

# Accessing and assessing environmental information: community-identified metrics and modifiers that matter in a changing climate

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Photo Credit: Alexandra Sawatzky



Community of Rigolet, Labrador  
Photo Credit: Alexandra Sawatzky



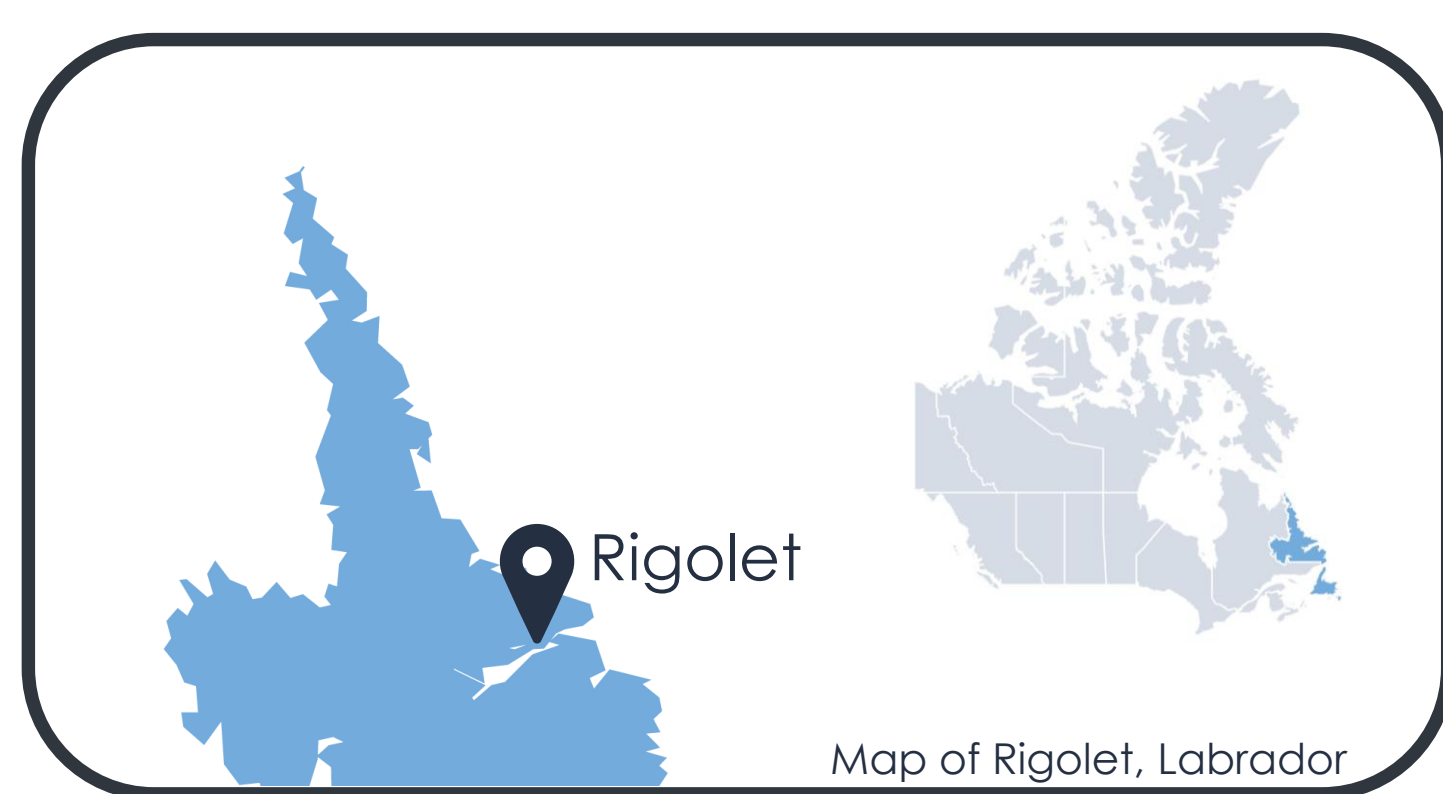
Ice fishing, Rigolet, Labrador  
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## Introduction

As Inuit experience disruptions to their livelihoods, culture, and wellbeing due to climate change and associated environmental shifts,<sup>1,2</sup> there is a need for monitoring that integrates and prioritizes Inuit knowledges and sciences.<sup>3,4</sup> Community-based monitoring approaches that incorporate culturally- and locally-relevant environmental metrics not only offer holistic representations of environmental-health,<sup>5</sup> but with meaningful engagement, can also improve wellbeing in and of itself.<sup>6</sup>

## Purpose

The aim of this study was to characterize how Rigolet Inuit perceive, prioritize, and interact with meteorological variables on the land and in the community to support environment and health monitoring.



## Research Objectives

1. Identify meteorological and environmental conditions important to community members' decision-making processes both on and off the land.
2. Characterize contextual factors that modify how meteorological and environmental conditions are interpreted, and how decisions are made.

## Methods

### Data Collection

- From February to October 2018, in-depth interviews were conducted by community research leads with Rigolet community members (n=8).

### Analysis

- Team debriefs were used to facilitate ongoing co-analyses that were grounded in community understandings of environment and health.<sup>7</sup>

- Thematic analysis of both interview and debrief transcripts was used following an iterative, constant-comparative method to explore patterns within and between data.<sup>8,9</sup>

## Preliminary Findings

### Meteorological and Environmental Variables

**"If it's gonna blow, you don't go."**

- Wind **speed** and **direction** were often deciding factors for land-based activities, impacting many other conditions, such as temperature, visibility in the winter with snow, and tide "lops" in the summer and fall months to impact boat safety.

**"People like to know how much snow, and the type of snow."**

- Snow **depth**, **texture**, and **timing** were important for winter-spring land access, particularly for accessing wood paths, since "on freshly fallen snow you gotta be kind of cautious" as it might cover "bad" spots of terrain and ice.

**"One of the biggest questions is how's the ice making? Where's it making?"**

- Ice **thickness** and **texture** were key for winter-spring land-based activities as they were indicators of safety, ease of travel, and associated with successful spots for harvesting activities (e.g. seal hunting).

**"Rain is a hard one, it will affect you both in the summer and winter."**

- Precipitation was described to impact travel decisions and conditions throughout the year, often causing people to delay their travel plans, particularly if it co-existed with strong winds.

### Contextual and Socio-cultural Modifiers

#### Individual Level

- **Gender**, **age**, and **local experience** related to what sorts of land-based activities and environmental conditions participants felt comfortable with. For example, an Elder shared:

*"I can't do the things now in the heat that I used to do when I was younger."*

#### Household Level

- **Shared resources** within a family, and the **distribution of individual level factors** contributed to land-based decisions. As one participant pointed out, regardless of environmental conditions:

*"If you're planning to go with somebody and they can't go, a lotta times you won't go either."*

#### Community Level

- **"Word-of-mouth" networks** were essential for learning about conditions beyond the community. When unsure of the land conditions, or where to find resources, one participant said you just need to ask because:

*"Most everywhere you go somebody's been there before."*

#### Regional Level

- **Development** and **climatic shifts** were noted to impact the validity of local methods for interpreting environmental conditions resulting in concern for present and future land use:

*"We're going through these physical changes and we don't really know where the ice may be bad?... and in the future people maybe taking unnecessary risks."*

## Discussion

- Community-identified variables and modifiers of land use and wellbeing highlight what information is important for Inuit to input, share, and receive in a monitoring system.<sup>10</sup>
- Examining scales at which environmental-health information and decision-making are modified enhances our understanding of how climate change may differentially impact Inuit health in Rigolet.<sup>11</sup>
- Synergies between Inuit- and Western-identified environmental variables can lead to complementary monitoring that provides holistic assessments of environmental and human health.<sup>12</sup>

## Implications

- Developing community-based monitoring with and for Inuit will directly contribute to wellbeing and capacity-building.
- Incorporating environmental-health indicators derived from in-depth cultural and environmental experience is a means to protect and enhance the diversity and condition of cultural knowledge and resources, and attachment to place.<sup>5,13</sup>
- Place-based metrics and modifiers will enhance ongoing research efforts including empirical investigations, and relevant and appropriate scales of adaptive policy.<sup>14</sup>

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