

The inter-ecologies of the Eeyou Marine Region



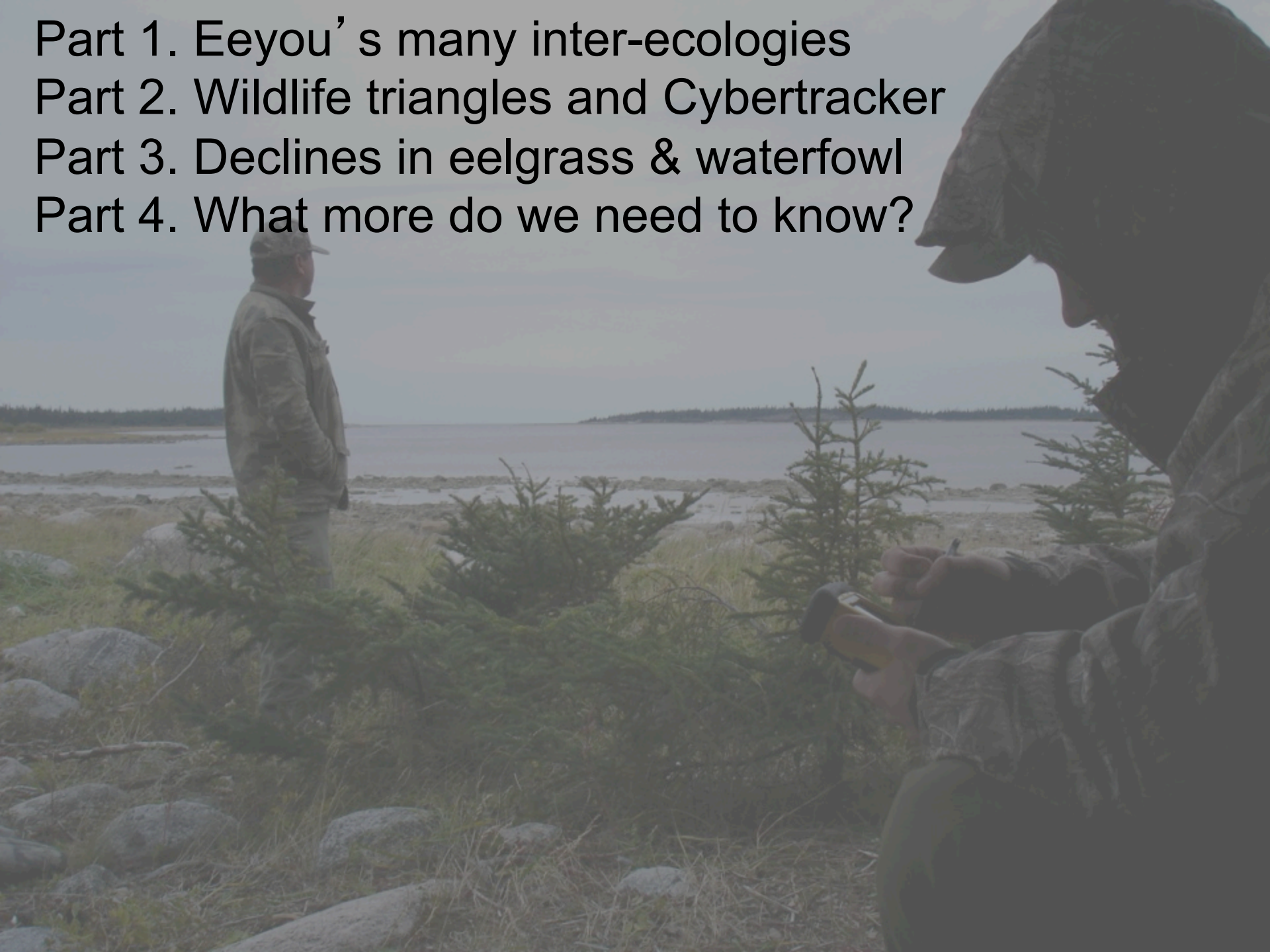
Murray Humphries & Mélanie-Louise Leblanc
Centre for Indigenous Peoples' Nutrition & Environment
McGill University
Montreal, Quebec
murray.humphries@mcgill.ca

Part 1. Eeyou's many inter-ecologies

Part 2. Wildlife triangles and Cybertracker

Part 3. Declines in eelgrass & waterfowl

Part 4. What more do we need to know?



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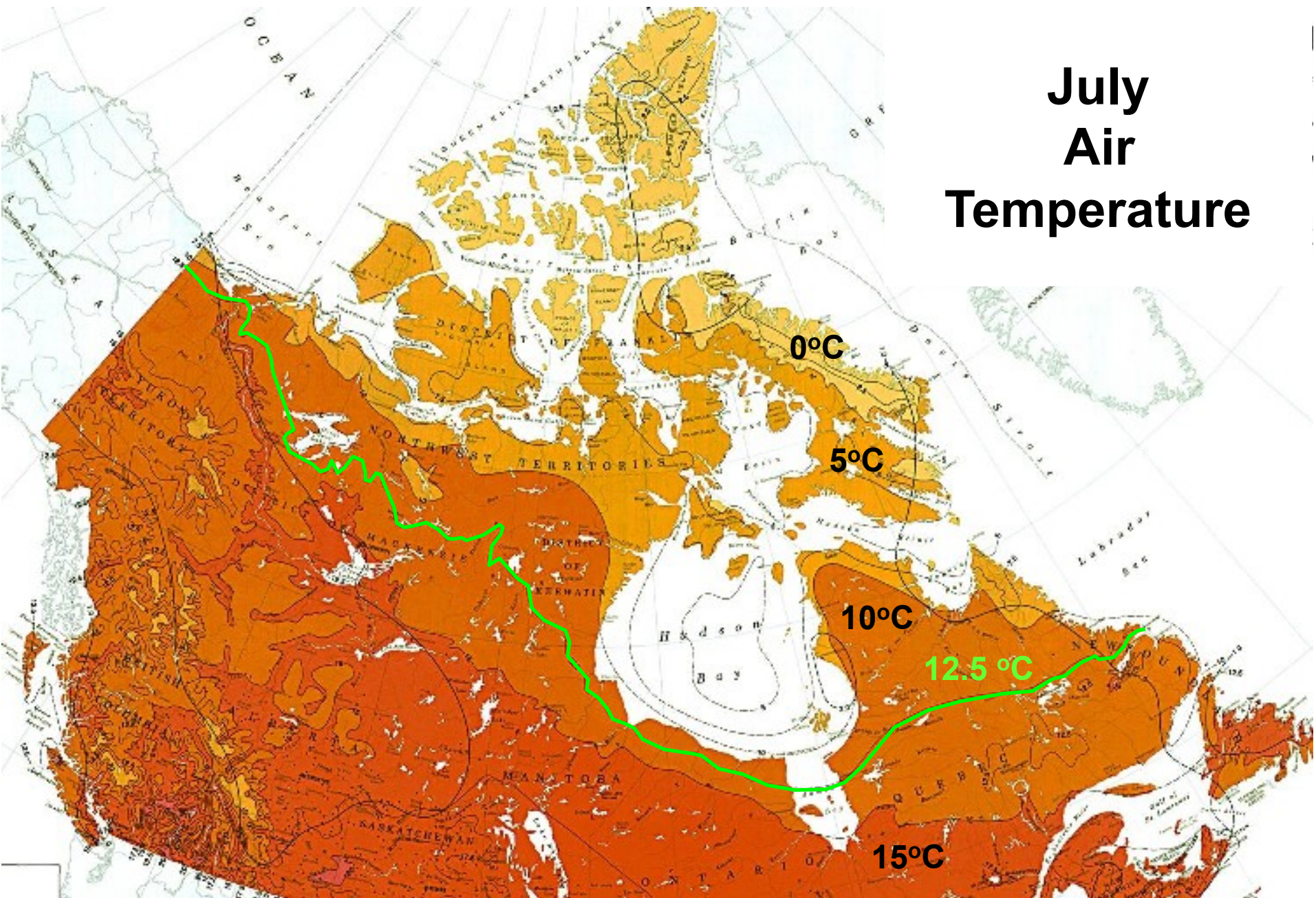


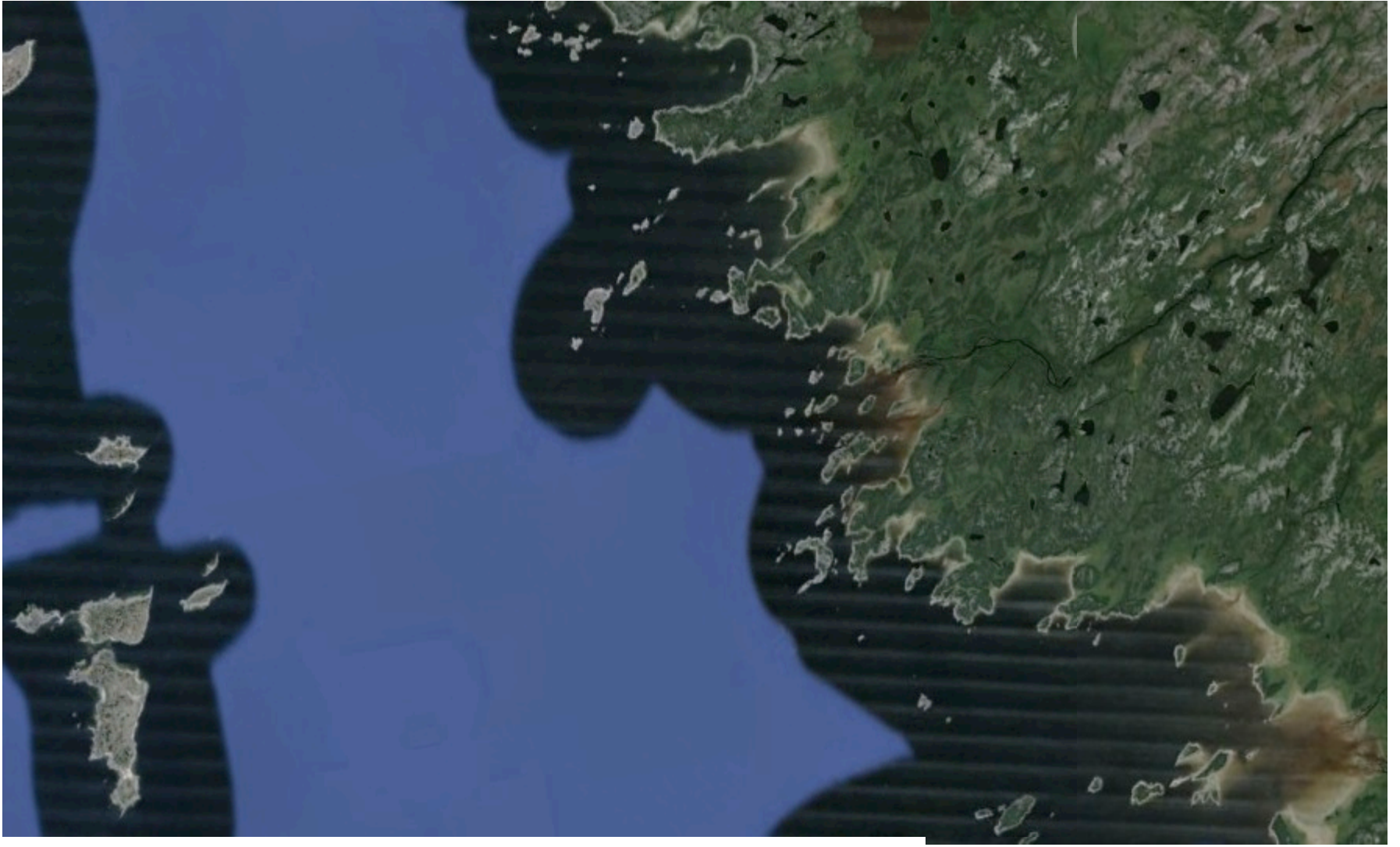
2014 Symposium on Science and Traditional Knowledge in the **Eeyou Marine Region**

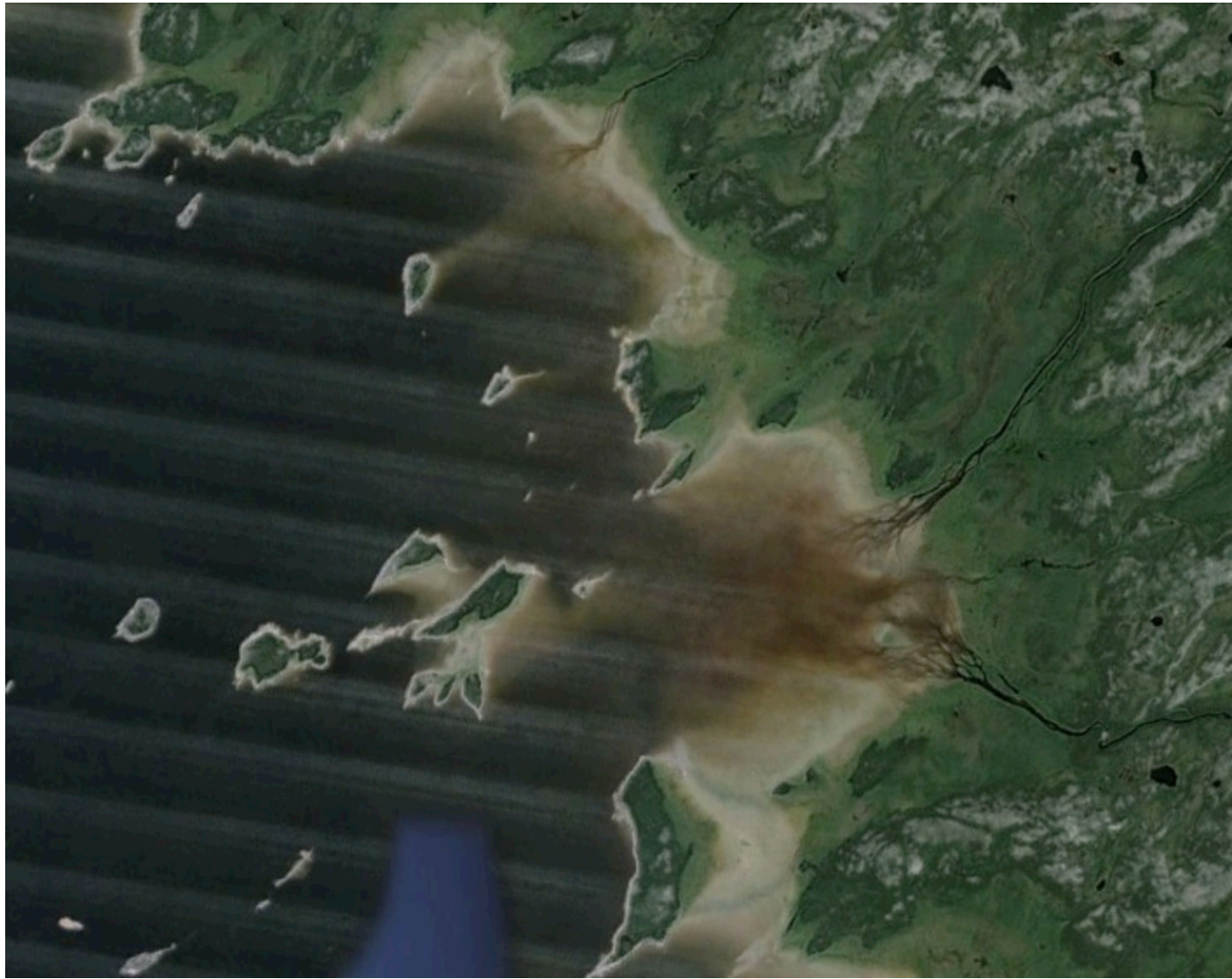
Centre Sheraton, Montreal
25-27 March 2014



July Air Temperature



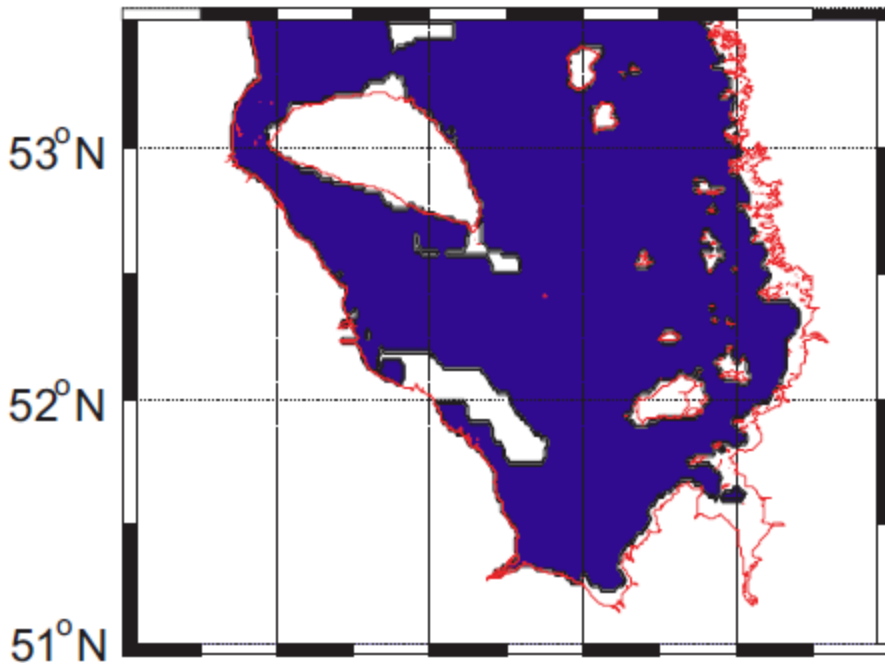




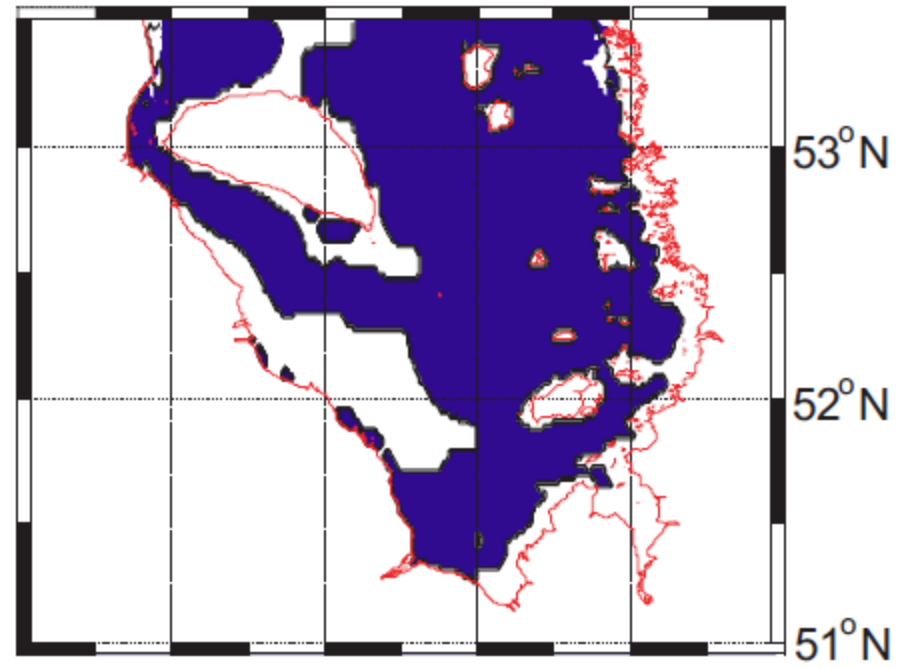
Post-Glacial Isostatic Adjustment and Global Warming in Subarctic Canada: Implications for Islands of the James Bay Region

LEONARD J.S. TSUJI,¹ NATALYA GOMEZ,² JERRY X. MITROVICA² and ROBLYN KENDALL²

100 years from the present



500 years from the present



The Subarctic Forest–Tundra: The Structure of a Biome in a Changing Climate

SERGE PAYETTE, MARIE-JOSÉE FORTIN, AND ISABELLE GAMACHE

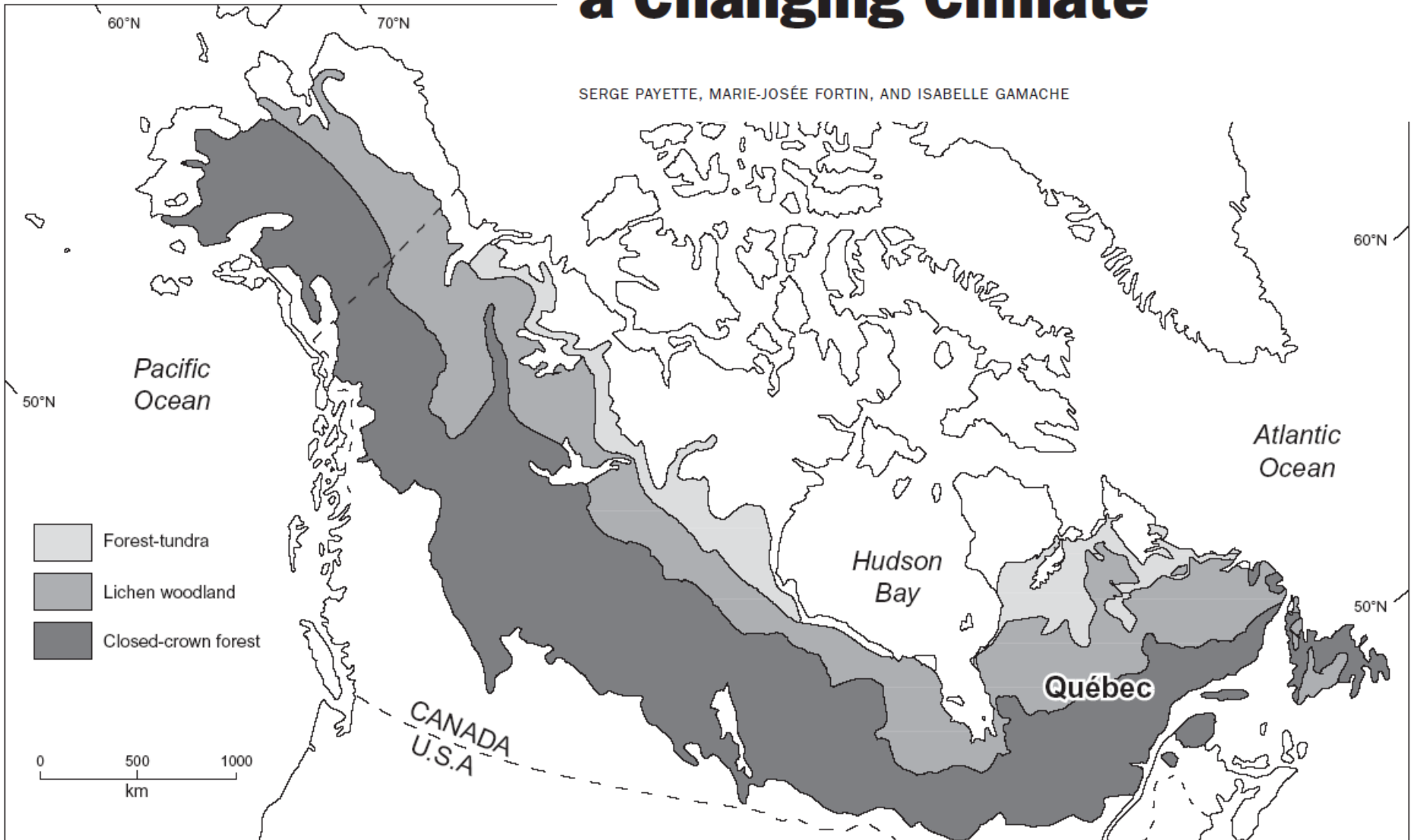



Figure 1. Major subdivisions of the North American boreal forest.

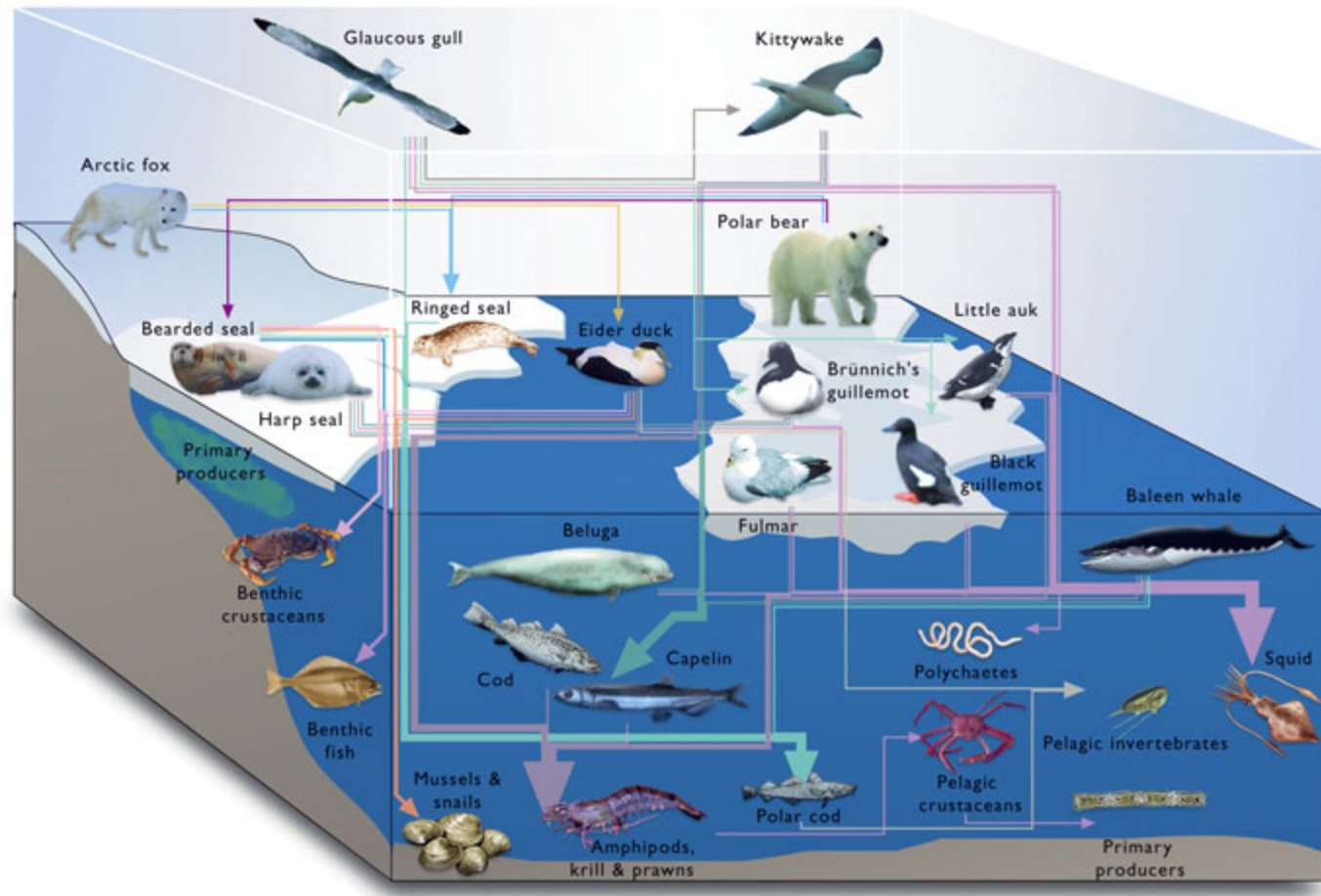
Complex convergence of
warm & cold,
land & water,
freshwater & saltwater,
forests & tundra:

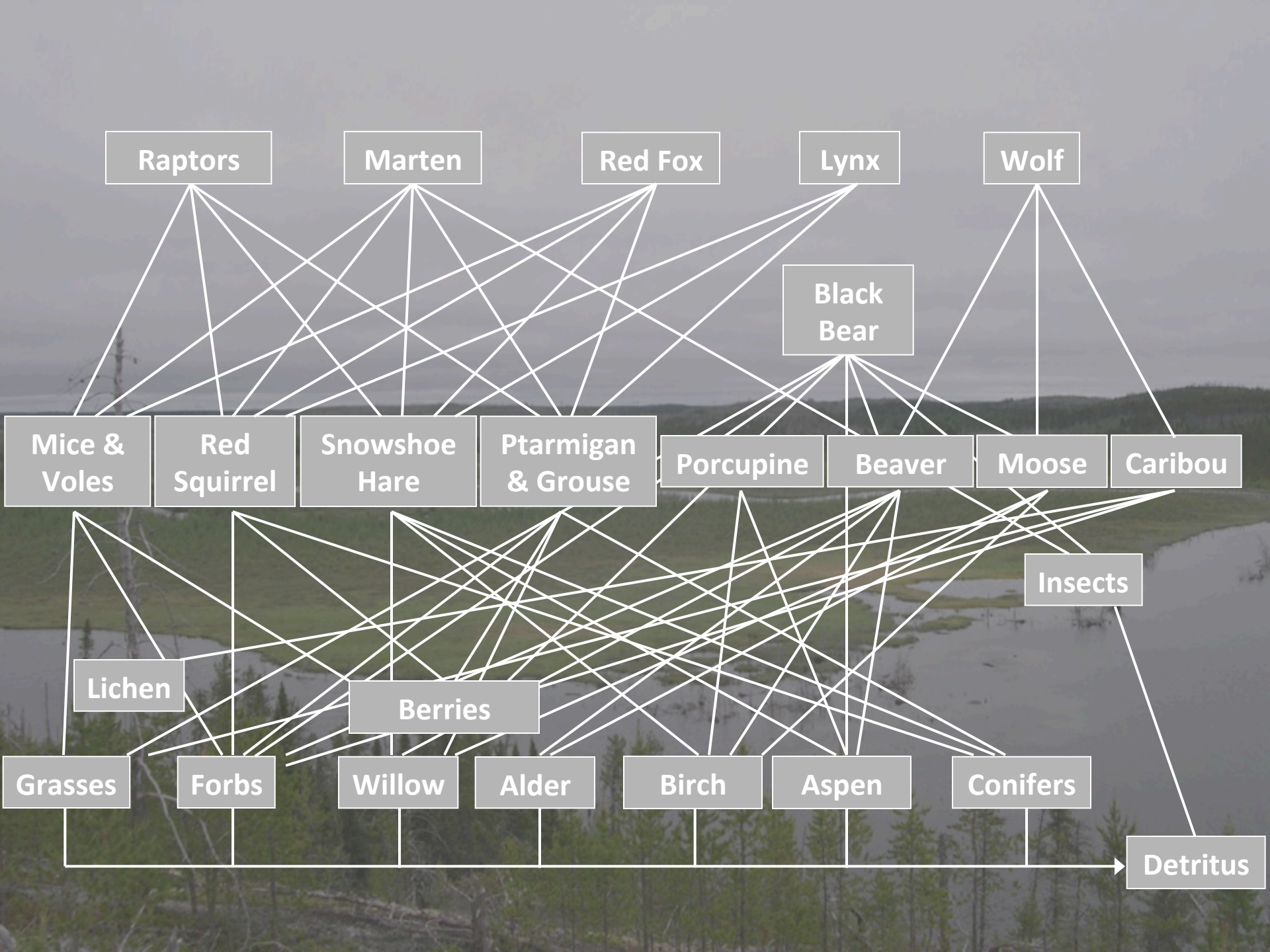


An aerial photograph showing a wide river delta with multiple channels and islands. The water is a deep blue-grey color. The surrounding land is a mix of green forested areas and brownish-yellow tundra or open land. A small town with several buildings is visible in the lower right quadrant. The sky is a pale, hazy blue.

Complex convergence of
warm & cold,
land & water,
freshwater & saltwater,
forests & tundra:

a unique assemblage of plants
and animals







Polar Bear, Waapiskw



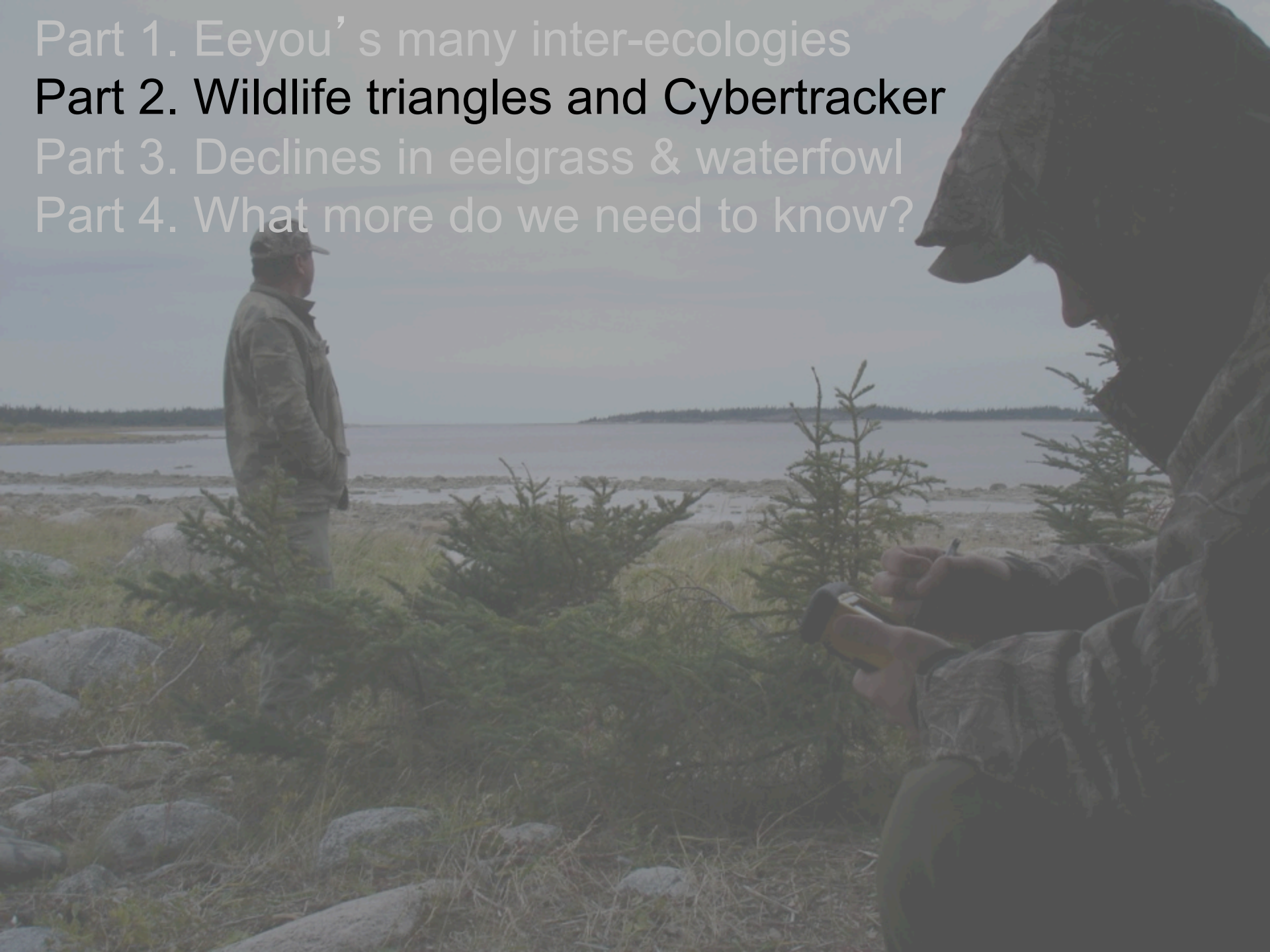
Striped Skunk, Shikaakw

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Wemindji Protected Areas Partnership

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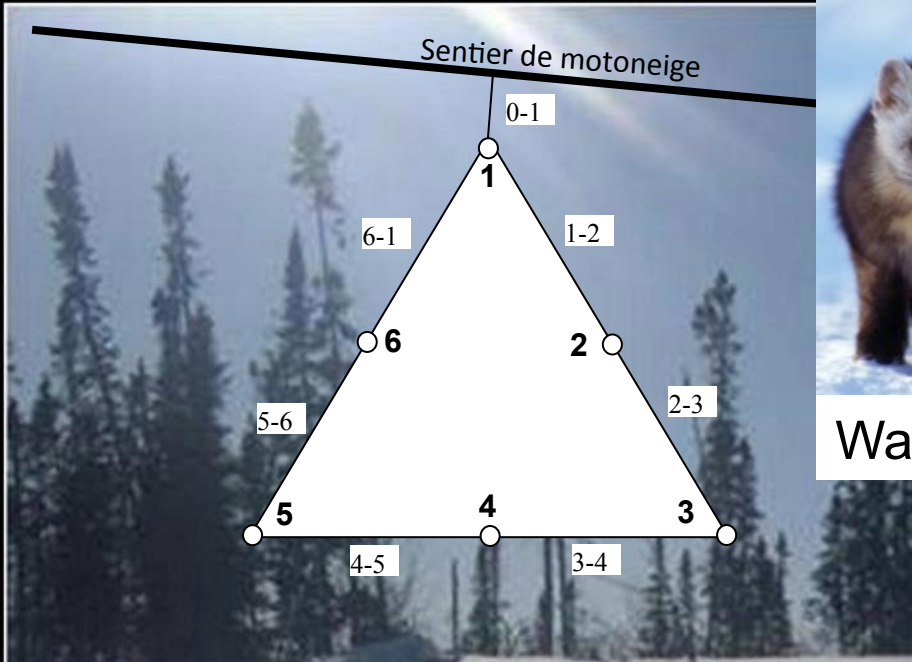
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Waapishtaan



Kaakw



Pishiu



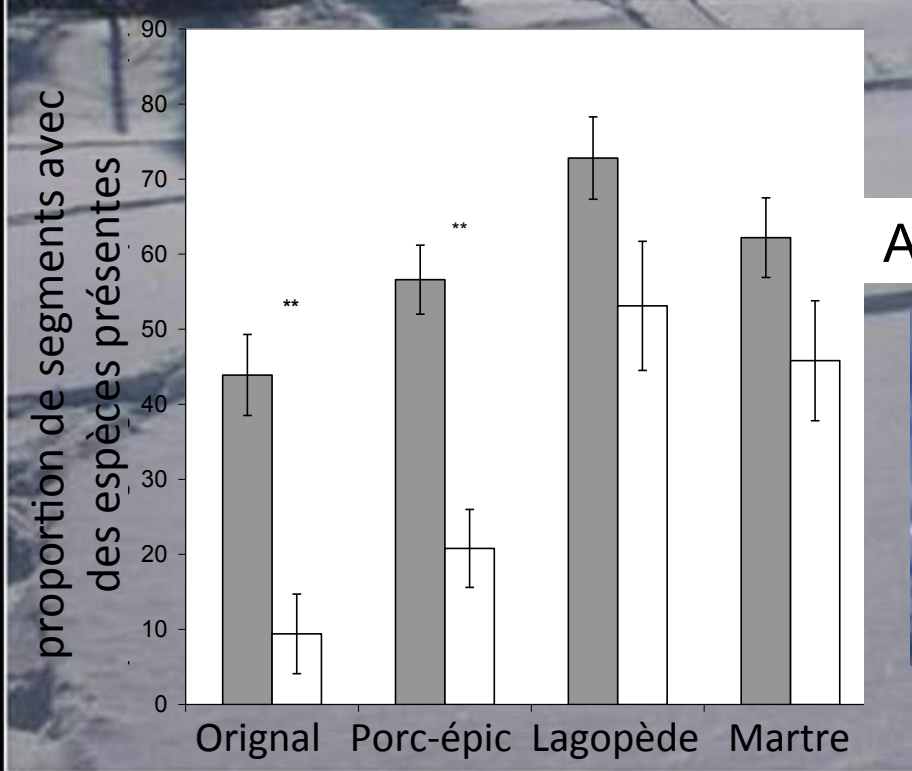
Anikuchaash



Muus



Atihkw



Waapush

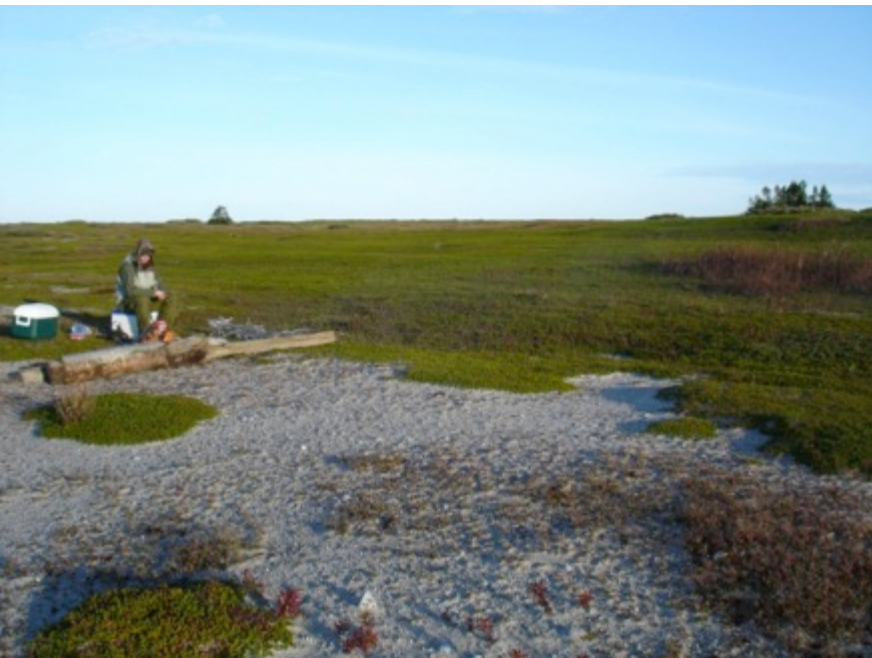


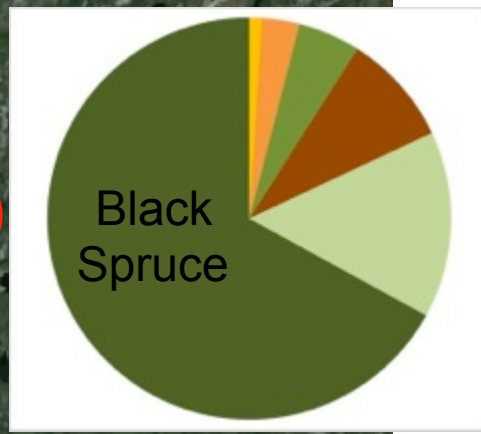
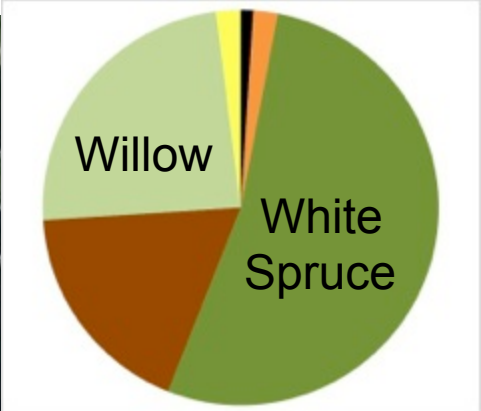
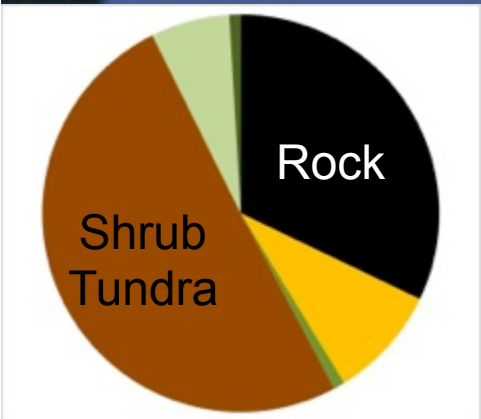
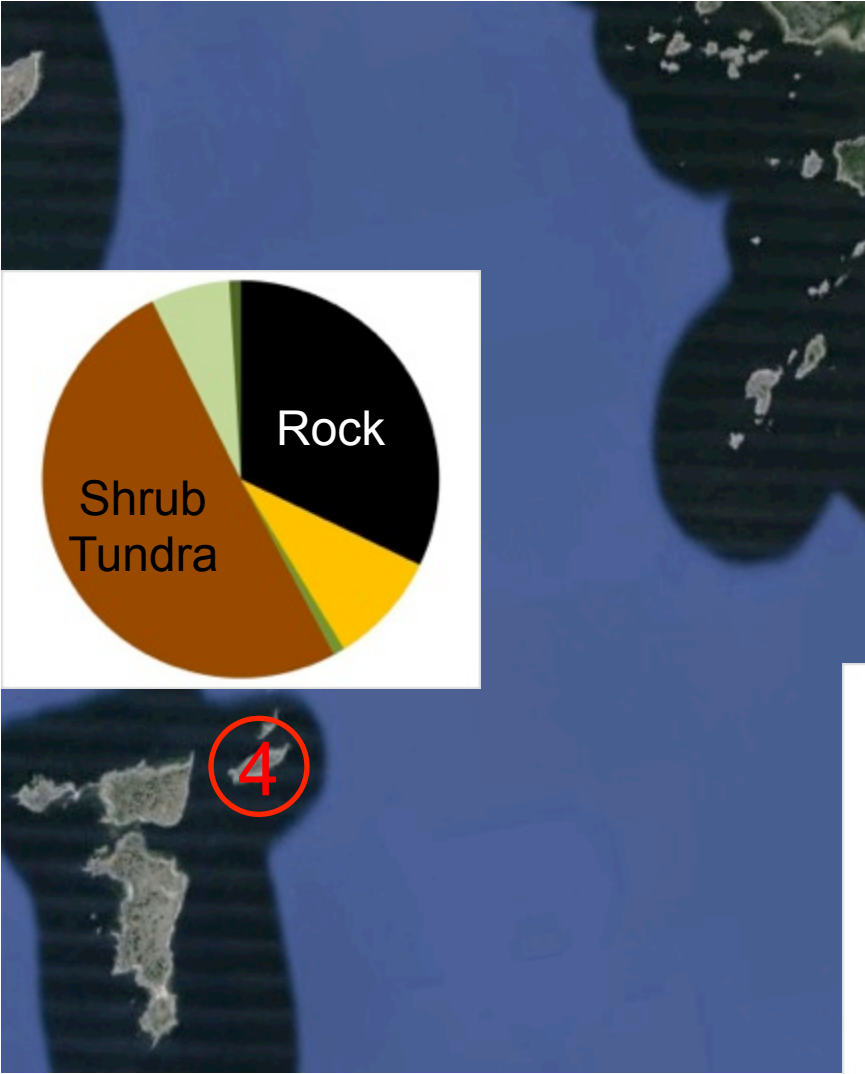
Waapihyeu







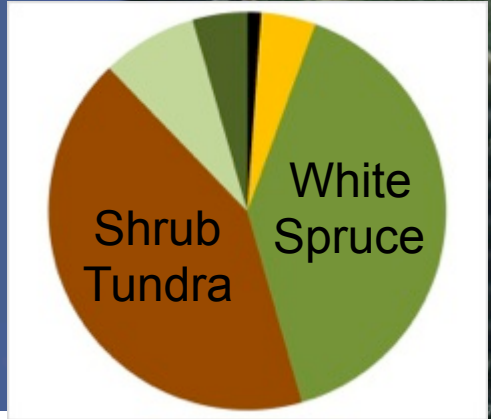




2

1

3





Waapiskw



Waapishtaan



Pishiu



Anikuchaash



Waapihchaashiish



Waapush



Tundra Northwest 1999 Swedish Polar Expedition

Terrestrial trophic dynamics in the Canadian Arctic

**Charles J. Krebs, Kjell Danell, Anders Angerbjörn, Jep Agrell,
Dominique Berteaux, Kari Anne Bråthen, Öje Danell, Sam Erlinge,
Vadim Fedorov, Karl Fredga, Joakim Hjältén, Göran Högstedt,
Ingibjörg S. Jónsdóttir, Alice J. Kenney, Nils Kjellén, Torgny Nordin,
Heikki Roininen, Mikael Svensson, Magnus Tannerfeldt, and Christer Wiklund**

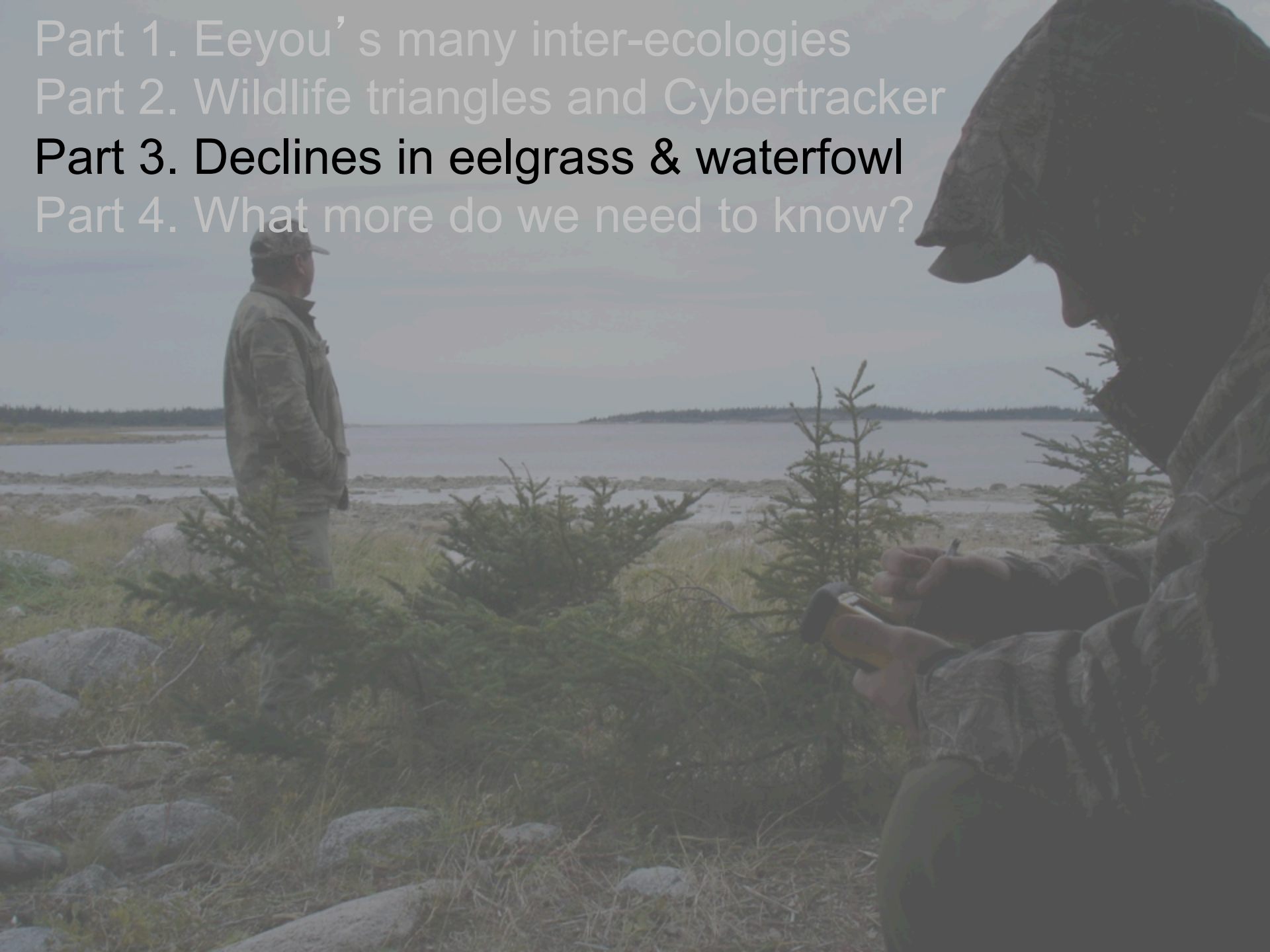
Abstract: The Swedish Tundra Northwest Expedition of 1999 visited 17 sites throughout the Canadian Arctic. At 12 sites that were intensively sampled we estimated the standing crop of plants and the densities of herbivores and predators with an array of trapping, visual surveys, and faecal-pellet transects. We developed a trophic-balance model using ECOPATH to integrate these observations and determine the fate of primary and secondary production in these tundra ecosystems, which spanned an 8-fold range of standing crop of plants. We estimated that about 13% of net primary production was consumed by herbivores, while over 70% of small-herbivore production was estimated to flow to predators. Only 9% of large-herbivore production was consumed by predators. Organization of Canadian Arctic ecosystems appears to be more top-down than bottom-up. Net primary production does not seem to be herbivore-limited at any site. This is the first attempt to integrate trophic dynamics over the entire Canadian Arctic.

Part 1. Eeyou's many inter-ecologies

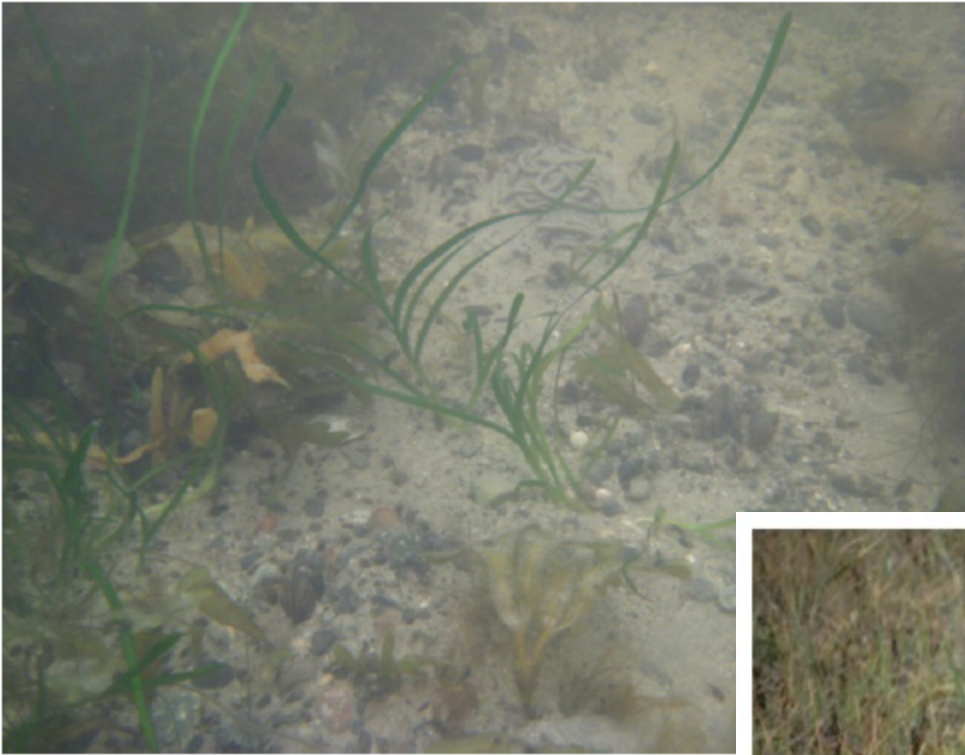
Part 2. Wildlife triangles and Cybertracker

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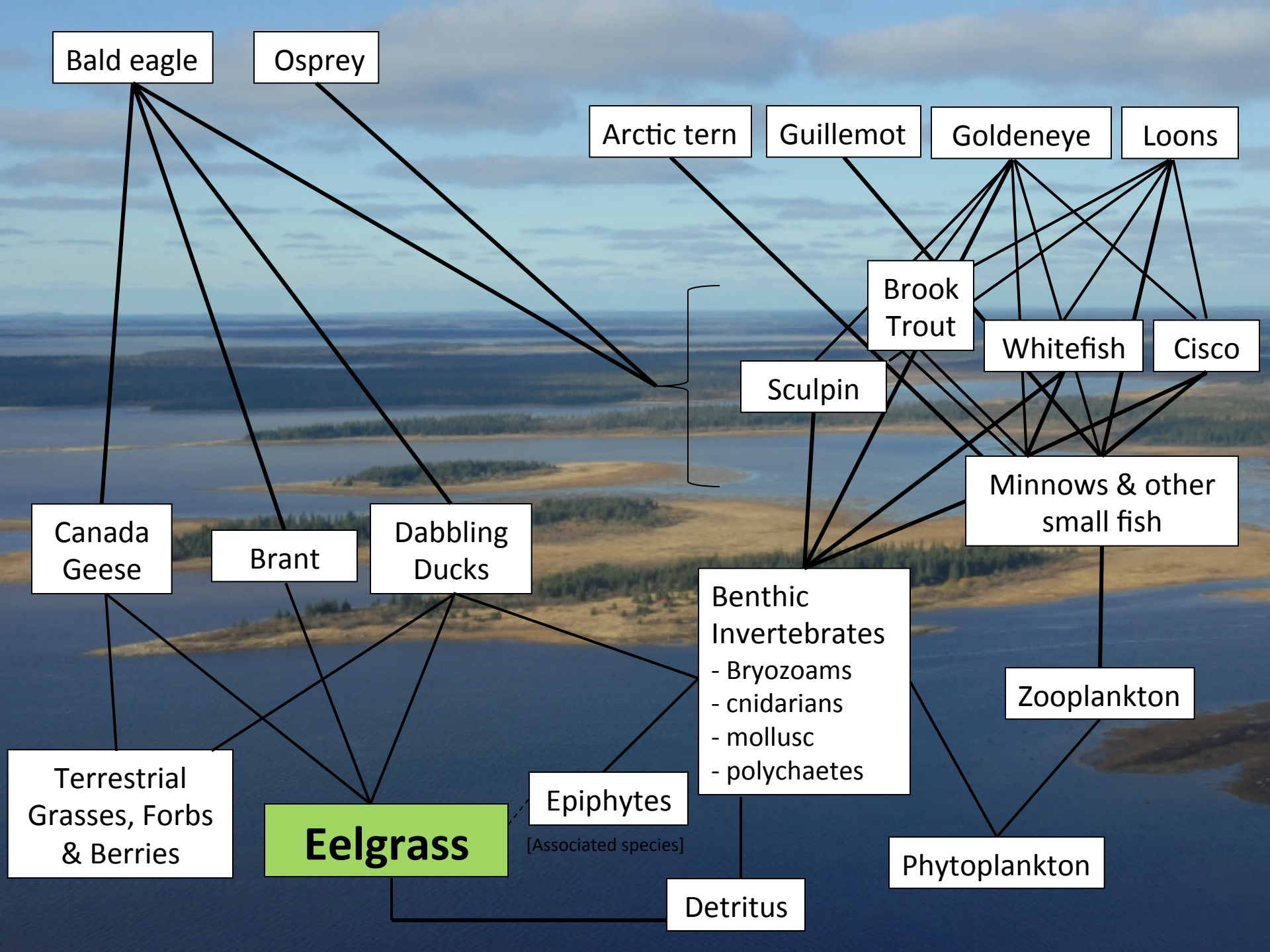
Migratory Birds Habitat Task Force



Eelgrass

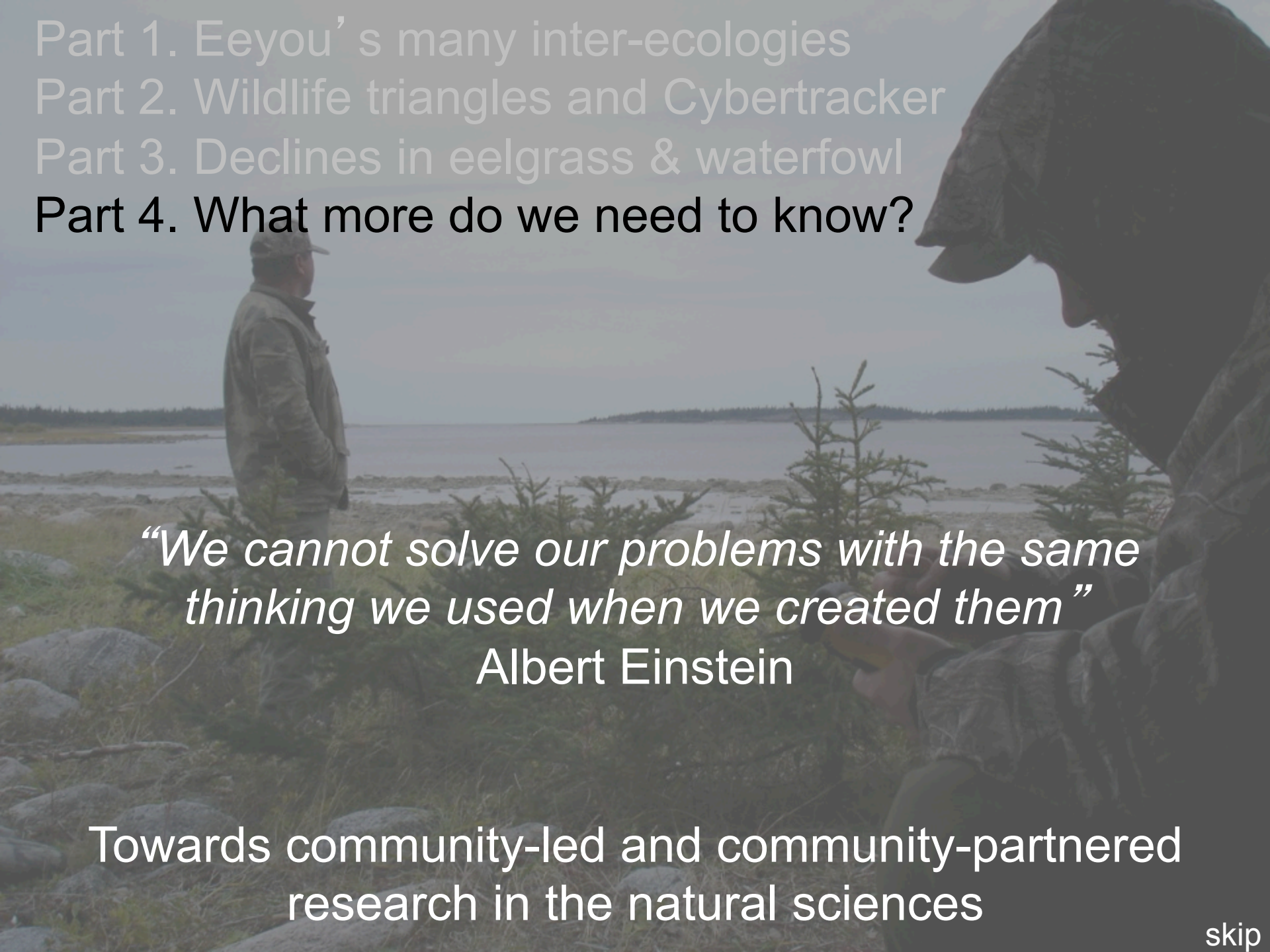


Cache of Hand-Carved Goose Decoys



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- 
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“We cannot solve our problems with the same thinking we used when we created them”

Albert Einstein

Towards community-led and community-partnered research in the natural sciences

HELGA NOWOTNY, PETER SCOTT and MICHAEL GIBBONS

INTRODUCTION

'Mode 2' Revisited: The New Production of Knowledge

Nine years ago, six authors published *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*.¹ Reviews were mixed. Some philosophers, historians, and sociologists of science regarded the argument in the book as either simplistic or banal (or perhaps both), while science policy analysts worried about the empirical evidence for the trends it identified (or argued that these trends were not new). However, the book's broad thesis – that the production of knowledge and the process of research were being radically transformed – struck a chord of recognition among both researchers and policy-makers.



Minerva 41: 179–194, 2003.

© 2003 Kluwer Academic Publishers. Printed in the Netherlands.

Mode 1: Standard science

1. Discovery and curiosity as drivers of good/independent science
2. Disciplinary silos of expertise, interests, and specialization
3. Universities as centers of knowledge creation
4. Objectivity, independence, distance
5. Quality control via decimal places, mathematical proofs, calibrations, peer-review, etc.

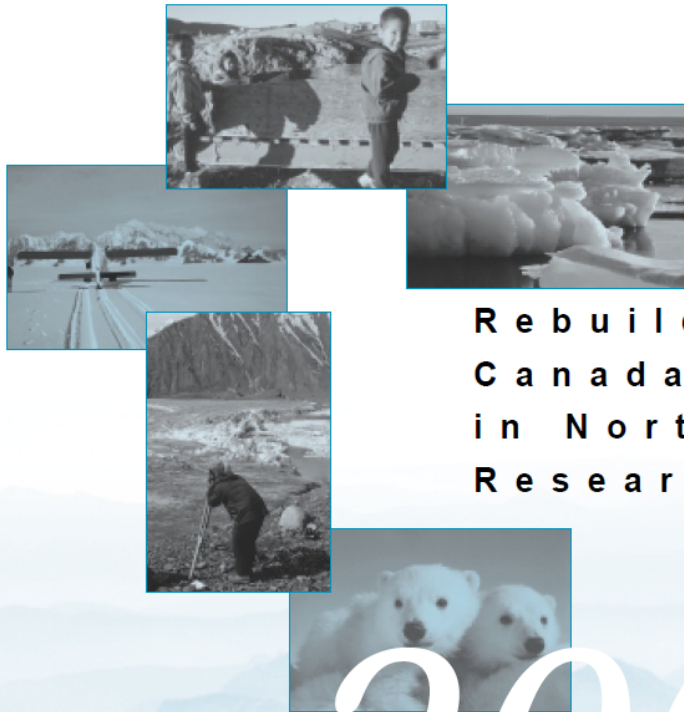
Science

Local Knowledge

Mode 1: Standard science

1. Discovery and curiosity as drivers of good/independent science
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3. Universities as centers of knowledge creation
4. Objectivity, independence, distance
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From Crisis to Opportunity



Rebuilding Canada's Role in Northern Research

“Northern communities and northern Aboriginal groups are showing an increased interest in getting involved in research.”

“Current research interests and priorities in the research community and northern communities coincide to a large extent, leading to partnership possibilities among northern communities, governments, and non-governmental organizations.”

“During the northern consultations, it became clear that the foundation for partnerships with northern communities is consultation and open dialogue during all phases of the research process.”

Final Report to NSERC and SSHRC
from the Task Force on Northern Research

NEGOTIATING RESEARCH RELATIONSHIPS WITH INUIT COMMUNITIES

We wrote this guide because Inuit have the right to set priorities for research and to influence how research gets done.



Inuit are increasingly requiring that researchers assign the same value, credibility and respect to local expertise (from recommended elders, or others) as that assigned to peer-reviewed scientific findings.

The community must accept the validity and accuracy of the researcher's analysis and interpretation before results can be finalized.

HELGA NOWOTNY, PETER SCOTT and MICHAEL GIBBONS

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Mode 2: The new production of knowledge

1. Knowledge is generated within a context of application
2. Trans-disciplinarity
3. Greater diversity of the sites at which knowledge is produced, and in the types of knowledge produced
4. Knowledge that is highly reflexive and socially accountable
5. Non-traditional forms of quality control

Mode 1: Standard science

1. Discovery and curiosity as drivers of good/independent science
2. Disciplinary silos of expertise, interests, and specialization
3. Universities as centers of knowledge creation
4. Objectivity, independence, distance
5. Quality control via decimal places, mathematical proofs, calibrations, peer-review, etc.

- calls for more community involvement in northern research embodies many of the principles of the Mode 2 knowledge production framework
- using the Mode 2 thesis as an assessment framework, we examined a large sample of published research articles form 1965-2010 in the journal *Arctic*
- has there been a paradigm shift in the extent and nature of involvement of local people?



ARCTIC

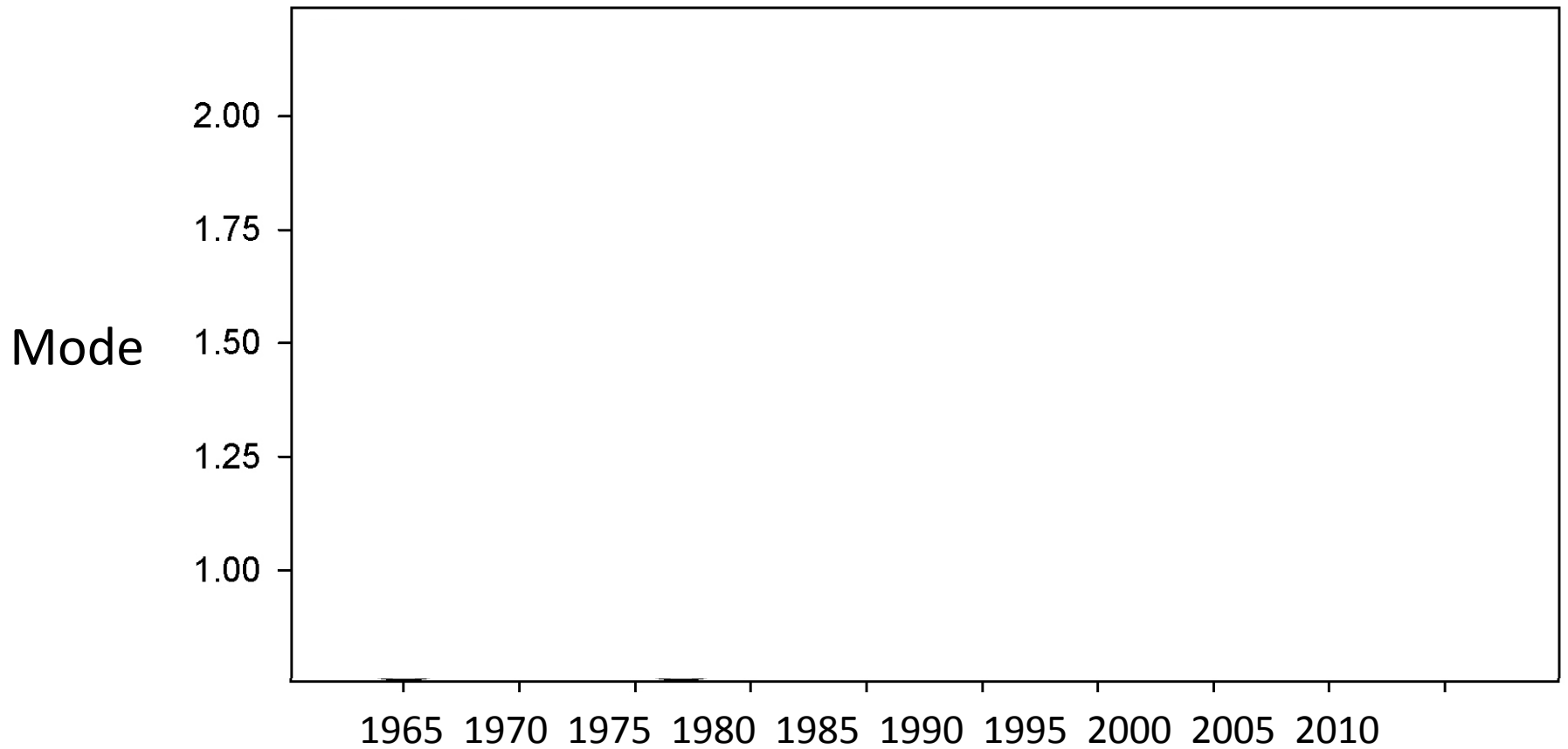
Journal of the Arctic Institute of North America

VOLUME 59, NUMBER 3

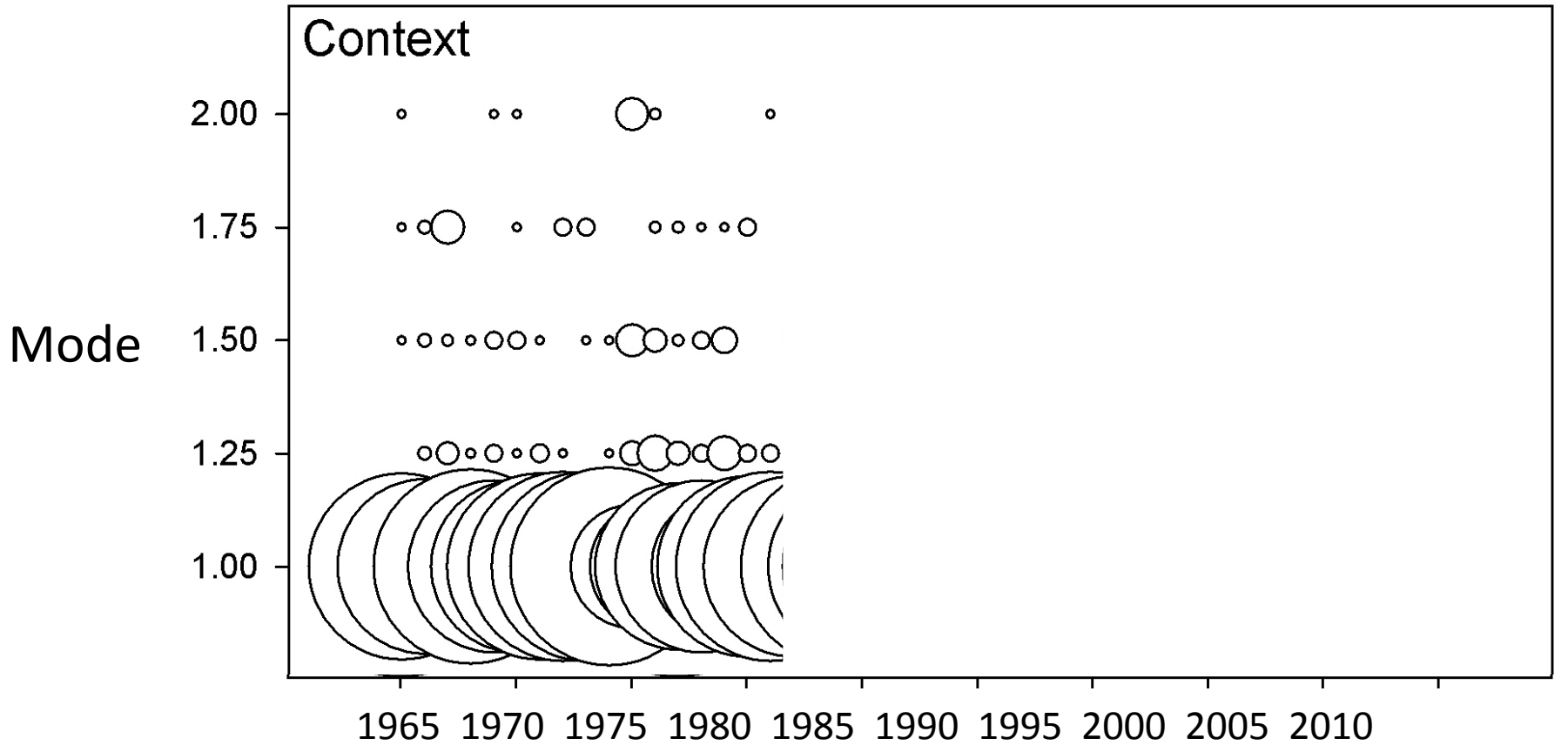
SEPTEMBER 2006

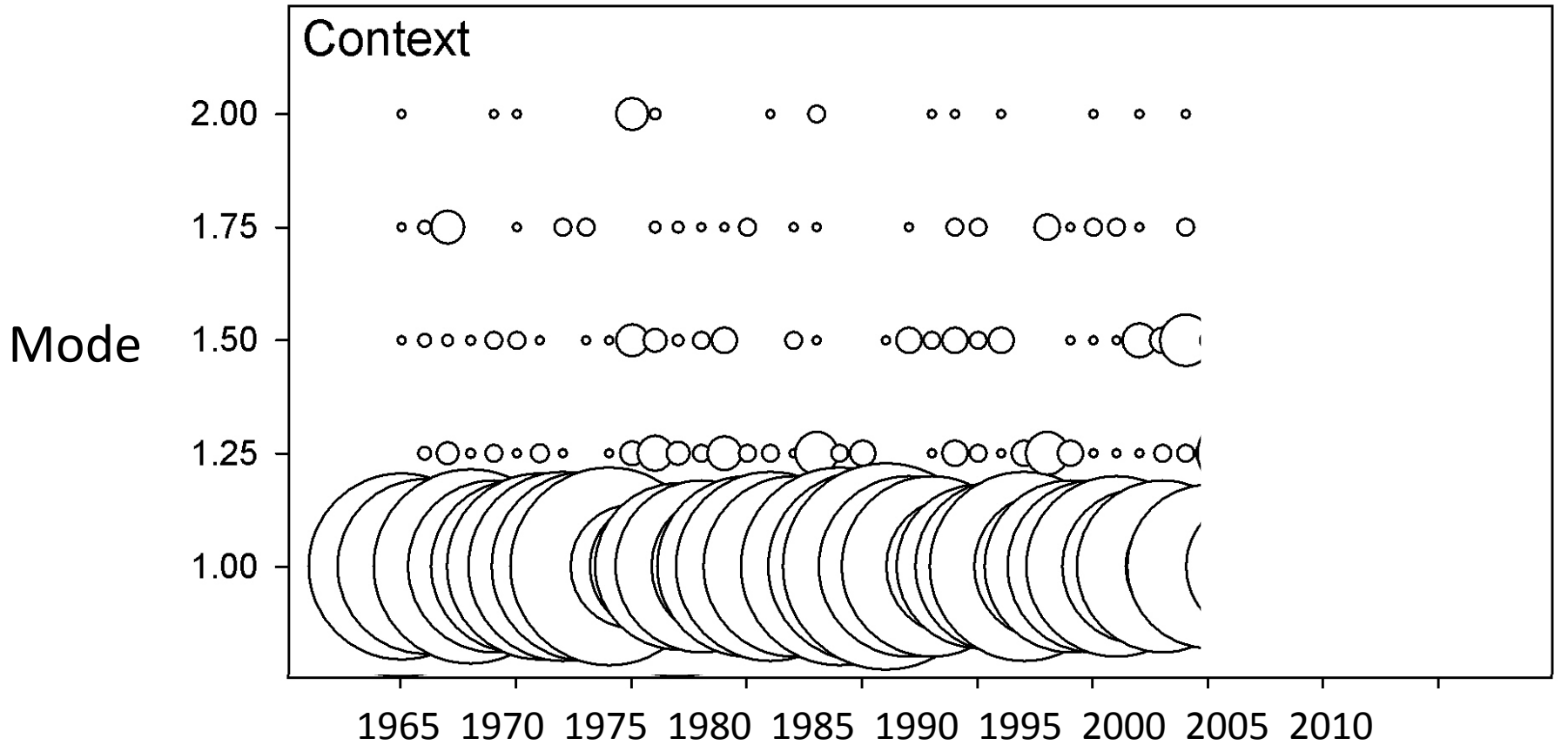


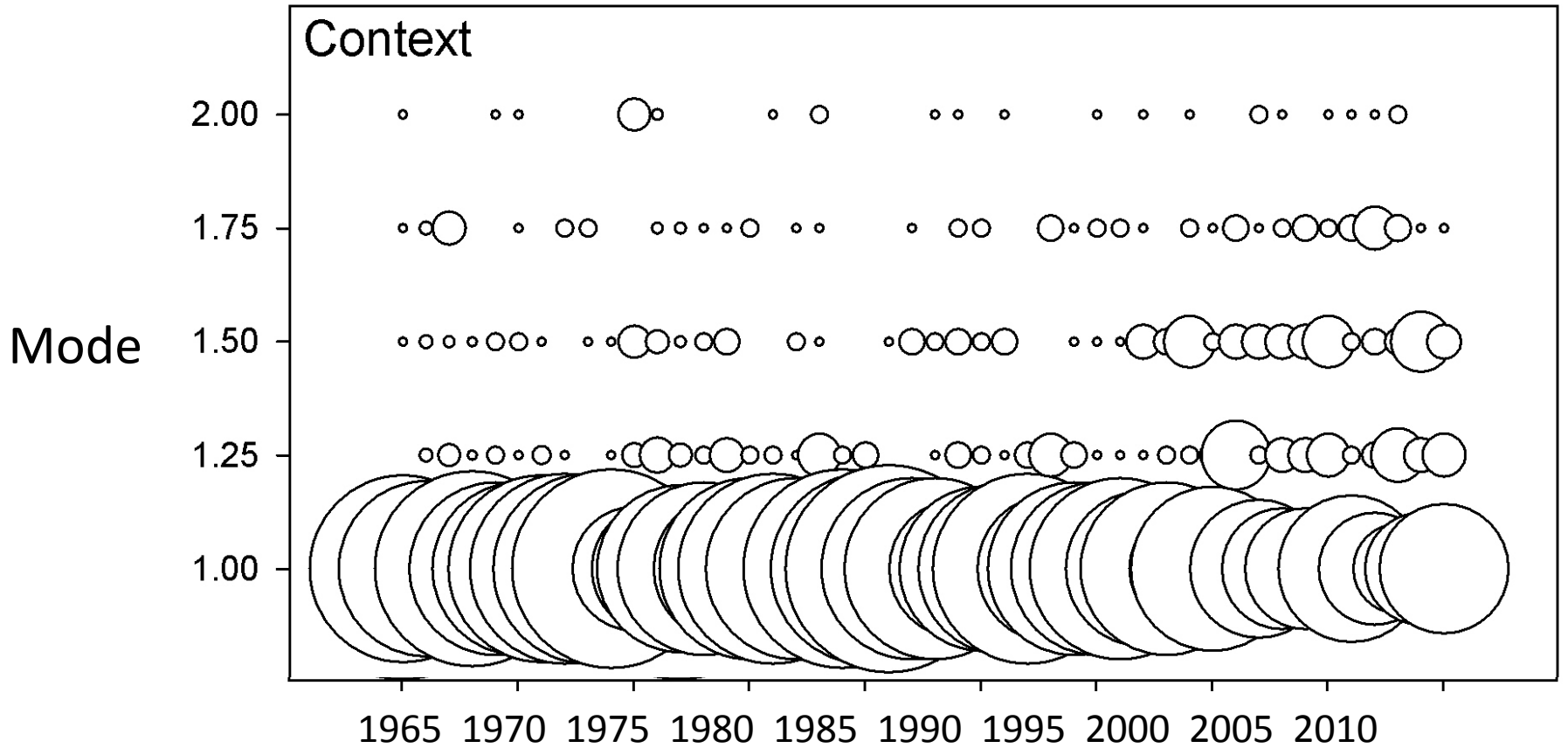
- publishes northern science exclusively
- authoritative, international source of northern scholarship
- eclectic, multidisciplinary journal spanning physical, life and social sciences

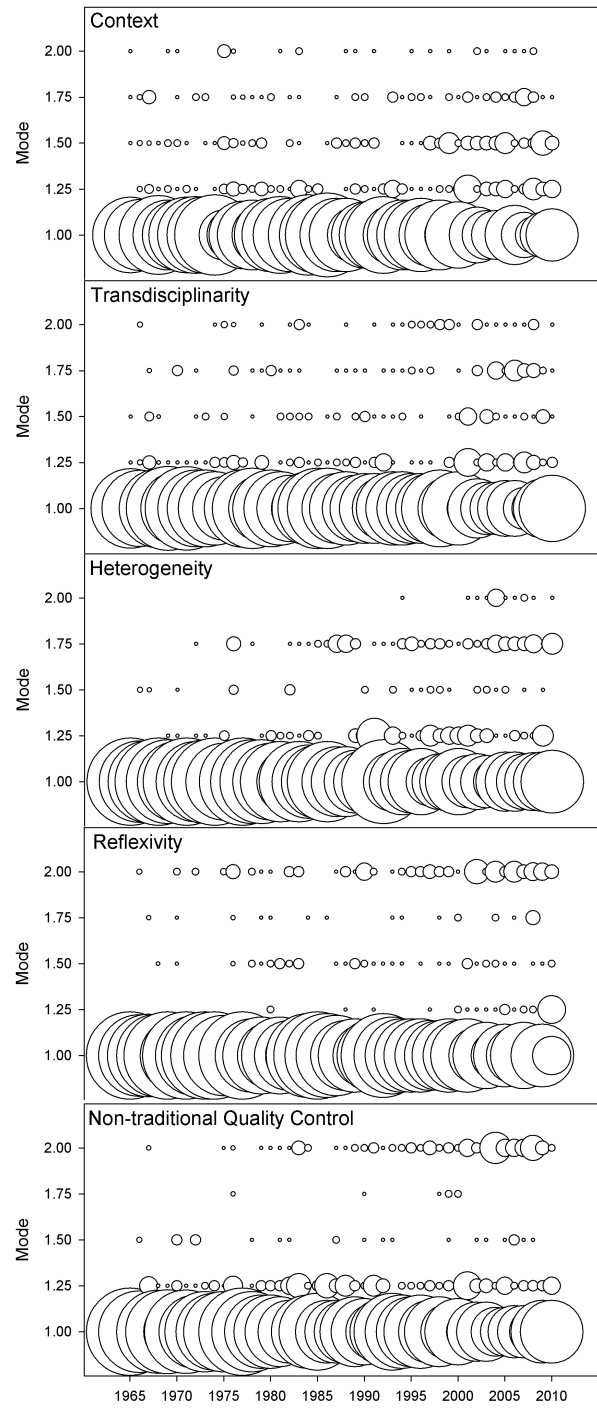


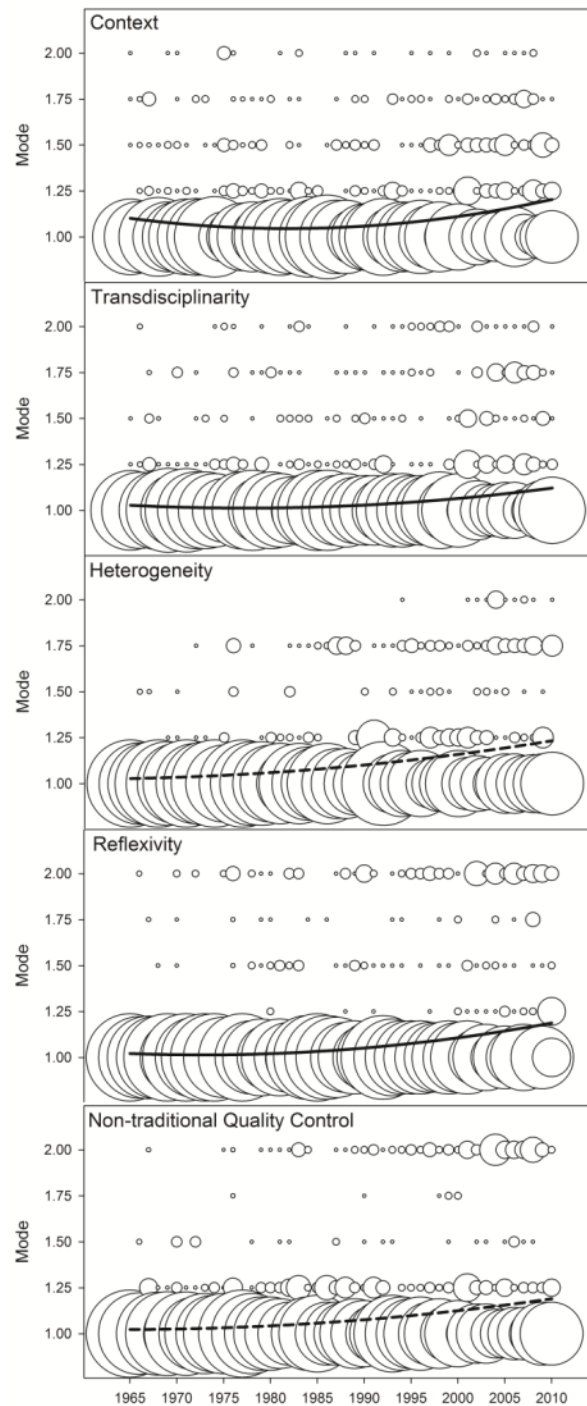
- 25 randomly selected research articles per year x 45 years \approx 1100 articles
- Assessed all papers for all 5 criteria











If this is a paradigm shift, it is far from complete...

Lead Author	Organization	Discipline	Region	Global Change Focus
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1.00

Federal University

1.25

Territorial

1.50

Local

1.75

2.00

- Analysed 1,100 papers published in the journal Arctic between 1965 and 2010.
- Participatory approaches are not new, but remain in the minority
- Any paradigm shift in northern science is tentative, recent, and far from complete
- The strongest predictor of participatory approaches is the organization of the lead author. Local organizations generate science oriented around local concerns, involvement, and expertise.

Wemindji Protected Areas Partnership

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ARCTIC
VOL. 64, NO. 1 (MARCH 2011)

InfoNorth

Environmental Change and Traditional Use of the Old Crow Flats in Northern Canada: An IPY Opportunity to Meet the Challenges of the New Northern Research Paradigm

by Brent B. Wolfe, Murray M. Humphries, Michael F.J. Pisaric, Ann M. Balasubramaniam, Chris R. Bum, Laurie Chan, Dorothy Cooley, Duane G. Froese, Shel Graupe, Roland I. Hall, Trevor Lantz, Trevor J. Porter, Pascale Roy-Leveillee, Kevin W. Turner, Sonia D. Wesche and Megan Williams

