Respecting ontology: Qualitative methods for documenting Inuit knowledge of Nunatsiavut coastal oceanography

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Context

- Following **western scientific research methodology**, questions guiding Inuit knowledge documentation are often determined by the researcher and analyzed from their perspective[1]; at times embedding Inuit knowledge within Western knowledge systems[2]
- Through this, Inuit knowledge can be subject to **decontextualization** *(to fit into analysis frameworks)* and **recontextualization** *(as conclusions from the data are drawn; Figure 1)*[3]
- As a result, data derived from Inuit knowledge will likely reflect a fraction of what was expressed by the knowledge holder, leading to possible changes in form and content while still being labelled as Inuit knowledge

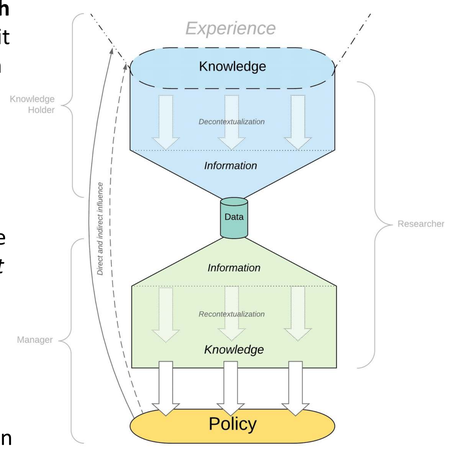


Figure 1 *As Inuit knowledge moves through this model, it is subject to decontextualization and recontextualization processes.*

This research identifies practices for *contextualizing* data as a way to respect the original ontological context of Labrador Inuit knowledge of coastal oceanography

Methodology

- Participatory mapping sessions to document oceanographic features were held in Rigolet and Hopedale *(Figure 2)*
- Sessions were open to community observers *(Images 1, 2)*
- Colour base maps displayed topography and bathymetry, at a scale of 1:50,000
  - **Rigolet**: two 9x21 ft floor maps *(ice-free and sea-ice seasons)*
    - Participants (n=5)
  - **Hopedale**: two 12x18 ft floor map *(ice-free and sea-ice seasons)*
    - Participants (n=6)

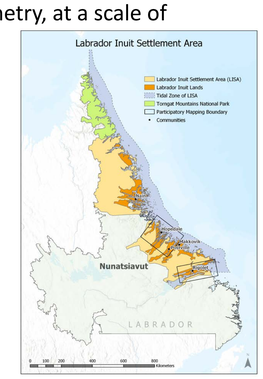


Figure 2 *Nunatsiavut, including Rigolet and Hopedale map domains*

- Mapped features *(in order)*:
  - **Summer and winter routes** *(trails)*
  - **Ice features** *(average floe edge, areas of open water, areas of unsafe ice, direction of ice drift)*
  - **Currents** *(location, relative strength)*
  - Other features of interest
    - Cabin locations *(Hopedale)*
- Participants discussed what they were mapping and why, to further contextualize spatial features *(lending to integrational knowledge transmission amongst participants and session observers)*
- Follow-up semi-structured interviews addressed:
  - How participants learn about oceanographic features
    - The importance of such features to participants
  - Descriptions of connection to the land and sea
  - How participants would like to see this research come back to the community

Results

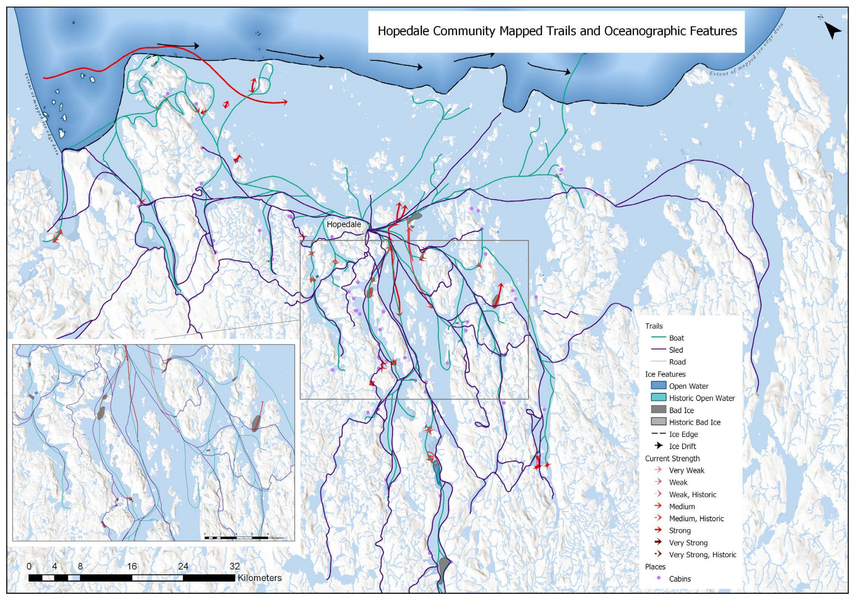


Figure 3 *Hopedale community mapped trails and oceanographic features, highlighting areas of open water and unsafe ice found in the bays and fjords around Hopedale.*

Images 1, 2 *Rigolet and Hopedale group mapping sessions were also open to community observers to support intergenerational knowledge transmission*

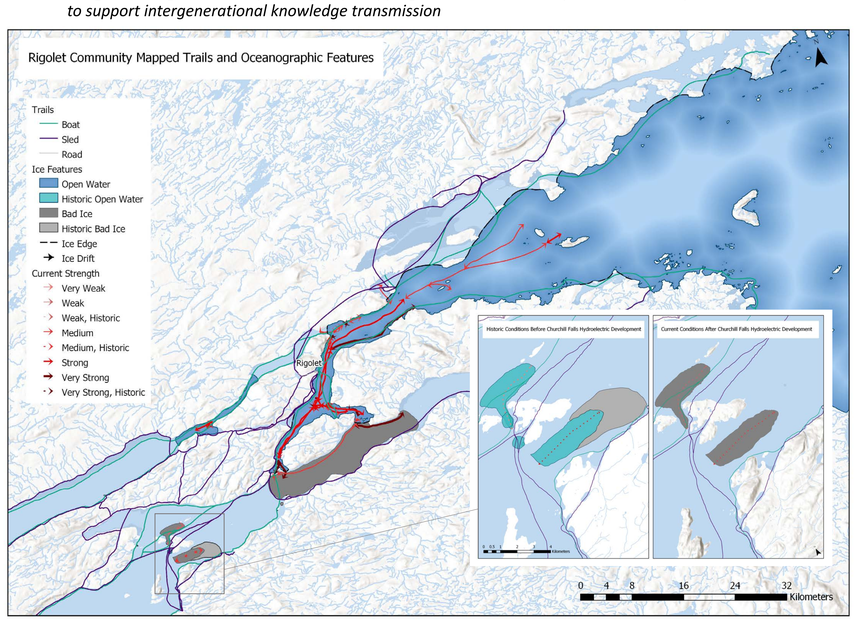


Figure 4 *Rigolet community mapped trails and oceanographic features, highlighting changing ice conditions that were observed after the Churchill Falls hydroelectric development (1971-1974).*

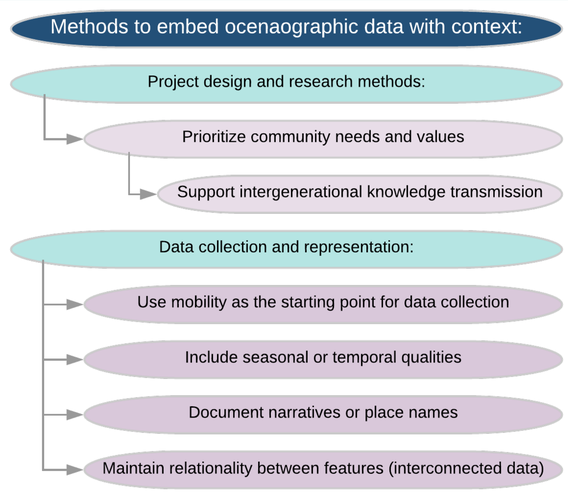
Discussion

- Understanding the significance and importance of coastal oceanography is at the core of documenting Inuit knowledge *(Figure 4)*

Figure 4 *Word tag cloud representing participant connection to the land and sea. Certain themes are evident: activities (hunting, fishing, travelling) species of importance (seals, salmon, caribou, geese); seasonality (winter, spring, summer); social relations (family, grandparents, parents); and features (ice, land, island, tide).*

- **Maps** can act as a mechanism to **represent and communicate Inuit ontology** [4]
  - Figures 2 and 3 cartographically depict Labrador Inuit knowledge of coastal oceanography
    - Associated details *(including seasons, cultural significance, or related narratives)* may be connected to these maps to further respect the original ontological context
- At the core of representing ontology *(in data collection and representation):*
  - **Mobility** and **seasonality** determine how Labrador Inuit interact with ocean features *(facilitating social-experiential knowledge generation and transmission)*
    - **Intergenerational knowledge transmission** should be involved in participatory research documenting oceanographic features
  - **Narratives** and **place names** can convey specific nuances that cartographic data alone may not capture
    - They reflect the depth and history of oral tradition
    - Descriptions can be preserved in metadata / attribute tables (*ArcGIS*)
- **Maintaining interconnected data** allows for a more 'complete picture'
  - In demonstrating the relationality between features → data more accurately reflects holistic knowledge[5]

Recommendations



References

[1]Wilson, S. (2008). *Research is ceremony : Indigenous research methods*. Black Point, N.S.: Fernwood Pub.
[2]Scassa, T., & Taylor, F. (2017). Legal and ethical issues around incorporating traditional knowledge in polar data infrastructures. Data Science Journal, 16(3), 1-14.
[3]Aporta, C., Bishop, B., Choi, O., & Wang, W. (*in press).* Knowledge and data: An exploration of the use of Inuit knowledge in decision support systems in marine management. In *Governance of Arctic and Northwest Atlantic Shipping: Perspectives, Issues and Approaches. (in press)*
[4]Wood, D., Fels, J., & Krygier, J. (2010). *Rethinking the power of maps*. New York: Guilford Press.
[5]Olson, R., Hackett, J., & DeRoy, S. (2016). Mapping the Digital Terrain: Towards Indigenous Geographic Information and Spatial Data Quality Indicators for Indigenous Knowledge and Traditional Land-Use Data Collection. *The Cartographic Journal, 53*(4), 348-355.

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