

THE BAXTER



Winter 2022 | Volume 2 | Issue 1

BAXTER CREEK WATERSHED SEPTEMBER 2022 FORUM: COMMUNITY OPEN HOUSE

Your Land. Your Water. Your Future.

Questions received and answers:

1. “Why is there some development in your ‘dream plan’ (e.g., education centre) [for the former Jail Lands]? Why not nothing?”

Answer: Our directors have a vision that wants to see the former lands of the Millbrook Correctional Centre bring value to the community. When the former Correctional Centre closed Millbrook lost a source of economy and jobs. We feel that the former site of the building envelope (approximately 4.5 acres) could support a carbon-neutral education centre dedicated to environmental education. Our vision is this learning centre would be an environmental hub for all ages including youth, middle-school, post-secondary, higher education (college and university), as well as our elders and local community groups.

2. “What about damage occurring right now at the jail (e.g., ATVs – pretty dramatic ATV damage)?”

Answer: Infrastructure Ontario continues to own the property and is responsible for managing and mitigating property damage.

Thank you to Steve Paul who submitted the winning bid for the antique print at the silent auction.



2022 ANNUAL REPORT: PROGRESS FOR THE BAXTER CREEK WATERSHED ALLIANCE BOARD OF DIRECTORS

This past summer our Board of Directors for the Baxter Creek Watershed Alliance (often referred to now as “BCWA” or “the Alliance”) has been very active over the last year meeting with partners and potential partners with common interests in watershed conservation. We continue to build up our collaborations and actively seek out new working relationships to build our capacity and pursue our vision of people living and working in Cavan-Monaghan and the Baxter Creek area, caring for a clean and healthy watershed. Here are some key highlights of our spring, summer and fall activities as we continue to dedicate ourselves to conserving and enhancing the local watershed environment for future generations of humans and wildlife.

As mentioned in our last issue, the Alliance closed out our 2022 Fleming GeoCommunity mapping project this year. In June we met with our student team for a final demonstration of their work as they implemented their mapping products on our new [Baxter Creek Watershed Hub site](#). Perhaps one of the most impressive outcomes of the project was the student’s online [Baxter Creek watershed Story Map](#). The Fleming students’ map series is now online and many of the maps were printed and on display at our fall Watershed Forum held September 26th, 2022.

Thanks to our Director, Dr. Noel Kerin, on August 19th we had the opportunity to meet with Brian Bates, the Chief Executive Officer for the Walkerton Clean Water Centre (WCWC). Dr. Kerin also sits on the Board of the WCWC, so this was a terrific opportunity to engage in shared interests. At the meeting, BCWA presented our organizational goals and objectives and highlighted how we support WCWC’s mandate locally by providing information, education, and advice to the public about environmental issues related to drinking water. We are looking forward to meeting again with WCWC to further discuss how we can work together in our township enhancing an understanding of our water resources and assist in delivering environmental education locally.

On the same day as the WCWC meeting on August 19th, BCWA shared a meeting with the Honorable David Piccini, Minister of the Environment, Conservation and Parks (MECP). Thanks goes to our former Mayor, Scott McFadden, for arranging this meeting. A delegation of our Board of Directors met with Minister Piccini, Mayor McFadden, Brian Bates from WCWC, as well as other council members and staff from the township. The delegation toured the Millbrook Drinking Water System including the Wastewater Treatment Plant in Millbrook (WWTP). The operator of the WWTP, Rob, did a fantastic job showcasing and demonstrating the incredibly modern wastewater treatment technology we have in our community. We are fortunate to have such professional and knowledgeable staff employed by our township overseeing the critical job of treating our effluent before it is released to Baxter Creek.

During our meeting with the Minister of the Environment, we highlighted our our goals and objectives. We spent some focused time presenting our vision for the watershed and of conserving the former Millbrook Correctional Centre lands. The Minister was extremely engaged and welcomed our ideas. **The Minister asked if anyone had considered establishing a Conservation Reserve on the property. We welcomed this idea and the Minister committed to having staff review the file and assess if a Conservation Reservation or other mechanism may be appropriate for conserving the lands.** While a Conservation Reserve is typically used for protecting significant ecological lands that are pristine or “untouched” representations of natural systems, this could be a potential solution given the property is within the municipal drinking water Wellhead Protection Area. The lands could also act as a site for offsetting natural heritage (e.g., tree planting) that is impacted in built up areas. BCWA will be following up with the Minister’s office in 2023 to arrange another meeting.

Finally, on August 26th, our Watershed Research Committee met with staff and faculty from Trent University. This meeting included Stephen Hill, the Director of Trent’s School of the Environment, as well as staff from the Trent Community-based Research Centre (CRC) and faculty from Trent’s Department of Biology. This was an extremely well-attended gathering which included a formal presentation from BCWA on our mission of caring for the watershed. Trent staff highlighted how the BCWA can leverage resources from Trent, in particular student and faculty research projects. Following this meeting, BCWA attended Trent’s CRC “meet and mingle with faculty and staff on November 28th, 2022. **As a result of this event, BCWA is pleased to announce that we will be accepting a 4th year Trent School of the Environment student placement who will be working for BCWA on our projects to earn course credit starting January 9th, 2023 to mid-April 2023! This placement adds significant capacity to our organization while highlighting our watershed and community to Trent staff and students.** Check our website in late January to read our student’s bio!

"Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest."

-Aldo Leopold.



MILLBROOK’S WASTERWATER TREATMENT PLANT

In our last issue we highlighted Millbrook’s Municipal Groundwater Well ([Volume 1, Issue 4](#)) and in the issue before that we focused on the Wellhead Protection Area ([Volume 1, Issue 3](#)). In this issue, we wanted to introduce the topic of the Wastewater Treatment Plant which is so critical to ensuring the water we use, and the other waste that flows from our residences, is safely treated before being released back into the environment through the Baxter Creek.

We are fortunate in Millbrook to have a modern, state-of-the-art Wastewater Treatment Plant. The plant is the result of a \$21-million renovation that was a five-year project completed in 2016. At the time, council was being proactive in planning for growth to accommodate at least 1,000 new homes. The provincial, federal and municipal governments each covered a third of the bill. The new water tower, located next to the Cavan Monaghan Municipal Office at 988 County Rd 10, was also part of the project. The wastewater treatment plant is located at the end of Centennial Lane in Millbrook (past Centennial Place long-term-care home at 25 Centennial Lane). See <https://themillbrooktimes.ca/wastewater-treatment-plant-official-opening/> for more details.

The wastewater treatment plant and the operators on staff ensure that the treated water being released back into the environment meets acceptable water quality standards. The process also ensures that the temperature of the water being released is within acceptable ranges as well which is critical considering Baxter Creek is a coldwater trout stream.

SNOW COVER AND OUR WATERSHED

Why is snow cover so important?

Snow cover is any area covered by snow at a given time. How long the ground remains snow covered, especially in the spring, affects the length of the growing season, the timing and amount of river and stream runoff, ground permafrost thawing, wildlife, and fire risks.

While many residents associate snow with a seemingly never-ending period of storms and icy cold weather as one waits for the return of spring, snow's influence on the weather and climate continues long after winter storms become a distant memory. Snow is highly reflective, and a vast amount of

sunlight that hits the snow is reflected back into space instead of warming the planet. Without snow cover, the ground absorbs about four to six times more of the sun's energy. Snow's high

reflectivity helps Earth's energy balance because it reflects solar energy, which helps cool the planet. Snow cover helps regulate the exchange of heat between Earth's surface and the atmosphere, or Earth's energy balance.

The presence or absence of snow controls patterns of heating and cooling over Earth's land surface more than any other single land surface feature! Seasonal snow plays an important part of Earth's climate system. Snow cover not only helps regulate the temperature of Earth's surface, once that snow melts, the water it contains helps fill streams and rivers and reservoirs.

The thermal properties of snow have important consequences for climate as well. Snow acts like an insulating blanket. Beneath only 30 centimeters (1 foot) of snow, the soil, as well as the many organisms and micro-organisms within the soil, are protected from changes in the air temperature above the snow surface. Snow helps insulate the ground below, holding in heat and preventing moisture from evaporating into the atmosphere.

Snow cover helps protect low growing plants (and the roots of larger shrubs and trees) from extreme temperature swings and from drying out in the cold dry air. Winter snow also helps protect small mammals from predators. Small mammals, such as mice, voles, and shrews, live in this snow world where they create tunnels to navigate to find food and create nests. Snowy winter months are also very beneficial for native woodland and prairie seed to germinate the following spring. Subsequent freezing and thawing, softens the seed coat allowing the cotyledons (the first leaves to emerge from the seed) to break through. If the seed coat isn't softened, then the seed won't germinate in the spring.

Snow, and more importantly snowmelt, is vital for replenishing local rivers, lakes, as well as groundwater and aquifers that supply drinking water for both human and wildlife.



Local agricultural snow cover; picture courtesy: Harry Stooshinoff

"The hard soil and four months of snow make the inhabitants of the northern temperate zone wiser and abler than his fellow who enjoys the fixed smile of the tropics."

- Ralph Waldo Emerson.

Snow Cover and Agriculture

Over 50% of the land in the Baxter Creek watershed and across Cavan-Monaghan is dedicated to agriculture. Snow cover plays an important role in sustainable farming in several ways. One of the benefits of moisture in the form of snow is that nearly all the moisture will move down into the soil and remain there for quite some time. Since the weather is cold, or at least cool, after a snow, very little of it will evaporate immediately. It takes much longer for wet soils to get cold than dry soils. Snow on top of a field helps to preserve the moisture already in the ground.

Snow cover insulates dormant crops like winter wheat. A layer of snow insulates the crop helping to avoid “winter kill” during bitter cold temperatures. Snow keeps soils warmer during the winter by adding moisture to the soil. Snow cover keeps topsoil from blowing. As long as the ground is protected by snow, soil particles on the surface can’t be picked up by high winds, thus preventing wind erosion and thus protecting the soil.

Did you know that snowflakes can contain trace amounts of nitrogen from the atmosphere that will help fertilize the next crop? Once the snow begins to melt, it will also help to put moisture back into the ground.

Snow Cover and Climate Change

Canadian studies have shown that in 2021, snow cover in April was at its 10th lowest since 1972 (i.e., 10th lowest out of 49 years of available data). In comparison, snow cover extent in May and June was at its 24th and 22nd lowest since 1972 (Source: Snow cover - Canada.ca at <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/snow-cover.html>). In fact, “overall, snow cover duration has decreased across most of Canada over recent decades” (Source: Changes in Snow – Canada.ca at <https://www.canada.ca/en/environment-climate-change/services/climate-change/canadian-centre-climate-services/basics/trends-projections/changes-snow.html>).

Some researchers and farmers are noticing an increase in the number of mid-winter thaws. While also reducing snow cover (or snow pack) mid-winter thaws can cause nutrients to runoff from the landscape into adjacent waterways.

Snow cover is also disappearing earlier in the spring. The energy that would have melted the snow now directly warms the soil. With decreased snow cover, the Northern Hemisphere reflects less energy into space, absorbs more solar radiation, adding heat to the system and melting more snow. Areas that experience significant decreases in snow water equivalent may see a decrease in water availability. This can impact agricultural production, impact drinking water security and increase the risk of forest fires. Winter recreation activities like skiing and snowmobiling also suffer from reduced snow accumulation and warmer temperatures.

So... instead of grumbling at the sight of falling snow as one reaches for the shovel or snow blower, one should be thankful instead!

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Baxter Creek Watershed Alliance (Corporation# 13483819) is a Canadian federal nonprofit corporation entity registered with Corporations Canada, located in the Village of Millbrook, Township of Cavan-Monaghan, County of Peterborough, Ontario, Canada.

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