



THE BIRDFISH

FALL 2022

Churchill Northern Studies Centre
Newsletter

WE'RE BACK!

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Cover Photo by Jason Walczak
A long-term CNSC volunteer

The Churchill Northern Studies Centre is committed to taking action to advance reconciliation. We would like to acknowledge that we operate on Treaty 5 territory — the traditional land of the Cree, Dene and Inuit people, and the homeland of the Metis Nation. Through our work, we aim to show respect and appreciation for the treaty that allows us to share this land.

RESEARCH IN ACTION

Research During COVID-19

For wildlife biologist Dr. Jim Roth, who studies population dynamics of small mammals, science has often been a family affair. His wife, Dr. Jane Waterman, is also a wildlife biologist, and the pair have numerous shared journal publications. (Work in Churchill was among their first projects together.) After the pair welcomed their two sons, it didn't take long for the youngsters to join the research team.

"The first time we took them with us into the field, they were one and three years old. They'd come with us... they were used to it," says Roth, adding that their first field work as a family of four was in Namibia. "I think they really valued those experiences."

Since his first visit to Churchill in 1994, Jim has become a regular fixture of local research, and his wife and his children have both come along to help. The University of Manitoba professor has been studying Arctic wildlife for the better part of three decades, and he uses the Churchill Northern Studies Centre as his base of operations. In fact, he has written about the CNSC's affirmative impact on his career in previous issues of *The Birdfish*. Roth established the Churchill Fox Project to study food web interactions on the Arctic tundra, with a focus on understanding the role that Arctic foxes play on the tundra. It began with four years of data collection in the mid-1990s, resumed in 2010, and has continued annually since.

Typically, a team of about 12 travels to Churchill and spends time checking activity fox dens, trapping small mammals, maintaining cameras, and more. Much of this activity takes place out of the Nester One research site within Wapusk National Park, which is operated by Parks Canada. Most of his research is done alongside graduate and field course students, but in 2020, as COVID-19 forced several restrictions on traveling and socializing, Roth returned to his roots of researching with family members. He called his son Alex.



As part of immediate measures to limit the spread of COVID-19, the CNSC was closed to the public, including visiting researchers, for several months in 2020. Activities in Wapusk were also prohibited. "It was a new thing for everyone; we were all uncertain," says Roth. He was worried about losing a



year's worth of data, until he heard that Parks Canada had allowed a married pair of employees into Wapusk. "I thought, if a husband-and-wife team can do it, they should let a father-son team in." And they did.

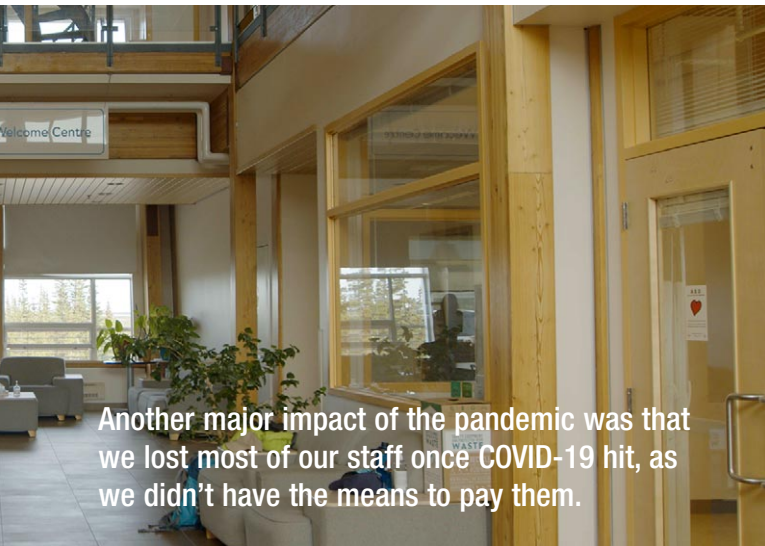
Alex, who, at the time, was a second-year biology student at the University of British Columbia, joined his father to try to accomplish the work of a dozen people in August, once the CNSC opened to a limited number of researchers. "It was just the father-son combination trying to do everything," says Roth. "I felt my age."

Typically, monitoring fox activity takes place in April, when there is still snow on the ground and snowmobiles can be used to travel between the dens. When the Roth team arrived in August 2020, they were not so lucky, as motorized vehicles are not allowed within the park after snow melt. And since humans have to sleep behind a tall fence to be safe — it is polar bear territory, after all — they had to hike from their Nester One site for everything they did. Ultimately, the pair didn't quite finish all of the tracking, trapping, monitoring, and sample collection that a full team typically would. Still, Roth believes the arduous, ambitious task was worth it. "We wouldn't have gotten that data otherwise."



Fast forward about eight months to April of 2021. Strict travel restrictions were in place, essential services — like research — could operate at half-capacity, and social "bubbles" were still required. The COVID-19 vaccine had been developed and rolled out to the public, but between all the restrictions, permitting, and protocols, pursuing field research was still a significant challenge.

"Several of my colleagues just gave up on that year, and I think they slept a lot better than I did," says Roth with a laugh. He adds that the CNSC staff was extremely helpful with coordinating all the procedures and paperwork with all of the regulatory organizations. Since field courses weren't considered essential, Roth offered his course online and asked students to volunteer for research spots on his team, but since participants would also have to isolate before traveling, what would normally have been a two-week field course turned into a four-week commitment. "Six people agreed to do it. I was thrilled."



Another major impact of the pandemic was that we lost most of our staff once COVID-19 hit, as we didn't have the means to pay them.

That year, the project was still a bit of a family affair, as Roth found himself hosting two graduate students, isolating with him in his house as they all prepared to head north. The group traveled as a bubble, and once they arrived at the Centre, they avoided all public areas during the day to keep staff safe.

In 2021, he overspent on his research budget, and it was tough – mentally, emotionally, and physically. But the team completed all the work. “It can be done if you’re persistent, but it’s a lot of time and it’s a ton of headaches and hassles. I still had brown hair and a brown beard at the time,” he says, pointedly rubbing his salt-and-pepper beard. “It was a stressful time.”



In March of this year, provincial health restrictions in Manitoba were lifted. “It sure makes things easier,” says Roth. He doesn’t begrudge the regulations and conditions that were put in place in the previous two seasons – in fact, he fully supported them. “You’ve got to figure out a way to make things work, and you’ve got to figure out a way to make things work safely,” he says. “You can pretty much overcome logistical challenges if you’re persistent, motivated, and creative.” Still, he’s glad that he was able to bring a full team to the Churchill Northern Studies this year, and that other researchers are doing the same. “It’s back to the old feeling of this is a fun place to visit.”

For more information about the Churchill Fox Project, visit the team online at www.churchillfoxproject.org.



More on COVID-19: Impact and Recovery

The global pandemic has had such a significant impact on businesses and individuals around the world for the past two-and-a-half years. The effect of COVID-19 has been especially amplified in Churchill — an isolated northern community that relies on tourism dollars for its survival — and at the Churchill Northern Studies Centre — whose primary goal is to accommodate and support visiting researchers and guests. Across Canada, the cost of materials, fuel, and shipping has drastically increased, and the same is true here, on top of already prohibitive prices in a remote northern location. An even greater repercussion has been the loss of our ability to host both researchers and Learning Vacation participants throughout the pandemic, which has meant we have had a limited ability to generate revenue.

In March of 2020, as the world’s understanding of COVID-19 began spreading as quickly as the virus, we had to respond swiftly, cancelling all Learning Vacations for the foreseeable future and majorly modifying our researcher accommodations. At the time, we prepared for a few months of change, but we could not anticipate what we were about to face. We were in the middle of a Winter Skies Learning Vacation, which we cut short due to travel restrictions. We were then forced to cancel many more, including Winter Skies (2020 & 2021), Spring’s Wings (2020 & 2021), Belugas in the Bay (2020 & 2021), Wild Planet (2020 & 2021) and Lords of the Arctic (2020). In total, we cancelled 14 Learning Vacations along with eight scheduled independent travel groups.

For a while, we could not accept any researchers on-site. Once we were confident in our strict safety precautions and our ability to follow provincial guidelines and regulations, we

were once again able to welcome limited numbers of research guests. Ultimately, our total user days went from over 9,000 in 2019 to under 800 in 2020, and our ability to facilitate the same level of research continued to be severely hampered until earlier this year.

Another major impact of the pandemic was that we lost most of our staff once COVID-19 hit, as we didn’t have the means to pay them. We are fortunate that we have since been able to build our team back up with some exceptional new additions. The safety of our staff and guests has always been our priority, and that’s why we have been so committed to safety protocols. For most of the pandemic’s duration, we required everyone inside the building to wear masks at all times. It’s only recently that masks have become optional (but still recommended).

Despite all our precautions, we have had multiple COVID-19 outbreaks on-site. Still, our dedicated staff have been able to successfully manage and contain the spread to others by reacting quickly and sectioning off parts of our accommodation area to allow guests testing positive and those testing negative to have their own rooms, washrooms, and showers. As a result of COVID-19, our revenues were cut in half from 2019 to 2020, and they have yet to reach pre-pandemic levels. As we move forward in this new “normal,” we are fully committed to our mission to understand and sustain the North. However, now — more than ever — we need your help to realize our incredible potential. Please consider helping our COVID-19 recovery by investing in the CNSC today; check out the “Support” option on our website.



The Return of Researchers

Science has been regaining traction at the Churchill Northern Studies Centre. We have finally been able to return to our regular operations, supporting and facilitating research in our surrounding ecosystems. And while you likely know that we host visiting researchers, you may not be aware that we also gather data, collect samples, and monitor equipment for

The CNSC is starting to feel as alive and active as we remember. Of course, we continue to support researchers by providing our annual Northern Research Fund, a grant we are able to provide through the Manitoba Government and generous donors.

those from afar. Contracted research is an attractive solution for researchers who, for a variety of reasons, may not have the ability to visit Churchill or the desire to stay for as long as their data collection requires. Because the CNSC employs full-time research personnel and has in-house laboratories and scientific equipment, we can offer contracted services to ensure all equipment and tools are working properly and collect all necessary data. In doing so, we help broaden the potential scope of nearly all projects facilitated through the Centre.

This year, we have welcomed several new collaborative contracts, including:

- *Weather and GHG Monitoring Station for Dr. Mario Tenuta, University of Manitoba, and Woodwell Climate Research Centre*

A weather station has been set up in a fen south of the CNSC to monitor weather and greenhouse gas emissions. The information gathered will help understand the global threat of a rapidly warming Arctic.

- *Bacterial Cellulose Biomaterial Monitoring for Dr. Mercedes Garcia-Holguera, University of Manitoba*

Organic building materials made of bacterial cellulose are being tested in the harsh climate of the sub-arctic. These materials are exposed to all the elements, while our research team monitors and takes weekly pictures to document any physical changes in the materials.

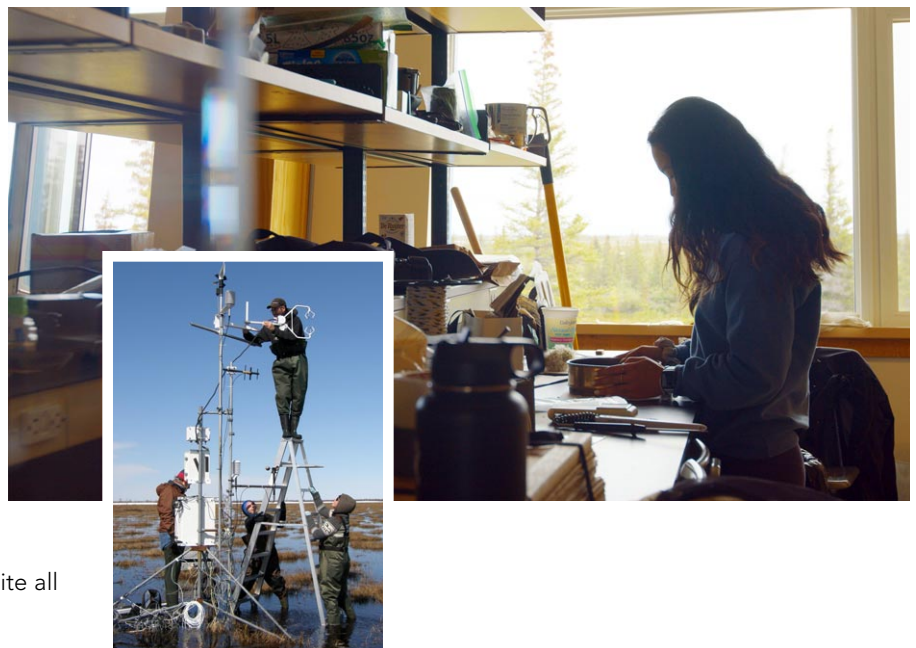
- *Beluga Neonates and Mother pairs Behavioural Observations in Response to Vessel Traffic for Oceans North*

We had Oceans North representatives on site all

summer, and we joined to assist in observing and recording behaviours that belugas displayed in the estuary of the Churchill River and the Hudson Bay. Data was collected on which behaviours were being seen, and how belugas were interacting with vessels. This information will be used in support of a Marine Conservation Area in the Western Hudson Bay.

In addition to this contracted research, our capable science staff have collected data for ten different studies from organizations like Environment and Climate Change Canada, University of Saskatchewan, Natural Resource Canada, and Assiniboine Park Conservancy. We also welcomed back visiting researchers, with over 1,900 user days so far this year! These researchers were studying polar bear distribution and demographics, greenhouse gases, invasive vegetation, seal distribution, and more.

The CNSC is starting to feel as alive and active as we remember. Of course, we continue to support researchers by providing our annual Northern Research Fund, a grant we are able to provide through the Manitoba Government and generous donors like you. This spring, we allocated over \$12,000 to sub-arctic research through 116 user days and 33 vehicle days to 18 eligible projects. Anyone interested in contributing directly to the Northern Research Fund can find it as an option within the donor portal of our website. ❄️





10 Years Later Our Building Celebrates a Decade of Use



Just over a decade ago, our supporters helped us build our state-of-the-art, LEED-certified facility. Now, we'd like to revisit the Centre's history and look ahead to challenges it currently faces. The building's development was a huge undertaking, with the design and build teams joining CNSC personnel

early in the process to help conceptualize a building that could succeed in supporting CNSC's diverse range of activities. All parties agreed that the new CNSC should be energy efficient and serve as a showcase of green building technologies in Canada's subarctic.

We were on the path to recovery when COVID-19 spread across the world and forced us to cancel 14 Learning Vacations and eight visits from independent tourism groups — a significant portion of our revenue over two years.

Construction of the \$19-million facility —which was funded in part by private and corporate donors as well as federal, provincial, and independent grants — began in summer 2009, and the Centre opened to researchers and visitors in August 2011. The addition of our hydroponic Growcer unit in 2017 and subsequent establishment of a sustainability department was a clear demonstration of the CNSC's ongoing commitment to sustaining the north. For the most part, the building has functioned exactly as planned. Snow is steered away from the building, we get great natural light throughout, and our composting toilets are still functioning properly — in fact, we haven't had to empty them yet. Our water use has dropped dramatically, and we are able to treat about 70 per cent of all

sewage on-site; these factors combined mean that our water and sewage costs are typically less than \$5,000 annually, whereas at the old building, they averaged \$40,000 to \$60,000.

Of course, as every homeowner knows, buildings all have their problems. We have had some breakdowns and some freezing lines, and we're currently troubleshooting our Growcer unit. We've had major issues with our septic tank plugging up with materials that are not biodegradable. To some degree, these types of issues are to be expected, and organizations build success plans with wiggle room into their budgets for this reason. Some situations, however, are much harder to predict and their effects are much more catastrophic.

We have had two such incidents in our building's short history. In the spring of 2017, heavy flooding damaged the railway to Churchill and service was suspended until the following December. This situation had a considerable effect on visitors' ability to travel to the Centre, and our revenue slumped. This also increased prices on shipping, and on materials needed to run the CNSC normally for almost two years. We were on the path to recovery when COVID-19 spread across the world and forced us to cancel 14 Learning Vacations and eight visits from independent tourism groups — a significant portion of our revenue over two years.

Now, our programs and services are back up and running, and we are excited for what the future holds. But before we get there, we have to face our current reality. With all of the lost revenue, the CNSC has had to take out loans to cover building costs. Our typical proceeds from programming are enough to offset our ordinary operational and capital needs — along with run-of-the-mill issues that arise — but there's not enough left over to cover such major losses that we have faced. (We are a non-profit, after all.) For the past few years, we were forced to dedicate much of our revenue towards the negative impacts of COVID-19 and have not been able to put funding back into our building. In the coming months, you can expect to see us pleading our case to our supporters to try to drum up enough funding to add to our building funds. We hope we can count on you. ❄️

Winter Skies have a Bright Future

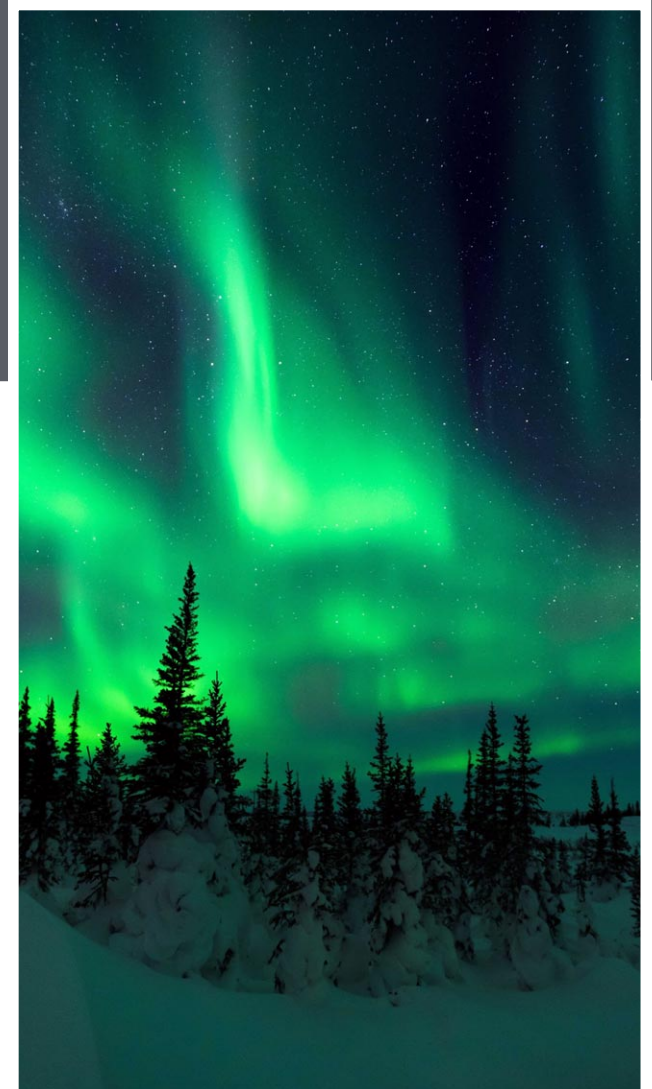


Looking ahead to our next Learning Vacation — namely, Winter Skies — we are excited for what is sure to be an amazing aurora season. We are anticipating particularly vivid auroras in the coming few years, since the sun is heading into a period of increased solar activity, with a peak expected in 2025. Not that we need much help in the Northern Lights department — Churchill is one of the top destinations for aurora tourism, photography, and research with good reason.

Located directly beneath the auroral oval, Churchill lies within a zone of extremely high auroral activity, and our subarctic winter skies tend to be cold, clear, and dark: the perfect combination for viewing Northern Lights. The Churchill Northern Studies Centre, in particular, offers an incomparable experience. Since we are located 23 kilometres from the town, there is virtually no light pollution. We have blackout blinds and can turn off all the building's lights when we are anticipating auroral activity, allowing the sky's treasures to shine as brightly as possible.

One of our Learning Vacation instructors, Alan Dyer, makes it easy to understand the science of the aurora and to capture the incredible views with your camera. (He literally wrote the book on it.) And we make it easy for our guests to enjoy the Northern Lights, too. Our building has a secure outdoor observation deck as well as an indoor Aurora dome that offers a 360-degree view of the sky. Plus, we provide wake-up calls to make sure guests don't miss any of the action. Add all this to Churchill's vibrant culture and history — which, of course, we also explore in our Learning Vacation — and we can't think of a place we'd rather be this winter.

Now that we are once again able to host visitors at full capacity, we hope to share our breathtaking winter skies with as many people as possible. To achieve this, we have partnered with



Travel Manitoba to increase our number of visitors for 2023. We have also launched a series of Google Ads campaigns with the help of a Google Ads Grant, and the Winter Skies ad is our most popular, having been clicked over 1,000 times in the past month.

Check out our Winter Skies Learning Vacation online, and let your friends and colleagues know about this bucket list experience! ❄️



MEMBERSHIP Offers Loads of Incentives

You are already a Churchill Northern Studies Centre member — that's why you're receiving The Birdfish newsletter. Did you know that we have added other great reasons to be a CNSC member, too?

As a member:

- You may stay in the Churchill Northern Studies Centre guest accommodations
- You may use CNSC laboratory and storage space for approved research projects

- You may sign up for the Rocket Greens launch box program (Churchill residents only)
 - You may browse our library and collections
 - You may stop by for refreshments and use our high-speed internet
 - You receive a discount for on-site tours
- If you'd like to show your long-term commitment to the CNSC, consider a lifetime membership, available for \$500. **Renew your membership today!** Pay your fees through our website under Support > Membership.

Introduction from the Executive Director

By Dylan McCart



There are some places in this world that have the ability to continually draw people back, time and time again. Churchill is one of those places, pulling me back to its vastness and beauty not once, not twice, but several times over the last decade of my life. Of course, like any person, I was awestruck with this place the first time I visited, when I was studying with board member Dr. Jim Roth, in a post-secondary field course in 2010. At the time, my group was staying at the old CNSC building, and my focus was entirely on the data I was gathering for my study on the effect of climate change on cranberry ripeness. I was captivated by Churchill's landscape and distinct environment, and I remember the shared admiration for the community that we all experienced. It was one of the first places where I saw my interest in science and understanding the world around us take shape. Unfortunately, at that time in my life, I was not able to stay longer.

But Churchill has a habit of pulling people back. I visited Churchill multiple times while studying polar bears in Ontario for over six years. I was happy to travel to Churchill with Polar Bears International and as a guest for Frontiers North Adventures. These visits continued to build my passion and interest in polar bears, which led to my graduate studies in polar bear endocrinology. I was able to collect data from Northern Ontario and Churchill for my studies to analyze polar bear hormones from various areas.

The most recent visit to Churchill was mostly for pleasure, and for a different kind of adventure. I was brought on my Frontiers North Adventures as an Interpretive Tundra Buggy Driver during the polar bear migration of 2021. It was absolutely thrilling to see the area come alive with engaged visitors, all looking for authentic experiences and a sincere connection with the natural world. I also was able to see the world of Churchill from the perspective of those in the community who provided such an amazing experience to visitors. It was an honour to share my knowledge and passion with enthusiastic guests.

Once again, I was inspired by Churchill — this time by its ability to inspire others. My respect for Churchill was well established before I moved here to take on the Executive Director position at the CNSC, but this role has brought on another layer of inspiration — one for the Centre itself. I'm sure you'll agree that the CNSC is a remarkable site, highlighting some of the area's best elements and adding its own special touches. Our incredible location, exceptional partners, outstanding service, and state-of-the-art building are all reasons to be proud. But it's the people I've met in this role who inspire me the most — the staff who champion the CNSC's mission, the researchers who devote their lives to enhancing our collective understanding of the North, the visitors who are committed to life-long learning, and the supporters who advocate for the pursuit of science. It's been a pleasure getting to know all of you. If you feel the pull of Churchill, don't resist. I can guarantee that you will feel the connection with this community, the people who are the heart and soul of it, and the remarkable beauty of this awe-inspiring place. ❄️

Established in 1976, the Churchill Northern Studies Centre is an independent, non-profit research station located along the western coast of Hudson Bay.

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to understand and sustain the north

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Thank you for your support

to understand and sustain the north



Have you made a lasting impact on northern research and education? If you are receiving this newsletter, you have. All of you have created a lasting impact by donating directly, participating in an educational course, conducting

research, instructing a course, volunteering your time, or by becoming a member of our organization. We would like to take this opportunity to thank you and let you know that you have made a difference. Every year, we face new challenges, but what remains consistent is your dedication to helping us continue our mission in the North. **Thank You!**

How can you continue to make a lasting impact on the North? Tell everyone around you about your experience with us in Churchill. By becoming an ambassador for the Churchill Northern Studies Centre your impact on northern research and education will be limitless. You can recommend us as a destination for learners of all ages, school group trips, conferences and meetings, credit and non-credit academic courses, a place to conduct research from any discipline and as a charity worthy of support of any amount. **Thank you for all you do!**

In honour of Dennis Macknak, we are starting a scholarship fund to annually award a local youth pursuing science and/or education. If you want to help us jump-start this fund, please choose to donate to the Birdfish Fund and make a note that you support the scholarship!

contribute

Your contribution is still needed to ensure that WE meet all the expectations that YOU, our participants, researchers, educators, donors and members have for the future of the CNSC. No contribution is too small. Every gift counts.

How to contribute:

Visit our website www.churchillscience.ca – click **"DONATE NOW"** or explore our Support page and become a monthly donor, renew your CNSC membership or become an advocate for our research station.

Clip the form below and mail to **CNSC, Box 610, Churchill, MB, R0B 0E0, Canada**



We're Going to Save Trees!

Starting with our next issue, we will be augmenting our efforts to reduce our use of paper. We will be delivering all copies of The Birdfish electronically, unless you request a physical copy. Contact us at **204 675 2307** or email daley@churchillscience.ca to let us know if you would like a physical copy. ✨

join, renew, support

the Churchill Northern Studies Centre Today!

We rely on our membership to provide the support and funding needed to make the CNSC a place for world class research and education programs in the Canadian subarctic. Join us now and be part of these exciting times at the CNSC. Already a member? Use this form to ensure your membership remains current. Renew or Join today!

Name: _____ E-mail: _____ Tel: _____

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- NEW* membership RENEW* my membership I would like to receive a physical copy of The Birdfish.
- Individual \$50 Student/Senior \$40 Family \$80 Corporate \$500 *One-year CNSC membership

I want to support the CNSC Please use my donation of \$ _____ for:

- General Operations School and Youth Programming
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