FRESHWATER AVAILABILITY AND ACCESS IN NUNATSIAVUT:
A Case Study From Rigolet

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Research Aim and Objectives
The primary aim of this study is to assess the vulnerability of drinking water systems in Nunatsiavut to present and future environmental and socio-economic changes, through a case study in Kikiak (Rigolet), Nunatsiavut. The Rigolet case study will be situated within a regional assessment of community water vulnerability across Nunatsiavut in future.

Rationale
Water stress in Arctic communities may amplify existing community vulnerabilities to the effects of climate change, influencing traditional harvesting practices, safety when traveling on the land, and the viability of subsistence livelihoods (ACIA, 2005).

Despite these concerns, research identifying the vulnerability of drinking water systems to the effects of climate change is presently limited, with no studies found in Nunatsiavut. This study addresses this knowledge gap while responding to a need expressed by residents of Nunatsiavut for "community-based assessments and systematic research on the issues of climate change impacts…" (Nickels et al, 2006: 116).

Context
There are 269 people living within the community of Rigolet, located in the Inuit region of Nunatsiavut on the east coast of Labrador (Fig.1). Rigolet is a dominantly Inuit community (90%) where many residents pursue traditional livlihoods, supplementing cash income with subsistence hunting and fishing.

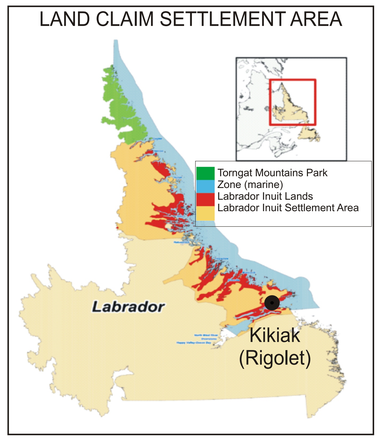
Freshwater systems provide:

A)important travel routes for land-based activities;

B)habitat for animal and fish species significant to the local diet; and,

C)drinking water consumed both within the community and on the land.

1.



Http://www.nunatsiavut.com/en/lilca_landclaimsarea.php

Study Design and Methodology
This study was initiated in response to local research needs identified by the Government of Nunatsiavut and the community of Rigolet and employed a community-based vulnerability approach, drawing on the CAVIAR framework (Smit, Hovelsrud and Wandel, 2008).

Study objectives and research design were formulated through dialogue with community residents and leaders within the Inuit Community Government of Rigolet and the Nunatsiavut Government during an initial visit in June 2009.

This visit allowed for the identification of potential research assistants, interpreters and local guides who formed an integral part of the research team. When final results have been assessed, findings will be discussed with Rigolet residents and community leaders during a visit in spring 2010, facilitating an exchange of local suggestions, questions and feedback regarding the study.

Data Collection Methods
- o 89 semi-structured household interviews (88% response) in Rigolet
- o 11 key informant interviews
- o Mapping local observations of freshwater change in Rigolet and surrounding area
- o Review of downscaled climate scenarios, river discharge records, and other sources

Findings
Preliminary results confirm observations of previous studies noting a decrease in water levels of streams and ponds (Fig. 2). Rigolet residents describe the complete disappearance of ponds in several areas over the last 25-30 years coinciding with the movement of geese farther inland, away from traditional harvesting sites.

Reductions in water levels of brooks has limited access to drinking water on the land, leading many to travel further (and expend more fuel) in search of drinking water or to purchase water for land-based activities.

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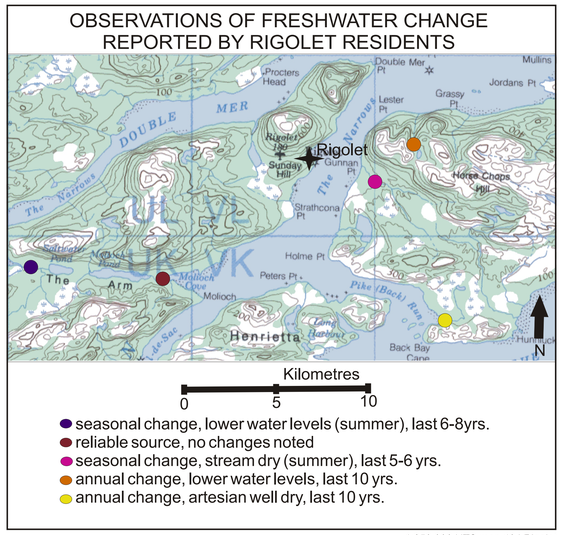
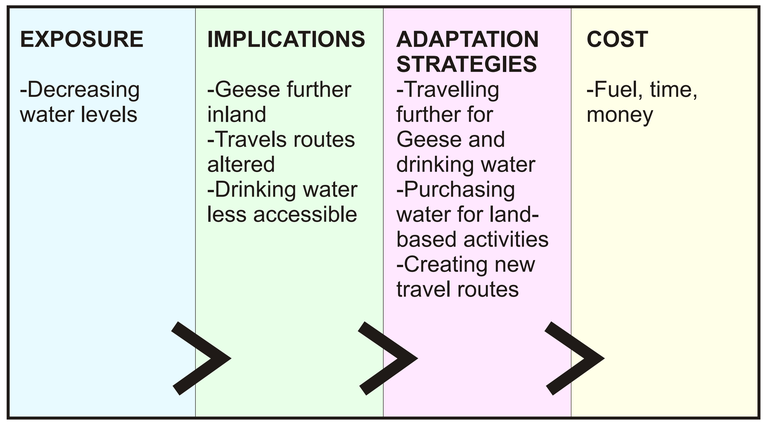


1:250,000 NTS map 13J Rigolet

Figure 2 (left) *notes recent (3-8yr.) seasonal and long-term (10-30yr.) water- level trends highlighted by Rigolet residents. These trends were largely connected with changes in precipitation by respondents (both rain and snowfall).*

Figure 4. COMMUNITY VULNERABILITY TO CHANGES IN FRESHWATER AVAILABILITY



The costs of fuel, time and money noted in Figure 4 compound existing financial stresses threatening the viability of subsistence livelihoods and the accessibility of land-based activities in Rigolet. Reflecting on these stresses one respondent notes:

"Gas is at almost 40$ a can now, when I go hunting on my hunt trip it's almost 300$ a trip for 2 or 3 nights. (...) So when I go hunting I have to go out and get something, bring back something to feed your family. There's no such thing as going for a joy ride now or just going for hunting and not coming up with anything. You have to bring back stuff to show all the money you spend on your hunting trip". -Kenny

Figure 3. IMPLICATIONS OF DECREASING WATER LEVELS FOR RIGOLET RESIDENTS