
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Continued from Page 1

Milk River Water Storage Investigation Study Summary Project

► Route 4 was considered the most feasible of five proposed pipeline/canal water supply routes from Ridge Reservoir. However, compared to onstream storage, the volume of water that could be practically delivered via pipeline/canal from Ridge Reservoir was small and unable to provide the same benefits. Social barriers also limited the future potential of this option, including the inter-basin transfer of water from Ridge Reservoir to the Milk River, and availability of water and use of infrastructure that is currently designated for other water users in the St. Mary River basin.

► Considering all onstream storage sites investigated, only the Milk River 2 (Forks) site had the storage capacity approaching the hydrologic optimum. The remaining onstream options were either limited in size by site topography and water supply, or were sized at less than their maximum capacity. The Milk River 2 (Forks) site was recommended as the most feasible onstream water storage option in all studies, except Klohn Crippen (2003) which did not identify preferred options. This site was considered optimal due to its comparatively large capacity, location upstream of the Town of Milk River (to maximize downstream benefits), and for its potential to provide continuous flow during winter or periods of drought to improve instream habitat for aquatic life. The recent modelling results by the Joint Initiative Team indicated that storage at the Milk River 2 (Forks) site could have mutual benefits for both countries (JIT 2015). Administrative options (i.e., Letter of Intent (LOI)) could be used to maximize mutual benefits of onstream water storage options.

The Water Supply and Management (WSM) Team, comprised of Alberta Environment and Parks, Milk River irrigators, and Milk River Watershed Council Canada Board members, evaluated the water supply options presented in past investigations (highlighted in the summary). The WSM Team identified strengths, weaknesses, opportunities and threats for the most feasible options: onstream storage at the Milk River 2 site, offstream storage at Lonely Valley B, and the alternative water supply from Ridge Reservoir (Route 4). The Team concluded that all of the options have strengths and weaknesses that require further analysis using updated information on a shorter list of the more feasible options. The Team noted that the option that provided the largest water storage capacity and greatest economic benefit for the Milk River basin was likely the combination of water storage at the Milk River 2 (Forks) site, the

upgrade/restoration of the St. Mary River diversion canal, and administrative tools to optimize operations (modified Letter of Intent). Increased access to secure water supplies would build community resilience to predicted water shortages resulting from climate change, and address the increasing risk of infrastructure failure in Montana.

Recommendations

1) Municipal, provincial and federal decision makers and water users should explore opportunities for collaboration to undertake the necessarv analysis for the most feasible options. Options to be explored should maximize benefits for both Canada and the U.S.A.

2) Funding to support the next phase of work should be sought from municipal, provincial and federal governments, and industry (e.g., agriculture, hydropower) when the options and scope of analysis have been determined.

3) Updated information and analysis should include:

a) An assessment of watershed hydrology that considers climate change impacts on future runoff and natural water supply.

b) An updated economic analysis to reflect current socio-economic conditions, and identify the potential benefits derived from irrigation

expansion, industry development, hydropower generation, and/or increased water-based tourism and recreation in southern Alberta.

c) Examination of opportunities to: restore existing environmental impacts from current water management practices (e.g., winter water quality conditions, streambank and channel erosion, loss of riparian and fish habitat), and mitigate new environmental impacts that may result from a water storage project (e.g., potential to restore native grassland habitat to offset project impacts; mitigate potential impacts to fish species at risk and aquatic life).

What's next? The WSM Team intends to present this information to the water managers, and government officials, as well as ensure our community has the best information available to make informed opinions on any future actions to address water security for our future. We will be hosting a community information session this fall with a follow up survey of watershed stakeholders and basin residents to ask what actions should be taken next. In reflection of this information the MRWCC will continue to facilitate the next steps required.

For more information on the project or to receive a copy of the report please stop by our office or visit our website for a digital version.

Continued from Page 1

■ Ties to the SSRP and implementation/other

■ He stressed the need for improved awareness and communication by:

■ Continued commitment to voluntary producer stewardship

■ Strong local voice with a diverse Council that is readily available to plan, advise, and take action to implement actions that align with the values of members and municipal partnerships

MRWCC holds its 14th Annual General Meeting

Tim Romanow, Executive Director presented the Milk River Watershed Council Canada Activity Report by pointing out the roles and responsibilities of Watershed Planning and Advisory Councils (WPAC's) and MRWCC as one of 11 WPACs within the Province of Alberta.

Tim thanked the Board members and outgoing board members for their contributions. He presented different roles within the organization and thanked all volunteers for over \$200,000 in-kind support that the Council received this past fiscal year. He went on to explain the different work Council does by being a Convener and Collaborator; Monitoring and Reporting; Planning and Policy; Education and Literacy; and Implementation. He gave an overview of the programs Teams are carrying out with a huge support from other stakeholders. He went on to explain that Council is working on the second year of the three-year Strategic Management Plan which stressed on the theme: "Water, Water, Water": Secure water supplies for all users; Source water protection; and Conservation of species diversity. He presented the 2019/20 Work Plan by giving an overview of:

- Continued existing programming
- Expanded existing programming
- New workplan projects and activities



Transboundary Grasslands Partnership

The Transboundary Grasslands Partnership (TGP) is a voluntary collaborative partnership with representation from Alberta, Montana, and Saskatchewan that is working towards native grasslands conservation. The TGP provides a forum where transboundary jurisdictions and sectors work collaboratively to conserve and enhance native grassland landscapes. The partnership operates under three guiding principles: Enhance - the health and function of native grasslands, by building on successes and challenges and awareness amongst the partners, Create - working towards collaborative actions that address gaps in transboundary native grassland conservation, and Connect - acknowledging and improving transboundary communications, relationship building, education, cooperation and messaging between partners, Tribes and First Nations and

The MRWCC is an active participant in the TGP, since its inception we have helped improve communication between government cooperators across all boarders; improve wildlife management and better align recovery actions. We have engaged and worked to better promote grazing as a vital tool for grasslands management, and promoted sustainable grazing management with producer cooperators and

interested organizations and individu-

the use of voluntary stewardship tools and incentives to avoid harsh protection orders. There have been positive stories including the evaluation of remaining native prairie in Alberta with 48% remaining and holding in the past 20 years.

The only statistically significant loss occurring on the Blood Reserve with a 20% increase in cultivated acreage, and challenges such as recovery from fire and encroachment of new or expanding invasive species.

After a successful workshop hosted in Lethbridge this past winter, the next TGP workshop will be hosted by Saskatchewan in February 2020 in conjunction with the Native Prairie Restoration and Reclamation workshop with a focus on large land-scape management across the region.



LAST CHANCE

to apply for project funding! Don't miss this chance! Apply soon.

As we enter the final year of the Watershed Resiliency and Restoration Program completion, we would like to remind watershed residents and agricultural producers who are interested in applying for funding to implement stewardship projects, to please do so promptly. All projects to be completed by March 2020. Remember that funding is on first come first serve basis.

Project Types:

- Wetland enhancements:
 - Watering systems / Alternative water developments \$10,000/one individual operation (maximum grant)
 - Riparian Corridor / Exclusion fencing \$5,000/site (maximum grant)
- Riparian plantings \$2,000/site (maximum grant)
- Wintering site management projects:
 - Portable windbreaks /calf shelters/winter watering system \$4,000/site (maximum grant)

Please note that this is a cost-share funding opportunity. The MRWCC will be responsible for material procurement and landowner will be responsible for construction and all in-kind costs.

Please visit our website at www.mrwcc.ca for a complete funding guideline and application form or simply call Tim at 403-647-4342 if you have questions.

We wish to thank the Government of Alberta for the funding and all residents and producers who have bought into this program which improves riparian health of the watershed.

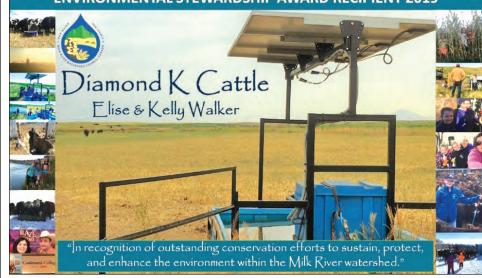
Checkout some past projects of the Watershed Resiliency and Restoration Program funding.







Milk River Watershed Council Canada ENVIRONMENTAL STEWARDSHIP AWARD RECIPIENT 2019



Success stories of local stewards within the watershed 2019

During the 3rd Annual Community Appreciation Forum held on March 23; local stewards were recognised for their outstanding conservation efforts. This year's Environmental Stewardship Award recipient was Diamond K Cattle owned by Elise and Kelly Walker and their family.

Elise & Kelly are agricultural producers who have been involved in their farming and ranching operations for a number of years. Raising 3 daughters on the land, the family is always looking to improve their operation by incorporating environmentally sustainable agricultural practices.

The Walkers have helped to promote the MRWCC by continuing to provide leadership in watershed management and planning within the watershed. They are one of the first producers to take advantage of the Watershed Resiliency and Restoration Program (WRRP) funding by implementing off-site watering systems and riparian exclusion fencing for their operation. WRRP is a program funded by Alberta Environment and Parks to assist area producers with projects that make their operations environmentally sustainable by reducing impact on sensitive riparian areas and reducing reliance on the river for livestock water during critical low flow winter months and during periods of prolonged drought.

We wish to congratulate the Walkers for being the 2019 recipient of the MRWCC Environmental Stewardship Award. As a token for their outstanding conservation effort, the Walkers received a gate sign below to proudly post on their farm gate for years to come.

We will be seeking nominations for the 2020 Award recipient, please check our website for nomination guidelines.

2019 MRWCC Heritage Tree: The Writing-on-Stone Provincial Park's: "The Sideways Tree"

The tree at Writing-on-Stone is one of the unique features in the day-use area of the park, adjacent to the play-ground. As such it draws 'children' of all ages to sit, climb and play on it. Writing-on-Stone Provincial Park has been a draw for the local community and visitors. The tree has substantially grown closer to the ground in the last 20-30 years and has had to be reinforced to prevent further breakage. The tree continues to grow every year, providing delight and awe to visitors at the park.

Photo: Suzanne Lodermeier, Visitor Services Coordinator for the Writing-on-Stone Provincial Park receiving a 2019 Heritage Tree sign from MRWCC Chairman John Ross



Education Outreach Coordinator - Kandra Forbes

t is hard to believe I am going into my third year here with the Council! I am still continually meeting and getting to work with new people.

I had a blast getting out to many classrooms to promote our poster contest this year. All the grades were



very intrigued by my watershed table and what they learned about watersheds showed in the final product. We had some amazing posters this year that really reflected the theme of "What is a Watershed?".

I'm excited to be doing more and more school groups in partnership with Writing on Stone. It is a lot of fun to teach students the importance of water quality and quantity right by the river. Students and teachers from outside our watershed enjoy learning about aquatic invasives and producer stewardship. Some students were even surprised to find out one of their teachers had never heard of zebra mussels!

Exciting news for this summer! We have received a grant and have been able to hire an Education and Outreach Assistant. This summer student will be working with us for July and August. She will be helping me further develop my education programs as well as assist in field work. Watch out for her at Writing on Stone as she will be around the park educating visitors about the watershed, species at risk and invasive species. This is our first time as a Council having a summer student so we are very excited! Robin Stelten is from the area and previously placed in the Caring for Our Watershed competition with the project for the hawk nest poles. Yes, the same poles we have been providing updates on (two of the platforms were occupied this year!). We are excited to have her on our team for the summer.



Some of the 2019 poster contest winners

Poster Contest

This years' theme was "What is a Watershed?" Kandra was able to go to most classes with her watershed table and introduce students to the Milk River Watershed Council and what a watershed means.

The posters we received were amazing. It was very clear the students learned that a watershed is all encompassing; it's not just the water. Many of the students included their home and farms in their posters and demonstrated that they learned that it is all connected. We had the posters on display at our Community Appreciation Forum so that participants can enjoy looking at them. Winning students from grade 1 to grade 8 were presented awards.

Way to go students from Milk River Elementary and Erle Rivers High School.

ATB Financial

Thank you to our poster contest sponsors!



Southern Alberta Youth Range Days

Southern Alberta Youth Range Days (YRDs) program is going into its 12th year! YRDs program celebrates our heritage and provides a mentoring environment for youth ages 13-18. Participants learn about species at risk, grazing, plant ID, riparian areas and so much more.

This program is an interactive event for youth and families interested in learning about working agricultural landscapes critical to environmental sustainability. Participants from all backgrounds are welcome!

This year's program is being held at Grain Hall near Aden. We are excited to return to this area as there are many cool things to show the participants. We are very proud to say that our registration was filled by the end of April! We are extremely grateful for the support we get for this program. Our organizing committee believes it is an excellent opportunity for youth and helps many participants in their future endeavours. We are happy to see most of the participants are returning but we still have a good amount of new faces as well.

Missed out this year? Make sure to follow the Southern Alberta Youth Range Days Facebook page to stay up to date.

If you are interested in donating to this event to help keep our registration cost low please contact Kandra.

YRD Where are they now?

The Youth Range Days Program celebrates working landscapes across our watershed, and provides insight into why native rangelands are so valuable to our Ranching community and the many species of wildlife unique to our area that make their home in our watershed. Range Days has provided youth from all backgrounds since 2008 an opportunity to learn about plants, wildlife, fish, water, and ranch management on working ranches throughout the four border counties. Each year approximately 30 youth participate, with many returning for multiple camps. Our goal has always been to expose these participants to the natural world in our backyard, foster mentoring opportunities and entice critical thinking and hear the stories how organizers and presenters became interested in our careers in Agriculture and Environmental sciences.

Many of the youth from years past have gone on to post-secondary influenced by the discussions we have around campfires and on dusty hilltops. One camp organizing committee member says "there are opportunities especially for local youth that understand crops and livestock, they can carry a conversation and bridge the science of wildlife management with the dollars and cents of the ranching community." Multi use landscapes, balancing production with livestock needs, recognizing the role of industry, reclamation, and even recreationalists are all difficult concepts to teach. Again, many youths have gone on as active managers of family farm/ranch operations, conservation officers, biologists, and reclamation specialists.

Southern Alberta Youth Range Days 2019

July 23-25th 2019

Ages 13-18 Families are welcome!



Location:

Grain Community and Ag Society Hall Aden. AB

Lizards, exploring badlands, river sports, birds and much more!

The Southern Alberta Youth Range Days program is an interactive event for youth, and families, interested in learning about rangelands, watersheds, wildlife, and other topics related to natural resource management. Youth from all backgrounds including farm and ranch, city, acreage or town, are welcome to attend. Registration link is available at www.mrwcc.ca Cost: \$75 per participant

The following are testimonials from two past YRDs graduates:

Southern Alberta Youth Range Days

Morgan Klaiber

Where are you from?

My Name is Morgan Klaiber and I grew up on a ranch South of Medicine Hat on the Wisdom Ridge.

Year(s) attended YRD?

I attended YRD as a camper in 2010, 2011, and 2013, and as a helper from the County of Cypress in 2015.

What are some of your memories of YRD? Some of my best memories from YRD are the people I met, and the places we went that I never would have set foot on otherwise. I also had the pleasure of representing Alberta and Canada at the High School Youth Forum at the Society of Range Management Annual Conference. I placed 7th out of 25 American students and made many friends. Through achieving a greater understanding about the native rangeland around me I grew an even deeper appreciation for it and how important it is to my family ranch.

Do you still keep in contact with any of the program organizers or past partici-

Yes, many of the organizers.

Did YRD influence your decisions on what to do after High School?

YRDs did help influence my post-secondary decision as I chose to study agriculture science at Lethbridge College. Thanks to YRDs I aced my weed ID course and pasture and forage management course.

Pop quiz! Name three native grasses or forbes you learned at YRDs, how you remember them? What are they good for (or not)?

3 plant species that I uniquely remember are Blue grama, Western wheatgrass, and June grass; all grass species present and abundant on my family's ranch. They are all great grasses for cattle and they seek them out even when they are amongst other tame grasses.

James Wills

Where are you from?

James Ross Wills from the Sweet Grass Hills. Born and raised on a ranch located on the border of Alberta and Montana;

30 km east of Coutts and directly south of Writing-on-Stone Provincial Park. Year(s) attended YRD?

For more information contact: youthrangedays@gmail.com or Kandra Forbes (MRWCC): 403-647-4306

tive for generations to come.

I attended 2 years as a participant, 2008 and 2009 and have come back to help out a few years since finishing school.

What are some of your memories of YRD? Learning how water, soil, plants, and animals form the land we live in today, and how, with proper utilization, we can keep this landscape healthy and produc-

Do you still keep in contact with any of the program organizers or past partici-

Most of the organizers that put on the event when I went, I now get to work with in a professional capacity.

Did YRD influence your decisions on what to do after High School?

It absolutely influenced me and my decision to go into the environment field. After high school I went and got my education in the land and water resources program at Olds College which I use daily in the career I've chosen.

What are you up to now?

I now work for the County of Warner in the Agricultural Services Board, along with helping on the family ranch. Also, in the summertime, I host a presentation at Writing-on-Stone on the snakes of Alberta; what types we have, why they're here, and what role they play in the environment.

Pop quiz! Name three native grasses or forbes you learned at YRD, how you remember them?

What are they good for (or not)?! Rough Fescue - providing excellent forage for animals all year, Alberta has the largest area of land containing this plant. One of the many reasons it is Alberta's provincial grass.

Saskatoon - this shrub can grow from one to eight metres in height and produces tasty fruit year after year, making it a favorite of animals and humans alike.

Spotted Water Hemlock - a cousin to the carrot that leaves a bad taste in the mouth, and by that, I mean it's lethal if ingested. One must be very careful with is located.



Education and Community Events

Hiking the Milk During Our Annual Hike Tours

Each year we try to host two hike tours. One in spring and another in fall.

Our Spring Hike Tour was a much-anticipated trip out to Twin River Heritage Rangeland. Thank you everyone for your support!

Participants were excited to visit Tree Coulee, the original site for the Spite Ditch, a Sundance Circle, and part of the Whoop-Up Trail. Ed Sloboda was a great guide and talked about the history of the area. Everyone got to see where the Spite Ditch started and see the views from where the First Nations had their vision guests at the top of the hill. Participants were also excited to see some first signs of spring in the form of blazing stars and prairie crocus. During lunch everyone got to explore the unique Tree Coulee under the watchful eye of the Great Horned Owl on her nest. Barb Glenn summed the day up well in her Western Producer article stating; "...the vastness of the open landscape gives visitors a sense of their own insignificance. The plains stretch south to the United States, where the Sweetgrass Hills rise from the grass. To the north, from some vantages, the prairie seems empty and endless."

Thank you everyone who came out. Special thanks go to the leaseholders. This tour wouldn't have been possible if we were not granted access to these historic and beautiful landscapes of our watershed.





We are in the process of planning our upcoming Fall Hike Tour!

This fall we will be partnering with Writing on Stone to host a hike into the Parks' backcountry. The hike will be more strenuous than our past hikes as there will be lots of hiking over uneven terrain. This hike promises a myriad of badlands and hoodoo habitats. We will scramble through slot and box canyons which are rare in the northern great plains. We will see many geologic outcrops; some recent rockfalls and aged plains cottonwood. We may also see fossils, petrified wood, and wildlife. We will also observe and discuss efforts of native prairie restoration. In addition, we will visit rock art sites in Police Coulee and see the Northwest Mounted Police outpost.

This hike is perfect for those who have always wanted to see Humphries, Davis and Police Coulees.





Details and registration will be released in the late summer. Make sure to sign up for our membership to be the first to know. Our events fill up fast!

Canoeing the Milk! See you on the river!

We are pleased to host a canoe trip on June 21, 2019. This year we are launching at the Forks confluence to the destination just west of the Town of Milk River near Whoop Up Trail Crossing of the Milk River, and Spite Ditch Diversion site. Thanks to Ed Sloboda for the Ed Sloboda and William King for the assistance to scout the trip and logistics of moving our canoes and vehicles. William King for their help to ensure the program went smoothly.





Our organization was happy to be given the opportunity to co-host this event in partnership with the County of Warner and South Eastern Alberta Watershed Alliance at the County of Warner Ag Service Board in March, 2019. Working Well workshops are intended to learn the basics of groundwater, well construction, common well problems, contamination risks, importance of well reclamation and best management practices. This is a travelling workshop made possible by Alberta Environment and Parks, Agriculture and Forestry, and Alberta Health Services, along with individuals from the Alberta Water Well Drilling Association. Rural municipalities and other organizations, such as Watershed Planning and Advisory Councils, from across the province have aided in hosting the workshops.

This workshop contained some hands-on activities and items to help producers and landowners understand all aspects surrounding the wells they

To learn more about groundwater and water wells in our watershed check out our Science Note 6 - Water Well Decommissioning and Groundwater protection in the Milk River Watershed as well as Note 9: Groundwater Quality either on our website or grab a copy from our office

March 2019 Working Well Workshop - County of Warner





Soil Monolith Collection at Lethbridge College

Provided by Ron McNeil, Board Member of MRWCC

Agriculture and Agri-Food Canada (AAFC) personnel collected 110 soil monoliths in the 1950s and 1960s, and stored the collection at the Research Centre in Lethbridge. Soil monoliths are a three-dimensional slice of soil that displays soil properties at a specific location, usually to a depth of about 1 m. The monoliths are about 15 cm wide and about 5 cm thick. The soil monoliths were carefully mounted on boards and preserved and protected by resins of organic solvents. AAFC donated the soil monolith collection to Lethbridge College in January 2018; a significant gift with a value of approximately \$250,000

Three quarters of the soil monoliths were collected in Alberta and of those the majority (65%) were from southern Alberta. One quarter of the Alberta monoliths are soils that occur in the Milk River watershed.

Location	Percentage of Monoliths
Alberta	75%
Uncertain	11%
B.C. British	7%
Columbia	
Yukon	5%
Saskatchewan	2%

The soil monoliths are an extremely valuable educational tool for Lethbridge College. They provide a visual display of soil properties, allowing students to directly view and evaluate these properties. The majority of the monoliths were classified in the 1950s, however the Canadian System of Soil Classification has been updated and modified several times since then. The soil monoliths required updated identification and classification to enhance their value as teaching tools.

Milk River Watershed Council Canada (MRWCC) board member Ron McNeil provided about 60 hours of service to Lethbridge College to assist with updating and classifying the 110 soil monoliths. Ron McNeil specializes in pedology, which describes the mapping and characterization of soils, mainly for soil survey information. Ron has worked throughout Alberta and western Canada, with most of his work concentrated in the Grassland, Parkland and Rocky Mountain Natural Regions. Within the Milk River watershed, Ron assisted with the soil survey of the County of Warner and he was the leader of Soil Surveys in the Counties of Forty Mile and Cypress.

Ron started by reviewing the basic classification and location information provided by AAFC for most of the monoliths. Ron then interpreted soil properties, including colours, structure, texture and parent material, and provided a soil classification to the subgroup level based on the Canadian System of Soil Classification. Where possible, Ron also provided the soil series name, which identifies subgroup, parent material and texture within a specific climatic area.

Three instructors in Environmental Sciences at Lethbridge College (Drs. Edith Olson, Monica Batista Benke, and Shane Porter) in collaboration with former instructor, Ken Perl, conducted a preliminary review of the updated classification on a subset of 18 soil monoliths. Ron, Ken and the instructors discussed and compared soil parameters, horizon descriptions, and subgroup classification, and all participants were in agreement on the updated classifications.

Lethbridge College displays the 110 soil monoliths in custom built cabinets on the third floor of the Cousins Building. Lethbridge College will use the monoliths mainly as teaching and laboratory aids. Monoliths that display explicit features such as diagnostic horizons may be used for certain examination questions. A confidence rating on their updated classification has been applied to all the monoliths. Monoliths with a low confidence rating are still valuable teaching tools useful for demonstrating basic interpretations such as soil structure in a specific

The collection is available to the public for viewing by individuals or tours. Please contact Edith at edith.olson@lethbridgecollege.ca or Monica at monica.batista_benke@lethbridgecollege.ca if you would like to see them.



Irrigation: A Driver of the Economy and Environmental Sustainability

By Dr. Lorraine Nicol, University of Lethbridge

Irrigation agriculture is one of the engines of the southern Alberta economy. Consider that the 1.7 million acres under irrigation represents 70 percent of irrigation acreage in Canada. Irrigation agriculture contributes \$3.6 billion to the Alberta economy, generating the equivalent of 56,000 full-time jobs. Sixty crop varieties are grown under irrigation, including 28 speciality crops. These crops in turn create considerable food processing activity, attracting such companies as Lamb-Weston, McCain Foods, Old Dutch Foods, Cavendish Farms and Lantic Sugar. Irrigation activity extends to the Milk River Watershed where there are approximately 7,600 acres under irrigation, with 66 water licences having been issued to 38 license holders. Here irrigation is used to augment forage and cereal production. Overall, almost 90 percent of the economic benefit of irrigation accrues to the southern Alberta region and 10 percent to irrigation producers.

While driving economic activity, irrigation agriculture is also contributing to environmental sustainability through the adoption of advancements in agriculture technology. These technologies, which include, for example, satellite imagery, GPS systems and drones, are often grouped under the term 'precision agriculture'. Such advancements have been deemed one of the top ten developments in agriculture in the past 50 years. Precision agriculture can improve crop yield and quality, as well as reduce farm inputs, generating benefits for irrigators and the environment.

Given the importance of precision agriculture, the extent to which precision agriculture is being adopted by southern Alberta irrigators is an important question to investigate. My study, carried out in the fall of 2018 with fellow researcher Dr. Chris Nicol, identified 20 technologies under three categories: basic technologies, soil mapping techniques and data management. Based on the data collected from a sur-

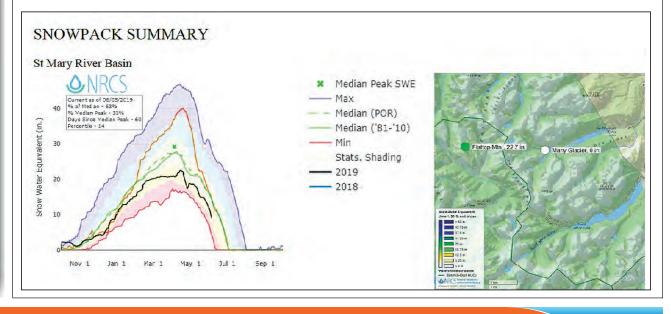
vey of irrigators in the Taber Irrigation District, precision agriculture is being widely adopted. Eighty-one percent of irrigators have adopted some form of precision agriculture. On average, irrigators have adopted five technologies, most predominantly auto steer technology, weather monitoring sensors, satellite imagery, GPS soil sampling as well as studying and analysing yield data.

These results are good news for irrigation agriculture as well as the environment. Respondents reported that precision agriculture has on average increased annual crop yields by 20 percent and crop quality by 16 percent. And use of inputs has declined: irrigation water fell on average 24 percent, fertilizer - 21 percent, herbicides - 14 percent and pesticides – 19 percent. These benefits should continue, given that 92 percent of adaptors of precision agriculture plan to adopt additional technologies in the future. This is a 'win-win' given there are benefits for irrigators, the economy as well as the environment!

Water Supply Forecast

Current summer water forecast projections are for approximately 77% to 86% of average stream flows with the upper St Mary's systems and Milk River basins respectively. Lower amounts of available water may result in lower than anticipated late summer and early fall flows on the Milk River. Montana was able to access an additional 4000+acre feet of water prior to May 1st off the St Mary

diversion that will be repaid to the Milk River basin under the letter of intent, this is good news as a deficit had not been reached in the three previous years, resulting in the challenges to water availability for our licenced water users. Reservoir conditions are holding steady (June 9th) with near full supply levels for both Fresno Reservoir in the lower basin and Sherburne in the upper St Mary.



Xeriscape Project

Xeriscape is landscaping that uses as many native and drought-resistant plants as possible.

Some of the perks are:

- Spending less time maintaining your yard and more time enjoying it
- Using less water
- Showcasing the attractive flowers and shrubs that naturally grow in the prairies
- Use less pesticides and fertilizers, reducing the risk of polluting storm water and saving

The plants used were specifically chosen for the spot. Once established they will require minimum maintenance and water, making them an excellent choice for this climate.

Last years' xeriscape project is looking great! Everything has come back and will be in bloom soon. The implementation and maintenance would not be possible without MANY helping hands. Thank you to the Town of Milk River for all the labour and help with upkeep, Raymond and Yvette Baril for watering and weeding, Mrs. Ellert-Garber's students from Erle Rivers High School who helped with the planting, Betty O'Donnell for donating the large rocks and to the Audet's family for donating some of their yucca.

Work is completed on the south side. For questions about the plants, please feel free to pop into our office and ask Kandra! All of the plants were bought locally so if you are interested in any of them, we can point you in the right direction.

Photos: Milk River Town Office Xeriscape underway in 2019 and photo on the bottom, 2018 Xeriscape coming along





Surface water and Invasive Mussel monitoring

Surface Water Monitoring

2019 Surface Water Quality & Invasive Mussel monitoring is underway.

The MRWCC continues to monitor surface water of the Milk River and major tributary sites. Lack of financial support for the analytical expense of the monitoring work continues to be a huge challenge with the program, but the Council has worked diligently to maintain the integrity of the program. The MRWCC wishes to thank the Government of Alberta (Environment and Parks) for the partnership and amalgamation of some of their monitoring sites, which reduced the monitoring cost making it possible for Council to continue with the longterm monitoring program.

Invasive Mussel monitoring

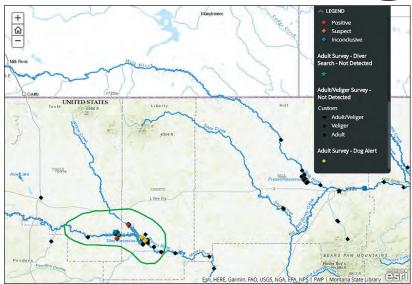
Invasive mussels pose a threat to Alberta's aquatic ecosystems and economy as they are virtually impossible to eradicate in a natural water body. Invasive mussels are filter feeders that strain suspended matter and food particles out of the water, disrupting natural food chains and leading to a depleted fishery (fewer and smaller fish) as the fish don't have enough food.

Invasive mussels attach to hard substrates in the water, blanketing any surface and reproducing at extremely fast rates. Females can produce up to one million eggs every year, and there is no natural predator in Alberta. If a mussel infestation occurred in Alberta, the province is estimating a total cost of \$75,000,000 annually to protect and replace water operated infrastructure (such as drinking water systems, power generation and irrigation), and in lost revenue from recreational fishing. This estimate includes decreasing property values and increased boat maintenance costs for the individual Albertan.

Quagga and zebra mussels have been known to move from waterbody to new waterbody by attaching themselves to boats, irrigation equipment, firefighting equipment, or other recreational equipment. The adults can survive for 30 days out of water, while the veligers (larval stage) can survive in standing water for long periods of time. Many of the infested waterbodies of the United States are popular destinations for snowbirds and the direct transport threat is a very real concern.

Tiber Reservoir Montana

Tiber Reservoir has become known for its trophy walleye and northern pike fishing. This waterbody sits east of



This map illustrates the sampling efforts at Tiber, along with the location of decontamination stations and the general containment area.

Shelby MT and is the nearest positive infestation of invasive mussels. In October 2016, Tiber became the first Montana waterbody to be listed as positive for the mussel larvae. To date, no adult mussels have been found at the reservoir, though dog crews in the fall of 2018 did have a positive shore hit for mussels.

Montana's response to mussels in Tiber Reservoir includes decontamination of watercraft leaving the reservoir. Additionally, increased state wide inspection stations watch and inspect all water craft. Organizations like our sister organization the Milk River Watershed Alliance have increased public awareness campaigns in and around watershed launches and communities.

Clean

After recreating at a waterbody, completely remove all plants, animals, mud, and standing water from your vessel. Inspect your boat, trailer, and all gear. Pay close attention to crevices and hidden areas.

Drain

Drain or remove water from your boat, bilge, live wells, engine, internal compartments and bait buckets by removing drain plugs before leaving the river access area. Draining the water is the best way to make sure aquatic invasive species don't get transported to someplace new.

Dry

Aquatic invaders can only survive in water and wet areas. Drying your watercraft and recreational equipment thoroughly, if given enough time, will kill aquatic invasive species.

Picture below – 2018 home locations of boats inspected by Montana State inspection stations; Alberta is the second most popular destination for boats launched in Montana.



Executive Director's Report

This past year we continued to improve communication, education, and expand our outreach efforts across the watershed. We have now publicly made available a review of past storage investigations for the Milk River that will help deal with challenges to water security and better inform our community and watershed stakeholder of the value and tradeoffs associated with solutions to economic, social,



and environmental challenges within the watershed.

Our successful Watershed Restoration and Resiliency program continues to support proactive drought and flood mitigation with our producers along the Milk River and associated tributaries. To date, we have helped improve management of over 1250 head of livestock along our water courses, improved access and security of water in the face of drought challenges, and providing fencing and materials to improve riparian resiliency and health while assisting producers to develop more flexible grazing schedules to avoid sensitive wet periods in the riparian areas and take advantage of late and dormant season grazing after the St Mary diversion water is out of the Milk River in the fall months. This is the final year for Phase 2 funding, and producers are encouraged to contact us soon if you have a project in mind that can be completed this spring or fall.

The new government provides new opportunities and approaches to grass-roots watershed management, we look forward to a continued commitment to voluntary producer stewardship. Our strong local voice with diverse council is readily available to plan, advise, and take action to implement actions that align with the values of our members and municipal partnerships.

We have many accomplishments to be proud of within our community, as demonstrated by the outpouring of community support at this past spring Community Appreciation Forum.

Once again thank you to all our program sponsors, donors, staff and volunteers that make our work not only possible, but rewarding.

Tim Romanow, Executive Director MRWCC

Contact Us

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We are located in the Milk River Town Office at 240 Main Street.

Address:

Box 313, Milk River, Alberta. T0K 1M0

Office Hours:

Tuesdays, Wednesdays, and Thursdays 8 a.m. to 4 p.m.

To reach us on Mondays and Fridays please contact us

We are closed weekends and holidays

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