

ArcticNet is made possible through funding from the Networks of Centres of Excellence Canada, a joint initiative of the Natural Sciences and Engineering Research Council, the Canadian Institutes of Health Research, the Social Sciences and Humanities Research Council, and Industry Canada.

The Networks of Centres of Excellence are unique partnerships among academia, industry, government and not-for-profit organizations aimed at turning Canadian research and entrepreneurial talent into economic and social benefits for all Canadians. An integral part of the Government of Canada's Innovation Strategy, these nation-wide, multidisciplinary and multisectoral research partnerships, connect excellent research with industrial know-how and strategic investment.

The ArcticNet Network of Centres of Excellence was incorporated as a not-for-profit corporation under the name "ArcticNet Inc." in December 2003.

ArcticNet is hosted at Université Laval, Quebec City, Canada with staff also operating out of the University of Ottawa, Ottawa, Canada.



Cover photo: Martin Fortier
Photo credit: Martin Fortier

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FINANCIAL REPORT



INTRODUCTION

NOTE FROM THE LEADERSHIP

ARCTICNET BY THE NUMBERS

ABOUT ARCTICNET

THE YEAR IN REVIEW

NOTE FROM THE LEADERSHIP

Since 2004, ArcticNet has built the foundation for Canada to collectively face the challenges and opportunities created by climate and socio-economic changes in the North. With a vast network of partnerships, track record of collaborative work and breadth of research, ArcticNet has established itself as an essential hub for Arctic research in Canada.

With the onset of the COVID-19 pandemic, 2020 was a tumultuous year globally. While the pandemic affected the researchers' ability to conduct field activities and in-person training, it also highlighted the importance of strong relationships and community engagement. Through the uncertainty, ArcticNet played a pivotal role in maintaining and sustaining the engagement of Network Member Institutions, affiliates and investigators while supporting Highly Qualified Personnel (HQP). The unpredictability of northern research is challenging in the best of times. The additional burden imposed by travel restrictions added an unprecedented layer of complexity for fieldwork teams. However, northern communities and researchers alike rose to the occasion to adapt and thrive in this new research environment. Research teams across the country adopted innovative and collaborative approaches to continuing the critical research undertaken in the Canadian North.

This year, the ArcticNet **North-by-North Program** became a reality thanks to years of building trust with northern communities and peoples. By directly funding northern-led research in northern post-secondary institutions and Inuit communities, the North-by-North Program strengthens our collective understanding of the Arctic, produces high-quality evidence to inform decision-making, builds capacity for research and training, and supports Inuit self-determination in research. This ground-breaking program is defining what northern-led research is, as envisioned by northern research leaders.

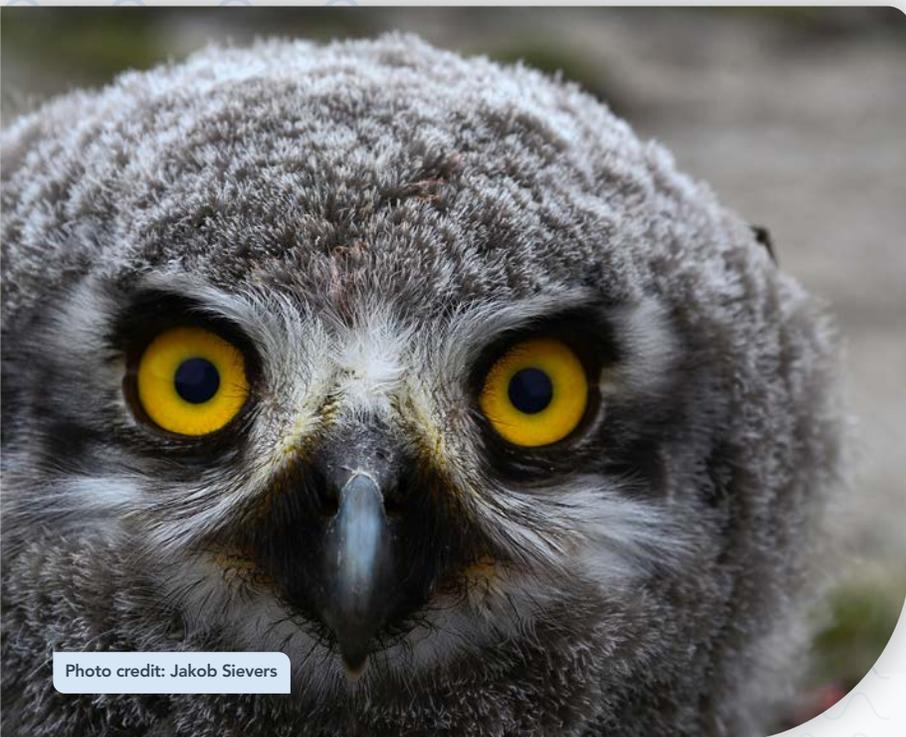


Photo credit: Jakob Sievers

“Research teams across the country adopted innovative and collaborative approaches to continuing the critical research undertaken in the Canadian North.”



2020 represented a difficult year for management as ArcticNet lost two foundational and pivotal members of the Network. The Board Chair, David Thomas, passed away in August, followed by ArcticNet founder, Louis Fortier, passing in October. ArcticNet will be forever grateful and indebted for their vision, conviction and dedication to the Network. In dealing with these tragic departures, the ArcticNet Directorate commemorated David and Louis during the virtual Arctic Change 2020 conference and began the hard work of replacing their expertise. A new (and current) Board Chair, Dr. Donna Kirkwood, was elected in September and the succession for Louis Fortier had already begun in the previous fiscal year but was accelerated due to his passing. David and Louis' insight, humour, inspiration and presence are truly missed.

ArcticNet capitalized on the COVID-19-imposed pause in field activities and logistical support by solidifying its leadership, vision, and partnerships, establishing a distributed secretariat, and embarking on a strategic planning process. ArcticNet, in partnership with Inuit and northern organizations, has carved out a clear niche in the Canadian Arctic research ecosystem. Partner engagement plays a central role in the journey of strategic planning. The positive response from partners to support this process and grow with our Network is truly astounding. ArcticNet is drawing the blueprints for a viable future for Arctic research in Canada, ensuring it is inclusive, collaborative and grounded in convergent research for a healthy, vibrant North.

ArcticNet foresees a bright future for Arctic research in Canada. In partnership with our network across the country, and with strong leadership, a clear vision for the future, and a track record of supporting research excellence, ArcticNet is poised to face the challenges of a rapidly changing Arctic in Canada and globally. Thank you to all those who have been a part of the first 17 years of ArcticNet. We are proud of the work this Network has accomplished so far, and look forward to the work ahead.



Dr. Jackie Dawson, ArcticNet Co-Scientific Director



Dr. Donna Kirkwood, Chair of the ArcticNet Board of Directors



Dr. Philippe Archambault, ArcticNet Co-Scientific Director



Dr. Christine Barnard, ArcticNet Executive Director



ARCTICNET BY THE NUMBERS

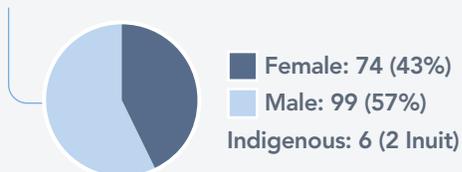
17 Years in the Making



2020/ 2021 Fiscal Year

Research projects funded: **33**

ArcticNet Researchers: **173**

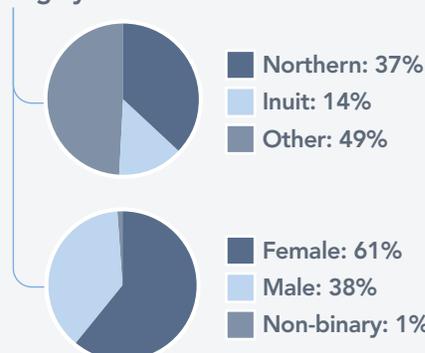


Study sites: **130+** covering all northern geographic regions of Canada

Partner organizations: **232**

Countries: **15**

Highly Qualified Personnel: **503**



Canadian Universities:
35

ArcticNet Network Investigators with Canada Research Chairs:
26

Inuit-led projects selected:
11



Total Publications:
441

Peer-reviewed publications:
397

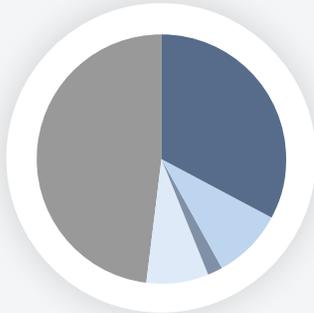
Specialized publications:
31

Virtual workshops and consultations hosted by Network Investigators:
38

NCE Funding 2020-21:
\$1,638,277

Total cash contributions 2020-21:
\$5,347,881

Total in-kind contributions 2020-21:
\$5,593,785



Cash contribution by sector:

- Not-for-profits, foundations, charities, associations: 33%
- University: 9%
- Other: 2%
- Provincial departments and agencies: 8%
- Federal department and agencies: 48%

Arctic Change 2020



Participants:
1900+



Northern participants:
327



Student Day:
300 participants





Photo credit: Michèle Séguin-Letendre

ABOUT ARCTICNET

A world-leading research network studying the Canadian North

Earth's rising temperatures are causing tremendous environmental and socio-economic consequences felt first and most severely in Arctic communities and territories. ArcticNet contributes to the development and distribution of knowledge required to support Arctic modernization and establish national policies and strategies to assist Canadians with the impacts and opportunities of climate change.

Through a network of partnerships, ArcticNet is a trailblazer in collaborative Arctic research. ArcticNet brings together more than 170 Arctic researchers, from 52 Canadian post-secondary institutions and Inuit organizations with northern communities, research institutes, industry partners, governments, and international agencies to create a uniquely diverse approach to northern research.

ArcticNet works collaboratively with international research teams throughout Denmark, Finland, France, Greenland, Japan, Norway, Poland, Russia, Spain, Sweden, the United Kingdom and the United States, to study the impacts of climate change and modernization in the Canadian North.



OUR VISION

A future where improved observations, modelling, capacity-building and knowledge exchange enable researchers, Inuit, Indigenous communities, Northerners and decision-makers to co-develop adaptation strategies minimizing negative impacts and maximizing positive outcomes resulting from the transformation of the Canadian Arctic.



OUR MISSION

- 1 BUILD** synergy among research Centres of Excellence in the health, natural and social Arctic sciences.
- 2 INVOLVE** Inuit, Northerners, government and the private sector in steering the Network and scientific processes through a bilateral exchange of knowledge, training and technology.
- 3 INCREASE** and update the observational basis required to address the ecosystem-level questions raised by climate change and modernization in the Arctic.
- 4 PROVIDE** academic researchers and their national and international collaborators with access to the Canadian Arctic.
- 5 CONSOLIDATE** national and international collaborations in the study of the Canadian Arctic.
- 6 CONTRIBUTE** to training the next generation of experts, from the North and South, to study, model and ensure the conservation of the changing Canadian Arctic.
- 7 TRANSLATE** our growing understanding of the Arctic into regional impact assessments, national policies and adaptation strategies.

Building on 17 years of research, relationship building, and knowledge sharing to understand the changing Arctic region, ArcticNet is well poised to continue building coordinated, collaborative, and sustainable Arctic research in Canada.





Photo credit: Simon Belt

THE YEAR IN REVIEW

Despite the turbulence this past year, 2020 proved to be a significant year for ArcticNet. In the face of travel restrictions, limiting field work and in-person training activities, ArcticNet researchers and communities showed resilience, continuing important work (community-based research and monitoring, publishing papers, transitioning to online knowledge sharing and capacity building) and demonstrating how strong relationships, collaborations, and community engagement are essential to effective and sustainable research.

This year, ArcticNet shared significant research results, launched exciting new programs, renewed our leadership team and launched a visionary and collaborative strategic planning process, looking ahead to solidifying the future of the Network. This year culminated in the successful virtual Arctic Change 2020 international conference.



FUNDING RESEARCH

CORE RESEARCH PROGRAM

NORTH-BY-NORTH PROGRAM

SATELLITE RESEARCH PROGRAM

RESEARCH HIGHLIGHTS ✨



Photo credit: Martin Fortier



Core Research Program

At its core, ArcticNet funds research across the pan-Canadian Arctic in health, natural and social sciences.

ArcticNet's research program is reviewed by the Research Management Committee (RMC) composed of representatives from Inuit organizations, government and industry. The program currently funds 33 Core Research Program projects studying:

- › Marine systems;
- › Terrestrial systems;
- › Inuit health, education and adaptation;
- › Northern policy and development; and
- › Knowledge transfer.

In their second year of funding, these projects operate across the Canadian North and South, including northern Manitoba, Northwest Territories, Yukon, and the four Inuit land claim regions of Canada: Inuvialuit Settlement Region, Nunavut, Nunavik, and Nunatsiavut. Despite travel restrictions limiting fieldwork this year, many projects still managed to collect data in partnership with northern communities due to the long-standing networks and trusting relationships that have been built within the network.

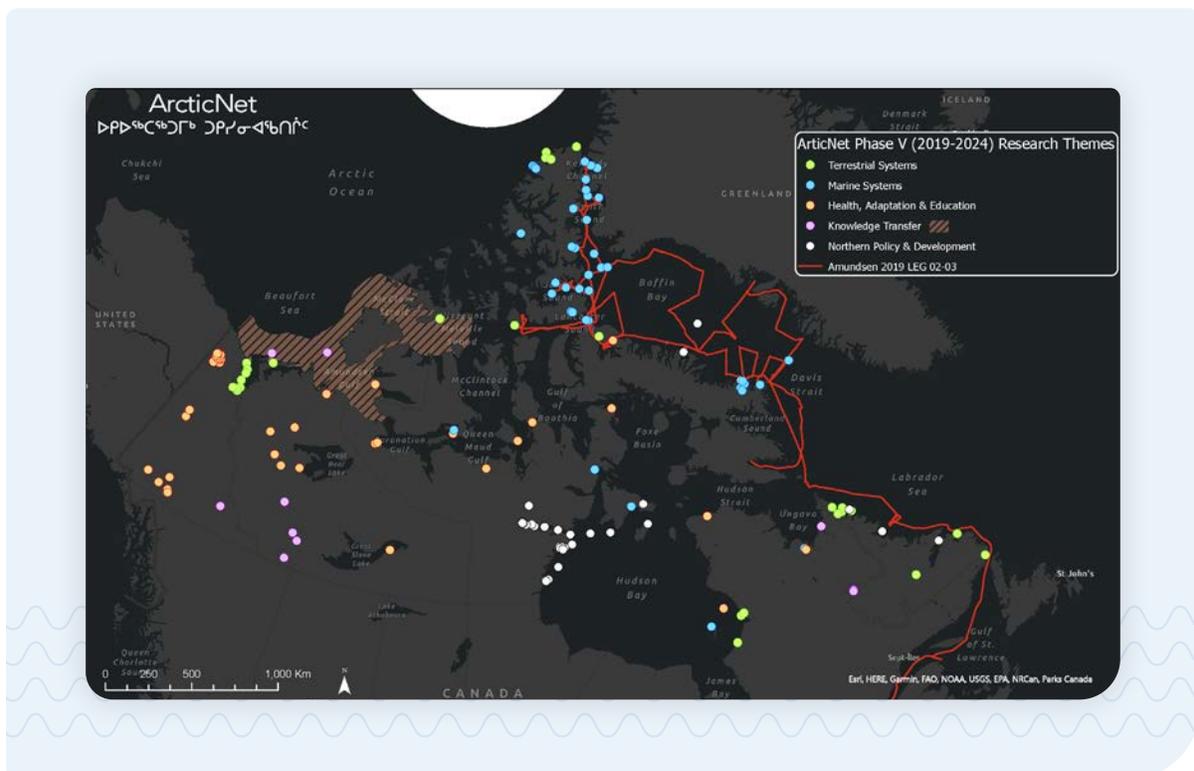




Photo credit: Wilson Cheung

North-by-North Program

ArcticNet launched its ground-breaking new North-by-North Program this year. By directly supporting northern-led research, the North-by-North Program strengthens our collective understanding of the Arctic, produces the best evidence to inform decision-making, and builds capacity for research and training. The North-by-North Program enables northern communities to lead their own research through two streams, outlined below.



North-by-North Program

The Inuit Nunangat Research Program

The Inuit Nunangat Research Program (INRP) is the first Inuit-led, governed and directed research program in the world. It supports Inuit researchers to lead studies that are relevant to and prioritized within Inuit Nunangat by:

1. Funding stand-alone projects;
2. Leveraging existing projects; and
3. Partnering with other organizations engaged in relevant research.

This year, the INRP released its first Call for Proposals, reviewed and recommended for funding the first Inuit-led, directed and governed research projects in the world. These **11 projects** were approved by the ArcticNet Board of Directors in fiscal year 2020/21 and will commence in the 2021/22 fiscal year with **52 funded researchers** (44% male, 56% female) and **\$1.63M in funding**. With a profound success in its first year, a second Call for Proposals will be launched in fall 2021 to continue funding Inuit-led research across the Arctic. The funded projects stretch across all four of the Inuit land claims regions: the Inuvialuit Settlement Region (ISR), Nunavut, Nunavik, and Nunatsiavut.

The INRP implements the principles of the National Inuit Strategy on Research from Inuit Tapiriit Kanatami by ensuring Inuit are involved throughout the governance process and maintain control over research projects and data.

IMPACT

1. Funds 52 researchers across 11 Inuit-led research projects.
2. Implements the principles of the National Inuit Strategy on Research.
3. Creates space to envision Inuit-led research according to regional Inuit research leaders.
4. Informs Canada's national funding bodies on how to define, fund and promote self-determined Inuit-led research.
5. Leads the way as a pilot project of Indigenous-led research for Canada's Tri-Council Funding Agencies.
6. Establishes ArcticNet as a national and an international leader in how to value, fund and incorporate Indigenous Knowledge systems into the scientific process.



Photo credit: Eric Loring



North-by-North Program

Northern Research Leaders Program

The Northern Research Leaders Program builds northern research capacity and excellence by supporting research leaders, chairs, postdoctoral fellows, and research associates in the northern post-secondary institutions. With **\$4.25M in funding** allocated over four years, this program supports pillar research programs and funds the recruitment of research leaders at Yukon University, Aurora College, Nunavut Arctic College, and the Labrador Institute's new School of Arctic and Subarctic Studies. In its first year, northern research institutions hired **14 new research positions** to advance northern research priorities. In close partnership with Indigenous and northern organizations, the North-by-North Program is paving the way ahead for self-determined research.

IMPACT

1. Funds 14 new research positions, with more to come.
2. Sets an international example for inclusive, convergent and collaborative Arctic research.
3. Bolsters northern research capacity in the themes outlined below.



Yukon University

- › Permafrost and geoscience
- › Hydrology and climate change
- › Northern business and economy



Aurora College

- › Climate Change Adaptation (Inuvik)
- › Health and Community (Yellowknife)
- › Indigenous Approaches to Environmental Management (Fort Smith)



Nunavut Arctic College

- › Research trends in Nunavut, including community engagement
- › Nunavut Research Institute Licensing Database Development



Labrador Institute

- › Climate-Sensitive Health Outcomes
- › Northern Indigenous Mental Health
- › Inuit-led Conservation Science in Nunatsiavut
- › Northern Survey on Climate Change and Health
- › Northern Boreal Food Systems





Photo credit: Craig Emmerton

Satellite Research Program

To meet the global challenges and opportunities of the rapidly changing Arctic, ArcticNet's Satellite Research Program supports research projects with international connections and collaborations. As a hub for Arctic research in Canada, ArcticNet leverages its NCE-funded Core Research projects and engages other programs, the private sector, and the international community in studying the Arctic.





Photo credit: Julienne Stroeve

Research Highlights

Paramount to achieving research excellence in the North, most of the core program projects work in tandem with northern communities to co-design, co-conduct, and bring to fruition multidisciplinary research projects which boast regional reach and global impact. Despite travel restrictions that eliminated the possibility of fieldwork this past year, many projects still managed to collect data in partnership with northern communities due to the long-standing networks and trusting relationships that have been built within the network. A selection of ArcticNet funded projects and their impacts are highlighted in the following section.



Research Highlights ✨

Arctic Health: Urgently Accelerating Indigenous Health and Wellbeing

Human health in the Arctic and globally is impacted by multiple stressors in a rapidly changing environment. In the face of evolving challenges, Arctic researchers can both learn from and contribute to the traditional global health field by sharing multidisciplinary approaches and recognizing the importance of Indigenous Knowledge.

This year an international commission was launched to study “Arctic Health: Urgently Accelerating Indigenous Health and Wellbeing” by the prestigious medical journal The Lancet. Co-chaired by Dr. Lisa Adams and Dr. Dalee Sambo Dorough, commissioners include ArcticNet Investigator Dr. Susan Chatwood alongside Dr. Gert Mulvad, Dr. Arja Rautio, Birgitta Evengård and Ketil Hansen. The Commission aims to bring together the global and Arctic health communities to:

- › Examine health challenges facing Arctic Indigenous peoples and other communities;
- › Explore linkages between the traditional global health agenda and Arctic Health frameworks; and,
- › Define priorities for global cooperation around Arctic Health.

The commission’s report, to be launched in the 2021-22 fiscal year will conclude with an international roadmap for improving Arctic health which identifies future research priorities and advocacy to be carried out in conjunction with Indigenous peoples and other communities. The vision, strategy, and evidence presented will support future Arctic health research, further policy development across sectors, and allow for ongoing adaptation as new circumstances arise.

IMPACT

1. Improves synergies between the traditional global health agenda and Arctic health frameworks.
2. Informs policy development across sectors.
3. Identifies priorities for further research and advocacy with Indigenous peoples and other communities.



Research Highlights ✨

Protecting Marine Ecosystems in Northern Baffin Bay

Pikialasorsuaq, or the North Water Polynya, in the North Water region located between Baffin Island and North West Greenland is the largest Arctic polynya and holds significance to Inuit communities in Canada and Greenland.

As part of the Satellite Research Program, nine of ArcticNet's Network Investigators collaborated closely with international experts from Greenland and Denmark to develop key recommendations for managing the international Pikialasorsuaq Marine Protected Area in Northern Baffin Bay. These recommendations were published in a science advisory report prepared by the Department of Fisheries and Oceans Canada entitled "Identification of Ecological Significance, Knowledge Gaps and Stressors for the North Water and Adjacent Areas."

IMPACT

1. Contributes to the protection of a variety of wildlife in the polynya.
2. Establishes a comprehensive baseline for ongoing collaborations related to the protection of the North Water region.
3. Establishes Canada as a leader in international cooperation for marine protection.
4. Identifies major knowledge gaps to inform future research priorities and policy decisions for the North Water region.





ARCTIC PASSION

As the rapidly changing Arctic impacts local and global systems, it highlights the need for an observation system that is accessible and tailored to the diverse needs of end users, including northern communities and decision makers, academia, government, and industry.

The “Pan-Arctic Observing System of Systems Implementing Observations for Societal Needs” ([Arctic PASSION](#)) project aims to meet this need by bringing together 36 collaborators, including ArcticNet as part of the Satellite Research Program, 43 partners and eight Indigenous communities from 17 countries to improve global Arctic observing systems. This year, Arctic PASSION successfully received funding from the European Union’s Horizon 2020 research and innovative programme.

IMPACT

1. Improves scientific and community-based monitoring of ongoing environmental changes to inform adaptation and mitigation measures and support sustainable development in the Arctic.
2. Addresses fragmentation of global observation systems through international collaboration, including with Indigenous and northern communities.
3. Ensures accessibility and interoperability of Arctic data systems and services.
4. Equips northern communities, governments, and other end users with the high-quality data required to inform economic, policy, investment, management, and societal decisions.
5. Integrates Indigenous Knowledge within global observation systems.



ArcticKelp: Understanding Kelp Forests in a Rapidly Changing Arctic

In a rapidly changing Arctic, where human-driven changes threaten coastal habitats, kelp forests provide unique insight into these changes.

Led by ArcticNet Co-Scientific Director Dr. Philippe Archambault and Dr. Karen Filbee-Dexter from the University of Western Australia, the “ArcticKelp” project studies how a warmer Arctic, less sea ice, and permafrost melt may impact the growth of kelp forests. This project combines coastal surveys, scientific dive experiments, laboratory experiments, community consultation, remote sensing, research cruises, and modelling approaches to map kelp forests in the Arctic.

As part of the Satellite Research Program, the “ArcticKelp” project partners with international researchers from the Institute of Marine Research, Norway, the University of Western Australia, Aarhus University, Denmark and King Abdullah University, Saudi Arabia. This global approach allows the team to undertake comparative experiments at field sites in Canada (Pond Inlet), Russia, and Norway (White Sea and Malangenfjord) to establish the resilience of kelp forests across the circumpolar Arctic. Further, in collaborating with the pan-Arctic initiative led by Dr. Dorte Krause-Jensen of Aarhus University, ArcticKelp assesses evidence of climate driven changes to vegetated coasts.

IMPACT

1. Predicts climate-driven impacts on kelp forests, including their importance for coastal ecosystems and northern coastal communities.
2. Equips northern coastal communities with the knowledge to prepare for coastal changes.
3. Demonstrates the necessity of including marine vegetation into a pan-Arctic science and management agenda to inform sustainable management strategies.

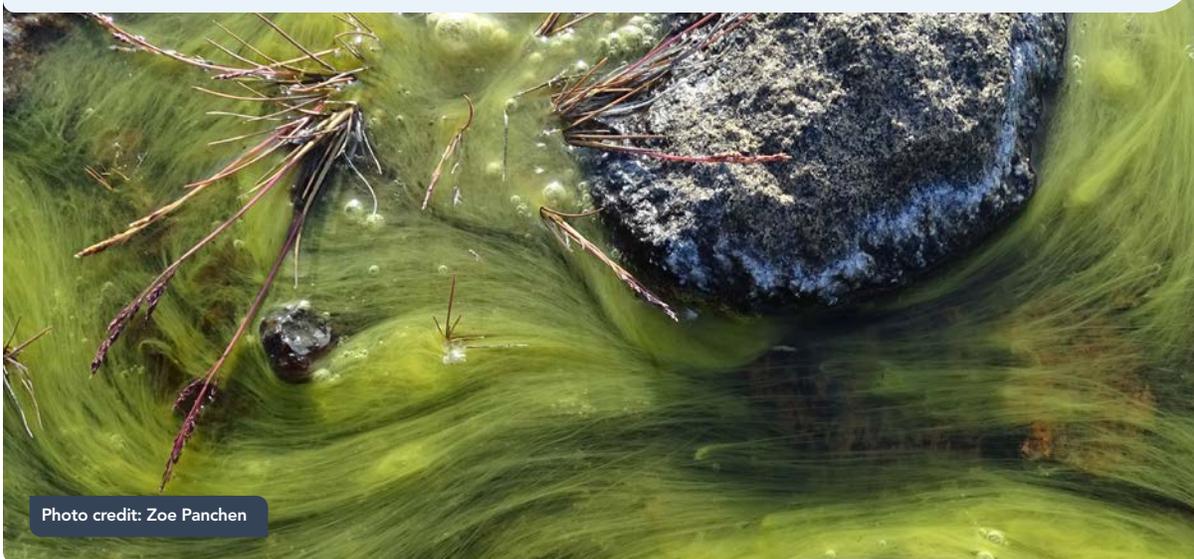


Photo credit: Zoe Panchen



Sea Ice Thickness: Improving Measurements for Arctic Communities

Sea ice is of utmost importance for northern communities; it allows for traditional hunting and harvesting activities and protects coastal communities during storms. Satellite-based observations are required to observe sea ice dynamics across large distances and over long time periods to predict future changes.

Led by Dr. Julienne Stroeve, Senior Canada-150 Research Chair in Climate Forcing of Sea Ice, the “Sea Ice Thickness” project addresses a critical research gap that examines the accuracy of satellite-derived sea ice thickness estimates from the Canadian Arctic. A KuKa radar (a dual frequency surface-based radar) was deployed during the year-long Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) expedition, led by the Alfred Wegener Institute in Germany. This was the largest polar expedition in history, with hundreds of researchers from 20 countries involved in this exceptional endeavour. Nature’s editors selected this project to highlight key events in science in 2020 around the world.

This project aimed to look more thoroughly than ever before at the Arctic as the epicenter of global warming to improve understanding of global climate change. Data from this deployment is informing the European Space Agency’s new satellite mission (CRISTAL), and paving a path forward to improved sea ice thickness accuracy and snow depth readings.



Photo credit: Stefan Hendricks

IMPACT

1. Improves accuracy of sea ice thickness and snow depth readings particularly for Canadian Arctic communities and major Canadian shipping corridors.
2. Resolves the research gap for the need for reliable thickness measurements in the Northwest Passage.
3. Informs the European Space Agency's new satellite mission (CRISTAL) using new and novel data.

The KuKa radar is a surface-based dual frequency Ka/Ku-band radar that can be used to measure sea ice thickness.



Community Biogeochemistry: Partnering with Inuit Communities on Climate Research

Many of Canada's Arctic research stations and research tools were not built with Inuit communities in mind. The "Community Biogeochemistry" project, led by Dr. Brent Else, partners with local northern communities to improve the network of northern weather stations while conducting state-of-the-art biogeochemical research. Through a co-operative research program with a focus on training northern researchers, this project endeavours to make research projects work for Inuit as well as scientists.

Through this collaborative approach, this project contributes to cutting-edge climate research. Dr. Else and his team conducted an analysis of historical dissolved CO₂ measurements made from the CCGS Amundsen and developed the first comprehensive budget of air-sea CO₂ exchange in the Canadian Arctic Archipelago. These results will feed into the "Global Stocktake," a fundamental component of the Paris Agreement.

IMPACT

1. Advances knowledge of the primary production of regional marine food web with detailed year-round measurements in the Kitikmeot region.
2. Summarizes the current state of knowledge of regional marine carbonate chemistry and estimates the future vulnerability of ocean acidification.
3. Constructs and operates a weather station network to address the travel risk associated with few existing weather stations and increased unpredictability of weather conditions.



Photo credit: Doug Barber



Climate Vegetation Cryosphere Interaction: Understanding Vegetation, Permafrost, and Snow

Greening and shrubification (the expansion of shrubs) of the Arctic is one of the most striking impacts of climate change on the terrestrial ecosystem. Commonly attributed to a better performance of shrub species, this phenomenon impacts permafrost, snow distribution, species composition, and food availability.

Dr. Robert Way is leading the “Climate Vegetation Cryosphere Interaction” project that highlights the interactions between vegetation, permafrost, and snow across diverse ecosystems in coastal Labrador and Nunavik. Remote sensing investigations show rapid shrubification and dramatic changes in ground-cover over the past four decades. These findings highlight where and how the impacts of shrubification may manifest in the future in the low Arctic mountains of Nunatsiavut and Nunavik, and the impacts on snow and permafrost. Their research shows that permafrost is expected to continue to thaw throughout much of northern Labrador.

Contributions from this project have been included in a database operated by the High Latitude Drone Ecology network and the International Tundra Experiments, both of which are large international research projects that span multiple institutions across the Arctic.

IMPACT

1. Improves understanding of the interaction between permafrost thaw and vegetation.
2. Informs sustainable resource management and future infrastructure projects, based on the area of vegetation and permafrost changes.
3. Equips communities with the tools to manage changing northern landscapes due to climate change.



Photo credit: Isabelle Dubois

Nunataryuk: Understanding the Changing Arctic Coast

Permafrost coasts across the Arctic are a key location for human-environmental interactions. These coasts provide essential ecosystem services (e.g., food: fish and marine mammals), exhibit high biodiversity and productivity, and support Indigenous lifestyles. At the same time, they are vulnerable zones of expanding infrastructure investment and growing health concerns.

As part of the Nunataryuk project (meaning “land-to-sea” in Inuvialuktun), Dr. Marcel Babin, Canada Excellence Research Chair in Remote Sensing of Canada’s New Arctic Frontier, studies the Mackenzie Delta in northern Canada, one such permafrost coast. The *Nunataryuk* project represents a global collaboration between German, Canadian and French partners and is guided by a Stakeholders’ Forum with representatives from Indigenous and Arctic coastal communities.

As permafrost thaws in the region, it releases dissolved organic matter from the Mackenzie Delta into the Arctic Ocean. This project provides valuable data to improve our understanding of the origin and fate of this re-mobilized organic matter and demonstrates the intricate connectivity of between terrestrial and marine systems. By combining on-site observations, remote sensing, laboratory experiments and numerical modelling, this project characterizes the organic matter released into coastal waters in the past and into the future. Dr. Babin’s team measures the carbon and nutrient content in groundwater released from permafrost thaw to assess its quality and produce critical public health information.

IMPACT

1. Employs innovative methods to serve as a new basis for ground-truthing remotely sensed images in a changing Arctic environment.
2. Produces environmental findings across a wide area and through a long time on the impact of organic matters in the coastal ocean from increasing permafrost thaw.
3. Assesses the future potential of the Arctic Ocean as either a net sink or source of CO₂ in the near future.
4. Improves understanding of impact of permafrost thaw, organic material in coastal waters, biological accumulation in country foods, and human health in local communities, to inform public health.
5. Translates novel empirical and theoretical knowledge on permafrost thaw and on consequences on marine coastal ecosystems into resources for local, regional and federal decision-makers.



Qanuilirpitaa? 2017: Understanding the Determinants of Health and Wellbeing

Led by the Nunavik Regional Board of Health and Social Services, the “Qanuilirpitaa? 2017 Nunavik Health Survey” ([Q2017](#)) provides a glimpse into the population’s state of mental and physical health across all 14 communities of Nunavik.

A team of ArcticNet-funded researchers, led by Dr. Mylène Riva, Canada Research Chair in Housing, Community, and Health, were important contributors to the successful Inuit-led Q2017. Q2017 examines the state of health of the Nunavik population to identify the diverse socio-environmental determinants empirically associated with physical and psychosocial health in Nunavik Inuit.

The survey encapsulated all aspects of health, including adult, youth and community health. Findings range from the impacts of food security and addressing the housing crisis, to respiratory disease, infections, exposure to contaminants, defining well-being, and traditional food consumption. Results from Q2017 were published and made accessible to the people of Nunavik before they were released publicly.

Fifteen survey thematic reports were published over the past year. Some of the above findings will be submitted for a special issue in the *Canadian Journal of Public Health* in the Fall 2021. Fourteen scientific articles were presented and discussed with the Data Management Committee of Q2017 and Nunavik representatives in a co-learning and co-creation approach. These reports are all available on the [Nunavik Regional Board of Health and Social Services website](#).

IMPACT

1. Enhances Nunavimmiut’s (people of Nunavik) ability to maintain and promote culture, language and identity.
2. Strengthens the region’s capacity to lead and take action to improve the health and well-being of communities.
3. Equips Nunavimmiut with data to define new preventive health strategies and services for the future.
4. Informs policy recommendations which can ultimately lead to healthier Nunavimmiut.



Understanding the Interface of Human, Animal, and Ecosystem Health

Strong connections among the land, wildlife, and people in the Canadian North require a One Health approach to address complex challenges at the interface of human, animal, and ecosystem health by engaging multiple disciplines and non-academic stakeholders. In Canada, the North has historically faced health disparities and food and water insecurity, and is now experiencing climate change at rates at least double that of the rest of Canada.

As part of the Satellite Research Program, the “Canadian Arctic One Health Network” project from Dr. Emily Jenkins and Dr. Patrick Leighton developed an international collaboration between researchers at the University of Alaska Fairbanks, the University of Saskatchewan, the Public Health Agency of Canada National Microbiology Lab, and the US Centres for Disease Control. This collaboration designs experimental animal work at University of Alaska Fairbanks and paves the way for future work in the project.

IMPACT

1. Establishes baseline data and develops models to detect and project the impacts of human and wildlife diseases as the Arctic warms.
2. Informs communities on the impact of climate change and helps develop cost-effective disease prevention programs, including through risk maps for communities and public health.
3. Develops targeted risk communication with wildlife managers and public health personnel in the North to enable informed decision making.
4. Builds northern capacity and a strong knowledge base of how zoonotic diseases and parasites are transmitted in the Arctic.

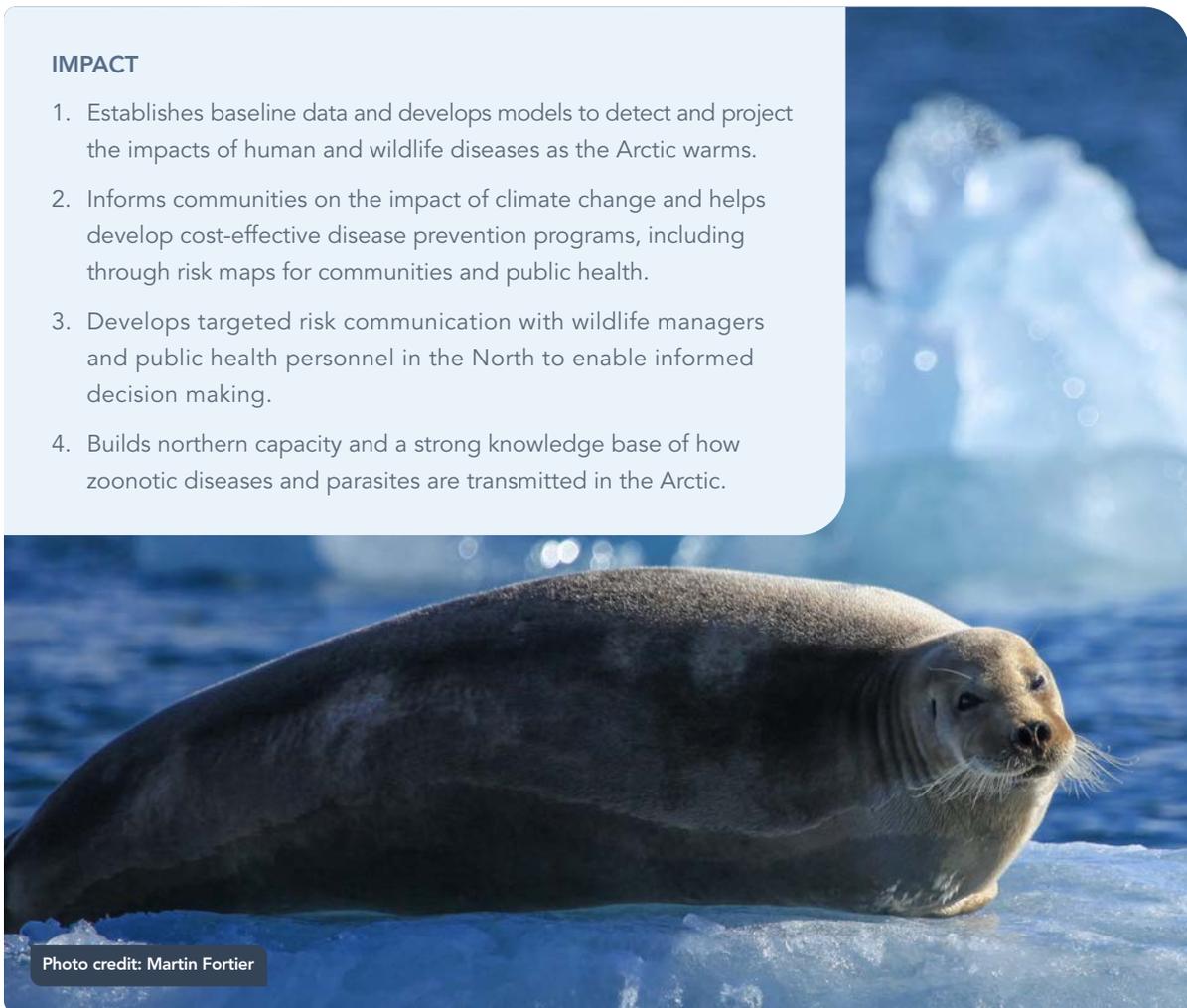


Photo credit: Martin Fortier



Supporting Humans in a Thawing Landscape

Permafrost thaw impacts people living in the North in diverse ways; it damages built infrastructure, compromises the security of transportation networks, and affects traditional subsistence activities and food security by altering the ecosystem and releasing contaminants into the food chain. Consequently, permafrost thaw generates significant costs associated with technological and cultural adaptations.

Dr. Fabrice Calmels' research identifies the issues, studies remediation approaches, and helps to develop adaptation strategies on the impacts of climate change, supporting the development of safer, more resilient, and cost-efficient transportation networks in the North, all in partnership with northern communities.

As part of the "Supporting Human in a Thawing Landscape" project this past year, Dr. Calmels' team produced a detailed characterization and distribution map of permafrost in the Greater Whitehorse Area that was directly used for land-use planning and a geohazard alarm system for transportation infrastructure. Their permafrost monitoring report on Nunavik airports led to new adaptation measures implemented at the Tasiujaq airport.

IMPACT

1. Equips governments and northern partners with the data needed to design adaptation and mitigation approaches for transportation networks.
2. Extends permafrost mapping and characterization in northern communities and transfers knowledge to inform building design and land use planning.
3. Partners with communities to assess ecological change in their lands induced by permafrost thaw and how their subsistence and cultural activities may be impacted.
4. Employs innovative techniques to development fundamental knowledge about permafrost thaw.



Photo credit: Martin Fortier

Coastal erosion and permafrost melt on the banks of the Mackenzie River near Inuvik.



Arctic Corridors and Northern Voices: Engaging Communities to Inform Low Impact Shipping Corridors

Arctic shipping traffic in Canada has almost tripled since 1990. In response, the Government of Canada has embarked on a project under the Oceans Protection Plan to develop a network of low-impact marine transportation corridors in the Arctic that encourages marine transportation traffic to use routes that pose less risk and minimize the impact on communities and the environment. The Low Impact Shipping Corridors will be developed and implemented in partnership with northerners and used as a framework to guide future federal investments to support marine navigation safety in Arctic Canada.

Led by ArcticNet Co-Scientific Director and Canada Research Chair in Environment, Society, and Policy, Dr. Jackie Dawson along with ArcticNet postdoctoral fellow Dr. Natalie Carter, the “Arctic Corridors and Northern Voices” project:

- › Developed a long-term geo-spatial ship track database (1990-present) in Arctic Canada.
- › Identified temporal and spatial shipping trends and established zones of high commercial and non-commercial shipping activity.
- › Documented Inuit-identified Culturally Significant Marine Areas (CSMAs).
- › Established potential management strategies for the low impact shipping corridors.

Dr. Dawson, Dr. Carter, and Northern Research Associates Shirley Tagalik (Arviat) and Natasha Simonee (Pond Inlet) were awarded two highly prestigious and competitive research awards this year for this project, including:

1. [Governor General’s Innovation award](#); and
2. [The Social Sciences and Humanities Research Council Impact award](#) in the Connection category.



Photo credit: Arctic Corridors Research

Natasha Simonee (left) and Dr. Jackie Dawson as part of the Governor Generals Award Winning Arctic Corridors and Northern Voices.

IMPACT

1. Draws participation from 133 Northern research participants contributing local knowledge.
2. Engages 14 partner communities.
3. Documents 81 community-identified corridors management options.
4. Trained 59 Inuit Youth in participatory mapping and workshop facilitation.
5. Supports federal policies on Arctic shipping navigation.



Modernizing Ecosystem Monitoring

Science-industry partnership, northern engagement, and innovative forms of knowledge transfer make environmental monitoring more effective. Dr. Paul Smith's "Modernizing Ecosystem Monitoring" project puts these approaches into action. This project assesses the ability of birds to respond to resource development and environmental variability in Arctic marine and terrestrial environments.

Dr. Smith's team showed that mitigation techniques currently being used to deter nesting birds are ineffective, and fail to achieve the conservation objectives of regulators. Environment and Climate Change Canada (ECCC) will incorporate these results into new guidance for Meadowbank/Amaruq Mines and other resource development projects across the North.

The team also showed that densities of shorebirds are only moderately weakened around mine infrastructure and that several species of passerines have elevated abundances. They modelled year-round seabird habitats by using machine learning and modeling. Their models increase our ability to predict future hotspots and inform the value of candidate areas for protection, based on their future importance for seabirds regionally and on a yearly basis, and is driven by many factors, including spawning behaviour.

They also showed that mesopelagic fish represent the most extensive unexploited stock in the world. These fish are abundant up to the northern Labrador Sea, but very uncommon in the Canadian Arctic, implying that the different water masses act as a mesopelagic boundary. Lastly, they showed that access to commercial fisheries differs across the different land claim territories and results in inequities in adjacent fish resources and in the financial benefits generated from commercial fisheries.

IMPACT

1. Informs Environment and Climate Change Canada (ECCC) guidance on nesting birds for resource development projects across the North.
2. Informs the selection of areas for protection based on their importance as future seabird habitat.
3. Illuminates the inequalities of commercial fisheries access and benefits across Arctic land claim territories.



ArcticFish: Forecasting Fish Dynamics in a Changing Arctic

In the Eastern Canadian Arctic, increasing productivity and access to fisheries grounds have boosted commercial fishing opportunities. Dr. Maxime Geoffroy's "ArcticFish" project studies the distributions and dynamics of the prey of commercially exploited fish to improve forecasting of how ongoing climatic changes will affect fisheries' productivity. The research team showed that the expansion of the range of boreal fish species into the Arctic varies. This project also contributes to the training of a new generation of Arctic fisheries researchers by training seven northern and southern HQP.

Through the Satellite Research Program, Dr. Geoffroy collaborates with Dr. Caroline Bouchard at the Greenland Institute of Natural Resources to better inform the co-management of Baffin Bay fish stocks. Their findings also help to fill the mandate of the International Working Group on Fish Stocks in the Central Arctic Ocean (FISCAO).

IMPACT

1. Facilitates better forecasting of how ongoing climate change will affect fisheries' productivity.
2. Informs Nunavut fisheries stakeholders, local communities and government agencies by providing critical information for the sustainable exploitation of Greenland halibut and other groundfish resources in Baffin Bay.
3. Continues at 15+ year time-series of fish and aquatic ecosystems from the Labrador Sea to the Beaufort Sea, and provides open access to these data through the Polar Data Catalogue.

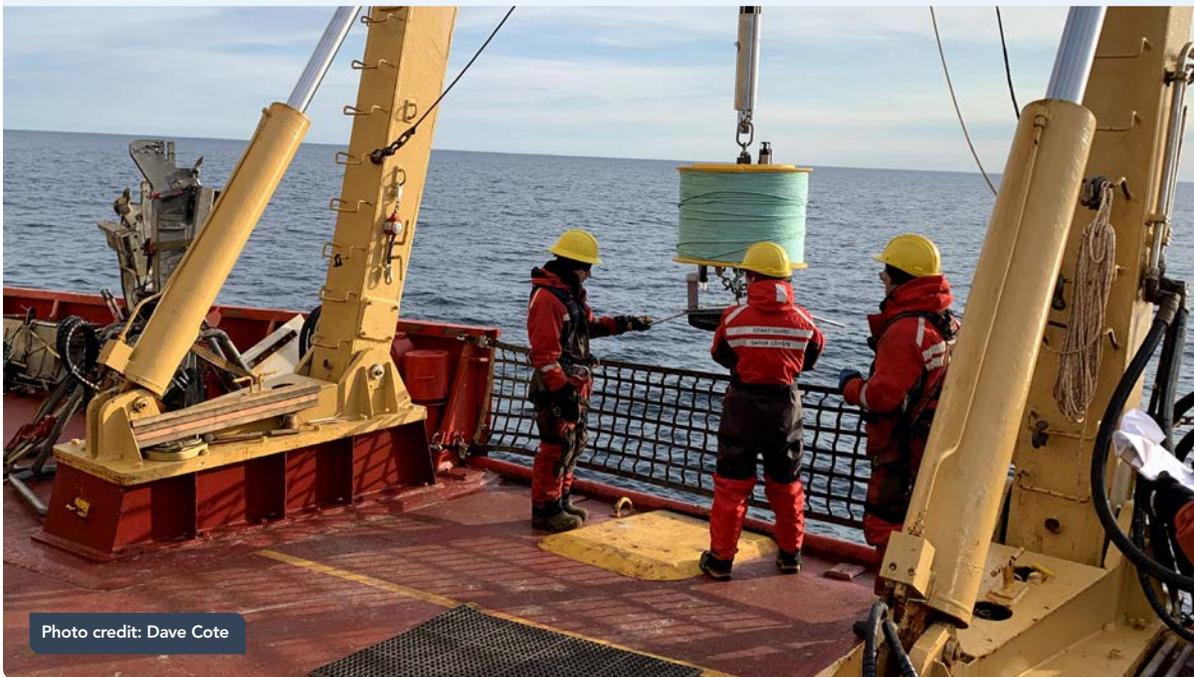


Photo credit: Dave Cote



KUUK-SHIPI-SHIPU: Communicating Environmental Change with Communities

Dr. Esther Lévesque’s “KUUK-SHIPI-SHIPU” project (meaning “river” in Inuktitut, Naskapi and Innu) collaborates with Nunavimmiut, the Naskapi and the Innu Nations to study the effects of climate and socio-environmental change in Nunavik’s George River Basin.

Dr. Lévesque’s team invests in mobilizing their cutting edge-science and results to communities and northern end-users. A new breakthrough protocol to calculate mercury concentration in traditional foods and the creation of baseline values for selected trace elements (e.g., mercury) provides a better understanding of the metal distribution in water. The team also created interactive maps featuring Inuit Knowledge which schools and Nunavik Parks will use as educational tools.

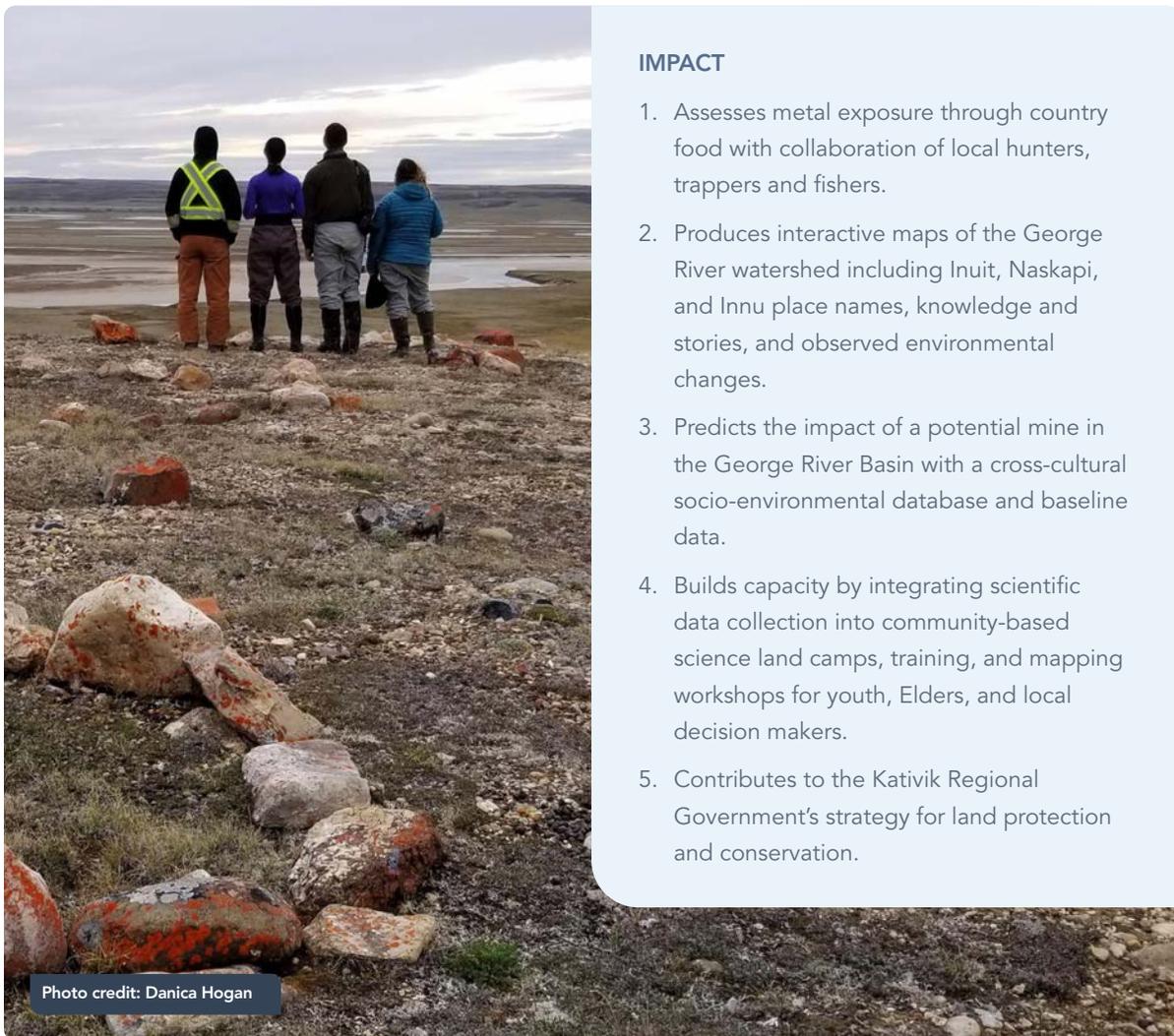


Photo credit: Danica Hogan

IMPACT

1. Assesses metal exposure through country food with collaboration of local hunters, trappers and fishers.
2. Produces interactive maps of the George River watershed including Inuit, Naskapi, and Innu place names, knowledge and stories, and observed environmental changes.
3. Predicts the impact of a potential mine in the George River Basin with a cross-cultural socio-environmental database and baseline data.
4. Builds capacity by integrating scientific data collection into community-based science land camps, training, and mapping workshops for youth, Elders, and local decision makers.
5. Contributes to the Kativik Regional Government’s strategy for land protection and conservation.



Dehcho Collaborative on Permafrost: Mapping Permafrost in the Dehcho Region

Climate warming and human disturbance in the Dehcho region of the Northwest Territories (NWT), Canada, has led to widespread permafrost thaw and land cover change that has disrupted the hydrological cycle and the ecosystems and human activities that depend on it. To meet the need for permafrost mapping in the Dehcho region, the Scotty Creek Research Station, led by Dr. William Quinton, and the Dehcho First Nations co-proposed the “Dehcho Collaborative on Permafrost” (DCoP) project which combines leading-edge scientific and Indigenous knowledge.

DCoP is a NASA/ABOVE affiliated project. This project focuses on remote sensing image acquisition and mapping which includes Indigenous community mappers. Furthermore, NASA/ABOVE has committed to including Dehcho Indigenous youth on their flight mission team over the Dehcho following the pandemic. This is an exceptional educational opportunity for community youth emerging from the Satellite Research Program.

IMPACT

1. Equip resource managers and planners with data and permafrost probability maps to inform resource planning.
2. Predicts the hydrological impacts of permafrost changes to inform management and adaptation strategies.
3. Provides innovative thermosyphon technology to communities to preserve or rejuvenate essential permafrost supporting infrastructure.

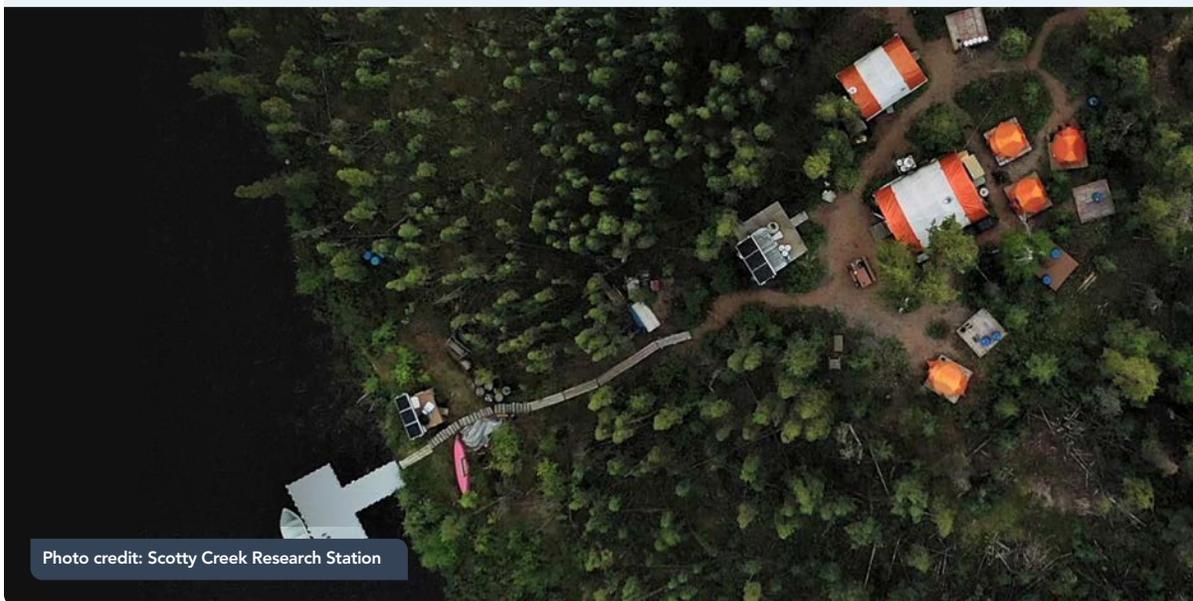


Photo credit: Scotty Creek Research Station

The Scotty Creek Research Station in Northwest Territories is a hub for scientific observation and community engagement in the Dehcho region.



SUPPORTING THE NEXT GENERATION OF ARCTIC RESEARCHERS

ARCTICNET TRAINING FUNDS

ARCTICNET STUDENT ASSOCIATION

Photo credit: Andreeanne Beardsell

ARCTICNET TRAINING FUNDS

ArcticNet's focus on the next generation of Arctic experts includes the HQP on its funded projects, their northern counterparts, and a focus on improving training and education, and collaboration opportunities for those from the North and the South.

HQP were hard-hit by the COVID-19 pandemic. Of over 400 HQP surveyed in April 2020, almost 70% (n=305) were being impacted by COVID-19, with the main impacts including significant delays to their projects (n=131) and necessary changes to their initial research objectives (n=94). To achieve its mission of training the next generation of Arctic researchers, ArcticNet adapted its training program to support HQP in this new environment.



ETHICAL RESEARCH TRAINING FUND

An integral part of the training for northern scientists must include an awareness of northern cultures and the conduct of research in an ethical way. This year, ArcticNet launched its Ethical Research Training Fund to support ArcticNet HQP and Network Investigators with up to \$200 each to enroll in online courses that focus on these areas of ethical conduct and cultural awareness. This new program aligns with ArcticNet's new Equity, Diversity and Inclusion Strategy and had deep impacts for ArcticNet HQP and Investigators.

In addition to the fund, suggested courses and resources are identified on our Training Fund webpage, with support and ideas included from ArcticNet's Inuit and Territorial Advisory Committees. Management has flagged that investment in this program may need to increase due to the rate of enrollment and interest.

"I learned that periods of silence while talking with hunters and trappers should not be interpreted as disinterest. Rather, silence is considered a natural process of thoughtfulness for many Indigenous peoples and small talk is often thought to be unnecessary. For those that are unaware of this, responses from Indigenous peoples may be perceived as shy or uncooperative. This allows me to better understand my previous interactions with northern community members and gives me a new perspective to help build trusting and mutually beneficial relationships with the people that I collaborate with in the North."

— ArcticNet Student.

ARCTICNET TRAINING FUND & FIELDWORK SAFETY TRAINING FUND

ArcticNet's Training Fund and Fieldwork Safety Training Fund are long-standing pillars of its training program. While these programs were put on hold due to COVID-19, they will return to operation when in-person training and fieldwork activities are safe.

The ArcticNet Training Fund supports the training of ArcticNet graduate students and northern students within national and international field schools, courses or institutes. The ArcticNet Training Fund covers 75% of the participation cost of the student up to a maximum of \$5K per application.

ArcticNet is committed to achieving health and safety excellence in all activities and operations conducted as part of its funded projects. The ArcticNet Fieldwork Safety Training supports Network Investigators and their graduate students, postdoctoral fellows, and staff participate in safety courses pertaining to fieldwork carried out as part of their ArcticNet funded projects. The Fund will cover 75% of the total cost of an individual's participation in a course, including course fees, travel and accommodations, up to a maximum of \$3K per application.





Photo credit: Cyril Aubry

ARCTICNET STUDENT ASSOCIATION

ASA ArcticNet Student Association

The ArcticNet Student Association (ASA) brings together undergraduate, Masters and PhD students from across Canada studying the Arctic. With support and close collaboration with ArcticNet, the ASA is run by students and for students. This gives the executives of the ASA the opportunity to build leadership capacity and provide training opportunities for the next generation of Arctic researchers.

This year, the ASA ran a widely attended, ongoing webinar series to connect with the broader early career researcher community about career opportunities after graduation. The ASA also successfully translated Student Day into a virtual format and engaged over 300 participants. They worked in partnership with the four Inuit Research Advisors (IRAs) across Inuit Nunangat. Student executives and IRAs co-facilitated workshops dedicated to each Inuit region as well as Yukon that explored how to appropriately engage with communities.





MOBILIZING, TRANSFERRING AND EXCHANGING KNOWLEDGE

ARCTICKT PORTAL

ARCTIC CHANGE 2020

ARCTICNET IN THE NEWS

Photo credit: Martin Fortier



ARCTICKT PORTAL

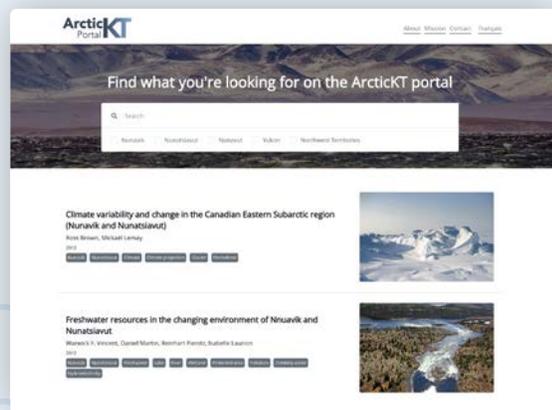
Recognizing the overlapping and interconnected nature of changes in the Arctic region, ArcticNet brings together a broad range of research spanning across the Arctic and northern regions of Canada and the world. Within its Core Research Program, ArcticNet has expanded its scope to encompass the Yukon and the continental regions of the Northwest Territories and Nunavut. This change is reflected in the creation of the Western Subarctic Integrated Regional Impact Study (IRIS) 5 region which includes the continental Canadian Arctic and Subarctic and its peoples and the establishment of a steering committee to determine the diverse topics that will be covered in the IRIS 5 report.

ArcticNet is pleased to launch its new “Arctic Knowledge Transfer Portal” or “ArcticKT Portal” this year. This new knowledge mobilization tool exemplifies ArcticNet’s commitment to adopting innovative approaches to increase and accelerate knowledge transfer in support of climate change adaptation and mitigation, and sustainable development in the north. The fully web-based, dynamic, editable online portal allows end-users of research to search within our report database for specific topics, to have access to different ways of conveying the information (scientific reports, science briefs, videos, etc.), and to access direct links to related information.

THE ARCTICKT PORTAL IS A HUB FOR ARCTIC RESEARCH KNOWLEDGE TRANSFER WHICH:

1. Consolidates the knowledge mobilization of leading national and international Arctic research programs into a dynamic portal to help inform adaptation and the sustainable development of the Canadian and circumpolar Arctic.
2. Transforms existing and future assessments into living, online, searchable documents that will connect users to sources and experts for direct queries.
3. Builds new bridges and coherence between academic and government research efforts in the Arctic.

ArcticKT Portal



ARCTIC CHANGE 2020

Arctic Research Together



Arctic Change 2020 participants:

1900+

Northern participants:

327

The ArcticNet Annual Scientific Meeting is the leading pan-Canadian gathering of Arctic researchers, stakeholders and rights-holders in Canada's top research clusters and is the hub for multidisciplinary Arctic research in Canada. Held every three years in different Canadian locations, the Arctic Change conference takes an international approach to the ArcticNet Annual Scientific Meeting and invites the global community to bring diverse perspectives.

2020 was a year like no other for Arctic research, and the Arctic Change conference was no exception. The international conference shifted to a virtual setting with the global COVID-19 pandemic, with **1900 attendees** tuning in online from across Canada and around the world, making this the world's largest Arctic research meeting. This year included **327 Northern participants**, the most representative Arctic Change conference yet.

Participants watched more than **346 presentations**, joined in live question and answer sessions and online chats with panelists and speakers, connected to each other on the virtual conference platform, and more than **5207 live streamed the plenaries**. During the week, sessions and conference events were viewed more than **25K times**. View our highlights video to enjoy the best of Arctic Change 2020: [highlight video](#).

The scientific programming demonstrated the commitment to research excellence displayed by ArcticNet's membership, with sessions covering a wide range of important topics in natural sciences, social and health sciences, engineering, and knowledge transfer and co-production. International panels discussed subjects ranging from how to tailor polar weather and climate information to address diverse user needs; community-based monitoring programs; transportation and infrastructure; changing ecosystems and environments; to traditional knowledge inclusion. The resounding success of this year's virtual format set a new standard for inclusion, diversity, representation and accessibility. Diverse international partners have reached out to ArcticNet post-conference to learn how to organize such a dynamic and impactful virtual conference.



To better understand the pervasive effects of COVID-19 on northern research, Dr. Samantha Burke, ArcticNet postdoctoral fellow, reached out to stakeholders from various backgrounds to participate in a video interview compilation. In the video, we heard from students, professors, government scientists, Northerners and Indigenous research partners about the challenges, successes, and lessons that can be learned from this unprecedented event. The [video](#) aired during our Arctic Change 2020 meeting.

Thanks to a partnership with Arctic Science Journal (ASJ), the abstracts from all oral and poster presentations during Arctic Change were published in the [Arctic Change Book of Abstracts](#).



“So lucky to have participated in virtual ArcticNet this year #AC2020 I learned about really interesting research in, and out, of my field. But most importantly I listened to important Indigenous voices on knowledge incorporation, supporting youth, and inclusion in science!!”

— Arctic Change 2020 Conference Attendee

“I’ve been to Arctic research events all over the world, but ArcticNet is the only event that makes a real, visible effort with real, visible results to get Northerners attending. I love going—it always feels like the beginning of the holiday season.”

— Enooyaq Sudlovenick, ArcticNet Student Association President and PhD student, Centre for Earth Observation Science (CEOS)



INCLUSION IN NORTHERN RESEARCH INITIATIVE

Arctic Change 2020 brings together the diverse Arctic research community, including participants from across sectors, research disciplines, and vast geographies. Ensuring the principles of Equity, Diversity and Inclusion (EDI) are integrated throughout is an integral part of the Arctic Change conference.

In an effort to implement these principles, ArcticNet partnered with the [Inclusion in Northern Research Initiative](#) to present Vox Pops: vignettes which tell the stories of members of the Arctic research community in their own voices. Over a six-month period, the Inclusion in Northern Research Initiative engaged dozens of youths, Elders, and researchers from across the Canadian North and South to record short videos answering questions about inclusion. These videos project premiered at Arctic Change 2020 and grew into an online discussion including more than 100 people across 35 countries. This conversation about inclusion in the research community continued with a series of interdisciplinary dialogues about inclusion, one of which was screened at Arctic Science Summit Week virtually from Lisbon, Portugal in March 2021.





Photo credit: Jean-Sébastien Moore

ARCTICNET IN THE NEWS

*ArcticNet continued to mobilize scientific results and stories of the important work being undertaken by its researchers with the end-users and the general public through media engagement. In the 2020/21 fiscal year, ArcticNet was mentioned in **572 media articles** and ArcticNet Network Investigators were mentioned in **1,317 media articles**, an increase of 23% over last fiscal year. ArcticNet also continued to grow its social media presence and engagement, connecting with an audience of over 6800 on Twitter.*

Publication Highlights

ArcticNet's commitment to advancing the principles of Inuit self-determination in research, including knowledge co-production and equal authorship, is apparent in publications of ArcticNet's research activities. Of particular interest this year, the open-access Arctic Science special issue "[Knowledge Mobilization on Co-Management, Co-Production of Knowledge, and Community-Based Monitoring to Support Effective Wildlife Resource Decision Making and Inuit Self-Determination](#)," led by ArcticNet Researcher Dr. Lisa Loseto offers insights into knowledge co-management and co-production in the Arctic. This publication, featuring 11 papers and one editorial, draws from sessions and workshops at the 2017, 2018 and 2019 ArcticNet Annual Scientific Meetings and covers a range of topics including:

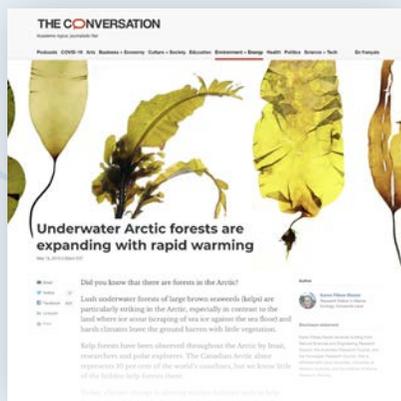
- › Wildlife co-management,
- › Meaningful engagement with Inuit communities,
- › The incorporation of Indigenous Knowledge in research.



Publications in this special edition were widely shared and had a significant impact in the Arctic research community. The article “[Decolonizing research with the Sikumiut model](#)” authored by Katherine Wilson, Trevor Bell, Andrew Arreak, B. Koonoo, D. Angnatsiak and Dr. Gita Ljubicic was ArcticNet’s highest impact stories during the 2020/21 fiscal and reached an audience of 103 million. The Sikumiut model (meaning “people of the ice” and the name of SmartICE’s Inuit management committee) describes a way for Inuit and non-Indigenous researchers to work together to support Inuit self-determination in research.

ArcticNet Core Research projects were also widely shared through the media. The project *ArcticKelp* with ArcticNet Co-Scientific Director Dr. Archambault published a story in [The Conversation](#) about the how changes in the Arctic environment shape impact kelp forests, for example how melting sea ice allows for more light to shine through to Arctic oceans and kelp forests to grow more lush. This text was translated into four languages and reached more than **128K readers**. The project was also highlighted in [Canadian North’s inflight magazine](#).

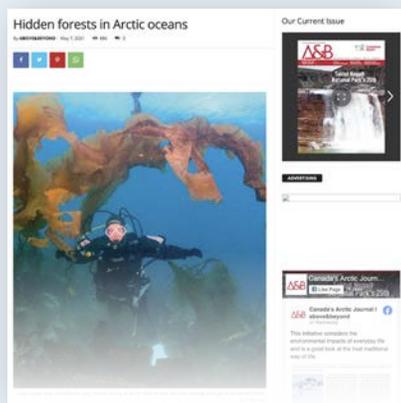
ArcticNet also continued to connect with the ArcticNet community through the publication of its biannual newsletter, publishing fall 2020 and spring 2020 editions. [ArcticNet Magazine](#) shares stories of ArcticNet researchers, high-impact research results, and other important updates from across the region.



The Conversation



ArcticNet Magazine



Canadian North's Inflight magazine



“Decolonizing research with the Sikumiut model”



PARTNERING WITH ARCTICNET

INUIT AND INDIGENOUS PARTNERSHIP

INTERNATIONAL COLLABORATION



Photo credit: Martin Fortier

Connecting to a network of trailblazers

ArcticNet is a truly pan-Canadian network with strong international connections, reflecting the global dimension of Arctic issues. ArcticNet is a hub for Arctic research in Canada, bringing together diverse communities, people, organizations, governments, and industry partners.





Photo credit: Eric Loring

INUIT AND INDIGENOUS PARTNERSHIP

Inuit and Indigenous partnership is a key pillar underpinning all of ArcticNet’s activities. This includes, in particular, strong relationships between ArcticNet and the organizations that comprise its Inuit and Territorial Advisory Committees.

The successful launch of the ground-breaking North-by-North Program this year is a testament to the strong foundation of these partnerships. Organizations representing the four Inuit land claim regions: the Inuvialuit Regional Corporation, Nunavut Tunngavik Inc., Makivik Corporation, Kativik Regional Government, and the Nunatsiavut Government, led the development of the newly launched Inuit Nunangat Research Program (INRP) under the North-by-North Program. The INRP was supported by a close working partnership between ArcticNet, Inuit Tapiriit Kanatami (ITK), and Inuit Circumpolar Council Canada (ICC), who worked closely to map together cultural viewpoints of Inuit within the rigour of Tri-Council funding.

The successful Arctic Change 2020 (AC2020) conference was enriched by a close partnership with the Inuvialuit Regional Corporation. The Inuvialuit Regional Corporation sponsored and managed virtual cultural activities, which included an online sewing circle closing out each day of the conference during which an Elder shared stories. Conference feedback noted that this was deeply meaningful to those who participated.

Through its Core Research Program, the Network engages **60 Indigenous partners** in **48 communities** across all provinces and territories. As part of the ongoing work with, by and for northern communities, a fifth IRIS was created covering western subarctic continental Canada and its northern First Nations and Métis Nation communities.





Photo credit: Wilson Cheung

INTERNATIONAL COLLABORATION

Recognizing that the changes occurring in the Arctic region expand beyond Canadian borders, ArcticNet works hard to build close collaborations with diverse Arctic research stakeholders globally.

This year, the Network signed an official Memorandum of Understanding with the Terrestrial Multidisciplinary distributed Observatories for the Study of Arctic Connections (T-MOSAIC) at Arctic Science Summit Week 2021 in Lisbon, Portugal in an event hosted by the Ambassador of Canada to Portugal. This agreement promotes scientific cooperation between the organizations, and encourages the exchange of knowledge and creation of synergies in Arctic research between facilities, researchers and nations. Participants included the Portuguese Minister of Science, Technology and Higher Education; the President of the Portuguese Science and Technology Foundation (FCT); the President of the International Arctic Science Committee (IASC); the Directors of Polar2E, Institut nordique du Québec (INQ) and Centre d'études nordiques (CEN); and the Executive and Scientific Directors of ArcticNet.

"ArcticNet continues to grow the Network far beyond Canadian borders. This partnership will strengthen the quality and reach of Arctic science for Canadian and international researchers alike," said Christine Barnard, Executive Director of ArcticNet.

ArcticNet's close partnership with the [CCGS Amundsen](#) has continued to provide a platform for international research collaboration on a diversity of projects. The CCGS Amundsen has collected more seabed mapping data in the Canadian Arctic than any other platform or organization combined and is a critical resource for advancing science in the region. Dr. Jean Carlos Montero Serrano's "Mapping the Arctic Seafloor" project collects and maps information on the Arctic seafloor from aboard the CCGS Amundsen to support safe navigation through northern waterways. Data collected from this project also feeds into the [Nippon Foundation-GEBCO Seabed 2030 project](#), a collaboration between the Nippon Foundation of Japan and the [General Bathymetric Chart of the Oceans \(GEBCO\)](#) of Britain which aims to map the entire ocean floor in the next nine year, and the related [International Bathymetric Chart of the Arctic Ocean \(IBCAO\)](#) projects, which represent the global authority on ocean depth measurement.



ArcticNet continued to invest in strengthening existing international collaborations this fiscal year as well, including as a partner or collaborator in the following initiatives:

- › The ArcticWeb network: conducting long-term multidisciplinary research on Arctic continental ecosystems and the impacts of climate change on food webs, led by Dr. Pierre Legagneux.
- › The Arctic Research Icebreaker Consortium of Europe ([ARICE](#)) initiative: bringing together experts from six Arctic countries to assemble a time series of Arctic marine vegetation, involving ArcticNet researchers Dr. Geoffroy, Dr. Archambault, Dr. Jean-Carlos Montero-Serrano, Dr. Jean-Éric Tremblay, Dr. Babin and Dr. Gary Stern.
- › The [Arctic Science Partnership](#): facilitating collaboration and integration of climate, cryosphere, ecosystems, and human-interaction research, monitoring and education, involving ArcticNet researchers Dr. Archambault, Dr. Babin, Dr. Tremblay, Dr. CJ Mundy, Dr. Zou Zou Kuzyk, and Dr. Krause-Jensen.



Photo credit: Martin Fortier



GOVERNANCE AND MANAGEMENT

ONGOING COMMITMENT TO EQUITY

FROM KNOWLEDGE TO POLICY

Photo credit: Brendan Malley

Well versed from an intensive first six months of leadership, the three new ArcticNet Directors are steering the Network through a myriad of initiatives with agility and vision.

At the highest level of governance, the Board of Directors underwent several changes. The new Board Chair, Dr. Donna Kirkwood, was nominated and elected in September, following the passing of Mr. David Thomas. The Board also renewed its Network Investigator representative, Dr. Melissa Lafrenière, a Board member since 2016. Melissa was graciously thanked for her devotion and important contributions. She was replaced by Dr. Milla Rautio, Canada Research Chair in Boreal and Polar Aquatic Ecology at UQAC. Dr. Rautio was elected in February 2021 as the new Network Investigator Board Member. Cedar Swan, CEO of Adventure Canada, was also elected as a member in March 2021, bringing more than 20 years of industry experience to the table which will enriching the Board's strategy development, regenerative thinking, and creative problem-solving capacity. Early in fiscal year 2021/2022, a postdoctoral fellow at the University of Ottawa, Dr. Jean Holloway, was also welcomed as the new Early Career Researcher (ECR) Board Member. This will provide the Board with insights and perspectives from an ECR's point of view, in addition to helping ArcticNet branch out to national and international arctic science initiatives. This addition to the Board will diversify ArcticNet's Board member composition with the inclusion of an early career researcher perspective.



ONGOING COMMITMENT TO EQUITY

This year, ArcticNet put its strong commitment to Equity, Diversity, and Inclusion (EDI) into action in various ways:

The Network developed and implemented an ArcticNet [EDI Strategy](#) to establish a framework guiding all ArcticNet activities and within the broader network. The strategy was developed with the support of an EDI consultant and reviewed by our newly formed EDI committee composed of Indigenous people, elders, youth, consultants, and researchers. The process of writing this strategy was informed by a survey conducted among our diverse members, interviews, and literature reviews. Following this release, ArcticNet is working to develop Key Performance Indicators (KPIs) to closely monitor the Network's evolution in breaking down barriers to ensuring inclusive and safe research environments. These KPIs will be released in fiscal 2021-2022 and several federal agencies are knocking on ArcticNet's door to inspire their practices from our work.

ArcticNet's [Code of Conduct during Events](#) was also reviewed to reflect and influence best practices. This policy ensures an inclusive and respectful environment for all registrants of ArcticNet online or in-person events, including the Annual Scientific Meeting. It aims to uplift the diverse perspectives brought together by the ArcticNet community.



ArcticNet has also taken the leadership in writing a common, international Arctic Research Code of Conduct, aiming to provide a common baseline of expected and unacceptable behaviour in remote field environments (field stations, research vessels, etc.). This year, 18 national and international organizations have committed to collaborate on this initiative.





Photo credit: Siri Uldal



FROM KNOWLEDGE TO POLICY

ArcticNet strategic planning and partner engagement has started with an aggressive strategic planning timeline, active partner engagement, and facilitated retreats to advance transformation plans of ArcticNet into a sustainable organisation post Networks of Centres of Excellence (NCE) funding, ArcticNet’s current primary funding source.

To support leadership in this strategic planning endeavour, a Transformation Committee was officialised on March 31 and is composed of a subcommittee of the Board. Finally, as part of the strategic planning process, ArcticNet is leading a Canadian Council of Academies (CCA) assessment on the state of the Arctic research in Canada. ArcticNet is engaging with key players who will help define the lines of inquiry of the report and identify potential partners, co-sponsors, and collaborators which will serve as the foundation for ArcticNet’s strategic plan.

The ArcticNet Secretariat now boasts a second hub at the University of Ottawa, supporting Co-Scientific Director Dr. Jackie Dawson. Strategically located to work closely with Inuit organizations and government departments in Ottawa, this will be critical in developing key partnerships and advancing ArcticNet’s strategic planning into the future.

The ArcticNet Data Management Policy (ADMP) was outdated, with the last update dating back to 2011. Globally, governments and research funders recognize the value of research data and the need for policies to enable excellence in data management and access to data emanating from research. Given the Tri-Agency expectation for the research funded with their dollars to be performed ethically and that research results are made as accessible as possible, ArcticNet must provide its researchers with clear guidelines and facilitate their access to databases and repositories. With this in mind, ArcticNet has drafted an updated ANDMP. Feedback from Indigenous, national and international data experts (The [Canadian Integrated Ocean Observing System](#), the [Canadian Consortium for Arctic Data Interoperability](#), and International Polar Data Management Committee members) was compiled and integrated. The Research Management Committee (RMC) has reviewed this policy, and it was approved by the Board of Directors in June 2021. The Data Management Policy can be found here: [ArcticNet Data Management Policy](#). In partnership with the Portage Network, the New Digital Research Infrastructure Organization, Mitacs, and Dalhousie University, a data intern will be hired to revise the data management plans submitted by researchers in their progress reports.



ARCTICNET PEOPLE

ARCTICNET SECRETARIAT STAFF

ARCTICNET BOARD OF DIRECTORS

ARCTICNET ADVISORY COMMITTEES

ARCTICNET STUDENT ASSOCIATION
EXECUTIVE COMMITTEE

Photo credit: Douglas Noblet



ARCTICNET SECRETARIAT STAFF



Dr. Philippe Archambault, Co-Scientific Director

Dr. Philippe Archambault has been a valuable member of ArcticNet for most of the Network's history, beginning as a Network Investigator in 2007. Beginning April 1, 2020, he has been able to bring this depth of experience to his new role as ArcticNet's Co-Scientific Director alongside Dr. Jackie Dawson. As Co-Scientific Director, Dr. Archambault provides scientific leadership and strategic direction to the network and co-chairs ArcticNet's Research Management Committee.

Based at Université Laval, Dr. Archambault is a professor in biological oceanography studying the interaction between human activity and environmental change, and the impacts on biodiversity and the benthic environment. A renowned Arctic researcher, Dr. Archambault is the co-leader for ArcticNet's "ArcticKelp" project along with Dr. Karen Filbee-Dexter, examining the fate of kelp forests in a rapidly changing Arctic. Combined with Inuit knowledge of the coasts, Dr. Archambault's work helps to fill a critical gap in our assessment of a rapidly-changing Arctic marine environment.

Dr. Philippe Archambault brings a wealth of research leadership experience, including Director of the Fonds de Recherche du Québec – Nature et technologies (FRQNT) Innovative Network Notre

Golfe, Co-Director of the priority on Ecosystem Functioning and Environmental Protection and Institut Nordique du Québec and member of the steering committees and advisory committees for the Natural Sciences and Engineering Research Council (NSERC) Canadian Healthy Ocean Network (CHONe), FRQNT Network Québec Océan, the International Scientific Committee, Ocean Network Canada, and President of the 4th World Congress of Marine Biodiversity 2018 to the ArcticNet leadership.

Dr. Archambault recognizes the critical role networked research plays in facilitating this important work.

"You cannot work by yourself in the Arctic. It's too expensive and difficult. Network collaboration gives you far more than the sum of its parts."

Building from his research and leadership expertise, Dr. Archambault is well poised to lead ArcticNet towards a sustainable future.





Dr. Jackie Dawson, Co-Scientific Director

Dr. Jackie Dawson is a multidisciplinary Arctic expert who brings a broad understanding of Arctic issues to her role as ArcticNet Co-Scientific Director alongside Dr. Archambault. Beginning this new role April 1, 2020, Dr. Dawson co-chairs ArcticNet’s Research Management Committee and provides scientific leadership and strategic direction to the network.

As a geography professor at the University of Ottawa, holder of the Canada Research Chair in Environment, Society and Policy, and leader of the University of Ottawa’s Environment, Society, and Policy Research Group, Dr. Dawson studies the human dimensions of environmental change in the Arctic. With a wealth of experience working with coastal communities around the world and stakeholders across the Arctic including shipping, tourism, government agencies, and Inuit organizations, Dr. Dawson’s work plays a critical role in positioning Canada as a global leader in Arctic oceans governance.

Dr. Dawson leads the “Arctic Corridors and Northern Voices” project at ArcticNet, which won the highly prestigious and competitive Governor General Innovation Prize this year for its important work combining Inuit Knowledge with ground-breaking scientific research. In her research and

leadership at ArcticNet, Dr. Dawson emphasizes the critical role of working in partnership with northern stakeholders, including communities, industry and government to understand the implications of a rapidly changing Canadian Arctic.

As an elected fellow of the prestigious College of the Royal Society of Canada, the Global Young Academic and the Royal Canadian Geographic Society, and serving on the Canadian Council of Academies Scientific Advisory Committee and the United Nations Decade of Ocean Science Arctic Task Force, Dr. Dawson bring a wealth of experience to her leadership of ArcticNet.

“The best kind of knowledge creation is that which is done collectively and that which draws on multiple sources and multiple types of knowledge. You only make excellent research better by working together.”

With Dr. Dawson’s leadership and guidance, ArcticNet is well equipped to face the challenges and opportunities of the rapidly changing Arctic region.





Christine Barnard, Executive Director

Dr. Christine Barnard is a bilingual northern research and infrastructure executive with more than 15 years of leadership experience in Arctic and northern research networks. As the Executive Director of ArcticNet since 2019, Christine leads the team of professional staff to support, promote and develop Arctic and northern research. Christine has steered ArcticNet into a new phase of its mandate, focusing on efficient and sound management, empowering northern communities and strengthening national and international partnerships that bring Canada's Arctic expertise to the world.

Dr. Barnard brings a wealth of senior leadership experience managing the research and infrastructure program at the Centre d'études Nordiques (CEN) at Université Laval, a collective of over 300 multidisciplinary scientists. She co-developed research stations with Inuit communities and managed millions of dollars in infrastructures funds. She has served and currently serves on numerous national and international boards and

advisory committees, including the Canadian Consortium for Arctic Data Interoperability, the Board of Directors for the Canadian Network of Northern Research Operators, and the Hudson Bay Consortium Steering Committee.

In her leadership of the Network, Dr. Barnard brings a passion for empowering northern communities and developing collaborative partnerships to the forefront.

"ArcticNet is a meeting place for innovative and multidisciplinary research. By working together and combining diverse approaches, we are able to meet the complex challenges in the rapidly changing Arctic."

Under Dr. Barnard's leadership ArcticNet is well poised to continue generating and sharing the knowledge needed to equip Canadians for a rapidly changing Arctic.

Dr. Pascale Ropars

Science Manager

Alexa Reedman

Research and Partnerships
Manager

Natalie Desmarais

Finance and
Administration Manager

Charlee Heath

Communications and
Events Officer

Shirin Nuesslein

Inuit Research Advisor
Coordinator

Marc-André Ducharme

Scientific Coordinator

Claude Levesque

Finance and Research
Management Assistant

Christine Demers

Executive Assistant



ARCTICNET BOARD OF DIRECTORS

The **Board of Directors** is responsible for the overall governance of the network and acts in accordance with the By-Laws of ArcticNet Inc. A majority of Board members are senior officials of organizations other than Network Member Institutions, coming from Inuit organizations, government, industry, non-governmental organizations and not-for profit organizations. Subcommittees of the Board of Directors include the Executive Committee, the Audit and Finance Committee, the Nomination and Governance Committee, and the Transformation Committee.



ArcticNet Board of Directors

Dr. Donna Kirkwood

Chair of the Board of Directors

Dr. Brendan Kelly

Executive Director, Study of Environmental Arctic Change (SEARCH) Program

Dr. Digvir Jayas

Vice-President (Research and International), University of Manitoba

Dr. Martin Fortier

Executive Director, Sentinel North

Cedar Swan

Chief Executive Officer, Adventure Canada

Dr. Milla Rautio

Professor, Université du Québec à Chicoutimi

Natan Obed

President, Inuit Tapiriit Kanatami

Guy Levesque

Associate Vice-President (Research Support and Infrastructure), University of Ottawa

Lisa Koperqualuk

Vice-President (International Affairs), Inuit Circumpolar Council Canada

Dr. Jean Holloway

Postdoctoral Fellow, University of Ottawa and Chair of the Canadian National Committee of the Association of Polar Early Career Scientists (APECS) *elected fiscal year 2021-2011*

Dr. Jackie Dawson

Co-Scientific Director, ArcticNet

Dr. Christine Barnard

Executive Director, ArcticNet

Dr. Philippe Archambault

Co-Scientific Director, ArcticNet

Observer:

Dr. François Santerre

Networks of Centres of Excellence, NSERC Senior Program Manager





Photo credit: Martin Fortier

ARCTICNET ADVISORY COMMITTEES

ArcticNet's governance structure includes the leadership and engagement of Inuit from regional, national and international representative bodies at all three levels of governance. The Inuit Advisory Committee (IAC) includes membership from the Inuit Research Advisors (IRAs) from Inuvialuit Settlement Region (ISR), Nunavut, Nunavik and Nunatsiavut as well as the Directors of Environment and/or Wildlife from each of the four Inuit Land Claims Organizations. Senior advisors from Inuit Tapiriit Kanatami (ITK) and Inuit Circumpolar Council (ICC) Canada also sit on the committee as observers.

The Directors from the four Inuit Land Claims Organizations and senior advisors from ITK and ICC also sit on ArcticNet's Research Management Committee (RMC). The President of ITK, Natan Obed, and the Vice President of ICC Canada, Lisa Koperqualuk, are both members of ArcticNet's Board of Directors and the newly formed Transformation Committee. This ensures that Inuit voices and direction are a part of all aspects of ArcticNet's programming and research funding, reflecting the principles of the National Inuit Strategy on Research (NISR).



Inuit Advisory Committee

Carla Pamak

Chair, Inuit Research Advisor,
Nunatsiavut

James Bolt

Inuit Research Advisor, Nunavut

Kendra Tingmiak

Inuit Research Advisor, Inuvialuit
Settlement Region

Lucy Grey

Inuit Research Advisor, Nunavik

Jenn Parrott

Director of Innovation, Science and
Climate Change, Inuvialuit Regional

Corporation

Jean Allen

Senior Research Advisor, Nunavut
Tunngavik Inc.

Michael Barrett

Associate Director, Kativik Regional
Government

Gregor Gilbert

Director of Environment, Wildlife and
Research, Makivik Corporation

Rodd Laing

Director of Environment, Nunatsiavut
Government

Eric Loring

Senior Policy Advisor, Inuit Tapiirit
Kanatami

Stephanie Meakin

Senior Science Advisor, Inuit
Circumpolar Council Canada

Dr. Jackie Dawson

Co-Scientific Director, ArcticNet

Dr. Christine Barnard

Executive Director, ArcticNet

Alexa Reedman

Research and Partnerships Manager,
ArcticNet

Territorial Advisory Committee

Andrew Applejohn

Senior Science Advisor, Government
of the Northwest Territories

Dr. Bronwyn Hancock

Associate Vice President (Research
Development), Yukon University

Dr. Aynsle Ogden

Director (Science and Technology
Program), Polar Knowledge Canada

Joel McAlister

Director (Western Arctic Research
Centre), Aurora College

Jamal Shirley

Manager (Research Design and Policy
Development), Nunavut Research
Institute

Dr. Jackie Dawson

Co-Scientific Director, ArcticNet

Dr. Christine Barnard

Executive Director, ArcticNet

Alexa Reedman

Research and Partnerships Manager,
ArcticNet



Photo credit: Martin Fortier



Research Management Committee

Jean Allen

Senior Research Advisor, Nunavut
Tunngavik Inc.

Andrew Applejohn

Senior Science Advisor, Government
of the Northwest Territories

Pascale Bourbonnais

Assistant Manager (Ice Services),
FedNav Limited

Dr. Dorthe Dahl-Jensen

Professor, University of Manitoba

Dr. Chris Derksen

Research Scientist, Environment and
Climate Change Canada

Michael Gordon

Director General, Kativik Regional
Government

Dr. Sherilee Harper

Associate Professor, University of
Alberta

Sarah Kalhok Bourque

Acting Director (Northern Science
and Contaminants Research), Crown-
Indigenous Relations and Northern
Affairs Canada

Dr. Susan Kutz

Professor, University of Calgary

Dr. Zou Zou Kuzyk

Associate Professor, University of
Manitoba

Rodd Laing

Director of Environment, Nunatsiavut
Government

Eric Loring

Senior Policy Advisor, Inuit Tapiirit
Kanatami

Dr. Lisa Loseto

Assistant Professor, University
of Manitoba; Research Scientist,
Department of Fisheries and Oceans
Canada

Stephanie Meakin

Senior Science Advisor, Inuit
Circumpolar Council Canada

Dr. Guillaume Nielsen

Industrial Research Chair in Northern
Mine Remediation, Yukon College

Jenn Parrott

Director of Innovation, Science and
Climate Change, Inuvialuit Regional
Corporation

Dr. Catherine Ste-Marie

Manager (Climate Change
Geosciences Program), Natural
Resources Canada

Enooyaq Sudlovenick

Ph.D. Student, University of Manitoba

Dr. Kevin Turner

Assistant Professor, Brock University

Dr. Philippe Archambault

Co-Scientific Director, ArcticNet

Dr. Jackie Dawson

Co-Scientific Director, ArcticNet

Dr. Christine Barnard

Executive Director, ArcticNet

Dr. Pascale Ropars

Science Manager, Université Laval,
ArcticNet

Alexa Reedman

Research and Partnerships Manager,
ArcticNet

Observers

François Santerre

Senior Program Manager, Networks
of Centres of Excellence

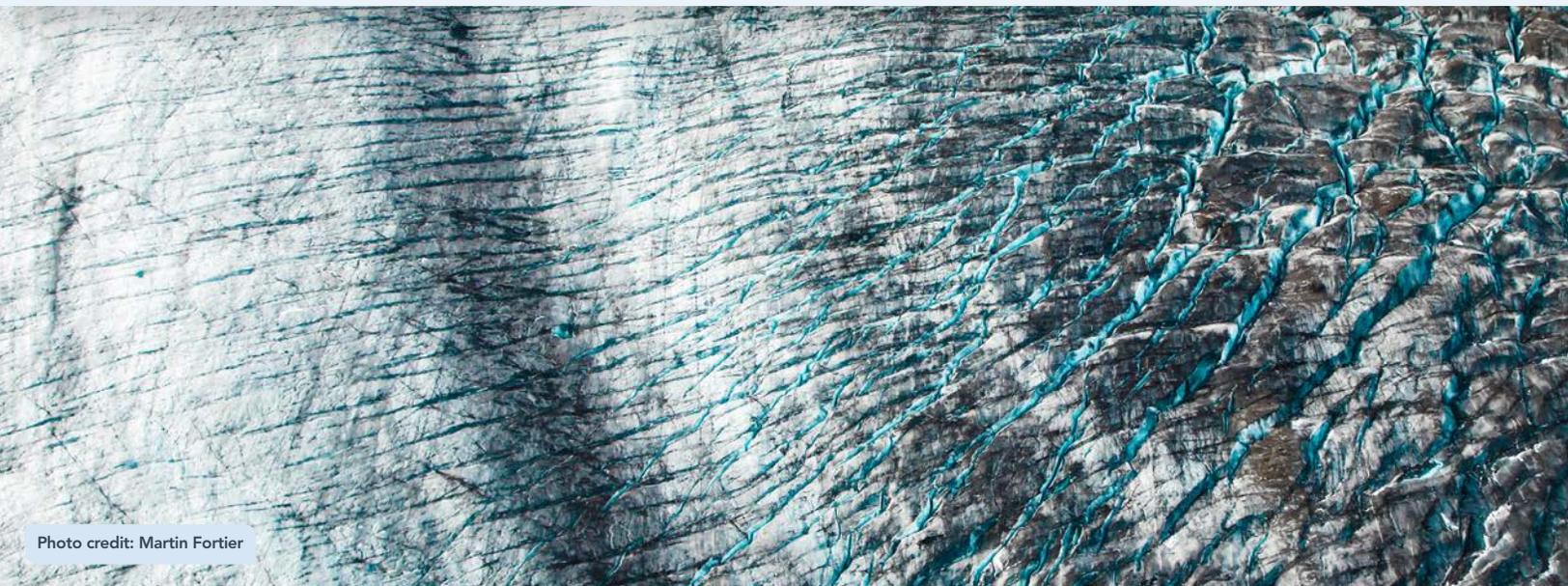


Photo credit: Martin Fortier



ARCTICNET STUDENT ASSOCIATION EXECUTIVE COMMITTEE



Enooyaq Sudlovenick, President

Enooyaq Sudlovenick has been a leader in Arctic research as a member of the ArcticNet Student Association (ASA) for three years, before taking the helm as President of the ASA this past year. As President of the ASA, Enooyaq leads a team of eight executive committee members to run initiatives by and for students, including Student Day at the ArcticNet Annual Scientific Meeting. Enooyaq also provides valuable insight into ArcticNet research activities as a member of the ArcticNet Research Management Committee.

Enooyaq is a PhD student with the Centre for Earth Observation Science (CEOS) at the University of Manitoba. Her research focuses

on integrating Western and Inuit methods of assessing whale health to produce a holistic approach to determining the health of beluga. The beluga is a valuable food source for many northern communities, who have raised concerns about the potential levels of mercury and other contaminants in whale tissue. The research team, led by ArcticNet Researcher Dr. Loseto, works with tissue samples collected from both harvested and tagged whales.

As president, Enooyaq hopes to encourage involvement with ArcticNet among new researchers, students as well as Northerners, including at the Annual Scientific Meeting

“The Arctic research world is such a small place. You hear these names over and over, but once you meet them at ArcticNet, you feel like you’ve finally connected.”

Elena Nogaeva

Vice President, Ph.D. Student, University of Eastern Finland

Carol-Anne Villeneuve

Student Day Coordinator, Masters Student, Université de Montréal

Talia Wells

Secretary, Masters Student, University of Toronto

Camille Lavoie

Education and Outreach Coordinator, Université Laval

Dr. Ariane Benoit

French Communications Officer, Postdoctoral Fellow, Université Laval

Danielle Nowosad

English Communications Officer, Masters Student, University of Guelph

Katie Manning

Northern Communication Officer, Masters Student, University of Saskatchewan



FULL LIST OF PROJECTS

CORE RESEARCH PROGRAM

NORTH-BY-NORTH PROGRAM

Photo credit: Martin Fortier

CORE RESEARCH PROGRAM

Marine Systems

A co-operative observation network to address community research priorities while studying marine biogeochemistry

Dr. Brent Else, University of Calgary

Arctic seafloor mapping data processing and dissemination

Dr. Jean-Carlos Montero-Serrano, Université du Québec à Rimouski

Community-based research on winter water modifications in the coastal domain of Hudson Bay: Implications for freshwater-marine coupling, biological productivity and the carbon cycle

Dr. Zou Zou Kuzyk, University of Manitoba

Downscaling future oceanography projections in the Canadian Arctic and Subarctic

Dr. Eric Oliver, Dalhousie University

Fate of kelp forests in a rapidly changing Arctic (ArcticKelp)

Dr. Philippe Archambault, Université Laval

GO-Ice: Glacier-Ocean-Iceberg dynamics in a changing Canadian Arctic

Dr. Luke Copland, University of Ottawa

Improved Canadian Arctic sea ice thickness estimates

Dr. Julienne Stroeve, University of Manitoba

Nutrient fluxes and living marine resources in the Inuit Nunangat

Dr. Jean-Éric Tremblay, Université Laval

Understanding climate change impacts on fish species in Ungava Bay (Kuujuuaq, Quebec)

Dr. Michael Power, University of Waterloo



Terrestrial Systems

Changing nutrients and food web health in northern lakes and rivers
Dr. Milla Rautio, Université du Québec à Chicoutimi

Developing seasonal multi-layer network models to evaluate cumulative impacts on Arctic ecosystems
Dr. Pierre Legagneux, Université Laval

Ensuring water security in the High Arctic: understanding the impacts of changing permafrost and hydrology on water quality and aquatic ecosystems.
Dr. Melissa Lafrenière, Queen's University; Dr. Scott Lamoureux, Queen's University

Long-term hydrological dynamics of Canada's largest watershed: climate controls on water quantity and quality of the Mackenzie River Basin
Dr. Jennifer Galloway, University of Calgary

Nunataryuk - Permafrost thaw and the changing Arctic coast: the MacKenzie delta and coastal waters sampling
Dr. Marcel Babin, Université Laval

Understanding and predicting future coastal climate-vegetation-cryosphere interactions in coastal Labrador
Dr. Robert Way, Queen's University



Photo credit: Martin Fortier



Inuit Health, Education and Adaptation

Community-led housing in the Canadian North: mobilizing the development of supportive housing plans through knowledge sharing and engagement in the Northwest Territories and Nunavut

Dr. Julia Christensen, Memorial University; Dr. Mylène Riva, McGill University

Effective teachers for successful students: An investigation of the preparation and resiliency of Northern educators

Dr. Ruth Kane, University of Ottawa; Dr. Kathy Snow, University of Prince Edward Island

Moving from understanding to action on food security in the Canadian Arctic

Dr. Chris Furgal, Trent University

Qanuikkat Siqinirmiut? Towards an understanding of southern Quebec Inuit health and wellbeing

Dr. Christopher Fletcher, Université Laval

Qanuilirpitaa 2017 - Understanding the determinants of health and well-being to support the implementation of population health promotion programmes, interventions, and services in Nunavik.

Dr. Mylène Riva, McGill University

Supporting humans in a thawing landscape

Dr. Fabrice Calmels, Yukon University

The Canadian Arctic One Health Network

Dr. Emily Jenkins, University of Saskatchewan; Dr. Patrick Leighton, Université de Montréal

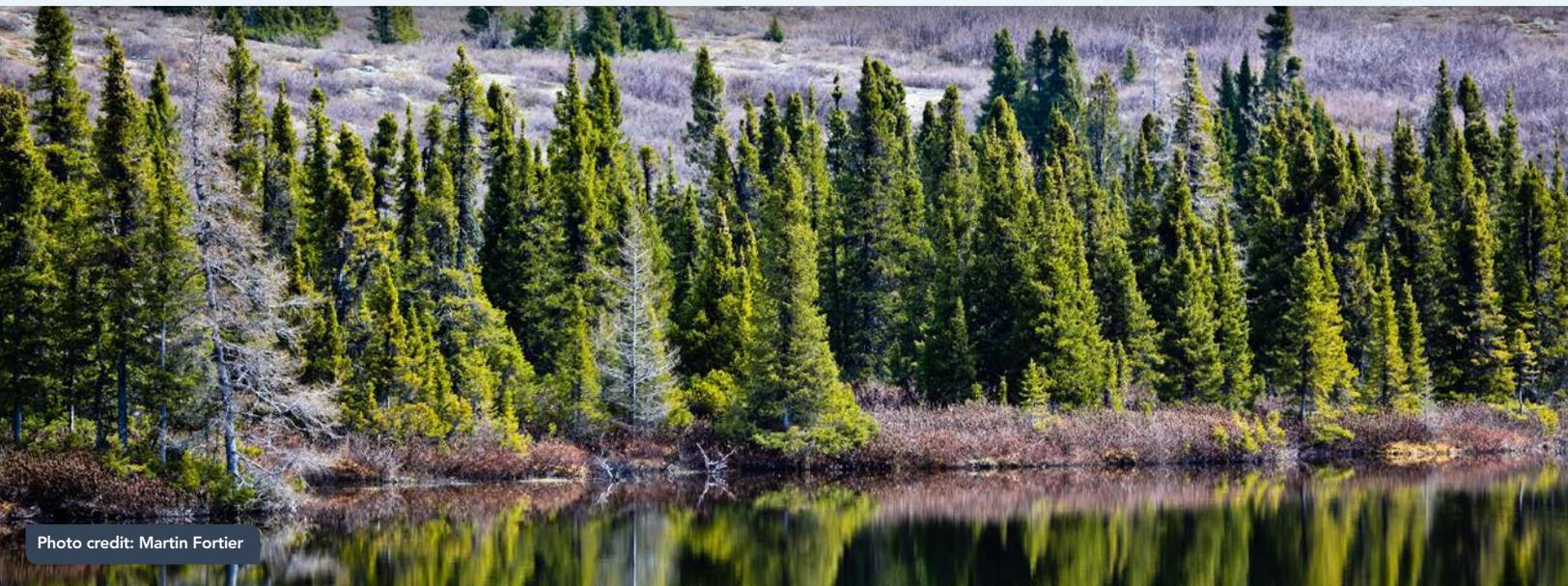


Photo credit: Martin Fortier



Northern Policy and Development

Arctic shipping and transportation in a rapidly changing Arctic

Dr. Jackie Dawson, University of Ottawa

ArcticFish: Fisheries resources in the changing Canadian Arctic Ocean

Dr. Maxime Geoffroy, Memorial University

Mitigating Arctic Shipping Risks Through Improved Prediction of Conditions Leading to Besetments in Pressured Ice in the Hudson Strait

Dr. Andrea Scott, University of Waterloo

Modernizing Ecosystem Monitoring to Support Sustainable Development in the Eastern Canadian Arctic

Dr. Paul Smith, Environment and Climate Change Canada

Supporting sustainable development of community Greenland halibut fisheries in the Eastern Canadian Arctic

Dr. Nigel Hussey, University of Windsor

Towards a marine management plan for Nunatsiavut: Coastal ecosystem research in support of priority concerns of Inuit

Dr. Tanya Brown, Fisheries and Oceans Canada; Dr. Max Liboiron, Memorial University

Understanding the effects of climate change and industrial development on contaminant processes and exposure in the Canadian Arctic marine ecosystem (ACCCPE)

Dr. Gary Stern, University of Manitoba



Photo credit: Keith Levesque



Knowledge Transfer

Dehcho Collaborative on Permafrost

Dr. William Quinton, Wilfrid Laurier

KUUK-SHIPI-SHIPU Building bridges and local capacities to track change: community-based environmental monitoring in the George River watershed, Nunavik, Canada

Dr. Esther Lévesque, Université du Québec à Trois-Rivières

Understanding Inuit community uses and needs for weather, water, ice and climate information and services

Dr. Gita Ljubicic, McMaster University

Using co-produced knowledge to understand and manage subsistence marine harvests in a changing climate

Dr. Lisa Loseto, University of Manitoba



Photo credit: Martin Fortier



NORTH-BY-NORTH PROGRAM

The Inuit Nunangat Research Program

The following Inuit Nunangat Research Program (INRP) projects were approved by the ArcticNet Board of Directors in fiscal year 2020/21 with funding start dates early in the 2021/22 fiscal year.

Study of Arctic char catches and stock assessment and winter disappearance in Tasirjuarusik
Noah Eetook, Northern Village of Kangirsuk

Walrus health and population dynamics in the context of climate change
Mathilde Lapointe St-Pierre, Nunavik Research Centre; Makivik Corporation

Marralik estuary beluga project
James May, Regional Nunavimmi Umajulirijii Katuqiqatigininga

Kaujvalliajut nillikulunnik | Getting to know little geese
Meredith Purcell, Torngat Secretariat

Assessment of the viability of goose harvesting as a response to food sovereignty in Arviat
Kukik Baker, Arviat Hunters and Trappers Organization

Hilap Aulaniit Qanuq Atayut (The World and its Connections)
Emily Angulilak, Pitquhirnikkut Ilihautiniq/ Kitikmeot Heritage Society

Health of Arctic Char near Kugluktuk, Nunavut
Eric Hitkolok, Kugluktuk Hunters and Trappers Organization

Acoustic monitoring for community empowerment at Clyde River, Nunavut
Malcolm Ranta, Ilisaqsivik Society, Ittaq Heritage and Research Centre

Water sampling to establish environmental baseline conditions for rivers supporting Arctic char near Naujaat
Johnny Tagornak, Arviq Hunters and Trappers Organization

Bringing back the beluga whale harvest in Aklavik
Michelle Gruben, Aklavik Hunters and Trappers Committee

Understanding patterns of social interactions in the Inuvialuit Settlement Region to support prevention and management of infectious diseases
Jenn Parrott, Inuvialuit Regional Corporation

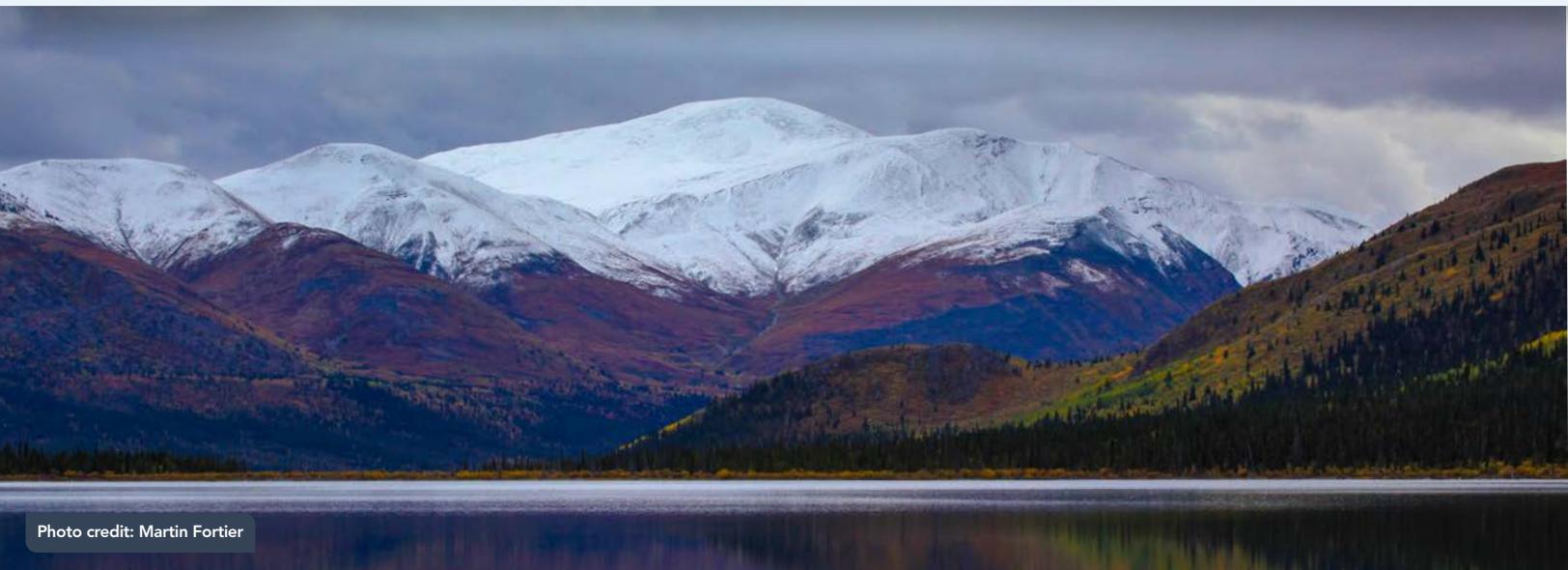


Photo credit: Martin Fortier



Northern Research Leaders Program

The researchers supported under the Northern Research Leaders Program in 2020/2021 to strengthen the evolution of the northern post-secondary institutional research pillars include:

Fanny Amyot, Yukon University

Dr. Ashlee Cunsolo, School of Arctic and Subarctic Studies, Labrador Institute

Garfield Gliff, Aurora College

Daniel Jolkowski, Yukon University

Cathy Koot, Yukon University

Cyrielle Laurent, Yukon University

Jacqueline Middleton, School of Arctic and Subarctic Studies, Labrador Institute

Dr. Nathaniel Pollock, School of Arctic and Subarctic Studies, Labrador Institute

Louis-Philippe Roy, Yukon University

Stephanie Saal, Yukon University

Jamal Shirley, Nunavut Arctic College

Maciej Stetkiewicz, Yukon University

Dr. Benoit Turcotte, Yukon University

Karyn Vanden Boomen, Nunavut Arctic College

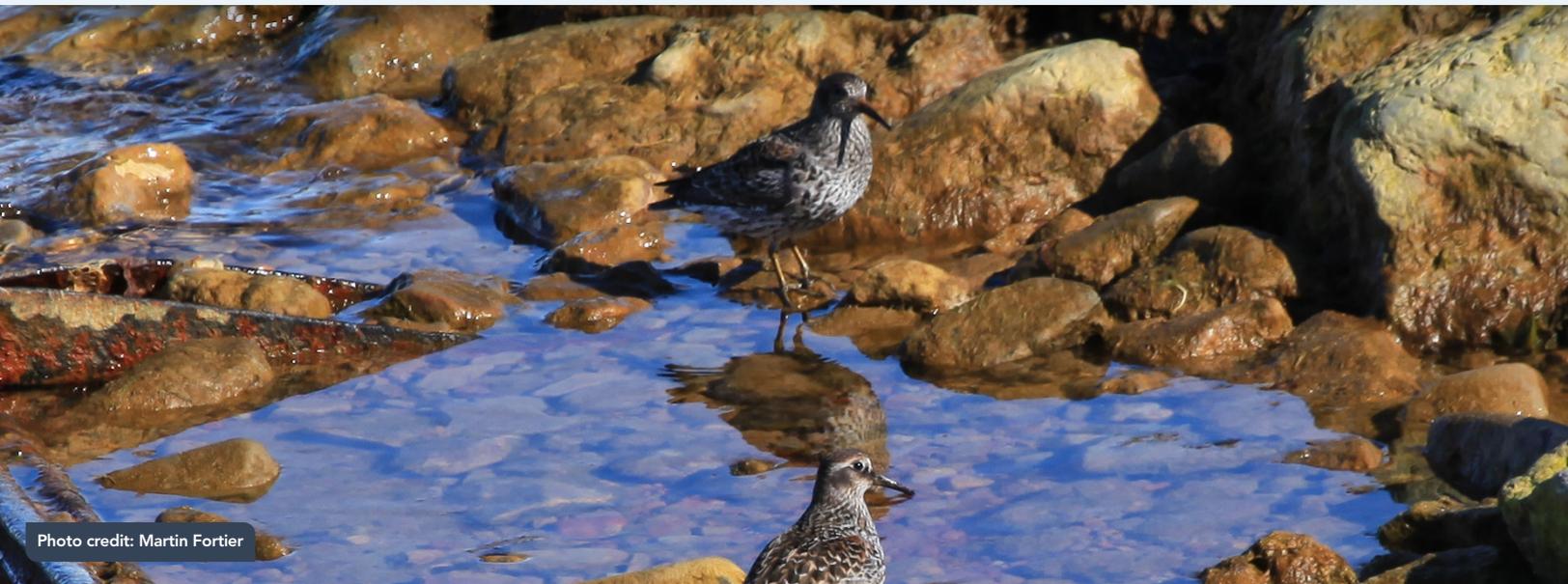


Photo credit: Martin Fortier





FINANCIAL REPORT

Photo credit: Sébastien Descamps

ArcticNet was audited in June 2021 in accordance with generally accepted Canadian auditing standards. The following figures and financial summary are prepared from the unqualified financial statements for fiscal year ending 31 March 2021.



Statement of operations

REVENUES

Networks of Centres of Excellence Grant (NCE)	\$ 5,732,263
COVID-19 Additional Funding for the NCE	\$ 1,039,200
Network partner contributions (Non-NCE)	\$ 53,050
Others	\$ 206,390
Total revenues	\$ 7,030,903

EXPENSES

Research projects	\$ 5,110,923
Research and logistics support	\$ 209,690
Knowledge mobilization	\$ 100,271
Networking and Training	\$ 308,986
Communications	\$ 67,326
Administrative Centre	\$ 821,779
Total expenses	\$ 6,618,975
Excess of revenues over expenses	\$ 411,928

Balance Sheet

ASSETS

Cash	\$ 13,713,197
Accounts receivable	\$ 23,583
Prepaid expenses	\$ 147,803
	\$ 13,884,583
Capital assets	\$ 26,628
	\$ 13,911,211

LIABILITIES

Accounts payable and accrued liabilities	\$ 220,510
	\$ 220,510

NET ASSETS

Invested in capital assets	\$ 26,628
Unrestricted Assets	\$ 13,664,073
	\$ 13,911,211



Statement of cash and in-kind contributions

	CASH	IN KIND
NCE CONTRIBUTIONS	\$ 5,710,000	\$ 0
NON-NCE CONTRIBUTIONS¹		
Provincial	\$ 439,532	\$ 217,993
Federal ²	\$ 2,590,508	\$ 1,508,419
University	\$ 499,041	\$ 1,639,325
Industry	\$ 13,000	\$ 161,600
Other	\$ 1,805,800	\$ 2,066,448
	\$ 5,347,881	\$ 5,593,785
TOTAL NCE AND NON-NCE	\$ 11,057,881	\$ 5,593,785

¹Certain funds contributed by Network Partners to support research projects are forwarded directly to researchers and are not managed by the ArcticNet Administrative Centre.

²These federal contributions do not include contributions received from the Federal granting councils, the Canada Foundation for Innovation and Genome Canada.



