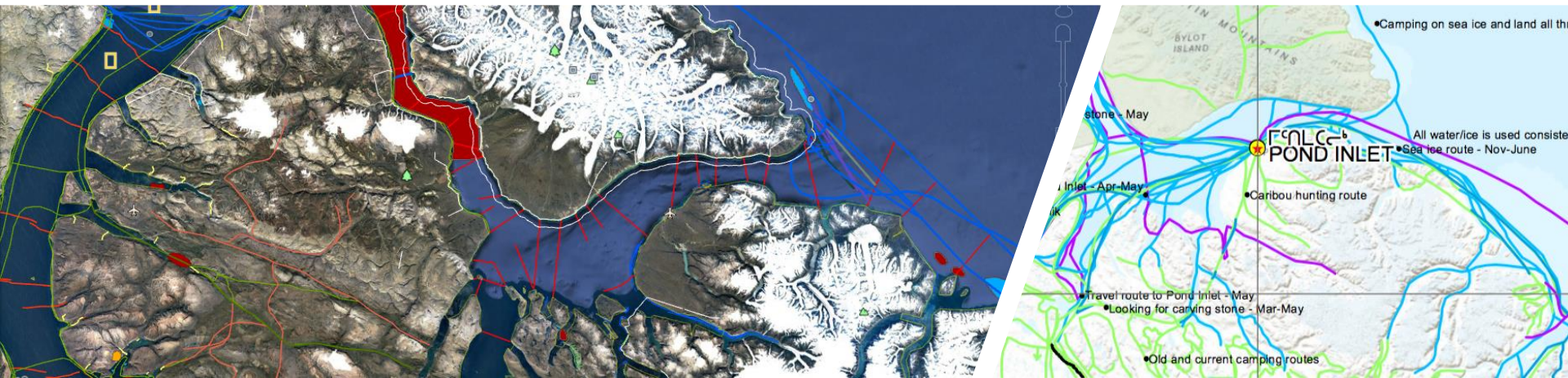


Inuit Knowledge Based Sea-Ice Maps for Improved Travel Safety & Emergency Management

Pan-Arctic Regional Climate Outlook Forum 3

Katherine Wilson: Canadian Ice Service, PhD Candidate – Memorial University
Katherine.Wilson@Canada.ca





Source: Wilson, 2019

SMART ICE

Nain, Nunatsiavut

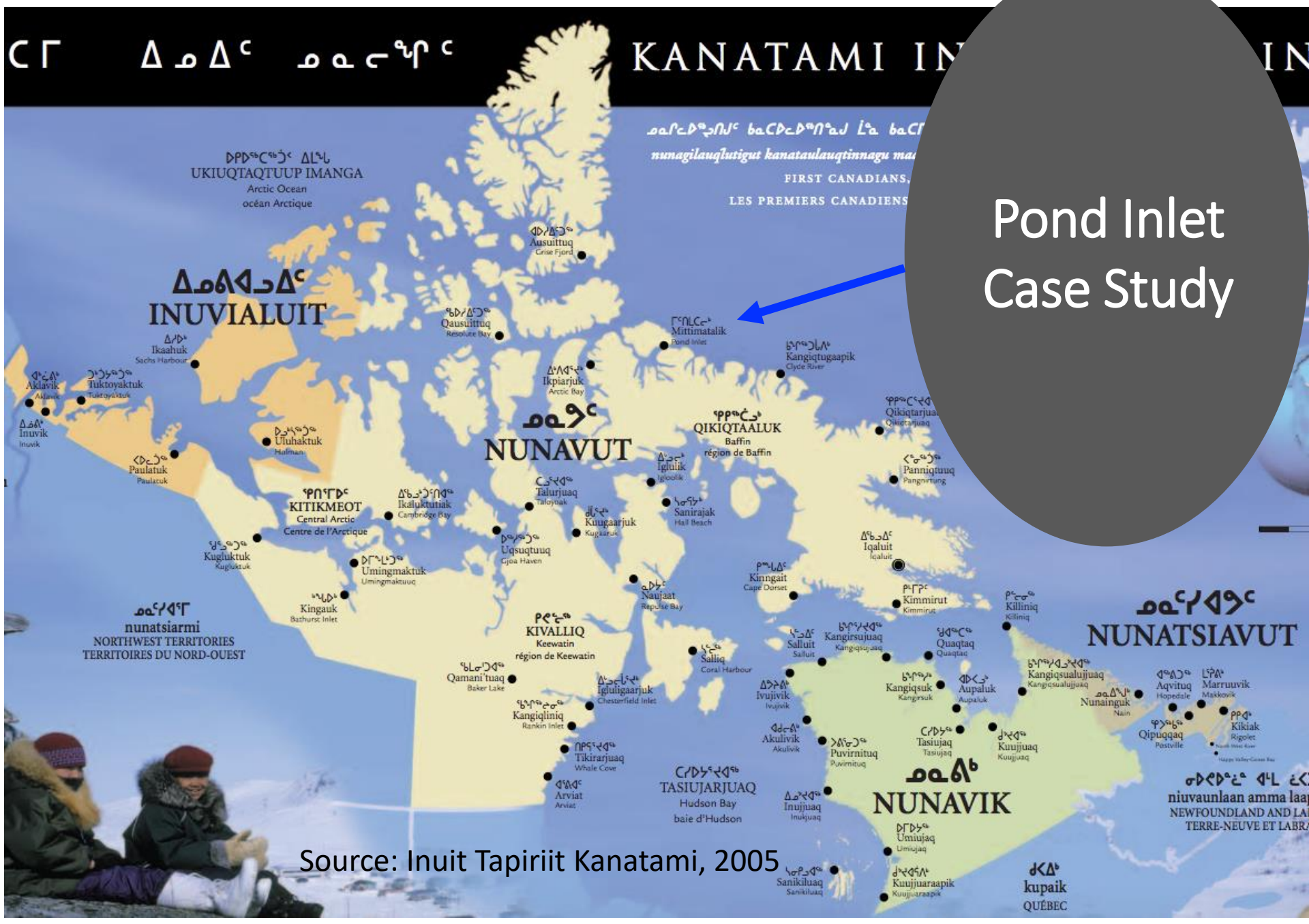




Ikaarvik: *Barriers to Bridges*

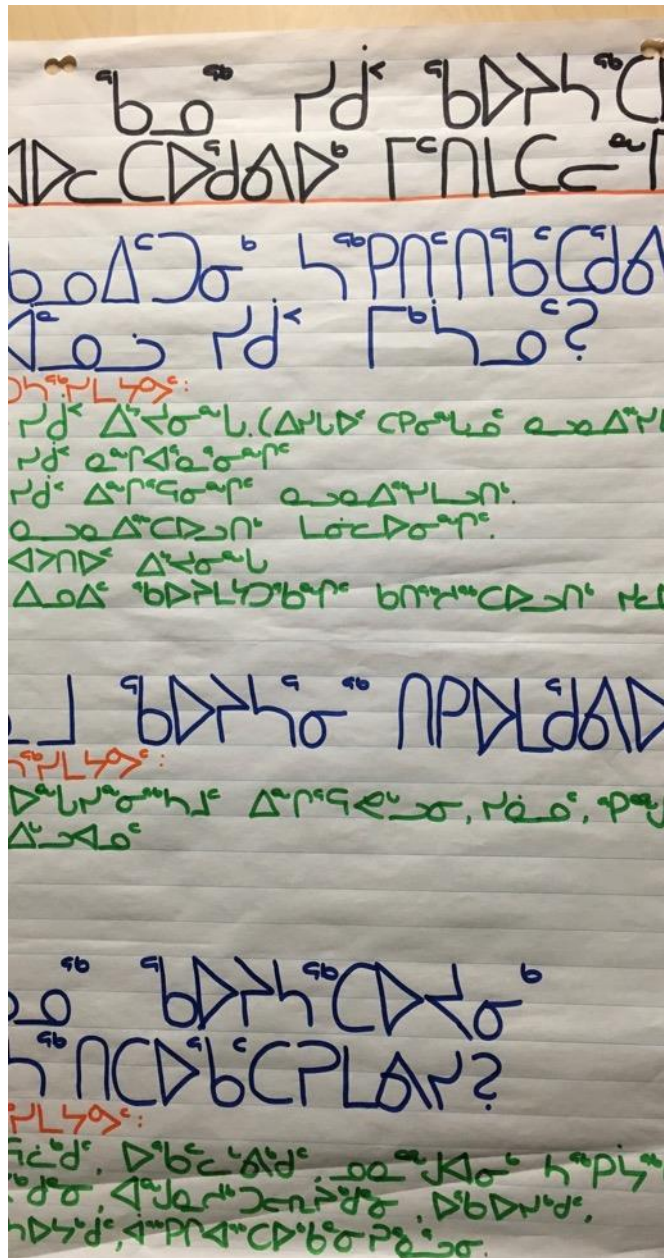
SciQ: the strengths of two ways of knowing,
scientific enquiry and Inuit Qaujimajatuqangit





Pond Inlet Case Study

Source: Inuit Tapiriit Kanatami, 2005



Source: Wilson, 2016



Source: Wilson, 2016

Ikaarvik: Facilitating the Establishment of SmartICE in Pond Inlet



Sikumiut (*Inuktitut for people of the ice*)

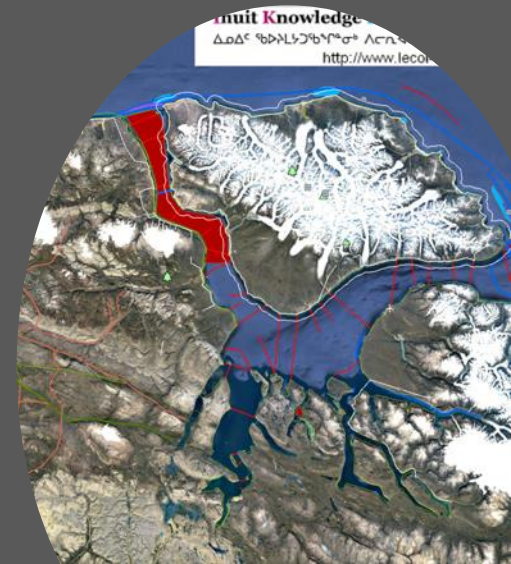
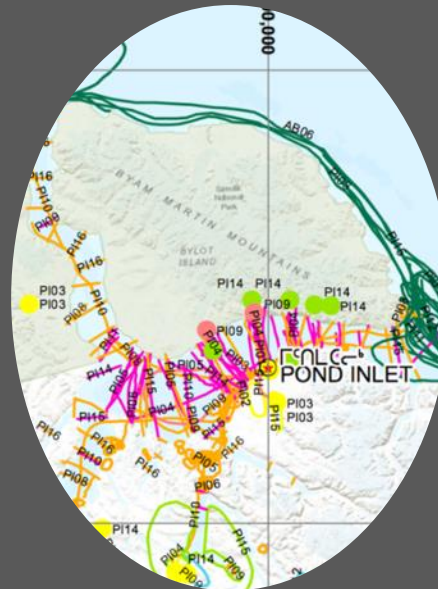
- The Inuit management committee that governs SmartICE in Pond Inlet
- Twelve-person membership includes
 - Elders (2), Youth (2)
 - Community Search and Rescue volunteers
 - Parks Canada, Canadian Rangers
 - Government of Nunavut Wildlife
 - Hunters and Trappers Association
 - Local outfitter



There is a gap in our ability to share our own IQ of sea-ice with other members of the community, ...especially the younger generations

Sikumiut Research Needs

- Document the history of sea-ice conditions around Pond Inlet using their sea-ice IK and western methods
- Gather and reclaim historical sea-ice data sets, some which includes their IK, and new data (satellite data).



Search and Rescue New Initiatives Funds

Nunavut Emergency Management felt that local IK sea-ice maps would improve local sea-ice travel safety, and reduce the amount of SAR activities

Also useful outside of the community

- Provide greater local detail to support their own search and rescue activities and for their partners (Coast Guard, National Defence, Police Services, Canadian Ice Service)
- Local scale information will be useful in day to day operations at the Canadian Ice Service

Developed a proposal with Nunavut Emergency Management and was successful in receiving funding



Public Safety
Canada

Sécurité publique
Canada





Planning how to
work together

Sikumiut

Will govern the research project. They will determine:

the methodology from an Inuit perspective

youth capacity building

my role in the research

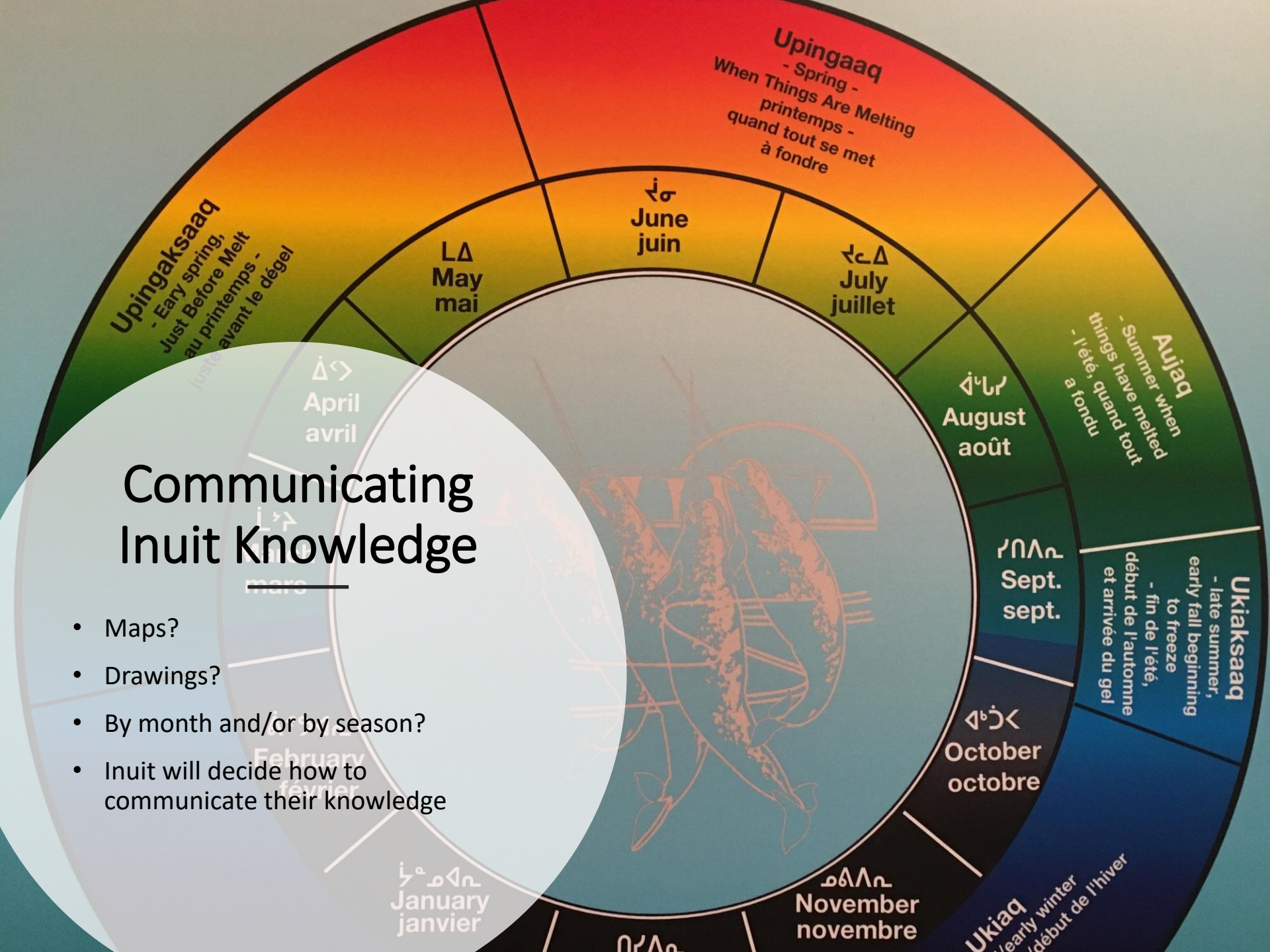
the methods used to share their IK

ownership of the data and sharing

evaluation of the project from an Inuit perspective.

Communicating Inuit Knowledge

- Maps?
- Drawings?
- By month and/or by season?
- Inuit will decide how to communicate their knowledge






Non-Inuit Researcher Partner Role

- Support Sikumiut decision making and approaches
- Seek and obtain funding
- Gather Pond Inlet sea-ice data and IK from southern archives
- Mentor and train Pond Inlet youth to do the research themselves



Strengthen Inuit
Youth Capacity



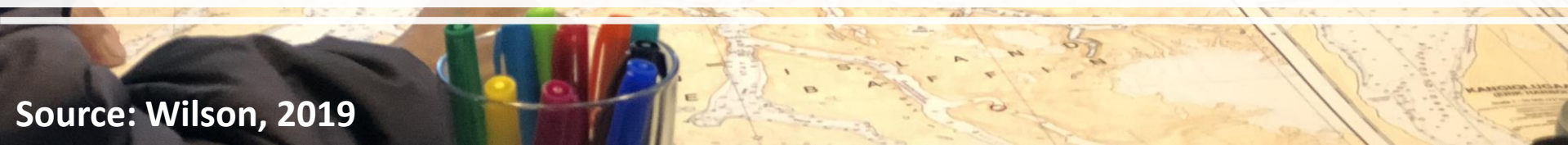
1. Youth Facilitating Workshops



a) Documenting & Learning Sea-Ice IQ



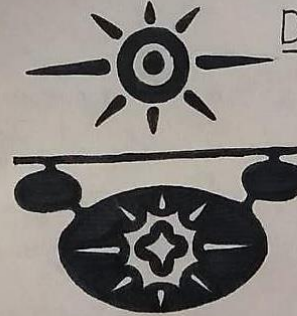
b) Participatory Mapping Workshops





Tap tap

Always bring a spear or a harpoon when going out on the sea ice to check for thin ice conditions when walking.

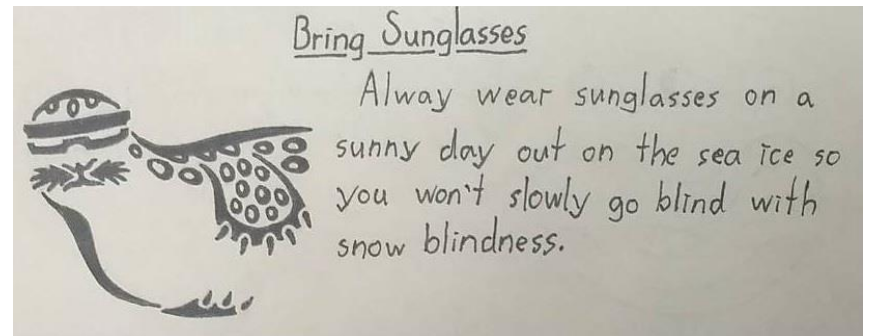
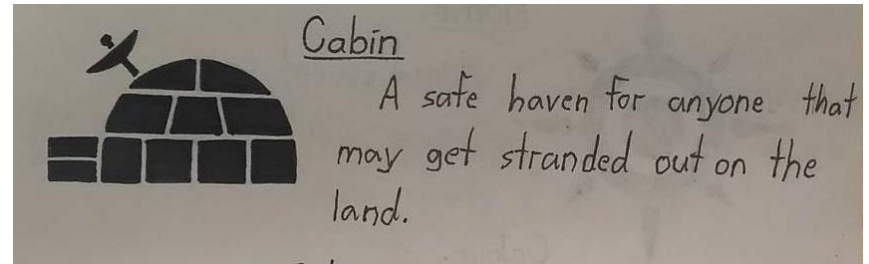


Danger of Reflection

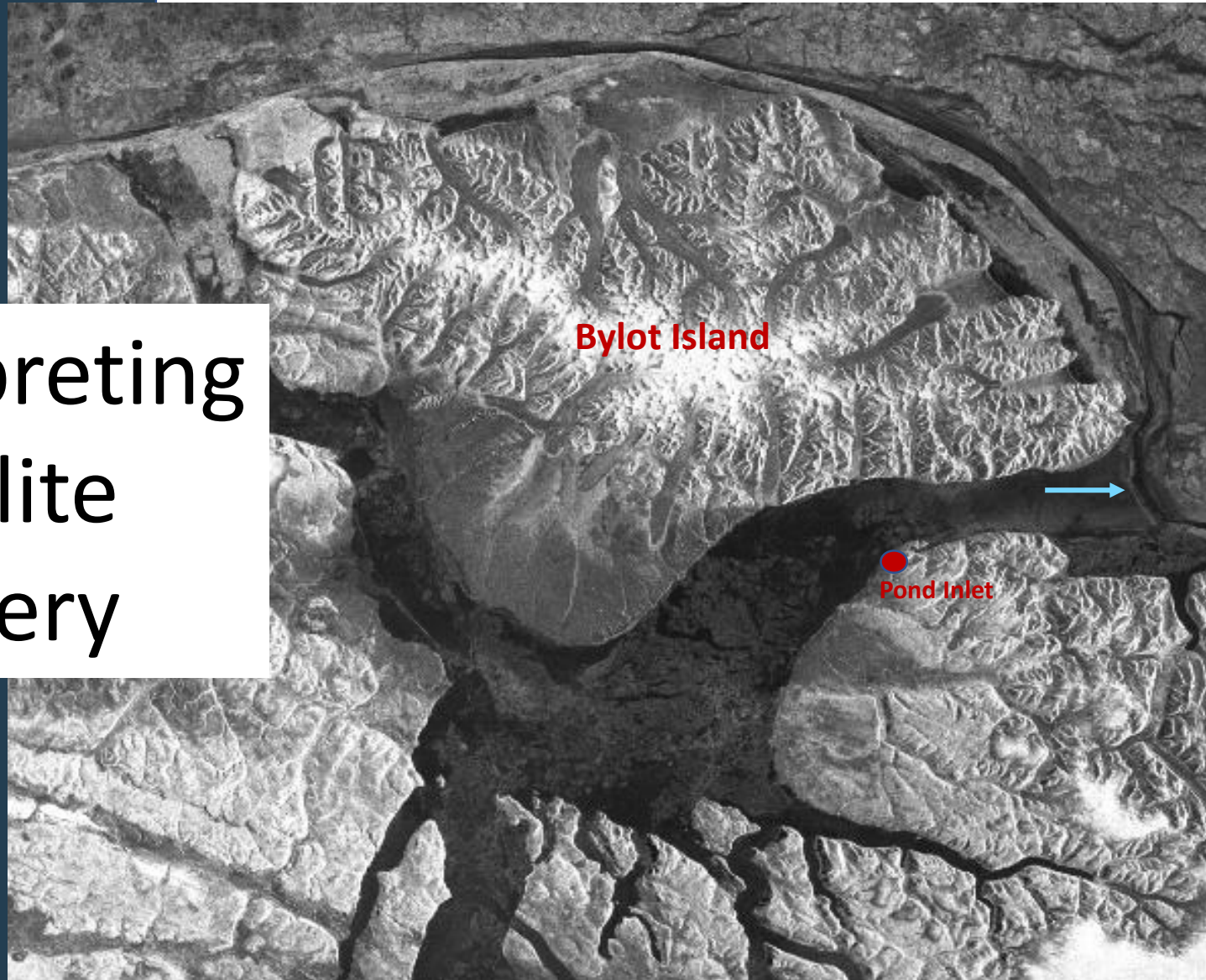
Be careful and vigilant when driving towards the sun when pools of water starts forming on the ice. You never know when the sun may be blinding you from a potential danger.

3. Developing Other ways to Communicate Sikumiut Knowledge

Inuit Knowledge is: Modern and Traditional



4. Interpreting Satellite Imagery





Source: Wilson, 2019

Developing a Pond Inlet Inuit Sea-Ice Climatology

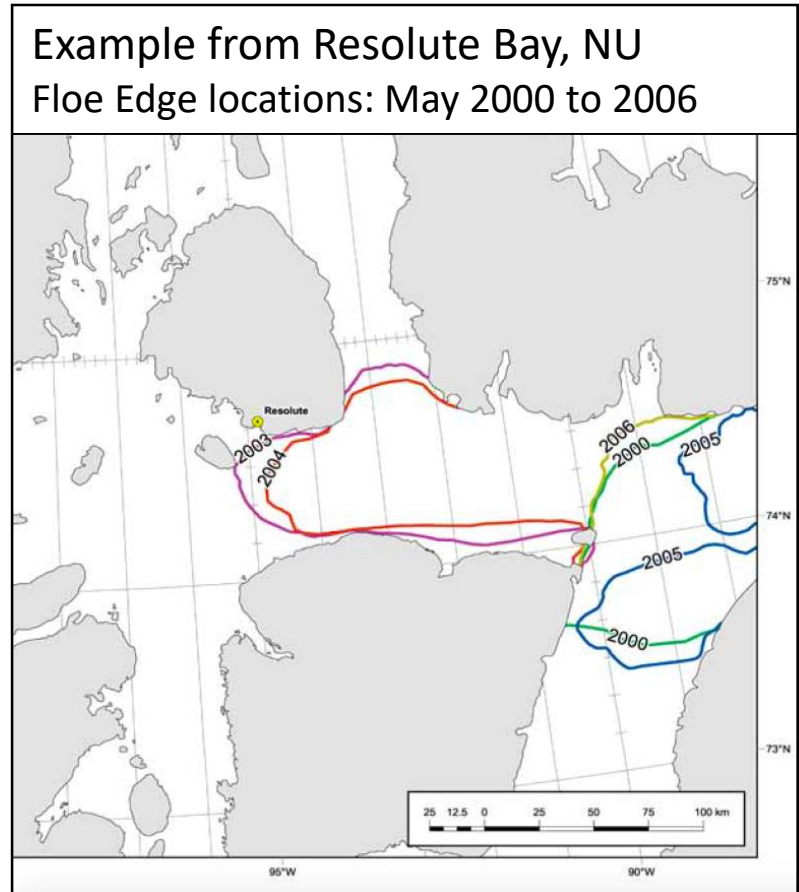
(maps of sea-ice conditions 1998 – present)

Climate change:

- Provide evidence for where, when and how quickly the sea-ice is changing, and the effect this has on their community
- Be used as adaptation tools to identifying known and emerging areas of ice hazards and safe travel areas throughout the season.

Future resource development:

A baseline of their sea-ice conditions can be used by the community in understanding the impacts from resource development on the sea-ice (i.e. winter shipping)



Source: Canadian Ice Service, 2007

5. Inuit Evaluation of the Research



INUIT YOUTH WILL
COORDINATE THE
EVALUATION OF THIS PROJECT



LEARN SURVEY AND
INTERVIEW SKILLS



PROGRAM EVALUATION
(SOCIAL SCIENCES) FROM AN
INUIT PERSPECTIVE



HELPING TO BUILD AN INUIT
SPECIFIC APPROACH FOR INUIT
SELF-DETERMINATION IN
RESEARCH

