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To learn more about Baxter Creek Watershed Alliance visit our website at:

<https://baxtercreekwatershed.org/>



A spatial selection from the “Canopy Height Model” of the Baxter Creek watershed developed with support from students of Fleming College and Trent University. Derived from publicly available airborne light detection and ranging (lidar) data collected by the Ontario Ministry of Natural Resources, 2017.

HOW CAN WE PRESERVE OUR DARK SKY HERITAGE?

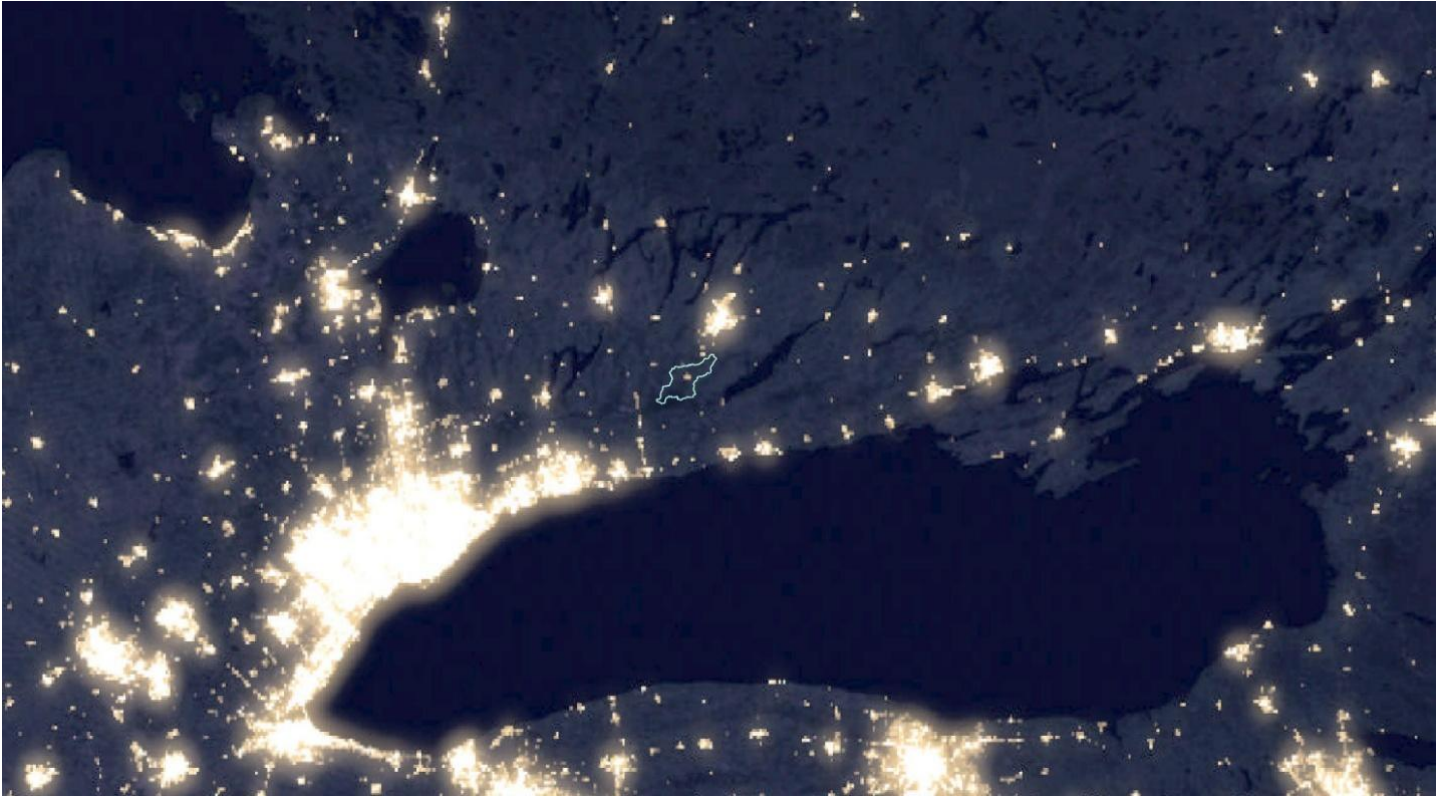
Have you ever looked up at the night sky and wished you could see more stars? Light pollution from streetlights, homes, and businesses makes it harder to enjoy the beauty of the night. Becoming a Dark Sky Community means making smart choices about outdoor lighting so everyone can enjoy the stars, protect wildlife, and save energy.

Other places in Ontario, like Huntsville and North Frontenac, have already taken steps to reduce light pollution. Huntsville uses special lighting rules to keep lights pointed down and uses bulbs that are less harsh. North Frontenac even has a Dark Sky Preserve, where people can stargaze and learn about astronomy. These changes help protect animals, save money on electricity, and make the community a better place to live.

If we follow their example, we could protect our rural heritage, help local wildlife, and create a unique identity as a place where people can enjoy the night sky. Simple actions like using shielded lights, choosing warm-colored bulbs, and turning off unnecessary lights can make a big difference. Supporting new lighting guidelines and spreading the word can help our community take the first steps toward a darker, starrier sky.

Perhaps one day, Millbrook can be recognized as an “Urban Star Park”. We are hoping one day Jail Hill could be designated as an Urban Star Park based on the lands being easily accessible within an urban settlement area and where public outreach plays a

large role, see: <https://rasc.ca/lpa/application-and-cgol> and <https://rasc.ca/lpa/dark-sky-site-program>. Other areas in and around Millbrook such as Medd's Mountain's conservation area, the field next to the Cavan Monaghan Libraries Millbrook Branch on Dufferin Street area also decent areas to stargaze. The map of light pollution below shows the Baxter Creek watershed outlined just west of Rice Lake. Other than the lights of Millbrook at the centre of the watershed, you can see why we are afforded such dark skies across the region.



Created by BCWA Digital Mapping and GIS. Source: Black Marble, "Light Pollution", from NASA's Earth Observatory, 2016.

"If the stars should appear one night in a thousand years, how would men believe and adore..."

- Ralph Waldo Emerson, Nature and Selected Essays

To see the impact of light pollution, check out satellite images of the Oak Ridges Moraine at night. These images, available from NASA's Earth Observatory and the National Oceanic and Atmospheric Administration (NOAA), show how city lights brighten the sky over southern Ontario:

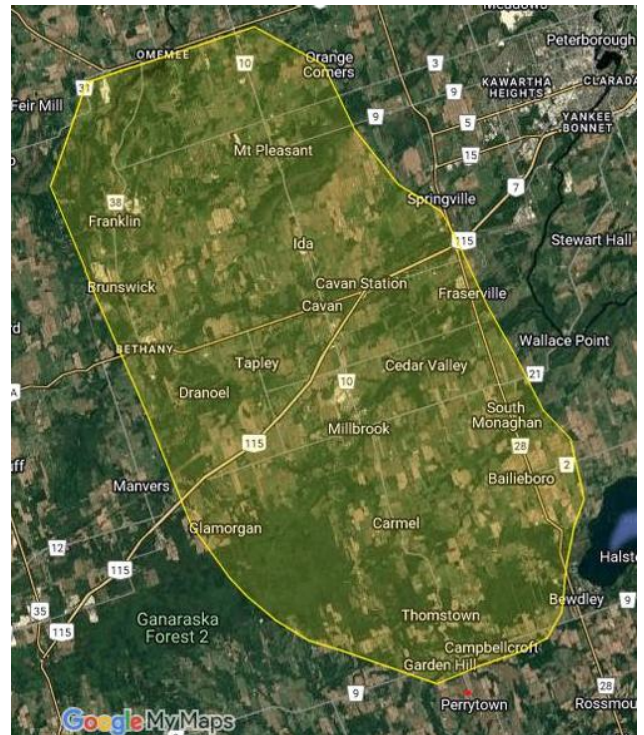
- <https://earthobservatory.nasa.gov/images/151797/night-lights-2022>
- <https://www.ncei.noaa.gov/maps/viirs/>

WHAT IS THE VALUE OF AGRI-ECOTOURISM IN OUR WATERSHED?

Trent University student completes Agri-Ecotourism study and then lands a summer job with the Township.

Earlier this year, Maxim Tandon from Trent University completed a Community Based Research Project hosted by Baxter Creek Watershed Alliance through the Trent University Community Research Centre. Titled, “Agritourism and Ecotourism in Cavan Monaghan Township: An Analysis”, it has shed light on just how important agritourism and ecotourism are to the economics and agricultural sustainability of our watershed — and to the wellbeing of the people who call Cavan-Monaghan home. The study identified 22 agritourism sites and 7 ecotourism attractions across the township, showing that our farms, forests, and trails are more than scenic backdrops. They are active contributors to environmental stewardship, local culture, and a stronger rural economy.

Agri-ecotourism supports the watershed by encouraging low-impact recreation, promoting local food systems, and helping residents and visitors build a deeper place-based connection to the land. Activities like farm tours, U-pick operations, hiking, and birdwatching help people understand how healthy soils, clean water, and protected natural areas support both agriculture and biodiversity.



Study Area. (Google Maps, 2024). Edited by Max Tandon



Kirk Hillsley, 2022

When visitors learn about sustainable farming or spend time on the Millbrook Valley Trails, they become more aware of how their choices affect the watershed around them.

The benefits extend well beyond the environment. Local businesses gain new customers, community events grow, and cultural attractions—like the 4th Line Theatre, which brought nearly \$2.5 million into the region in 2024—show how tourism can strengthen the local economy while celebrating our shared heritage. Stronger tourism also means more local job opportunities, more

collaboration among local groups, and more reasons for residents to feel proud of where they live and develop a life-long sense of place and belonging.

The project also highlights the value of investing in young people and creating local jobs. Max went on to work for the Township in a summer job contract as Heritage Coordinator, putting their knowledge directly into action. It's a great example of how community-based research can build local skills, support municipal planning, and inspire the next generation of environmental leaders.

As the report suggests, Cavan-Monaghan has all the ingredients for a thriving agri-ecotourism sector—rolling farmland, rich natural spaces, and a community that cares deeply about its watershed. With better outreach, stronger partnerships, and continued support for local initiatives, our region can grow in a way that protects the land while strengthening the community that depends on it.

UPDATING OUR STRATEGIC PLAN: OUR COMPASS

Since our Annual General Meeting this September and since releasing our 2024–2027 strategic plan, the Baxter Creek Watershed Alliance continued to strengthen our governance and strategy. With the help of SuccessMap Consulting Group, the Alliance is leveraging our updated strategy as a guiding compass to operationalize the plan over the next few years.



Jennifer Steele Viti and Frank Viti, Partners in SuccessMap Consulting Group, leading Directors of BCWA through a strategic theme analysis. BCWA, 2025

As mentioned in our last issue, during 2024, the Baxter Creek Watershed Alliance (BCWA) released its first strategic plan. The plan is a living document to be reviewed annually. Since the plan's release, the organization has undergone several changes, most notably, the dissolution of the Old Millbrook Jail Lands Association (OMJLA) as an independent nonprofit. Some OMJLA directors have continued with BCWA as non-voting members on board committees, while others remain involved as volunteers. Although OMJLA no longer operates as a separate entity, it continues as a strategic initiative within BCWA, focused on engagement and consultation with local Williams Treaty First Nations. BCWA has been actively working with Alderville First Nation and Hiawatha First Nation to advance the goals of the OMJLA initiative.

"An effective strategy is a compass, not a map, it points direction, not every step."

- Wayne Chirisa

As part of the strategic plan review, SuccessMap Consulting Group firm has been facilitating the update of our strategic plan to reflect the organization's goal to achieve a sustainable operational plan over the longer term. SuccessMap empowers organizations to thrive by optimizing governance and talent strategies. They apply their own integrated PersonaMapping™ process, to help strengthen board and internal governance while enhancing talent recruitment, promotion, and workforce alignment.

SuccessMap has offered its services to BCWA, to help build a resilient, high-performing organization that maximizes impact, relevance, and long-term sustainability. We are excited to have the opportunity to work with SuccessMap to revitalize our local effort to conserve and enhance the local watershed environment for future generations of humans and wildlife.

As always, if you are interested in volunteering your time and expertise with the BCWA or interested in learning more about how you can participate in our organization, please contact us at baxtercreekwatershed@gmail.com.

WHAT DOES “PERSONHOOD RIGHTS” MEAN FOR RICE LAKE?

Recognizing the Rights of Rice Lake: A New Step in Stewardship.

Alderville First Nation has taken an important and inspiring step in local watershed protection. Chief Taynor Simpson and Alderville Council recently passed a resolution recognizing the inherent rights of Rice Lake, an approach often called “personhood” for a water body. This resolution affirms that Rice Lake has the right to exist, flourish, and be protected, and it reflects a long-standing Anishinaabe understanding that water is a living relative, not a resource to be used without responsibility.

Chief Simpson recently brought this resolution to the global stage at COP30. COP30 is the 30th Conference of the Parties, the annual United Nations climate change conference held on November 2025 in Belém, Brazil, where Indigenous-led environmental leadership is increasingly shaping international climate discussions. By sharing Alderville's work, he highlighted how local actions – rooted in culture, community, and care for the land – can influence broader conversations about how we protect the natural systems that sustain us.

For many people, the idea of granting “rights” to a lake may seem unusual at first. But the concept is similar to something we use every day: corporate personhood. When a group of people incorporates a business or a nonprofit, the law grants that corporation certain rights so it can act, be represented, and be protected. The personhood model for natural features works in a comparable way. It gives a lake or river a legal voice – usually represented by guardians – so that decisions affecting its health must consider its long-term wellbeing.

For the Rice Lake watershed community, this initiative is more than a legal shift. It’s a reminder that healthy water supports healthy people, healthy ecosystems, and healthy local economies. As conversations about watershed protection continue across the region, Alderville’s leadership offers a powerful example of how traditional knowledge and modern governance can work together to safeguard the places we all benefit from.

Stay tuned for updates as this exciting initiative moves forward! 🌿

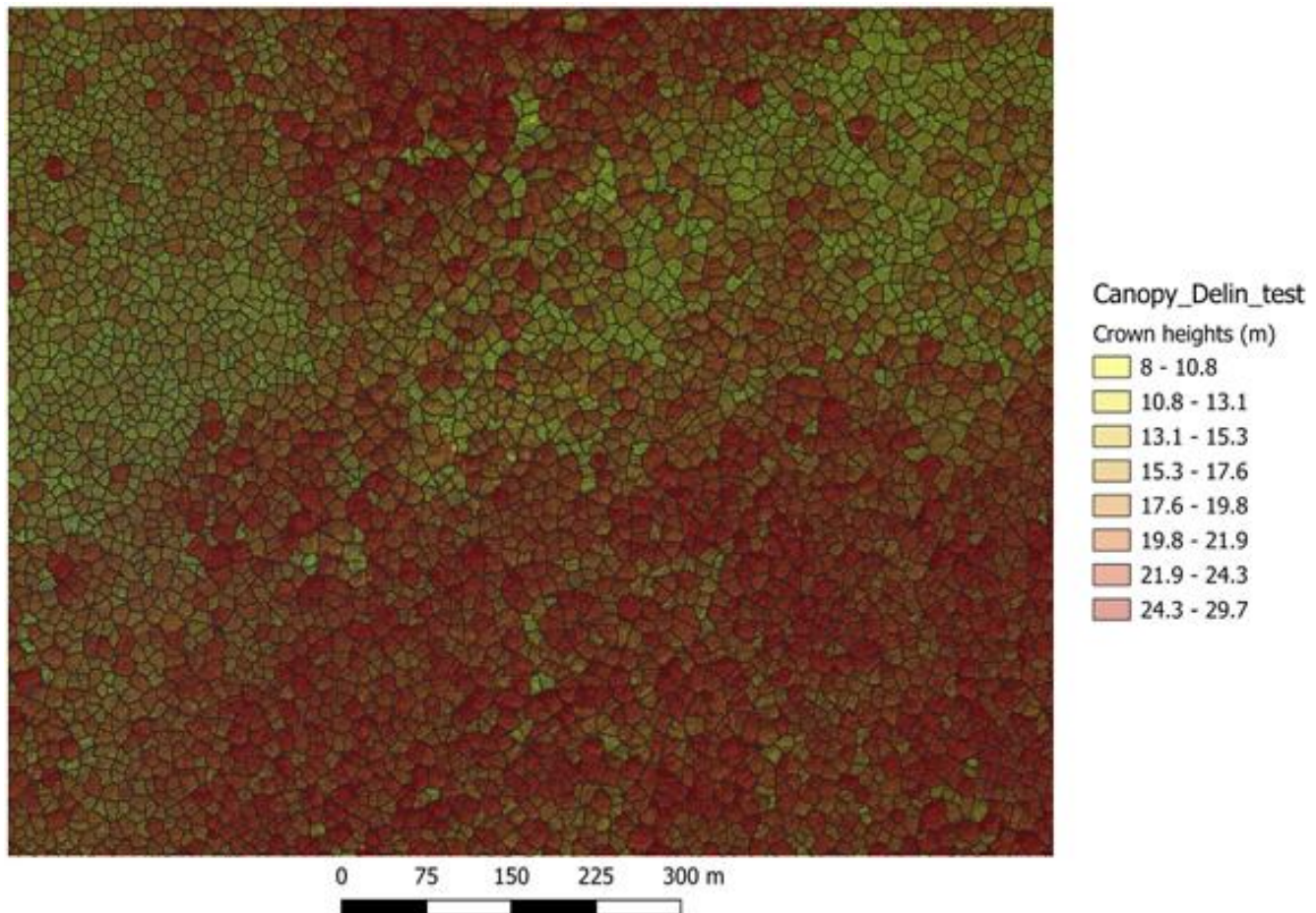
SEEING THE FOREST THROUGH THE TREES: USING AIRBORNE LASER DETECTION DATA TO UNDERSTAND OUR WATERSHED

📍 **What we can see and count from Forest Mapping with Lidar** Describing the forests of the watershed using 3D laser data. Ongoing results from a four-phase project with students from Fleming College and Trent University.



A Canopy Height Model with “Super Canopy Trees” labelled. Source: BCWA, 2023. Lidar Data sourced from Geospatial Ontario, Ministry of Natural Resources and Forestry. (2017). LiDAR-derived classified point cloud (2017) [Open LiDAR data set]. Government of Ontario. <https://geohub.lio.gov.on.ca/>

Lidar, which stands for Light Detection And Ranging, is a special technology that uses laser beams to create detailed 3D maps of forests and the ground under the trees. By sending out pulses of light from an aerial device, such as an airplane in this case, and measuring how long it takes for the light to bounce back, lidar can build a “point cloud” that shows the height and shape of trees and the ground underneath. This data is helping planners, scientists, and conservation groups, like the Baxter Creek Watershed Alliance, figure out things like tree height, tree density, and even locate especially tall “super canopy” trees that are important for wildlife and biodiversity. With lidar, it’s possible to make accurate maps that show where forests are dense and tall and where special habitats might be found (Krawec, B. (2024). Baxter Creek Watershed Forest Resource Analysis: Final report (ERSC160). Trent University).



Delineated forest crown layer with height data from the Baxter Creek valley. This layer is now able to have search terms applied to it in order for trees to be highlighted according to characteristics such as height or crown diameter. Krawec, B. (2024). Canopy Height Model: Final report (ERSC4840). Trent University. Data sourced from Geospatial Ontario, Ministry of Natural Resources and Forestry. (2017). LiDAR-derived classified point cloud (2017) [Open LiDAR data set]. Government of Ontario. <https://geohub.lio.gov.on.ca/>

Once the lidar data is collected, computer programs sort the points into categories like ground, vegetation, buildings, and wires. This sorting is important because it lets digital mapping users create models called Digital Terrain Models (DTM) and Canopy Height Models (CHM). The DTM shows the shape of the land, while the CHM shows the height of the tree canopy. By comparing these models, we can measure how tall the trees are

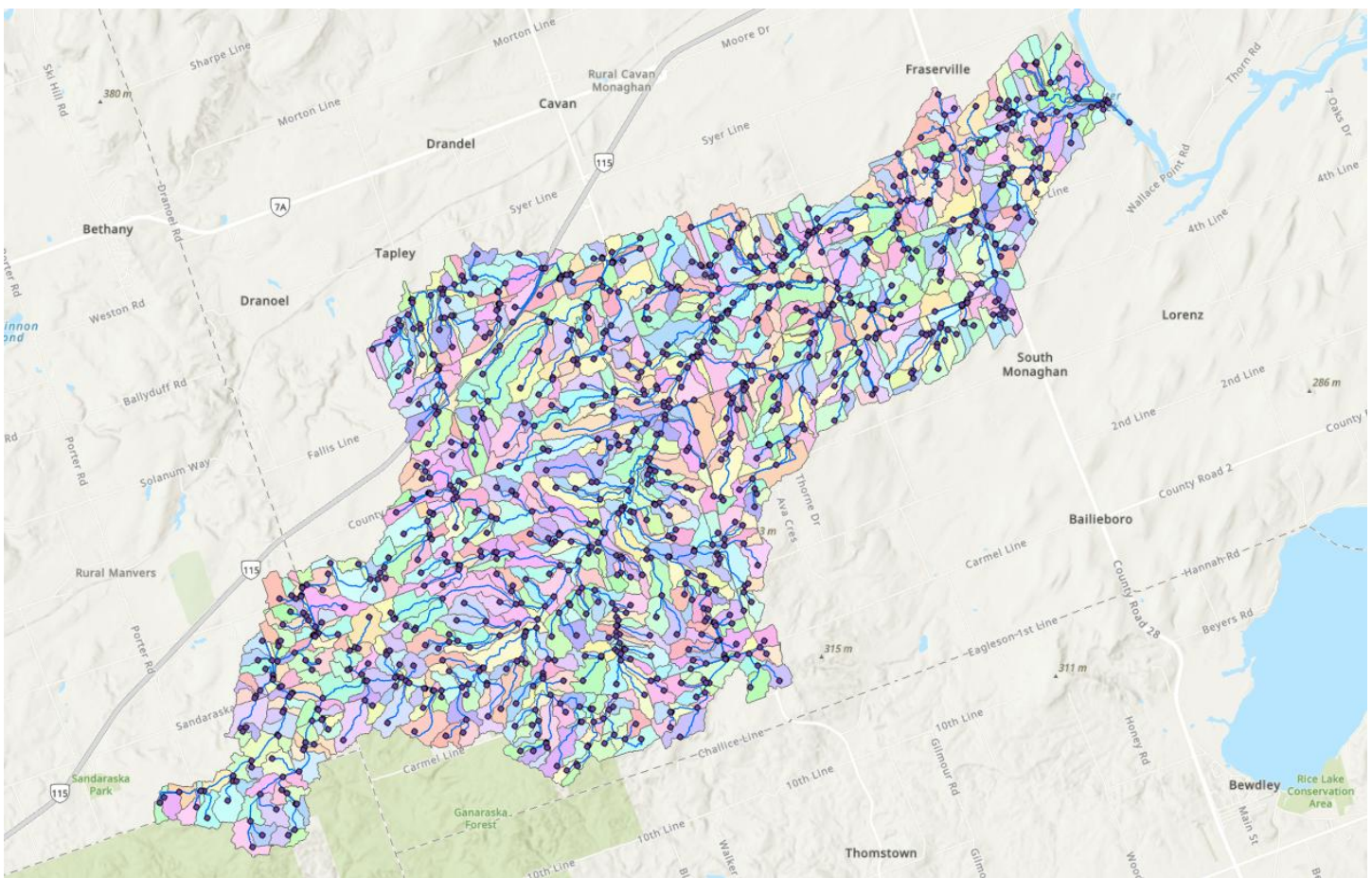
and how dense the forest is in different areas. (Krawec, B. (2024). Baxter Creek Watershed Forest Resource Analysis: Final report (ERSC160). Trent University). These measurements help with conservation planning, identifying ecologically significant old growth forests, and understanding the local environment. Lidar makes it much easier and less costly to gather this information quickly and accurately (opposed to running a field survey) which is a big step forward for community science and forest management.

🌐 Open Access & Collaboration All student research and tools like CMAT will be available through BCWA's Watershed Library, promoting open science and collaborative conservation planning.

WHAT IS THE PURPOSE OF AN INTEGRATED HYDROLOGICAL GEODATABASE FOR BAXTER CREEK?

Mapping Our Water: How a New Geodatabase Helps Us Protect Baxter Creek

The Baxter Creek Watershed Alliance has been working hard over the last two years to build a detailed **water resources geodatabase** for the watershed. A geodatabase is a digital map that stores important information about our land and water. It helps us see how water moves across the landscape and how our choices affect the environment.



So far, we've mapped the natural parts of the watershed – streams, ponds, wetlands, and other surface features. But one big piece is still missing: **the underground stormwater pipes in Millbrook**. These pipes carry

rainwater under our streets and neighbourhoods, and without knowing where they are or how they connect, we can't fully understand how water flows during storms.

Adding this “buried pipes” information will make a huge difference. It will allow us to:

- **Model storm events more accurately**, especially during heavy rainfall linked to climate change.
- **Identify risks to water quality**, flooding, and local infrastructure.
- **Plan for the future**, including better stormwater management and long-term community resilience.
- **Lay the foundation for a full water utilities map**, which could one day include drinking water and wastewater systems.

This kind of geodatabase doesn't just help scientists. It can help support planning with a powerful tool to make smart decisions about development, infrastructure, and environmental protection. With climate change bringing more intense storms and unpredictable weather, understanding how water moves through our community and watershed is more important than ever.

“There is no life without water. Not a bit of blue, not a bit of green.”

- Sylvia Alice Earle, marine biologist, oceanographer, explorer, writer, and lecturer”



The good news is that we already have the tools, software, and expertise to build the next version of this database. What we are working on now is mapping in the stormwater pipe data. With that information, we can create a resource that supports conservation and planning – not just in Baxter Creek, but across neighbouring subwatersheds as well.

We've already mapped detailed catchment areas for each stream, including land use, soil type, and topography. These details help us understand where water comes from, how fast it moves, and what might happen during major storms. This work has taken many hours and includes guidance from experts at Esri's Water Resources practice in Redlands, California and students from Fleming College.

We look forward to continuing this project and sharing more with the community. Together, we can build a stronger, more resilient watershed – one that protects our environment and prepares us for the challenges of climate change.

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Baxter Creek Watershed Alliance (Corporation# 1348381-9) 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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