

LIVING WITH CLIMATE CHANGE: Community Vulnerability and Adaptation in Ulukhaktok

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Introduction

Research was conducted with the community of Ulukhaktok (Holman) to document conditions experienced by the community and the adaptive strategies they employ, or could employ, to deal with changing environmental conditions. The research involves:

- 1 Documenting current exposures and risks and the adaptive strategies employed by the community to manage or cope with changing conditions;
- 2 Identifying the processes and conditions which have aided or inhibited adaptations;
- 3 Incorporating probabilities of potential climate change and social and economic conditions to assess community adaptive capacity in the future.



Inukshuks on Third Hill, April 2005



Nelson, Brittney, Papak, Ulukhaktok, April 2005

Case Study: Ulukhaktok (Holman)

Ulukhaktok is a coastal Inuvialuit community of approximately 420 people, over 93% of them aboriginal, located on the west coast of Victoria Island in the Inuvialuit Settlement Region in the Western Canadian Arctic (*figure 1*). The economy is largely subsistence based mixed with government and community services, sport hunting and an arts and crafts sector. Interviews with 60 community members, representing 23% of the adult population, were conducted providing insights on:



Figure 1 - Inuvialuit Settlement Region

- The interaction between people and the environment including how the economy and livelihoods depend on the environment;
- Problematic conditions that people have had to deal with and are currently dealing with including conditions affecting infrastructure;
- Strategies employed by people (in the past and currently) to manage or adapt to problematic conditions;
- Processes and conditions which have aided or inhibited the success of past and present adaptations;
- Conditions that may become problematic in the future and future adaptation strategies.



Research Assistant Fred Kataoyak in drum dance attire



Winnie Akhiatak traveling on the land, April 2005



Adam Kudlak seal hunting, Aug 2005

Vulnerabilities & Infrastructure

Infrastructure in Arctic communities includes the basic facilities, services and installations needed for the functioning of a community including natural infrastructure such as travel routes and paths on the land and sea ice. People in Ulukhaktok are coping with changing environmental conditions that have implications for local infrastructure and thus for people's livelihoods.

RISK	EXPOSURE	ADAPTATION	CONSTRAINT
<ul style="list-style-type: none"> • Faster, unpredictable spring melts 	Travel on the sea ice and land is more dangerous or not possible Limits access to hunting and fishing grounds	Change timing and mode of travel Travel by boat or ATV instead of skidoo	Limited time due to employment No access to alternative mode of transportation
<ul style="list-style-type: none"> • Changing ice conditions - No longer a regular pattern 	Affects travel to hunting grounds and camps	Wait in the community Travel by the land Buy food from the store	Store bought food is expensive and often not as desirable as country foods
<ul style="list-style-type: none"> • Greater frequency and intensity of storms - Stronger winds 	Makes travel more dangerous and difficult Wind can cause damage to houses and buildings	Check weather reports Take extra fuel and supplies when traveling	Limited time due to employment Access to an ATV
<ul style="list-style-type: none"> • Rapid thaw of ATV trails 	Degradation of trails, creating difficulty traveling	Make new trails	More land degradation
<ul style="list-style-type: none"> • Rising cost of fuel 	Increased dependence on machines for travel (ATV, snow machines, outboard motors).	Work more to pay for fuel Travel less and shorter distances	Limited number of jobs
<ul style="list-style-type: none"> • Less snow - Snow is often blown away by strong winds 	Sometimes difficult or unable to travel by snow machine Can be difficult to track animals	Travel by ATV or use alternative routes	Access to an ATV Use other tracking techniques



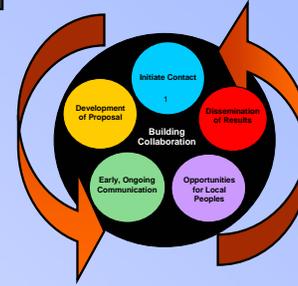
Degrading ATV trail outside of Ulukhaktok, April 2005



Travelling on the ice in the spring, Ulukhaktok (photo by A. Kudlak)

Community Involvement

This research employs the 'Vulnerability Approach' for documenting people's experiences with changing environmental conditions. Local knowledge and experiences guide the research; the community identifies what conditions are relevant and what adaptations are realistic. Local peoples are active partners in the research through research planning and design, facilitation, translation and interpretation and dissemination of results.



The diagram outlines steps for community research collaboration in climate change vulnerability and adaptation research in the Arctic.

Future Vulnerability

Future Risk	Future Exposures-Sensitivities
Increasingly earlier spring melt	Affects the timing of travel to hunting grounds. Could potentially disrupt sport hunting activities which are restricted to a set time period.
Increasingly rapid thaw of ATV trails	Less access to inland locations and increased land degradation.
Mining development	Would have economic, social and ecological impacts which will affect the nature of future exposures and adaptive capacities.



Discussion

Environmental conditions are changing in Ulukhaktok, some with implications for community infrastructure. Ulukhaktok's economy, traditional activities and subsistence lifestyle depend on having consistent access to natural resources including safe travel infrastructure to resource areas and the health of the resource itself. Local people are active players in adaptation and are currently adapting to or coping with changing conditions, often by adjusting the mode, timing and location that they travel for harvesting activities. However, changing conditions coupled with other stresses, environmental and social, threaten the long term stability of subsistence activities. Strengthening current adaptation strategies at multiple levels, individual, household, community and region, will also serve to strengthen adaptation to future climate change.

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