BIODIVERSITY AND CULTURAL LANDSCAPES

Inuit cultural practices increase small-scale biodiversity and create novel vegetation communities in Nunatsiavut (Labrador, Canada)

E Oberndorfer, J Lundholm,
T Broomfield, G Ljubicic

ABC 2018, Rovaniemi, 13 Oct 2018

UNDERSTANDING BIODIVERSITY PATTERNS

EFFECTS OF CULTURAL PRACTICES ON BIODIVERSITY

Long-term, low intensity impacts; enduring ecological effects

Arctic landscapes are cultural

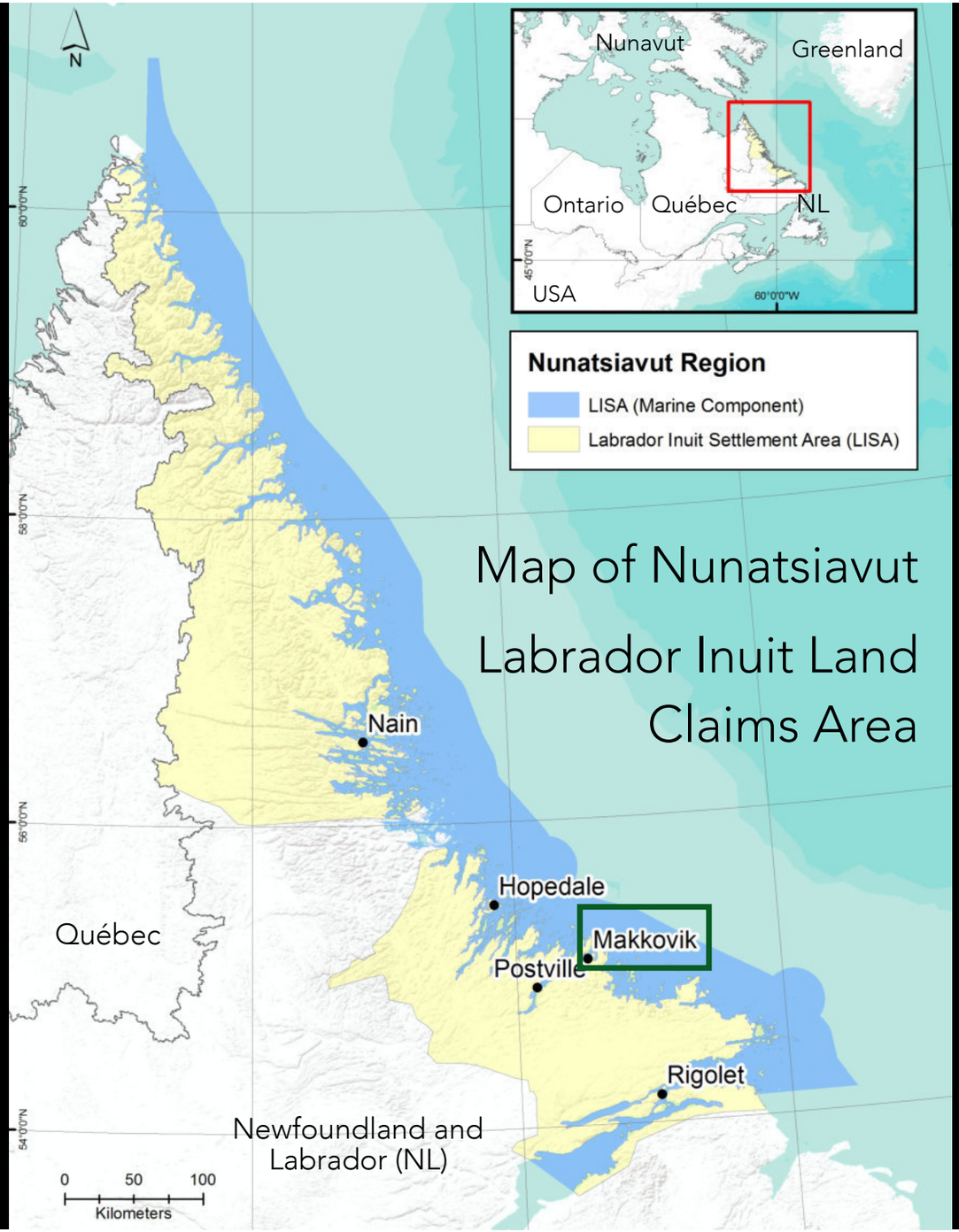
RESEARCH QUESTION

Elder Annie Evans, Ben’s Cove

RESEARCH QUESTION

Do built environments of fishing places express persistent differences in plant communities?

Elder Annie Evans, Ben's Cove



Map adapted from Torngat Secretariat

INUIT COMMUNITY OF MAKKOVIK

55°04′38″N, 59°11′16″W


AIR LABRADOR

OUR TEAM

Erica: CAFF-IASC Fellow (Goose Bay)

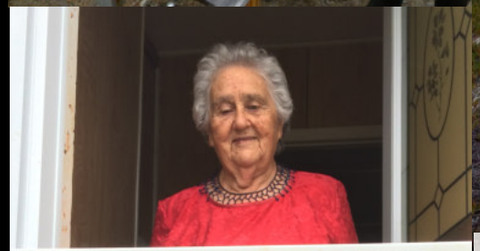
Todd: Guide and research advisor (Makkovik)

Jeremy: Professor, Saint Mary's University (Halifax)

Gita: Associate professor, Carleton University (Ottawa)

MAKKOVIMIUT PLANT MENTORS


Mr Randy Edmunds




Aunt Nellie Winters


Mr John Winters


Aunt Ellen Andersen


Aunt Annie Evans


Mrs Mary B and Mr Tony Andersen


Mr Henry Jacque


Uncle Harold Andersen

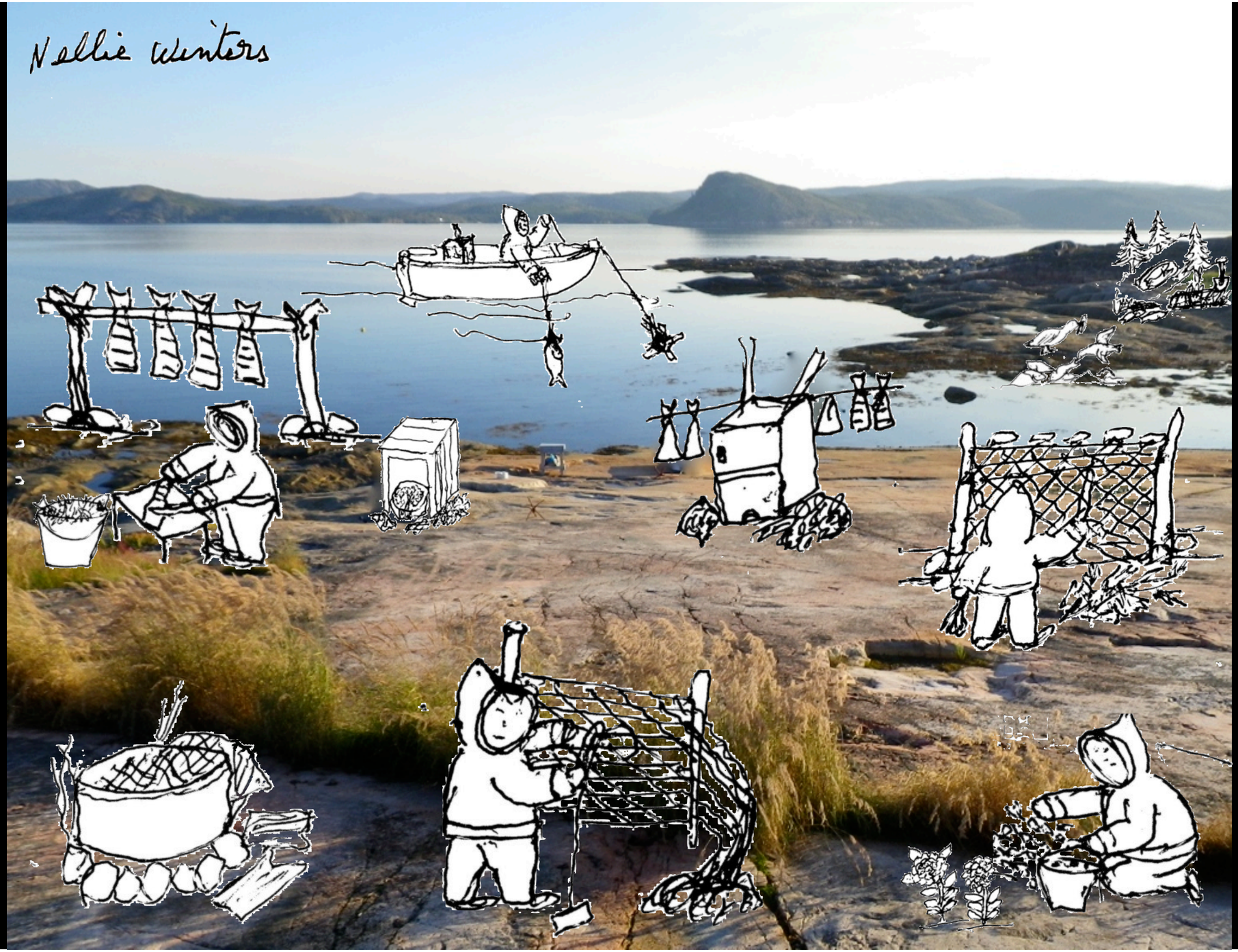
Community research priorities on people-plant relationships


1. Documenting cultural
plant knowledge

The stories people tell about plants

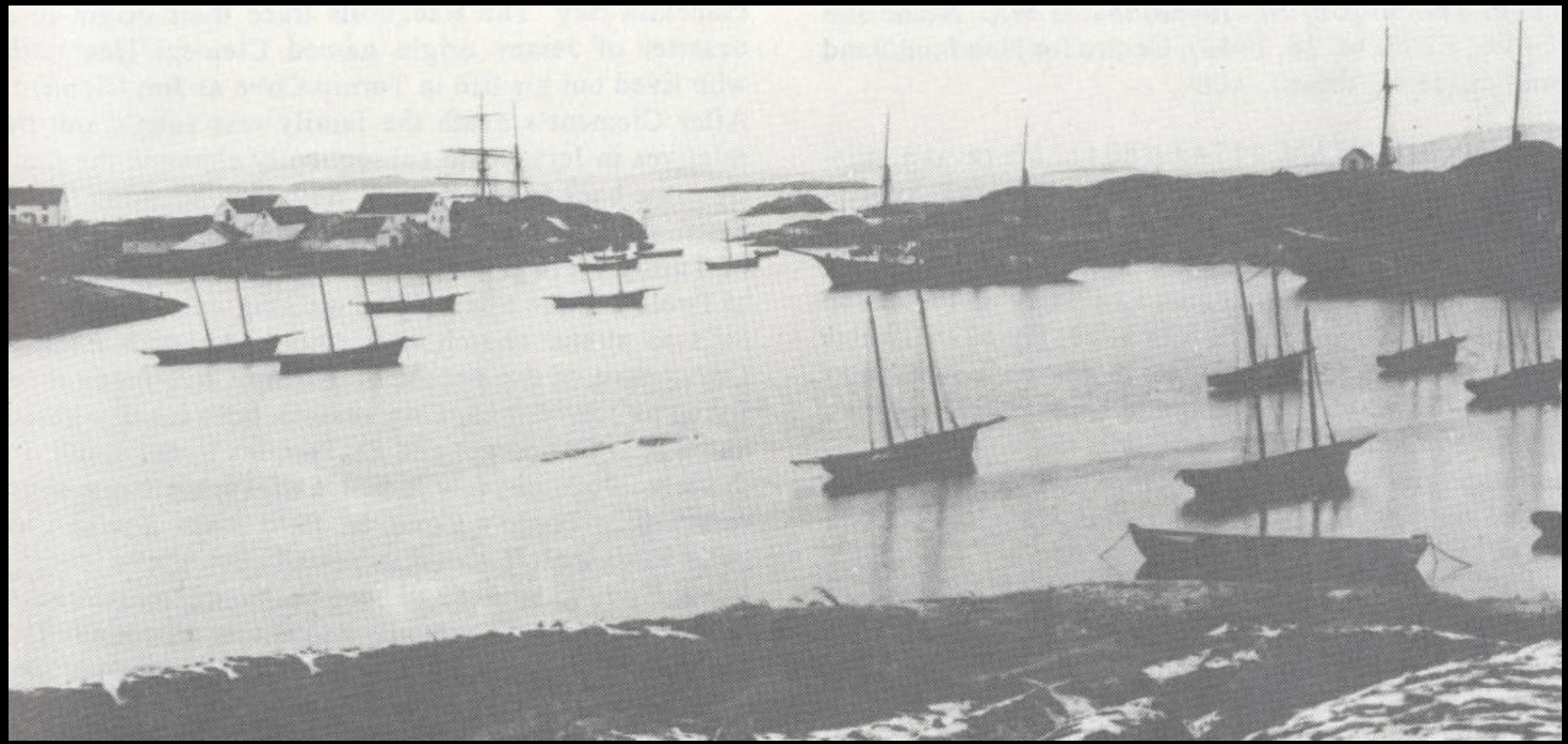

Do plants tell stories about people?


1. Documenting cultural plant knowledge
2. Learning more about the plants of family places


Nellie winters

From: The Rooms Provincial Archives
https://www.mun.ca/mha/cw/va152-172.html

From: The Rooms Provincial Archives
https://www.mun.ca/mha/cw/va152-174.html



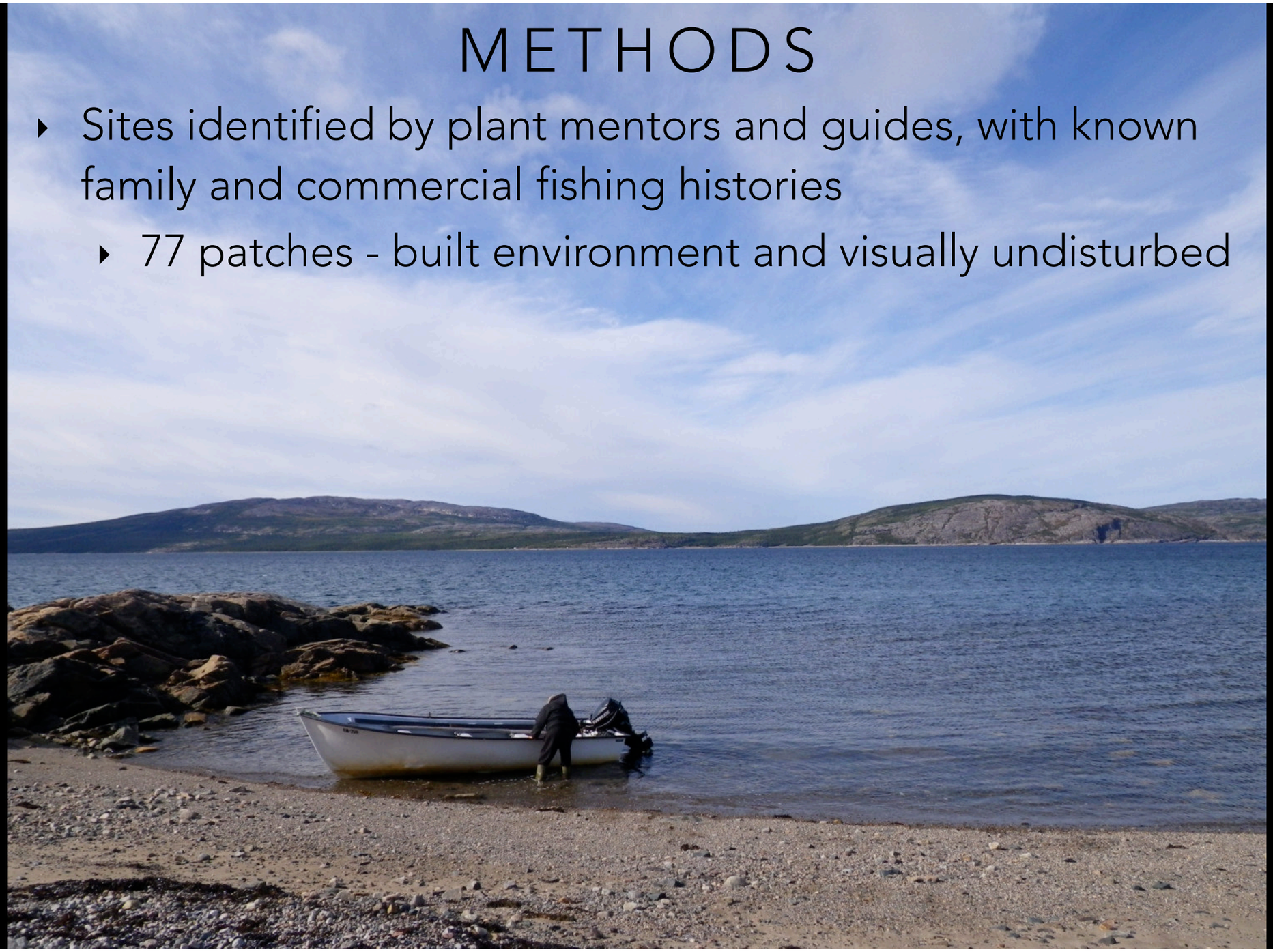
From: MUN archives

http://collections.mun.ca/cdm/fullbrowser/collection/cns_enl/id/1153/rv/compoundobject/cpd/1163/rec/1

Sheldon and Eldred Andersen harvesting rhubarbs

METHODS

- Sites identified by plant mentors and guides, with known family and commercial fishing histories
  - 77 patches - built environment and visually undisturbed



Commercial bunkhouses


Makkovimiut family houses

Middens

Research Assistant Jessica Winters

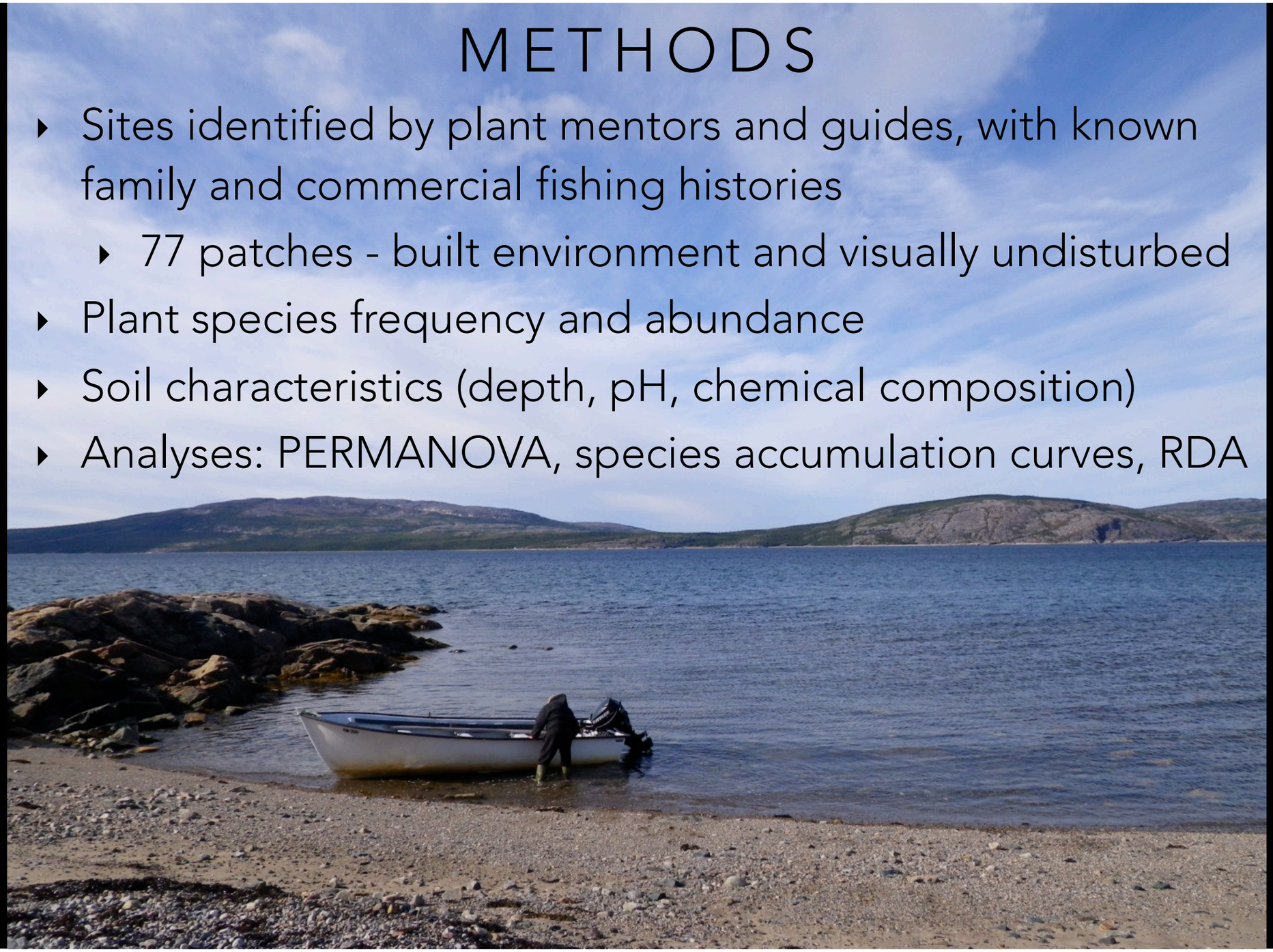

Sod houses

Tent rings


Gardens

METHODS

- Sites identified by plant mentors and guides, with known family and commercial fishing histories
  - 77 patches - built environment and visually undisturbed
- Plant species frequency and abundance
- Soil characteristics (depth, pH, chemical composition)
- Analyses: PERMANOVA, species accumulation curves, RDA



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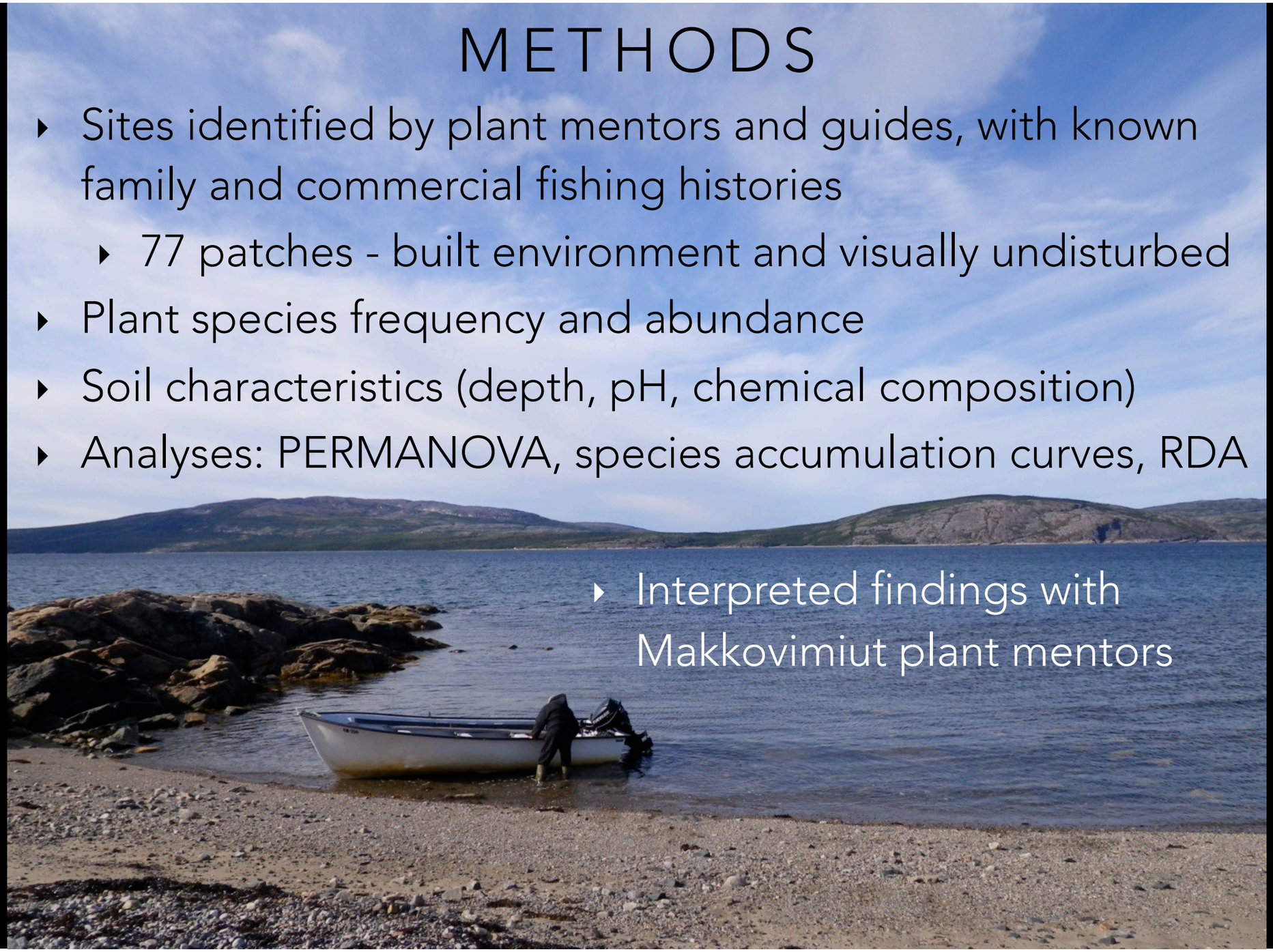
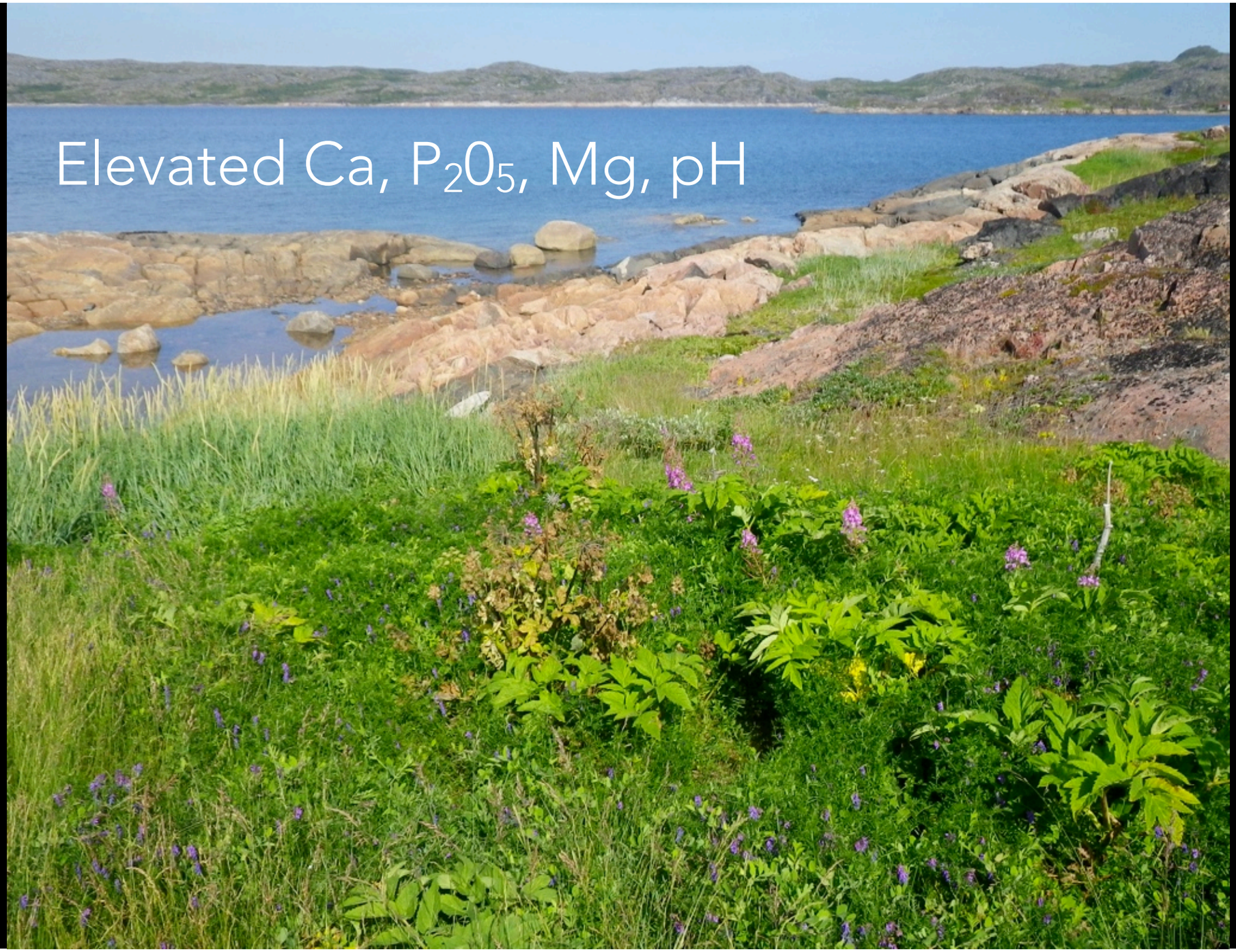


- Interpreted findings with Makkovimiut plant mentors

FINDINGS

- Built environment legacies have significantly different species composition and abundance
- Built environments with Inuit cultural legacies have unique species assemblages
  - native, disturbance-tolerant species
  - calciphiles


Elevated Ca, P_2O_5, Mg, pH


Makkovimiut diet

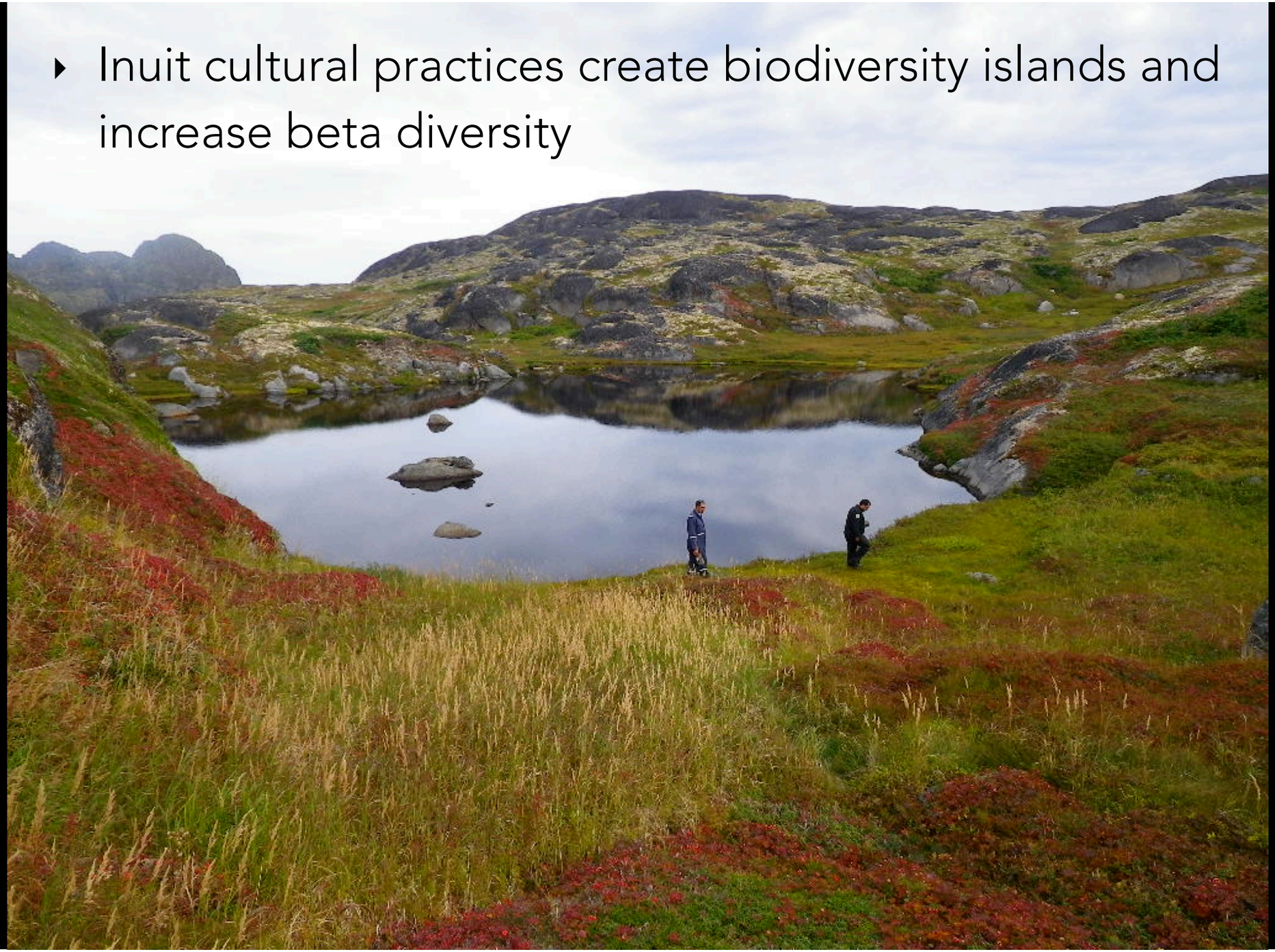

Vegetation not always an indicator of past practices

- anchors
- mooring rings
- barking pots
- komatik (sled) shoeing

CONCLUSIONS

- Cultural legacies are not always visible in reference areas - unseen does not mean “pristine”

- Inuit cultural practices create biodiversity islands and increase beta diversity



- Community knowledge directs and interprets research = greater likelihood of mutually relevant biodiversity research

- We propose that effective biodiversity conservation planning must actively support the Indigenous cultural practices that drive biodiversity

Giitu ~ Kiitos ~ Nakummek ~ Thank you ~ Merci


MEMORIAL UNIVERSITY
LABRADOR INSTITUTE
NSTP PFSN
Northern Scientific Training Program
Programme de formation scientifique dans le Nord
IASC
MAKKOVIK
Inuit Community Government
Makkoviup inuit NunatuKait kavmanga
CAFF
Conservation of Arctic Flora and Fauna
TORNGAT
WILDLIFE PLANTS & FISHERIES
SECRETARIAT
TRADITION+ TRANSITION
NASIVVIK
Carleton UNIVERSITY
SSHRC CRSH
Social Sciences and Humanities Research Council of Canada
Conseil de recherches en sciences humaines du Canada
Canadian Northern Studies Trust
Fiduciaire canadienne d'études nordiques