

RESEARCH IN THE SOUTH SLAVE SUMMER UPDATE

JUNE 2026



An APPLE a Day, Tastes Even Better when its HOMEGROWN! SARAH ROSOLEN, MANAGER



*Lisa with John in one of
his protection structures*

In March, several of our staff travelled to the Yukon with Aliyah Hirsch and Kathryn Scott from Samba'a K'e (Trout Lake) First Nation and Rosie Kerr from Future Harvest Partnership to learn about growing apples in the north. If you start looking into northern apples, your search will inevitably lead to John Lenart, owner and founder of the Klondike Valley Nursery (KVN). Most of the apples currently being grown in the NWT come from his stock. Known as Johnny

Appleseed of the North, John founded KVN some 35 years ago and has become renowned for pushing the boundaries of northern fruit production.

While we were in the Yukon, we also got the opportunity to visit the Trondek Hwech'in Farm, the only First Nations-run farm north of 60 in Canada. We spent the day learning about the benefits and challenges of growing food for the community. I also got the opportunity to sit down with Yukon University researchers, and we started planning ways to collaborate. More about this trip on the next page!

Also in this issue - reporting back from our **Fire Break Visioning Session** and intro to **Future Harvest Partnership** students (P3), our best-ever **Science Rendezvous** in collaboration with JBT Elementary School and a new **scanning electron microscope** (!) (p4), the **Northern Seeds Summer Student Collaboration** (p6), and more.

Finally, calling all Grade 11 and 12s! Be sure to read about the **ENRTP Field Course for Youth**.

Taking place at Tsu Lake in August, this camp is a great opportunity for youth to connect with our instructors while gaining practical skills and learning about natural resource management. Learn more on Page 11.



*Photo from the inaugural
ENRTP youth field course
(2024)*

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YUKON APPLE TRIP CONTINUED

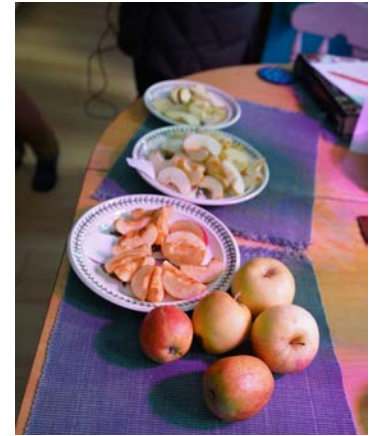
The Klondike Valley Nursery is located at an off-grid homestead on an island in the middle of the Klondike River – accessible only by canoe in the summer and snowshoe in the winter. We were a little wary when we were told to bring snowshoes, but the remoteness really sunk in as we ventured across the frozen river. On the island, John has a myriad of structures providing various levels of shelter for his countless varieties of cold-hardy apples and other fruits (cherries, haskaps, pears).

I first reached out to John over 5 years ago, and have stayed in touch as we started to 'grow' our research program. We have heard a lot of community interest and history around growing apples in Fort Smith and other communities in the NWT and knew that learning how to grow fruit in the NWT was going to be important.

We were so grateful to spend two days at the nursery with John and his research associate Kim Melton. Not only did we learn how to grow and propagate apples, but we made the most of our time brainstorming together on a collaborative northern fruit / food forest research partnership.



A pruning demonstration in one of KVN's structures



The sweet taste of northern grown apples



Crossing the Klondike River

Trondek Hwech'in Farm

We planned an extra day in Dawson to visit Trondek Hwech'in Farm, a First Nations-owned and run working farm. Here they raise eggs – chicken, quail, duck and goose, goats, pork, and so much produce. Their new 4-season greenhouse was breathtaking, the meat processing centre impeccable, the gardens and berries – well, they were under snow, but we could imagine. This farm is making a dent in food security for its nation – truly inspiring.

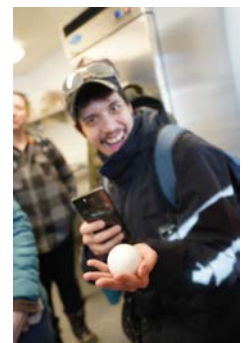
We enjoyed spending some time sharing perspectives on northern food sovereignty as we helped plant seeds in their bright and homey three-season greenhouse. We were gifted some seed potatoes when we left, which we have planted in the Community Garden – what an incredible exchange all around! Mahsi cho to Derrick Hastings, Manager, and Jonathon Robinson, Farm Field Supervisor, for taking time out of their very busy work to show us around, and to Taylor Jobin from Yukon University for helping make this visit possible.



Derrick Hastings, Manager of the Trondek Hwech'in Farm outside of their new 4-season greenhouse



Kathryn Scott, Agriculture Coordinator for Samba K'e First Nation helping plant seeds at THF



That's a big egg!

REIMAGINING FIREBREAKS

SARAH ROSOLEN, MANAGER

Earlier this year, Adam McNab, Director of Protective Services for the Town of Fort Smith, approached us to discuss opportunities to collaborate on the town's firebreak program. We reached out to Dr. Andrew Spring at Wilfrid Laurier University, as we knew that he was doing firebreak work with Ka'a'gee Tu First Nation and was involved in a pan-arctic network that developed the Fuel Breaks with Benefits project. Firebreak 'benefits' are alternative uses for that space that support their maintenance, reducing operating costs while providing access to cleared land that might not have been available previously. Together, we consulted with and brought in the GNWT - Environment and Climate Change Fire Management Division, Nature United, and the Wildfire Resilience Consortium of Canada to test the "Fuel Breaks with Benefits" concept and approach in Thebacha. We held two meetings in May - a visioning session with Town residents and a planning meeting with leaders and decision makers who could help get some projects off the ground. The next step will be working together to action some of the ideas that came out of the meetings - stay tuned!

A big Mahsi Cho to Lillith Brook from Nature United, Stephanie Yuill from Wildfire Resilience Consortium of Canada, and Andrew Spring from the Future Harvest Partnership/Wilfrid Laurier University for funding the workshops and to Carla Johnston from Wilfrid Laurier University for facilitating.



Fort Smith community members hard at work!



FHP GRADUATE STUDENTS @ SSRC

We are thrilled to be hosting two graduate students through the Future Harvest Partnership. They will be supporting food systems planning and priorities identified during Jules Russel's visits earlier this year. Please give these students a warm welcome if you see them around.



LAUREN LARMON (SHE/HER), WILFRID LAURIER UNIVERSITY

Hello everyone! My name is Lauren, this will be my first summer in Fort Smith! I am starting my master's degree this Fall at Laurier University in Ontario. I am really looking forward to getting involved in the community, meeting everyone at the SSRC and learning about all the projects on the go and hopeful projects to come! You'll find me enjoying all that the outdoors has to offer from the forests to the river. Coming from a food and nutrition background, I am excited to help out with anything and everything food related - cooking, growing and harvesting, you name it!



ALLISON YOUNG (UNIVERSITY OF GUELPH)

Hello everyone! My name is Allison. I am currently a Master's student in the Public Issues Anthropology program at the University of Guelph, specializing in One Health. I am really looking forward to getting involved with this team, meeting everyone, and learning about all the research projects we have on the go!

Outside of my studies, you'll usually find me enjoying the outdoors, or with my nose in a book. Coming from a background focused on sustainable and regenerative farming, I am especially excited to help out with anything related to local food systems and community engagement!

SCIENCE RENDEZVOUS X JBT COLLAB

TAYLOR PORTER, STEM SUMMER STUDENT

Thebacha's 4th annual Science Rendezvous was a tremendous success this year, bringing together students, educators, researchers, and community partners for a morning of hands-on discovery. Hosted in partnership with JBT elementary school, the event featured 30 interactive stations led by over 20 organizations and over 50 volunteers. Students has an opportunity to explore drone technology, wildlife tracking, astronomy, construction, water and soil science, bottle rockets, virtual reality, and even a life sized inflatable whale.



Science Rendezvous is a national outreach initiative that connects communities with science through engaging, and interactive experiences. This year's event showcased the power of planning and collaboration. The excitement throughout the day made it a memorable experience for everyone involved. Thank you to everyone who made it possible!

Getting the BIG Picture on Some LITTLE Things

HILARY TURKO, STEM OUTREACH COORDINATOR

This spring, GNWT - Environment and Climate Change, Aurora College, and the National Research Council of Canada teamed up to bring a Scanning Electron Microscope (SEM) to the North! A SEM is a powerful tool that uses a focused beam of electrons, rather than light, to produce detailed, high-magnification images of the tiny world around us. It allows students to see textures, shapes, and features that are completely invisible to the naked eye, revealing the world at the micro and nano-scale!

Our team completed the training and then hit the road to introduce students in Hay River to the incredible power of microscopy, where students explored everything from insect wings to animal hairs. We also invited local Guardians programs to participate in a morning of training to learn how the SEM can support their community based monitoring projects. This partnership is helping build local capacity in advanced science and inspiring the next generation of northern researchers. Stay tuned as we gear up for more school tours in the fall, bringing even more opportunities for students to explore the microscopic world!



Spring Edition of **SPEAKER SERIES** Kicks off

ANAÏS AUBREY-SMITH & TAYLOR PORTER, STEM SUMMER STUDENTS

Spring 2026's first Speaker Series was delivered by Johanna Stewart, a Master of Environmental Science Student at Thompson Rivers University. Originally from Yellowknife, Johanna was inspired to study the red-sided garter snake, North America's northernmost reptile, after the devastating wildfires swept through their habitats in 2023.

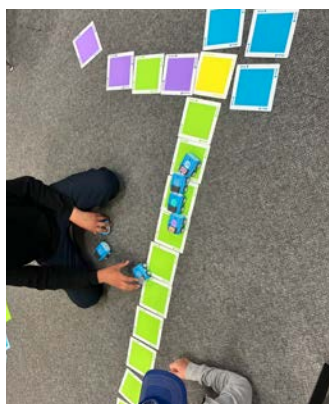
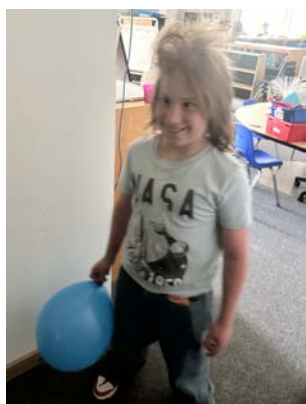
Over the last 2 years, her work has assessed how the populations and individual snakes were impacted by the fires, as well as investigating how populations of the wood frog, the snakes' #1 prey item, have been impacted.

Recently, her focus has shifted to assessing population health post 2023 wildfires due to limited data pre-wildfires. A significant challenge the snakes face is the obstacle presented by the highway separating the snakes from food sources. This has been more of a problem in recent years due to the wildfires drying up the land surrounding the snakes hibernation dens, causing the snakes to be vulnerable to predators and cars.

If you are a researcher interested in sharing your story through our speaker series, please reach out! hturko@auroracollege.ca



photo credit: Johanna Stewart



STEM Highlights

ANAÏS AUBREY-SMITH, STEM SUMMER STUDENT

This spring the STEM Outreach team has been offering an afterschool STEM Club at JBT school every Wednesday from 3:15-4:30pm. Students in grades 4-6 have the opportunity to learn coding skills, work with and build robots, understand AI, and more! June 17 will be the last session of this school year.

Also don't miss our ongoing weekly TinkerLabs in the STEMspace at Thebacha Campus, a STEM program offered Fridays or when JBT students are off school. TinkerLab is free of charge, aimed at youth ages 8 and older, and a great opportunity to explore STEM subjects and hands-on learning in a fun environment. Recently, participants have used online software to 3D print bath bomb molds, which were then used the following week in creating bath bombs to take home. Stay tuned to weekly SSRC Facebook updates as TinkerLab will be offered throughout the summer!

Berries EVERYWHERE!

LISA SMITH, LOCAL FOODS COORDINATOR

The first phase of the Boreal Berry Patch Collective is now in its final year, but the vision of "Berries Everywhere!" continues to grow. This summer, our partners collectively planted over 100 additional perennial fruit shrubs and trees, including haskaps, saskatoons, and raspberries. We also collectively planted over 200 Seascape variety strawberries in the community this year (the clear 'winner' in our Strawberry trials last summer). At the College, our Food Forest continues to expand – this year we are trying a few new cherry varieties, more blueberries (we haven't had much success to date), and more haskaps! Apples are planned for next spring, now that we have a better idea of what we are doing.



Planting blueberries for Food Forest on campus



Watering newly planted cherries on campus

We are excited to see berry patches continuing to flourish, creating lasting benefits for our community and contributing to a stronger local food system. Stay tuned for more details on the Boreal Berry Jamboree, a celebration of local berries and food, happening in July.

Funded by the Climate Change and Health Adaptation Program

NORTHERN SEEDS Summer Student Training COLLABORATION

LISA SMITH, LOCAL FOODS COORDINATOR

This summer, we are piloting Northern Seeds: Building Thebacha Youth Futures, a collaborative youth summer student training program led by five community partners: Aurora College, Tthebatthie Denesuline First Nation, Salt River First Nation, the Town of Fort Smith, and the Northern Life Museum & Cultural Centre. This pilot initiative is designed to provide youth in Fort Smith (Thebacha) with hands-on training, meaningful employment experience, and opportunities to explore a variety of career pathways while building confidence and workplace readiness skills.

Throughout the summer, students will take part in a range of training sessions to gain transferable skills in workplace, digital and communications, research and data collection, as well as hands-on learning experiences in agriculture and food systems, land and environmental stewardship, tourism, event planning and management, and trades. We are excited to see the students grow in confidence, develop new skills, and contribute to their community throughout the summer season.

Funded by Job Creation Partnership (GNWT), Canada Summer Jobs program, and Environmental Careers Organization Canada.



At the Community Garden



Checking on bugs

SSRC Summer Students



ANAÏS AUBREY-SMITH (SHE/HER), RESEARCH ASSISTANT

Hi everyone, I'm Anaïs and I'm from Fort Smith! I'm studying chemical engineering at McGill University and this is my third summer working for the SSRC! This year I am working in STEM Outreach with the aim to make STEM accessible, engaging, and most importantly fun for everyone. I love working with others to build skills and creativity, as well as having the opportunity to inspire confidence and promote awareness in STEM. I look forward to seeing you all around the college, community, and at STEM activities and events this summer!

TAYLOR PORTER (SHE/HER), RESEARCH ASSISTANT

Hi, my name is Taylor! I am born and raised in Fort Smith and just finished my first year of mechanical engineering at Dalhousie University in Halifax! This is my first summer working for the SSRC in STEM Outreach and I am so excited to be able to share my love of STEM with my community. A bit about myself is that I love anything nature related and am an animal lover! This summer I hope to inspire youth to pursue their STEM interests and provide them with opportunities I never had. I'm excited to see where this summer takes us and can't wait to work with you all this summer!



BRENNA MACKAY-JOHNSON (SHE/HER), RESEARCH ASSISTANT

Hi, I'm Brenna, a University of Calgary student originally from Fort Smith, NT. I will be working with the local food team with South Slave Research Centre. I am looking forward to getting involved in research projects this summer and being able to contribute where I can!

AMELIE AUBREY-SMITH (SHE/HER), RESEARCH ASSISTANT

Hello everyone! I'm Amelie and I'm very happy to be back for my third summer working at the South Slave Research Centre! I'm currently completing my Bachelor of Science degree in the biology program at Trent University. This year I will be continuing to work on community research and outreach projects, as well as some communications to keep everyone updated on all our programming. At the moment, I am looking to expand my musical horizons and actively seeking gardening playlist recommendations so if you have a favourite tune that helps get you in the zone, feel free to reach out and share.



JANE MARIOTTI (SHE/HER), RESEARCH COORDINATOR

Hello all, my name is Jane, and I'm excited to start another summer with the SSRC! I am originally from Windsor, ON, and did my undergrad in Environmental Science & Ecology at the U of Guelph. Since 2024, I've been doing my master's in Fort Smith, which looks at natural soil fertility in northern landscapes. I am passionate about working at the intersection of environmental stewardship, and local food systems. This year, I'm excited to continue the Thebacha Strawberry Trials, to start new projects like the Northern Seeds training program, and to building playlists in the garden with Amelie Aubrey-Smith!

Aurora College - Research Ethics Committee (REC) Student Member Spotlight

SAMUEL EJII, STUDENT REC MEMBER 2025-2026

"Serving on the Aurora College Research Ethics Committee has been a very meaningful and eye-opening experience for me. At first, everything felt completely new and honestly a bit overwhelming before my first REC meeting. However, after attending that first meeting, I immediately felt more relaxed and welcomed. The REC members were very supportive, respectful, and genuinely great people to work with, which made the experience much easier and more enjoyable.

Each meeting exposed me to new concepts, perspectives, ideologies, and different areas of research that I had never really considered before. It opened my mind to a whole other side of research and showed me how much thought, ethics, responsibility, and community impact must be considered before carrying out any project or study, especially in the Northwest Territories.

Being part of the REC helped me grow professionally and personally. I strongly encourage students interested in leadership, learning, community involvement, or gaining new experiences to apply. It is a welcoming environment, a great learning opportunity, and an experience that will stay valuable long after college."



Come Check Out the COMMUNITY GARDEN this Summer



Wilfrid Laurier students lending a hand, and maybe having some fun!



Sprouts are happening! ↑



Jane and Evan admiring the fruits of their labour (2025) →

The Community Garden is already coming to life! This is the first year that all plots have been spoken for, with 30 gardeners participating!

Come join in on the action - we often host drop-ins where Trent, our 'garden host' and agriculture technician, is on-hand for questions and support. We also use this time to bring people together to lend a hand with the Food Bank Plot. Last year, we grew and harvested over 400 lbs of food for the community. We planted even more this year, and could use your help!

While at the Garden, you can also check out our Strawberry Trials, now in our third year. They were apparently too tasty last year, so we have developed a few "taste test" plots as well! Please check out the signs to make sure you are not eating our research!

Follow [@SouthSlaveResearch](https://www.facebook.com/SouthSlaveResearch) on Facebook to keep tabs on all the activities taking place at the Garden this summer!

Managed and funded by GNWT - Industry, Tourism and Investment

Environment and Natural Resources Technology Program (ENRTP) Research Program

Bryce Olson, Peter Lin & Linh Nguyen

The Environment and Natural Resource Technology Program (ENRTP) at Aurora College is expanding research and monitoring projects near Fort Smith. Much of this work is being developed with Tthebatthie Denesųliné Nation (TDN), Fort Smith Métis Council (FSMC), Government of Northwest Territories (GNWT) Environment and Climate Change (ECC), southern universities, and other partners. Current projects focus on water quality, fish and wildlife monitoring, forest health assessments, climate monitoring, and new environmental technology. Instructors are using several funding opportunities to support community-based field research and monitoring while creating learning and training opportunities for ENRTP students and partners through technology development, monitoring programs, and applied research projects.

Recent funding through Aurora Research Institute (ARI) is helping launch new research and monitoring programs as well as expand on existing projects to improve local long-term environmental data collection.

New equipment purchases include a spectrophotometer which analyzes light reflectance and absorbances to assess water quality. This instrument was used by two recent ENRTP graduates to assess the quality of water bodies across the South Slave Region and will continue to provide local assessment of water quality for the foreseeable future. A muffle furnace is currently being purchased through a similar project start-up grant. This high temperature (up to 1200°C) furnace will allow lab processing and analysis such as determining carbon content of soil or other samples. Thanks to the grants, these tools will allow in-house processing and analysis of environmental samples. This will reduce the reliance and associated cost of external laboratory analysis while simultaneously provide training and educational opportunities for ENRTP students and local partners.

Additional ARI grants are allowing students to contribute to major research initiatives. A student research grant along with matching funds from ECC will support two student technical projects in 2026–2027. One student will work on water and fish health data from the Taltson Basin while the other will support the development of advanced water quality sensors in partnership with National Research Council and ECC. Additional student-led technology projects are planned for monitoring wildlife including bats within the South Slave Region.

Tsu Lake camp, a hub of many research and monitoring projects, will see additional research and monitoring sites established in 2026 in collaboration with several partners. An upgraded long-term weather station was established in 2025 in partnership with GNWT Forest Management Division to support weather data for projects. New monitoring sites will also be established at Alcantara Lake in partnership with TDN thanks to a Partnership Development Fund grant for future TDN Guardian monitoring and training.



Students from ENRTP deploy trail cameras and acoustic recording units at Tsu Lake to monitor terrestrial biodiversity.

ENRTP Research Program (cont)

Bryce Olson, Peter Lin & Linh Nguyen

The purpose of these sites is to monitor aquatic and terrestrial ecosystems including the effects of climate change, industrial activities such as natural resource extraction, and effects of forest fire on these ecosystems. Tsu Lake camp is also supporting the Northwest Territories Biodiversity Monitoring Program led by ECC. This project uses trail cameras, acoustic recording units, and other sensors to monitor wildlife species across the north. Forest monitoring plots are in collaboration with Wilfrid Laurier University providing expertise and additional funding. This includes the recent acquisition of a large drone system capable of LiDAR and multispectral imaging to most effectively monitor forests, wildlife habitat, and environmental change across the landscape.

Other ongoing and expanding projects ENRTP staff are working on include monitoring populations of pelicans, small mammals, insects, and snakes, oil sands deposition monitoring in partnership with TDN and the Wood Buffalo Environmental Association, and new studies on Longnose Sucker populations in the Salt River. An ARI strategic grant was recently awarded to purchase data loggers to expand water quality monitoring in shield lakes east of the Slave River in partnership with ECC, TDN, and FSMC. Overall, these projects are intended to provide education and training opportunities for ENRTP students and partners while simultaneously supporting northern communities with locally relevant research, monitoring, and technical expertise.



Students from ENRTP pull nets to sample fish under the guidance of local Elders at Tsu Lake.

Aurora College - Youth ENRTP Field Course



Youth ENRTP Field Course

August 20 – 28, 2026 • Tsu Lake fly-in camp

For more information contact Linh Nguyen

Email: LNguyen@auroracollege.ca • Phone: 867-872-7576

Are you entering Grade 11 or 12?

Are you interested in science and the outdoors?

Are you currently in biology and want to experience what ENRTP can offer?



Are you interested in science and the outdoors? The Youth ENRTP Field Course returns to Tsu Lake, August 20–28, 2026, an immersive 8-day field course. Thanks to funding from Environment and Climate Change Canada and Aurora Research Institute, Aurora College covers air transport between Fort Smith and Tsu Lake, meals and accommodation, while Environment & Natural Resources Technology (ENRTP) staff provide the instructors.

Highschool students get hands-on experience in wildlife biology, aquatic ecology, benthic and fisheries sampling, botanical surveys, environmental monitoring, and sessions with an elder, all delivered on the fly-in Tsu Lake camp with tent-frame cabins, classrooms, kitchen and dock. The program accepts up to 10 students entering Grades 11 or 12 (homeschooled students welcome), and successful completion earns 3 college credits plus possible high-school credits.



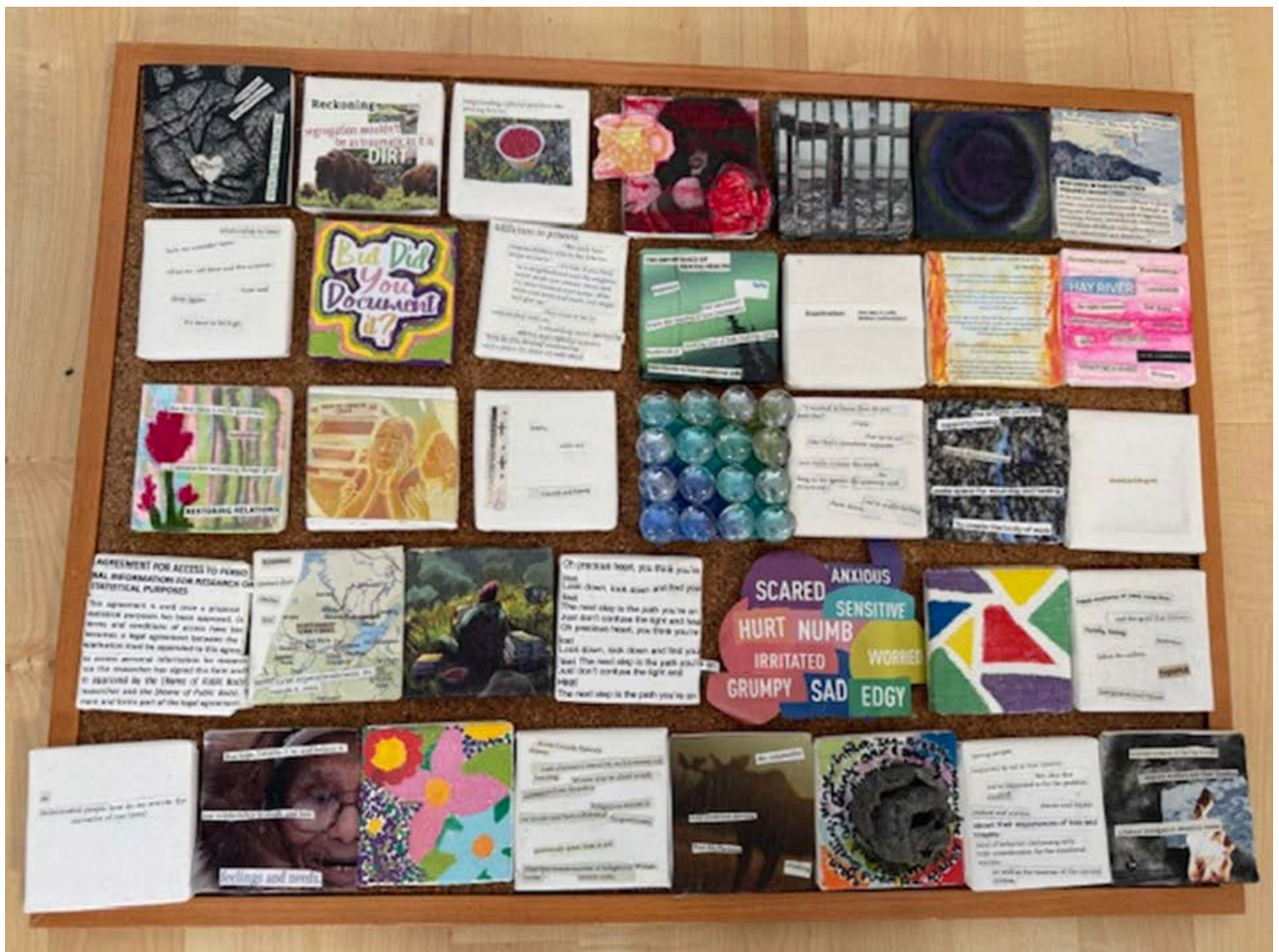
Last delivered in August 2024, a past student highlighted how field-based, practical lessons, especially benthics, fisheries and sessions with elder Louie Beaulieu made learning memorable and deepened understanding far beyond classroom theory.

Still interested? Applications close July 1, 2026. Contact Linh Nguyen at (867) 872-7576 or LNguyen@auroracollege.ca for more information. Open to all NWT students with a science background.

Mental Health Research in Correctional Institutions

MALLORY MINERSON (UNIVERSITY OF ALBERTA)

Happy Spring! I am the mental health clinician at Fort Smith Correctional Complex and a PhD student at UofA in psychiatry. My research aims to investigate the relationship between both traditional and culturally-specific Adverse Childhood Experiences (ACEs), cultural trauma, and the factors that influence incarceration of Indigenous women in the Northwest Territories (NWT). Building on the existing ACEs framework, the study will expand its scope to consider the importance of culture and ACEs, including questions about cultural erasure measures in Canada, addressing both formal and informal actions that have suppressed or overwritten Indigenous cultural practices, identities, and histories. Utilizing a Braided Methodology, this is a mixed methods study involving questionnaire, narrative interview, arts-based research, and community involvement in a public art exhibition. Stay tuned for opportunities to engage with the work in the future!



Parks Canada: Wolf-Bison Relationships in Wood Buffalo National Park

BRENNAN STANFIELD (UNIVERSITY OF ALBERTA), JENNA RABLEY (PARKS CANADA)

Objectives are to update wolf pack size, diet, and winter bison predation rates, and to assess how wolves and bison influence each other's habitat selection and space use.

Predators have a strong influence on how animals behave. Wood Buffalo National Park (WBNP) is home to the largest free-roaming herd of wood bison and some of the largest wolf packs in both number and size. Disease in the bison herd may change how wolves and bison interact. Wolves may help bison by targeting weakened individuals. However, if wolves hunt more often, they could also put more pressure on the herd.

Parks Canada, the University of Alberta, and the Fort Chipewyan Nations are studying these interactions through a combination of community engagement, fieldwork, and statistical analysis. Their objectives are to update wolf pack size, diet, how often wolves hunt bison in winter, and to assess how wolves and bison influence each other's habitat selection and space use.

Researchers identified areas of concentrated wolf activity ("clusters") and visited them to confirm if they were kill sites (or bedding sites), and to collect samples if possible. They collected 297 scat samples from 112 sites (1-5 per site) for eDNA analysis to determine seasonal diet patterns.

Results show that wolves' diets consist primarily of bison and rarely switch to other prey. This suggests wolves in WBNP mainly rely on bison, although their diet becomes more varied in spring when other prey is available. The project is ongoing, but results have provided significant new insights since it began in September 2024.



Parks Canada (continued): Whooping Crane Update

WOOD BUFFALO FIELD UNIT STAFF

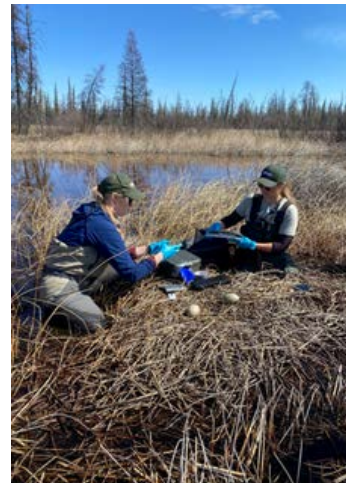


Now in the final year of fieldwork, Parks Canada and Environment and Climate Change Canada, working in partnership with the Wilder Institute, are completing a collaborative project focused on understanding the factors that influence nesting success in whooping cranes. Over the past four years, the project team has deployed wildlife cameras, autonomous recording units (ARUs), and water loggers at whooping crane nests across the broader Wood Buffalo breeding range. Water samples are also collected to assess the quality and conditions of nesting ponds.

This information helps researchers understand how different factors affect whether chicks survive. These factors include drought, wildfires, extreme weather, predators and parental experience. This information is critical for understanding both current and emerging threats to this endangered species.

Fieldwork at active nests is conducted with great care to minimize disturbance. Our teams operate on a strict timeline once a nest is reached. While monitoring equipment is installed, specialists from the Wilder Institute temporarily measure and warm the eggs to ensure they remain safely incubated. The team then departs promptly, allowing the adult cranes to quickly return and continue caring for their eggs.

Although data collection for the project is still ongoing, several noteworthy preliminary findings have emerged. Cameras have captured predators such as ravens, bears, wolverines, and mink taking eggs from nests. Data gathered during the historic 2023 wildfire season suggest that wildfires may not pose a significant threat to nesting whooping cranes, likely because they preferentially nest in large wetland complexes. Drought, however, is expected to be an important factor influencing nesting conditions, though its effects at the family level are still being studied.



Characterizing Soil Fertility on the Landscape in Southern NWT: Ongoing Research

JANE MARIOTTI (SHE/HER), UNIVERSITY OF GUELPH

Backyard food production is a large (and growing) priority for many communities in the face of high produce costs and a changing climate. Compared to southern locations, few surveys have been done in the area that provide growers with information on soil fertility. Testing soils and subsequent amendments can prove costly. Therefore, this study will provide land users with information on where the best soils are located near them by associating identifiable landscape features (ex: specific plants, drainage conditions, etc.) with high-nutrient soils. I also investigated the impact of the 2023 wildfire season on soil nutrients to assess the potential use of burned land for future agriculture.

Over the course of two summers (2024 & 2025), my team collected over 600lbs of soil samples from the Enterprise, Hay River, and Fort Smith regions with the help of incredible field technicians Olivia Cox, Alex Herrmann, Nava Brimble, and volunteers from both Kátt'odeeche First Nation and Tthebatthie Denesų́liné Nation's Lands Departments. We then transported samples back to the University of Guelph (ON) for nutrient testing.

Preliminary results show that important plant nutrients for agriculture can be linked to specific landscape features.

Chamaenerion angustifolium (Fireweed), *Populus tremuloides* (Trembling Aspen), *Rosa acicularis* (Wild Rose) and *Equisetum arvense* (Horsetail) were consistently found in high-phosphorus soils. For nitrogen, *Lathyrus venosus*

(Veiny Pea) and *Cornus canadensis* (Bunchberry) were found in soils with high nitrate. Deciduous forests (such as aspen stands) had significantly higher potassium than conifer forests. In addition to plants, different bedrocks had varying phosphorus levels, with the Fort Smith formation slightly higher than the Hay River formation. As for topography, dryer soils were found to have more potassium, nitrate, and sulphur, while having less carbon. Burned soils had significantly high pH (more neutral) than unburned mature stands, which were slightly more acidic.

Stay tuned for more updates as I finish processing my results and write my thesis over the summer!



On-Going Red-Sided Garter Snake Research

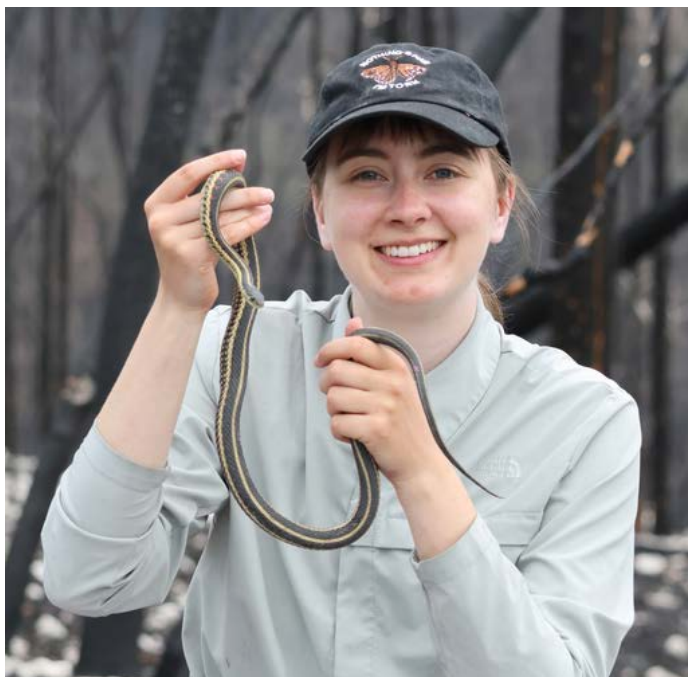
JOHANNA STEWART (THOMPSON RIVERS UNIVERSITY)

Johanna Stewart was born and raised in Yellowknife, but has spent the past two summers living in Fort Smith, collecting data for her Master's research based out of Thompson Rivers University.

Her project is looking at how 2023 wildfire season may have affected the red-sided garter snakes and their amphibian prey. Initial surveys in 2024 found that garter snakes are still living at all known denning sites in the area, including ones that were severely burnt. Frogs were found at most ponds surveyed within burned areas in 2025, which is good news for the snakes, since frogs are their main food source.

Data collected over the past two years and in spring 2026 will be used to estimate the number of snakes at dens in the study area as well as to examine their body condition and health. Though this is the last year of her research study, Johanna hopes to return to work in the North after finishing her degree.

If you'd like to learn more about her research or share information about snakes in the South Slave region, you can send Johanna an email at stewartj24@mytru.ca.



Alberta Geological Survey Transboundary Groundwater Research

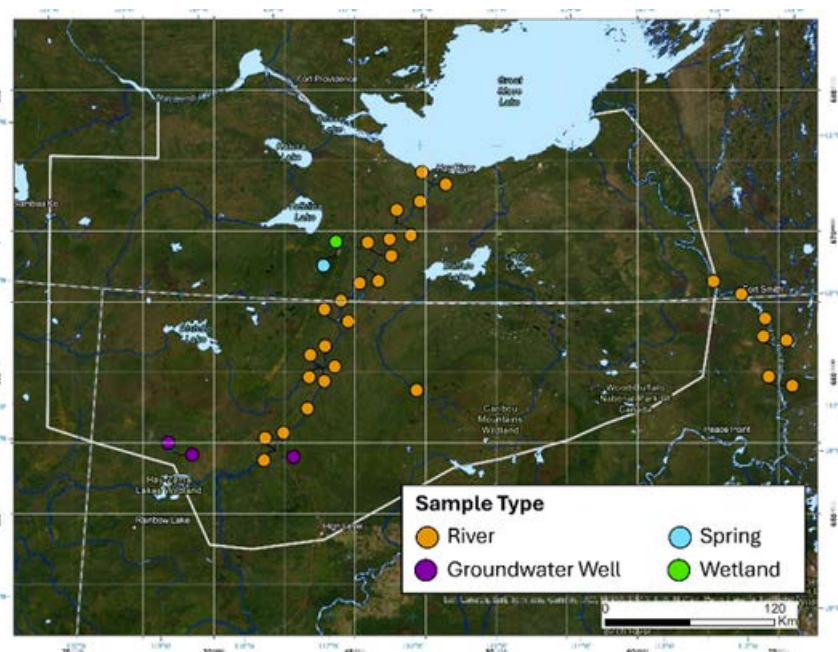
Allison Rubin, Dan Palombi, & Dan Utting (Alberta Geological Survey)

The Alberta Geological Survey (AGS), in collaboration with the Government of Northwest Territories (GNWT) and the Government of Alberta (GOA), is conducting transboundary groundwater research in northern Alberta and the South Slave region of NWT. This project, first introduced in the June 2024 newsletter, aims to improve knowledge on the hydrogeological setting of the transboundary region and to support shared management of transboundary water resources.

A key component of this work is our water sampling program to assess groundwater-surface water interaction across the region. Surface water and groundwater samples have been collected from the lower Hay River sub-basin, along with additional samples from the Slave River (see figure). These efforts were complemented by targeted sampling of springs, wetlands, and smaller rivers identified during field investigations, including a helicopter survey discussed in the [Fall/Winter 2025 newsletter](#).

Water samples are analyzed for environmental tracers that provide insight into groundwater flow patterns and groundwater-surface water connections. These data help distinguish between groundwater flow systems and improve understanding of how rivers interact with surrounding aquifers. Preliminary results indicate limited exchange between groundwater and the Hay River and suggest that groundwater may predominantly flow downward to recharge deeper aquifers. Local- to intermediate-scale flow systems are predicted to interact with surface water features, such as groundwater discharging into wetlands.

Additional groundwater data are needed to refine these interpretations, and participation from landowners with groundwater wells in the area is encouraged. If you are interested in participating, please contact Allison Rubin at allison.rubin@aer.ca.



Locations of water samples in the Alberta-Northwest Territories transboundary region (left) and a spring located on the Cameron Hills being sampled (right) by Allison Rubin.

Ages: 8+ or with a guardian

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