The ArcticNet IRIS (Integrated Regional Impact Study)

A tool to bridge science and policy

ArcticNet

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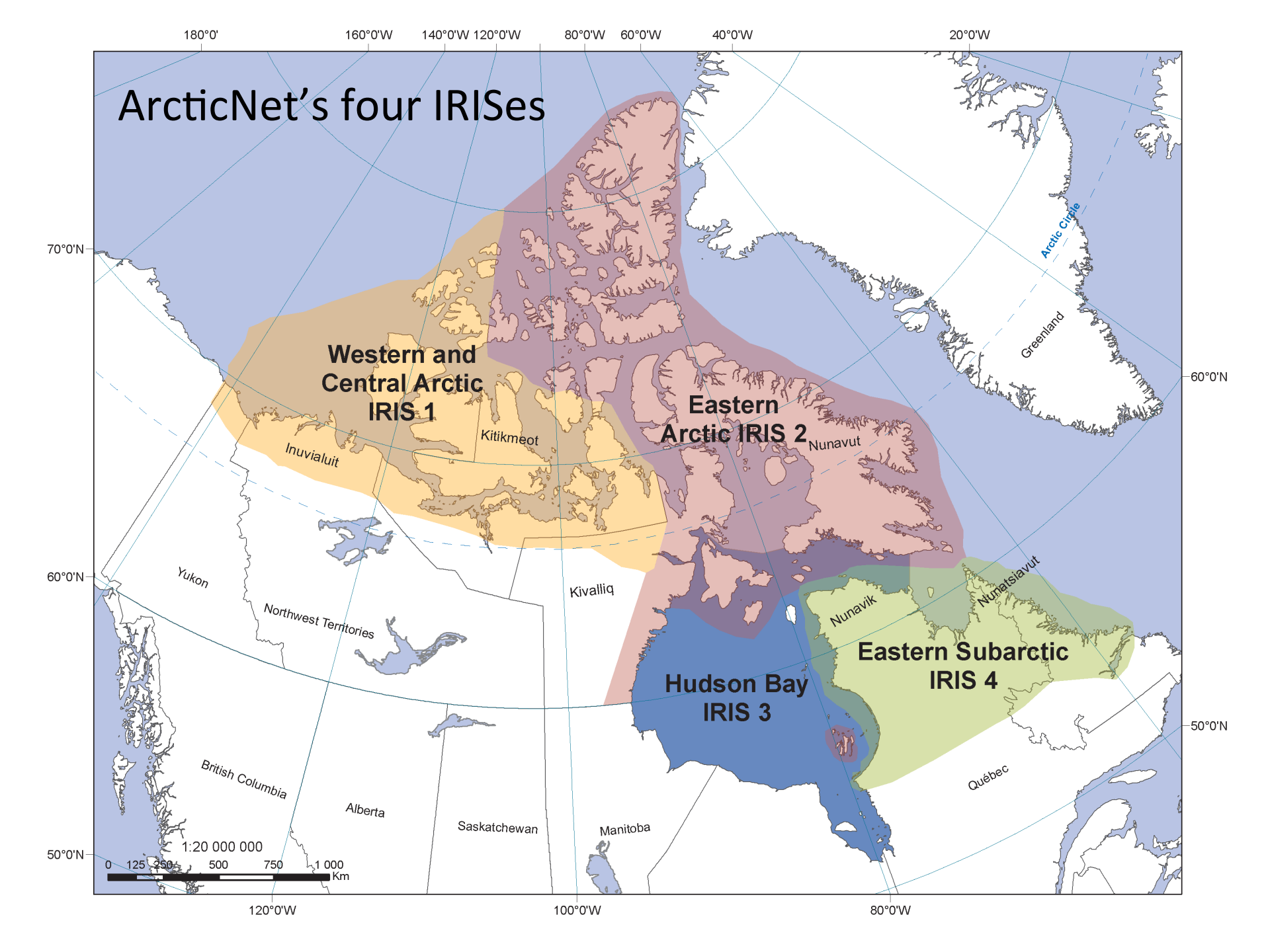

ArcticNet's four IRISes
Western and Central Arctic IRIS 1
Eastern Arctic IRIS 2
Hudson Bay IRIS 3
Eastern Subarctic IRIS 4
Inuvialuit
Kitikmeot
Nunavut
Kivalliq
Nunavik
Nunatsiavut
Yukon
Northwest Territories
British Columbia
Alberta
Saskatchewan
Manitoba
Québec
Greenland
Arctic Circle
180°0'
160°0'W
140°0'W
120°0'W
80°0'W
60°0'W
40°0'W
20°0'W
70°0'N
60°0'N
50°0'N
120°0'W
100°0'W
80°0'W
1:20 000 000
0 125 250 500 750 1 000
Km

Purpose of an ArcticNet IRIS

Summarizes knowledge of impacts at a regional scale (e.g. climate change, industrialization) into a *Regional Impact Assessment*

--> Facilitates better accessibility of knowledge

- Uses climate and oceanographic projections (2050) to estimate future climate variables and develop a prognosis of impacts
- Recommends strategies to cope with, adapt to or benefit from estimated impacts
- Targeted at northern managers, policy-makers and other decision makers to strengthen adaptation planning and sustainable development

Vincent L'Hérault/ArcticNet

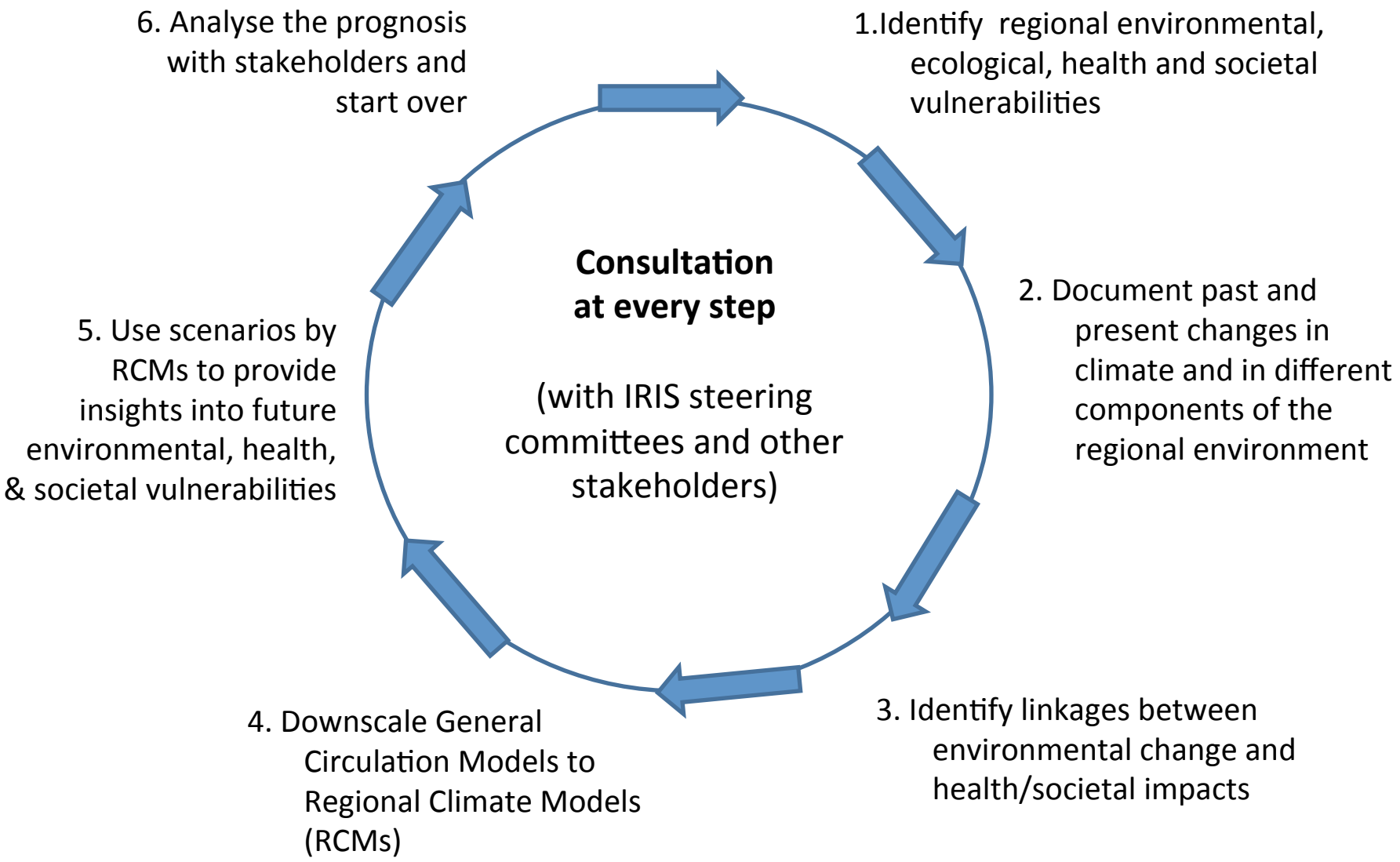
(Available at www.arcticnet.ulaval.ca)

First completed IRIS Regional Impact Assessment: Eastern Sub-Arctic

Led by Michel Allard and Mickaël Lemay

Above photos from ADAPT website

The IRIS process – towards developing a regional impact assessment



Marc Tawil/ArcticNet

Western and Central Canadian Arctic IRIS

Progress to date (since 2010)

- Established an IRIS steering committee (May-Sept 2010) and Kitikmeot sub-committee (July 2013)

- Conducted a regional workshop in Inuvik, NT, to develop Table of Contents (April 2011)

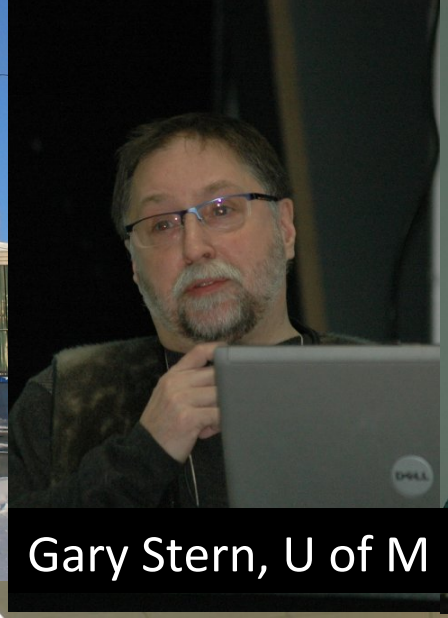
- Completed 2 drafts of Regional Impact Assessment (April 2012, Dec. 2013), including reviews by scientists and committee members. Final draft in prep (~Jan. 2015).

- *Synthesis and Recommendations* written (July 2014)

- On-going consultation with steering committee, Kitikmeot sub-committee, and other groups and stakeholders (see next slide)

Consultative Meetings and Workshops with Stakeholders

- Kitikmeot regional consultations, Cambridge Bay (September 19-20, 2012);
- International Polar Year 2012 Conference, Montreal (April 22-27, 2012);
- Meeting at NTI headquarters, Iqaluit, NU (March 29, 2012);
- Department of Fisheries and Oceans Canada (February 20, 2012);
- Inuvialuit Game Council meetings, Whitehorse (September 11, 2010 and September 19, 2011);
- IRIS regional workshop, Inuvik (April 12-15, 2011);
- Fisheries Joint Management Committee meeting (January 18, 2011);
- Inuvik Regional Research Working Group meeting (February 5, 2010);
- IRIS workshop, ArcticNet Annual Scientific Meeting, Victoria (December 11, 2009);
- ArcticNet Annual Scientific Meetings (2009-2014); and
- IRIS Steering Committee and Kitikmeot Sub-committee meetings on an as-needed basis (2011-2014)



Gary Stern, U of M

Frank Pokiak, IGC

IRIS Regional Workshop, Inuvik, NT, April 11-15, 2011

Photos: Stephanie Powell-Hellyer

Nellie Cournoyea, IRC

Martin Fortier, ArcticNet

Human Health/Food Security break-out group

Terrestrial/Freshwater Ecosystems break-out group

Louis Fortier, ArcticNet

Marine Ecosystems break-out group

Photos: Stephanie Powell-Hellyer

Safety, Security, Infrastructure break-out group

Left: Sharon Edmunds-Potvin, NTI;
Right: Pitsey Moss-Davies, ICC

Several workshop participants, ISR

Social Science break-out group

Photos: Stephanie Powell-Hellyer

Kitikmeot Regional Consultations

Cambridge Bay, NU
Sept. 19-20, 2012

Photos: Breanne Reinfort

Gayle Kabloona (NTI), Stephen King (Cambridge Bay), Corey Dimitruk (GN)

Marg Epp (Kitikmeot Community Futures Inc/CHARS), Peter Laube (Kalvik Enterprises Inc./CHARS), Alex Tooke (KitNuna/CHARS), Luigi Toretti (KIA), Jim MacEachern (Cambridge Bay), Kiah Hachey (NTI)

IRIS Steering Committees

Members sit on regional and national/international Inuit organizations. Meetings are conducted on an as-needed basis with the IRIS leader and coordinator (~2-4 times per year)

Committee members guide the development of the RIAs to ensure the topics are relevant to the regions. Typically committee members will have had experience with policy issues and policy development.

Once the science chapters are written, the IRIS steering committees contribute to the policy and research recommendations from the scientific prognosis.

Committee members, supporters and observers for the Western and Central Canadian Arctic IRIS – Thank you!

Andrew Dunford (Nunavut Tunngavik Inc. – NTI)
Miguel Chenier (NTI)
Natan Obed (NTI)
Shannon O'Hara (Inuvialuit Regional Corporation - IRC)
Norm Snow (Joint Secretariat – Inuvialuit Settlement Region)
Kevin Taylor (Municipality of Cambridge Bay)
Corey Dimitruk (Government of Nunavut)
Pitseolalaq Moss-Davies (Inuit Circumpolar Council-Canada)
Steve Baryluk (Inuvialuit Game Council –IGC)

Romani Makkik (NTI)
Sharon Edmunds-Potvin (NTI)
Jennifer Johnston (IRC)
Bob Simpson (IRC)
Sonia Aredes (Nunavut Water Board)
Kendra Tagoona (ITK)
Eric Loring (Inuit Tapiriit Kanatami - ITK
Jennifer Lam (IGC)

Previous members, supporters and observers

Gayle Kabloona (NTI), Jeannie Ehaloak (NTI), Kiah Hachey (NTI),
Jaswir Dhillon (Nunavut Impact Review Board), Meghan McKenna (ITK)

Doug Barber/ArcticNet

IRIS Chapter outline – Western and Central Canadian Arctic

Synthesis and Recommendations

Chapter 1 – Overview of the western and central Canadian Arctic

Chapter 2 – Climate trends and projections

Chapter 3 – Terrestrial and freshwater systems

Chapter 4 – Marine ecosystems & contaminants

Chapter 5 – Inuit Health Survey

Chapter 6 – Safety in transportation and navigation

Chapter 7 – Impacts to infrastructure

Chapter 8 – Culture and food security

Chapter 9 – Resource development

Chapter 10 – Climate change policy responses

James Ford/ArcticNet

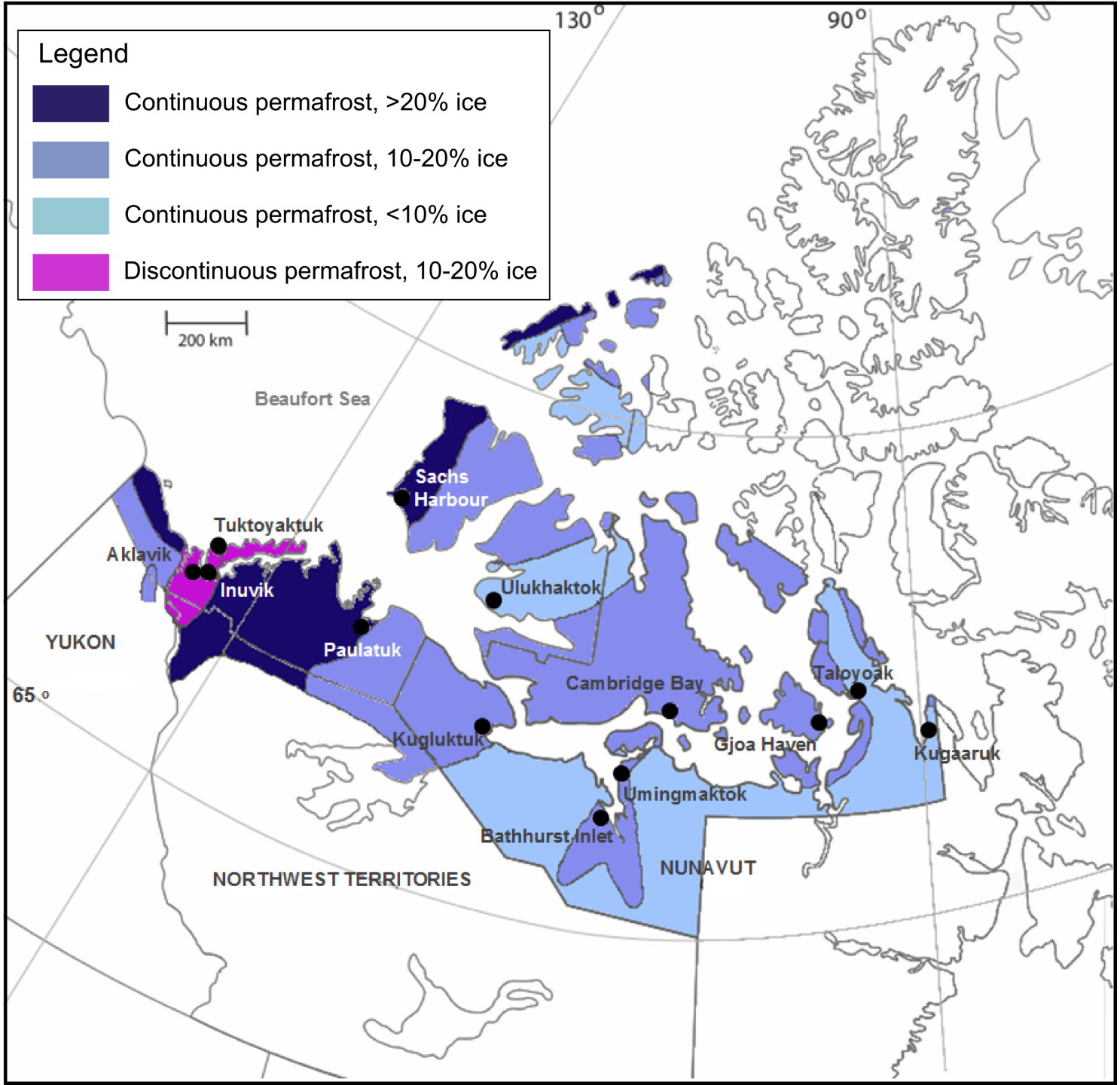
Chapter 7: Impacts to Infrastructure

Lead authors: Scott Lamoureux[1], Donald Forbes[2], Trevor Bell[3], Gavin Manson[2]

[1]Queen's University, Kingston, ON; [2]Geological Survey of Canada, Dartmouth, NS; [3]Memorial University, St. John's, NL

Chapter sections:

- Permafrost
- Changes to surface and subsurface water drainage
- Building foundation stability
- Road and air strip stability
- Pipeline stability
- Winter and ice road changes
- Coastal infrastructure
- Climate change and sea levels
- Summary: impacts of changing climate on existing and planned infrastructure


Legend
Continuous permafrost, >20% ice
Continuous permafrost, 10-20% ice
Continuous permafrost, <10% ice
Discontinuous permafrost, 10-20% ice
200 km
130°
90°
Beaufort Sea
Sachs Harbour
Tuktoyaktuk
Aklavik
Inuvik
Ulukhaktok
Paulatuk
YUKON
65°
Cambridge Bay
Taloyoak
Kugluktuk
Gjoa Haven
Kugaaruk
Umingmaktok
Bathhurst Inlet
NUNAVUT
NORTHWEST TERRITORIES

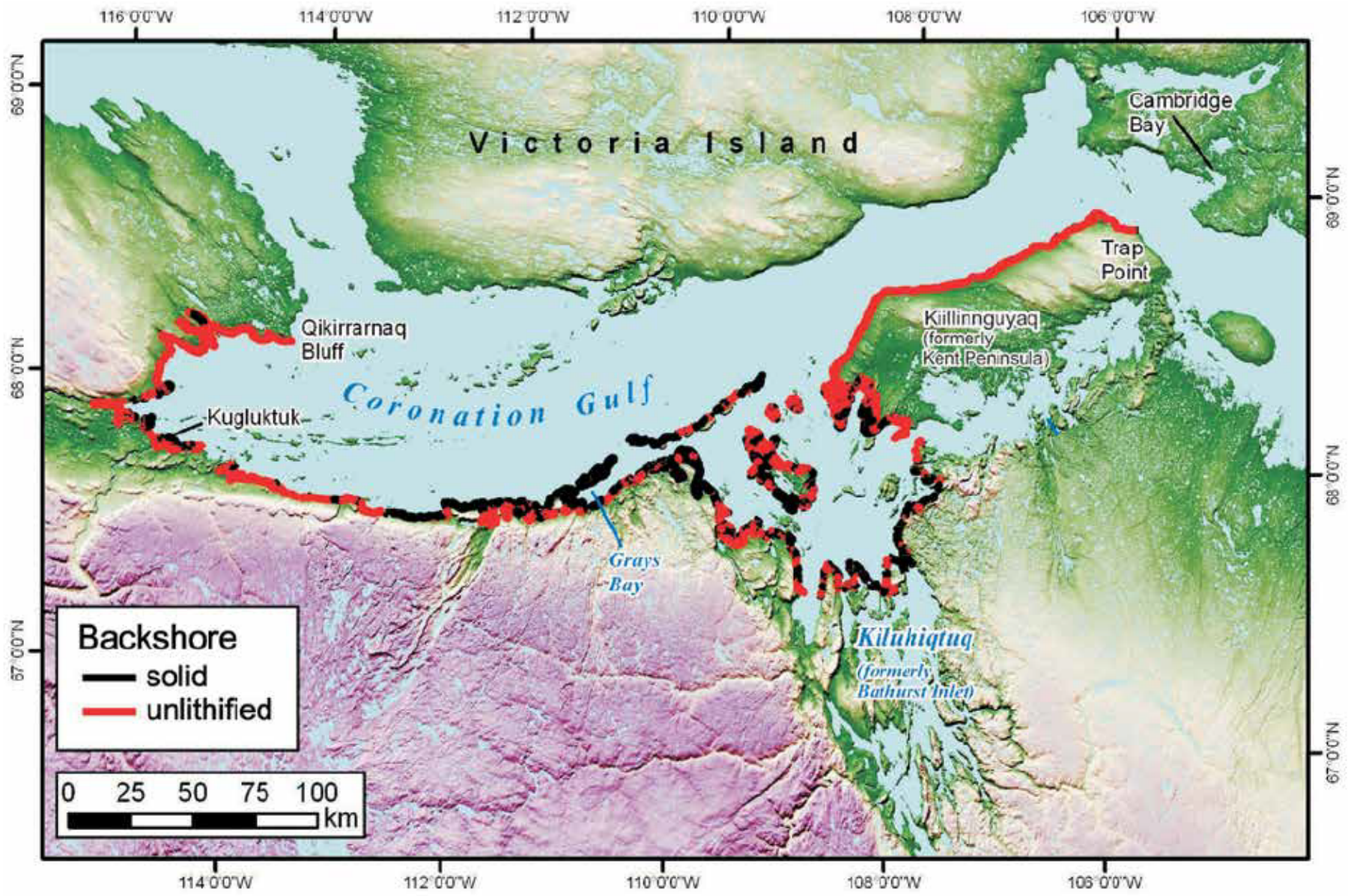
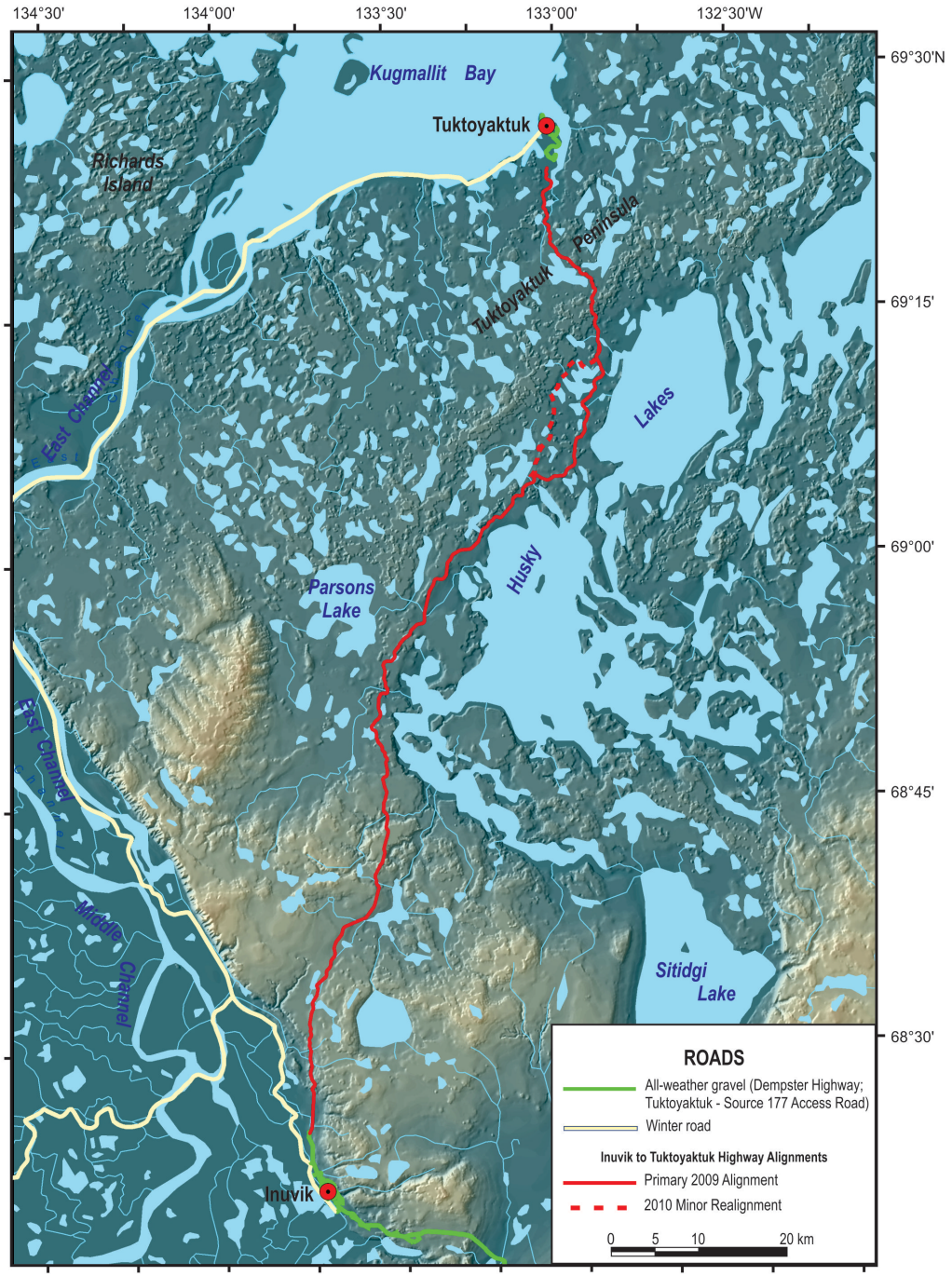


Figure 26. Distribution of rock and surficial deposits in the backshore of southern Coronation Gulf, derived from CIS data. Equivalent mapping of the north shore is near completion. Modified from Couture et al. (2014), courtesy of the Canada-Nunavut Geoscience Office.



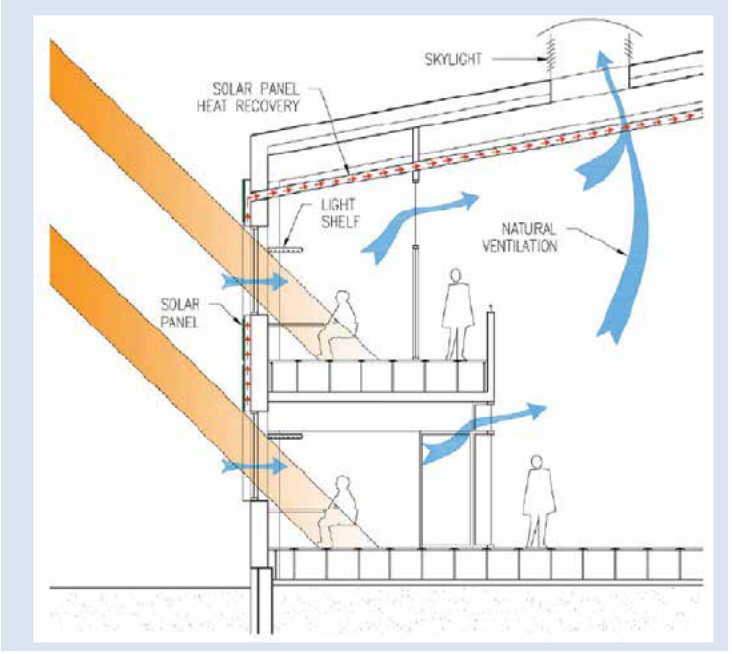
Local Case Studies

Left:

Inuvik to Tuktoyaktuk highway

Below:

Canadian High Arctic Research Station – state of the art northern infrastructure



Chapter 9: Resource Development

Topics of interest:

Climate change and mining operations

Oil and gas

Arctic marine shipping

Cruise tourism

Lupin gold mine in Nunavut (www.novusgold.com)
Operational from 1982-2003 and 2004-2005

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ArcticNet

ARCTICNET is a Network of Centres of Excellence of Canada that brings together scientists and managers in the natural, human health and social sciences with their partners from Inuit organizations, northern communities, federal and provincial agencies and the private sector. The objective of ArcticNet is to study the impacts of climate change and modernization in the coastal Canadian Arctic. Over 145 ArcticNet researchers from 30 Canadian Universities, 8 federal and 11 provincial agencies and departments collaborate with research teams in Denmark, Finland, France, Greenland, Japan, Norway, Poland, Russia, Spain, Sweden, the United Kingdom and the USA.

Highlights

Arctic Inspiration Prize
The Prize recognizes teams who implement their Arctic knowledge into concrete actions to benefit the Canadian Arctic.

2011-2013 Annual Report
ArcticNet's multidisciplinary research program is addressing the challenges and opportunities facing the Canadian Arctic.

IRIS Report
IRIS 4: From Science to Policy in Nunavik and Nunatsiavut was launched in Kuujjuaq on 29 November 2012.

Quick Links

- Photo Gallery
- Safety Training Fund
- Schools on Board
- Student Association
- CCGS Amundsen
- Research Projects Phase 3
- Inuit Research Advisors
- Polar Data Catalogue
- ArcticNet Meetings
- ArcticNet in the News

Arctic Change 2014

ArcticNet and its national and international partners will welcome the Arctic research community to Ottawa for the International Arctic Change 2014 Conference from 8-12 December 2014.


Questions?
Enjoy the conference!
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