

Community Climate Change Adaptation Project (CCCAP):

Adaptation Planning in Dawson City, YT



Introduction: Climate Change in Yukon

Western Arctic is already experiencing rapid change.

ACIA¹ reports an increase in winter temperatures of 3-4°C over the past 50 years and an estimated 8% increase in precipitation. Subsequent effects have been reported in Yukon Communities since 2000²:

- Increased weather variability
- New species
- Changing species distributions
- Permafrost decline
- Warmer winters

Permafrost Slump (Ft. McPherson)



Musk Ox (Yukon/NWT Border)

Introduction: The Need for Adaptation in Yukon



Yukon Communities are vulnerable to socio-economic change

- Isolation
- Narrow economies
- Limited resources

Courtesy of Dr. Frank Duerden:
Dawson IPY CAVIAR Project



Introduction: The Need for Adaptation in Yukon

Yukon Communities are further vulnerable to the effects of climate change.

- Infrastructure collapse (Permafrost decline)
- Socio-economic change (Changing environmental conditions)
- Cultural change (Shifting biodiversity)
- Impacts on health (Changing harvesting patterns/ climate conditions)
- Shifting resources (Changing hydrology)

Cumulative effects of a rapid and severe onset of climate change could result in landscapes that are increasing unfamiliar to residents and lifestyles that are increasingly disrupted and expensive



Overview:

- What is CCCAP?
- How was the plan developed?
- Why did risk management work?
- What are the limitations of the planning process?
- What barriers emerged?
- How is the Dawson Adaptation Plan being implemented?
- What next?

Yukon Quest Start, Whitehorse, YT



Discovery Days Parade, Dawson, YT



Ice Bridge, Dawson, YT



Main Street, Whitehorse, YT



What is CCCAP? Community Adaptation in Yukon

Vulnerability Assessment and adaptation planning in three Yukon communities, 2007-2012:

- Vulnerability assessment
- Community engagement
- Adaptation planning
- Implementation

Designed and implemented by the Northern Climate ExChange



Mayo, YT



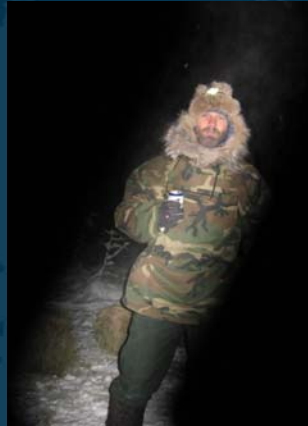
Dawson City, YT



Whitehorse, YT



How Was the Plan Developed? The Need for Community Collaboration in Dawson



Sebastian Jones,
Dawson Adaptation Coordinator

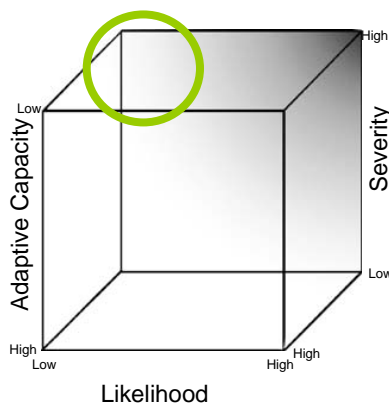
In response to data gaps and in acknowledgment of local knowledge, the Dawson planning process was grounded in community collaboration:

- Local adaptation coordinator and advisory committee
- Local knowledge formed the foundation of a community based climate change scenario
- Adaptations primarily recommended by the community



Why did Risk Management Work?

Adaptive Capacity and Regional Uncertainty



Adapted from: Fraser, E.⁵

Risk management approach followed a model proposed by the Australian Greenhouse Office³.

- Integration of scientific and local knowledge
- Evaluation of community consequences
- Assessing the influence of adaptive capacity:
 1. Place identity
 2. Available physical resources
 3. Available Knowledge
 4. Experience⁴



What Are the Limitations of the Planning Process?

- Emphasis on local knowledge limited the extent to which scientific knowledge was utilized (compensated for through Dawson CAVIAR)
- Partnerships with governments were also limited (reduces the implementation of the planning process)
- Variability and uncertainty were challenging to assess

Flood Damage, 2009



Flood Damage, 1979



Flood Damage, 2009

What Barriers Have Emerged? The Limits of Community

While the Dawson community was observed to have high adaptive capacity, barriers remain for plan implementation:

- Capacity (TAC input, limited First Nations participation, extent of issues)
- Opportunities
- Lack partner participation as a product of community focus
- Mitigation/Adaptation divide
- Lack of data

Fish Wheel Installation



Quigley Landfill



Dawson Community Gardens

How is the Dawson Adaptation Plan Being Implemented?

With funding from CCCAP, Dawson will be implementing 5 adaptation projects, 2009-2010:

- Electric Truck (to increase energy independence/increase local food security)
- Community Greenhouse Project (to increase local food security)
- Dawson Climate Change and Science Centre Feasibility Study (to ensure additional research and support education and outreach)
- Sustainable Harvest Strategy for Salmon (in response to changes in flora and fauna)
- Conservation Klondike Society Implementation Officer (to build capacity)



Dawson Resident Cutting Smoked Salmon



What Next? Whitehorse, Mayo and Beyond

Whitehorse Community Adaptation Project (WhiteCAP)

- Multiple vulnerability scenarios
- Bioregional mapping
- Regional climate change projections developed in partnership with the Scenarios Network for Alaska Planning (University of Fairbanks/Alaska)

Mayo Community Adaptation Project (MCAP)

Yukon Maladaptation Study
Sustainability and Adaptation Study



Northern Lights over Whitehorse



References:

¹ ACIA (2004). [Impacts of a warming arctic](#). Arctic Climate Impacts Assessment. Cambridge University Press: Cambridge, UK.

² NCE (2000). [Exchanging ideas on climate change in the Yukon](#). Northern Climate Exchange. Yukon College: Whitehorse, CA

³ AGO (2006). [Climate change impacts and risk management: A guide for business and government](#). Australian Greenhouse Office, Department of Environment and Heritage. Commonwealth of Australia: Canberra, AU.

⁴ Duerden, F. (2008) [Stresses and adaptive capacity in Dawson: Community Overview](#). (Unpublished).

⁵ Fraser, E. (2007). [Traveling in antique lands: Using past famines to develop an adaptability/resilience framework to identify food systems vulnerable to climate change](#). [Climate Change](#): 83, 495-519

CCCAP is funded by:



Yukon Northern Strategy Trust

In partnership with:



RYERSON UNIVERSITY

