NUNAVUT RESEARCH INSTITUTE

2010 COMPENDIUM OF RESEARCH

For further information contact:

Mary Ellen Thomas, Senior Research Officer
(867) 979.7202 or Maryellen.thomas@arcticcollege.ca

Rick Armstrong, Manager, Scientific Support Services
(867) 979.7280 or ramstrong@arctic.college.ca

2010 COMPENDIUM OF RESEARCH IN NUNAVUT

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Welcome to the Nunavut Research Institute

The Nunavut Research Institute is a gateway to the many exciting research and technology development initiatives underway in the territory.

A part of Nunavut Arctic College, it is a leader in developing and promoting traditional knowledge, science and technology as key local resources. As the central body mandated to license research, it serves as a touchstone for broad-scale scientific activity in the territory.

NRI also acts on behalf of Nunavut residents, sharing information on research projects, providing advice on research funding programs and assisting in the development of proposals to research funding agencies.

Mandate and Objectives

The Nunavut Research Institute's mandate is to develop, facilitate, and promote scientific research as a resource for the well being of people in Nunavut. The core objectives of the Institute are to:

- Coordinate the research licensing process under the Nunavut Scientists Act
- Support the meaningful involvement of Nunavut residents in scientific research, including advancing the incorporation of Inuit Qaujimanituqangit in research design
- Promote the development and application of new technology to improve the quality of life of Nunavummiut
- Help broker research projects and partnerships that meet the needs of Nunavut residents
- Provide a clearing house of information on scientific research conducted in Nunavut
- Organize, facilitate, and promote research training and outreach programs designed to enhance awareness and build local research capacity in Nunavut

A Message from the Senior Science Officer

As the Institue wraps of another year of activity, we can see an increase in the amount of research being undertaken in Nunavut.

Many projects are being initiated by nunavummiut with a desire to generate more data relevant to lives in Nunavut. We will continue to monitor the types, numbers and locations of these projects going forward in order to measure possible impacts and outcomes.

We see great opportunities for research in Nunavut and with the development of new research facilities in Nunavut, that include a new office space, work stations, labs, conference and training facilities in Iqaluit. Igloolik, Rankin Inlet, Cambridge Bay and Arviat.

These investments, funded by the Government of Canada's Arctic Research Infrastructure (ARIF) Program will contribute to expanding the territory's capacity to support licensed scientific research and community-based science led by Nunavummiut

The institute is continully working to seek out and develop new relationships to strengthen the range and type of research that is being carried out to improve knowledge of Nunavut and to improve the well being of our residents.

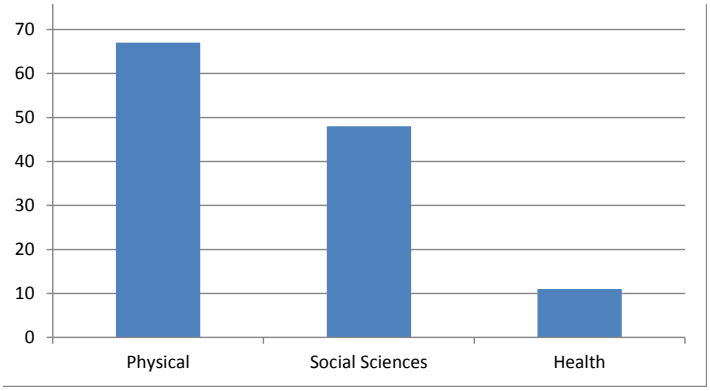
We also seek out relationships that will offer ever increasing opportunites for Arctic College students to gain experience in research, heading to careers in science.

Mary Ellen Thomas
Senior Science Officer
Nunavut Research Institute

2010 LICENSED RESEARCH IN NUNAVUT

In 2010, 126 scientific research licenses were issued by the Nunavut Research Institute.

	Physical Science	Social Sciences	Health Research	Total Licenses
2010	67	48	11	126



A HISTORY OF THE INSTITUTE

The Iqaluit research centre was opened by the Department of Indian and Northern Affairs in 1978 to support the Eastern Arctic Marine Sciences Project.

A similar research support centre was also opened in Igloolik in 1975 to support field research. Operations of both centres were devolved to the Science Institute of the Northwest Territories (SINT) in 1988. And the SINT assumed responsibility for administration of the NWT Scientists Act in Nunavut.

Responsibility for the Igloolik facility was transferred to the college's Language and Culture Program in 2008. The centre will form an integral part of the new Inuit language and cultural research centre currently being established Nunavut Arctic College. In 2010 the Iqaluit research centre was replaced with a new facility under the Arctic Research Infrastructure fund.

Hundreds of research field projects in the physical, biological, health, and social science disciplines have been supported by the Iqaluit and Igloolik research centers since they were established. Over the years, NRI's role expanded well beyond providing scientific permits, technical advice, and logistic support.

The Institute has administered a wide range of outreach, training and communication initiatives to Inform Nunavummiut about research in Nunavut and to support young Nunavummiut to pursue careers in scientific research. NRI has also actively worked to identify research needs, broker research partnerships, and facilitate dialogue and collaboration among Nunavut communities, Academic research scientists, Government agencies, and the private sector. NRI has also served as the point of contact in Nunavut for major research programs such as the International Polar Year. Staff of the NRI have also led a variety of primary projects ranging from oral history documentation to development of methods for aquatic biomonitoring.

The Iqaluit Research Centre has established strong working relationships with Nunavut communities, Inuit organizations, government agencies and co-management bodies, and is well networked with Academic, Government and private sector institutions that conduct long term research in Nunavut. Utilizing these connections, the Institute serves as a clearing house for information on research in Nunavut and provides focal point for science coordination and outreach, including hosting a Nunavut coordination office for International Polar year.

The centre also provides administrative support and supervision to Arctic College's Environmental Technology Program, and works closely with research partners to design and conduct innovative environmental field monitoring programs.

FOR MORE INFORMATION

Visit the Nunavut Research Institute web site at:

http://www.nri.nu.ca

Construction for new Nunavut Research Institute facilities began in 2009 and was completed in 2010. The news facilities were all fully operational in 2011.

A tugboat carefully guides a barge containing components of the Arviat Research Support Centre. The Igloolik, Cambridge Bay and Rankin Inlet facilities were also shipped by sealift.

The Rankin Inlet Research Laboratory is an example of the completed community research centres. The Rankin Inlet lab is conveniently located next to the Nunavut Arctic College Community Learning Centre.

The new headquarters building and Science Campus for the Nunavut Research Institute were funded by the Arctic Research Infrastructure Program in Iqaluit.

NRI INTRODUCES NEW RESEARCH FACILITIES

In 2010 the Nunavut Research Institute received 11 million dollars through the Government of Canada's Arctic Research Infrastructure Fund (ARIF) to replace and expand the NRI research facilities, greatly expanding the range and quality of services and support we can offer to researchers.

The new NRI research complex and science campus in Iqaluit consists of two state of the art buildings (each approximately 5,000 square feet). One housing the NRI's administrative offices, research laboratory, meeting areas, and conference rooms. The adjoining building houses the classrooms, teachers' offices, and teaching laboratories of Nunavut Arctic College's Environmental Technology Program, along with the Institute's new circumpolar research library.

Both buildings were specifically designed to meet the practical needs of researchers and incorporate innovative energy efficiency design features. Construction of the buildings was completed in December 2010, and the buildings were occupied in February 2011.

SERVICES

SERVICES AND SUPPORT FOR LICENSED SCIENTIFIC RESEARCH

The Nunavut Research Institute provides a range of research and advisory services supporting research across the territory. Support services include:

- Research regulatory advice (e.g. identification of permit requirements for field projects);
- Identification of research field support services (referrals for interpreters, field assistants, accommodation, etc);
- Organization of research presentations and outreach activities in Iqaluit;
- Advice on communication, training, and community engagement initiatives;
- Support for research development, including proposal review, brokering partnerships, and identification of project funding sources

NUNAVUT RESEARCH INSTITUTE FACILITIES

NUNAVUT RESEARCH CENTRE AND IQALUIT SCIENCE CAMPUS

The Nunavut Research Institute provides logistical support services and resources to licensed researchers at their headquarters and Science Campus facilities in Iqaluit:

- Physical, Social sciences and Health Research
- Wet laboratory with chemical fume hoods*
- Accommodation and meals at Nunatta residence*
- Shower and laundry facilities
- Telephone, fax, printing, copying*
- Wireless internet access and research work stations
- Meeting rooms with presentation screens
- Whisper interpretation kits
- NRI Circumpolar Research library
- Warehouse storage (unheated) - short and long term*
- ATV and snowmobile rentals
- Field gear and safety equipment (ice augers, -40C rated sleeping bags, winter boots and coats, tent, camp stoves, immersion suits, SPOT personal locator devices, GPS devices, satellite phones, etc.)

CAMBRIDGE BAY RESEARCH LABORATORY

The Cambridge Bay Research Laboratory is customized to support physical sciences and health research through the provision of clinical and laboratory facilities.

RANKIN INLET RESEARCH LABORATORY

The Cambridge Bay Research Laboratory is customized to support physical sciences and health research through the provision of clinical and laboratory facilities.

IGLOOLIK RESEARCH RESIDENCE

The Igloolik Research residence is designed to support up to six visiting researchers. On-site kitchen, shower, laundry and storage facilities;

ARVIAT TRADITIONAL KNOWLEDGE RESEARCH SUPPORT CENTRE

The Arviat Research Support Centre provides support for social sciences and traditional knowledge research with an emphasis on new media production and publishing.

- Social Sciences and Traditional Knowledge Research
- New media video production and editing suites
- Accommodation for up to six residents *
- Shower and laundry facilities
- Telephone, fax, printing, copying *
- Wireless internet access and research workstations
- Meeting rooms with presentation screens
- Whisper interpretation kits
- Translation and Interpretation services *
- Teleconferencing and video conferencing services *
- Warehouse storage - short and long term *

NUNAVUT ARCTIC COLLEGE COMMUNITY LEARNING CENTRES

Nunavut Research Institute facilities and services are compimented through the support of Nunavut Arctic College's network of Community Learning Centres and regional Campuses in Iqaluit, Rankin Inlet, Arviat and Cambridge Bay.

FOR MORE INFORMATION

For more information on research support services, facility bookings and fees contact:

Manager, Scientific Support Services
Nunavut Research Institute
Box 1720 Iqaluit, NU XOA OHO
Phone: 867-979-7280 Fax: 867-979-7109
Rick.armstrong@arcticcollege.ca

** denotes services that may be subject to user fees. Please consult the user fee table below for our current rates*

2010

PHYSICAL SCIENCES RESEARCH IN NUNAVUT

2009 Hope Bay Belt Environmental Baseline Program

License Number: 04 026 10R-M

Principal Investigator: Muggli, Deborah

Affiliation: Rescan Enviro. Services
Vancouver, BC, CA
dmuggli@rescan.com

Number in Party: 19

Research Area: Kitikmeot Region

Locations: Hope Bay Belt

Summary:

Newmont Mining Corporation is exploring significant metal deposits near Hope Bay, Melville Sound, Nunavut. The area includes three main deposits; Doris, Madrid, and Boston. The Doris deposit has been previously permitted to become a mine, but Newmont would like to continue baseline studies in the area in case of further development and to meet fisheries data collection commitments.

A map of the sampling area is included with this proposal. The majority of the sampling will be restricted to potential deposit areas and access corridors, and from reference areas. Sampling will also be conducted in the marine environment for potential future marine access. The proposed baseline research program is to be conducted between April 15, 2009 and April 15, 2010, but the same baseline studies may continue in subsequent years and we area therefore asking for a 3 year multi year permit.

Baseline studies will include the following environmental components:

- local climate and air quality conditions
- marine and freshwater water and sediment quality
- marine and freshwater aquatic biology
- marine and freshwater fish communities
- water quantity and flow patterns
- terrestrial vegetation and soils
- wildlife

AEI - Roche Bay Magnetite Project - Fresh Water Monitoring

License Number: 02 081 10N-A

Principal Investigator: Moore, Steve

Affiliation: EBA Engineering Consultants
Yellowknife, NWT, Canada
smoore@eba.ca

Number in Party: 6

Research Area: North Baffin Region

Locations: Roche Bay (Hall Beach)

Summary:

Sampling will be conducted according to standardized water quality guidelines, which includes a QA/QC program. Water samples will be collected at Roche Bay in June, July and August. The locations of water sampling stations will predetermined and a Global Positioning System (GPS) will be used to locate all stations. Water quality samples will be collected for standard analytical parameters including ultra-low dissolved metals, ultra-low total metals, major ions, low-level nutrients and inorganics.

ALS Environmental (ALS) of Edmonton will prepare the water sampling bottles for all water sampling events. All samples will be transported in portable coolers with ice packs.

In the field, powder-less latex gloves will be worn during handling of bottles and equipment to minimize contamination. All bottles will be rinsed three times with the source water (i.e. the same water the bottle will be filled with) prior to water collection. To minimize trace metals contamination from the filters, filters were rinsed three times with source water prior to filtering the sample water.

As part of a Quality Assurance/Quality Control (QA/QC) program, travel blanks will be used; field blanks and duplicates will be collected and filter blanks submitted. Duplicates will be collected to test the validity of sampling procedures and laboratory methodology.

An investigation of the sensitivity of high Arctic permafrost to climate change

License Number: 02 053 10R-M

Principal Investigator: Pollard, Wayne

Affiliation: McGill University
Department of Geography
Montreal, Quebec, CA
wayne.pollard@mcgill.ca

Number in Party: 10

Research Area: North Baffin Region

This project looks at the impact of climate change on high arctic permafrost conditions and high arctic landscapes. The aims of this project are: (1) to monitor climate conditions for different types of landscape (eg tundra, mountains, coasts, wetlands ...) and assess how much the climate is changing, (2) to determine the amount and rate of landscape change caused by warming and melting permafrost, and (3) to map these changes from for the period 2007-2011.

The information collected in this study will improve our general understanding about climate and permafrost as well as help to predict how the land will respond as climates warm.

This study also contributes new information about high Arctic permafrost and ground ice conditions, the sensitivity of high arctic permafrost to climate change and background data upon which landscape changes can be documented. Another component of this project looks at long-term changes in high Arctic landscapes by looking at how rock surfaces are being weathered and eroded. This research will help northern understand how landscapes are changing and will change in the future.

Architecture, evolution and metallogeny of Mesoproterozoic sedimentary basins of the eastern Canadian Arctic Islands

License Number: 02 062 10R-M

Principal Investigator: Turner, Elizabeth C.

Affiliation: Laurentian University
Department of Earth Sciences
Sudbury, Ontario, Canada
eturner@laurentian.ca

Number in Party: 4
Research Area: North Baffin Region
Locations: Adams Sound, Society Cliffs, Fleming Inlet, Paquet Bay

The project will focus on limestone/dolostone (known to contain Zn-Pb±Cu±Ag deposits on northern Baffin Island) and sandstone/conglomerate (potential U hosts) in three Mesoproterozoic (1.6 to 1.0 billion years ago) sedimentary basins of northern Nunavut.

This project will make major contributions in three areas:

1 defining the economic prospectivity of the Mesoproterozoic basins of northeastern Nunavut by identifying features that may have contributed to concentrating metals;

2 contributing to the international literature on the nature of early Earth's oceans and biotas, prior to the advent of multicellular life or life on land; and

3 reconstructing the structural, stratigraphic and sedimentological configuration of three basins that are presumed to have been parts of a low-latitude continental margin about 1.2 billion years ago.

Arctic Carbonates

License Number: 02 069 10N-M

Principal Investigator: Beauchamp, Benoit

Affiliation: University of Calgary
Calgary, Alberta, Canada
bbeaucha@ucalgary.ca

Number in Party: 5

Research Area: North Baffin Region

Locations: Ellesmere Island

We will investigate the role played by ocean acidification in the global transformation of carbonate rocks across the late Paleozoic-early Mesozoic transition, some 251 million years ago, when pCO2 levels rose from modern-like value to 5x to 10x modern values. We will focus on an area of the Sverdrup Basin centered on Raanes Peninsula, SW Ellesmere Island, where this phenomenon is well displayed in outcrops.

Goals and objectives:
The project will address two issues of importance to understand the phenomenon of oceans acidification in the distant past in the Sverdrup Basin:

Ancient reefs.
The focus of this project is to examine outcrops of large ancient reefs west of Blind Fiord, on Raanes Peninsula, SW Ellesmere Island.

Sandstone-carbonate units.
The focus of this project is to examine outcrops of carbonates and sandstones east of Blind Fiord, on Raanes Peninsula, SW Ellesmere Island.

Method of transportation:
Twin Otter transportation from Resolute Bay to Eureka or strips designated by PCSP Helicopter transportation to study area.Walk from camp site to outcrops.

Structures to be erected:
Only four temporary personal tents will be erected at the different camp sites.

Restoration/abandonment plans:

Each camp site will be restored to its original conditions. All garbage will be gathered and shipped back to Resolute.

Methodology:

Collection protocol and mechanism
About 50 small rock samples (less than 0.5 kg each) will be collected for geochemical analysis. Samples will be collected with a geological hammer and will be catalogued and preserved in Calgary by the Geological Survey of Canada. No fossils will be collected.

Data:

Use of data:
In the short term, the data will be used in support of the work of the researchers and the graduate students. The data will then be published in peer-reviewed journals, after which it will be made publicly available through the GSC to anyone who wishes to use it.

Reporting
Three to five peer-reviewed papers will result from this project. The results that are relevant to Arctic Institute of North America's outreach initiative.

ArcticNet 2009 Expedition: Integrated Regional Impact Study of the Canadian High Arctic

License Number: 05 055 10R-M

Principal Investigator: Levesque, Keith

Affiliation: Universite Laval
ArcticNet
Quebec City, Quebec, Canada
keith.levesque@arcticnet.ulaval.ca

Number in Party: 43

Research Area: Nunavut Wide

Locations: North and South Baffin , Kivalliq and Kitikmeot Regions

The main objective of the proposed research project is to assess the changes occurring in the Eastern Canadian Arctic coastal marine ecosystem in response to climate warming.

Using the Canadian research icebreaker CCGS Amundsen to access the vast expanses of the coastal Canadian Arctic, sampling operations in Nunavut waters are planned to take place from 15 October to 10 November.

Shipboard sampling will be carried out along the ship track and at designated sampling stations in the Northwest Passage, Lancaster Sound, northern Baffin Bay and Hudson Strait (see Figure 1-2). Shipboard operations will include mapping the ocean floor with sounding technologies, meteorological measurements and the sampling of seawater, sediment, sea ice, plankton and juvenile fish. The quantity of organisms sampled will be ecologically insignificant and will have no impact on the resource. A small launch vessel (< 10 m) will also be used to measure the physical characteristics of the water column such as mixing occurring in the surface layer.

The vessel will conduct short term day-time (under 4 hours) sampling operations and return to the Amundsen daily. Samples taken during the 2009 expedition will cover almost all natural science fields, including geology, chemistry (e.g., contaminants), biology, oceanography and meteorology.

Arctic marine Ice-associated ecosystem in a Changing Environment (Arctic-ICE)

License Number: 02 080 10N-A

Principal Investigator: Gosselin, Michel

Affiliation: University du Quesbec a Rimouski
Rimouski, Quebec, Canada
michel_gosselin@uqar.gc.ca

Number in Party: 9

Research Area: North Baffin Region

Locations: Resolute Passage

Climate warming has induced rapid change on the ice-covered marine ecosystem of the high Arctic. In this project we will investigate physical and biological processes controlling the timing of marine primary production, which has been hypothesized as an indicator of potential change in the ecosystem.

We plan to conduct scientific research near Resolute Bay, Nunavut, this spring (2010) and next spring (2011). We are a group of researchers who are specialized to study the sea ice ecosystem. As part of this larger study, we will collect data to study the response of the sea ice to weather and oceanographic forcing. We hope to undertake this research in Resolute Passage west of Allen Bay (see below), for a period of about two months (May and June). During this time, we hope to set-up two heated tents on the ice for our equipment.

Our sampling will involve installing automated electronic sensors on the ice that will monitor the weather and ocean properties and currents. Regular sampling will involve the use of ice corers, augers and ocean samplers. While at the camp, we will operate 2 generators for power supply and drip diesel furnaces for heating. We plan to live at the Polar Continental Shelf Project base near the Resolute Bay airport and travel by snowmobile to our sampling site every day, dependent on weather.

Arctic Ocean Climate Change Project

License Number: 02 077 10R-M

Principal Investigator: Hamilton, Jim

Affiliation: Bedford Institute of Oceanography
Ocean Science Division, DFO
Dartmouth, Nova Scotia, CA
HamiltonJ@mar.dfo-mpo.gc.ca

Number in Party: 6

Research Area: North Baffin

Locations: Eastern Barrow Strait, Lancaster Sound, Regent Inlet

An oceanographic study in the eastern end of Barrow Strait has provided continuous measurements of water current, temperature and salinity from August 1998 to present, under successive NRI Research Licenses, the most recent being 0204508R-M.

The objective of the work is to quantify and understand the variability of the heat and fresh water movement between the Arctic Ocean and the Northwest Atlantic to better understand global warming impacts. Measurements, combined with modeling studies, are being used to determine how the interactions between these oceans affect the local, regional and global climate systems.

The data collected also provide information for improving on the safety and efficiency of sea transportation and resources development in the high Arctic. In recent years, the program has expanded to include biological measurements (phytoplankton and zooplankton) to examine how changes in the physical environment may impact on the ecosystem.

This physical and biological oceanographic monitoring program continues in 2009 to provide an extended continuous time series of data that can be examined for trends linked to climate change.

AREVA Kiggavik-Sissons Project Aquatic Baseline Program

License Number: 03 027 10R-M

Principal Investigator: Hamilton, David

Affiliation: Golder Associates Ltd.
Saskatoon, Saskatchewan, CA
dhamilton@golder.com

Number in Party: 9

Research Area: Kivalliq Region

Locations: Baker Lake:

AREVA Resources Canada Inc. (AREVA) proposes to construct and operate a uranium mine located in the Kivalliq region of Nunavut, southeast of the Thelon River. The Kiggavik-Sissons Project is at the surface exploration phase. The project is made of two large groups of mining leases and mineral claims subdivided into Kiggavik to the north and Sissons to the south.

Field personnel will be transported to camp by helicopter. Lakes and streams will be accessed by boat and helicopter.

Assessing the use of natural and constructed wetlands for wastewater treatment in the Kivalliq

License Number: 03 028 10R-M

Principal Investigator: Wootten, Brent

Affiliation: Fleming College
Centre for Alternate Wastewater Treatment
Lindsay, ON, CA
bwootton@flemingc.on.ca

Number in Party: 6

Research Area: Kivalliq

Locations: Baker Lake,Chesterfield Inlet,Whale Cove

Researchers at the Centre for Alternative Wastewater Treatment, Fleming College, are studying the performance, efficacy and functioning of existing natural wetland treatment systems in six communities in Nunavut and examining the chemical, physical and microbial processes occurring in treatment wetlands in cold climates.

Bathurst Inlet Port and Road Project – 2010 Summer Field Work

License Number: 04 035 10N-A
Principal Investigator: Landry, Francois
Affiliation: Rescan Environmental Services
Vancouver, BC, Canada
flandry@rescan.com

Number in Party: 21
Research Area: Kitikmeot Region
Locations: Contwoyto Lake

The proposed Bathurst Inlet Port and Road Project consists of a proposed port on Bathurst Inlet connected to the mines and mineral deposits in Nunavut and Northwest Territories by a new proposed 211 km all-weather road.

The proposed research for 2010 focuses on the terrestrial, freshwater and marine environments and is being conducted to fulfill data gaps and information requests from interveners such as INAC, DFO, Transport Canada, Health Canada, Environment Canada and Natural Resources Canada for the purpose of completing the Final Environmental Impact Statement for the NIRB Environmental Assessment process.

Biography of Polar Desert Soil Ecosystems

License Number: 02 079 10N-A

Principal Investigator: Siciliano, Steven

Affiliation: University of Saskatchewan
Department of Soil Science
Saskatoon, Sask., Canada
steven.siciliano@usask.ca

Number in Party: 4

Research Area: North Baffin Region

Locations: Ellesmere Island

Little is known about polar desert ecosystems. Previous work at Alexandra Fjord indicates that these desert systems may be substantially contributing to the Arctic greenhouse gas budget. In 2010, we propose to characterize the soil ecosystem of six different Canadian High Arctic polar deserts spanning 10º of latitude in a consistent polar desert ecosystem type, which have less than 5% vegetation cover and low annual precipitation. Planned study sites extend from approximately 72ºN on Baffin Island to approximately 82ºN on Ellesmere Island.

Three hypotheses regarding the biological communities of the soils of the polar desert will be tested. To test Hypothesis 1, that spatial relationships among processes are latitudinally dependent, a transect will be laid out at each site. Comparison between transects at different sites will allow estimation of the latitudinal dependency of these scale-dependent variances.

The methods to be used provide the statistical power and robustness needed for these complex datasets. Data to be collected from the transects includes surface sunlight in both the visible and ultra-violet ranges, greenhouse gas fluxes, and a range of soil-biological, soil-chemical and soil-physical measures.

Bylot Island Sampling

License Number: 02 051 10R-M

Principal Investigator: Oakey, Gordon

Affiliation: Geological Survey of Canada(Atlantic)
Dartmouth, NS, CA
goakey@nrcan.gc.ca

Number in Party: 4

Research Area: North Baffin Region

Locations: Bylot Island, Pond Inlet

Purpose: The Geological Survey of Canada (GSC) has initiated a new Geomapping for Energy and Minerals (GEM) Program to identify new resources and stimulate economic growth in the Canadian Arctic.

Goals and Objectives: The sedimentary rocks within the Lancaster Basin are exposed onshore north Baffin Island and Bylot Island. This project will sample the onshore exposures to establish possible petroleum source and reservoir rocks in the Lancaster Basin.

Canadian Arctic Buoy Program

License Number: 02 073 10R-M

Principal Investigator: Tremblay, Bruno

Affiliation: McGill University
Atmospheric and Oceanic Sciences
Montreal, QC, CA
bruno.tremblay@mcgill.ca

Number in Party: 3

Research Area: North Baffin Region

Locations: Byam Martin Channel

We will deploy 3 ice buoys south of the Byam Channel and north of the M'Clintock Channel at the entrance of the Viscount Melville Sound on a multi-year sea ice floe. The goal of the project is to collect data to calibrate a sea ice model of the Canadian Arctic Archipelago (CAA) to study the future sea ice conditions in the Canadian Arctic.

The buoys will be transported to the field using a Twin Otter operated by the Polar Continental Shelf Program. The buoy will be installed on the ice and have a life expectancy of 2 years. Next year, we will deploy 3 additional buoys and replace the battery in the buoys deployed this year.

The buoy may also be lost in a sea ice ridge or drift in a location where maintenance is not possible. One the three buoys is a drifting buoy which tends to wash ashore and be picked-up by passing vessels. The deployment program is funded for 5 years – which means that we will perform such deployment for the next 5 years.

CANDAC

License Number: 02 055 10R-M

Principal Investigator: Drummond, James

Affiliation: University of Toronto
Dept. of Physics
Toronto, Ontario, CA
james.drummond@utoronto.ca

Number in Party: 6

Research Area: North Baffin

Locations: Ellesmere Island

In 2002 a group of researchers joined together to form the Canadian Network for the Detection of Atmospheric Change (CANDAC) with the objective of improving the state of ob-

servational atmosphere research in Canada.

One of the first identified objectives was the necessity of an Arctic laboratory. Within four years, successful applications allowed CANDAC to open the Polar Environment Atmospheric Research Laboratory (PEARL) complex, leasing the building from the Meteorological Service of Canada (MSC) for a nominal fee, and equipping it with instrumentation appropriate to current questions in atmospheric science.

The PEARL complex is located at Eureka, Nunavut, 80N, 86.25W and 1,100km from the North Pole. It is located 425km northwest of the most Northern community in Canada (Grise Fiord) and is only accessible by charter plane, with the exception of an annual "sea-lift" by the Canadian Coast Guard. It is a unique national and international resource used for a variety of atmospheric research programs. It also provides support for other research programs.

Parts of the PEARL complex are required to be independent. For example, the Ridge Laboratory has to provide and maintain resources for power, water, sanitation, accommodation and the like during emergancies. The other sites (0PAL and SAFIRE) can take advantage of the nearby weather station infrastructure that is used for regular support.

CANDAC is dedicated to addressing the issues within the three broad areas of air quality, ozone and climate change. The CANDAC objectives are:

understanding atmospheric change over Canada;

integrating measurements taken from space, aircraft, balloons and the ground;

providing quality-controlled research datasets to researchers;

linking with international networks for data exchange;

maintaining research-critical resources;

training skilled personnel and public education.

CATLIN ARCTIC SURVEY 2010 – Ice Base

License Number: 02 065 10N-A

Principal Investigator: Cunliffe, Chip

Affiliation: Catlin Arctic Survey
London, UK
chip@catlinarcticsurvey.com

Number in Party: 15

Research Area: North Baffin Region

Locations: Ellesmere Island

The result of an increase in man-made CO_2 entering the atmosphere is that 30% is being absorbed into the seawater resulting in an increase in its acidity. 'Ocean Acidification' is a major concern as the hard shells of sea-life are starting to be dissolved, and in many cases shells are not developing at all. Such acid conditions cause a loss of shell-fish, corals and plankton. This could have serious negative impacts on community and commercial fisheries, shoreline and tourism.

Goals and objectives: The Arctic is considered a crucial 'Early Warning System' for global ocean acidification. However, research has been held up by the extreme conditions. We provide polar experts allowing international scientists (from Canada, USA, and Europe) to perform crucial biology and chemistry experiments on the progress of ocean acidification, sampling seawater below the sea-ice and on the northernmost edge of Ellesmere Island.

CCGS Hudson 2010 Hudson Bay/Foxe Basin oceanographic survey

License Number: 01 063 10N-A

Principal Investigator: Duchesne, Mathieu

Affiliation: Geological Survey of Canada
Quebec City, Quebec, Canada
mduchesn@nrcan.gc.ca

Number in Party: 59

Research Area: South Baffin,Kivalliq Regions

Locations: Hudson Bay, Hudson Strait, Foxe Basin

This oceanographic survey will improve the understanding of the regional geology of Hudson Strait, Northern Hudson Bay and Foxe Channel. The four objectives of the survey are 1) to identify and characterize seafloor and shallow subsurface gas escape features 2) estimate thickness of sedimentary rocks 3) map former ice-sheet grounding lines and 4) characterize glacial and post-glacial sediment deposits.

The objectives will be addressed through the acquisition of sediment samples and high-resolution subsurface imaging. The survey will occur onboard the CCGS Hudson departing and returning to Dartmouth, NS. Sediment samples will be raised from the seafloor using coring devices having a maximal length of 15 m. Sediment cores will be processed and stored onboard the vessel. Subsurface imaging will be provided by low energy high-resolution seismic reflection systems.

The areas to be surveyed were selected because their geology is poorly constrained and understood. The region of interest is relatively underexplored and despite previous work is considered a frontier basin.

Churchill Diamond Corridor Activity

License Number: 03 038 10R-M

Principal Investigator: Campbell, Janet

Affiliation: Geological Survey of Canada
NRCan
Ottawa, Ontario, Canada
janet.campbell@nrcan.gc.ca

Number in Party: 6

Research Area: Kivalliq Region

Locations: Wager Bay,Repulse Bay

The principal objectives of this project are to provide geoscience information on the surficial materials and the deep bedrock in the Repulse Bay - Wager Bay area, in the form of geological maps and reports in support of economically effective and environmentally sound use of the terrain and materials.

These activities are part of a five year (2010-2014) multidisciplinary and collaborative effort between geoscientists of Nunavut, Parks Canada and the Geological Survey of Canada to improve the regional geoscience knowledge base for the Wager Bay area.

The main outcomes of this project are to promote sustainable development of natural resources and increase economic self-sufficiency and work opportunities for northerners.

Climate Change Hazard Mapping in Nunavut Communities

License Number: 05 056 10R-M

Principal Investigator: Mate, David

Affiliation: Memorial University & Universite Laval
Nunavut Climate Change Partnership
Quebec City, Quebec, Canada
dmate@nrcan.gc.ca

Number in Party: 18

Research Area: Nunavut

Locations: Arctic Bay, Clyde River, Pond Inlet, Resolute Bay, Grise Fiord, Cape Dorset, Kimmirut, Sanikiluaq, Hall Beach, Igloolik, Qikiqtarjuaq, Pangnirtung, Rankin Inlet, Arviat, Whale Cove, Chesterfield Inlet, Baker Lake, Coral Harbour, Repulse Bay, Kugaaruk, Taloyoak, Gjoa Haven, Cambridge Bay, Kugluktuk, Bathurst Inlet

This work is part of the Nunavut Climate Change Partnership lead by the Government of Nunavut, Department of Environment. To conduct this work a collaborative team has been created that consists of CNGO, GN, NRCan, Memorial University and Université Laval.

The purpose of this project is to evaluate existing and potential landscape hazards and the impacts climate change may have on infrastructure and resource development in communities across Nunavut.

An intensive study will be conducted in Pangnirtung while reconnaissance studies will be conducted by this Project in several communities in 2009-10 (Arviat, Whale Cove, Cambridge Bay, Kugluktuk and Iqaluit)..

Fieldwork in support of this research includes community-scale surficial geology mapping, natural hazard assessment, and permafrost characterization in order to identify infrastructure at risk and landscape constraints on future development.

Datasets that will be produced include surface sediment characteristics, permafrost and ground-ice content, geotechnical properties, thermal condition of the ground, hydrology and surface processes.

The goal is to integrate the above datasets to create a landscape hazard map for communities. This map will be a useful tool for planners and engineers in Nunavut.

Climate change effects on the hydro-ecology of Northern lakes

License Number: 02 070 10R-M

Principal Investigator: Prowse, Terry

Affiliation: University of Victoria
Environment Canada/Water & Climate Impacts
Victoria, BC, CA
Terry.prowse.ec.gc.ca

Number in Party: 3

Research Area: North Baffin Region

Locations: Resolute, Alert, Colour Lake

Climate change is projected to cause significant change to arctic aquatic ecosystems. Changes in the thickness and composition of arctic lake ice covers will produce second order impacts on lake biological productivity and ecology.

The most important effects are likely to result from changes in temperature (ice growth) and precipitation (ice cover composition). While a number of models have been developed to model these changes, their validation has been stalled by lack of relevant field data. Relevant field data will be obtained by sampling of lake ice thickness during spring 2009.

Sampling will commence in Resolute, NU. Transportation between sites will be by Twin Otter airplane. Transportation at field sites will be by snowmobile. No structure will be erected. Impact on lake ice environment will be minimal.

Climate change impacts on river flows, sediment loads, and water quality

License Number: 01 064 10N-M

Principal Investigator: Lafreniere, Melissa

Affiliation: Department of Geography
Queens University
Kingston, Ontario, Canada
melissa.lafreniere@queensu.ca

Number in Party: 4

Research Area: South Baffin Region

Locations: Aulattivijjuaq River

The aim of the research project is to develop knowledge to help understand how climate change will affect river flows, sediment loads and water quality.

In particular, we will combine measurements of water level and water quality in the rivers with studies of lakes and lake sediments to reconstruct past river flows. We are also interested in how climate change can affect floods.

This is similar to work that we have carried out for many years in the High Arctic on Melville Island. This project has been carried out for eight years and is one of the longest records of it's type.

Our hope is that we can establish a similar, long term study near Pangnirtung to serve as an important source of information and knowledge for the residents and governments to predict future changes to the rivers.

DRDC Northern Watch Technology Demonstration Project

License Number: 02 092 10R-M

Principal Investigator: McCoy, Nelson

Affiliation: Defence R&D Canada-Atlantic
Dartmouth, NS, Canada
nelson.mccoy@drdc-rddc.gc.ca

Number in Party: 10
Research Area: North Baffin Region
Locations: Devon Island

With the prospect of an open sea route through Canada's Arctic, the Federal Government has stated that Arctic sovereignty is a priority. The Northern Watch Technology Demonstration (NWTD) project was initiated to identify and characterized combinations of sensors and systems for cost effective surveillance of the unique maritime environment of the Canadian Arctic.

Such Surveillance is required for an effective understanding of activities and events in the North that could affect Canada's security, safety, economy and/or environment.

To achieve the objective, three annual trials and experiments will be carried out in Barrow Strait, Nunavut during late August and early September. These tests involve both underwater and land-based sensors.

The underwater portion involves deploying four bottom-mounted arrays that include acoustic magnetic, and electric field sensors with a 10 km long sub-sea cable to the old Defence Research camp at Gascoyne Inlet, which will be expanded by one or two shelters. Land-Based sensors include a marine navigation radar, an Electro-Optical (EO) system, and Electronic Intelligence (ELINT) receiver and an Automatic Identification System (AIS).

The land based portion will be housed in a portable structure on top of Cappe Liddon and a very low power HF beacon will be mounted on the Brodeur Pininsula.

Dynamics and Change of the Devon Ice Cap

License Number: 02 067 10N-M

Principal Investigator: Sharp, Martin

Affiliation: University of Alberta
Department of Earth & Atmospheric Sciences
Edmonton, Alberta, Canada
martin.sharp@ualberta.ca

Number in Party: 4
Research Area: North Baffin Region
Locations: Devon Island

Project Description: The project goal is to describe and explain ongoing changes in the area, mass and flow of the Devon Island ice cap so that we can estimate its recent current and future contribution to changes in global sea level.

We are interested in how climate warming may cause faster flow of glaciers that end in the ocean, and how faster flow may lead to more mass loss by iceberg calving. Our work combines field studies with satellite and airborne remote sensing, and with modeling of ice cap flow and interactions with the atmosphere.

Our fieldwork involves calibrating and validating measurements made by remote sensing, and measuring changes in ice thickness, snow properties, glacier flow, meltwater production and runoff, and rates of iceberg calving. It provides us with data that we can use in our models. We access the ice cap from Resolute Bay by PCSP Twin Otter or helicopter, and travel on the ice by snowmobile or helicopter. Each year we establish a base camp on the ice cap summit where we store food, equipment and fuel. Most work is carried out from mobile 2-person camps. We install some instruments on or adjacent to the ice, but all will be removed at the end of the project leaving the ice cap as we found it.

Ecology of Nunavut Aquatic Systems

License Number: 05 054 10R-M

Principal Investigator: Quinlan, Dr. Roberto

Affiliation: York University
Department of Biology
Toronto, ON, CA
rquinlan@yorku.ca

Number in Party: 4

Research Area: Kivalliq and South Baffin Regions

Locations: Arviat, Iqaluit

The Canadian Arctic contains a vast multitude of lakes and ponds which have served as important sources of food and freshwater for indigenous peoples and which continue to yield valuable scientific information about environmental conditions.

Ecosystem structure and functioning in Arctic aquatic systems is expected to change under the influence of human-induced climate change and other human impacts. However, much remains unknown about the current composition of these communities.

Researchers have increasingly examined the spatial structuring of freshwater systems. The majority of this research has focused on temperate rivers and lakes, leaving Arctic regions under-researched. In the Canadian Arctic landscape, aquatic ecosystems feature prominently.

As interest in Arctic resources and recognition of the Arctic's sensitivity to climate change increase, it is essential to assess our northern freshwater resources.

For the 2009 field season, our research will focus on research in several Nunavut communities (Repulse Bay, Rankin Inlet, Arviat, and Iqaluit). Data from lakes along a landscape gradient (using the metric of 'lake order' for lake landscape position) will be collected. Each lake will be sampled for water chemistry, zooplankton, benthic invertebrates, and aquatic algae.

During my 6 weeks in Iqaluit, our research team will collect field samples for the Arctic Benthic Biomonitoring Network, a community-based invertebrate stream sampling project that is an ongoing collaboration between York University and the Nunavut Research Institute. While this research attempts to create appropriate lake sa

mpling methods, this joint project develops stream sampling protocols that can be used by local community groups in the future.

Employing the kick-and-sweep method, invertebrates will be collected in a 500um mesh Dip Net and preserved in 95% ethanol. In addition, a variety of water chemistry and sediment quality variables will be measured.

The organisms collected will be identified to the genus level where possible statistics will be employed to determine which variables are responsible for controlling species distributions. Lakes and ponds will be traversed by inflatable zodiac, and temperature monitors (deployed in 2007) will be collected from study lakes in the Baker Lake region.

Ellesmere Island Teleseismic Experiment

License Number: 02 049 10R-M Amended

Principal Investigator: Oakey, Gordon

Affiliation: Geological Survey of Canada(Atlantic)
Dartmouth, NS, CA
goakey@nrcan.gc.ca

Number in Party: 3

Research Area: North Baffin

Locations: Ellesmere Island

Purpose: The Geological Survey of Canada (GSC) has initiated a new Geomapping for Energy and Minerals (GEM) Program to identify new resources and stimulate economic growth in the Canadian Arctic.

Goals and Objectives: The GSC is planning to establish an array of passive observatories to measure seismic activity from naturally occurring earthquakes to map the regional variability of the earth's crust to better understand the development of the present-day topography and the formation of the Sverdrup Basin and polar continental margin.

Method of Transportation: The scientists plan to operate out of the Eureka Weather Station and make daily Twin Otter flights to the seismic station locations. Logistical support is being coordinated with the Polar Continental Shelf Program (PSCP).

Structures/Restoration/Abandonment: The seismic station units will be set up as temporary installations for the duration of the project. The stations will be revisited annually to refurbish the equipment. All equipment will be removed from the field at the end of the experiment.

Eastern Arctic Canadian Arctic Seismic Experiment

License Number: 0209110N-A

Principal Investigator: Oakey, Gordon

Affiliation: Natural Resources Canada
Dartmouth, NS, Canada
goakey@nrcan.gc.ca

Number in Party: 13

Research Area: North Baffin Region

Locations: Lancaster Sound, Jones Sound, Baffin Bay

Marine Geophysical Surveying : The German Institute of Geoscience (BGR) will operate a 65-day multidisciplinary expedition to northern Baffin Bay in August-September 2010 on the Polarstern Icebreaker. GSC participation in this expedition will both influence the scientific objectives to maximize the relevance to the Eastern Arctic Energy Project and ensure the compliance of Canadian regulations.

The expedition will collect seismic data and produce detailed bathymetric maps. If naturally occurring oil seeps are identified, dredge sampling will be carried out to retrieve rocks exposed at the seafloor. It is anticipated that (Inuit) marine mammal observers will be needed to ensure a minimal environmental impact.

Due to the extended duration of the expedition, it is also anticipated that a crew change (60 to 80 people) will be required through a northern Canadian port.

In advance of field work, we would like to make a visit to Pond Inlet in April 2009 to make a presentation about the planned projects, to talk about impacts and employment opportunities, and consult with interested groups.

We would like to meet the Hamlet Council and organize a community meeting to present the project, answer questions and discuss any concerns about our planned activities.

North Baffin Bay Fixed Wing Geophysical Survey

License Number: 02 089 10N-A
Principal Investigator: Oakey, Gordon
Affiliation: Geological Survey of Canada
Natural Resources Canada
Dartmouth, NS, Canada
goakey@nrcan.gc.ca

Number in Party: 6
Research Area: North Baffin Region
Locations: Baffin Bay

Purpose: The Geological Survey of Canada (GSC) has initiated a new Geomapping for Energy and Minerals (GEM) Program to increase economic prosperity of northern Canada through long term private sector investment in resource development.

This experiment is a collaboration with the National Research Council of Canada (NRC), Defence Research and Development Canada (DRDC), and the Danish Department of Space Science (DKSC).

Goals and Objectives: Detailed geophysical mapping will improve the understanding of the development of the offshore sedimentary basins and the structural framework for trapping hydrocarbons.

Method of Transportation: The magnetic base stations will be shipped to Grise Fiord and Pond Inlet by commercial air freight. The survey work will be carried out from the Thule airbase in North Greenland.

The scientific team will mobilize/demobilize with the survey plane.

Structures/Restoration/Abandonment: Base-stations will be set up in Grise Fiord and Pond Inlet to monitor natural variations in the earth's magnetic field, and will be removed at the end of the experiment.

Geochemical Ecology of Cryptoendolithic Microorganisms

License Number: 02 064 10N-M
Principal Investigator: Omelon, Christopher
Affiliation: University of Western Ontario
Department of Earth Sciences
London, Ont, Canada
comelon@uwo.ca

Number in Party: 2
Research Area: North Baffin Region
Locations: Fosheim Peninsula

Cryptoendolithic environments are the most common terrestrial habitats colonized by microorganisms in areas experiencing extremes in climate, where they live beneath rock surfaces as interstitial habitants of cracks, fissures, and pore spaces between mineral grains that make up sedimentary rock formations. Christopher Omelon has been studying the community composition and interaction with minerals of cryptoendolithic microorganisms at this site since 2002, and is planning to continue his research to investigate the degree to which cyanobacteria and algae are involved in generating hyperalkaline conditions that results in rapid rock weathering and dissolution of silica cements and minerals.

Preliminary results suggest a potentially large-scale mechanism for biogenic chemical weathering, and raise new questions about biochemical mechanisms and microbe-mineral interactions.

Geology and hydrocarbon potential of Ellef Ringnes Island

License Number: 02 095 10N-M

Principal Investigator: Dewing, Keith

Affiliation: Geological Survey of Canada
Calgary, AB, Canada
kdewing@nrcan.gc.ca

Number in Party: 23

Research Area: North Bafin Region

Locations: Ellef Ringnes Island

The purpose of this project is to update our understanding of the geology and hydrocarbon potential of Ellef Ringnes Island. The island was last mapped in 1967. A detailed geological map of the island will be produced. This map will be used to help re-interpret the seismic data that was collected in the 1970s and 1980s.

Field work will be from a temporary tent camp of about 20 people for one month, with a few days of setup and teardown at each end. Camp will be taken in to an existing airstrip using a Twin Otter. Transport on the island will be by Bell 205 helicopter supported by the Polar Continental Shelf Project. Water will be drawn from the nearby river (about 60 l/day), and human waste disposed of latrine. Waste will be incinerated and the non-combustible material removed by aircraft to Resolute for disposal.

A second season of field work is anticipated in 2011, with a crew of about 15 for 1 month. Field material will be cached over the winter of 2010-2011 and used again in 2011.

Methodology: Field work will be undertaken by 2-4 person crews supported by helicopter. Crews will be set out for the day to traverse, examine outcrops on ridges and in river valleys, and to sample rocks. Rocks are collected by hand, usually 0.5-2 kg in size. These will be sent to Calgary and analyzed for their organic matter. Small samples of water or ice will be taken from creeks and springs to analyse for water quality (dissolved solids, microbes, chemistry).

Two to four person fly camps will be established for 4-6 days in areas of detailed work. This will cut down on the amount of flying.

Glacier Mass Balance and Pollution Studies in the Canadian high Arctic

License Number: 02 066 10R-M

Principal Investigator: Burgess, David

Affiliation: Canada Centre for Remote Sensing
Ottawa, Ontario, CA
David.burgess@nrcan.gc.ca

Number in Party: 3

Research Area: North Baffin

Locations: Devon Island, Ellesmere

This is an ongoing study aimed at monitoring the mass balance and pollution levels of the Melville, Meighen, Agassiz, Devon ice caps, and the Grise Fiord Glacier. An additional component to this work will be to measure variations in flow rates of 3 glaciers on the Devon ice cap in order to understand how these glaciers will respond to future climate warming. Transportation at each site will be by snowmobile or helicopter where requested.

I. Glacier mass balance

Meteorological data will also be collected from the 11 automatic weather stations deployed as part of this network. Mass balance measurements provide an indication as to whether the ice caps under investigation are shrinking or growing in any particular year. This work will be performed out of permanent huts that exist on the Meighen and Melville ice caps, and tents on the Agassiz and Devon ice caps.

II. Snow sampling for monitoring pollution levels

Snow samples collected from each mass balance monitoring site will be returned to the GSC glaciology laboratory in Ottawa for analysis of the major pollutant ions (eg. Sulphates – acid snow) and pollen. Knowledge of the annual variability of pollen and pollutant concentrations at the monitoring locations improve provide important information towards quantifying current trends in levels of atmospheric pollution, understanding atmospheric circulation patterns, and interpreting long-term pollution trends from ice cores.

III. Variability in flow rates of major outlet glaciers on the Devon Ice cap

In-situ global positioning systems (GPS) will be deployed on 3 major outlet glaciers that drain the Devon ice cap. The in-situ GPS's will track the glacier's velocity on a daily basis over the course of a 2 year period of time. These data will a) provide ground validation to measurements of glacier velocity fields derived from satellite-based methods and b) quantify seasonal variations in rates of glacier flow. These data are crucial to understanding the effects of climate warming on the dynamics and mass balance of high Arctic ice caps.

Glacier and Climate Evolution of Baffin Island, Arctic Canada

License Number: 01 049 10R-M

Principal Investigator: Briner, Jason

Affiliation: University at Buffalo
Dept. of Geology
Buffalo, NY, USA
jbriner@buffalo.edu

Number in Party: 4

Research Area: North Baffin Region

Locations: Clyde River, Iqaluit Lakes, Qivitoo Sea cliffs, Small ice caps

The purpose of this project is to determine the glacier and climate evolution of Baffin Island on long, pre-historic time scales.

Our time periods of focus are both: 1) the present, warm interglacial period that has lasted since the end of the last ice age, about 10,000 years ago, and 2) the longer period of the Ice Age that spans the last 2 million years.

We have many specific goals that have evolved from our long history of research in the three study regions. We are using geological techniques to reconstruct the history of ice caps, like the Barnes Ice Cap, during the past few thousand years.

We are also collecting cores of lake sediments that we use to make inferences about past climate change and glacier extent, also spanning the last few thousand years. And, we are using chemical and isotopic tracers to reconstruct the ice sheet and landscape evolution of Baffin Island since the beginning of the Ice Age.

Geological Study of the Queen Maud Block, Nunavut

License Number: 0403610N-A

Principal Investigator: Chacko, Thomas

Affiliation: University of Alberta
Department of Earth & Atmospheric Sciences
Edmonton, Alberta, Canada
tom.chacko@ualberta.ca

Number in Party: 3

Research Area: Kitikmeot Region

Locations: Queen Maud Gulf

We propose to examine the bedrock geology of the Queen Maud block, a large but little studied block of continental crust in the northwestern part of the Canadian Shield. Through a combination of field observations on individual rock outcrops and detailed laboratory work on samples collected in the fieldwork, we will attempt to decipher the geological history of this crustal block.

Specifically, we will: 1) determine the mineralogy and chemical composition of the collected rock samples and 2) determine their age using isotopic techniques. The ultimate objective of the project is to develop a comprehensive model for the geological evolution of the western Canadian Shield.

HAUGHTON-MARS PROJECT (HMP)

License Number: 02 088 10R-M

Principal Investigator: Lee, Pascal

Affiliation: NASA
Mars Institute
Moffett Field, California, USA
pascal.lee@marsinstitute.net

Number in Party: 39

Research Area: North Baffin Region

Locations: Haughton Crater,Devon Island

Haughton Crater and surrounding terrain on Devon Island are of great scientific value for Earth, Space and Life Sciences Research.

The site presents many exceptional attributes not found elsewhere on Earth, in particular the presence of a large, well-preserved meteorite impact crater and other unique terrain features similar to the Moon or Mars. Devon Island has been used by the Haughton-Mars Project (HMP) for this type of research since the project began in 1997.

The base camp for this project is called the Haughton-Mars Project Research Station or HMP RS.

Current plans of government space agencies around the world include the possibility of sending humans to the Moon by 2017-2025 and on to Mars in 2025-2035.

The Haughton-Mars Project plans to continue conducting research to help achieve these goals and also possibly the next steps beyond. It is anticipated that the HMP RS will continue to be operated in support of these endeavors until at least 2017 and possibly beyond.

Activities on the HMP include: a) the scientific study of Haughton Crater and surrounding terrain (the history of water and the adaptations of microbial life to extreme environments); b) the testing and validation of new technologies and approaches for space exploration, including rovers, habitats, tools and instruments; c) education and public outreach activities.

HAUGHTON-MARSPROJECT:NORTHWEST PASSAGE DRIVE

License Number: 02 076 10R-M

Principal Investigator: Lee, Pascal

Affiliation: Mars Institute
Vancouver, BC, Canada
pascal.lee@marsinstitute.net

Number in Party: 5

Research Area: North Baffin, Kitikmeot Regions

The Haughton-Mars Project (HMP) is an international scientific research project on Devon Island, Nunavut, centered on advancing the exploration of the Moon and Mars through comparative studies between the Earth and these other planets, and by conducting simulations of their future exploration by robots and humans.

The project was started in 1997 and continues every Summer with the support and participation of the Communities of Grise Fiord and Resolute Bay. Scientific findings from the project are openly released and are conducted for the benefit of all humankind.

This year, in order to deliver a new field research vehicle – the Moon-1 Humvee Rover - to the HMP Research Station on Devon Island, and in an effort to help understand better the pressing problem of Climate Change here on Earth, we propose to drive the entire length of the Northwest Passage, and measure the thickness of sea-ice using a Canadian-made electromagnetic sounding system. In addition, we propose to investigate snow and ice features presenting similarities with Mars and other planets, measure weak radiation from space, and learn lessons for operating future human rovers on the Moon and Mars.

We propose to drive our Moon-1 Rover from Kugluktuk to the HMP Research Station on Devon Island during a 2-3 week period between 1 April and 15 May 2009, with 1-day stops in Cambridge Bay, Gjoa Haven, and Resolute Bay.

The Moon-1 Rover will be accompanied at all times by 2 snowmobiles serving as scouts. The field team will be international and will comprise a total of 5 people, with Dr Pascal Lee serving as Project Leader and Mr. Joe Amarualik of Resolute Bay as Lead Guide. fuel, food, other supplies and services will be purchased in each of the communities visited.

Helicopter electromagnetic measurements of the sea ice mass balance

License Number: 02 075 10R-M

Principal Investigator: Haas, Christian

Affiliation: University of Alberta
Department of Earth and Atmospheric Sciences
Edmonton, AB, CA
Christian.Haas@ualberta.ca

Number in Party: 3

Research Area: North Baffin Region

Locations: Lincoln Sea

The planned work will study changes of the sea ice mass balance as a result of variations of the thermodynamic and dynamic boundary conditions for ice growth, melt, and deformation, including the role of the snow cover.

The focus of my research is the establishment of long-term, systematic ice mass balance observations of thick multiyear ice in the Arctic Ocean between the coast of Canada and the North Pole.

These observations will include biennial airborne electromagnetic measurements of the seasonal and interannual ice thickness variability, as well as observations of ice deformation and snow properties. In-situ measurements will be complemented by satellite remote sensing and modeling work, and will contribute to the validation of new satellite products and model results.

The research is significant as the areal coverage of Arctic sea ice is rapidly decreasing, at a pace much faster than predicted by any climate model. This demonstrates our limited understanding of climate processes and feedbacks in the Arctic. The disagreement can partially be explained by a misrepresentation of the sea ice mass balance in existing climate models, which is largely due to a general lack of systematic ice thickness observations in the Arctic Ocean.

High Arctic Permafrost Landscape Stability and Water Quality, Sabine Peninsula, Melville Island Nunavut

License Number: 02 063 10N-A

Principal Investigator: Lafreniere, Melissa

Affiliation: Queen's University
Department of Geography
Kingston, Ont, Canada
melissa.lafreniere@queensu.ca

Number in Party: 4

Research Area: North Baffin Region

Locations: Melville Island

The aim of the research project is to develop knowledge to help predict what landscape controls affect water quality. In particular, we will study the impact of natural permafrost and vegetation disturbances.

We will map permafrost disturbances (1954-present) with satellite images and aerial photographs, and develop a landscape model to predict future disturbances across different rock, slope and plant surfaces. We will also integrate water quality monitoring to create models to predict changes in water quality associated with permafrost disturbance. These models will be of primary value to effectively manage this region of the High Arctic in a changing climate and to support the development of natural gas resources in the region in the future.

Hydrocarbon potential of the Hudson Bay and Foxe sedimentary basins

License Number: 03 033 10N-A

Principal Investigator: Lavoie, Denis

Affiliation: Natural Resources Canada
Quebec City, Quebec, Canada
delavoie@nrcan.gc.ca

Number in Party: 10

Research Area: Kivalliq Region

Locations: Southampton Island

The Geological Survey of Canada's, Geo-mapping, Energy and Minerals Group (GEM) is conducting a new research project in the Hudson Bay basin aiming at a better understanding the area hydrocarbon potential.

The Southampton Island area has many significant potential hydrocarbon source rocks and outcrops and understanding their importance is critical in assessing the overall potential of the Hudson Bay which could lead to a renewed phase of hydrocarbon exploration.

Our project proposes a small 7 day helicopter lead field trip to these various locations of interest. The project will be occurring between August 1, 2010 and August 7, 2010 and be based out of Coral Harbour.

The specific activity consists in visiting selected outcrops of sedimentary rocks at various localities on Southampton Island (still being determined). A group of 10 geologists will be visiting each location to examination the rocks, and possible small sampling of rocks for specific scientific activities. The duration at each site will be determined by the specifics of the area and inherent interest the site poses.

This project will allow researchers to develop new models and maps of the Hudson Bay Basin (last done in 1984 and now obsolete) that may lead to enhanced and new exploration of these resources and ultimately the successful discovery of new oil and/or gas resources.

Ice Island Drift Tracking

License Number: 0205810N-M

Principal Investigator: Mueller, Derek

Affiliation: Canadian Ice Service
Environment Canada
Ottawa, Ontario, Canada
derek.mueller@ec.gc.ca

Number in Party: 2

Research Area: North Baffin Region

Locations: Ellesmere Island

The Canadian Ice Service is currently exploring the use of satellite imagery to identify and track ice islands. To fully evaluate these techniques, it is important to have independent confirmation of where the ice islands are drifting. By deploying several tracking beacons on the surface of ice islands we can monitor where some of the dozens of ice islands are in real time. Our results will also be used to create ice charts and advise mariners of these ice hazards in Canadian waters.

Several (1 to 5) tracking beacons will be deployed between March and May 2010 near Borden Island by scientists who will be working nearby on a hydrographic survey. They will be placed on ice islands using a helicopter or possibly dropped from an airplane. The ice islands may drift south through the Canadian Arctic Archipelago or to the southwest toward the Beaufort Sea.

Hydrological Baseline Assessment of the Kiggavik Project

License Number: 03 029 10R-M

Principal Investigator: Topp, Brent

Affiliation: Golder Associates Ltd.
Saskatoon, SK, CA
btopp@golder.com

Number in Party: 6
Research Area: Kivalliq Region
Locations: Baker Lake

The Kiggavik Sissons Project is a uranium surface exploration project located approximately 80 km west of Baker Lake. The project is made of two large groups of mining leases and mineral claims subdivided into Kiggavik to the north and Sissons to the south.

The Kiggavik camp was first established in 1977 and it was occupied for drill programs until 1997. Exploration drilling has not taken place at the project since the end of the 1997 field season. The focus of the hydrological assessment is gather baseline streamflow and lake water level information from drainage areas in the Kiggavik-Sissons area.

Installation of a Wind Data Collection Tower

License Number: 03 023 10N-M
Principal Investigator: Robert, Stephane
Affiliation: Agnico-Eagle Mines
Baker Lake, Nunavut, Canada
stephane.robert@agnico-eagle.com

Number in Party: 5
Research Area: Kivalliq Region
Locations: Baker Lake

The Meadowbank Gold Project,owned and operated by Agnico-Eagle Mines, LTD-Meadowbank Division (AEM),is located on Inuit-owned lands approximately 70 km north from the Hamlet of Baker Lake.

The mine site is connected to Baker Lake by a 110km all weather private access road (AWPAR).AEM is proposing to install a wind data collection tower ata site located near 102km in the Meadowbank All Access Weather Road.This tower would be used to collect wind speed and wind direction data at an altitude of 60 meters above ground level for a period of approximately two years.

Construction is proposed for the end of 2009 so that the data collection can begin as soon as possible.The data collected would be used by AEM and it's consultants to determine the technical and economic feasibility of using wind turbine technology as a secondary power source at the Meadowbank Project.

Jones Sound Helicopter Airborne Magnetic Survey

License Number: 02 090 10N-A

Principal Investigator: Oakey, Gordon

Affiliation: Geological Survey of Canada
Dartmouth, NS, Canada
goakey@nrcan.gc.ca

Number in Party: 5

Research Area: North Baffin Region

Locations: Jones Sound

Purpose: The Geological Survey of Canada (GSC) has initiated a new Geomapping for Energy and Minerals (GEM) Program to increase economic prosperity of northern Canada through long term private sector investment in resource development. This work is a collaboration with the German Federal Institute of Geoscience (BGR).

Goals and Objectives: Detailed geophysical mapping will improve the understanding of the development of the offshore sedimentary basins and the structural framework for trapping hydrocarbons. This survey is designed to tie the offshore geology to mapped onshore areas.

Method of Transportation: Equipment will be shipped using commercial air services. Fuel will be shipped to Grise Fiord by sealift and the drums for the fuel cache will be transported by Twin Otter. Logistical support is being coordinated with PSCP.

Structures/Restoration/Abandonment: A fuel containment berm will set up at the Grise Fiord Airport and left as a permanent installation. A temporary berm will be placed at the cache location and removed at the end of the project.

All fuel drums will be removed for disposal. Base-stations will be set up in Grise Fiord and the fuel cache location to monitor natural variations in the earth's magnetic field, and will be removed at the end of the experiment.

Landscape processes at Cape Bounty, Melville Island and North Lake, Cornwallis Island

License Number: 02 074 10R-M

Principal Investigator: Lamoureux, Scott

Affiliation: Queen's University
Department of Geography
Kingston, ON, CA
lamoureu@post.queensu.ca

Number in Party: 18

Research Area: North Baffin Region

Locations: Melville Island, North Lake

Our work is intended to develop a long record of past weather and river conditions using lake sediments and to determine the amount of carbon stored and released from the watershed by plants and erosion. Our work will involve obtaining sediment and water samples from the lakes and streams at Cape Bounty.

We have chosen these lakes because the rivers appear to supply abundant sediment and deep lakes are needed to preserve the sediments for our research. We have been doing this work since 2003 and hope to continue for several years.

Lupin Gold Mine Cycle 3 Environmental Effects Monitoring Investigation of Cause Study

License Number: 03 045 10N-A

Principal Investigator: Prather, Colleen

Affiliation: AECOM Canada Ltd.
Edmonton, Alberta, Canada
colleen.prather@aecom.com

Number in Party: 3

Research Area: Kitikmeot

Locations: Lupin Mine Site

The Lupin Gold Mine is located on the west shore of Contwoyto Lake, Nunavut, approximately 300 km south-east of Kugluktuk and 80 km south of the Arctic Circle (65°46' N, 111°15' W).

Mine construction started in August 1980 and was completed in March 1982. The mine was operated continuously from 1982 to 1998, 2000 to 2003 and 2004 to 2005. In the interim periods and after 2005, the mine went into care and maintenance.

Ownership of the mine has changed many times but it is currently owned by MMG Resources Canada Inc. (MMG). Discharge of treated effluent began in September 1985 with discharges scheduled to occur between July and September of each year. Discharged effluent eventually reaches Contwoyto Lake via Seep Creek, Seep Creek Lake, unnamed creek, unnamed lake and Inner Sun Bay of Contwoyto Lake.

Mapping Mantle Diamond Potential/ Churchill Diamonds

License Number: 05 048 10R-M

Principal Investigator: Snyder, David

Affiliation: Natural Resources Canada
Ottawa, Ontario, Canada
dsnyder@nrcan.gc.ca

Number in Party: 5

Research Area: Nunavut

Locations: Igloolik, Rankin Inlet, Arviat, Baker Lake, Coral Harbour, Kimmirut, Cape Dorset, Pangnirtung

The objective of this study, begun in the NWT in the late 1990's, is to investigate the structure and composition of the Earth's crust and mantle to depths of 0-300 km with a view to characterizing diamond reservoirs to make diamond exploration more efficient and low impact.

The research will lead to improved mineral exploration strategies, improved estimates of damaging large earthquakes, and a superior framework for handling Canada's natural resource potential over the next decade.

Recordings of the arrival of earthquake waves provide the highest resolution and lowest impact way of imaging structures deep in the Earth.

Seismic stations will be installed via helicopter or chartered plane at various sites in the survey area - a corridor along the western coast of Hudson Bay between Churchill and Pond Inlet. Many stations will be located near existing mines or exploration camps such as those near Rankin Inlet and Igloolik.

The stations, each of which will be deployed for between three and five years consist of a geophysical sensor, satellite dish, solar panels and battery/electronics bixes deployed on sand or flat bedrock.

Seismic waves from earthquakes around the globe will be recorded by the sensor and transmitted to the University of Western Ontario using satellite telemetry link (same as television signals). From there, the data will be distributed to researchers by way of the internet at the site www.polarisnet.com.

Magnetotelluric stations measure Earth conductivity over several days and consist of an electronics box and five sensors. Sites are located in gravel as sensors must be buried to form a cross 100m in length.

Marine Sediment Collection for Microbe Bioprospecting

License Number: 01 062 10N-A

Principal Investigator: Kerr, Russel

Affiliation: University of Prince Edward Island
Charlottetown, PEI, Canada
rkerr@upei.ca

Number in Party: 2

Research Area: South Baffin Region

Locations: Iqaluit

The general aim of the project is to collect marine sediment samples from Frobisher Bay for the purpose of isolating and culturing novel microbes.

The sampling will be conducted using a "sediment sampler" which is a device that is deployed from a boat, free falls to the ocean floor, collects approx 0.5 liters of sediment, and is then retrieved by a hand-cranked winch. We anticipate collecting approximately 20 sediment samples from varied sites collected over a 2 – 3 day period. Sediment samples will undergo processing in a lab in Iqaluit to isolate microbes and such processed samples will be brought back to the University of Prince Edward Island.

The overall goal of this research is to develop an understanding of the microbial community in marine habitats off Baffin Island. Data will provide a baseline of the microbial communities present in marine sediment.

Marine microbes are believed to hold great potential as a source of bioactive natural products with applications as therapeutic agents. Thus, monitoring of the microbial population over time will lead to an understanding of the effect of climate change on this important genetic resource.

In addition, the isolated microbes will be fermented and used in a natural products discovery program where the goal is to identify new natural products.

Meliadine West Gold Project

License Number: 03 046 10R-M

Principal Investigator: Young, Lasha

Affiliation: Golder Associates Ltd.
Edmonton, AB, CA
lasha_young@golder.com

Number in Party: 8

Research Area: Kivalliq Region

Locations: Rankin Inlet, Chesterfield Inlet

All research activities will operate from the Comaplex Minerals West Gold Project exploration camp which has already been permitted for use. Please refer to Land Use Permit No.: N2007Q0040 for more detail.

The following is a summary of the baseline environmental studies that will be conducted in support of the Comaplex Minerals West Gold Project along the proposed all-weather road from Rankin Inlet to the Project site and within a 52 km radius of the Project site between May and December 2009. The project is located in the Kivalliq Region, and the nearest communities are Rankin Inlet (30 km) and Chesterfield Inlet (60 km).

All research will be carried out by experienced wildlife biologists, fisheries biologists, and water quality and hydrology specialists from Golder Associates with assistance from local community members, where possible. All field sites will be accessed from Meliadine West Camp by foot or by helicopter.

Collect wildlife data and document wildlife habitat. The following wildlife studies will be conducted:

aerial surveys for caribou (~ four per year);

aerial survey for waterfowl;

point counts for upland songbirds and rapid survey method for shorebird; and

aerial surveys for raptors.

Aquatic field surveys will include detailed habitat mapping to describe and quantify fish habitat. Watercourse crossing studies to identify and verify potential Arctic grayling spawning sites.

Water quality and sediment quality surveys in open water and under-ice conditions

Collection hydroclimatic and hydrological parameters. The following hydrology studies will be conducted:

snowcourse survey;

collection of precipitation data using a rain gauge at the Meliadine West Camp; and

water level and water discharge monitoring using continuous and discrete hydrology monitoring stations.

The information collected in 2009, as well as previous years, will support permitting requirements for the Project. The information will be communicated through summaries supplied as part of permitting requirements, in baseline reports and through presentation to communities and Nunavut organizations.

Melville Peninsula Geo-Mapping (GEM) Project

License Number: 05 047 10R-M

Principal Investigator: Chakungal, Joyia

Affiliation: Canada-Nunavut Geoscience Office
Iqaluit, Nunavut, Canada
jchakung@nrcan.gc.ca

Number in Party: 25

Research Area: Nunavut Wide

Locations: Melville Peninsula

In 2009, as part of the Federal Government's Geo-mapping for Energy and Minerals program, the Canada – Nunavut Geoscience Office (CNGO) and Geological Survey of Canada (GSC) will conduct a geoscience project on Melville Peninsula, Nunavut.

The primary objective of the project is to update and advance geological knowledge of the region. The project will provide up-to-date information for exploration companies working in the area, and is intended to increase the level of mineral exploration and provide benefits to Igloolik, Hall Beach and Repulse Bay.

Geological mapping will be carried out over three summers (2009 – 2011). In 2009, the field crew will operate out of a helicopter supported, tent camp at the Sarcpa Lake DEW Line Station (Figure 1) and possibly, two man fly-camp(s) located approximately 150 km south of the main camp. Mapping will occur in July and August.

The project will include hiring 8 to 10 field assistants from Hall Beach. The jobs will provide training in the areas of camp support, mineral prospecting and exploration. The mapping will focus on two belts of rocks called the Prince Albert and Penrhyn groups. Both are thought to have high potential for mineral deposits. The Prince Albert Group hosts volcanic rocks that have the potential for gold, base metals (copper, zinc, and nickel) and Platinum Group Element (PGEs) deposits.

The Penrhyn Group has potential for gold and gemstone deposits. Recent exploration in the Igloolik, Hall Beach and Repulse Bay region has also demonstrated the occurrences of diamonds. In addition to mapping the bedrock, the surficial materials (glacial deposits) will also be mapped.

The glacial deposits, called till, carry clues that can lead prospectors to a deposit. Thus, an understanding of the ice flow history is critical to mineral exploration in the region. In support of the ground-based mapping, a 45,000-line kilometre aeromagnetic survey will be flown over the central part of the peninsula in the spring (April – May) of 2009.

All data will be published in the form of maps and reports through the Geological Survey of Canada and will be made available to the public as soon as they become available.

Microbial investigations of perennial springs, permafrost and ground ice in the high Arctic

License Number: 02 071 10R-M-Amended

Principal Investigator: Whyte, Lyle

Affiliation: McGill University
Dept. of Natural resource Sciences
St. Anne de Bellevue, Quebec, Canada
whyte@nrs.mcgill.ca

Number in Party: 4

Research Area: North Baffin Region

Locations: Axel Heiberg

Relitively few reports are found describing the ecology and biodiversity of microbial communities in the Canadian high Arctic where unique habitats exist including cold perennial salt springs, glacial ice and sub glacial soil, permafrost and ground ice, and cryptoedoliths (mocrobial communities within rocks). Little is knows about the traits that enable such microorganisms to survive and thrive in these extreme habitats.

Therefore, I am presently developing and expanding a research program focused on Arctic mocrobial biodiversity and ecology studies in these habitats to expand our basic knowledge of Arctic microbial communities, to determine the utility of these unique environments as analogs to those which may exist or existed on Mars, and, in the longer term, the potential biotechnological applications of cold adapted microorganisms (examples: antifreeze protiens, polyunsaturated fatty acids.)

In 2003, small representative samples (~2 kg of soil/ permafrost or 2-4 L of water) of the mocrobial populations will be obtained from the Eureka and Axel heiberg sites. Microbial biodiverstiy research will be conducted in my lab at McGill University on the collected samples.

This data will provide information on the mocrobial populations associated with these sites, the physiological types that are involved in biogeochemical processes and hopefully establish which organisms become fossilized or preserved in the system.

Northern Ellesmere Ice Shelves, Ecosystems and Climate Impacts

License Number: 02 059 10R-M

Principal Investigator: Copland, Luke

Affiliation: University of Ottawa
Department of Geography
Ottawa, ON, CA
luke.copland@uottawa.ca

Number in Party: 4

Research Area: North Baffin

Locations: Milne Ice Shelf - Peterson Ice Shelf/ Yelverton Bay - Ayles Fiord - Serson Ice Shelf and floating ice islands

Since 2002, there have been dramatic changes in the ice shelves along the northern coast of Ellesmere Island. Ice shelves that have been attached to the shore for thousands of years have been breaking-up, leading to the drainage of massive bodies of freshwater and the creation of new ice islands.

The entire Ayles Ice Shelf broke away in summer 2005, and in summer 2008 the entire Markham Ice Shelf and large pieces from several other ice shelves were lost. Thousands of square kilometres of 50 to 70 year old landfast sea ice has also broken away from the coast, suggesting that the ice shelves which used to occupy this coastline will not regenerate in the foreseeable future.

These physical changes are also causing major transformations incommunities of micro-organisms that are associated with the ice. The aim of this research program is to provide a comprehensive survey of the current characteristics and stability of the northern Ellesmere Island ice shelves and multiyear landfast sea ice. This will focus on measurements of ice thickness and internal structure using ice penetrating radar and shallow ice cores.

Surface melt rates and patterns of surface motion will be determined from stakes drilled into the ice shelf surface and measurements with GPS systems. We will also take salinity profiles in the fiords and bays along the coast to measure how the water is changing.

We plan to install a semi-permanent automated weather station that will provide temperature data in the vicinity of Milne Ice Shelf. This data will be uploaded daily via a satellite connection, and made publicly available on the internet.

Samples will be taken for water quality and DNA analysis to examine the micro-organisms and their habitats on and under the ice shelves.

The proposed project will contribute to Canadian IPY projects “Variability and Change in the Canadian Cryosphere” and “Microbiological and Ecological Responses to Global Environmental Change in the Polar Regions (MERGE-Canada)”. It will also continue measurements that we began on the Ranger’s Op Nunalivut patrol in spring 2008.

We will visit Qarmartalik School in Resolute Bay immediately after our fieldwork to explain our work and its significance to community members and to address any questions they may have. This will continue visits that we made to Qarmartalik School in both 2007 and 2008.

Northern Ellesmere Island in the Global Environment (NEIGE)

License Number: 02 061 10R-M

Principal Investigator: Vincent, Warwick

Affiliation: Universite Laval
Departement de Biologie
Quebec City, QC, CA
warwick.vincent@fsg.ulaval.ca

Number in Party: 6

Research Area: North Baffin

Locations: Ellesmere, Resolute Bay area, Cornwallis Island

Ecosystems along the northern coast of Ellesmere Island are responding to accelerated climatic change. These changes can occur gradually over decades, yet they can also be suddenly disruptive.

Our aim is to monitor trends over the longer term, to evaluate the ecological responses to the crossing of the thresholds, and to define the structure, biodiversity and functioning of these northern-most ecosystems. Field research will involve profiling lakes and fiords to monitor changes in salinity as well as sampling small amounts of sediments and micro-organisms that are found on the surface of ice shelves. During the field season, we will stay in Quttinirpaaq National Park. Transportation out of the park to sample areas outlined in this proposal will be by helicopter, Twin Otter or snowmobile.

O-Buoy measurements of ozone, carbon dioxide and bromine oxide with accompanying geographic and meteorological information for up to a year long periods over frozen surface of Hudson Bay and Arctic Ocean

License Number: Registered

Principal Investigator: Puckett, Keith

Affiliation: Environment Canada
Toronto, Ontario, Canada
keith.puckett@ed.gc.ca

Number in Party: 4

Research Area: Kivalliq and North Baffin Regions

Locations: Hudson Bay

The goal of this project is to obtain long-term observations of the concentrations of two important greenhouse gases (ozone and carbon dioxide) as well as bromine oxide, a key chemical reagent determining the presence (or absence) of ozone, accompanied with meteorological data and geographic information over Arctic Ocean and Hudson Bay. This is a component of collaborative project involving Environment Canada and several research institutions in the US, supported by the Canadian Federal Project Office for the International Polar Year (Environment Canada), and the US National Science Foundation (US partners).

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Optimization of In Situ Bioremediation Conditions at CFS-Alert

License Number: 02 072 10N-M

Principal Investigator: Bell, Terrence

Affiliation: McGill University
Montreal, Quebec, Canada
terrence.bell@mail.mcgill.ca

Number in Party: 4

Research Area: North Baffin Region

Locations: Ellesmere Island, CFS-Alert

Many soils in the Arctic have been contaminated by petroleum hydrocarbons, most commonly due to fuel line breaks, and poor gas transfers to transport vehicles and other heavy machinery. The native bacterial communities in these soils are capable of degrading petroleum hydrocarbons for use as carbon and energy sources reducing the contamination.

These bacteria are only active during the limited summer of the Arctic, so optimizing their activity is critical. Adding nutrients to soil has often been shown to increase the rate of contaminant breakdown, but the dynamics of how these nutrients are use within the soil are widely unknown. There are thousands of bacterial species in every gram of soil, and only a fraction of these are capable of contaminant degradation. We are going to examine which bacterial species are incorporating our added nutrients, so that we can optimize nutrient availability for the contaminant-degrading species within the soil.

On-site work will be relatively simple, and will involve the addition of fertilizers to small areas of soil as well as various soil aeration techniques to increase oxygen in the subsurface bacterial communities. Treatments will be set-up on a single day in July and incubated for approximately 1 month, followed by a soil sample collection trip in August. Samples will be analyzed in the lab to determine which bacterial species are incorporating the nutrients that we have added to the soil.

Collected data will support the completion of my doctoral thesis work, and any discoveries will be applied to future Arctic bioremediation efforts. Results from this study will be submitted for publication in refereed journals focused on applied environmental microbiology. The results from this study as well as other bioremediation work performed by the Biotechnology Research Institute at CFS-Alert will be presented orally to members of the CFS-Alert base camp, and is open to be presented to officials from the Nunavut Research Institute, Environment Canada and any other interested parties.

The optimization of current techniques to reduce soil contamination in the Arctic will ensure the prolonged preservation of the Canadian North's unique environment.

Paleoclimatic reconstruction of the Canadian High Arctic using bioindicators

License Number: 02 078 10N-A

Principal Investigator: Francus, Pierre

Affiliation: Institut National de la Reserche Scientific
Quebec City, Quebec, Canada
pierre.francus@ete.inrs.ca

Number in Party: 4

Research Area: North Baffin Region

Locations: Ellesmere Island

The goal of this field season is to retrieve 1 m long sediment cores from the small, shallow (10 m) and organic-rich lake at the head of Strathcona Fjord. It is important to act as soon as possible as the fluvial erosion near the lake might cause its disappeance. Two miles to the east there is a large, deep detritic lake where we would like to obtain bathymetric measures and collect as well short sediment cores to ascertain the presence of sedimentary lamination.

Sediment cores from the bottom of the lake will be retrieved directly through the lake ice with portable gravity and percussion corers made of nylon. Core tubes are polycarbonate (2 3/4'' diam.). Holes will be drilled in the ice with an ice auger provided by PCSP.

A temporary camp will be erected for the duration of the work. Another goal of this field trip is to install a meteorological station at South Sawtooth Lake. A small automated station (2-meter high tripod) will be left on site for the coming years and will be subsequently serviced every summer. During the trip, two means of transportation will be used: airplane to reach the field locations and snowmobile on the ground.

Sediment cores retrieved from the lakes will be brought back intact to our laboratory and analyzed in order to provide multidisciplinary paleoenvironmental reconstructions. These data will be used for two PhD projects and will be published in scientific journals. They will eventually be stored on world data centers.

We will also provide NRI with an annual report. No hasardous material is brought in the field and we will bring everything back to Resolute Bay (except the weather station).

Finally, V. Tremblay intends to stay in Resolute Bay for a week in order to meet the children at the elementary school to acquaint them with the research we're doing in the North.

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Paleoenvironmental reconstruction of the Haughton impact structure and surrounding terrains over the past 39 Million years

License Number: 02 082 10N-M

Principal Investigator: Osinski, Gordon

Affiliation: University of Western Ontario
London, Ontario, Canada
gosinski@uwo.ca

Number in Party: 13

Research Area: North Baffin Region

Locations: Devon Island

Meteorite impact events have played an important role throughout Earth's history, shaping the geological landscape and affecting the evolution of life. This research focuses on understanding processes that occurred after the formation of the Haughton impact structure (HIS), from its immediate aftermath 39 million years ago to the present-day. This research focuses on 4 main areas:

1) Impact processes: When meteorites or other objects impact a planetary surface they alter the target material on a microscopic level through "shock metamorphism". Objectives:

The main focus of this field season is detailed outcrop-scale mapping with subsequent follow-up laboratory work. The goal is to quantify this increase by correlating the measured decrease in density with shock level as determined by petrographic study.

2) Impact craters as habitats for life: Impact events, while initially sterilizing an area, have the ability to provide refuge for microorganisms, especially in extreme environments like the Arctic. Objectives: collect samples of impact-shocked gneiss from the HIS, for analysis of microorganisms.

3) Intra-crater sedimentary deposits: The post-impact sediments of the HIS (Haughton Fm.) is the only known deposit that preserves the remains of flora and fauna, including vertebrates, from the early Miocene Arctic. Objectives: Reconstruct the depositional history of the Haughton Fm., as well as to identify possible fossil layers. We anticipate the continued emergence of fossil bones in the area as a result of active layer processes. Ground Penetrating Radar (GPR) will be tested for its suitability in locating fossil occurrences.

4) Recent climate history and change: The HIS today lies in a

polar desert environment. It is notable that the extent and history of glaciation on Devon Island remains poorly understood. Objectives: Detailed mapping of unconsolidated Quaternary deposits within the HIS; GPR studies within the HIS and in Thomas Lee Inlet to delineate massive ice deposits. Access to the two weather stations is required in order to download data.

Peregrine Diamonds Ltd. Chidliak Property 2010 Baseline Environmental Studies

License Number: 01 054 10R-M

Principal Investigator: Moore, Steve

Affiliation: EBA Engineering Consultants Ltd.
Yellowknife, NT, CA
smoore@eba.ca

Number in Party: 3

Research Area: South Baffin Region

Locations: Peregrine Diamonds Chidliak Camp, Iqaluit, Pangnirtung

Peregrine Diamonds Ltd. retained EBA Engineering Consultants Ltd. (EBA) to conduct environmental baseline studies at their proposed Chidliak project site, approximately 100 km northeast of Iqaluit, Nunavut.

The proposed project will involve the following field studies: preliminary hydrology measurements, a preliminary habitat study, and wildlife surveys.

The 2009 field studies will be conducted over two short events in July and September. Each sampling event will be less than a week in duration. A small team of one biologist and one local research assistant will conduct these field studies in July and September; one research assistant per field event. A local research assistant from the two nearest communities, Iqaluit and Pangnirtung, are currently being sought.

Phase I and Preliminary Phase II Environmental Site Assessment (ESA), Polar Bear Pass National Wildlife Area, Nunavut

License Number: 02 087 10N-A

Principal Investigator: LeBlanc, Catherine

Affiliation: Franz Environmental Inc.
Ottawa, Ont., Canada
cleblanc@franzenenvironmental.com

Number in Party: 4

Research Area: North Baffin Region

Locations: Polar Bear Pass National Wildlife Area

The Phase I and Preliminary Phase II ESA will be conducted by Franz Environmental Inc (FRANZ) on behalf of Public Works and Government Services Canada and Environment Canada. The site is located on Bathurst Island, Nunavut and the project will occur over a maximum two-day period in August 2010.

The Phase I ESA will involve a review of historical records, interviews with individuals familiar with the area, and a visit to the wildlife area. The visit will include conducting a low altitude fly-over with a fixed wing aircraft. The purpose of the Phase I ESA is to identify if any previous activities at the site may have caused an impact to the site and what, if any, chemicals may have been used on site.

Based on the results of the Phase I ESA activities, a preliminary Phase II ESA will be conducted immediately following the fly-over. The purpose of the Phase II ESA is to further inspect the areas that may have been impacted by human activity and to collect surface soil samples (less than 1 metre deep). The surface soil samples will be collected manually, with a shovel, to be analysed for the chemicals identified in the Phase I ESA. The results of the Phase II ESA will determine if additional sampling is required and help formulate a risk or management plan for the site.

The mode of transportation for this project will be a combination of fixed wing aircraft and ATV. The ATV will be used to visit the disturbed areas identified in the fly-over. It is anticipated that the use of the ATV will be minimal. No structures will be erected as it is expected that the field staff will return to Resolute at the end of each day. If an overnight stay is required, the research cabin will be used. It is anticipated that the FRANZ field staff will be on site for no longer than two days.

The results of the Phase I and preliminary Phase II ESA will be summarized by FRANZ in a written report and submitted to Public Works and Government Services Canada and Environment Canada. A summary of the report will be submitted to the Nunavut Research Institute.

PolarDARN radar for Rankin Inlet (Kangiqsliniq)

License Number: 03 044 10R-M

Principal Investigator: Sofko, George

Affiliation: University of Saskatchewan
Department of Physics and Eng. Physics
Saskatoon, SK, Canada
George.Sofko@usask.ca

Number in Party: 3

Research Area: Kivalliq Region

Locations: Rankin Inlet

A large group of international scientists have joined to use radars to study high-altitude weather systems and their effects upon the low-altitude weather we experience at the ground.

The SuperDARN (Super Dual Auroral Radar Network) community, with funding and/or participation from 12 countries (Canada, US Great Britain, France, Italy, Finland, Norway, Iceland, Japan, Australia, New Zealand and South Africa), has constructed 9 radars in the northern hemisphere and 7 in the southern hemisphere (including four in Antarctica).

All of the 16 SuperDARN radars are located so as to examine the "auroral zone" (the zone of northern or southern lights) at high latitudes in the northern and southern regions of the earth. There is, however, a gap in the coverage over the polar regions.

The north magnetic pole lies near Eureka, Nunavut. Only two radars, to be called the PolarDARN radars, are needed to view the entire "north polar cap" region centered around the magnetic pole. The first radar would be installed in Rankin Inlet, the second in Inuvik.

We already take part in science projects at two sites in Rankin Inlet-at a small hut in which a camera and a radio inosonde operate. The PolarDARN radars will be portable-easy to install and remove, with no environmental damage. The radars measure the high altitude "weather maps" (which are voltage maps, because high-altitude winds are motions of electrically charged particles driven by electrical voltages). These maps are available on the internet with only a few minutes delay.

Such information is important for all satellites, because satellites fly in this high altitude weather. These satellites are extremely important to the north because they transmit most communications signals (telephone, TV, internet etc.).

Recently, scientists have found that the high-altitude weather is connected to the low-altitude weather, and the PolarDARN radar observations will help us to understand these connections. PolarDARN can measure part of the energy from the Sun to the Earth, namely the energy that comes from the "solar wind". This energy goes most directly to the polar regions, so these are very important regions to study.

We are very fortunate that Nunavut and the NWT provide much easier access to the northern polar regions than Antarctica to the south polar regions.

Polar North

License Number: 04 034 10N-A

Principal Investigator: Rondeau, Rob

Affiliation: PROCOM Marine Survey & Archaeology
Coronation, AB, CA
procomsurvey@hotmail.com

Number in Party: 5

Research Area: Kitikmeot Region

Locations: Larsen Sound

Project Polar Reach aims to develop solutions relating to offshore surveying through the use of autonomous underwater vehicles (AUVs).

Essentially robots, AUVs can provide greater "precision of position" in surveying under ice and also reduce the risk to personnel doing such work in the remote Arctic environment. The conventional way of bathymetric mapping in the Arctic is to equip an icebreaker with a multibeam echo sounder. In heavy ice, mapping with large icebreakers is time consuming and potentially dangerous. And, it's challenging to run straight lines. Operating independent of its surface support vessel, an AUV can map at greater speed, accurately following planned survey lines. AUVs are also capable of simultaneous recording using a full geophysical sensor suite – including bathymetry, sub bottom profiling (shallow seismic), acoustic and optical imaging and other oceanographic data recording, such as mapping the ice floor from underneath.

Provenance of Clastic Sediments in rthe Sverdrup Basin

License Number: 02 047 10R-M

Principal Investigator: Smyth, Helen

Affiliation: Cambridge University
CASP, Cambridge, , UK
robert.scott@casp.cam.ac.uk

Number in Party: 5
Research Area: North Baffin Region
Locations: Ellesmere Island

The CASP 2009-2011 field programme aims to study the geology of the Canadian Arctic Archipelago to build on existing published information,and CASP work in 2007-08.

Production and Loss of Methylmercury, and it's Uptake in Lake Food Webs of the High Arctic

License Number: 02 083 10N-M

Principal Investigator: Chetelat, John

Affiliation: Carelton University
Environment Canada,National Wildlife Research Centre
Ottawa, Ont, Canada
john.chetelat@ec.gc.ca

Number in Party: 4

Research Area: North Baffin Region

Locations: Resolute Bay

Project Description: Mercury is a priority contaminant of the Northern Contaminants Program (NCP) due to its prevalence in the Arctic and high levels found in some traditional foods. Most mercury in the environment is in an inorganic form whereas organic methylmercury is the much more toxic species that biomagnifies through food webs. Processes regulating the amount of methylmercury present are therefore critical in controlling how much enters aquatic food webs.

In July and August of 2010 and 2011, we propose to measure key production and loss processes for methylmercury which have not previously been studied in High Arctic fresh waters. Rates of production and breakdown of methylmercury will be measured in sediment of lakes and wetlands on Cornwallis Island. The bacterial community responsible for methylmercury formation will be studied. Sunlight-induced breakdown of methylmercury will be measured in the water column.

Mercury levels in chironomids, the main food of lake-dwelling char, will be measured to link methylmercury production and loss processes with food web uptake. This project will provide critical information on the mercury cycle to support monitoring of landlocked Arctic char currently conducted under the NCP.

Quantifying Changes in Multi-year Floes Drifting through the Arctic

License Number: 02 068 10R-M

Principal Investigator: Johnston, Michelle

Affiliation: National Research Council
Canadian Hydraulics Centre
Ottawa, ON, Canada
michelle.johnston@nrc-cnrc.gc.ca

Number in Party: 4

Research Area: North Baffin Region

Locations: Nares Strait, Penny Strait

The work will be conducted in Nares Strait (80°N) and Penny Strait (76°). (1) The objective the 2009 work is to (1) conduct detailed thickness measurements on up to 14 multi-year floes and (2) install a temperature chain and GPS system in two 10 m thick floes (Nares Strait) and one 25 m thick pressure ridge (Penny Strait). The temperature chains will extend through the full thickness of ice. They will be used to monitor temperature changes in the ice. GPS and temperature data will be downloaded remotely via satellite. This project promises to provide details about how quickly thick multi-year ice melts in summer and how much the floe recovers (new ice forms on the underside of the floe) during the winter.

Reconstructing Ancient Ocean Conditions from Rocks of the Belcher Group,Belcher Islands, Nunavut

License Number: 0106610N-A

Principal Investigator: Partin, Camille

Affiliation: University of Manitoba
Department of Geological Sciences
Winnipeg, Manitoba, Canada
camille.partin@gmail.com

Number in Party: 4

Research Area: South Baffin Region

Locations: Belcher Islands, Flaherty Island, Tukarak Island

The purpose of this research is to study the origin of the sequence of rocks covering the Belcher Islands. To do this, we plan to sample various rock types (carbonates and shales), and document how they are related. Ultimately, we want to understand the story of the ancient ocean in which the rocks of the Belcher Group were deposited, approximately 2 billion years ago. We will accomplish our sample collecting mostly by boat work and on foot, and possibly by ATV. We plan to hire a local guide to help us with navigation, transportation and bear-monitoring.

Structural, thermal and magmatic evolution of Baffin Bay and Davis Strait and adjacent continental margins

License Number: 01 055 10N-A

Principal Investigator: Stephenson, Randell

Affiliation: University of Aberdeen
Geosciences
Aberdeen, , Scotland
r.stephenson@abdn.ac.uk

Number in Party: 2

Research Area: South Baffin Region

The overall research project mainly comprises numerical modelling of lithosphere deformation processes that led to subsidence of the Davis Strait area, and formation of sedimentary basin, and eventual related uplift of Baffin Island and the Greenland margin.

The field project applied for here involves the collection of rock samples for fission track analysis to help constrain the modelling. The project is expected to yield a better understanding of the evolution of the area, including the maturity evolution of the sedimentary fill in the area offshore Baffin island and the timing of the first rifting between Greenland and Canada.

Thermal state of permafrost

License Number: 02 086 10N-A

Principal Investigator: Romanovski, Vladimir

Affiliation: Geophysical Institute
University of Fairbanks
Fairbanks, Alaska, USA
veromanovsky@alaska.edu

Number in Party: 6
Research Area: North Baffin
Locations: Ellef Ringnes Island

Project description:

The main objective of this study is to observe permafrost conditions at this location. A climate station is located on the research site, this station has valuable data that we need to download. We will upgrade the station to allow for better measurements of permafrost conditions in the future.

Methodology:

We will upgrade the data logger and install temperature probes. These probes are installed in a pilot hole with a diameter less than 2cm and a depth of 5 meters. The soil from the pilot hole will remain at the location we only need describe its features. Temperature probes will be installed and left in place for continuous permafrost monitoring.

Variability and Forcing of Fluxes through Nares Strait & Jones Sound

License Number: 02 060 10R-M

Principal Investigator: Melling, Humfrey

Affiliation: Institute of Ocean Sciences
Sidney, BC, CA
humfrey.melling@dfo-mpo.gc.ca

Number in Party: 13

Research Area: North Baffin Region

Locations: Nares Strait, Jones Sound

In August 2009, DFO's Institute of Ocean Sciences plans to recover 12 oceanographic moorings from the waters of Nares Strait, between Ellesmere Island and Greenland and 3 from the waters of Cardigan Strait, between Ellesmere Island and Devon Island.

The region and locations of moorings are shown. The work will be conducted from the CCGS Henry Larsen. Moorings were installed variously in August 2006, August 2007 and August 2008 from CCG icebreakers Henry Larsen (2006 and 2007) and des Groseilliers (2008).

Most of the moorings are in southern Kennedy Channel at depths of 200-400 m. They carry instruments to measure ocean current, temperature and salinity, sea level and ice thickness. All the measurements made since 2007 are stored within the instruments.

We recover the moorings by using a coded sound signal to activate a device on each mooring. This disconnects the floating part from its anchor. The floating part is collected by small boat at the surface.

2010

LICENSED HEALTH RESEARCH IN NUNAVUT

An Ethnographic Study to Define the "Good" Rural Death

License Number: 04 031 10N-A

Principal Investigator: Wilson, Donna
Affiliation: University of Alberta, Faculty of Nursing
Edmonton, Alberta, Canada
donna.wilson@ualberta.ca

Number in Party: 2
Research Area: Kitikmeot
Locations: Cambridge Bay

Every year, nearly 250,000 Canadians die, with most deaths now among people who are either very old or who have lived through a long illness. Death is often expected now, although it is still often tragic and sad. It is therefore very important to have a good dying process, for both the dying person and their caregivers. Much concern has centered on the "good" death since the initiation of the hospice/palliative care movement in the 1970s. This concern is readily apparent in hospice-palliative care definitions that emphasize care should be aimed at fostering a good death.

Progress has been made in terms of health care services for dying urbanites, but much remains unknown about the perspectives and needs of people living in rural or remote areas. Few studies have sought to identify the perspectives and needs of rural or remote dying persons and their caregivers.

Rural/remote living can present additional challenges for dying persons and their families, particularly with regard to health and social services access. Considering that 20-30 per cent of Canadians live in areas that are rural or remote, and that the rural/remote population is usually older and arguably closer to the end of life, there is much need to address this deficiency.

An extension of an ethnographic study that was completed recently in rural areas of two provinces of Canada is planned (rural Alberta and rural Quebec) to establish a conceptual understanding of the good death from a remote perspective. The proposed ethnographic study of a good death as it is understood by Canadians who live in remote area of Canada will contribute to knowledge about what can be done to foster high quality palliative/end-of-life care.

Arviat Healthy Homes and Public Health Youth and Elders Community Survey

License Number: 03 061 11N-A REGISTRY

Principal Investigator: Healey, Gwen
Affiliation: Qaujigiartiit Health Research Network
Iqaluit, Nunavut, Canada
gwen.healey@qhrc.ca

Number in Party: 4
Research Area: Kivalliq Region
Locations: Arviat

Arviat has long been a community proactively working for improvements and increased ownership in programs which impact their lives. Since the creation of Nunavut, the Arviat Health Committee has had a community wellness plan that targets specific community-identified health issues and is based on community-initiated research findings and locally developed programs.

The community Health Committee works closely with the Arviat Hamlet Council and other community agencies to ensure that efforts to address health and wellness issues are collaborative and well-supported across the community.

In September 2008, during the Arviat Health Summit, the idea for the Healthy Homes initiative was developed in response to the devastating outbreak of CA-MRSA. During the summit discussions, the message was adopted that it is up to each family to ensure its own health, to provide a healthy home for children and to be aware of how to prevent illness.

With no formal access to public health education in the community, the decision was made to launch a program directed at examining the existing conditions which lead to high rates of communicable disease in the community and at providing information that will promote prevention and changes in personal health habits.

Assessing the Role and Outcomes of the Introduction of Chiropractic Health Care Services in a Nunavut Community

License Number:

Principal Investigator: Tucker, John
Affiliation: Government & Interprofessional Relations
Canadian Chiropractic Association
Toronto, Ontario, Canada
jtucker@chiropracticcanada.ca

Number in Party: 7

Research Area: South Baffin Region

Locations: Pangnirtung

The chiropractor will work in collaboration with health care professionals and staff at the Pangnirtung Health Center. Consideration is also being given to holding occasional clinics at Qikiqtarjuaq, the closest hamlet to Pangnirtung.

Support is being sought from the Government of Nunavut Department of Health and Social Services in terms of availability of office space at the local health center to promote collaboration among providers and use of X-ray. Professional licensing for the chiropractor will be managed by way of the chiropractor's provincial regulatory college agreeing to act as the professional regulatory body for the chiropractor.

Climate change, key traditional food species and community health in Nunavut

License Number: 0401205N-M

Principal Investigator: Chan, Laurie
Affiliation: McGill University
MacDonald Campus
Ste. Anne de Bellevue, Quebec, Canada
laurie.chan@mcgill.ca

Number in Party: 4
Research Area: Kitikmeot and Kivalliq Regions
Locations: Kugaaruk, Repulse Bay

The proposed research is to identify changes in availability and access of key food species in two Nunavut communitities, Kugaaruk, and Naujaat and to project nutrient intake and health impacts. We will also help the communities to create an adaptation plan.

Our study aims to understand how changes in key species abundance and access, is related to health (focused on nutrient intake, but also concerning social, mental, spiritual, and aspects of health). Are the hunting seasons longer of shorter? How does this change the number of animals harvested in each community? How does this affect community distribution of food and thus nutrient intake and overall health? These are some of the key questions guiding our study.

The study will involve several days of interviews, use of maps, and focus groups with informed individuals from the communities in the spring of 2005. This project will be carried out in collaboration with the communities at all stages of the project to ensure correct representation and appropriateness of knowledge shared.

A preliminary workshop to be organized by the Inuit Tapiriit Kanatami in winter of 2005 will be the basis for what environmental change is currently affecting the community. This preliminary visit will allow us to identify community concerns and focus our hypotheses and our research tools in this direction.

The results of our study will be vital in developing an adaptation plan to achieve required nutrient levels that promote optimum health in the face of climate change. Furthermore, it will bring to light the link between overall health and traditional key food species in each community.

Competency Based Health Human Resources Planning for Aging Canadians

License Number: 05 057 10-Registry

Principal Investigator: Murphy, Gail Tomblin

Affiliation: Dalhousie University
Halfiax, Nova Scotia, Canada
gail.tomblin.murphy@dal.ca

Number in Party: 2

Research Area: Nunvut Wide

Locations: North and South Baffin, Kivalliq and Kitikmeot Regions

For this proposed project, a competency-based approach to HHR planning is described which begins with the health needs of the population, determines the competencies required to meet those needs and plans a workforce based on these factors through methods involving extensive collaboration.

The target population is seniors in long-term care (LTC) in Nova Scotia and Nunavut, encompassing Aboriginals and non-Aboriginals. The tools developed in this work will be relevant in jurisdictions across Canada as they face the challenge of planning for healthcare for the elderly.

Healing the social body: A community-based approach to mental health policy.

License Number: 0400106R-M

Principal Investigator: Donaldson, Shawn

Affiliation: Carleton University
Department of Geography and Environmental Studies
Ottawa, Ontario, Canada
sdonald2@connect.carleton.ca

Number in Party: 1

Research Area: South Baffin Region

Locations: Cape Dorset

I would like to gain a better understanding of community perspectives on how to understand and promote mental health and prevent mental illness. Particularily, I would like to better understand the role that cultural concepts of mental health, connections to nature, identity and traditional values play in mental health and the prevention of mental illness.

This can be used to examine the governments approach to address mental health issues to see if it reflects Inuit views and knowledge. This research will use qualitative methodology in conjunction with official statistical data. I hope to do interviews with community members, public health officials, nurses, doctors, psychologists and psychiatrists.

Palliative Care and the Kivalliq Region of Nunavut: Determinants of Programme Development and Implementation

License Number: 0301003N-A

Principal Investigator: Martin, Bruce

Affiliation: University of Manitoba
Faculty of Medicine
Winnipeg, Manitoba, Canada
bmartin@cc.umanitoba.ca

Number in Party: 0

Research Area: North Baffin Region

The ultimate objective of this study is to identify the broad determinants of palliative care programme development and implementation in the Kivalliq Region of Nunavu. This objective will be achieved in the following dimentsions:

1. Conduct a survey of the literature regarding specific emphasis on cross-cultural and remote settings;

2. Identify the broad determinants for current and sustained palliative care programming;

3. Identify the requisite supports for palliative care by conducting an environmental scan of the current health and social services system with a Nunavut-specific focus;

4. Identify Canadaian Inuit beleifs on death and dying by reviewing existing literature, and aupplementing this with information from key informants;

5. Conduct focused interviews of patients and family "units of care" regarding end of life care from both a cultural and needs-based perspective; and

6. Conduct surveys and interviews of health and social service providers to gain their perspective on palliative care programme development and implementation.

Prenatal care in two Nunavut communities: What are the barriers, facilitators and motivators to accessing care?

License Number: 03 047 10N-A-Amended

Principal Investigator: Geraci, Johanna

Affiliation: McMaster University
Guelph, Ontario, Canada
johannageraci@yahoo.com

Number in Party: 2

Research Area: Kivalliq Region

Locations: Arviat, Rankin Inlet

The purpose of this study is to understand why women choose to attend, or not to attend, prenatal care in two Nunavut communities with different rates of attendance. The research will look at how individual characteristics, personal relationships, the woman's community and the health care system influence her decision to attend prenatal care.

A descriptive, qualitative research design will use interviews to collect information from pregnant and postpartum women, and nurses, midwives and maternity care workers who live in Arviat and Rankin Inlet. Community members have been working with the researcher to develop a research proposal and interview questions that are relevant to prenatal care in their communities. Interviews will be offered in Inuktitut and English.

Information from the interviews will be analyzed using content analysis, which looks for common and related ideas from the interviews. A summary of the research results will be written describing the factors that encourage and discourage women from attending prenatal care.

Surveillance and Cost Analysis for Respiratory Syncytial Virus Hospital Admissions in Arctic Communities in Canada

License Number: 0501708N-M

Principal Investigator: Banerji, Anna

Affiliation: University of Toronto
St Michael's Hospital
Toronto, Ontario, Canada
anna.banerji@utoronto.ca

Number in Party: 0

Research Area: Nunavut Wide

Canadian Inuit children have very high rates of lower respiratory tract infections (lung infections) compared to the South. The purpose of this study is to find out what viruses are causing infants less than one year of age to be admitted to the hospitals and what are the costs associated with these hospital admissions. We will observe infants admitted to regional hospitals in Nunavut, Nunavik and Northwest Territories, or transferred to children's Hospitals in the South over a one-year period.

We are especially interested in a virus called virus called Respiratory Syncytial Virus or RSV. RSV is the major cause of hospital admissions around the world, and there is an vaccine (called palivizumab) that can greatly reduce the number of admissions to hospital caused by RSV. The vaccine is very expensive, and currently is given only to children who are higher risk for admissions for RSV such as premature children or children with underlying heart or lung disease. If we find that RSV is a major cause of hospital admission for in Northern Canada and that these admissions are very expensive, then it might be possible to increase the number of babies who are eligible for this vaccine in the North. This has the potential to greatly reduce the number of admissions to the hospital for RSV. As this is an observational study where we are just collecting information and testing leftover nasal fluids, there will be no impact on the baby.

We have discussed the study with health representatives the support of Inuit Tapiriit Kanatami (ITK) and Nunavut Tunngavik Incorporated (NTI) and have their support. As in previous studies we will keep the Northern community informed of the progress of the study through the CBC.

Traditional Inuit Beliefs about Pregnancy and Birth

License Number: 01 068 10-NM

Principal Investigator: O'Brien, Beverley

Affiliation: University of Alberta
Faculty of Nursing
Edmonton, Alberta, Canada
beverley.obrien@ualbert.ca

Number in Party: 5

Research Area: South Baffin, Kivalliq Regions

Locations: Arviat, Cape Dorset, Iqaluit, Rankin Inlet

Prior to the 1960s, pregnant and birthing women in Nunavut were cared for by traditional midwives. By the 1970s, Inuit were relocated to larger communities. At this time they were told that the only safe way to give birth was in a hospital, which was usually far away from their homes, communities and culture. They were also told that only doctors and nurses could give safe care. They were not encouraged to value the knowledge and wisdom of traditional midwives who had provided maternity care under harsh conditions for countless generations. Now there are few traditional midwives and what they know is being lost or is in danger of being lost.

An alarming consequence of the loss of skills and knowledge of these important maternity care providers is that birth was removed from the community. For example, 62 per cent of women in Nunavut must travel more than 100 km to birth as opposed to 2.5 per cent of women living elsewhere in Canada (MES, in press for March 2009). Many women who travel to give birth must leave their communities by 36 weeks gestation and experience birth while being cared for by providers who are strangers to them.

What are the current practices, attitudes and support systems related to breastfeeding among mothers of infants less than two years of age living in Repulse Bay?

License Number: 03 057 11N-A-Registry

Principal Investigator: Lu, Jianming

Affiliation: Winnipeg Regional Health Authority
Winnipeg, Manitoba, Canada
jlukimmy@gmail.com

Number in Party: 6

Research Area: Kivalliq Region

Locations: Repulse Bay

Our research aims to gain a better understanding of the current breastfeeding practices and attitudes as well as the support systems for breastfeeding in Repulse Bay.

Researchers will conduct individual face-to-face interviews and medical chart reviews to collect data. Participants will be recruited via:

1. collaboration with health centre staff in distributing information to mothers during postnatal visits;
2. radio announcements and poster advertising throughout the community;
3. information booths at the health centre, church and school.

Recruitment announcements and posters will be in both English and Inuktitut languages.

Participants will be informed of the purpose and procedures of the study and asked to sign the consent form acknowledging confidentiality and agreeing to participate.

Parental consent will be obtained for adolescents under the age of 18. A translator will be available to assist during interviews if needed.

2010

SOCIAL SCIENCES RESEARCH IN NUNAVUT

2010 Chidliak Traditional Land-Use Project

License Number: 01 060 10N-A

Principal Investigator: Pfister, Shirley-Standafer`

Affiliation: Peregrine Diamonds
Vancouver, BC, Canada
shirley@pdiam.com

Number in Party: 4

Research Area: South Baffin Region

Locations: Pangnirtung

To provide Peregrine with Traditional Knowledge or Qaujimajatuqangiit data (TK/IQ) for the Chidliak Project exploration area on the Hall Peninsula, Baffin Island, so that Peregrine may plan its exploration activities, environmental baseline studies and environmental assessment by regulators, should this mineral-exploration project advance toward development. Further, it is expected that the TK/IQ provided will have educational value for Peregrine, for Pangnirtung and for youth of the community, the next generation of land-users. The information has not been assembled before, because the area is new to exploration; therefore, Peregrine and the Municipality expect the information to be valuable for both parties.

4-D Visioning for Climate Decision-Making in Clyde River, Nunavut

License Number: 02 095 10N-M

Principal Investigator: Sheppard, Stephen

Affiliation: University of British Columbia
Forest Resources Management
Vancouver, BC, Canada
stephen.sheppard@ubc.ca

Number in Party: 4

Research Area: North Baffin Region

Locations: Clyde River, Iqaluit

This project is part of a national study to test the effectiveness of a process that includes local knowledge, participation, scenario development, science, and 3D computer visualizations over time, in a range of Canadian communities. Clyde River will be the first northern case study. In Clyde River, the research will test which northern issues the visioning process can help address.

Aboriginal ecotourism, environmental and economic changes, livelihood and traditional knowledge; a comparative analysis between the caribou Inuit of Baker Lake in Nunavut and the Sami reindeer herders of Övre Soppero in Northern Sweden

License Number: 03 035 10R-M

Principal Investigator: Blangy, Sylvie

Affiliation: Montellier University
Geography Department
Ottawa, Ontario, CA
slangy@connect.carleton.ca

Number in Party: 3

Research Area: Kivalliq Region

Locations: Baker Lake

This project aims at understanding how Aboriginal tourism can contribute to the well being of northern communities, preserve and enhance their traditional cultures, sustain their natural resources, and help community members face the challenges of climate change and economic dependency.

It is based on the hypothesis that northern communities in different geographic regions face comparable challenges and that a comparative analysis between such communities will provide new insights on the possible ways to face them.

For this, we selected 2 communities, the Inuit Inland Caribou from Baker Lake in Nunavut and the Sami Reindeer Herder of Övre Soppero of Northern Sweden that share a traditional livelihood based on the same species Rangifer tarandus and similar challenges despite the differences in their ecological and socio economic context.

Collaborative research and social action tools will be used to bridge scientific and community based knowledge to explore future scenarios and models and nurture an Arctic aboriginal ecotourism network of practitioners.

Adaptation, Industrial Development and Arctic Communities: Experiences of environmental and social change

License Number: 0304110N-M

Principal Investigator: Keeling, Arn

Affiliation: Memorial University
Department of Geography
St Johns, NL, Canada
akeeling@mun.ca

Number in Party: 6

Research Area: Kitikmeot and Kivalliq Regions

Locations: Kugluktuk, Baker Lake, Rankin Inlet, Arviat

The key objective of this project is to engage in community-based and historical research into Arctic mineral development. The projected outcomes of this study will inform contemporary efforts by regulators and policy-makers to engage communities in economic development and to incorporate traditional knowledge into research and policy surrounding the rapid development of Arctic regions. By connecting archival research with community perspectives, our project aims to understand the long-term consequences of and adaptations to resource extractive activities (even long after closure or abandonment).

American and Inuit Whalers in Cumberland Sound, 1850-1918

License Number: 010 51 10R-M

Principal Investigator: Routledge, Karen

Affiliation: Rutgers University
Department of History
Calgary, Alberta, Canada
kirimsa@gmail.com

Number in Party: 1

Research Area: South Baffin

Locations: Pangnirtung

I am applying to do research in Pangnirtuuq in order to learn more Inuit stories about the whaling days. My PhD dissertation is about Americans and Inuit living in each other's homelands in the late 1800s and early 1900s, and two of my chapters are about whaling in Cumberland Sound. I have read a lot of records written by qallunaat whalers, but these don't tell me much about the Inuit who helped the Americans and worked with them. I am especially interested in learning about the Cumberland Sound environment and seasons, how Inuit lived off the land, how they hunted whales, how they interacted with the qallunaat whalers, and any stories about Inuit who visited the United States on whaling ships.

Arctic Sovereignties: The View from Iqaluit

License Number: 01 059 10N-A

Principal Investigator: Shields, Rob

Affiliation: University of Alberta
Edmonton, Alta, Canada
rshields@ualberta.ca

Number in Party: 2

Research Area: South Baffin

Locations: Iqaluit

Workshop and research activities in Iqaluit are proposed to bring residents' perspectives into an international, US National Science Foundation-funded project on Arctic sovereignty in five circumpolar nations. The proposed research takes place mostly during the period of a year, building on completed pilot studies and visits, augmenting an established international collaboration and setting the basis for future teamwork. The Applicant is a Non-Funded Foreign Collaborator and one of the co-authors of the NSF proposal.

The US NSF project builds upon past collaborative research by its Principal Investigator, Prof. Philip Steinberg and the Applicant, Prof. Rob Shields, on contested US and Canadian claims in the Arctic (Steinberg et al forthcoming). SSHRC funding will ensure Canadian academic and graduate student participation in the overall NSF team, continue a Canadian perspective on this timely and strategic topic, add a northern perspective in addition to the US team's state level of analysis, and mobilize this research in Nunavut - in Iqaluit and the South Baffin region in particular - through interactive discussions, community workshops and contributions in the media. It lays the basis for future collaborative and comparative research on Nunavut and Greenland, drawing on and transferring the NSF-funded team's research back to the Arctic by comparing and contrasting the urban futures of the two capital cities, Iqaluit and Nuuk.

Arviat: an intimate re-examination of colonial relations

License Number: 03 036 10N-M

Principal Investigator: Tester, Frank

Affiliation: Universityof British Columbia
Vancouver, BC, Canada
ftester@interchange.ubc.ca

Number in Party: 7

Research Area: Kivalliq Region

Locations: Arviat

Thiis project will be studying the history of Arviat Nunavut from an Inuit way of looking at things.The project is interested in what happened to Inuit before they moved to the settlement of Arviat and what happened to them after they got there.

This project will involve the help of 5 Inuit students who will research the events that happened during this timeand will record their results in writing and on film. This project will use the stories and the experiences of both Inuit and Qablunaat who were involved during this time to create a new understanding of what happened and the impacts it had on the Inuit way of living.

Changes in Inuit Opposition and Resistance to Industrial Development on Caribou Claving Grounds Near Baker Lake,Nunavut

License Number: 04 028 10N-A

Principal Investigator: Bernauer, Warren

Affiliation: University of Manitoba
Department of Native Studies
Winnipeg, Manitoba, Canada
wbernauer@hotmail.com

Number in Party: 2

Research Area: Kivalliq Region

Locations: Baker Lake

This project will explore changes in the attitudes of Inuit in Baker Lake to Uranium mining in the calving and post calving grounds of the Beverly Herd.In the past,there appeared to be stronger Inuit resistance to mining in this area than there is today. The changes are likely due to a variety of factors,and this project will explore a variety of phenomena that may or may not be contributing towards this change in attitude.

The project will examine changes in the importance of hunting to the Inuit of Baker Lake;declining returns from trapping due to the collapse of the fur market;the signing of the Nunavut Land Claims Agreement and the fact that Inuit now have greater control over mining projects and are guaranteed greater benefits from them;the change in minig company from Urangeselleschaft to Areva and the effect of this;problems with Inuit organizations attempting to represent numerous communities,some of which likely do not have the same attachment to the Beverly herd as Inuit from Baker lake;conflicts of interest created by Inuit organizations collecting royalties from mining projects;and potential problems community members have when attempting to take part in the environmental review process for new mines.This study is not “anti-mining”,but is studying whether or not the inuit of Baker Lake have changed their minds about uranuim mining,and if so, why?

Climate change and tourism change:a vulnerability and resilience assessment

License Number: 05 050 10N-M

Principal Investigator: Johnston, Margaret

Affiliation: Lakehead University
Thunder Bay, Ontario, Canada
mejohnst@lakeheadu.ca

Number in Party: 6

Research Area: North & South Baffin

Locations: Pond Inlet,Gjoa Haven,Iqaluit

This research examines approaches to managing tourism change and its interaction with climate change in several northern communities. Climate change is one of many changes affecting communities and having an influence on economic activities such as tourism.

Communities and individuals who rely on tourism may be affected through negative outcomes and through opportunities for development. This research addresses the need to understand climate change adaptations in the tourism industry and their implications for northern residents and communities based on local strengths, experiences and visions.

Using case studies, the research will explore changes for communities especially related to expedition cruising and terrestrial wildlife tourism. The study uses a framework that includes climate change, tourism change, community resilience and community adaptation.

The goal of the study is to work with communities and individuals to identify community-level adaptation strategies that could be used by local stakeholders and decision-makers. Adaptation will be unique to each community, but likely will focus on changes in visitor numbers, expectations, experiences and impacts, and will require a variety of strategies that can take advantage of the opportunities and minimize negative outcomes.

Climate change impacts on berry ecology in the Canadian arctic tundra / CICAT

License Number: 04 033 10R-M

Principal Investigator: Gerin-Lajoie, Jose

Affiliation: Universite du Quebec a Trois-Rivieres
Chemistry / Biology
Trois Rivieres, QC, CA
jglajoie@globetrotter.net

Number in Party: 3

Research Area: Kitikmeot Region

Locations: Kugluktuk

Part of IPY initiative CiCAT (Climate Change Impacts on Canadian Arctic Tundra Ecosystems: Interdisciplinary and Multi-scale Assessments), the main goal of this project is to improve our knowledge of the ecology of berry producing species and to monitor berry productivity (biomass/m2) in relation to environmental change, including increased erect shrub growth.

Another important objective of this project is to link local and traditional ecological knowledge (LTEK) with scientific data on variations in annual productivity of commonly used berries: Kimminaq (Mountain cranberry, Vaccinium vitis -idaea), Paurngaq (Crowberry, Empetrum nigrum), Kigutangirnaq (Blueberry, Vaccinium uliginosum) and Arpiq (Cloudberry, Rubus chamaemorus). Finally we are collaborating with schools to develop our monitoring protocols.

Constructs and Consequences of Permanent Walls

License Number: 0303910N-M

Principal Investigator: van den Scott, Lisa-Jo

Affiliation: Northwestern University
Evanston, Illinois, USA
lvandenscott@u.northwestern.edu

Number in Party: 2

Research Area: Kivalliq

Locations: Arviat

It seems almost daily now that our society faces the discovery and subsequent outpouring of a new technology which infiltrates every aspect of our lives and changes the way we interact and structure everything from our social groups to our daily schedules. Each of these new technologies, however, is the culmination of earlier developments.

For example, the telephone predated the cell phone. My broad research question is simply: How does a society, such as the Inuit of Arviat, Nunavut, a nomadic people famed for their ingenuity and problem-solving, who have not been exposed to the gradual build-up of technology, deal with its influx? What are the consequences of the introduction of permanent walls to the Inuit in Arviat, and how do they negotiate their understanding and relationship to those walls? There are concrete ways in which walls have changed the way that the Inuit live.

The consequences of walls are real and tangible, while at the same these results are negotiated and influenced by recent history and the agency of individuals.

Determinants of food insecurity among Inuit women in Arviat, Nunavut: the role of climate change and multiple socio-economic stresses

License Number: 03 032 10N-M

Principal Investigator: Beaumier, Maude

Affiliation: Department of Geography
McGill University
Montreal, Quebec, Canada
maude.beaumier@mail.mcgill.ca

Number in Party: 3
Research Area: Kivalliq Region
Locations: Arviat

This community-run project aims to identify and characterize the key factors determining the vulnerability of Inuit women to food insecurity within the context of significant socio-economic transformation as well as climatic and environmental changes, in the Inuit community of Arviat, Nunavut.

Ecology of killer whales in the eastern Canadian Arctic

License Number: 0500808N-M

Principal Investigator: Ferguson, Steven

Affiliation: University of Manitoba
Department of Fisheries and Oceans
Winnipeg, MB, Canada
fergusonsh@dfo-mpo.gc.ca

Number in Party: 3

Research Area: Qikiqtaaluk and Kivalliq

Locations: Igloolik, Hall Beach, Cape Dorset, Kimmirut, Rankin Inlet, Pangnirtung and Arviat

The purpose of this project is to collect baseline data on killer whale distribution, abundance and ecology in the Canadian eastern Arctic. In order to collect this data, interviews will be conducted with hunters and elders in various communities around Nunavut.

Collecting observations and traditional knowledge from local people is an important step in gaining a better understanding of killer whales in Nunavut.

Effects of Development on Movements of Barren Ground Caribou development in the region are affecting behavior and migration on barren-ground caribou, using both scientific methods and Inuit Qaujimajatuqangit (IQ).

License Number: 04 037 10N-M

Principal Investigator: Panayi, Damian

Affiliation: Golder Associates
Yellowknife, NWT, Canada
damian_panayi@golder.com

Number in Party: 7

Research Area: Kitikmeot Region

Locations: Kugluktuk

Our proposed study is anticipated to identify if and how human development in the region are affecting behavior and migration on barren-ground caribou, using both scientific methods and Inuit Qaujimajatuqangit (IQ).

Exploring issues of fit surrounding the biosphere reserve model and the Igalirtuuq conservation initiative,Clyde River,Nunavut

License Number: 02 093 10N-A

Principal Investigator: Kearns, John

Affiliation: University of Saskatchewan
Saskatoon, Saskatchewan, Canada
john.kearns@usask.ca

Number in Party: 2

Research Area: Qikiqtaaluk

Locations: Clyde River

The purpose of this research is to better understand the fit between the interests of institutions at different levels of conservation initiatives.The goals of this research are to identify shared and divergent interests between organizations at different levels (ie local and regional) which are linked through conservation and governance initiatives.

Exploring the cultural connection between walrus, trichinellosis, and the Inuit People of Repulse Bay, Nunavut

License Number: 03 059 10N-A

Principal Investigator: DeVetten, Giselle

Affiliation: University of Calgary
Faculty of Medicine
Calgary, Alta, Canada
giselle.devetten@gmail.com

Number in Party: 1

Research Area: Kivalliq Region

Locations: Repule Bay

The purpose of this project is to examine the cultural links between walrus and the Inuit people of Repulse Bay, Nunavut and how this may affect the implementation of the trichinellosis prevention program in the community.

Food Coping Strategies among Iqaluit's Vulnerable Population in the context of Socio-Economic Change

License Number: 01 048 10N-A

Principal Investigator: Lardeau, Marie-Pierre

Affiliation: McGill University
Department of Geography, Burnside Hall
Montreal, P.Q., Canada
marie-pierre.lardeau@mcgill.ca

Number in Party: 2

Research Area: South Baffin

Locations: Iqaluit

The purpose of this project is to gain in-depth information on food security circumstances from users of food services provided by three distinct community-based Iqaluit organizations (Food bank, Soup Kitchen and Tukisigiarvik) which use different approaches to provide food to those in need. We aim to evaluate 1) how such services are perceived by their users, 2) if they contribute to reduce food insecurity for those users 3) the reasons that lead some to use these services 4) identify other strategies employed in response to food shortages by these users and 5) to use understanding of food insecurity and food services use to examine vulnerability to climate change.

Furthermore, this project aims to identify elements of the Inuit culture that have traditionally improved food insecurity and examine if they are still employed by users of these food distribution services. We will work in collaboration with Quajigiartiit, which will bring their expertise to use photovoice methodology, to offer participants the opportunity to engage in the research and describe their reality

through photography.

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Hamlet of Coral Harbour's Duke of York Bay Long Term Land Use Strategy

License Number: 03 030 10-Registry

Principal Investigator: Grosset, Chris

Affiliation: Aarluk Consulting
Iqaluit, Nunavut, Canada
grosset@aarluk.ca

Number in Party: 5
Research Area: Kivalliq
Locations: Coral Harbour

The Hamlet of Coral Harbour is preparing a long term strategy for land uses in the Duke of York Bay area to guide future economic development activities, and to identify areas that may require future protection of the land and resources.

The Hamlet has contracted Aarluk Consulting to prepare the strategic plan. Aarluk is working with the Council, residents, and local organizations like the Hunters and Trappers Association and the local Kivalliq Inuit Association office on the project to ensure that members of the community have the opportunity to participate. The purpose of the project is to have a guide for the future use of the area that is balanced, and provides benefits to local residents now and in the future.

Hazardous Weather in Iqaluit, Nunavut: Perceptions, Impacts, Vulnerabilities and Adaptations

License Number: 01 057 10R-M

Principal Investigator: Folliott, Jadah

Affiliation: University of Western
Dept. of Geography
London, ON, CA
jfolliott@uwo.ca

Number in Party: 4
Research Area: South Baffin
Locations: Iqaluit

This research will use local knowledge in a vulnerability and adaptive capacity framework to study the effects of hazardous weather on the people and their social and economic activities in the city of Iqaluit, Nunavut.

The main objective of the study is to increase understanding of hazardous weather through the involvement of community residents and organizations in identifying and analyzing: impacts of hazardous weather and related events; ways that residents adapt to, prepare for, and know in advance about these events. There is a focus on: adaptations to weather hazards; and vulnerabilities within the community, now and in the future

How to be people together? People, place and Inuit governance regeneration.

License Number: 05 052 10N-A

Principal Investigator: Price, Jackie

Affiliation: University of Cambridge
Iqaluit, NU, Canada
jep49@cam.ac.uk

Number in Party: 1

Research Area: South Baffin, Kitikmeot

Locations: Cambridge Bay, Gjoa Haven, Kugluktuk, Iqaluit

The purpose of my research is to learn about Inuit perceptions of contemporary Inuit governance. For this research, governance is understood as a system that emerges from, and supports, the relationship between people and place, and does not refer to Inuit participation in political institutions (i.e., Government of Nunavut, Nunavut Tunngavik, etc.).

The interviews for this research will ask people how they think good relationship can support a strong sense of community, or to put it another way, how Inuit feel people "should be people together". These discussions will inform the articulation of possible strategies to encourage the development of community engagement to support Inuit engagement in various Arctic debates at the local, regional, territorial, national and international level.

These interviews will be understood in relation to Inuit experiences on wayfinding, story telling and food sharing. These practices express how Inuit are to be people together, and they mutually support individual and collective experience, expectation, responsibility and opportunity. These practices provide important insights into how can Inuit support sustainable and interactive relationships with the land, but also among people.

As these discussions will occur in the settlement, the interviews will provide an opportunity to learn how settlement life has influenced Inuit understandings of these land based practices.

Improving Access to University Education in the Canadian Arctic:Learning from Past Experiences and listening to the Inuit Student Experiences

License Number: 01 071 10N-M

Principal Investigator: Rodon, Thierry

Affiliation: Carleton University
School of Public Policy & Administration
Ottawa, Ontario, Canada
thierry_rodon@carleton.ca

Number in Party: 7

Research Area: Baffin

Locations: Iqaluit

Increased participation in postsecondary education is of primary concern for Inuit organizations. The goal of this research proposal is to provide evidence-based research on Inuit participation in University education throughout Inuit Nunangat and to promote a national discussion amongst provider of university program in Inuit Nunangat, Northern institutions and Inuit organizations in order to develop a more coordinated effort in program delivery, curriculum development.

Inuit Knowledge of Foxe Basin Polar Bear Habitat and Movements

License Number: 0103208N-M

Principal Investigator: Sahanatien, Vicki Ann Marie

Affiliation: University of Alberta
Department of Biological Sciences
Edmonton, AB, CA
vicki.sahanatien@ualberta.ca

Number in Party: 2

Research Area: South Baffin

Locations: Igloolik, Hall Beach, Cape Dorset, Kimmirut

The polar bears of the Foxe Basin region are not well known to researchers and wildlife managers. The most recent polar bear studies occurred in the 1980s. The only biological data collected since that time are harvest and defense kill information. This gap in information is an important opportunity to tap into and explore approaches for incorporating traditional ecological knowledge into scientific research.

My study area includes the coastline and ocean of northern Hudson Bay, Hudson Strait and Foxe Basin. This is also known as the Foxe Basin polar bear population area. The focus of my research is polar bear habitat, the effects on climate change on available polar bear habitat (sea ice), polar bear movements, and behavior.

The existing oral history collections, reports and published literature of Inuit knowledge of polar bears were reviewed. New information will be collected using interviews and focus groups with knowledgeable Inuit and non-Inuit from communities in the study area.

All sources of information will be combined into a database that can be used for research, management and public education.

Inuit leadership and Governance in Nunavut and Nunavik: Life Stories, Analytical Perspectives and Training

License Number: 01 058 10N-M

Principal Investigator: Laugrand, Frederic

Affiliation: University of Laval
Quebec City, Quebec, Canada
frederic.laugrand@ant.ulaval.ca

Number in Party: 9

Research Area: South Baffin

Locations: Iqaluit

The CURA Inuit Leadership and Governance in Nunavik : Lifes Stories, Analytical Perspectives and Training is under the responsibility of Frédéric Laugrand, professor at the department of anthropology in Laval University. The research will be conducted in Nunavut and Nunavik from 2010, 30th April until 2015, 31th January. The general objective of this research is to analyze Inuit leadership and governance in those regions. Three main objectives can be identified:

- to gather new knowledge on Inuit leadership and governance from original methods, while simultaneously meeting the needs of communities. Since no substantial research has yet been conducted in this field, it is necessary to collect empirical data in a multidisciplinary perspective;

- to contribute to the training of a young generation of Inuit leaders who wish to link tradition and modernity; also to consider how local, acquired knowledge is applied to address contemporary issues in Northern communities. This objective is essential, as Nunavut and Nunavik are in dire need of a qualified workforce to run the new institutions according to a governance mode adapted to local and regional needs;

- to nurture an analytical, critical and comparative reflection on Inuit leadership, springing from improved interconnection between the expertise of leaders and young Inuit, and those of academics who have conducted research on these questions for many years.

Inuit Qaujimajatunqangit on declines of Arctic terns near Rankin Inlet and Whale Cove

License Number: 0304010N-M

Principal Investigator: Akearok, Jason

Affiliation: Environment Stewardship Brand,Prairie & Northern Region
Canadian Wildlife Service
Iqaluit, Nunavut, Canada
jason.akearok@ec.gc.ca

Number in Party: 1

Research Area: Kivalliq

Locations: Rankin Inlet and Whale Cove

Arctic Tern eggs are an important food resource of harvesters in Nunavut, notably in the Kivalliq region. Harvesters in several communities, but notably Rankin Inlet and Whale Cove, have expressed concern over declining numbers of terns near their communities, and seek research to address the issue. In response to the communities' interest, and following discussion with them, we propose to conduct an Inuit Qaujimajatuqangit (IQ) study at both communities to document the historical and current distribution of tern colonies, and to gauge community thoughts on the possible causes of decline.

We would be working with the local HTOs to select approximately 10 local residents with knowledge of Arctic terns. IQ questions would be based on an interview form (questionnaire) that is first reviewed by the HTO and would be conducted in Inuktitut (English if requested) on Arctic terns and maps would be included in the interviews if required.

Inuit Qaujimajatuqangit and the Transformation of High School Education in Nunavut

License Number: 02 094 10N-M

Principal Investigator: Walton, Fiona

Affiliation: University of PEI
Faculty of Education
Charlottetown, PEI, Canada
fwalton@upei.ca

Number in Party: 7

Research Area: Qikiqtani

Locations: Clyde River, Pangnirtung

The following research protocols support the case study research to be conducted at the high school level in the communities of Pangnirtung and Clyde Rive, Nunavut over the next year. Information letters, questions for participants and the consent forms are divided into eight sections be-

low. Please note that this qualitative research project takes place using collaborative, participatory, community-based methodologies where both Inuktitut and English are used and Inuit researchers interact with the participants.

Inuit Qaujimajatuqanigit and Harvest Studies Supporting the Mary River Project

License Number: 02 084 10N-M

Principal Investigator: Cook, Richard

Affiliation: Knight Piesold Ltd.
North Bay, Ontario, Canada
rcook@knightpiesold.com

Number in Party: 6

Research Area: North & South Baffin

Locations: Arctic Bay, Cape Dorset, Clyde River, Hall Beach, Igloolik, Pond Inlet

Baffinland Iron Mines Corporation (Baffinland) is looking to build a mine at Nuluujaak (Mary River). Inuit Qaujimajatuqangit (IQ) studies were initiated in 2006 to document the existing condition of the land and wildlife in the region and obtain feedback on the potential effects of mine development.

The studies proposed here include supplementing the IQ studies already initiated, as well as collection of current wildlife harvest information from local hunters. The IQ studies will help Baffinland plan a project that considers and respects local knowledge, including how the people use the land and which areas are most important.

The information will be very important to support an environmental assessment, including identifying potential negative and positive impacts of the project on the communities and wildlife, and identifying mitigation opportunities.

These studies will be conducted and coordinated by Baffinland, with the assistance of Knight Piesold Ltd., with the participation of local researchers and Hunter and Trapper Organizations.

Inuit Resilience Project

License Number: 0304210N-A

Principal Investigator: Potter, Stephanie

Affiliation: Whetstone Consulting Group
Ottawa, Ontario, Canada
sp0tter@xplornet.com

Number in Party: 5

Research Area: Kivalliq, South Baffin

Locations: Arviat, Igloolik

To use the Inuit traditional knowledge – or Inuit Qaujimajatuqangit (IQ) – framework to explore the concept of resilience. It takes an in-depth look at how two communities in Nunavut define resilience, and through their voices, identifies initiatives which are supporting the resilience of Inuit both individually and collectively.

Inuit Women and Subsistence: Social and Environmental Change

License Number: 02 046 10N-M

Principal Investigator: Dowsley, Martha

Affiliation: Lakehead University
Department of Geography
Thunder Bay, ON, CA
mdowsley@lakeheadu.ca

Number in Party: 5

Research Area: North Baffin

Locations: Qikiqtarjuaq, Clyde River

The objectives of the project are to investigate women's activities related to harvesting and processing country foods and materials. Also to examine the social networks of sharing for the collection, processing, distribution, and consumption of goods and services (including, but not only, country foods and other products). Also to find out people's views on changes in subsistence over the past 50 years and the main threats to the current system. Finally, to use this information as a baseline for future studies.

Language Policy Innovation in Nunavut

License Number: 01 053 10N-M

Principal Investigator: Timpson, Annis-May

Affiliation: University of Edinburgh
Centre for Canadian Studies
Edinburgh, , UK
a.m.timpson@ed.ac.uk

Number in Party: 1

Research Area: South Baffin

Locations: Iqaluit

This project will consider how the development of language policies in Nunavut has been shaped by:

(a) The Government of Nunavut's public government commitment to addressing the language needs of Inuit Language, Anglophone and Francophone communities in Nunavut;

(b) The dual objectives of developing and implementing official language legislation (that recognizes all major language communities in Nunavut) and Inuit Language protection legislation (that focuses on the needs of Inuit Language communities);

(c) Processes of public/stakeholder consultation over the development and implementation of Inuit language legislation;

(d) Intergovernmental dimensions of modelling and implementing the development of new legislation;

(e) Initiatives undertaken by the department of Culture, Languages, Elders and Youth to develop the legislation;

(f) Government of Nunavut initiatives to implement those aspects of language legislation that pertain to the promotion of the Inuit Language in education, the public sector workplace, and more broadly in the private and municipal sectors;

(g) Initiatives undertaken by the Minister of Languages and the Official Languages Commissioner of Nunavut to monitor the implementation of the legislation.

Local Discourses of Arctic Sovereignty in Iqaluit

License Number: 01 069 10R-M

Principal Investigator: Weber, Barret

Affiliation: University of Alberta
Department of Sociology
Edmonton, AB, CA
barretw@ualberta.ca

Number in Party: 2

Research Area: South Baffin

Locations: Iqaluit

The investigators will conduct interviews in Iqaluit, Nunavut from September 29 through October 12, 2009. In this research project we attempt to relate local discourses to the wider questions about sovereignty in the Arctic. We attempt to understand the various ways in which residents of Iqaluit, Nunavut interpret and enjoy life in their town, region, and broader contexts in everyday terms. We will gather data for this project by conducing open-ended interviews with local stakeholders and to document the interviews using electronic recorders.

This research is focused primarily on issues having to do with diverse conceptions of land and water, or what we will attempt to articulate as new 'geographies of sovereignty'. Therefore, the research will highlight interviews with local stakeholders or Arctic residents.

We investigate local social processes that challenge not only the traditional concept of sovereignty, but also the manner in which local perspectives are both supporting and challenging the validity of scientific claims about the region. By examining the relationship between geopolitics, science, and everyday life, we show that the Arctic is a place of knowledge-generation and -exchange amongst indigenous peoples, scientists, citizens, researchers, media, policy makers, and others.

Negotiating in an Inuit Environment

License Number: 01 070 10N-A

Principal Investigator: Young, Sherri

Affiliation: Iqaluit, Nunavut, Canada
sherri25young@hotmail.com

Number in Party: 2

Research Area: South Baffin

Locations: Iqaluit

Purpose: This research will examine cross cultural communication and cultural relativity in order to propose an effective process when negotiating in an Inuit environment. Approximately twelve senior-level negotiators will be interviewed; four who have negotiated on behalf of Inuit orga-

nizations, four who have negotiated on behalf of territorial or provincial governments and four who have negotiated on behalf of the federal government. The information will be analysed for common threads, best practices and pitfalls to avoid. This research is examining only the process of negotiations, both formal and informal, not content.

Nunavumi Nunarjuattigut Illinniarniq (Learning in Nunavut Through Our Earth)

License Number: 02 057 10N-M

Principal Investigator: Taylor, Fraser

Affiliation: Carleton University
Dept.of Geography & Environmental Studies
Ottawa, Ontario, Canada
fraser_taylor@carleton.ca

Number in Party: 6

Research Area: North & South Baffin

Locations: Arctic Bay, Iqaluit, Pangnirtung

The project seeks to develop educational resources (in communities and online) for Nunavumi Nunarjuattigut Illinniarniq-learning in Nunavut through our earth. It will develop experiential and cultural learning opportunities throughout Nunavut by creating educational materials and curriculum,while also establishing the foundation for a collaborative online atlas of Nunavut.Multiple teams will create specific learning untis for various types and levels of education within Nunavut

Picturing Responsibility on the Thelon River,Nunavut

License Number: 03 026 10N-M

Principal Investigator: Grimwood, Bryan

Affiliation: Carleton University
Department of Geography & Environmental Studies
Ottawa, Ontario, Canada
bgrimwood@connect.carleton.ca

Number in Party: 4

Research Area: Kivalliq

Locations: Baker lake

The Thelon River is a source of natural and cultural value for Inuit residents of Baker Lake and nature-based tourists from the south. It is also a place with changing social-ecological relationships, complex knowledge systems, and diverse political structures. The purpose of this PhD research is to explore how personal and group responsibility functions within this complexity, and to use this information to cultivate enhanced social and environmental responsibility along the Thelon River.

The central objectives of this research are to: 1) describe how nature and culture are bound together along the Thelon; 2) illustrate the interconnected layers of values associated with the Thelon; and 3) consider the extent to which knowledge-sharing encounters facilitate expressions of responsibility along the Thelon. Of central concern is that the research engages Thelon River canoe travelers and residents, particularly the Inuit living in Qamani'tuaq, through knowledge-sharing workshops about land-based practices, environmental and social responsibility, and meaningful places.

Recharting the Course(s) of History: Community Archaeology, Multivocality, and the Quest for Cultural Relevance in the Canadian Arctic

License Number: 04 032 10R-M

Principal Investigator: Griebel, Brendan

Affiliation: University of Toronto
Cambridge Bay, Nunavut, CA
brendan.griebel@utoronto.ca

Number in Party: 2

Research Area: Kitikmeot

Locations: Cambridge Bay

My Ph.D. research explores potential roles for archaeology within Nunavut's communities. For years, archaeologists have been looking for ways to bridge their own scientific knowledge with Inuit Qaujimajatuqangit and elder narratives about the past. By joining these forms of knowledge, it is recognized that new understandings of history can be established alongside the commitment to create projects that are relevant to both academia and Arctic communities.

Through the collaborative development of local history workshops and exhibits, educational curricula and internet-based history archives, my research seeks to not only better understand the processes and aspirations of community-based archaeology, but also to create projects encouraging the multiple voices of history to be heard.

Reducing Diesel Dependency in Nunavut: Integrating Renewable Electricity Sources

License Number: 0106710N-A

Principal Investigator: McDonald, Nicole

Affiliation: Queens University

School of Environmental Studies

Kingston, Ontario, Canada

9nm@queensu.ca

Number in Party: 1

Research Area: South Baffin

Locations: Cape Dorset, Iqaluit, Pangnirtung

This project will focus on the issues related to integrating Renewable Energy Technology (RET) into communities in Nunavut, thereby reducing the territory's dependency on diesel.

In Nunavut, diesel is by far the most consumed fuel source, and most often used to produce electricity. However, there are a number of environmental, social and economic problems associated with diesel use. This fuel source is an emission-intensive and polluting energy source, and is expensive due to the high cost of transportation and the inefficiency of diesel generators.

The goal of this project is to develop recommended policy actions, which can be taken by federal and territorial governments to increase the uptake of RETs across Nunavut.

Social Supports for Nunavut Residents Requiring Medivac

License Number: 01 0560 10N-A

Principal Investigator: McKenzie, Cameron

Affiliation: School of Social Work
Carleton University
Ottawa, Ontario, Canada
cmckenzi@connect.carleton.ca

Number in Party: 3

Research Area: South Baffin

Locations: Iqaluit

The objective of this study is to assess the effect of long distance travel for Inuit requiring medical care. Of particular interest are the effects of separation on the patients' speed of recovery and their mental health. The proposed methodology for this study is four-fold: a) review of scholarly and grey literature; b) review of Nunavut governmental policies and determine how they address the issue of isolation, social support and emotional stress, and how, to what extend and by which government jurisdiction; c) explore the role of nonprofit organizations (such as OHSNI) in the management of specialty health care services d) field researching local media accounts and other archival research as well as health care providers accounts in the hospital. Given that Iqaluit has a hospital, I anticipate that patients requiring medivac services will have serious medical or surgical needs. As a result, it is likely that they will require more complex and longer-term care.

Consequently, these patients may be at a higher risk of being affected by social isolation or other psycho-social issues. Given that Iqaluit has a hospital, I anticipate that patients requiring medivac services will have serious medical or surgical needs. As a result, it is likely that they will require more complex and longer-term care. Consequently, these patients may be at a higher risk of being affected by social isolation or other psycho-social issues.

Socio-Economic & Traditional Knowledge Studies for the Agnico-Eagle Mines, Meliadine Gold Project Environmental Impact Assessment

License Number: 03 031 10N-A-Amended

Principal Investigator: Havers, Linda

Affiliation: Golder Associates
Calgary, Alta, Canada
linda_havers@golder.com

Number in Party: 5

Research Area: Kivalliq

Locations: Rankin Inlet, Whale Cove, Chesterfield Inlet

The socio-economic and traditional knowledge studies may include, in addition to reviews of secondary data sources, key informant interviews and focus group discussion in Rankin Inlet, Whale Cove and Chesterfield Inlet.

Key informant interviews and focus groups discussions complement official socio-economic data from secondary sources, providing qualitative information on socio-economic dynamics and trends, as well as on community/sub population strengths, weaknesses, opportunities and constraints and on people's concerns and interests with regard to the Meliadine Project development. Interviews with people who are knowledgeable about the land and its resources provide information that can be integrated into the environmental impact assessment, in combination with scientific knowledge, such that the quality of the assessment is enhanced.

Stakeholder Perspectives on change and adaptation in expedition cruise tourism in Nunavut

License Number: 0106510N-A

Principal Investigator: Johnston, Adrianne

Affiliation: Lakehead University
Thunder Bay, Ontario, Canada
ajohnst4@lakeheadu.ca

Number in Party: 5

Research Area: South Baffin

Locations: Iqaluit

The purpose of this research project is to explore the views and strategies that decision makers in Nunavut's expedition cruise ship tourism industry propose available for the industry and communities to manage the effects of climate change.

Objectives

1. To deepen understanding of how climate change is influencing the development of regulation and polices for Nunavut's expedition cruise ship tourism industry.

2. To obtain an understanding of industry decision maker views on the effects of climate change on Nunavut's expedition cruise ship tourism industry.

3. To develop an understanding of the views of individuals who influence the expedition cruise ship tourism industry through decision-making and regulations.

Methodology

To collect data for this research, I will conduct semi – structured interviews with decision makers in government and non-governmental organizations that have a role in the expedition cruise ship tourism industry (Appendix 1). These interviews are expected to be ½ hour to hour long, and consist of questions regarding the views of the participants and strategies used by their organizations to adapt to climate change. Interviews will be audio recorded with the consent of the participant. If consent is denied, I will take notes during the interview. Typed transcripts will be sent back to participants to ensure that interviews were transcribed accurately.

Subsistence, Food Security and Economy in Clyde River, Nunavut

License Number: 01 061 10N-M

Principal Investigator: Wenzel, George

Affiliation: McGill University
Montreal, Quebec, Canada
wenzel@geog.mcgill.ca

Number in Party: 3

Research Area: North Baffin

Locations: Clyde River

The proposed research program will examine the adaptive response(s) within the social economy (see Wenzel et al 2000; Abele 2009; Natcher 2009) by the Inuit of Clyde River, Nunavut, to a variety of stressors affecting the traditional food system.

Earlier research in the community (Wenzel 1989, 1991, 2000, 2008, 2009; Wenzel and White 2001) has addressed the structural role (and effect) of money in modern Inuit subsistence practice. It is increasingly evident, however, that biophysical and human demographic changes being experienced by Clyde Inuit, and across the Canadian North, have precipitated a number of incipient socio-economic adaptations.

A principal objective of this research is to learn whether the suite of institutional and voluntary economic adaptations recently observed at Clyde River (Wenzel Unpublished Clyde River Field Notes, 2008, 2009) viably complement the ningiqtuq (normative resource sharing) system, thus buffering changes in resource availability. Further, comparative research may offer insights as whether such adjustments might serve as a template for other Nunavut communities.

The Determinants of Food Security Among Inuit Women: Understanding Pregnancy, Nutrition and Health in the Canadian Arctic.

License Number: 01 052 10N-A

Principal Investigator: Doucette, Michelle

Affiliation: Lakehead University
Coe Hill, Ontario, Canada
mmdoucette@lakeheadu.ca

Number in Party: 5

Research Area: South Baffin

Locations: Iqaluit, Pangnirtung

My research endeavours to use a multi-community, qualitative investigation to better understand Inuit women's circumstances of food security during pregnancy and the determinants of food security from women's perspectives. The population health research community and most importantly Inuit themselves are primed for more nuanced understandings about the current circumstance of food security for Inuit women during pregnancy in Canada. My proposed research is grounded in an understanding of the interaction between environment and human health, Indigenous research methodologies, and the principles of community-based participatory research (CBPR).

The driving research question for this project is, "What are the determinants of food security for Inuit women during pregnancy and how are this population's nutritional choices influenced by self-identified determinants of food security?"

The Role of Institutions in Shaping Inuit Participation in Climate Change Policy

License Number: 01 050 10R-M

Principal Investigator: Johnson, Noorjehan

Affiliation: McGill University
Dept. of Anthropology
Montreal, QC, CA
noor.johnson@mail.mcgill.ca

Number in Party: 2

Research Area: South Baffin, North Baffin

Locations: Iqaluit, Clyde River

My research will examine the role of institutions in shaping responses to climate change in Clyde River and Iqaluit.

I interpret 'institutions' broadly to include both organizations (such local associations and government agencies) as well as economic and social practices (such as capitalism and food sharing). Through my research, I will examine what climate change means for these different institutions, how institutions interact, and how these interactions impact the creation of climate change policy. The purpose of this research is to contribute to an understanding of the role of institutions and individuals in shaping climate change science and policy.

Tobacco: Can We Change?

License Number: 05 049 10-Registry

Principal Investigator: Doucette, Michelle

Affiliation: Health & Social Services
Government of Nunavut
Iqaluit, Nunavut
mdoucette@GOV.NU.CA

Number in Party: 8

Research Area: South Baffin,Kivalliq,Kitikmeot

Locations: Iqaluit, Rankin Inlet, Cambridge Bay

This research project is being conducted in partnership with the Government of Nunavut's Health and Social Services Department, Health Canada and the University of Waterloo (Waterloo, Ontario). The overall purpose of the project is to:

(1) gain insight on tobacco use and the role it plays in people's lives in Nunavut; and,

(2) gather opinions about different strategies that could be used to help people who want to stop using tobacco.

To do so, a series of 27 discussion groups will be conducted in three communities across Nunavut (Iqaluit, Rankin Inlet, and Cambridge Bay). These will be conducted with people who currently use tobacco, have quit or have never used tobacco.

Community research facilitators will participant in a shared learning session with researchers from the University of Waterloo (Waterloo, Ontario) to practice and further refine steps for facilitating effective discussion groups.

A community participative research approach was used to develop recruitment materials and the guide for facilitating group discussions with a goal of eliciting community insider perspectives from participants. Efforts have been taken to adhere to best practices in community participative research (including considerations about group dynamics and avoidance of the researcher/researchee dynamic style), ethical guidelines outlined by the Arctic Health Research Network and the University of Waterloo's Office of Research Ethics.

Audiotapes will be used to record interviews during the discussion groups. These audio-recordings will be transcribed, translated by and analyzed by experienced interpreters and data analysts.

A preliminarily research report will be produced and shared with the Government of Nunavut's Health and Social Services Department and other project partners.

The information provided in the report will be used primarily to develop more culturally appropriate community-based public health programs and tools aimed at changing tobacco use behaviours within Nunavut's communities.

Traditional Knowledge of Northwestern Hudson Bay Polar Bears: Distribution, Habitats, Food and Behavior

License Number: 03 025 10R-M

Principal Investigator: Sahanatien, Vicki Ann Marie

Affiliation: University of Alberta
Department of Biological Sciences
Edmonton, AB, CA
vicki.sahanatien@ualberta.ca

Number in Party: 5

Research Area: Kivalliq

Locations: Repulse Bay, Coral Harbour, Chesterfield Inlet, Rankin Inlet, Baker Lake

The polar bears of Northwestern Hudson Bay and the Foxe Basin region are not well known to researchers and wildlife managers. The most recent polar bear studies occurred in the 1980s. The only biological data collected since that time are harvest and defense kill information.

This gap in information is an important opportunity to tap into and explore approaches for incorporating traditional ecological knowledge into scientific research.

My study area is in Northwestern Hudson Bay. This is also referred to as the Foxe Basin polar bear population. The focus of my research is polar bear habitat selection (small and large scale), the effects on climate change on available polar bear habitat (sea ice), polar bear movements, and behavior.

The existing oral history collections, reports and published literature of Inuit knowledge of polar bears were reviewed. New information will be collected using interviews and focus groups with knowledgeable Inuit and non-Inuit from communities in the study area.

All sources of information will be combined into a database that can be used for research, management and public education.

Typological aspects of Inuit Sign Language

License Number: 0304310N-A

Principal Investigator: Schuit, Joke

Affiliation: University of Amsterdam
Amsterdam, , Netherlands
j.m.schuit@uva.nl

Number in Party: 2

Research Area: Kivalliq, Kitikmeot

Locations: Baker Lake,Rankin Inlet,Taloyoak

The goal of this project is to describe some linguistic aspects of Inuit Sign Language (ISL), which – apart from some aspects of its vocabulary – is as yet undescribed. ISL has recently been recognized by the government of Nunavut. The Nunavut government has clearly indicated that they would like to develop ISL. A prerequisite for the development of ISL is a linguistic description of the language.

From a linguistic point of view, it is interesting to describe ISL because of its unique setting: it is a language used in a wide area by few people. Moreover, the extreme weather conditions of Nunavut are expected to have influenced the structure of the language. Furthermore, ISL is expected to be highly influenced by the surrounding spoken language Inuktitut, a fact which may have lead to unique linguistic structures that are not found in other signed languages around the world.

The study will focus on selected semantic fields (colour, kinship and time terms) as well as on some grammatical aspects (noun-verb patterns, verb agreement) of ISL. Furthermore, an inventory of the handshapes used in the sign language will be compiled. All patterns found will be compared to those of other signed languages as well as to Inuktitut.

Urqsuk:The Changing Nature of Arctic Fats and the Inuit Diet

License Number: 02 056 10N-A

Principal Investigator: Furgal, Chris

Affiliation: Gzowski College, Trent University
Indegenous Environmental Studies Program
Peterborough, ON, Canada
chrisfurgal@trentu.ca

Number in Party: 2

Research Area: North Baffin

Locations: Clyde River

A considerable amount of dietary data has been collected on changes in Inuit Country Food consumption, and on increased reliance on Store Foods in Inuit regions throughout the Canadian North. Given the health effects of some of these changes a better understanding of where, when

and why people eat what they do is needed. Also, to strive towards an optimal diet from the population's perspective, baseline knowledge and fundamental values related to nutrition must be taken into account. This research supports the role of Inuit health organizations and advisory bodies in providing information and nutrition education tailored to local needs and preferences, on matters of food, nutrition and health.

Specifically, this research project proposes to investigate the changing nature of fats in key Arctic animal species that are commonly consumed in Clyde River, Nunavut. This project will document the changing knowledge of and perspectives of traditional (country food originating) and contemporary (store food related) fats and the impacts that these perspectives may have on diet and other health related behaviours in Inuit communities. A considerable amount of dietary data has been collected on changes in Inuit Country Food consumption, and on increased reliance on Store Foods in Inuit regions throughout the Canadian North.

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Violence and Violence Prevention among Inuit in Nunavut (East Canadian Arctic)

License Number: 0100808N-M

Principal Investigator: Diesel, Torsten

Affiliation: Johann Wolfgang Goethe-Universitat, Frankfurt am St. Wendel, Germany
t.diesel@web.de

Number in Party: 1

Research Area: North Baffin and South Baffin

Locations: Iqaluit, Igloolik

The research is part of a dissertation thesis and consists of three crucial steps. First of all, this research shall help to give a current topic overview.. Furthermore, by combining both the sampled data and the existing literature, the scientific theory concerning that topic shall be further developed which finally, as a third step, new appropriate models of violence prevention and crime reduction may be developed for Nunavut communities.

The research is supposed to be a case study that shall cover as many aspects as possible dealing with violence, its roots, and effects on Nunavut communities.

Consequently, the Nunavut court and justice system, the work of the RCMP, the situation of imprisoned Inuit inside and outside of Nunavut are both included in the study and the work of social workers, issues of victims services, drug, alcohol, and suicide prevention strategies, the engagement of political organizations such as Pauktuutit, DIAND, and various departments of the Legislative Assembly of Nunavut, and how the community deals with offenders of violence and their victims.

Furthermore, there shall be an analyses of the question if or how much historical circumstances (e.g. colonization, (re-) settlement in villages) may have contributed to the high degree of violence in Inuit communities. The last aspect of the research shall include a look at how Inuit traditional knowledge (Inuit Qaujimajatuqangit) may be helpful by working on violence prevention strategies, anger management, and healing.

INDEX OF RESEARCHERS