

An aerial photograph of a mountain range covered in snow. A dark river valley winds through the center of the mountains. The sky is a deep blue with some light clouds. The overall tone is cold and majestic.

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

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Le réseau de centres d'excellence ArcticNet a été incorporé en tant qu'organisme à but non lucratif sous le nom « ArcticNet inc. » en décembre 2003.



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Corporate Profile

Understanding the present transformation of the Arctic environment and anticipating its consequences is one of the great challenges faced by Canadians, the Canadian government and the national and international scientific communities. In Canada, climate warming will have tremendous environmental, socio-economic and strategic consequences that will be felt first and most severely in arctic communities and regions.

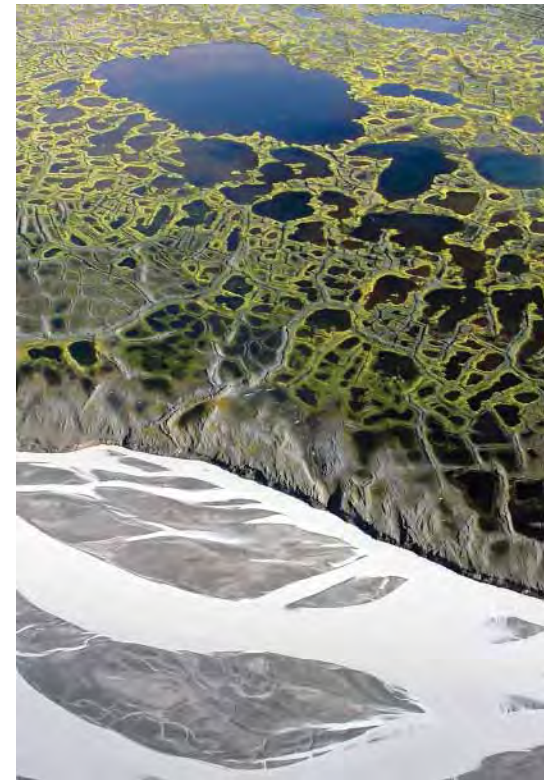
ArcticNet brings together scientists and other experts in the natural, human health and social sciences with their partners in Inuit organizations, northern communities, governments and the private sector to help Canadians prepare for the impacts and opportunities brought by climate change and modernization in the Arctic. Over 150 ArcticNet researchers and 600 graduate students, postdoctoral fellows, research associates and technicians from 30 Canadian universities, 8 federal and 9 provincial departments and agencies collaborate on 38 research projects with over 100 partner organizations from 15 countries.

Our Vision

A future where knowledge exchange, monitoring, modeling and capacity building will have enabled scientists, Northerners and decision makers to jointly attenuate the negative impacts and maximize the positive outcomes of the transformation of the Canadian Arctic.

Our Mission

- Build synergy among Centres of Excellence in the natural, human health and social arctic sciences.
- Involve Northerners, government and the private sector in the steering of the Network and scientific process through bilateral exchange of knowledge, training and technology.
- Increase and update the observational basis needed to address the ecosystem-level questions raised by climate change and globalization in the Arctic.
- Provide academic researchers and their national and international collaborators with stable access to the coastal Canadian Arctic.
- Consolidate national and international collaborations in the study of the Canadian Arctic.
- Contribute to the training of the next generation of experts, from north and south, needed to study, model and ensure the stewardship of the changing Canadian Arctic.
- Translate our growing understanding of the changing Arctic into regional impact assessments, national policies and adaptation strategies.



Message from the Chair of the Board, Scientific Director and Executive Director

Full ahead!

In 2010-2011, the Scientific and Executive Directors, the Board of Directors, the Research Management Committee, and the Administrative Centre focused their collective efforts on the renewal of ArcticNet for a second 7-year cycle. The Network further aligned its research program to support the four pillars of Canada's Northern Strategy: sovereignty, economic development, environment, and governance. The resulting Strategic Plan proposes an extremely rich and exciting roadmap for our next cycle that convinced the International Evaluation Committee and

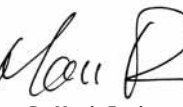
the Network of Centres of Excellence program to renew ArcticNet at the full level of support requested.

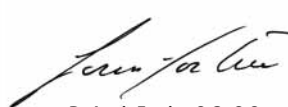
Network Investigators and their teams did not await the renewal announcement to further advance the scientific and strategic objectives of ArcticNet in many and often spectacular ways. As a reflection of the successful implementation of ArcticNet's research plan over Cycle I, ArcticNet members delivered over 1030 scientific publications, including 423 in refereed journals in the last year alone. The constant progression of ArcticNet publications illustrates the expansion of our understanding of the ongoing transformation of the Arctic and its impact on northern societies, industries and economic development. ArcticNet's seventh Annual Scientific Meeting (ASM2010) attracted over 550 participants and showcased 150 oral presentations and 170 scientific posters from all fields of Arctic research, reflecting the tremendous research effort supported by ArcticNet and the highly multidisciplinary nature of its program.

The two new Canada Excellence Research Chairs (CERC) funded under the aegis of ArcticNet quickly recruited their teams and started to contribute to the Network's research program and the development of new international partnerships. At the Centre for Earth Observation Science (CEOS) at the University of Manitoba, a whole new floor was added to the Wallace Building to welcome Søren Rysgaard's CERC on Arctic Geomicrobiology and Climate Change and its new team of young Arctic professors, many trained as part of ArcticNet. CEOS, the Greenland Climate Research Centre and the University of Aarhus, Denmark, have




Mr. Bernie Boucher,
Chair of the Board of Directors


Dr. Martin Fortier,
Executive Director,
Vice-President and COO


Dr. Louis Fortier, O.C., O.Q.
Scientific Director,
President and CEO

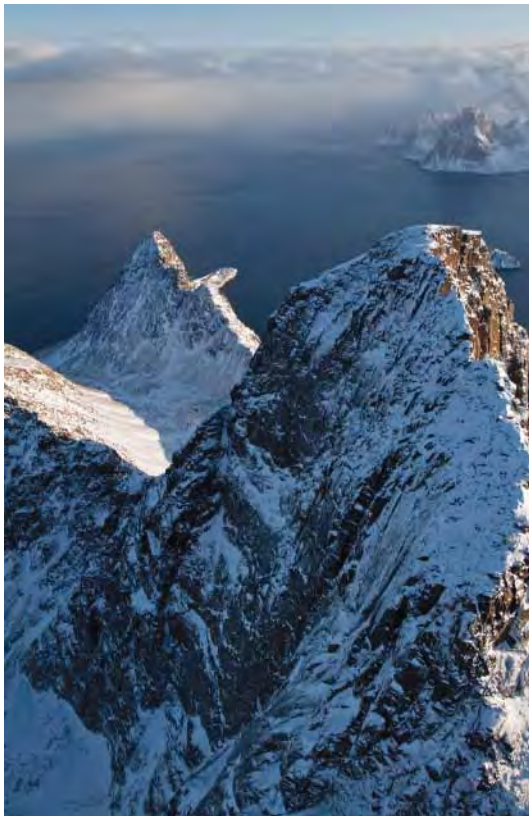
entered in a new Arctic Science Partnership (ASP) that will see close integration of their research programs in Arctic marine, terrestrial, atmospheric, social science, health, education and outreach. ASP members will share data, collaborate on joint field programs, jointly hire research scientists and allow for the free flow of students between Denmark, Greenland and Canada.

At Université Laval, over 500 m² of laboratory, workshop and office space were completely renovated and equipped with state-of-the-art scientific instrumentation thanks to a CFI grant to greet Marcel Babin's CERC on the Remote-Sensing of Canada's New Arctic Frontier. Prof. Babin's team uses ocean color to track the response of pelagic ecosystems to sea ice reduction and the warming of the surface layer of the Arctic Ocean. In parallel with the development of the CERC, the Canada-France CNRS Unité Mixte Internationale Takuvik at Université Laval welcomed its first contingent of 8 French specialists of the Arctic who now collaborate closely with their Canadian counterparts in the study of marine and terrestrial ecosystems. The new CERCs are major new elements in the ongoing efforts of ArcticNet to encourage and nurture new international collaborations between Canada and other Arctic countries.

The year 2010-2011 also saw the continuation of major research partnerships with the oil and gas sector in the Beaufort Sea. These partnerships, which the Standing Committee on Fisheries and Oceans of the Commons qualified as "exemplary", are helping us assess the technical challenges and environmental baselines in an area awarded for exploration drilling at the edge of the continental shelf in the offshore Beaufort Sea. Building on the capacity and expertise they developed in the Beaufort Sea over the last decade, ArcticNet researchers were successful at securing funding for research projects that form the core of the new Beaufort Regional Environmental Assessment (BREA)



In 2010-2011, over \$1,000,000 was allocated towards 12 new ArcticNet research projects in human health and social sciences. ...[T]hese exciting new projects brought 35 new Network Investigators and dozens of graduate students to ArcticNet.



multi-stakeholder initiative to gather new information vital to the future management of the region. ArcticNet researchers will receive over \$5M over the next 4 years (2011-2015) to lead four of the currently funded BREA research projects, with three of them conducted as part of the ArcticNet annual expedition to the Beaufort Sea onboard the CCGS *Amundsen*.

In 2010-2011, over \$1,000,000 was allocated towards 12 new ArcticNet research projects in human health and social sciences. Covering topics such as K-12 and higher education, arctic shipping, sovereignty, food security and industrial development, these exciting new projects brought 35 new Network Investigators and dozens of graduate students to ArcticNet. Providing major insights on the causes and consequences of the difficult transition of Inuit to modernity, these projects are now included in the core NCE funded research program for Phase III of ArcticNet (2011-2015).

The Integrated Regional Impact Study (IRIS) process, which is at the core of the trans-sector integration of the research program of ArcticNet, came of age in 2010-2011. IRIS 4 (eastern sub-Arctic) made major progress towards the publication of its first assessment for Nunavik and Nunatsiavut. IRIS 1 (Western High Arctic) and IRIS 2 (Eastern High Arctic) advanced their first

assessment through meetings with stakeholders and initiating the redaction of chapters. The ArcticNet IRIS process is attracting increasing international attention as a tool to inform policy and decision at the regional scale. As well, the ArcticNet-CCIN Polar Data Catalogue has now entered a new phase, moving from metadata to actual data, in its evolution towards a state-of-the-art geo-referenced data retrieval system to answer the needs of Arctic scientists and stakeholders.

Over the last year, ArcticNet maintained a high presence in national and international media. From migration of Arctic birds to disintegrating ice shelves, many projects led by ArcticNet network investigators received intense media coverage, raising Arctic climate change research awareness in millions of viewers and readers worldwide. Over 135 articles featuring ArcticNet research were distributed by international, national and northern media and published in many countries including Canada, France, Thailand, the UK, and the USA.

By all measures, the efforts invested in the successful renewal of the Network in 2010-2011 have not slowed the continuous progresses of ArcticNet but, on the contrary, helped focus the Research Program, revise the Strategic Plan, spur the establishment of the CERCs, consolidate our unique partnership with Inuit, and accelerate the development of the IRISes. The Network's Strategic Plan contemplates seven years of intense trans-sector research in support of the sustainable development of the Canadian North. Thanks to ArcticNet and the long-term logistical and financial support it provides, Canadian specialists, their international collaborators, their Inuit allies and their partners in the private sector have never been in a stronger position to address the many challenges raised by the changing Arctic.

Message from the Co-Chair of the Board

As we move fully into the renewal of ArcticNet programming the Arctic continues to experience unprecedented environmental, social and economic change. For the indigenous peoples who live in the Arctic this requires the breadth and depth of our traditional knowledge, resilient capacity and adaptive ability to ensure we meet these changes head on and continue to thrive. To the northerners who have come to live in the Arctic they bring a passion for the land and peoples, and valuable contributions to knowledge and decision making. These newcomers are a new and growing group, who bring with them economic opportunities for communities and different visions of the Arctic. In years to come we will look at how we have worked together, how we have shared knowledge, and respected each other's views and aspirations. ArcticNet has and will continue to play a significant role in this process.

Since concerted efforts by all ArcticNet partners, managers and students resulted in successfully securing the renewal of ArcticNet to 2018, Inuit, government, industry and academic partners alike have the important task to advance the state of knowledge of the Canadian Arctic.

The renewed ArcticNet has matured to look beyond defining the issue to providing knowledge for addressing the challenges and exploiting the opportunities. ArcticNet has evolved to be more responsive to the concerns and needs of the communities and will continue to do so. Projects of particular importance to Inuit in the areas of human health, education and social and political

science are progressing agreeably. These projects will contribute to the body of knowledge required to be more responsive and timely in our ability to understand and address paramount questions relating to Inuit health, governance, human rights, and education for example. They are a facet of the human element of the program that is coming to the fore as we work towards the most effective utilization of the important knowledge gained from the hard work that has been done to make positive differences in the lives of Inuit, northerners, Canadians and others the world over. As we have come to understand the important role the Arctic plays in global climate cycles and regulation, the work we do is of benefit to all of humanity. We are encouraged by the stronger partnerships struck between ArcticNet research teams and Inuit on specific issues such as education– we know that full participation in emerging new Arctic education strategies will be a critical factor. In working together, we can anticipate important outcomes that will provide tools to help Inuit improve education rates from high school and post-secondary programs and fully contribute to the understanding of the Arctic.

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Mr. Duane Smith,
Co-Chair of the Board of Directors and
President of Inuit Circumpolar Council
(Canada)

Inuit, the ArcticNet administration and other partners are already preparing visions on the considerable legacy that ArcticNet could and should leave as both a model of partnership, respect, patience and understanding, and a driver of science in the Arctic.

As the last of the International Polar Year results are tabulated, calculated and analyzed we find a niche for ArcticNet to continue to build bridges between disciplines, to integrate different forcers of change in the Arctic and to provide a foundation for building partnerships between researchers, communities, and countries.

In recent years, the program has been internally promoting the development and production of Regional impact Assessments (RIAs) via the Integrated Regional Impact Studies (IRIS) framework established by the network. Despite the varying approaches taken by IRIS teams, a common necessity for each IRIS is the guidance of Inuit that ensures the RIAs are relevant tools for policy and decision makers in the Canadian Arctic. To this end, Inuit have been duly involved in consultations and workshops of the various IRISs that are advancing toward RIAs. The network anticipates the release of the first Regional Impact Assessment report that will be made available by IRIS 4.

In addition to its excellent natural scientific program, ArcticNet has been investing in knowledge-gathering that strives to incorporate local or traditional knowledge also known in parts of the Arctic as Inuit Qaujimajatuqangit. The recognition, acknowledgement, and inclusion of all knowledge available, including that which is held in our Inuit communities, has been applied where possible by a small number of researchers working in the realms of health, social and political science — we anticipate and hope this will continue to grow. Although there exist uncertainties within the research community about traditional knowledge and the process of incorporating it into western (or we like to say southern) science, Inuit are doubtless about its value and contribution to complement other forms of information that will serve to mitigate and adapt to environmental and social change. I encourage inclusion and innovation through the incorporation of traditional knowledge as a complementary data set where possible and appropriate.

We have embarked on the new, but final phase of funding for the network. However, that does not mean there is no long-term vision. Inuit, the ArcticNet administration and other partners are already preparing visions on the considerable legacy that ArcticNet could and should leave as both a model of partnership, respect, patience and understanding, and a driver of science in the Arctic. The vision is a kaleidoscope of products, from research infrastructure to human resources, but also a legacy of knowledge and understanding that reflects the needs of stakeholders.





Renewal of ArcticNet for a Second Funding Cycle (2011-2018)

"Year after year, ArcticNet researchers continue to navigate across the vast and often harsh conditions of the Canadian Arctic and sub-Arctic to gather information on the effects of climate change and how to best develop and protect northern communities. This research is invaluable and has been applied by many stakeholders involved in the future of Arctic development, including industry partners and regulators, policymakers as well as local populations."

— Suzanne Fortier, Chair of the Networks of Centres of Excellence Steering Committee and President of the Natural Sciences and Engineering Research Council of Canada.

On 15 September 2011 in Quebec City, the Honourable Christian Paradis, Minister of Industry and Minister of State (Agriculture), announced an additional \$67.3 million in funding to ArcticNet for its next seven-year cycle (2011-2018). At \$9.61 million per year, this grant represents 100% of the funding requested in our renewal application and constitutes an increase in funding of 47% compared to our first funding cycle. It is the largest funding renewal for the Networks of Centres of Excellence (NCE) program to date.

ArcticNet would like to thank all of its members and partners for their continued support and collaboration. We look forward to working with you during this exciting next cycle of Arctic research excellence and networking.



From left to right: Martin Fortier - Executive Director, ArcticNet; Denis Brière - Rector, Université Laval; The Honourable Christian Paradis - Minister of Industry and Minister of State (Agriculture); Suzanne Fortier - President, Natural Sciences and Engineering Research Council of Canada; Louis Fortier - Scientific Director, ArcticNet; Jean-Claude Gavrel - Associate Vice-President, Networks of Centres of Excellence, Canada

"ArcticNet's work is of tremendous importance to Canadians; it promotes research excellence in natural resource management and helps us understand the effects of climate change and how we can advance the sustainable development of communities in Canada's North."

— Honourable Christian Paradis, Minister of Industry and Minister of State (Agriculture)



2010-2011 ArcticNet Research and Monitoring

ArcticNet's research program continues to support a multi-disciplinary approach to address the challenges facing the coastal Canadian Arctic, with the objective of filling identified knowledge gaps to help the formulation and implementation of policies and adaptation strategies.

Geographically, ArcticNet focuses on the coastal Canadian Arctic because the largest fraction of Arctic and sub-Arctic Canada is primarily a maritime territory; Canadian Inuit are a coastal maritime people; the coastal Canadian Arctic encompasses some of the least studied regions and ecosystems on Earth; and the logistical capacity provided by ArcticNet's core infrastructure extends predominantly to marine and coastal regions of the Canadian Arctic.

Temporally, ArcticNet addresses the present state of the coastal Canadian Arctic, and aims to anticipate the nature and magnitude of the impacts of climate warming on this region over the coming 20, 50 and 100 years. Paleoclimatic studies and Regional Climate Models reconstruct conditions in the coastal Canadian Arctic over the last several millennia to help cast present observations in an historic context. However, ArcticNet focuses on the short-term evolution of the coastal Canadian Arctic environment and the strategies needed to help communities and industries adapt to the impacts of the impending warming and modernization.

Socio-economically and culturally, Inuit and other Northerners living in coastal communities of the Canadian Arctic and their adaptation to climate warming and modernization are at the core of the Network's research program. Other users of ArcticNet deliverables include industry (oil & gas, navigation, mining, hydroelectricity), and government departments with a mandate to manage a changing Arctic.

ArcticNet is committed to providing its Network Investigators, students and partners with well-coordinated land and sea access to the coastal Canadian Arctic. Only through improved and stable access can researchers establish the long-term studies and gain observations necessary to understand and document the changes occurring in the Arctic. Through collaborative partnerships, researchers also have access to the expertise of communities, northern regional authorities and governments.

On Land

ArcticNet researchers can rely on a network of research stations and laboratories such as the ones maintained by the Polar Continental Shelf Program (PCSP), the Centre d'études nordiques (CEN), the Nunavik Research Centre, the Churchill Northern Studies Centre, the Aurora Research Institute and the Nunavut Research Institute. All of these research facilities recently underwent major renovations and extensions thanks to the Federal Government's \$85 million Arctic Research Infrastructure Fund (ARIF).

Over the last year, ArcticNet teams conducted research in each of the four Inuit regions of Canada, as well as in northern Manitoba and the Yukon North Slope. More than 125 field sites were visited, including 35 of the 53 Canadian Inuit communities. With research occurring across the Canadian Arctic and sub-Arctic, ArcticNet Network Investigators are able to better understand the variation in climate change occurring across the Arctic and the range of impacts being observed. Research conducted in and around northern communities covers a wide spectrum of health, social and natural sciences, with Network Investigators studying issues such as food security, wildlife diversity, coastal erosion, community adaptation, Inuit education, emerging infectious diseases and permafrost degradation.

At Sea

Network Investigators from various disciplines use the state of the art Canadian research icebreaker CCGS *Amundsen* as a mobile research platform to study the coastal Canadian Arctic. On 02 July 2010, the *Amundsen* left her homeport of Quebec City for a 121-day scientific expedition to Hudson Bay and the coastal Canadian Arctic. The 2010 expedition was part of ArcticNet's continued effort to maintain its network of long-term oceanic observatories and monitor the present state of the Canadian Arctic marine environment.

During the first segment of the expedition, the ship sailed over 7000 km in Hudson Bay to conduct operations at oceanographic stations and sample several river estuaries to determine how freshwater fluxes and contaminant transport affect the marine ecosystem of this gigantic inland sea. Following a mid-leg crew change in Iqaluit on 02 August, ArcticNet researchers continued

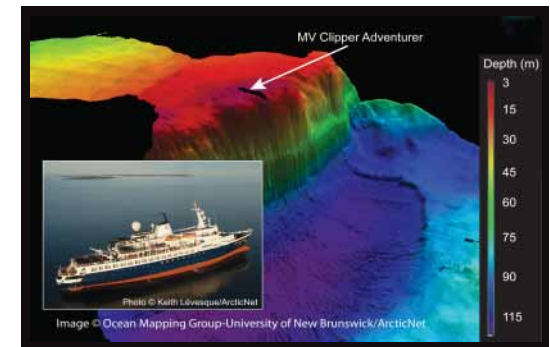
to sample during their transit north along the majestic coast of Baffin Island and then west through the Northwest Passage. As part of the annual ArcticNet Schools on Board program, 8 high school students and 3 teachers from across Canada joined ArcticNet researchers in their daily sampling activities.

Starting in Kugluktuk on 12 August, the main focus of the second leg of the expedition was to continue research collaborations with the Oil and Gas industry, established with Imperial Oil in 2009, through a new agreement with BP. During an intensive 56-day period, ArcticNet researchers and their private sector collaborators collected sea-ice, bathymetric, geophysical and biophysical data in the Beaufort Sea/Mackenzie Shelf/Amundsen Gulf region with a special emphasis placed in the exploration license areas awarded to BP and Imperial Oil by the Federal Government.

Following a final crew change in Sachs Harbour on 07 October, the *Amundsen* sailed east, conducting operations at designated stations in Prince of Wales Strait, Lancaster Sound, Baffin Bay and northern Labrador. After travelling more than 40,000 km throughout the Canadian coastal Arctic and Hudson Bay, the ship returned to Quebec City on 31 October. Altogether, ArcticNet researchers sampled at over 220 stations and, using the CCGS *Amundsen*'s extensive array of continuous samplers, collected a wealth of oceanic and atmospheric data during the entire transit.

Core Research Program

The Network's research projects are increasingly focused on Integrated Regional Impact Studies (IRISes) studying the consequences of change on the society and ecosystems of the



Rescue of the MV Clipper Adventurer

On Friday, 27 August 2010, the passenger vessel MV *Clipper Adventurer* ran aground in Coronation Gulf north of Kugluktuk, Nunavut. While conducting ArcticNet scientific operations in the Beaufort Sea, the CCGS *Amundsen* was called to the rescue, making the two-day transit east to reach the stricken vessel. The Canadian Coast Guard rescue operation in these uncharted waters was facilitated by the unique, state-of-the art multibeam sonar mapping technology mounted onboard the *Amundsen*. Having surveyed sections of the southern Coronation Gulf on previous ArcticNet expeditions and with the aid of a second high-resolution shallow-water multibeam sonar mapping system mounted on the *Amundsen*'s barge, the Captain was able to bring the icebreaker within a few nautical miles of the stranded vessel, allowing the Coast Guard officers and crew to safely and efficiently rescue its passengers and then ferry them to safety in Kugluktuk. The *Amundsen* is the only Canadian Coast Guard icebreaker equipped with a multibeam sonar. This mapping system is operated by ArcticNet researchers from University of New Brunswick's Ocean Mapping Group as part of the *Canadian Arctic Seabed: Navigation and Resource Mapping* project.



ArcticNet IRIS leaders, from left to right: Michel Allard, Université Laval; David Barber, University of Manitoba; Trevor Bell, Memorial University of Newfoundland; Gary Stern, Fisheries and Oceans Canada and University of Manitoba.

coastal western and central Arctic, eastern Arctic and sub-Arctic, and Hudson Bay. The ultimate goal of integrating research results within this framework is the production of Integrated Regional Assessments that will form a key tool for decision-makers in developing policies and strategies for an increasingly stressed Arctic system.

In 2010-2011, over \$1,000,000 was allocated towards 12 new ArcticNet research projects in human health and social sciences. Covering topics such as K-12 and higher education, arctic shipping, sovereignty, security, food safety and industrial development, these exciting new projects brought 35 new Network Investigators and dozens of graduate students to ArcticNet. Since April 2011, these projects have been included in the core NCE funded research program for Phase III of ArcticNet (2011-2015).

Each of the 38 research projects detailed below contributes to one or more of the four ArcticNet IRISes.

IRIS 1: Western and Central Arctic

Leader: Gary Stern, Fisheries and Oceans Canada
& University of Manitoba
Coordinator: Ashley Gaden

IRIS 2: Eastern Arctic

Leader: Trevor Bell, Memorial University of Newfoundland
Coordinator: Philippe Leblanc

IRIS 3: Hudson Bay

Leader: David Barber, University of Manitoba
* Tim Papakyriakou, University of Manitoba,
Acting Leader in 2010
Coordinator: Dan Leitch

IRIS 4: Eastern sub-Arctic

Leader: Michel Allard, Université Laval
Coordinator: Mickaël Lemay

ArcticNet Projects and Project Leaders:

** Newly funded in 2010*

Permafrost and Climate Change in Northern Coastal Canada

Project Leaders: Michel Allard and Wayne Pollard

How is permafrost likely to respond to a changing climate? Using regional climate models to determine ground surface temperatures, by means of current and projected climate conditions, this project monitors changes to the landscape, including the development of landforms, modification of drainage patterns, and coastal erosion. The project will provide policy makers, managers and land use planners with the tools needed to assess the impact of landscape modifications on northern communities and ecosystems.

Impact of Climate Change on Arctic Benthos

Project Leader: Philippe Archambault

Life on the ocean floor is astonishingly diverse but still poorly known in polar regions where ice cover and remoteness has restricted sampling. This project establishes benchmarks at biodiversity *hotspots*, areas with a high number of species and abundance, and *coldspots*, where opposite conditions prevail. Knowledge resulting from this research effort will provide a better understanding of how arctic benthos will be affected by climate-driven changes in oceanographic conditions and resource exploitation.

The Role of Sea Ice in ArcticNet IRISes

Project Leader: David Barber

The arctic system is changing from one dominated by multiyear sea ice to one dominated by first-year sea ice-related processes. In the next few decades, marine ecosystems will come under incremental pressure, industrial activity will increase as more exploration and development occurs, and Inuit will find it more and more challenging to use sea ice for cultural and subsistence purposes. This project provides sea ice expertise to the coordinated ArcticNet Integrated Regional Impact Studies of the coastal Canadian Arctic, supplying the required information for sound management of these issues.

Freshwater-Marine Coupling in Hudson Bay

Project Leaders: David Barber and Kevin Sydor

Climate models predict warming in the Hudson Bay watershed that may alter the amount and timing of runoff and therefore the load of suspended solids, dissolved organic matter, nutrients, and heat delivered to the Bay. The overarching objective of this project is to describe the impact of such runoff on marine processes within Hudson Bay and to examine the cumulative impacts of climate change and hydroelectric development on these processes.

Analysis of Past Hydro-Climatic

Variations in Nunavik

Project Leader: Yves Bégin

The 15 percent decrease in Central Quebec precipitation over the last thirty years could have serious socio-economic consequences as nearly 50 percent of the province's hydro-electric production comes from this area. Using an extended

network of tree-ring chronologies, the project studies temporal and geographical hydroclimatic variations over the past 250 years and, at some locations, over the last millennium at a yearly resolution. The records and the reconstructions of climatic variables will be used to better grasp the climatic variations over the pre- and post-industrial period.

Instability of Coastal Landscapes in Arctic Communities and Regions

Project Leaders: Trevor Bell and Don Forbes

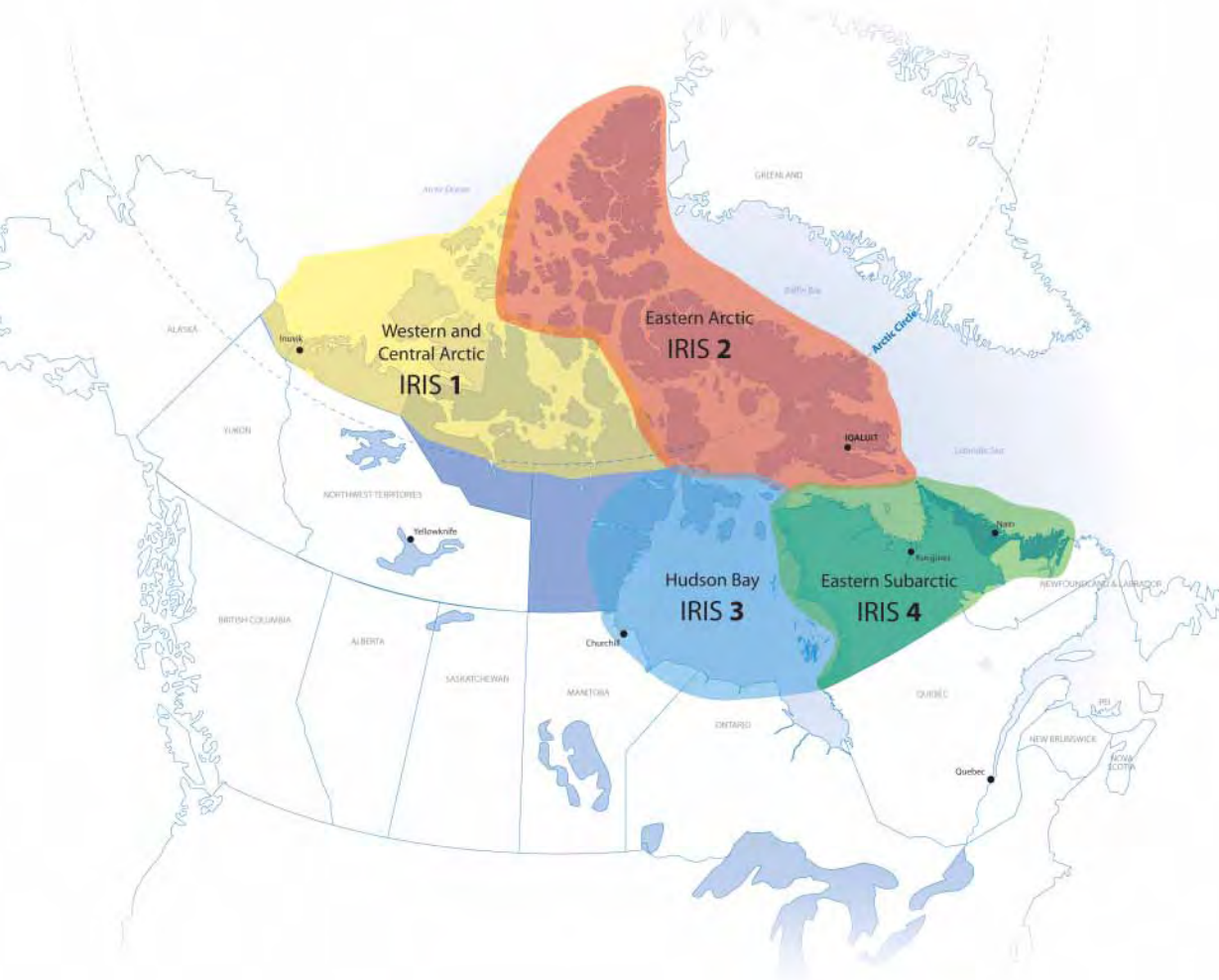
Future climate scenarios and impacts modelling predict changes in climate variables that may increase coastal landscape instability and hazard risk. Through improved understanding of changes in climate, sea level, sea ice, storms and waves, this project assesses integrated impacts on coastal landscape stability, including flooding, erosion, habitat integrity, and community vulnerability. Together with northern communities and partners, the project integrates local and external research and knowledge on climate change trends and impacts in order to promote informed choices of adaptation measures and enhanced resilience in northern coastal communities.

Effects of Climate Change on Canadian Arctic Wildlife

Project Leader: Dominique Berteaux

Many northern biological systems are undergoing major shifts related to climate change. An understanding of this transformation and its consequences is critical to anticipating ways in which negative and positive effects on wildlife populations may be mitigated or addressed. Through the implementation of a wildlife monitoring program, the project identifies the main vulner-

abilities of arctic wildlife to climate change using the collected data to analyze past and present responses of wildlife to climatic variability. Decision makers in the wildlife sector will be provided with a sound basis for developing appropriate management and adaptation strategies.



The Law and Politics of Canadian Jurisdiction on Arctic Ocean Seabed

Project Leader: Michael Byers

The possibility that the Arctic Ocean seabed contains vast deposits of hydrocarbons is attracting considerable attention. This research project focuses on several outstanding maritime boundary disputes — involving the United States, Denmark and potentially Russia — that must be resolved before Canada can submit a comprehensive package of information to the UN Commission on the Limits of the Continental Shelf by 2013. The project will analyze the legal and political differences involved in the different disputes, explore the various options for resolving them, and provide detailed recommendations.

Food Security, Ice, Climate and Community Health: Climate Change Impacts on Traditional Food Security in Canadian Inuit Communities

Project Leaders: Laurie Chan and Christopher Furgal

Collaborating with Canadian Arctic communities, this project seeks to investigate how and to what extent climate change is affecting the traditional diet profile of northern aboriginal residents presently and potentially in the future, and what implications this may have for individuals' health. Using models and qualitative approaches to integrate both scientific and traditional knowledge, the project focuses on nutrition and potential changes in nutrient intake, exposure to contaminants, and levels of food security.

Population Dynamics of Migratory Caribou in Nunavik/Nunatsiavut

Project Leader: Steeve Côté

Migratory caribou are now abundant in northern Quebec and Labrador, but declining almost everywhere else in Canada. The

factors responsible for these declines are poorly known. This project establishes how climate, population density, and industrial activities affect caribou abundance and distribution in the Arctic. Partners from government, aboriginal groups and industry will be provided with new tools to monitor the demography of caribou and improve their conservation in the face of a changing Arctic.

*** International Inuit Cohort Study:**
Developing the Next Phase

Project Leader: Éric Dewailly

This project merges the data from the major Inuit health surveys conducted in Canada and Greenland. From this new database, health indicators of global changes (environment, climate, modernization, etc.) will be extracted to show geographical differences according to regions and IRIS territories. New information will also be collected at the community level in order to understand if different infrastructure or demographic variables are associated with chronic diseases or risk factors. Finally, the project aims at organizing the follow-up of all participants starting with a new visit planned in 2012 in Nunavik.

Marine Fatty Acids in a Changing Canadian Arctic

Project Leader: Éric Dewailly

The traditional Inuit diet consists mainly of fish, marine and terrestrial mammals, and berries. Marine lipid consumption by Inuit plays an especially important role for energy intake and other critical human biological functions. A warming climate might affect the molecular composition of these lipids through changes in microalgae, the basis of the entire Arctic food web. This project seeks to understand the impact of these changes on

the health of Inuit and to orient public policies to prevent the negative consequences of these changes.

*** Integrated Analysis of Human Development
in the Canadian Arctic**

Project Leader: Gérard Duhaime

Using Inuit health survey data and the ArcticStat socioeconomic circumpolar database, this project proposes to link an integrated analysis of individual social conditions to an analysis of regional structural conditions. The project's overarching goal is to understand the adaptive capacity of Inuit regional societies.

Impacts of Global Warming on Arctic Marine Mammals

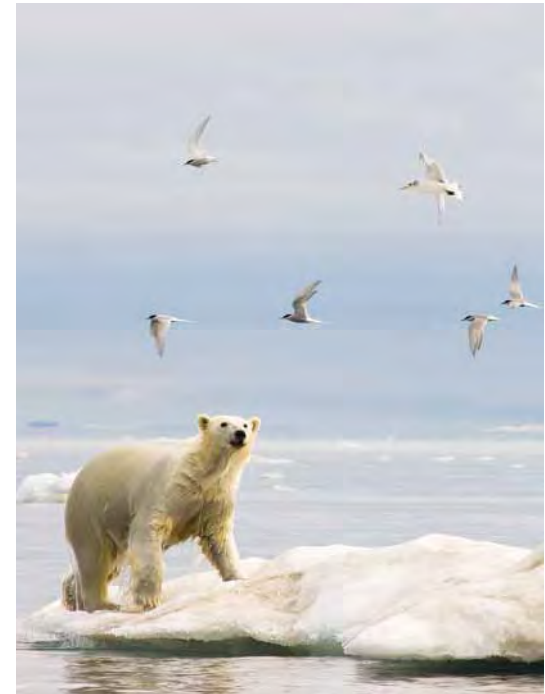
Project Leader: Steven Ferguson

Knowing how polar ecosystems may change with global warming will help develop strategies for conservation and species management. It is important to recognize the changing distribution and numbers of Arctic mammals, as Northerners depend on these species as a food source and integral part of their unique culture. This project examines global warming and its effects on water-based mammals in the Arctic. Several aspects of mammal health are studied, including diet, diseases, contaminants, and stress. Research results will help Inuit communities adapt to changes in marine mammal distribution and abundance.

*** Climate Change and Food Security
in Regional Inuit Centres**

Project Leader: James Ford

Food insecurity is a chronic problem affecting many Inuit communities and is likely to predispose Inuit food systems to the negative effects of climate change. Using in-depth case studies, this project aims to identify and characterize the vulnerability of





food systems in four regional Inuit centres to climate change as a basis for identifying adaptation entry points.

* Impacts of Environmental Change on Charr in the Inuvialuit Settlement Region

Project Leader: Christopher Furgal

This project uses both Traditional Ecological Knowledge and scientific information to develop environmental indicators for the assessment and monitoring of changes in arctic charr (*Salvelinus alpinus*) in Inuvialuit Settlement Region communities. This novel research and the outcomes of the development of effective community-based monitoring plans created in direct collaboration with Arctic community residents will generate results applicable to other northern communities facing similar changes and challenges.

* Inuit Knowledge and Geospatial Ontologies in Nunatsiavut

Project Leaders: Christopher Furgal and Tom Sheldon

This project proposes to conduct a Participatory GIS and geospatial ontology research exercise with expert knowledge holders in the Nunatsiavut Settlement Area. The goal is the development of a geospatial ontology application and interface that complements existing GIS for land-use planning, environment and development decision making as well as Inuit knowledge representation and transmission in Nunatsiavut.

* Community-Driven Research on *H. pylori* Infection in the Inuvialuit Settlement Region

Project Leader: Karen Goodman

H. pylori infection has become a major concern for many

northern communities and their health care providers. These concerns initiated a large collaborative project to investigate the health risks of *H. pylori* and develop locally appropriate *H. pylori* control strategies. This project seeks to expand these efforts to include other northern communities and ultimately to improve the success of *H. pylori* infection treatment methods, provide health authorities with information to guide relevant public health policy, and to help concerned community members understand *H. pylori* health risks.

Long-Term Observatories in Canadian Arctic Waters

Project Leader: Yves Gratton

This project will correlate sub-surface ocean properties recorded by moored instruments to satellite records of surface temperature, chlorophyll, suspended sediments and sea ice type and thermodynamic state. The objectives are 1) to provide long-term detailed observations of the ocean-sea ice-atmosphere coupling in the Canadian High Arctic, 2) to identify the oceanic/atmospheric processes underlying changes in these variables, and 3) to provide baseline physical information required to understand the complexities of physical-biological coupling in the Arctic marine environment.

Impacts of Vegetation Change in the Canadian Arctic: Local and Regional Assessments

Project Leader: Greg Henry

The tundra across the Canadian Arctic is already reacting to climate change. Northerners and scientists are observing changes, such as shrubs getting taller and more numerous. This research team studies changes to tundra vegetation near Arctic

communities across the North, including changes in the amount of berries produced each year in traditional berry picking areas. Community members are involved in designing the studies and in conducting measurements. The results will be used by communities and will contribute to national and international efforts to understand the responses of tundra ecosystems to climate variability and change.

Integrating and Translating ArcticNet Science for Sustainable Communities and National and Global Policy and Decision-Making

Project Leaders: David Hik and Christopher Furgal

This project investigates the arctic policy landscape and how ArcticNet science contributes to informed policy decisions in Canada and globally. This will be accomplished through a quantitative and qualitative analysis of the influence of ArcticNet science on arctic policy development. The conclusions from this project will allow ArcticNet to address the most effective ways to use and translate ArcticNet research results on urgent issues such as climate change into “action” or decision-making at the local, regional, national or international levels.

*** The Emerging Arctic Security Environment**

Project Leader: Rob Huebert

This project aims at a better understanding of the developing Arctic security trends in the circumpolar region, and will address these questions: (1) What are the reasons behind the new foreign, defence and security policies of the Arctic states? (2) What are the ramifications of these actions? The project will add to the public policy debate within Canada and across the circumpolar world regarding the possibilities/probabilities for conflict and

cooperation in the region. The project will also systematically (3) analyze the relationship between sovereignty, security and safety in Canadian political discourse and policy and (4) critically examine the historic and contemporary practice of Arctic sovereignty and security assertion in evolving cultural, political and spatial contexts.

The Canadian Arctic Seabed: Navigation and Resource Mapping

Project Leader: John Hughes Clarke

This project undertakes the core seabed mapping component of the ArcticNet research program. Acoustic mapping of the seabed relief, sediment distribution and shallow subsurface sediments are the prime datasets used by researchers to understand the geological processes shaping the seafloor, to assess natural hazards, hazards to navigation and coastal habitats, and to reconstruct the history of past climatic changes.

*** Adaptation, Industrial Development and Arctic Communities**

Project Leader: Arn Keeling

This project is set to engage in community-based, historical and comparative research on industrial development as a driver of social, cultural and environmental change in the Arctic. In particular, researchers will explore the cultural, economic and environmental impacts of mineral exploration and development on three Arctic communities. Ultimately, this project will be useful for communities and policy makers in assessing the potential benefits and impacts of current development proposals.





High Arctic Hydrological, Landscape and Ecosystem Responses to Climate Change

Project Leaders: Scott Lamoureux and Melissa Lafrenière
Research at the Cape Bounty Arctic Watershed Observatory, Melville Island, Nunavut, investigates how climate change affects rivers, permafrost, soils, vegetation, greenhouse gas emissions and the release of contaminants into High Arctic rivers and lakes. This integrated watershed network will provide an unprecedented understanding of the sensitivity and anticipated future effects of climate change on the High Arctic ecosystem. Impact models based on river flow and related environmental systems will be developed for scientists, Northerners and other stakeholders to identify and adapt to the impacts of climate change.

* Climate Change and Commercial Shipping Development in the Arctic

Project Leader: Frédéric Lasserre
Is Arctic shipping really going to develop as fast as generally predicted in Canada? What sectors of the shipping industry might be interested in plying a seasonal, poorly mapped, unserved northern route? Will containerized cargo liners between Europe and Asia rush to utilize the route? Asking international shipping companies these questions will enable researchers to evaluate the speed and shape of shipping development in the region.

Development of an Ocean Modelling Capacity for the Canadian Arctic Archipelago

Project Leader: Paul Myers
This project is structured around three objectives: to develop a capacity for ocean and sea ice modelling for the Canadian North and the Canadian Arctic Archipelago, to examine current ocean

transports in and out of the entire Canadian Arctic Archipelago and to quantify the processes underlying snow distribution patterns on landfast sea ice in the Canadian Arctic Archipelago.

Carbon Exchange Dynamics in Coastal and Marine Ecosystems

Project Leader: Tim Papakyriakou
Absorption and release of carbon dioxide by the oceans is one of the primary factors controlling the atmospheric CO₂ concentration, and some of the highest CO₂ uptake rates reported anywhere have been observed within the Arctic's peripheral seas. Researchers in this project undertake field studies to parameterize the effects of several factors affecting both the distribution of dissolved CO₂ in Arctic surface water and the mechanism by which the gas is exchanged with the atmosphere. Newly developed parameterizations will be implemented into a coupled atmosphere-sea ice-ocean biogeochemistry model to learn how the ocean's response to climate change and variability will affect the atmosphere-ocean cycling of CO₂.

Growth Variability and Mercury Tissue Concentration in Anadromous Arctic Charr

Project Leader: Michael Power
This project examines climate change related impacts on landlocked and migratory populations of arctic charr. Differences in total mercury accumulation rates in the two types of arctic charr will be analysed and the relative influences of diet, temperature and habitat on growth and total mercury accumulation along a north-south gradient will be assessed. An enhanced understanding will permit more accurate prediction of the effects of climate

change on the important migratory stocks of arctic charr used by Inuit in traditional subsistence fisheries. This research will also inform management decisions about the issues associated with country food consumption in the face of climate change.

Understanding and Responding to the Effects of Climate Change and Modernization in Nunatsiavut

Project Leaders: Ken Reimer and Marina Biasutti

This project addresses Inuit concerns about the impacts of climate change, modernization and contaminants on the health of marine ecosystems and communities of northern Labrador. Research will provide important insights into how the environment is changing, what it means for the long term health of marine ecosystems and how northern communities will access and manage their land and freshwater resources in the future. The involvement of Inuit, the Nunatsiavut Government and federal agencies will ensure developed adaptation strategies and policies have direct relevance for the people, industries and environment of northern Labrador.

* Improving Access to University Education in the Canadian Arctic

Project Leader: Thierry Rodon

The goal of this research project is to provide evidence-based research on Inuit participation in university education throughout Inuit Nunaat. A secondary goal is to promote a national discussion amongst providers of university programs in Inuit Nunaat, northern institutions and Inuit organizations in order to define a more coordinated effort in program delivery and curriculum development.

Adaptation in a Changing Arctic: Ecosystem Services, Communities and Policy

Project Leader: Barry Smit

This project documents the changing physical, biological and socio-economic conditions that are affecting people in the Arctic and identifies policies and strategies to assist communities in dealing with these changes. The main focus of the project involves integrating scientific and traditional knowledge of ice, permafrost, coastal dynamics and wildlife with information about community use of these ecosystem services. The overarching goal is to identify the opportunities in existing policies and co-management arrangements for adaptation strategies to help communities deal with changing conditions.

* Transience and Social Cohesion in an Arctic Community

Project Leader: Chris Southcott

Using Inuvik, Northwest Territories as a case study, the researchers, in partnership with community groups, will investigate the extent of mobility in the community, determine what the major negative impacts of this mobility are on community organizations, and discuss what can be done to mitigate these negative impacts.

Effects of Climate Change on Contaminant Cycling in the Coastal and Marine Ecosystems

Project Leaders: Gary Stern, Robie Macdonald, and Feiyue Wang
Contaminants pose a potential hazard to Arctic fish and marine mammal health, and ultimately to Northerners that consume their meat as part of their traditional diets. The research will help assess the vulnerability of coastal Inuit communities to climate change, document and project impacts of climate change on traditional food security and community health, and provide the





information required by communities, scientists and policy makers to develop adaptation strategies. Findings will help test and shape policy for the future management of contaminant emissions and long range transport to the Arctic and will support integrated ocean management programs.

Marine Biological Hotspots: Ecosystem Services and Susceptibility to Climate Change

Project Leaders: Jean-Éric Tremblay and Michel Gosselin

The microalgae growing in ice brine channels and in surface water are the source of the Arctic marine food web. Changes at the base of the food web are bound to affect the nutrition and spatial distribution of higher trophic level organisms such as seals, whales, and polar bears. This project examines how changes in the physical environment affect the productivity and species dominance of organisms, particularly in the lower part of the food web. A comprehensive synthesis of the whole Arctic marine food web will then be assembled and made available to inform stakeholders.

Freshwater Resources of the Eastern Canadian Arctic

Project Leader: Warwick Vincent

Lakes and wetlands are major ecological features of the circum-polar Arctic, and they provide many essential services including habitats for aquatic wildlife, drinking water supplies for northern residents, and water for industrial activities. The project continues and extends observations on lakes and wetlands at key sites in the eastern Canadian Arctic to identify and measure aquatic indicators of environmental change in the past and present. These studies will allow assessments of future changes in northern freshwater ecosystems to help guide the formulation of environmental management and monitoring policies.

* Inuit Qaujimajatuqangit and the Transformation of High School Education in Nunavut

Project Leader: Fiona Walton

How can Inuit educational leaders work with parents in communities to create a school system to meet the challenges of the 21st century? How can a curriculum grounded in traditional beliefs and values contribute to the personal and academic success of Inuit high school students? This project aims at exploring these questions and documenting the role of culture and language on student learning, in the hope of providing useful ideas and examples as tools for northern communities attempting transformation in local education.

Hydro-ecological Responses of Arctic Tundra Lakes to Climate Change and Landscape Perturbation

Project Leader: Fred Wrona

Significant changes in climatic regimes are expected to have far-reaching impacts on the hydrology and ecology of Arctic freshwater ecosystems. This project aims at integrating landscape-lake processes and modelling studies to improve the regional understanding of the upland tundra lakes sensitivities and responses to climate variability and change. An integrated landscape-geochemical, lake-ice, hydroecological model for Arctic systems will be developed and validated. The project will produce legacy data and products of direct benefit to the development of adaptation options for the conservation, protection and management of Arctic freshwater ecosystems.





Education and Training

ArcticNet has implemented a comprehensive training strategy to recruit and train a complete generation of researchers and technicians critical for studying and monitoring the transformation of the North. All elements of ArcticNet's proposed strategy to increase the awareness of young Canadians to Canada's Arctic dimension and to the possibilities of interesting careers in the North were implemented during Cycle I (2004-2011).

Since 2004, over 600 students and postdoctoral fellows have completed or are completing their training within the uniquely multidisciplinary, trans-sector and international context of ArcticNet. The Network currently supports over 400 graduate students and post-doctoral fellows and 175 research associates and technical staff. Whether at sea on the *Amundsen* participating in some of the largest international research projects ever conducted, on the Arctic tundra or in Inuit communities, at the Annual Scientific Meeting (ASM) and planning workshops, or attending international schools, these young researchers are immersed in trans-sector networking – working, discussing and debating with the best Canadian and foreign experts in the natural, health and social Arctic sciences. They have formed the remarkably active ArcticNet Student Association (ASA), which hosts the Student Day during the Annual Scientific Meeting as well as regional workshops to discuss how to adapt their research to Network objectives. ArcticNet's Training Fund has supported the participation of our students in international Arctic schools. The accomplishments of these hundreds of ArcticNet graduate students and post-doctoral fellows in recent years provide a positive

direction for the future of Arctic research and the management of an environment facing climate change and globalization.

Schools on Board

Initiated in the first year of ArcticNet, the Schools on Board Program offers high school students and teachers in Canadian schools from coast to coast to coast the opportunity to bridge the gap between Arctic science taught in the classroom and research conducted directly in the field. The ultimate goal of the program is to engage youth from northern and southern communities and highlight the education and career opportunities that involve studying and managing the changing Arctic environment. The main thrust of the program is the field program "onboard" the CCGS *Amundsen*. Schools are given the unique opportunity to send students and teachers to the Arctic, onboard the vessel to participate in an educational experience completely integrated into the research activities of the ArcticNet science team.

The 2010 Schools on Board Field Program experienced a very successful year during Leg 1 of the ArcticNet scientific expedition. Through collaboration with Youth Science Canada (YSC), four students were selected from the Canada Wide Science Fair program and YSC's Polar Innovation program. The remaining five spaces were allocated to selected schools. Teachers and students from schools across the country were represented, including: Inuvik (NT), Kugluktuk (NU), Rankin Inlet (NU), St. Pierre (MB), Calgary (AB), Montreal (QC), Cornwall (ON), and Toronto (ON).





"This experience has made me feel more connected to the land (nuna) and my culture."

— Student, 2010 Field Program,
Maani Ulujuk Ilinniarnvik (high school)
Rankin Inlet, NU

The field program began in Iqaluit where participants met and interacted with community leaders from the Nunavut and federal governments working in environmental management and protection, as well as community elders. Between 29 July and 15 August, the Schools on Board team accompanied ArcticNet researchers onboard the CCGS *Amundsen* through the Northwest Passage from Iqaluit to Kugluktuk. Students spent many hours working with scientists on deck during the deployment of the rosette, nets, moorings and box cores, as well as processing samples in the labs and learning about geomorphology from the seabed mapping group.

After an incredible voyage through the historic passage filled with on-deck sampling operations, scientific presentations and views of glaciers, icebergs and polar bears, the expedition ended

in Kugluktuk (NU). The participants had the opportunity to discuss their voyage with local high school students and take a final exciting trip to Bloody Falls before ending the adventure with a feast of 'country food' (caribou, charr, and bannock).

The activities of the Schools on Board program over the last year also included high involvement of program staff at the 2010 IPY Oslo Science Conference in June. This included co-chairing one of the outreach themes; one poster and two oral presentations in the outreach sessions and active involvement in the implementation of the Polar Teachers workshop and Polar Festival.

ArcticNet Student Association

The ArcticNet Student Association (ASA) continues to exceed expectations. The 2010 and 2011 Executive Committees, composed of highly motivated graduate students from across Canada, organized many outreach activities. Designed to broaden the ArcticNet student experience through the promotion of learning, leadership, research and networking, these activities included the writing of articles, the organization of regional and national meetings, and the development of partnerships.

The Sixth Annual ArcticNet Student Day

The theme of this year's Student Day was "Careers After Graduation". The impetus for this theme was driven by ArcticNet's emerging industrial partnerships, a suggestion from the RMC to focus on helping students find careers, and by demand from the student body. The keynote speaker, Dr. Jennifer Gardy, provided an excellent introduction to the theme. The student day breakout sessions were designed to help ArcticNet students understand the broad range of careers available to them. These careers were broken into four main sectors: academic employment, public sector employment, northern careers and private sector employment.

Training Fund

Well established within the Network since 2005, the ArcticNet Training Fund encourages ArcticNet students to take part in international field schools covering different axes of Arctic research. The field courses provide students with expert insight and technical training in fields ranging from glaciology and climate to satellite imagery analysis and microbial ecology. Over 50 ArcticNet graduate students have taken advantage of the training fund since its inception. In 2010-2011, seven students were granted a total of over \$20,000 to attend high level international training offered by leading Arctic researchers in Antarctica, Italy, Norway, Scotland, Svalbard and the USA.

Recognition of Excellence for ArcticNet students

W. Garfield Weston Awards

The Garfield Weston Awards for Northern Research were initiated by the W. Garfield Weston Foundation to encourage Canada's leadership in northern studies during the International Polar Year. Students are selected on the basis of academic excellence and commitment to the North. Successful recipients demonstrate an understanding of how their research contributes to northern scholarship and are willing to publicly promote the importance of tackling northern scientific challenges. ArcticNet is proud to have six of its graduate students among the eleven 2010-2011 recipients, including four of the five PhD award winners.

Doctoral Scholarships (\$40 000)

- Matthew Asplin, PhD Candidate, Geography, University of Manitoba
- Peter Fast, PhD Candidate, Biology, Université du Québec à Rimouski

- Jennifer Knopp, PhD Candidate, Environmental and Life Sciences, Trent University
- Corinne Pomerleau, Ph.D. student, Marine Biology, Université du Québec à Rimouski

Masters Scholarships (\$15 000)

- Alexandre Ancil, Masters Candidate, Wildlife Management, Université du Québec à Rimouski
- Elizabeth Miller, Masters Candidate, Physical Geography, York University

ASM2010 Graduate Student Poster Award

To encourage student research, ArcticNet holds an annual poster competition for excellence in research and presentation during its Annual Scientific Meeting (ASM). Prizes of up to \$500 were awarded to the winners of the 2010 ArcticNet Graduate Student Poster Awards.

Natural Sciences - Marine

- Marc Cadieux, University of Manitoba
- Jessy Barrette, INRS-ETE
- Tanya Brown, University of Victoria
- Anabelle Baya, Trent University

Natural Sciences - Terrestrial

- Émilie Champagne, Université Laval
- Inga May, University of Munich
- Arnaud Tarroux, Université du Québec à Rimouski
- Wendy Michaud, University of Waterloo

Health and Social Sciences

- Rudy Riedlsperger, Memorial University of Newfoundland
- Kaitlin Breton-Honeyman, Trent University
- Meghan Buckham, Trent University
- James Baker, University of British Columbia

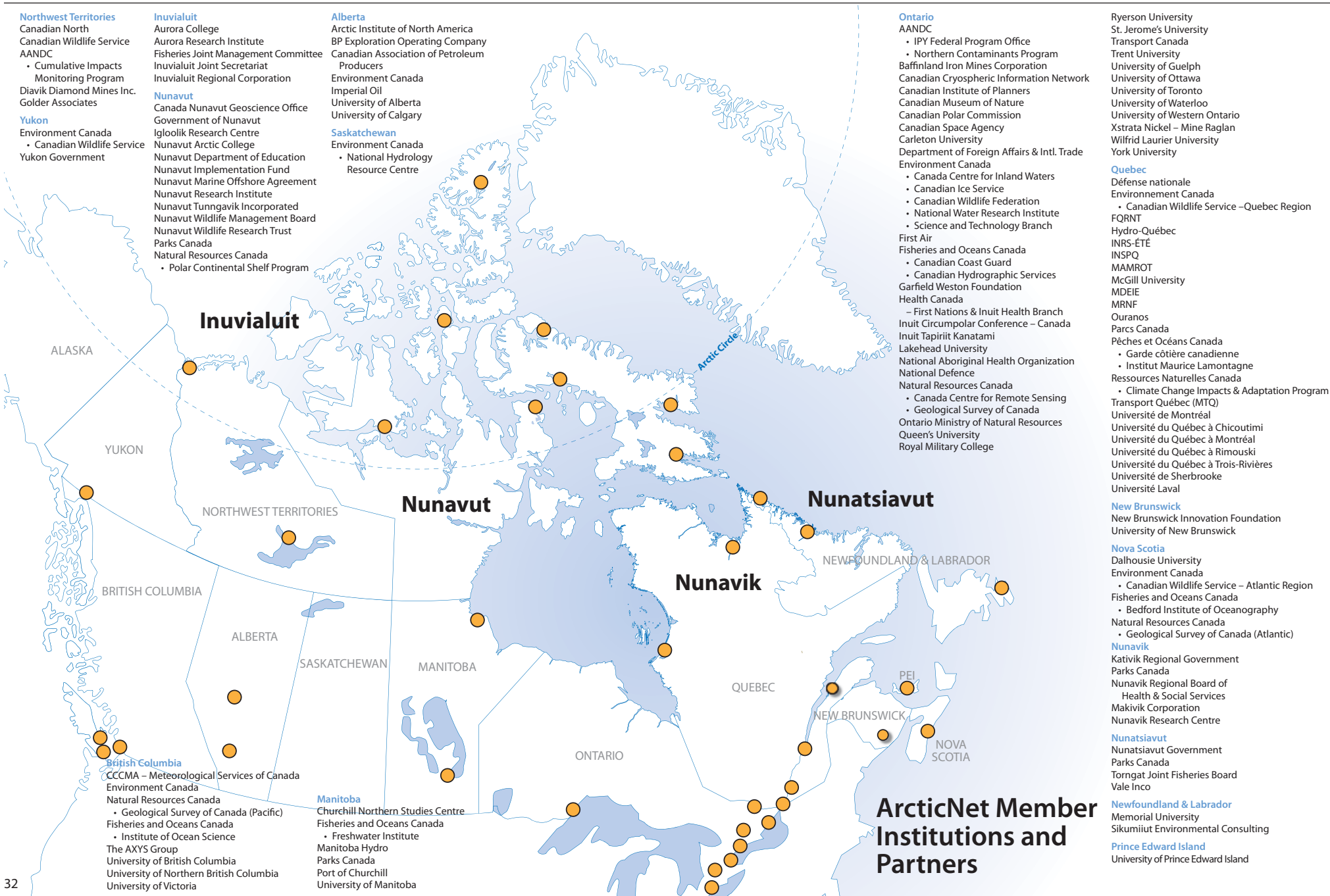
Inuit Partnership of Excellence Award

- Jennifer Organ, Dalhousie University



"If one student can bring back a deeper understanding of the scientific process, a zeal for being on the cutting edge of knowledge, we can use that energy to motivate other students."

— Teacher, Kugluktuk High School 2010



Networking and Partnerships

ArcticNet is a truly pan-Canadian network with strong international connections, reflecting the global dimension of Arctic issues. At the eve of our second funding cycle, 30 Canadian universities, 28 programs, agencies and laboratories in 8 federal departments, 18 Inuit organizations, 10 private sector partners, and 9 provincial departments and agencies participate meaningfully in the Network. These partners are distributed throughout all Canadian provinces, northern territories and Inuit Land Claim Settlement Regions, covering not only the usual along-the-US-border east-west dimension of Canada, but her south-north dimension as well. An increasing number of academic and government-based partners in the USA, Norway, France, Denmark, the UK, Spain, Russia, Japan and Germany provide ArcticNet's international facet.

Since 2004, ArcticNet has engaged Inuit directly at all levels of the planning of the research program and the strategic framework. ArcticNet collaborates closely with Inuit Tapiriit Kanatami (ITK), the Inuit Circumpolar Council (Canada) and all four Regional Inuit Land Claim organizations in developing and conducting its research program and defining its Strategic Plan. Members from all six organizations serve on our Research Management Committee and Board of Directors.

Consulting Inuit and northern stakeholders in over 50 remote coastal Arctic communities scattered over millions of km² presents important logistical and financial challenges. In an alliance with

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the Northern Contaminants Program (NCP) and the Nasivvik Centre for Inuit Health and Changing Environments, ArcticNet supports an Inuit Research Advisor (IRA) position in each of the four Inuit regions. The mandate of the IRAs includes the facilitation of community visits and consultations to present research projects to northern communities and research licensing bodies and the collection of input by Northerners into specific projects and the overall research program of ArcticNet. IRAs and Inuit members of the RMC also meet annually as members of the ArcticNet Inuit Advisory Committee, making Inuit specific recommendations with regards to the research program and priorities.

Inuit Education

Despite efforts to improve student success by reflecting Inuit language and culture in schools, Inuit K-12 graduation rates are among the lowest in Canada for aboriginal populations. Though Northern colleges provide programs in specific fields, access to post-secondary education remains extremely limited for Inuit despite some ad hoc initiatives by southern universities. Inuit are acutely aware that a common solution to several of the trials of their societies is improved access to an education system that will prepare the young generations for the specific tasks and opportunities of the ongoing transition to modernity. In 2009, several Inuit groups and organizations signed a multi-party Inuit Education Accord to establish a National Committee on Inuit Education (NCIE) with the goal of developing a National Strategy on Inuit Education. In 2010, ArcticNet supported the Literature Review and Key Evidence research component of the NCIE initiative as part of its overall research program. Inuit education was identified as a key focus of ArcticNet's 2010 call for proposals

that resulted in the funding of two new ArcticNet projects focused on Inuit education at the high-school and post-secondary level. Initiated in April 2010, these two projects are now embedded as part of the networks' Phase III research program (2011-2015).

Regional IRIS Workshops

A Regional Workshop for ArcticNet's Western Canadian Arctic Integrated Regional Impact Study (IRIS 1) was held in Inuvik, NT, from 11-15 April 2011. With over 100 people in attendance, including 30 community members, numerous presentations outlined the overview and goals of the IRIS 1 regional impact assessment as well as the research conducted by ArcticNet and its partners in the region. Information sharing was encouraged through break-out group discussions to identify regional climate change priorities and improve the overall outline of the IRIS 1 assessment. The resulting revised IRIS 1 outline is now being distributed to decision and policy makers in the Inuvialuit Settlement Region and in Nunavut to ensure that the assessment is relevant to its users and driven by the needs of the region. ArcticNet also co-funded a concurrent Community-Based Monitoring workshop organized by the Fisheries Joint Management Committee (FJMC).

Attracting the world's leading researchers and their teams to the Network

The Canada Excellence Research Chairs (CERC) program was announced in 2008 as part of the government's Science and Technology Strategy to help build Canadian expertise in strategic areas. The Arctic, with a focus on resource production, climate change adaptation and monitoring, was among the seven fields targeted by the first competition of the CERC program.

Two Arctic CERCs were funded under the aegis of ArcticNet. Professor Marcel Babin is leading the *CERC on the Remote Sensing of Canada's New Arctic Frontier* at Université Laval. The *CERC on Climate Change and Arctic Geomicrobiology* at the University of Manitoba is led by Dr. Søren Rysgaard. The CERCs are funded for the seven years corresponding to ArcticNet's Cycle II (2011-2018) and their budgets (including collateral funding) will represent an estimated injection of over \$90M into the research program of the Network. Each CERC represents the addition of a new Centre of excellence with new research programs and new researchers that complement ArcticNet's science program. Each CERC has been given the status of a full ArcticNet research project as part of Cycle II (2011-2018).

Growing International Collaborations

In past years, ArcticNet has benefited from incredible opportunities to create and strengthen its ever-growing international collaborations. Building even further on the momentum of IPY and the International Partnership Initiative (IPI) of the Network of Centres of Excellence program, ArcticNet has consolidated many partnerships that have in turn enhanced the Network's recognition and contribution at a global level. New partnerships in 2010-2011 include:

CNRS-funded Canada-France Unité Mixte internationale in Arctic Sciences

On 19 July 2010, a major and remarkably innovative international partnership was inaugurated with the creation at Université Laval of the Canada-France Unité Mixte Internationale (UMI) in Arctic Sciences funded by the French Comité National de la Recherche Scientifique (CNRS). The strategic objectives of the UMI *Takuvik*:

the international Centre for the Study and Modeling of Arctic and Subarctic Ecosystems and Geosystems are (1) to provide French polar specialists with access to the Canadian Arctic and Canada's northern research infrastructure, and (2) to enrich the ongoing Canadian effort with scientific and engineering expertise from France. It will bring in residence to Université Laval several teams of CNRS experts and technicians in Arctic sciences, each team being matched by a corresponding Canadian team. Takuvik is a unique avenue to consolidate international collaborations within ArcticNet and adds a new centre of excellence to the Network.

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Collaboration with Denmark and Greenland

The University of Manitoba's Centre for Earth Observation Science (CEOS), one of ArcticNet's major Centres of Excellence, the Greenland Climate Research Centre and the University of Aarhus, Denmark, have recently agreed to a three-way collaboration in Arctic science. The new Arctic Science Partnership (ASP) is being developed as a partnership between Canada, Greenland and Denmark and will see close integration of research programs including Arctic marine, terrestrial, atmospheric, social science, health, education and outreach through programs in Greenland and Arctic Canada. ASP members will share data, collaborate on joint field programs, jointly hire research scientists and allow for the free flow of students between Denmark, Greenland and



Held annually in early December, the conference now attracts between 400 to 900 participants annually. Opening with a dedicated Student Day, organised and led by the ArcticNet Student Association (ASA), the ASM is recognised as one of the most dynamic and multidisciplinary Arctic meetings in the world. The large participation rate of dynamic graduate students and young scientists has brought a much-needed rejuvenation to this type of meeting in Canada and to the Arctic research community in general.

ArcticNet's seventh Annual Scientific Meeting (ASM2010) was held from 14 to 17 December 2010 at the Westin Ottawa, in downtown Ottawa, Ontario. With 550 participants, ASM2010 proved to be a dynamic networking event, providing an excellent opportunity for network investigators, post-doctoral fellows,

graduate students, research staff, network partners from governments, Inuit organizations and industry, as well as board and committee members to meet face to face in the light of the latest Arctic science. More than 150 oral presentations and 165 scientific posters from all fields of Arctic research were presented during the meeting, reflecting the tremendous research effort supported by ArcticNet and the highly multidisciplinary nature of its program. The success of the Integrated Regional Impact Study (IRIS) framework was manifest during this ASM with two topical sessions entirely dedicated to the impacts of climate change in the Canadian Eastern Sub-Arctic and many productive IRIS coordination side-meetings. As evidence of a promising future for Canadian Arctic research, more than 335 people attended the Sixth ArcticNet Student Day.



Sharing Knowledge

ArcticNet research results are increasingly accessible to decision makers, fellow scientists, and the general public. Published research results also spur new and more innovative projects, and increase the possibilities for collaborations. At the community level, access to results enables individuals to make informed decisions about their environment. It also orients decision makers towards addressing the issues that Northerners deal with on a daily basis.

ArcticNet Publications

The number of ArcticNet refereed scientific publications progresses exponentially over time. This progression reflects the successful implementation of ArcticNet's research plan over Cycle I. It illustrates the expansion of our understanding of the ongoing transformation of the Arctic and its impact on northern societies and industries. This year alone, ArcticNet members delivered 1036 scientific publications, including 423 in refereed journals.

During the last year, ArcticNet teamed up with the Arctic Science and Technology Information System (ASTIS) to create a searchable ArcticNet Publications Database that describes publications from ArcticNet and its two predecessor marine research programs; the Canadian Arctic Shelf Exchange Study (CASES: 2002-2007) and the International North Water Polynya Study (NOW: 1997-2002). The database provides complete coverage of more than 1,000 refereed publications and partial

coverage of over 800 non-refereed publications. The database, available at www.aina.ucalgary.ca/arcticnet/, will be updated annually over ArcticNet's second cycle (2011-2018). ASTIS, Canada's national northern database, is a project of the Arctic Institute of North America at the University of Calgary.

Polar Data Catalogue

The wealth of knowledge and data generated by polar research must be managed to ensure and maximize the exchange and accessibility of relevant data, and to leave a lasting legacy. The Polar Data Catalogue (www.polardata.ca) is a data centre that describes and provides access to diverse Arctic and Antarctic datasets. The records cover a wide range of disciplines from natural sciences and policy, to health and social sciences. In addition to all data collected through ArcticNet, the catalogue now hosts metadata from research institutions, centres, and programs across Canada and abroad, including the Northern Contaminants Program, the Circumpolar Biodiversity Monitoring Program, and the International Polar Year Program. A geospatial search tool available to the public and researchers allows users to search for data using a web-based mapping interface, in combination with other search parameters (keywords, date, research group, etc.). Full data archiving is now being implemented and new geomatics tools are being incorporated in collaboration with the new Canada Excellence Research Chair on Remote Sensing of Canada's New Arctic Frontier. Collaborations are also underway with the GEOIDE NCE to add

Spatial Online Analytical Processing (SOLAP) capacity to the Catalogue. The Polar Data Catalogue (PDC) was developed as a collaborative effort between ArcticNet, the Canadian Cryospheric Information Network (CCIN), and the Department of Fisheries and Oceans Canada (DFO) to facilitate the exchange of information on the Canadian Arctic between researchers and other user groups, including northern communities and international programs. The management of the Polar Data Catalogue is now coordinated by the inter-agency Polar Data Management Committee, which includes representatives from CCIN, ArcticNet, Centre for Northern Studies, Northern Contaminants Program, DFO, Environment Canada and Inuit Tapiriit Kanatami.

In 2010-2011, efforts were made to establish new collaborations, to identify needs for adapting the geospatial search tool for Northerners, to develop a data archiving plan, as well as to obtain funding for the full archiving of datasets. CCIN was successful in a proposal to the Canadian IPY program and was funded to serve as a Data Center for the preservation of IPY datasets. ArcticNet formally supported this initiative as a key element of ongoing data management and evolution of PDC, and central to the new cycle of ArcticNet. Members of the Polar Data Management Committee initiated new collaborations, notably with the Circumpolar Biodiversity Monitoring Program and IPY Data Assembly Centre Network. Meetings provided opportunities to initiate and further discussions with international groups such as the British Antarctic Survey, Cooperative Arctic Data and Information Service, and Partnering Earth Observations for People Living Environmentally. We are confident these discussions will lead to increased partnership and recognition of the PDC at the international level.

Informing Policy

On 20 August 2010, Aboriginal Affairs and Northern Development Canada announced an investment of \$21.8 million over five years in support of the Beaufort Regional Environmental Assessment (BREA), a multi-stakeholder initiative to sponsor regional environmental and socio-economic research that will gather new information vital to the future management of the Beaufort Sea. Following a Call for proposal initiated in March 2011, ArcticNet researchers were very successful at securing funding for research projects that form the core of the BREA research program. ArcticNet researchers will lead four of the 15 currently funded BREA research projects, with three of them conducted as part of the ArcticNet annual expedition to the Beaufort Sea onboard the CCGS *Amundsen*. The four projects listed below will receive a total of over \$5M over the next 4 years (2011-2015).

- Active Acoustic Mapping of Fish in the Beaufort Sea, Louis Fortier, Université Laval
- Deep Water Seabed Geohazards, Steve Blasco, Geological Survey of Canada-Natural Resources Canada
- Southern and Northeastern Beaufort Sea Marine Observatories, Martin Fortier, Université Laval, ArcticNet and Malcolm Lowings, IMG-Golder
- Radarsat Mapping of Extreme Ice Features in the Southern Beaufort Sea, David Barber, University of Manitoba

ArcticNet's success in securing BREA funding is directly linked to its capacity and expertise developed in the Beaufort Sea over the last decade as well as its recent partnerships with industry in the region. The results collected by ArcticNet will directly contribute to BREA's key goal of producing relevant scientific and socio-

economic information that simplifies project-level environmental assessment and regulatory decision-making for oil and gas activities, while strengthening the relationship between environmental assessment and integrated management and planning in the region.

Bringing Arctic Issues to the General Public

With the high level of knowledge and expertise available within ArcticNet, the management and researchers of the Network are often called upon by the media for interviews regarding issues of critical importance to Canadians and their government. Many projects led by ArcticNet network investigators received intense national and international media coverage, raising Arctic climate change research awareness to millions of viewers and readers worldwide. Throughout 2010-2011, ArcticNet maintained a high level of national and international media coverage. From print publications to television, film and House of Commons hearings, the voice of ArcticNet's researchers was broadcast in an ever-increasing attempt to educate the public about a rapidly changing Arctic climate. Some of the highlights include:

- Over 135 articles featuring ArcticNet research were distributed by international (Asia Times, BBC, CNN, The Economist, The Guardian, Le Monde, Nature, The New York Times, Reuters), national (Calgary Herald, CTV, Discovery Channel, CBC, Le Devoir, The Gazette, The Globe and Mail, Ottawa Citizen, Postmedia News, La Presse, Radio-Canada, Toronto Star, Toronto Sun, Vancouver Sun, Winnipeg Free Press) and northern (APTN, Nunatsiq News) media and published in many countries including Canada, France, Thailand, the UK, and the USA.
- Discovery Channel's Mighty Ships joined ArcticNet and the Canadian Coast Guard onboard the CCGS *Amundsen* following the team of researchers as they scrambled to sample sea ice and recover oceanographic moorings while battling a constantly changing Arctic environment in the Canadian Beaufort Sea.
- ArcticNet Network Investigator Joël Bêty was awarded "2010 Researcher of the Year" by Radio-Canada for his work on the nesting habits of Arctic birds. Previously, in January 2010, Dr. Bêty and ArcticNet Ph.D. student Laura McKinnon published the results of their research in the prestigious international journal, *Science*.



The wealth of knowledge and data generated by polar research must be managed to ensure and maximize the exchange and accessibility of relevant data, and to leave a lasting legacy. The Polar Data Catalogue (www.polardata.ca) is a data centre that describes and provides access to diverse Arctic and Antarctic datasets. The records cover a wide range of disciplines from natural sciences and policy, to health and social sciences.

- A much-needed national debate on the role of industry in the funding of scientific research was raised in response to ArcticNet's collaborations with the Oil & Gas Industry since 2009 onboard the CCGS *Amundsen*. Numerous articles in national and northern publications tackled the heated issues surrounding the environmental, political, economic and ethical questions raised by these collaborations. ArcticNet Scientific Director Louis Fortier participated in the Canada House of Commons Department of Fisheries and Oceans hearings, along with industry collaborators and the Coast Guard to clarify some of the preconceptions and misinformation that had been circulated.
- The grounding of the passenger vessel, *Clipper Adventurer*, north of Kugluktuk and the subsequent rescue of her passengers by the CCGS *Amundsen* initiated a plethora of media coverage concerning seabed mapping of the Northwest Passage in the face of dwindling Arctic sea ice. This event, along with two other vessel groundings in 2010 in the Canadian Arctic, highlighted the increased need for dedicated mapping of the Arctic seafloor, such as done by ArcticNet researchers onboard the CCGS *Amundsen*.
- Professor Mike Byers continued to educate the public on Canadian sovereignty issues, Canada's international image and the opening of the Northwest Passage through numerous print and online publications.
- ArcticNet researchers were in the news following the loss of several massive ice chunks from the Ward Hunt Ice Shelf and Greenland's Petermann Glacier in 2010. John England discussed the deterioration of the Arctic's ice shelves in the face of climate change, and Jean-Éric Tremblay described how the movement of the detached ice islands can significantly affect the Arctic food chain.
- Professor and Canada Research Chair in Global Environmental Change, Barry Smit was interviewed by CNN and e! Science News regarding the impacts that climate change and modernization are having on the lifestyle of Canada's Inuit. The critical health issues brought on by the transition from a traditional raw meat-based diet to one that is high in processed junk foods was also discussed.
- Nunatsiaq reporter Jane George joined the CCGS *Amundsen* for 10 days, documenting ArcticNet's scientific sampling operations for Northern audiences as the ship made its way through the Northwest Passage.
- Kim Juniper and University of Victoria student Maeva Gauthier produced a video entitled, "Before the Ice Melts" using footage gathered from ArcticNet expeditions onboard the CCGS *Amundsen*. The film, broadcast online on Eye on the Arctic (a partner of Radio-Canada International), publicized the need for documenting the little-known marine biodiversity of the Canadian Arctic in light of a changing Arctic climate.



ArcticNet Community

La Communauté ArcticNet

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Board of Directors Conseil d'administration ᑕᐅᑦᑕᑦᑕᑦᑕᑦ

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Mary Simon, (Co-Chair until December 2010)
President, Inuit Tapiriit Kanatami

Duane Smith, (Co-Chair from December 2010)
President, Inuit Circumpolar Council (Canada)

Yves Bégin,
Director, Institut national de la recherche scientifique - Eau, Terre et Environnement

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Scientific Director and CEO, ArcticNet,
Ex-officio

Martin Fortier,
Executive Director and COO, ArcticNet,
Ex-officio, non voting

Edwin Bourget, (until June 2010)
Vice-Rector, Research and Innovation,
Université Laval

Paul Fortier, (from July 2010)
Vice-Rector, Research and Innovation,
Université Laval

Udloriak Hanson,
Special Advisor to the President,
Inuit Tapiriit Kanatami

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Vice-President Research,
University of Manitoba

Danielle Labonté,
Director General, Aboriginal Affairs and
Northern Development Canada

Charles Lin,
Director General, Environment Canada

Carmen Loberg,
President and CEO, NorTerra Inc.

Tom Paterson,
Vice-President, Fednav Ltd.

Mike Peters,
Northern Canada Operations, Canadian
Association of Petroleum Producers

Christian Thivierge,
Senior Program Officer,
Networks of Centres of Excellence

David J. Thomas,
President and Chairman, The Axy's Group

Ed Wojczynski,
Division Manager of Portfolio Projects
Management, Manitoba Hydro

Shelagh Jane Woods,
Director General, Health Canada, First
Nations and Inuit Health Branch

Executive Committee Conseil exécutif ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦ ᑕᐅᑦᑕᑦᑕᑦᑕᑦ

Bernie Boucher, Chair of the Board,
President, JF Boucher Consulting Ltd.

Louis Fortier,
Scientific Director and CEO, ArcticNet, *Ex-officio*

Martin Fortier,
Executive Director and COO, ArcticNet,
Ex-officio, non voting

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Université Laval

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Vice-Rector, Research and Innovation,
Université Laval

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President and Chairman, The Axy's Group

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President, Inuit Tapiriit Kanatami

Duane Smith, (Co-Chair from December 2010)
President, Inuit Circumpolar Council (Canada)

Audit and Finance Committee Comité de vérification et des finances ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦ ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦ ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦ

Martin Fortier,
Executive Director and COO, ArcticNet,
Ex-officio, non voting

David J. Thomas,
President and Chairman, The Axy's Group

Ed Wojczynski,
Division Manager of Portfolio Projects
Management, Manitoba Hydro

Environmental Review Committee Comité d'évaluations environnementales ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦ ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦ ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦ

Martin Fortier,
Executive Director and COO, ArcticNet,
Ex-officio, non voting

Udloriak Hanson,
Special Advisor to the President,
Inuit Tapiriit Kanatami

Duane Smith,
President, Inuit Circumpolar Council (Canada)

David J. Thomas,
President and Chairman, The Axy's Group

Research Management Committee Comité de gestion de la recherche ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦ ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦ ᑕᐅᑦᑕᑦᑕᑦᑕᑦᑕᑦ

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Director, Northern Science and
Contaminants Research Directorate,
Aboriginal Affairs and Northern
Development Canada

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Professor, Université Laval

David Barber,
Professor, University of Manitoba

Michael Barrett,
Assistant Director,
Kativik Regional Government

Trevor Bell,
Professor, Memorial University of
Newfoundland

Leah Braithwaite,
Chief, Strategic Planning,
Canadian Ice Service, Environment Canada

Larry Carpenter,
Chair, Wildlife Management Advisory
Council (NWT), Inuvialuit Joint Secretariat

John Cheechoo,
Director, Inuit Tapiriit Kanatami

Andrew Dunford,
Policy and Environment Advisor,
Nunavut Tunngavik Inc.

Brent Else,
President, ArcticNet Student Association,
Ex-officio, non voting

Louis Fortier,
Scientific Director and CEO, ArcticNet,
Ex-officio

Martin Fortier,
Executive Director and COO, ArcticNet,
Ex-officio, non voting

Christopher Furgal,
Assistant Professor, Indigenous Studies
Department, Trent University

Helen Joseph,
Director, Oceanography and Climate Branch,
Fisheries and Oceans Canada

Pitseolalag Moss-Davies,
Research Coordinator,
Inuit Circumpolar Council (Canada)

ArcticNet Partners

Partenaires d'ArcticNet

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Federal Departments and Agencies Ministères et organismes fédéraux ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ

Canada Nunavut Geoscience Office
Canadian Museum of Nature
Canadian Polar Commission
Canadian Space Agency
Department of Foreign Affairs and International Trade
Environment Canada

- Canada Centre for Inland Waters
- Canadian Ice Service
- Canadian Wildlife Service
 - Atlantic Region
- Canadian Wildlife Service
 - Northern Conservation Division
- Canadian Wildlife Service
 - Prairie and Northern Region
- Canadian Wildlife Service
 - Quebec Region
- National Hydrology Resource Centre
- Meteorology Service of Canada – CCCMA
- National Water Research Institute
- Science and Technology Branch

Fisheries and Oceans Canada

- Bedford Institute of Oceanography
- Canadian Coast Guard
- Canadian Hydrographic Service (Central and Arctic Region)
- Ecosystem Research Initiative
- Emerging Fisheries
- Freshwater Institute
- Institute of Ocean Sciences
- Maurice Lamontagne Institute
- Oceans Sector
- Science Branch Newfoundland
- Science Sector
- Species at Risk Act

Health Canada

- First Nations and Inuit Health Branch

Aboriginal Affairs and Northern Development Canada

- Cumulative Impacts Monitoring Program
- International Polar Year Federal Program Office
- Northern Contaminants Program
- Northern Science and Contaminants Research Directorate
- Northern Scientific Training Program

National Defence

Natural Resources Canada

- Canada Centre for Remote Sensing
- Climate Change Impacts and Adaptation Program
- Earth Sciences Sector
- Environmental Studies Revolving Fund
- Geological Survey of Canada
- Geological Survey of Canada (Atlantic)
- Geological Survey of Canada (Pacific)
- Polar Continental Shelf Program

Nunavik Marine Offshore Agreement

Parks Canada

- Torngat Mountains National Park Reserve

Transport Canada

Provincial Departments and Agencies Ministères et organismes provinciaux ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ

Coopération Québec Bavière,
Chancellerie Bavaroise
Fonds québécois de recherche sur la nature et les technologies
Fonds québécois de recherche sur la société et la culture
Government of Newfoundland and Labrador (Environment and Conservation)
Institut national de santé publique du Québec

Ministère des affaires municipales et des régions du Québec
Ministère Développement économique, innovation et exportation
Nunavik Regional Board of Health and Social Services
Nunavut Department of Education
Nunavut Implementation Fund
Nunavut Marine Offshore Agreement
Ontario Ministry of Natural Resources
Ressources naturelles et de la faune du Québec
Transport Québec
Yukon Government

International Inuit Organization Organisation internationale inuite ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ

Inuit Circumpolar Council (Canada)

National Inuit Organization Organisation nationale inuite ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ

Inuit Tapiriit Kanatami

Regional Organizations, Agencies and Governments

Gouvernements, agences et organisations régionales ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦᐅᑦ, ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦᐅᑦ

Nunatsiavut Region:

Nunatsiavut Government
Torngat Joint Fisheries Board

Nunavik:

Kativik Environmental Advisory Committee
Kativik Municipal Housing Bureau
Kativik Regional Government
Makivik Corporation
Nunavik Research Centre

Nunavut:

Nunavut Tunngavik Incorporated
Government of Nunavut
Nunavut Implementation Fund
Nunavut Wildlife Management Board
Nunavut Wildlife Research Trust

Inuvialuit Region:

Inuvialuit Joint Secretariat
Inuvialuit Regional Corporation
Fisheries Joint Management Committee

Northern Communities Communautés nordiques ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ ᐅᐅᐅᑦᐅᑦᐅᑦᐅᑦ

Churchill, MB
Aqvituk, NL (Hopedale)
Nunainguk, NL (Nain)
Kikiak, NL (Rigolet)
Aklavik, NT
Inuvik, NT
Paulatuk, NT
Sachs Harbour, NT
Tuktoyaktuk, NT
Uluhaktuk, NT (Holman)
Arviat, NU
Iqalukuttiaq (Cambridge Bay)
Igloodik, NU (Igloodik)
Ikpiarjuk, NU (Arctic Bay)
Iqaluit, NU
Kangiqliniq, NU (Rankin Inlet)
Kangiqtuqaapik, NU (Clyde River)
Kugluktuk, NU
Kuugaarjuk, NU (Kugaaruk)
Mittimatalik, NU (Pond Inlet)
Naujaat, NU (Repulse Bay)
Panniqtuq, NU (Pangnirtung)
Qamani'tuaq, NU (Baker Lake)
Qausuittuq, NU (Resolute Bay)
Salliq, NU (Coral Harbour)

Sanikiluaq, NU
 Sanirajak, NU (Hall Beach)
 Tikirarjuaq, NU (Whale Cove)
 Kangihsualujjuaq, QC
 Kangirsujuaq, QC
 Kuujjuaq, QC
 Kuujjuaraapik, QC
 Salluit, QC
 Umiujaq, QC

Industries / Industries / ᐱᓇᐱᓐᓂᐱᓐ

Baffinland Iron Mines Corporation
 Beachwalker Films
 BP Exploration Operating Company Ltd
 Campbell Scientific
 Canadian Association of Petroleum Producers
 Canadian Institute of Planners
 Canadian North
 Diavik Diamond Mines Inc.
 First Air
 Geosensors Inc.
 Golder Associates
 Hydro-Québec
 Imperial Oil Resources Ventures Limited
 Inuvialuit Regional Corporation
 JF Boucher Consulting Ltd
 Manitoba Hydro
 New Brunswick Innovation Foundation
 OmniTRAX
 Sensors by Design
 Sikumiiut Environmental Consulting
 Sovereign Geographic Inc.
 The Axys Group
 Western Ag Innovations
 Wildlife Genetics International
 Vale Inco
 Xstrata Nickel – Mine Raglan

Universities and Institutes Universités et instituts ᐱᓇᓂᐱᓐᓂᐱᓐ

Alfred Wegener Institute Foundation
 for Polar and Marine Research
 Arctic Institute of North America
 Association of Canadian universities
 for Northern Studies
 Balsillie School of International Affairs
 Bodø Graduate School of Business

Canadian Circumpolar Institute
 Carleton University
 Centre de Recherche du Centre hospitalier
 de l'Université Laval
 Centre for Earth Observation Science (CEOS)
 CIÉRA - Centre interuniversitaire d'études et
 de recherches autochtones
 Cornell University
 Courant Institute of Mathematical Sciences
 Dalhousie University
 Georgetown University
 Hague Academy of International Law
 Institut des sciences de la mer de Rimouski
 Institut national de la recherche scientifique
 - Eau, Terre et Environnement
 Institute of the North
 Lakehead University
 McGill University
 McMaster University
 Memorial University of Newfoundland
 Norwegian School of Veterinary Science
 Queen's University
 Royal Military College of Canada
 Simon Fraser University
 St. Francis Xavier University
 St. Jerome's University
 Stanford University
 Stony Brook University
 The King's University College
 Trent University
 Université de Bretagne Occidentale
 Université de la Méditerranée Aix-Marseille II
 Université de Montréal
 Université de Sherbrooke
 Université du Québec à Chicoutimi
 Université du Québec à Montréal
 Université du Québec à Rimouski
 Université du Québec à Trois-Rivières
 Université Laval
 University of Alaska Anchorage
 University of Alaska Fairbanks

University of Alberta
 University of British Columbia
 University of Calgary
 University of Colorado at Boulder – CIRES
 University of Groningen
 University of Guelph
 University of Kiel
 University of Liege
 University of Lomonosov Moscow
 University of Manitoba
 University of Miami - Rosenstiel School of
 Marine and Atmospheric Science
 University of Munich
 University of New Brunswick
 University of New Hampshire
 University of Northern British Columbia
 University of Oslo
 University of Ottawa
 University of Oxford - Linacre College
 University of Plymouth
 University of Prince Edward Island
 University of Saskatchewan
 University of Sheffield
 University of South Carolina
 University of Southampton
 University of Toronto
 University of Victoria
 University of Washington
 University of Waterloo
 University of Western Ontario
 University of Windsor
 University of Winnipeg
 US Naval War College
 Wilfried Laurier University
 Woods Hole Oceanographic Institute (WHOI)
 York University

Others / Autres / ᐱᓇᓂᐱᓐ

Aurora College
 Aurora Research Institute
 Canadian Cryospheric Information Network

Canadian Healthy Oceans Network
 Canadian Wildlife Federation
 Centre d'études nordiques
 Centre national de recherche scientifique
 Centre national de recherche scientifique -
 Laboratoire d'océanographie de Villefranche
 Churchill Northern Studies Centre
 Circumpolar Flaw Lead System Study
 Garfield Weston Foundation
 German Research Foundation
 Greenland Institute of Natural Resources
 International Polar Year CAVIAR project
 Nasivvik Centre for Inuit Health and
 Changing Environments
 National Institute of Public Health – Denmark
 National Museum of Natural History
 of France
 National Research Council Canada
 National Science Foundation
 Natural Sciences and Engineering Research
 Council of Canada
 Nayumivik Landholding Corporation
 Norwegian Institute for Defense Studies
 Norwegian Water Resources and Energy
 Nunavut Arctic College – Kivalliq campus
 Nunavut Research Institute
 Ocean Tracking Network
 Ouranos
 Paulatuk Hunter and Trappers Committee
 Polar Bear International
 Port of Churchill
 Qaujigiartiit Health Research Centre
 Québec-Océan
 Russian Geographical Society
 Sea Duck Joint Venture
 Social Economy Research Network for
 Northern Canada
 The Kenneth M Molson Foundation
 U.S. Department of the Interior
 Wildlife Conservation Society Canada
 World Wildlife Fund Canada

Financial Summary / Sommaire financier

ArcticNet was audited in May 2011 in accordance with generally accepted Canadian auditing standards. The following figures and financial summary are prepared from the unqualified financial statements.

ArcticNet a été vérifié en mai 2011 selon les normes de vérification généralement reconnues du Canada. Les données financières suivantes sont extraites des rapports financiers produits sans restriction.

Revenues, expenses and net assets | Revenus, dépenses et actifs nets

For the fiscal year ending March 31, 2011

Pour l'année fiscale se terminant le 31 mars 2011

Revenues	Revenus	2010-2011
Networks of Centres of Excellence Grant (NCE)	Subvention des Réseaux de centres d'excellence (RCE)	\$ 6,441,000
Network partners contributions (Non-NCE)	Contributions des partenaires du réseau (Non-RCE)	9,029,534
Others	Autres	264,268
Total revenues	Revenus totaux	15,734,802
Expenses	Dépenses	
Research Projects (NCE)	Projets de recherche (RCE)	3,650,874
Research Projects (Non-NCE)	Projets de recherche (Non-RCE)	4,666,577
Core infrastructure (NCE)	Infrastructure majeure (RCE)	1,730,808
Core infrastructure (Non-NCE)	Infrastructure majeure (Non-RCE)	3,597,717
Amortization of equipment	Amortissement de l'équipement	187,287
Administrative Centre	Centre administratif	1,980,710
Total expenses	Dépenses totales	15,813,973
Surplus (deficiency) of revenues over expenses	Excédent (déficit) des revenus sur les dépenses	(79,171)
Net assets, beginning of year	Actifs nets, début de l'exercice	1,540,816
Net assets, end of year	Actifs nets, fin de l'exercice	\$ 1,461,645

Balance Sheet | Bilan

For fiscal year ending March 31, 2011

Pour l'année fiscale se terminant le 31 mars 2011

Assets	Actifs	2010-2011
Cash	Encaisse	\$ 1,973,192
Accounts receivable	Comptes à recevoir	627,103
Prepaid expenses	Frais payés d'avance	562,120
		3,162,415
Capital assets	Immobilisations	1,573,238
		4,735,653
Liabilities	Passifs	
Accounts payable and accrued liabilities	Comptes à payer et frais courus	301,304
Deferred grant	Apports reportés	2,972,704
		1,461,645
Unrestricted net assets	Actifs nets non affectés	\$ 4,735,653

Statement of cash and in-kind contributions | Sommaire des contributions en espèces et en nature

		Cash / En espèces 2010-2011	In-kind / En nature 2010-2011	Total
NCE	RCE	\$ 6,441,000	0	6,441,000
Non-NCE¹	Non-RCE¹			
Provincial	Provinciales	410,854	335,260	746,114
Federal ²	Fédérales ²	2,815,343	5,801,550	8,616,893
University	Universitaires	339,813	3,829,580	4,169,393
Industry	Industrielles	9,090,397	5,806,510	14,896,907
Other	Autres	1,431,821	74,600	1,506,521
Non-NCE	Non-RCE	14,088,228	15,847,500	29,935,728
Total NCE and non-NCE	Total RCE et non-RCE	\$ 20,529,228	\$ 15,847,500	\$ 36,376,728

For the fiscal year ending 31 March 2011

- 1 Certain funds contributed by Network Partners to support research projects are forwarded directly to researchers and are not managed by the ArcticNet Administrative Centre
- 2 These federal contributions do not include contributions received from the Federal granting councils, the Canada Foundation for Innovation and Genome Canada.

Pour l'année fiscale se terminant le 31 mars 2011

- 1 Certaines contributions des partenaires du réseau aux projets de recherche parviennent directement aux chercheurs et ne sont pas gérées par le centre administratif d'ArcticNet.
- 2 Ces contributions fédérales n'incluent pas les contributions des conseils de recherche, de la fondation canadienne pour l'innovation et de Génome Canada.



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Comprendre la transformation en cours dans le milieu arctique et en prévoir les conséquences représente l'un des grands défis que doivent relever les Canadiens, leurs gouvernements ainsi que les communautés scientifiques nationales et internationales. Au Canada, le réchauffement climatique aura des répercussions écologiques, socio-économiques et stratégiques considérables qui seront ressenties en tout premier lieu et de façon plus intense dans les territoires et les collectivités arctiques.

ArcticNet regroupe des scientifiques et des gestionnaires en sciences naturelles, en sciences de la santé et en sciences sociales et leurs partenaires des organisations inuites, des collectivités nordiques, des gouvernements et de l'industrie afin d'aider les Canadiens à se préparer aux impacts et aux opportunités amenés par les changements climatiques et la modernisation dans l'Arctique. Plus de 150 chercheurs d'ArcticNet ainsi que 600 étudiants des cycles supérieurs, chercheurs postdoctoraux, associés de recherche et techniciens, issus de 30 universités canadiennes, de 8 ministères fédéraux et de 9 départements provinciaux collaborent à 38 projets de recherche avec plus de 100 organismes partenaires de 15 pays.

Notre vision

Un avenir où le partage des connaissances, la surveillance, la modélisation et le renforcement des capacités auront permis aux scientifiques, aux habitants du Nord et aux décideurs de conjointement minimiser les impacts négatifs et maximiser les répercussions positives de la transformation de l'Arctique canadien.

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Message du président du conseil d'administration, du directeur scientifique et du directeur exécutif



M. Bernie Boucher,
président du conseil d'administration

M. Martin Fortier, Ph.D.,
directeur exécutif, vice-président
et directeur des opérations

M. Louis Fortier, Ph.D., O.C., O.Q.,
directeur scientifique, président et
directeur général

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Droit devant!

En 2010-2011, le directeur scientifique, le directeur exécutif, le conseil d'administration, le comité de gestion de la recherche et le centre administratif d'ArcticNet ont centré leurs efforts collectifs sur le renouvellement du réseau ArcticNet pour un deuxième cycle de sept ans. Le réseau a précisé l'orientation de son programme de recherche afin d'appuyer les quatre piliers de la Stratégie pour le Nord du Canada : la souveraineté, le développement économique, l'environnement et la gouvernance. Le plan stratégique qui en résulte propose une feuille de route des plus riche et passionnante qui a convaincu le Comité international d'évaluation et le Programme des réseaux de centres d'excellence de renouveler le financement demandé.

Les chercheurs du réseau et leurs équipes n'ont pas attendu l'annonce officielle du renouvellement pour poursuivre les objectifs scientifiques et stratégiques d'ArcticNet de plusieurs façons, souvent même spectaculaires. Réflétant le succès de la mise en œuvre du plan de recherches d'ArcticNet au cours du Cycle I, les membres du réseau ont publié, cette année seulement, plus de 1030 articles scientifiques, dont 423 dans des revues à comité de lecture. La progression exponentielle du nombre de publications d'ArcticNet témoigne de notre plus grande compréhension de la transformation en cours dans l'Arctique et de ses incidences sur les sociétés et les industries du Nord. Avec plus de 550 participants, la septième édition de la réunion scientifique annuelle d'ArcticNet (ASM2010) a offert un programme incluant plus de 150 conférences et 165 affiches scientifiques relevant de tous les domaines de la recherche arctique, reflétant les impressionnantes réalisations scientifiques et le caractère hautement pluridisciplinaire de la recherche au sein d'ArcticNet.

Les deux nouvelles Chaires d'excellence en recherche du Canada (CERC), financées sous l'égide d'ArcticNet, ont rapidement recruté leurs équipes et ont commencé à contribuer au programme de recherche d'ArcticNet et à établir de nouveaux partenariats internationaux. Au Centre CEOS

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(Centre for Earth Observation Science) de l'Université du Manitoba, un étage complet a été ajouté à l'Édifice Wallace pour accueillir la Chaire d'excellence en recherche sur la géomicrobiologie arctique et le changement climatique, dont le titulaire est Søren Rysgaard. Le Centre CEOS, le Centre de recherche climatologique du Groenland et l'Université d'Aarhus, au Danemark, ont récemment convenu d'un nouveau partenariat en sciences de l'Arctique qui permettra une plus étroite intégration des programmes de recherche dans l'Arctique, notamment en sciences de la mer, de la terre, de l'atmosphère, en sciences sociales, en sciences de la santé, en éducation et en sensibilisation communautaire. Les membres de ce partenariat pourront partager leurs données, collaborer à des programmes de recherche communs, embaucher conjointement des associés de recherche et permettre aux étudiants d'acquérir une formation internationale au Danemark, au Groenland et au Canada.

À l'Université Laval, une superficie de plus de 500 m² de laboratoires, d'ateliers et de bureaux a été complètement rénovée et est maintenant équipée d'instruments scientifiques ultramodernes, grâce à la contribution de la Fondation canadienne pour l'innovation visant à accueillir la nouvelle CERC sur la télédétection de la nouvelle frontière arctique du Canada, dont Marcel Babin est le titulaire. L'équipe de M. Babin utilise la couleur de l'océan pour surveiller la réaction des écosystèmes pélagiques à la diminution de la glace de mer et au réchauffement de la couche superficielle de l'océan Arctique. Parallèlement à l'établissement de la CERC, l'Unité mixte internationale (UMI) Takuvik, un projet de collaboration du CNRS (France) et de l'Université Laval, a accueilli son premier contingent de huit chercheurs français, spécialistes de l'Arctique. Ceux-ci travaillent maintenant en étroite collaboration avec leurs homologues canadiens à l'étude des écosystèmes marins et terrestres. Les deux CERC font partie des efforts déployés par ArcticNet pour encourager et stimuler de nouvelles collaborations internationales entre le Canada et les autres pays de l'Arctique.

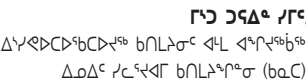
Au cours de l'année 2010-2011, le réseau a aussi finalisé avec succès d'importants partenariats de recherche dans le secteur de la prospection pétrolière dans la mer de Beaufort. Ces partenariats, qualifiés



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croissante comme outil servant à orienter les politiques et les décisions à l'échelle régionale. Quant au Catalogue de données polaires d'ArcticNet-CCIN, il entame une nouvelle étape de son développement, évoluant des métadonnées vers les données réelles, en vue de devenir un système sophistiqué d'extraction de données géoréférencées qui répondra aux besoins des scientifiques et de toutes les parties intéressées.

Les efforts investis en 2010-2011 dans le renouvellement du réseau n'ont en rien ralenti les constants progrès d'ArcticNet. Au contraire, ils ont permis de recentrer le programme de recherche, de revoir le plan stratégique, de susciter la mise en place des CERC, de consolider notre partenariat unique avec les Inuits et d'accélérer le développement des IRIS. Le réseau envisage maintenant sept années d'intenses recherches intersectorielles en appui au développement durable dans le Nord du Canada. Grâce à ArcticNet et au soutien financier et logistique à long terme qu'il procure, les spécialistes canadiens, leurs collaborateurs étrangers, leurs alliés inuits et leurs partenaires du secteur privé n'ont jamais été dans une meilleure position pour relever les défis que pose l'Arctique en changement.

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M. Duane Smith,
coprésident du conseil d'administration
et président d'Inuit Circumpolar Council
(Canada)

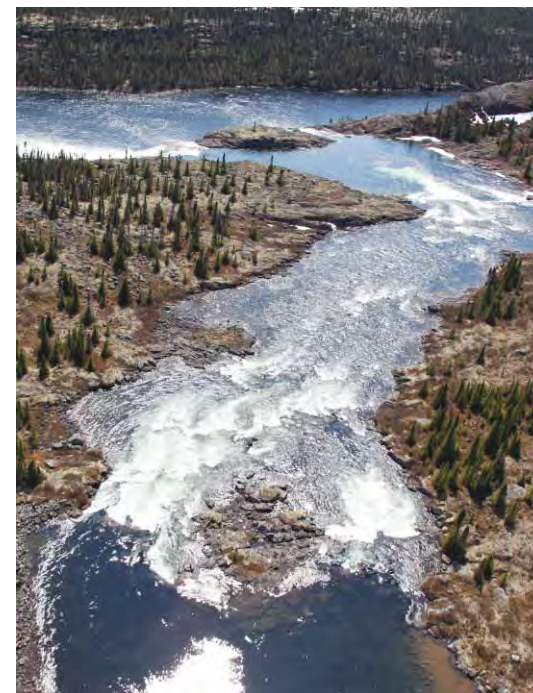
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Puisque ce sont les efforts concertés de tous les partenaires, gestionnaires et étudiants du réseau qui ont permis le renouvellement d'ArcticNet jusqu'en 2018, c'est aux partenaires des organisations inuites, des gouvernements, du secteur de l'industrie et des universités qu'incombe la tâche importante de faire progresser l'état des connaissances de l'Arctique canadien.

La vision du programme renouvelé d'ArcticNet a évolué. Il ne s'agit plus seulement de définir les enjeux, mais bien de fournir des connaissances qui serviront à relever les défis et à tirer profit des avenues de développement. ArcticNet a changé pour mieux réagir aux préoccupations et aux besoins des collectivités, et il continuera dans cette voie. Les projets d'une importance particulière pour les Inuits dans les secteurs de la santé, de

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Au cours des dernières années, ArcticNet a encouragé la conception et la réalisation d'évaluations d'impact régionales (Regional Impact Assessments – RIA) dans le cadre même des Études d'impact régionales intégrées (Integrated Regional Impact Studies – IRIS) mises en place par le réseau. Malgré les approches différentes adoptées par les équipes des IRIS, un commun besoin pour chaque IRIS est de suivre les conseils des



Nous entamons la nouvelle mais dernière phase de financement du réseau. Toutefois, cela ne signifie pas l'absence de vision à long terme. Les Inuits, l'administration et les autres partenaires réfléchissent déjà aux perspectives de l'héritage considérable qu'ArcticNet pourrait et devrait laisser, tant à titre de modèle de partenariat, de respect, de patience et de compréhension, qu'à titre d'élément moteur pour faire progresser la science dans l'Arctique. Notre vision est celle d'un kaléidoscope de produits, incluant des infrastructures de recherche et des ressources humaines, mais aussi un legs de connaissances et de compréhension qui correspond aux besoins des intervenants.

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Le renouvellement d'ArcticNet pour un deuxième cycle de financement (2011-2018)

“ArcticNet ነፃጋፈገጋረኛ ልርብነጥናፈባርፊኖሮ ላሊ ለርቢኑባኖሮ ልብኖሪፈረኖሮ ላሊ ለርቢኑባኖሮ፣ ኖርፌኔጋጋር ልርኖሮ ልኖባፈረኖባኖሮ፣ ርጋጋሪ ለኖሪኖሪ ልፈረኖሪ ልፈረኖሪ ኖሪኖሪ ለፈረኖሪ ላሊ ለርቢኑባኖሮ።”

— ԼԵՆԻՆԻՍՏԻՆԻ ԺՈՒՆԻՍԿՈՒՆԻԱՅԻՆ ԲԻՐՈՒՄԻ ԸՆԴՈՒՆՈՒԹՅԱՆ ԳԵՐԱԴԱՐԱՆԻ ՎԵՐԱԳՆԱԾ ԿԱՐԳԻ ՎԵՐԱԿԱՐԳՈՒՄԸ (ԿՐԴՈՒՄԻ ՎԵՐԱԿԱՐԳՈՒՄԸ)

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Le 15 septembre 2011, l'honorable Christian Paradis, ministre de l'Industrie et ministre d'État (Agriculture), a annoncé à Québec un investissement supplémentaire de 67,3 millions de dollars pour ArcticNet pour son prochain cycle de sept ans (2011-2018). D'un montant de 9,61 millions de dollars par année, cet investissement représente 100% du financement demandé dans notre demande de renouvellement et constitue une augmentation de financement de 47% par rapport au premier cycle. Il s'agit du plus important investissement du gouvernement dans le Programme des réseaux de centres d'excellence (RCE) jusqu'à maintenant.

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De gauche à droite : Martin Fortier – directeur exécutif, ArcticNet; Denis Brière – recteur, Université Laval; L'honorable Christian Paradis – ministre de l'Industrie et ministre d'État (Agriculture); Suzanne Fortier – présidente, Conseil de recherches en sciences naturelles et en génie du Canada; Louis Fortier – directeur scientifique, ArcticNet; Jean-Claude Gavrel – vice-président associé, Réseaux de centres d'excellence du Canada

« Les travaux de recherche d'ArcticNet sont très importants pour tous les Canadiens. Ils favorisent l'excellence en recherche en matière de gestion des ressources naturelles, et nous aident à comprendre les effets des changements climatiques et la manière dont nous pouvons faire progresser le développement durable dans les collectivités du Nord canadien. »

— L'honorable Christian Paradis, ministre de l'Industrie et ministre d'État (Agriculture)



Travaux de recherche et de monitoring d'ArcticNet en 2010-2011

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Le programme de recherche d'ArcticNet continue de soutenir une approche pluridisciplinaire pour étudier les défis auxquels sont confrontées les régions côtières de l'Arctique, l'objectif étant de combler des lacunes ciblées de connaissances afin d'aider à la formulation et à la mise en œuvre de politiques et de stratégies d'adaptation.

Sur le plan géographique, ArcticNet se concentre sur le littoral de l'Arctique canadien pour les raisons suivantes : la plus grande partie de la région arctique et subarctique du Canada est un territoire maritime; les Inuits du Canada sont un peuple maritime; les côtes de l'Arctique canadien englobent des régions et des écosystèmes qui sont parmi les moins étudiés de la planète; la capacité logistique fournie par l'infrastructure principale d'ArcticNet s'étend principalement dans les régions maritimes et côtières de l'Arctique canadien.

Sur le plan temporel, ArcticNet se penche sur l'état actuel des régions côtières de l'Arctique canadien. Les recherches visent à anticiper la nature et l'ampleur des répercussions du réchauffement climatique sur cette région au cours des 20, 50 et 100 prochaines années. Des études paléoclimatiques et des modèles climatiques régionaux permettent de reconstituer les conditions dans les régions côtières de l'Arctique canadien au cours des derniers millénaires, ce qui aide à inscrire les observations actuelles dans un contexte historique. ArcticNet se concentre toutefois sur l'évolution à court terme de l'environnement côtier dans l'Arctique canadien et sur les stratégies requises pour aider les collectivités et les industries à s'adapter aux incidences du réchauffement imminent et de la modernisation.

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En mer

Les chercheurs du réseau provenant de divers champs d'expertise utilisent l'ultramoderne brise-glace de recherche canadien NGCC *Amundsen* comme plate-forme mobile de recherche afin d'étudier le littoral arctique canadien.

Le 2 juillet 2010, l'*Amundsen* a quitté son port d'attache de Québec pour une expédition scientifique de 121 jours dans la baie d'Hudson et le long du littoral arctique canadien. L'expédition de 2010 s'inscrivait dans l'effort constant d'ArcticNet pour maintenir son réseau d'observatoires océaniques à long terme et surveiller l'état actuel du milieu marin dans l'Arctique canadien.

Pendant le premier segment de l'expédition, le navire a parcouru plus de 7 000 km dans la baie d'Hudson pour effectuer des opérations à des stations océanographiques et prendre des échantillons dans plusieurs estuaires afin de déterminer comment les flux d'eau douce et le transport des contaminants affectent l'écosystème marin de cette gigantesque mer intérieure. Après un changement d'équipage à Iqaluit le 2 août, les chercheurs d'ArcticNet ont poursuivi leur échantillonnage au cours du déplacement vers le nord le long de la majestueuse côte

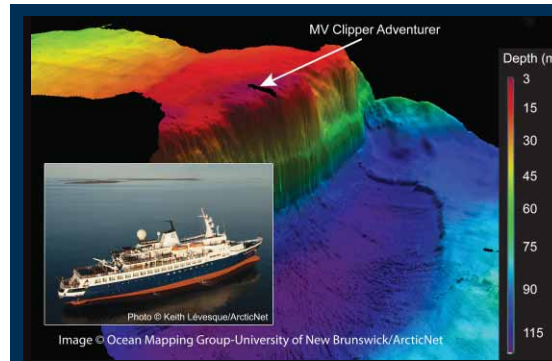
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 ለመገናኛት ለረገዳው ለረገዳው ለረገዳው ArcticNet
 IRISes.

de l'île de Baffin, et ensuite vers l'ouest dans le passage du Nord-Ouest. Dans le cadre du programme annuel « Écoles à bord » d'ArcticNet, huit étudiants du secondaire et trois enseignants provenant d'un peu partout au Canada se sont joints aux chercheurs d'ArcticNet pour participer aux activités quotidiennes d'échantillonnage.



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MV Clipper Adventurer

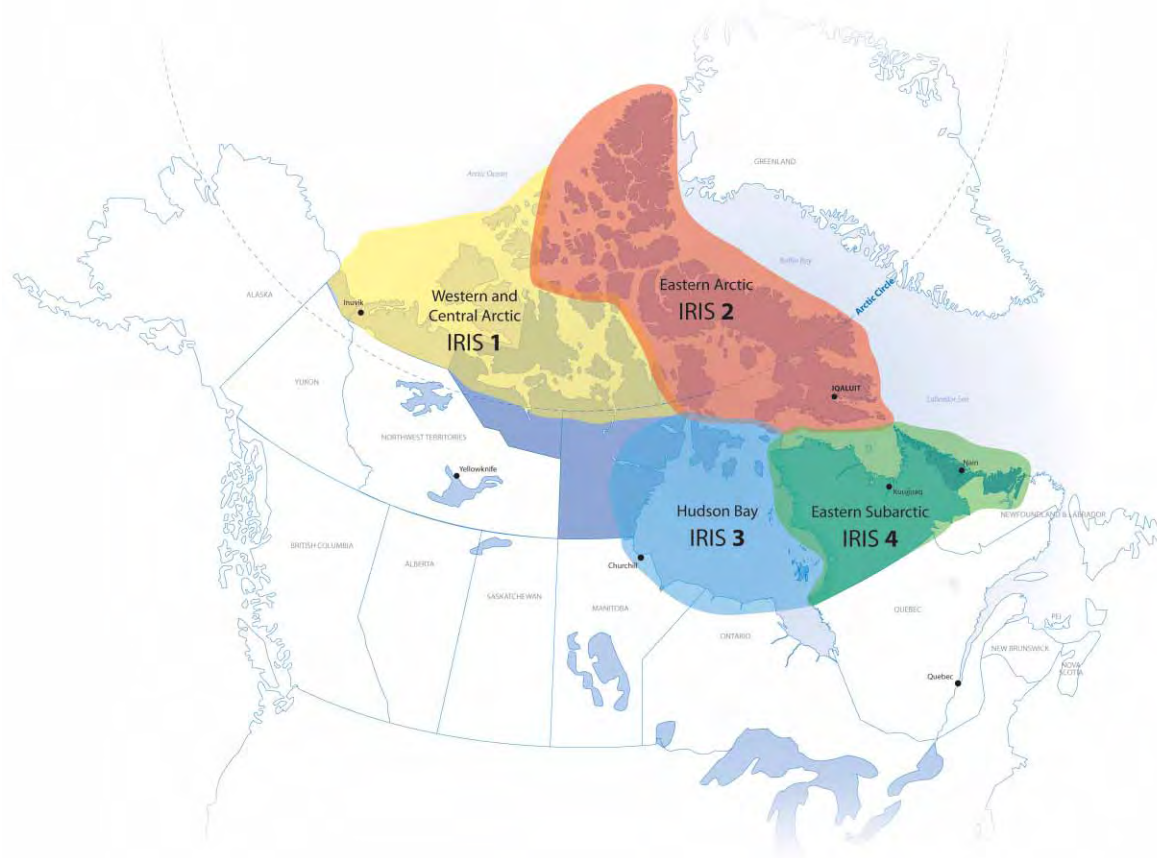
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Sauvetage du MV *Clipper Adventurer*

Le vendredi 27 août 2010, le navire de croisière *MV Clipper Adventurer* s'est échoué dans le golfe Coronation, au nord de Kugluktuk, au Nunavut. Alors qu'ArcticNet effectuait des opérations scientifiques dans la mer de Beaufort à bord du NGCC *Amundsen*, le navire a été appelé à la rescousse, faisant le voyage de deux jours vers l'est pour rejoindre le navire accidenté. L'opération de sauvetage de la Garde côtière canadienne dans ces eaux inexplorées a été facilitée par l'usage de la technologie de pointe de cartographie par sonar multifaisceaux, montée à bord de l'*Amundsen*. Puisque des sections de la partie sud du golfe Coronation avaient déjà été répertoriées lors d'expéditions antérieures d'ArcticNet, le capitaine du navire a pu, à l'aide d'un deuxième système de cartographie par sonar multifaisceaux en eaux peu profondes monté sur la barge de l'*Amundsen*, approcher le brise-glace à quelques milles marins du navire accidenté. Cette manœuvre a permis aux officiers et à l'équipage de la Garde côtière de rescaper les passagers de façon efficace et sécuritaire et de les ramener ensuite à bon port à Kugluktuk. L'*Amundsen* est le seul brise-glace de la Garde côtière équipé d'un sonar multifaisceaux. Ce système de cartographie est opéré par les chercheurs d'ArcticNet du groupe de cartographie océanique de l'université du Nouveau-Brunswick, dans le cadre du projet *Canadian Arctic Seabed: Navigation and Resource Mapping*.

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 ሥነ-ጥንታዊ: ሥነ-ጥንታዊ



Après un dernier changement d'équipage à Sachs Harbour le 7 octobre, l'*Amundsen* s'est dirigé vers l'est, effectuant des opérations à des stations désignées dans le détroit de Prince of Wales, le détroit de Lancaster, la baie de Baffin et le nord du Labrador. Après avoir parcouru plus de 40 000 km le long des côtes de l'Arctique canadien et de la baie d'Hudson, le navire est arrivé à Québec le 31 octobre. Dans l'ensemble, les chercheurs d'ArcticNet ont pris des échantillons dans plus de 220 stations et, grâce aux multiples outils d'échantillonnage continuels du NGCC *Amundsen*, ont recueilli une mine de données océaniques et atmosphériques pendant toute la durée du voyage.

Les projets de recherche du réseau sont de plus en plus ciblés en fonction des études d'impact régionales intégrées (IRIS) dans l'étude des conséquences des changements sur la société et les écosystèmes des régions côtières du centre et de l'ouest de l'Arctique, des régions arctique et subarctique de l'Est et de la baie d'Hudson. Le but ultime de l'intégration des résultats de recherche dans ce cadre de travail est de produire des évaluations régionales intégrées. Ces évaluations deviendront un outil clé pour les décideurs au moment d'élaborer des politiques et des stratégies pour un système arctique soumis à des pressions croissantes.

***ለኮሎኒያል ምርጫ ሥርዓት ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት**

ለሥራ ምርጫ: በጋራ ምርጫ ሥርዓት ምክር ቤቱ የሥራ ምርጫ ሥርዓት ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት አለው። ምርጫ ሥርዓቱን ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት ለሥራ ምርጫ ሥርዓቱ ስርዓት ምክር ቤቱ አለው። ምርጫ ሥርዓቱን ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት ለሥራ ምርጫ ሥርዓቱ ስርዓት ምክር ቤቱ አለው።

ሥራ ምርጫ ሥርዓት ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት

ለሥራ ምርጫ: ለሥራ ምርጫ ሥርዓቱ ስርዓት ምክር ቤቱ የሥራ ምርጫ ሥርዓት ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት አለው። ምርጫ ሥርዓቱን ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት ለሥራ ምርጫ ሥርዓቱ ስርዓት ምክር ቤቱ አለው። ምርጫ ሥርዓቱን ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት ለሥራ ምርጫ ሥርዓቱ ስርዓት ምክር ቤቱ አለው።

***ለሥራ ምርጫ ሥርዓት ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት**

ለሥራ ምርጫ: ለሥራ ምርጫ ሥርዓቱ ስርዓት ምክር ቤቱ የሥራ ምርጫ ሥርዓት ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት አለው። ምርጫ ሥርዓቱን ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት ለሥራ ምርጫ ሥርዓቱ ስርዓት ምክር ቤቱ አለው። ምርጫ ሥርዓቱን ለማሻሻልና ለመብራራት የሚደረግ ፍላጎት ለሥራ ምርጫ ሥርዓቱ ስርዓት ምክር ቤቱ አለው።

chevalier utilisés par les Inuits dans le cadre de leur pêche de subsistance traditionnelle. Cette recherche permettra également de prendre des décisions de gestion éclairées relativement aux problèmes liés à la consommation d'aliments locaux dans le contexte des changements climatiques.

Comprendre les effets des changements climatiques et de la modernisation au Nunatsiavut

Directeurs de projet : Ken Reimer et Marina Biasutti
Ce projet se penche sur les inquiétudes des Inuits concernant les effets des changements climatiques, de la modernisation et des contaminants sur la santé des écosystèmes marins et des collectivités du nord du Labrador. Les recherches fourniront des renseignements importants sur la façon dont l'environnement se transforme, sur ce que cela signifie pour la santé à long terme des écosystèmes marins et comment les collectivités nordiques accèderont et géreront dans le futur leurs terres et les ressources en eau douce. La participation des Inuits, du gouvernement du Nunatsiavut et des organismes fédéraux permettra d'élaborer des politiques et des stratégies d'adaptation d'une pertinence directe pour les gens, les industries et l'environnement du nord du Labrador.

***Améliorer l'accès aux études universitaires dans l'Arctique canadien**

Directeur de projet : Thierry Rodon
Le but de ce projet est d'effectuer une recherche factuelle sur la fréquentation universitaire des Inuits dans toutes les régions inuites (Inuit Nunaat). Le but secondaire est de susciter une discussion nationale parmi les fournisseurs de programmes universitaires dans l'Inuit Nunaat, les établissements nordiques et les organisations inuites afin de convenir d'une stratégie mieux coordonnée pour l'élaboration des programmes et de leur prestation.

Adaptation dans un milieu arctique en évolution : écoservices, communautés et politiques

Directeur de projet : Barry Smit
Ce projet a pour but de documenter les changements qui

ለፍብፋ፣ ሥነ-ጥበቃ፣ ጥናት ጋር

*Inuit Qaujimajatuqangit et la transformation de l'enseignement au niveau secondaire au Nunavut

Directrice de projet : Fiona Walton

Réponses hydroécologiques des lacs de la toundra arctique aux changements climatiques et aux perturbations du paysage

Directeur de projet : Fred Wrona

On s'attend à ce que d'importants changements dans les régimes climatiques aient de profondes répercussions sur l'hydrologie et l'écologie des écosystèmes d'eau douce dans l'Arctique. Ce projet vise à intégrer les processus paysage/lac et les études de modélisation en vue d'améliorer la compréhension à l'échelle régionale des sensibilités des lacs de toundra arctique et leurs réactions à la variabilité et aux changements climatiques. Les chercheurs élaboreront et valideront un modèle hydro-écologique pour les systèmes arctiques, intégrant le paysage et la géochimie, ainsi que les lacs et la glace. Ce projet fournira des données patrimoniales et des produits qui pourront servir directement au développement de solutions alternatives d'adaptation pour la conservation, la protection et la gestion des écosystèmes d'eau douce dans l'Arctique.





“ᑕᑭᓐᓇ ᐱᑭᓐᑭᓐ ᓄᓇᑭᓐ ᖃᑦᑕᓕᓕᓕᓐᓂᖃᑦᓂᓐ (ᓄᓇ) ᐱᑭᓐ ᐅᑦᓂᓐ ᐱᖃᓄᓐᓂᓄᓐ.”

— ᐃᑕᓐᓂᐱᖃᓕᓕ, 2010 ᐱᑕᓕᓕᓐᑭᓐᑭᓐ, ᑭᓂ ᐅᓐᑦᓂᓐ ᐃᑕᓐᓂᐱᖃᓐ (ᐃᑕᓐᓂᐱᖃᓐᑭᓐ ᓂᖃᓐᑦᑕᓐᓂᖃᓐ, ᓄᓇᑭᓐ

« Grâce à cette expérience, je me sens plus connecté à ma terre (nuna) et à ma culture. »

— Un étudiant du Programme sur le terrain 2010, école secondaire Maani Ulujuk Ilinniarsvik, Rankin Inlet, Nunavut

ᖃᓄᓐᑭᓐᑭᓐᑭᓐᑭᓐ ᑕᓐᓄᓂᓐ ᐱᓇᓐᑭᓐᓂᓐᓂᓐ ᐱᑕᓕᓐᓂᓐᑭᓐᑭᓐ. ArcticNet ᐱᑕᓐᓂᓐᑭᓐᑭᓐ ᑭᓐᓄᓐᑭᓐ ᐃᓂᖃᓐᑭᓐᑭᓐᑭᓐ ᐃᑕᓐᓂᓐᑭᓐᑭᓐ-ᓇᖃᓐᑭᓐᑭᓐ ᐃᑕᓐᓂᐱᖃᓐᑭᓐ ᓄᓇᖃᓐᑭᓐᑭᓐᑭᓐ ᐅᓐᓂᓐᑭᓐᑭᓐ ᐃᑕᓐᓂᐱᖃᓐᑭᓐ. ᐱᓐᓂᓐᑭᓐᑭᓐᑭᓐ ᑕᓐᓄᓐ ᐱᓇᓐᑭᓐᑭᓐᑭᓐ ArcticNet ᐱᓐᓂᓐᑭᓐᑭᓐ ᐃᑕᓐᓂᐱᖃᓐᑭᓐ ᐱᑭᓐ ᓐᑕᓐᑭᓐᑭᓐᑭᓐ ᓐᑕᓐᑭᓐᑭᓐᑭᓐ ᐱᓐᓂᓐᑭᓐᑭᓐ ᐃᑕᓐᓂᐱᖃᓐᑭᓐ ᐃᓂᓐᑭᓐᑭᓐᑭᓐ

du réseau. Grâce au fonds de formation ArcticNet, nos étudiants peuvent participer à des cours internationaux spécialisés dans le domaine de l'Arctique. Depuis quelques années, les réalisations de ces centaines d'étudiants de cycle supérieur et de boursiers postdoctoraux d'ArcticNet donnent une orientation positive à l'avenir de la recherche sur l'Arctique et à la gestion d'un milieu confronté aux changements climatiques et à la modernisation.

Écoles à bord

Institué au cours de la première année d'ArcticNet, le programme Écoles à bord offre à des élèves et des enseignants d'écoles secondaires d'un bout à l'autre du Canada l'occasion de combler le fossé entre les sciences arctiques enseignées à l'école et la recherche effectuée directement sur le terrain. L'objectif du programme est de faire participer des jeunes des collectivités du nord et du sud et de leur montrer que l'étude et la gestion des changements qui s'opèrent dans le milieu arctique offrent des possibilités pédagogiques et professionnelles. L'événement marquant de cette initiative est le programme sur le terrain « à bord » du NGCC *Amundsen*. Les écoles ont l'occasion unique d'envoyer des étudiants et des enseignants dans l'Arctique, à bord du navire, pour prendre part à une expérience pédagogique qui fait partie intégrante de la recherche effectuée par l'équipe scientifique d'ArcticNet.

En 2010, le programme Écoles à bord a connu un franc succès au cours de la première portion de l'expédition scientifique d'ArcticNet. Grâce à la collaboration de Sciences jeunesse Canada (SJC), quatre étudiants ont été choisis parmi les participants au programme d'Expo-sciences pancanadienne et au programme d'innovation polaire de SJC. Les cinq autres places ont été attribuées à des écoles retenues après sélection. Les enseignants et étudiants provenaient d'écoles d'un bout à l'autre du pays : Inuvik (T.N.-O.), Kugluktuk (Nt), Rankin Inlet (Nt), St-Pierre (Man.), Calgary (Alb.), Montréal (Qc), Cornwall (Ont.) et Toronto (Ont.).

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- ሲኖ ኮጋ፣ ሥርዓተናጽሕፍቱን ሲያስፈልግ
- አባሪ ያለው የINRS-ETE
- ርዕሰ ኃይል ሆኖ፣ ሥርዓተናጽሕፍቱን ለማስፈለግ
- ለመለየት ትችል፤ ይህም ሥርዓተናጽሕፍቱን

- $\Delta L < \Delta L^a$, $\rho_L \omega_L^a \delta \omega_L^a \Delta L^a$ ርዕሰ
- ΔL ሊፈጠር፣ $\rho_L \omega_L^a \delta \omega_L^a$ ጥንቃቄ
- ለፍጥነት ርዕሰ፣ $\rho_L \omega_L^a \delta \omega_L^a$ ርዕሰ ሊፈጠር
- ለፍጥነት ርዕሰ፣ $\rho_L \omega_L^a \delta \omega_L^a$ ርዕሰ

- ሕገ ናድሪታይድ፣ ሥርዓት ልዩነት ለገቢዎች መጠራጠር
- ስልጣኑ ለሥልጣኑ ዘመቻ፣ ሥልጣኑ ሥርዓት ልዩነት ለገቢዎች
- ለሥልጣኑ ስልጣኑ፣ ሥልጣኑ ሥርዓት ልዩነት ለገቢዎች
- ከሥልጣኑ ስልጣኑ፣ ሥርዓት ልዩነት ለገቢዎች ስልጣኑ

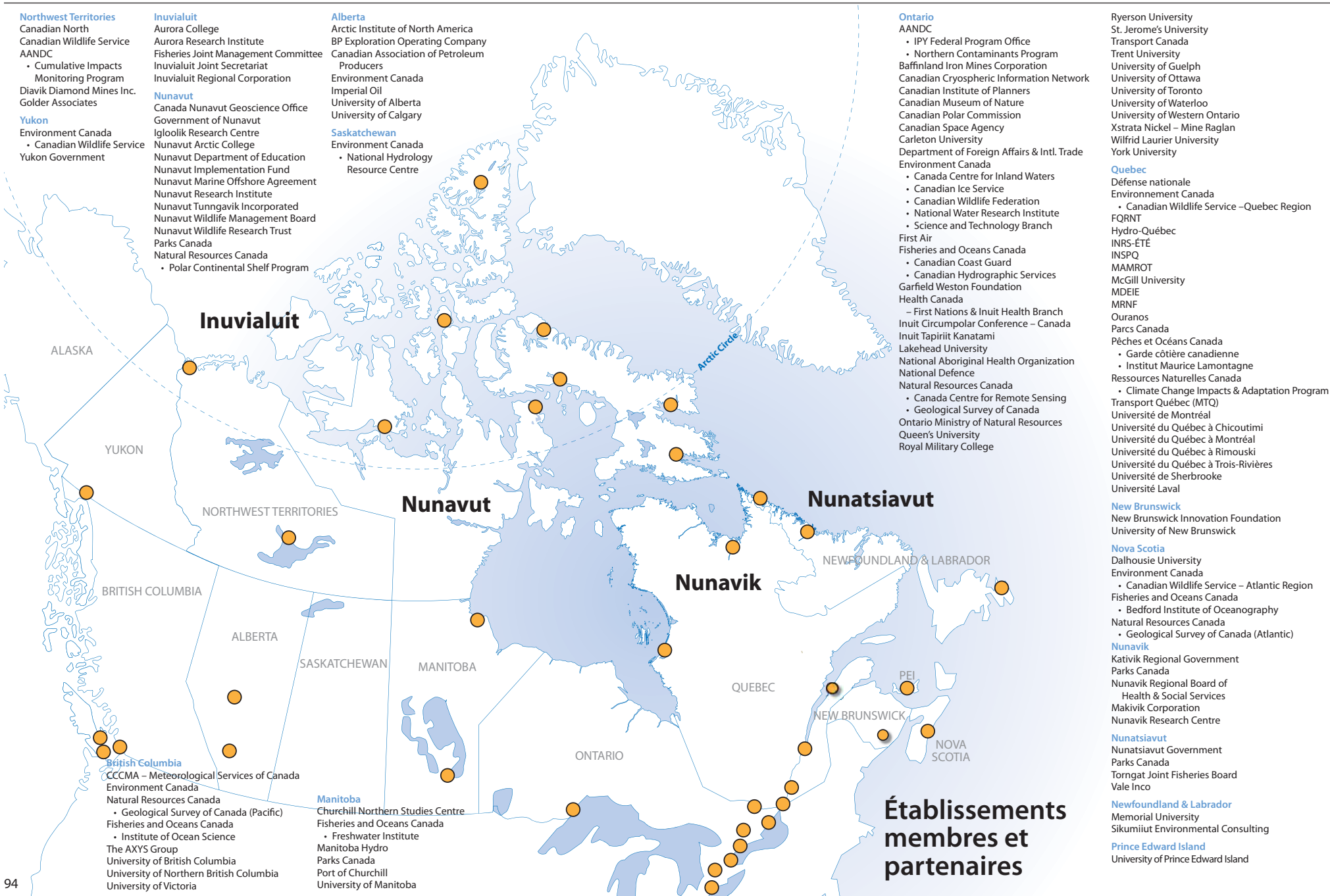
- $\langle \sigma \rangle$ $\propto$ $\langle \sigma \rangle$. $\langle \sigma \rangle$ $\propto$ $\langle \sigma \rangle$



- Émilie Champagne, Université Laval
- Inga May, Université de Munich
- Arnaud Tarroux, Université du Québec à Rimouski
- Wendy Michaud, Université de Waterloo

- Rudy Riedlsperger, Université Memorial de Terre-Neuve
- Kaitlin Breton-Honeyman, Université Trent
- Meghan Buckham, Université Trent
- James Baker, Université de Colombie-Britannique

- Jennifer Organ, Université Dalhousie



Λαμβάνοντας υπόψη τα παραπάνω, η εταιρεία μας
Réseautage et partenariats

[illegible][illegible]

ጋክሊፋልኛጋር ልዎላ ልሊጋ ምዕራፍጋር ሰገላፋገላፋ
ፍሊጋጋር 50 ፍሊጋጋር ምዕራፍጋር ፍሊጋጋር

ArcticNet est un réseau pancanadien qui mise sur des appuis internationaux solides, reflétant la portée mondiale des questions relatives à l'Arctique. À l'aube de notre deuxième cycle de financement, nous comptons 30 universités canadiennes, 28 programmes, organismes et laboratoires dans 8 ministères fédéraux, 18 organismes inuits, 10 partenaires du secteur privé ainsi que 9 ministères et organismes provinciaux qui contribuent de façon concrète au réseau. Ces partenaires se trouvent dans toutes les provinces canadiennes, dans les territoires du nord et dans les régions de revendications territoriales des Inuits, couvrant non seulement les zones limitrophes habituelles qui séparent le Canada des États-Unis à l'est et à l'ouest, mais également le nord et le sud du pays. De plus en plus, des partenaires des milieux universitaires et gouvernementaux situés aux États-Unis, en Norvège, en France, au Danemark, au Royaume-Uni, en Espagne, en Russie, au Japon et en Allemagne concourent au rayonnement international d'ArcticNet.

Depuis 2004, ArcticNet s'est assuré de la participation directe des Inuits à toutes les étapes de la planification du programme de recherche et de la conception du cadre stratégique. ArcticNet travaille étroitement avec Inuit Tapiriit Kanatami (ITK), le Conseil circumpolaire inuit (CCI Canada) et les quatre organisations inuites régionales de revendications territoriales à l'élaboration et la mise en œuvre de son programme de recherche ainsi qu'à la précision de son plan stratégique. Ces six organisations sont représentées au sein du Comité de gestion de la recherche et du conseil d'administration du réseau.

La consultation des intervenants inuits et nordiques vivant dans plus de 50 collectivités du littoral arctique dispersées sur des

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[illegible]

Deux chaires d'excellence en recherche du Canada sur l'Arctique ont été financées sous l'égide d'ArcticNet. Marcel Babin, professeur à l'Université Laval, est titulaire de la CERC sur la télédétection de la nouvelle frontière arctique du Canada, tandis que Søren Rysgaard, de l'Université du Manitoba, détient la CERC sur la géomicrobiologie arctique et le changement climatique. Les chaires d'excellence en recherche du Canada sont financées pour une période de sept ans, correspondant au deuxième cycle d'ArcticNet (2011-2018); leurs budgets, incluant le financement collatéral, représenteront une contribution estimée à plus de 90 millions de dollars au programme de recherche du réseau. Ces deux chaires complètent le programme scientifique d'ArcticNet par l'addition de deux nouveaux centres d'excellence avec de nouveaux programmes de recherche et de nouveaux chercheurs et font partie du deuxième cycle d'ArcticNet (2011-2018) en tant que projets de recherche.

Au cours des dernières années, ArcticNet a bénéficié d'occasions extraordinaires de tisser de nouveaux liens et de renforcer ses relations avec des partenaires internationaux de plus en plus nombreux. Le réseau a su profiter de l'impulsion donnée par l'Année polaire internationale (API) et par l'Initiative des partenariats internationaux (IPI) du programme des Réseaux de centres d'excellence pour consolider de nombreuses collaborations qui ont, en retour, permis d'accroître la reconnaissance et la contribution d'ArcticNet sur la scène internationale. Les nouvelles collaborations du réseau en 2010-2011 incluent :

[illegible]

La réunion scientifique annuelle d'ArcticNet : LA conférence canadienne sur l'Arctique

Peu de temps après sa première édition, en décembre 2004, la réunion scientifique annuelle d'ArcticNet est rapidement devenue LA réunion scientifique annuelle sur l'Arctique au Canada. En

ArcticNet ለሕዳሪኛው ዓመት የሚሰጠው የክልላዊ የአየር ትኩረት (ASM2010) 14-፣ 17-፣ 19-፣ 2010-፣ 2011-፣ 2012-፣ 2013-፣ 2014-፣ 2015-፣ 2016-፣ 2017-፣ 2018-፣ 2019-፣ 2020-፣ 2021-፣ 2022-፣ 2023-፣ 2024-፣ 2025-፣ 2026-፣ 2027-፣ 2028-፣ 2029-፣ 2030-፣ 2031-፣ 2032-፣ 2033-፣ 2034-፣ 2035-፣ 2036-፣ 2037-፣ 2038-፣ 2039-፣ 2040-፣ 2041-፣ 2042-፣ 2043-፣ 2044-፣ 2045-፣ 2046-፣ 2047-፣ 2048-፣ 2049-፣ 2050-፣ 2051-፣ 2052-፣ 2053-፣ 2054-፣ 2055-፣ 2056-፣ 2057-፣ 2058-፣ 2059-፣ 2060-፣ 2061-፣ 2062-፣ 2063-፣ 2064-፣ 2065-፣ 2066-፣ 2067-፣ 2068-፣ 2069-፣ 2070-፣ 2071-፣ 2072-፣ 2073-፣ 2074-፣ 2075-፣ 2076-፣ 2077-፣ 2078-፣ 2079-፣ 2080-፣ 2081-፣ 2082-፣ 2083-፣ 2084-፣ 2085-፣ 2086-፣ 2087-፣ 2088-፣ 2089-፣ 2090-፣ 2091-፣ 2092-፣ 2093-፣ 2094-፣ 2095-፣ 2096-፣ 2097-፣ 2098-፣ 2099-፣ 2100-፣ 2101-፣ 2102-፣ 2103-፣ 2104-፣ 2105-፣ 2106-፣ 2107-፣ 2108-፣ 2109-፣ 2110-፣ 2111-፣ 2112-፣ 2113-፣ 2114-፣ 2115-፣ 2116-፣ 2117-፣ 2118-፣ 2119-፣ 2120-፣ 2121-፣ 2122-፣ 2123-፣ 2124-፣ 2125-፣ 2126-፣ 2127-፣ 2128-፣ 2129-፣ 2130-፣ 2131-፣ 2132-፣ 2133-፣ 2134-፣ 2135-፣ 2136-፣ 2137-፣ 2138-፣ 2139-፣ 2140-፣ 2141-፣ 2142-፣ 2143-፣ 2144-፣ 2145-፣ 2146-፣ 2147-፣ 2148-፣ 2149-፣ 2150-፣ 2151-፣ 2152-፣ 2153-፣ 2154-፣ 2155-፣ 2156-፣ 2157-፣ 2158-፣ 2159-፣ 2160-፣ 2161-፣ 2162-፣ 2163-፣ 2164-፣ 2165-፣ 2166-፣ 2167-፣ 2168-፣ 2169-፣ 2170-፣ 2171-፣ 2172-፣ 2173-፣ 2174-፣ 2175-፣ 2176-፣ 2177-፣ 2178-፣ 2179-፣ 2180-፣ 2181-፣ 2182-፣ 2183-፣ 2184-፣ 2185-፣ 2186-፣ 2187-፣ 2188-፣ 2189-፣ 2190-፣ 2191-፣ 2192-፣ 2193-፣ 2194-፣ 2195-፣ 2196-፣ 2197-፣ 2198-፣ 2199-፣ 2200-፣ 2201-፣ 2202-፣ 2203-፣ 2204-፣ 2205-፣ 2206-፣ 2207-፣ 2208-፣ 2209-፣ 2210-፣ 2211-፣ 2212-፣ 2213-፣ 2214-፣ 2215-፣ 2216-፣ 2217-፣ 2218-፣ 2219-፣ 2220-፣ 2221-፣ 2222-፣ 2223-፣ 2224-፣ 2225-፣ 2226-፣ 2227-፣ 2228-፣ 2229-፣ 2230-፣ 2231-፣ 2232-፣ 2233-፣ 2234-፣ 2235-፣ 2236-፣ 2237-፣ 2238-፣ 2239-፣ 2240-፣ 2241-፣ 2242-፣ 2243-፣ 2244-፣ 2245-፣ 2246-፣ 2247-፣ 2248-፣ 2249-፣ 2250-፣ 2251-፣ 2252-፣ 2253-፣ 2254-፣ 2255-፣ 2256-፣ 2257-፣ 2258-፣ 2259-፣ 2260-፣ 2261-፣ 2262-፣ 2263-፣ 2264-፣ 2265-፣ 2266-፣ 2267-፣ 2268-፣ 2269-፣ 2270-፣ 2271-፣ 2272-፣ 2273-፣ 2274-፣ 2275-፣ 2276-፣ 2277-፣ 2278-፣ 2279-፣ 2280-፣ 2281-፣ 2282-፣ 2283-፣ 2284-፣ 2285-፣ 2286-፣ 2287-፣ 2288-፣ 2289-፣ 2290-፣ 2291-፣ 2292-፣ 2293-፣ 2294-፣ 2295-፣ 2296-፣ 2297-፣ 2298-፣ 2299-፣ 2300-፣ 2301-፣ 2302-፣ 2303-፣ 2304-፣ 2305-፣ 2306-፣ 2307-፣ 2308-፣ 2309-፣ 2310-፣ 2311-፣ 2312-፣ 2313-፣ 2314-፣ 2315-፣ 2316-፣ 2317-፣ 2318-፣ 2319-፣ 2320-፣ 2321-፣ 2322-፣ 2323-፣ 2324-፣ 2325-፣ 2326-፣ 2327-፣ 2328-፣ 2329-፣ 2330-፣ 2331-፣ 2332-፣ 2333-፣ 2334-፣ 2335-፣ 2336-፣ 2337-፣ 2338-፣ 2339-፣ 2340-፣ 2341-፣ 2342-፣ 2343-፣ 2344-፣ 2345-፣ 2346-፣ 2347-፣ 2348-፣ 2349-፣ 2350-፣ 2351-፣ 2352-፣ 2353-፣ 2354-፣ 2355-፣ 2356-፣ 2357-፣ 2358-፣ 2359-፣ 2360-፣ 2361-፣ 2362-፣ 2363-፣ 2364-፣ 2365-፣ 2366-፣ 2367-፣ 2368-፣ 2369-፣ 2370-፣ 2371-፣ 2372-፣ 2373-፣ 2374-፣ 2375-፣ 2376-፣ 2377-፣ 2378-፣ 2379-፣ 2380-፣ 2381-፣ 2382-፣ 2383-፣ 2384-፣ 2385-፣ 2386-፣ 2387-፣ 2388-፣ 2389-፣ 2390-፣ 2391-፣ 2392-፣ 2393-፣ 2394-፣ 2395-፣ 2396-፣ 2397-፣ 2398-፣ 2399-፣ 2400-፣ 2401-፣ 2402-፣ 2403-፣ 2404-፣ 2405-፣ 2406-፣ 2407-፣ 2408-፣ 2409-፣ 2410-፣ 2411-፣ 2412-፣ 2413-፣ 2414-፣ 2415-፣ 2416-፣ 2417-፣ 2418-፣ 2419-፣ 2420-፣ 2421-፣ 2422-፣ 2423-፣ 2424-፣ 2425-፣ 2426-፣ 2427-፣ 2428-፣ 2429-፣ 2430-፣ 2431-፣ 2432-፣ 2433-፣ 2434-፣ 2435-፣ 2436-፣ 2437-፣ 2438-፣ 2439-፣ 2440-፣ 2441-፣ 2442-፣ 2443-፣ 2444-፣ 2445-፣ 2446-፣ 2447-፣ 2448-፣ 2449-፣ 2450-፣ 2451-፣ 2452-፣ 2453-፣ 2454-፣ 2455-፣ 2456

réponse à un besoin évident, la réunion est devenue une conférence nationale et internationale sur la recherche arctique bien établie, récurrente et très courue. La conférence a lieu au début du mois de décembre et réunit chaque année 400 à 900 participants. L'évènement débute par une Journée étudiante orchestrée par l'Association étudiante ArcticNet (AÉA). La réunion scientifique a la réputation d'être l'une des rencontres sur l'Arctique les plus dynamiques et les plus pluridisciplinaires au monde. La très forte participation d'étudiants diplômés et de jeunes scientifiques fait l'effet d'un bain de jouvence nécessaire à ce type de réunion au Canada et au milieu de la recherche sur l'Arctique en général.

La septième édition de la réunion scientifique annuelle d'ArcticNet (ASM2010) a eu lieu du 14 au 17 décembre 2010 au Westin Ottawa, Ottawa, Ontario. Accueillant 550 participants, l'ASM2010 a été un évènement marquant pour le réseautage, offrant une occasion hors pair pour les chercheurs du réseau, les boursiers postdoctoraux, les étudiants diplômés, le personnel de recherche, les partenaires du réseau issus du gouvernement, des organisations inuites et de l'industrie ainsi que les membres du conseil d'administration et des divers comités de se rencontrer et de discuter des plus récents résultats de recherche sur l'Arctique. Le programme incluait plus de 150 conférences et 165 affiches scientifiques relevant de tous les domaines de la recherche arctique, reflétant les impressionnantes réalisations scientifiques et le caractère hautement pluridisciplinaire de la recherche au sein d'ArcticNet. Le succès des études d'impact régionales intégrées (IRIS) était évident durant l'ASM2010 avec deux sessions concurrentes entièrement dédiées aux effets des changements climatiques sur la région subarctique de l'Est canadien et d'importantes réunions pour la coordination des IRIS. Témoinant du dynamisme de la relève canadienne en recherche arctique, plus de 335 personnes ont participé à la sixième journée étudiante d'ArcticNet.





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En 2010-2011, le réseau a concentré ses efforts sur l'établissement de nouvelles collaborations, sur l'identification des besoins aux fins de l'adaptation de l'outil de recherche géospatiale pour les résidents du Nord, sur l'élaboration d'un plan d'archivage de données et sur l'obtention de financement pour l'archivage complet des séries de données. À cet égard, le programme canadien de l'API a accepté une proposition du réseau CCIN, fournissant les fonds pour que le CCIN devienne le Centre de préservation des séries de données de l'API. ArcticNet a soutenu officiellement cette initiative, car il s'agit d'un élément essentiel pour la gestion continue des données et l'évolution du CDP, d'une grande importance dans le cadre du nouveau cycle d'ArcticNet. Les membres du Comité de gestion des données polaires ont commencé de nouvelles collaborations, notamment avec le Programme de surveillance de la biodiversité circumpolaire et le réseau du centre de rassemblement des données de l'API. Les rencontres ont permis de susciter ou de poursuivre des discussions avec des groupes internationaux tels que British Antarctic Survey, Cooperative Arctic Data and Information Service et Partnering Earth Observations for People Living Environmentally. Nous avons espoir que ces discussions permettront d'accroître les partenariats de même que la reconnaissance du CDP à l'échelle internationale.

Le 20 août 2010, le ministère des Affaires autochtones et Développement du Nord Canada a annoncé un investissement

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- ኢኒርፖርት 135 በባናዲያን ስራ ደረጃ ርዕይነት የተሰጠው ArcticNet ነፃ አስተሳሰብ ነው፡፡ ኤምዋርፓየል ኬኔድያ ታዲያ ሙሉ ሊኖር ይችላል፡፡ (Asia Times, BBC, CNN, The Economist, The Guardian, Le Monde, Nature, The New York Times, Reuters), ካልገሪ (Calgary Herald, CTV, Discovery Channel, CBC, Le Devoir, The Gazette, The Globe and Mail, Ottawa Citizen, Postmedia News, La Presse, Radio-Canada, Toronto Star, Toronto Sun,

Informer le public des problèmes dans l'Arctique

- Des médias internationaux (Asia Times, BBC, CNN, The Economist, The Guardian, Le Monde, Nature, The New York Times, Reuters), nationaux (Calgary Herald, CTV, Discovery Channel, CBC, Le Devoir, The Gazette, The Globe and Mail, Ottawa Citizen, Postmedia News, La Presse, Radio-Canada, Toronto Star, Toronto Sun, Vancouver Sun, Winnipeg Free Press) et nordiques (APTN, Nunatsiq News) ont diffusé plus de 135 reportages sur la recherche d'ArcticNet dans bon nombre de pays dont le Canada, la France, la Thaïlande, le Royaume-Uni et les États-Unis.
- L'équipe de l'émission « Mighty Ships » du réseau Discovery s'est jointe à ArcticNet et à la Garde côtière canadienne à

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bord du NGCC *Amundsen* pour suivre l'équipe de chercheurs échantillonnant la glace de mer et récupérant des mouillages océanographiques tout en combattant un environnement arctique en constant changement dans la mer de Beaufort canadienne.

- Le chercheur d'ArcticNet Joël Bêty s'est vu décerner le titre de scientifique de l'année 2010 par Radio-Canada pour son travail sur la migration des oiseaux vers le Grand Nord. De plus, en janvier 2010, le professeur Bêty et son étudiante au doctorat Laura McKinnon ont publié les résultats de leur recherche dans le prestigieux magazine international « Science ».
- Un débat des plus importants sur le rôle de l'industrie dans le financement de la recherche scientifique a été soulevé à la suite des collaborations d'ArcticNet avec l'industrie pétrolière et gazière depuis 2009 à bord du NGCC *Amundsen*. Bien des questions ont été soulevées par rapport à l'aspect environnemental, politique, économique et éthique de ces collaborations, ce qui a engendré plusieurs articles provenant de publications nationales et nordiques. Louis Fortier, directeur scientifique d'ArcticNet, a participé à une séance du Comité permanent des pêches et des océans à la Chambre des communes du Canada pour clarifier certaines idées préconçues ainsi que de la fausse information en circulation.
- L'échouement du navire de croisière MV *Clipper Adventurer*, au nord de Kugluktuk, et le sauvetage subséquent de ses passagers par le NGCC *Amundsen* ont suscité une importante couverture médiatique concernant l'étude cartographique du plancher océanique du passage du Nord-Ouest face à la diminution de la glace de mer en Arctique. Cet incident, de même que l'échouement de deux autres navires en 2010 dans l'Arctique canadien, a souligné le besoin urgent de cartographier les fonds marins de l'Arctique, comme le font déjà les chercheurs d'ArcticNet à bord du NGCC *Amundsen*.

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Les photos utilisées dans ce rapport annuel sont disponibles sur la galerie de photos ArcticNet.

Warwick Vincent: pages 14, 62

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