Bow River Basin Council

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preserving our lifeline

working together to nurture, share, and protect the waters of the Bow River Basin

View of Ghost River Valley. Photo: Marina Krainer

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welcome to our newsletter

a quarterly look at stories and updates from around the watershed

In this issue

2024 BRBC Board Retreat

BRBC members and partners have had a remarkably challenging year, planning for the worst and hoping for the best after an exceptionally dry 2023. Against this backdrop, BRBC staff continued to collaborate with knowledge experts on a new online State of the Watershed Report (soon to be released!). We have also continued to host forums and workshops, and facilitate committee work in support of our stewardship partners.

Following the September BRBC Quarterly Educational and Networking Forum at SAIT, the BRBC Board met for their annual retreat. The focus of this year's retreat was to identify and understand upcoming challenges, thereby strengthening our position to support better watershed management decisions while continuing as a trusted voice in the watershed.

With the help of facilitator Daniela Galindo (Alberta Ministry of Arts, Culture and Status of Women), the Board engaged in strategic discussions that covered the issues and challenges facing each of our six membership sectors, highlighting what is working well and what could be refined to better meet the needs of our members.

BRBC Board Retreat. Back row, from left to right: Rob Wolfe, Joe Fowler, Scott Taylor, Mark Bennett, Chris Manderson, Richard Phillips, Jason Schneider, Jason Mogilefsky. Front row, from left to right: Pablo Pina, Megan Van Ham, Amanda Halawell, Nilo Sinnatamby, Brooke Kapeller, Nisha Saini, Mike Murray, Steve Meadows.

We also celebrated the year's successes, noting that these all revolve around the people like you who actively participate in and support the work of the BRBC. We have also been able to adapt and increase our ability to respond to workload demands and complexity of the work itself. For example, our drought response work this year (which included a Legislation and Policy forum and timely, drought-specific content on

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our website) was received very positively by our members and demonstrated our ability to deliver timely, high-quality service in response to an evolving, complex situation. Such success is in part due to stable, core funding support, for which we are very grateful. Our overall success, however, is also due to having secured a number grants, allowing us to add expertise and capacity in support of stewardship activities throughout the basin.

A significant challenge for the BRBC, and all non-profit groups, is inflation and its ripple effects. The Board Retreat provided opportunities to discuss this challenge and how the BRBC can move forward with priorities and initiatives that ensure the effective functioning of the organization and continued support of our stewardship partners. As an organization, we need to plan for the work ahead but also ensure the organization has the flexibility to pivot to unexpected areas (e.g., drought). Such challenges are an opportunity to leverage our competitive advantages of strong membership, staff and partners to develop effective strategies.

Preliminary goals and priority actions identified include:

- Amplify the key learnings in the State of the Watershed though a communications and outreach project focused on connecting with our sectors in the basin.
- Build and strengthen relationships, through our connections and relationships in the basin.
- Establish strategies to increase organizational resiliency.
- Support the untapped potential that the BRBC has to be of help to our members and the Bow Basin.

If you have any questions or would like to know more please reach out to your Board members or myself for more information.

- Mike Murray
BRBC Executive Director
mmurray@brbc.ab.ca

Waiparous Creek. Photo: Cal Hill.

Expanding Citizen Science Groundwater Level Monitoring

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Groundwater is an essential and often overlooked component in the health and function of freshwater ecosystems. Stored in bedrock pores and fractures, and spaces within sediment, groundwater feeds springs, rivers, lakes and wetlands and seeps into the ocean. Importantly, groundwater is the largest freshwater source in Canada and is the main source of drinking water for over one third of the country. As climate change continues to affect our freshwater resources it is more pressing than ever to be able to properly quantify how these changes are affecting groundwater levels and flow over time.

While there are many groundwater experts in southern Alberta, there is still not enough data to properly determine how groundwater behaves or changes over seasonal and multi-year time periods in the Bow River Basin (a region that uses groundwater for agriculture and domestic supplies and has been particularly impacted by recent drought periods). In addition to the Government of Alberta's Groundwater Observation Well Network (GOWN), which monitors groundwater throughout much of the province, citizen science monitoring initiatives are proving to be valuable additions for filling groundwater data gaps in certain regions of the province. Since 2007, the University of Calgary's Earth, Energy, and Environment Department has been monitoring groundwater levels through a citizen science program initiated in Rocky View County. The Rocky View WellWatch program, led by Dr. Masaki Hayashi, includes 40 water wells

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BRBC Groundwater Subcommittee

Advisory Panel

Dr. Masaki Hayashi
Hydrogeologist, Professor
University of Calgary
Global Water Futures

Dr. Cathy Ryan
Hydrogeologist, Professor
University of Calgary

Lisa Kleebaum
Geophysicist, Instructor
SAIT

Active Members

Dr. Pieter Aukes
Hydrologist, Instructor
SAIT

Dr. Jean Birks
Hydrogeologist
Alberta Environment & Protected Areas

Alan Breakey
Retired geologist
(mining, oil, and gas)

Dan Brown
Retired hydrogeologist
Golder Associates

Wendell Koning
Retired provincial limnologist
Co-chair BRBC Science Committee

Mary Kruk
Water data specialist
DataStream

Bob McAlpine
Limnologist
Water quality specialist
WQ Consulting

Dr. Mike Moncur
Hydrogeologist
Alberta Environment & Protected Areas

Dr. Klas Ohman
Water engineer
Associated Engineering

Dr. Nilo Sinnatamby
Biologist, Limnologist
Miistakis Institute

Harris Switzman
Water resources engineer
Calgary Airport Authority

Mike Weldon
Geoscientist
Associated Engineering

in the County. Building on this initiative, the BRBC Science Committee established a Groundwater Subcommittee to examine how the BRBC could expand the WellWatch program and add to groundwater data and understanding throughout the Bow River Basin.

The BRBC Groundwater Subcommittee consists of two components: active members representing a wide range of scientific fields and experience, and an Advisory Panel of groundwater specialists. To date, the subcommittee has compiled and plotted all wells currently being monitored by both the Rocky View County and Provincial GOWN programs within the Bow River Basin (Figure 1). This compilation has revealed large geographical gaps in water well monitoring. It was therefore decided that the BRBC Groundwater Monitoring Project should focus on expanding citizen science groundwater level monitoring to the other counties within the basin to gain a more complete picture of how groundwater behaves through space and over time. These include the M.D. of Bighorn, Foothills County, Wheatland County, Vulcan County, and the County of Newell (all of which have significant groundwater monitoring data gaps).

A grant awarded to the BRBC by the TD Friends of the Environment Foundation allowed the Groundwater Subcommittee to purchase equipment to loan to citizen science volunteers who could then take monthly groundwater level measurements (and possibly, at select sites, continuous water level monitoring). Using $10,000 from this grant, the committee covered the costs of field incidentals and purchased 13 electronic water level meters of various lengths, two continuous recording pressure transducers, two direct read cables, and a Barologger.

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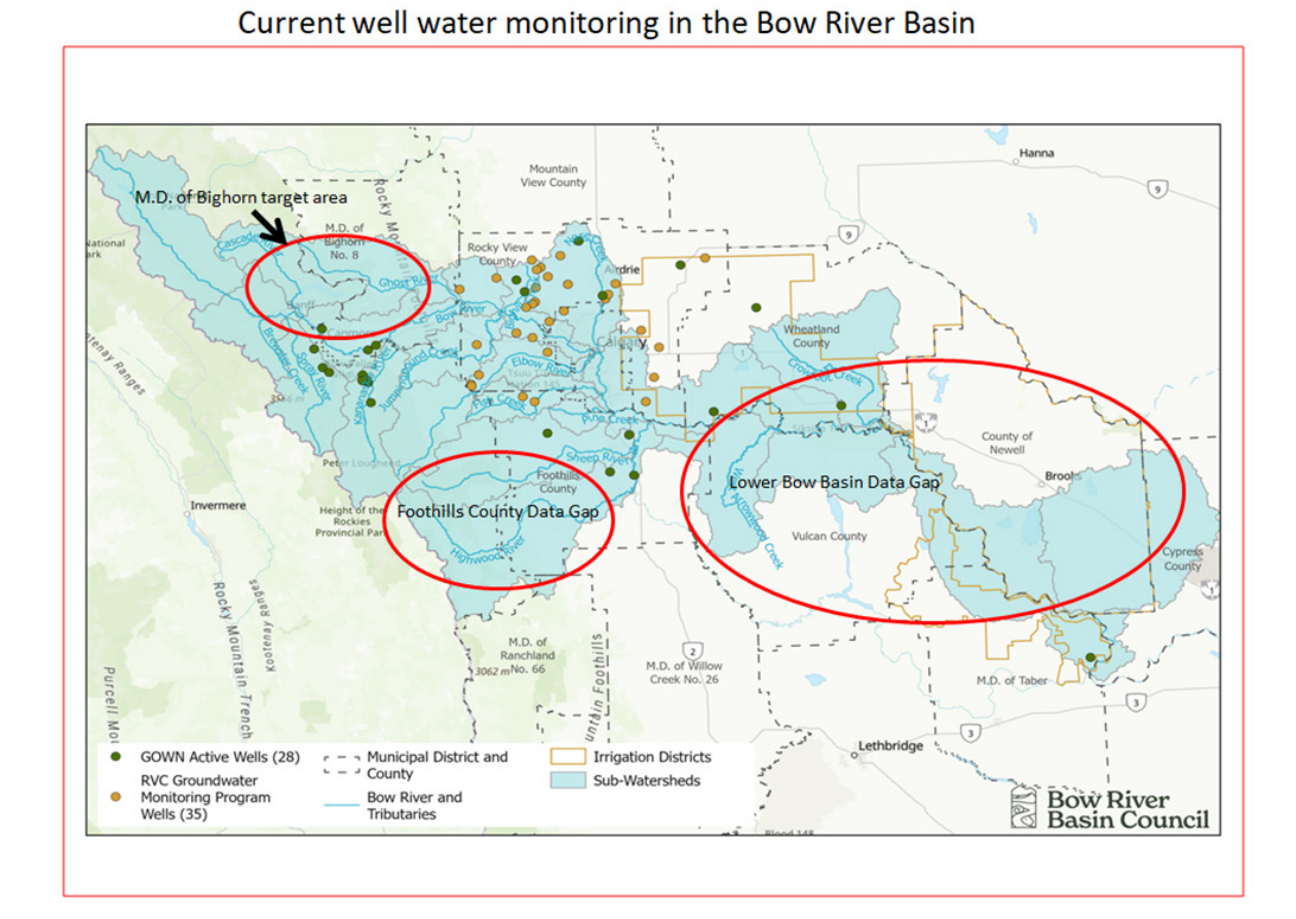
Figure 1. Identifying groundwater level data gaps in the Bow River Basin.



To date, 12 well owners have shown interest in participating in this initiative, with well locations in the M.D. of Bighorn and Foothills County. The first well owner training session occurred in August, where Dr. Masaki Hayashi was able to share his knowledge of how to collect accurate and reliable groundwater level measurements with members of the Groundwater Subcommittee and the well owner. Two more training sessions followed in October, led by the subcommittee, and subsequent training sessions are set to take place over the fall months. To date, three landowners have participated in training and are taking their own monthly water level measurements.

During the upcoming year, the Groundwater Subcommittee plans to continue to loan out monitoring equipment and establish well monitoring sites within the identified counties. The information collected will be made available through regular reports, and the water level data will be available through a secure, open access data repository. The long-term goal is to set up an ongoing groundwater monitoring program to fill data gaps and better understand multi-year (and eventually decadal) trends in groundwater levels in the Bow River Basin. Consideration is also being given to future chemical analysis at monitoring locations to better understand changes in the quality and condition of aquifers and how they might be impacted by human activity.

If you are a well owner interested in participating in the BRBC Citizen Science Groundwater Monitoring Program please scan the QR code to fill out our Citizen Science Survey. If you have further questions or are interested in getting involved with the BRBC groundwater committee, please contact Pieter.Aukes@sait.ca.

BRBC Citizen Science Groundwater Survey

A well owner being trained to take groundwater level measurements using an electronic water level meter in August 2024.
Photo: BRBC Groundwater Subcommittee.

Using a flashlight to assess potential obstructions to tape probe.
Photo: BRBC Groundwater Subcommittee.

Spotlight: Women in the Watershed

Maddison Skinner

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Riparian Resource Analyst/Resource Specialist
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To recognize and celebrate International Women's Day in March of this year, the BRBC initiated a 'Women in the Watershed' series highlighting the lives and contributions of women who nurture, share and protect the waters of the Bow River Basin. We're pleased to continue this celebration with our next introduction in the series, Maddison (Maddy) Skinner, a riparian resource analyst and riparian specialist with Cows and Fish Riparian Management Society.

BRBC: Tell us a bit about your career path.

Maddy: I was lucky enough to grow up with a family who spent much of their time outdoors. My family camped, fished, and gleefully tore up dirt bike trails. Later, after we moved from suburbia onto a little homestead, a conservation ethic slowly crept up on us all and we traded dirt biking for building compost bins, planting tree species missing from our property, and spending quiet evenings by the firepit listening to a boobook owl call from the trees above.

My ecology degree taught me to see the natural world in a new way – or perhaps to see it for the first time. A tree on the side of the trail was no longer a tree, but one of several hundred potential trees, all with unique names and histories and appearances that I hadn't begun to notice until somebody taught me to see.

After university, I left my home in Australia following a yearning to experience the distinct seasonality and big mammals of Canada. After a year living and working in the mountain parks, I decided that this land, with its glaciers, wildflower blooms, prairies, and vast, beautiful tracts through which one can wander for weeks on end with nary a road in sight, was where I belonged.

"Fieldwork often requires long days and lots of planning, but the satisfaction of being out on the land doing fulfilling work is unbeatable." Photo: Amy Berlando.

I started searching for opportunities to put my degree to use. Eventually I accepted a position with Cows and Fish, which allowed me to work across the province assessing the health of riparian areas along the beautiful rivers, streams, lakes, and wetlands of our region. Over that first summer field season, I learned more about plants, ecoregions, riparian area function, and sustainable grazing and recreation practices than I ever thought possible in such a short timeframe. I became a convert to the beauty and importance of the prairies and native grasses that have shaped the Bow River Basin and countless others for millennia.

It's an honour and a joy to have the privilege of working alongside so many passionate, dedicated women and folks of all backgrounds who are all bound by our love for these rivers and the landscapes they support. I get to work in a role that uses both my academic background in ecology and my experience growing up in a farming family, and I get to share my love of waterways and riparian areas with ranchers,

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anglers, First Nations communities, college and university students, and the general public. As far as career perks go, I think that's pretty hard to beat!

BRBC: Can you share a memorable success story or achievement from your watershed-related career or volunteer experience that you're particularly proud of? Are there specific projects or initiatives you've been involved in that have had a positive impact on the local community or environment?

Maddy: Restoration and coexistence activities are some of the most rewarding projects I get to be a part of! A favourite project in the basin is the beaver dam analogues that various groups and volunteers came together to install in the Ghost/Waiparous area northwest of Calgary. We conducted the work on a tributary that once flowed year-round and hosted beavers, bull trout, westslope cutthroat trout, and abundant willows along its length. However, when we began the project, almost two kilometres of the stream was drying up every summer. The channel had historically been diverted and straightened and, as a result, water would rush straight through early in the spring, leaving little to show for it but eroding banks and an ever-lowering water table that no longer supported willows or other riparian plants.

To help this stream get back to providing the function and habitat it once did, we needed to slow the water down and help the channel to 'meander' again. So we did something that's both obvious and a little bit revolutionary – we built beaver dams in the streambed. Since we can't go around building actual beaver dams, we call these structures beaver dam analogues. They use entirely natural materials, including untreated wooden posts and many hundreds of willow stakes harvested from the surrounding landscape, to mimic real beaver dams. In doing so, they slow the flow of water, giving it more time to soak into the ground and raise the water table. This will eventually allow riparian plants like willows and river birch to re-establish alongside the banks, preventing further erosion and providing shade to the fish that will be able to access the tributary year-round once again.

The primary reward of this project, of course, was restoring degraded waterways and reinvigorating habitat for native trout and beavers. But there are other rewards that are harder to pinpoint. Rewards like strengthening partnerships, seeing the dedication of volunteers – regular people who just love their watershed and are willing to work to protect it – and rewards like using my own body, my muscles, my energy, to work in service of the watershed that does so much for me.

Maddy standing in the shadow of the beautiful Uluru, one of Australia's iconic land features and a site of enormous spiritual significance to many of Australia's Indigenous Peoples. Photo: Cassie Maw.

BRBC: Can you share a piece of advice or encouragement for women who are considering a career or volunteering in the watershed management or similar environmental fields?

Maddy: If you're doubting whether it's for you, take the leap and give it a go! We're a pretty friendly bunch, and we'll welcome you with open arms. This field is full of amazing, warm, knowledgeable people, and whether you're interested in biological restoration or stormwater management or glaciology or fisheries biology or one of hundreds of other facets of this work – we need you! Our watersheds need as many of us as possible on board, informed, and standing up for them – and those of us already doing the work will tell you that it's about the most fun you could possibly have in a career.

The BRBC extends special thanks to Alesia Cameron for initiating and coordinating this year's Women in the Watershed series. We greatly appreciate your commitment and passion Alesia, thank you!

2024 BRBC Summer Student Reflections:
Nolan James

AUTHOR Nolan James, BRBC
Adaptation and Resilience Training (ART) Intern
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This past summer, I had the distinct privilege of working with the Bow River Basin Council (BRBC) as a Watershed Planning Technician. I learned of the opportunity when my instructor posted the job opening in one of SAIT's LinkedIn groups. Intrigued, I dove into researching what the BRBC is and what it stood for. It didn't take long for me to realize that the BRBC's mission to nurture, share, and protect the waters of the Bow River Basin resonated deeply with me. The meaningful work undertaken by the BRBC team and its membership immediately sparked my interest, and I knew I wanted to be a part of these impactful efforts.

After an engaging interview with Mike Murray and Brooke Kapeller, I felt confident that I would be a great fit for the position. With their enthusiasm and commitment to the BRBC's mission, I was eager to contribute and join the team! I was thrilled to receive Brooke's call that I had been selected for the role, and looked forward with excitement to the summer ahead.

My role as a Watershed Planning Technician provided many opportunities to apply my education in environmental management and Geographic Information Systems. My primary focus was assisting in the development of the BRBC's State of the Watershed Report, a project that I found particularly rewarding as it involved analyzing data, conducting research, and collaborating with various stakeholders to produce a comprehensive report on the health and status of the watershed.

I hit the ground running during my first month of the internship. The first few days included a welcome lunch with the BRBC team and attending the 17th annual Science Forum, held at Mount Royal University's Roderick Mah Centre for Continuous Learning. Being surrounded by such a dedicated and passionate group of individuals was both invigorating and inspiring. The forum was a fantastic kickoff to my summer internship, providing me with valuable insights into the latest research and developments in watershed management. I also had many opportunities over the following weeks to join meetings on a diverse array of topics such as legislation, policy, and water quality, to name a few.

Welcoming Nolan to the BRBC! Clockwise, from left: Mike Murray, Tenaya Lynx, Steve Meadows, Brooke Kapeller, Nolan James, Medini Prasai, Andrea Czarnecki. Photo: BRBC.

The highlights of the summer included planning a hike with the BRBC staff to Upper Kananaskis Lakes, where we were treated to stunning scenery, beautiful weather, and even better company. Additionally, participating in CABiN testing

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with the Elbow River Watershed Partnership provided hands-on experience and valuable insights into water quality assessment.

Throughout the many meetings, events, and field activities I attended with the BRBC, I had the opportunity to meet numerous dedicated and inspirational individuals. These interactions were incredibly enriching, as they not only broadened my perspective but also motivating me to continue learning and growing within my field.

This experience not only deepened my understanding of watershed issues but also allowed me to contribute meaningfully to the BRBC's ongoing projects. The skills I gained and the connections I made during this internship have been invaluable. Working alongside dedicated professionals like Brooke, Mike, Medini, and Joe was incredibly rewarding. Their expertise and passion for environmental stewardship were inspiring and provided me with a wealth of knowledge and practical experience.

Throughout my time with the BRBC, I learned not only technical skills in data analysis and GIS but also gained insights into effective teamwork and project management. The collaborative environment and the emphasis on impactful work made every task meaningful and engaging. I am grateful for the opportunity to have been part of such a committed team this past summer, and I'm very pleased to report that I am continuing my work with the BRBC as the successful applicant for the Adaptation Resilience Training internship. Under this program, I will continue with the BRBC until June, 2025, building upon the inspiration and knowledge I gained over the summer and allowing me to continue to develop and explore my professional aspirations in environmental management and GIS.

CABiN testing with the Elbow River Watershed Partnership. Left to right: Emma Chong, Kip Monaghan, Nolan James, Flora Giesbrecht, Joe Fowler, Sierra Vongrad. Photo: Marina Krainer.

BRBC Quarterly Educational and Networking Forum

December 11th, 9:00 am - 3:00 pm
(8:30 am, sign in)

Aldred Hall (in Aldred Centre)
Southern Alberta Institute of Technology
1301 16th Avenue Northwest, Calgary

To register, please visit this link.

FORUM SPEAKERS

Flora Giesbrecht, Executive Director
Elbow River Watershed Partnership
Stewardship in the Elbow Valley

Reed Froklage, Public Program Coordinator
The City of Calgary
The City of Calgary: Supporting Stewardship Initiatives

Leah Andries, Director
Howl High School
The Howl Experience: Engaging Youth in Stewardship

Jenny Yeremiy
The Gravity Well
Alberta's $260 Billion Clean-up and Restoration Economy

Sharlene Fritz, Education and Outreach Coordinator
Ghost Watershed Alliance Society
Education, Outreach and GIS with the Ghost Watershed Alliance Society

Dr. David Roberts, Co-Director
Alberta Biodiversity Monitoring Institute
Science Centre
ABMI ORB Tool

Leta van Duin, Executive Director
Alberta Low Impact Development Partnership
Updates from the ALIDP

Mary Kruk, Data Specialist, DataStream
Dr. Pieter Aukes, Instructor
Water Science (SAIT)
Groundwater Monitoring in the Bow Basin Project

Emma Stroud, Team Lead
Ecology and Conservation
Friends of Fish Creek
Salvaging Plants with Alberta Native Plant Rescue

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Donate

Sustainable funding fuels the work we do and allows us to support projects across the Bow Basin. The BRBC prides itself on maintaining autonomy and integrity via diverse funding sources, including donations by our membership and partners.

To learn more about our current initiatives, visit www.brbc.ab.ca

A donation can be made online at brbc.ab.ca/donate

The next BRBC newsletter will be released in March. If you would like to submit an article, please contact Andrea Czarnecki at aczarnecki@brbc.ab.ca