

# Climate Change in Eeyou Istchee

## Identification of Impacts and Adaptation Measures for the Cree Hunters, Trappers and Communities

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EEYÓUCH KANTÓOHÓODO ERMAHMOUEECH  
CREE TRAPPERS ASSOCIATION



Cree Regional Authority



Comité consultatif pour l'environnement de la Baie James  
James Bay Advisory Committee on the Environment



Conseil Cri de la santé et des services sociaux de la Baie James  
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# Rationale

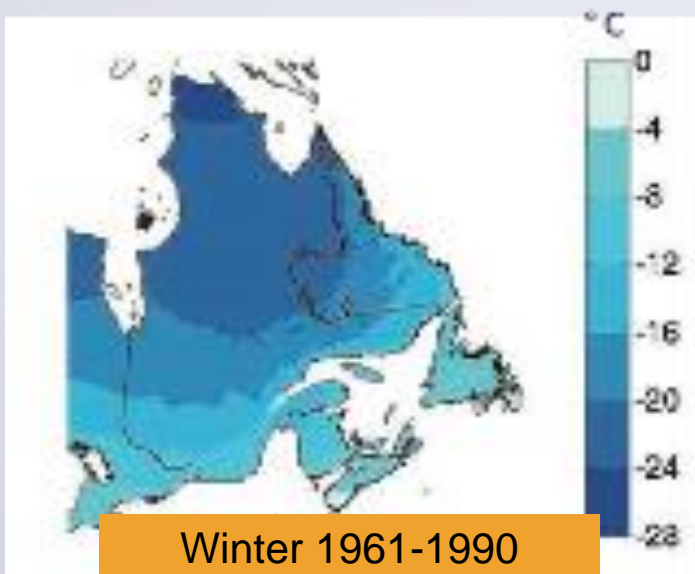
- ▶ Concerns of global warming and effects on the land and the people of Eeyou Istchee.
- ▶ Cree hunters reported observations potentially linked to the effects of climate change. (Ice conditions, changes in distribution of species, etc.)
- ▶ Building on the current state of knowledge (JBACE): *Portrait and known environmental impacts of climate change on the James Bay territory 2007*



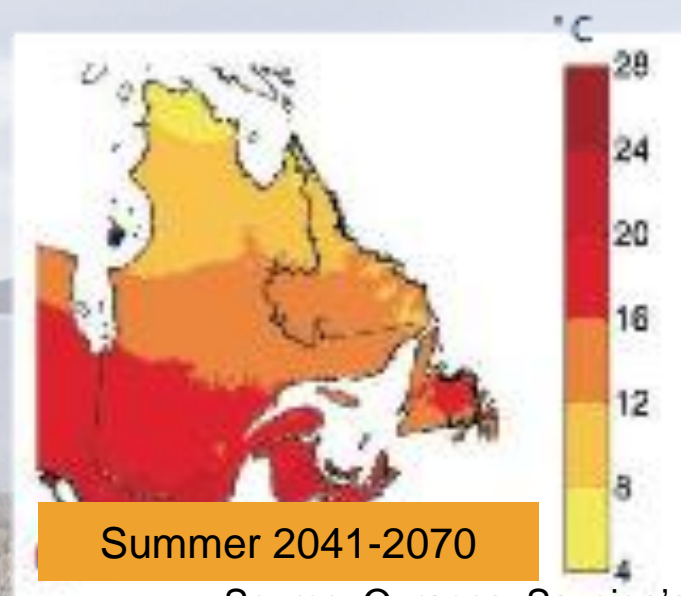
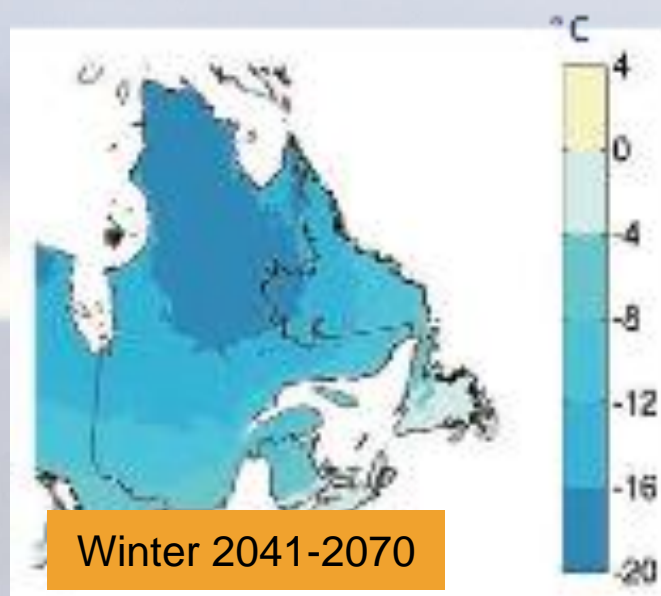
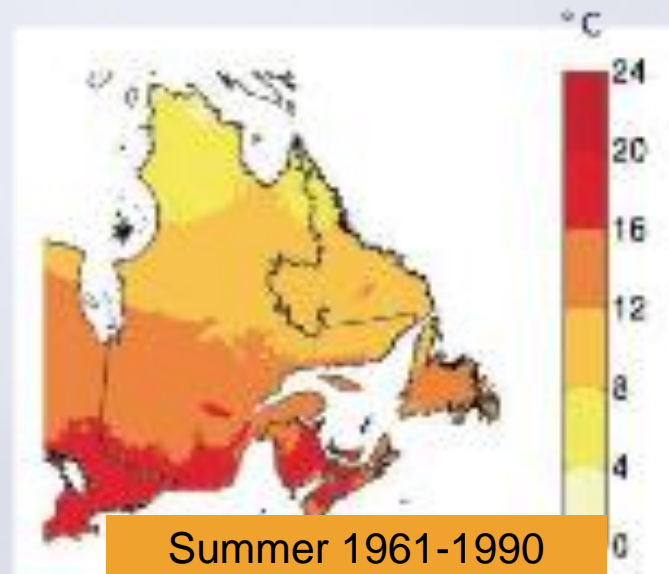


# Temperature Change

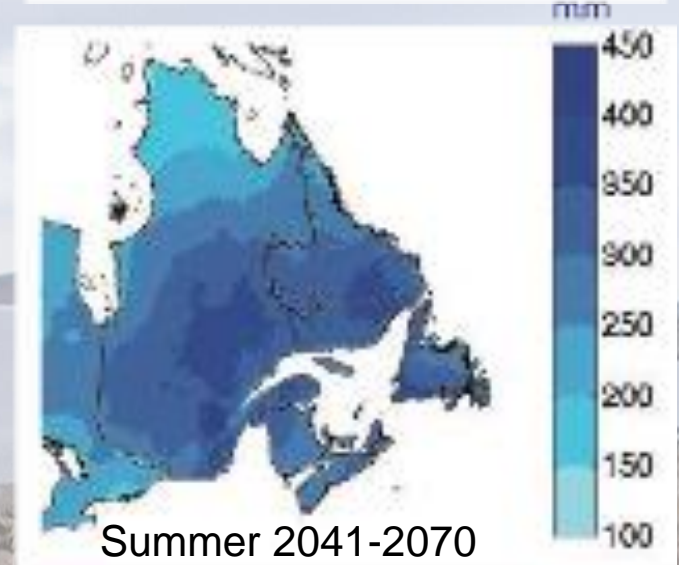
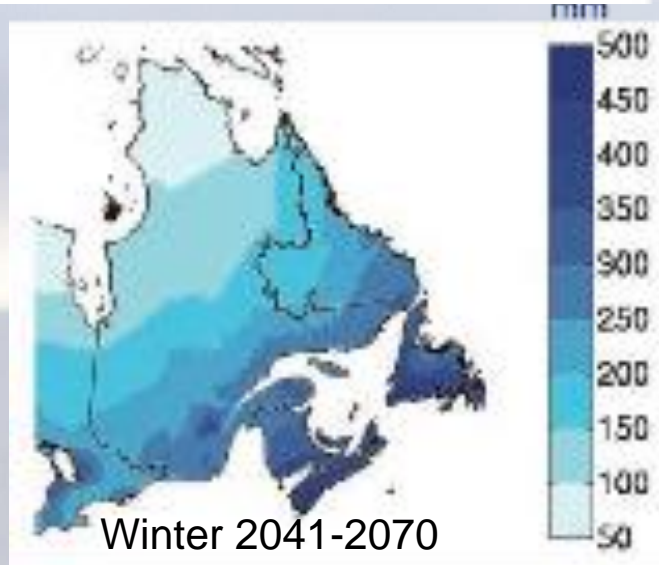
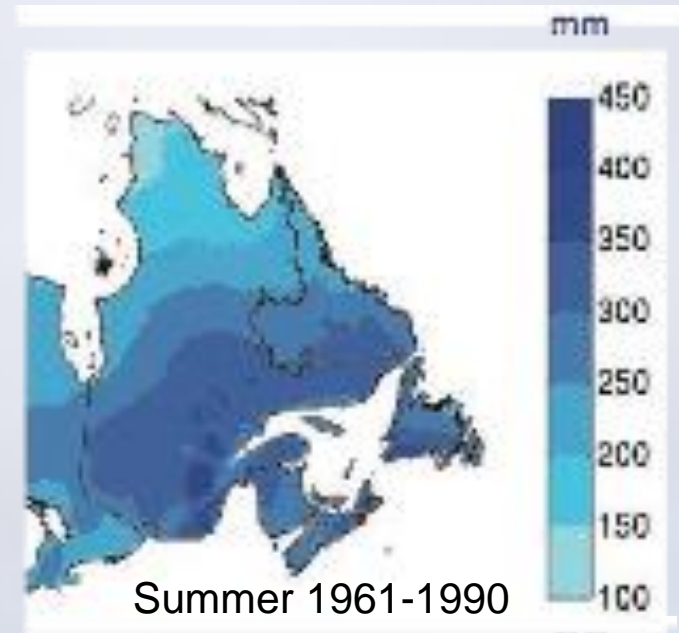
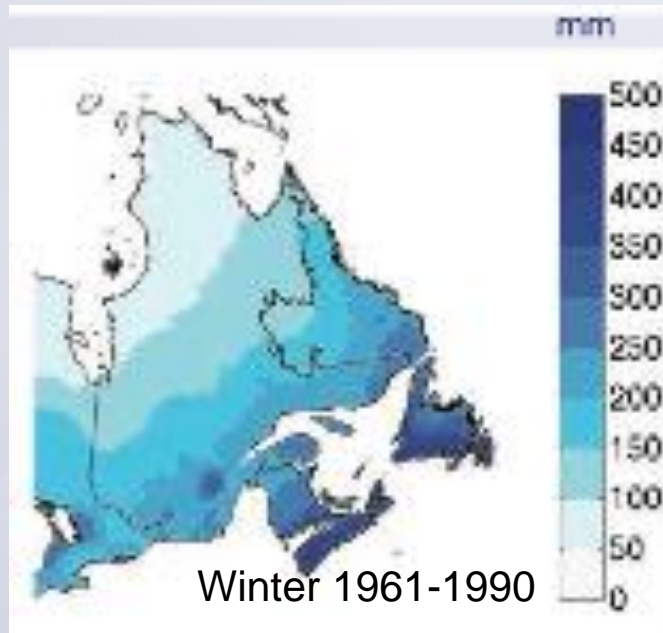
Hiver 1961-1990



Été 1961-1990



# Precipitation Change



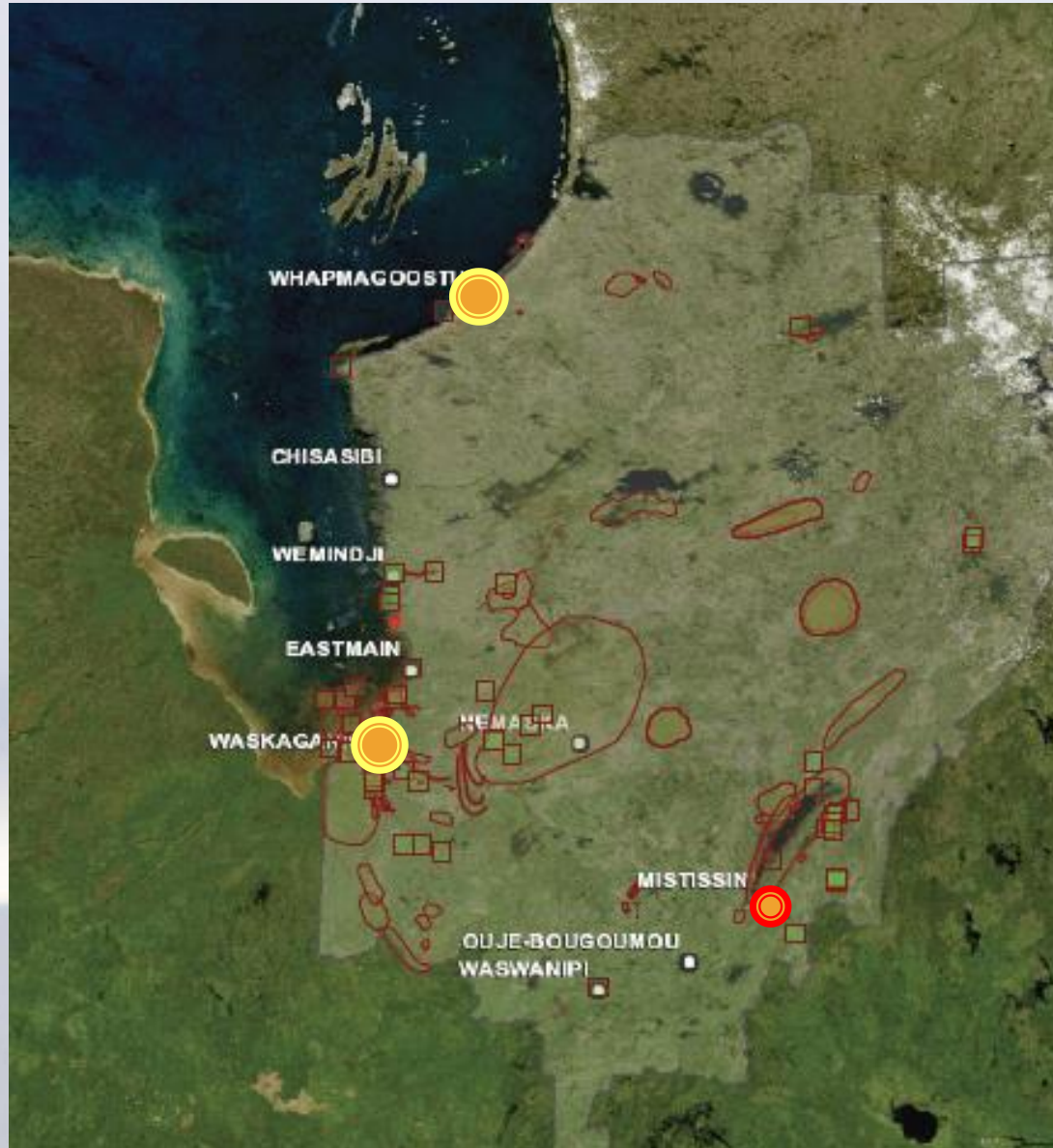
# Overall Goals & Objectives

- ▶ The goal of the study was to:
  - Improve the understanding of the environmental implications of climate change from the Cree perspectives;
  - Improve the understanding of the human implications of climate change, with a specific focus on the impacts on hunters, trappers and other community members;
  - Identify the vulnerabilities to climate change, as well as the possible avenues for adaptation to its impacts;
  - Enhance awareness and encourage Cree participation in adaptation measures.
  
- ▶ Objectives included
  - Disseminate information on climate change
  - Record and map observed changes and their impacts
  - Identify vulnerabilities and priority for adaptation strategies
  - Examine future needs for monitoring or actions
  - Contribute to capacity building in the Cree communities





# Study Area



# Participation

- ▶ Project presented to the 9 Cree communities
- ▶ 3 participating Cree communities selected based on:
  - community-level interest;
  - two main climate gradients in the region (north-south; coastal-inland); and,
  - allow the consideration of differences in thermal regimes, precipitation distribution, as well as other important considerations; different wildlife resources.
- ▶ Structure of project
  - Creation Steering Committee and Coordination Committee (*Day to day activities*)
  - Local community presence through the local CTA
  - Locally hired researchers
  - Support from outside expertise and regional Cree organisations



# Methodology

- ▶ 2009 community workshops and individual interviews
  - the *key categories of changes* associated with climate change;
  - the potential *vulnerabilities* to local land uses and communities caused by climatic change; and
  - options and priorities for *adaptation* actions.
- ▶ Interviews conducted by local community research assistants (hired and trained)
- ▶ Information digitally recorded and mapped and integrated in the Cree Climate Change Geoportal
- ▶ 2010 Follow-up workshops, communication of results, validation, adaptation actions, community reports and Cree Geoportal.





# Reports, Tools and Materials

- ▶ Summary Climate Change information developed for community distribution in Eeyou Istchee
- ▶ Workshop Reports and influence diagrams
- ▶ Identification of vulnerabilities and adaptation options for each community
- ▶ Development of a geographic information database
- ▶ Establishment of a project website for sharing information

# Geoportal for Eeyou Istchee

► ABOUT  
► RESOURCES  
► CONTACT

LOG IN

username:

password:

Login

WELCOME



Welcome to the Geo Portal for Eeyou Istchee.

**Non Registered Users**  
These maps are available to the public:

General Map  
Quick Find Map  
Itineraries Map  
Stories and Placenames  
Climate Change Map  
NIMS

Click below for a guest account.

CTA Guest Account  
COTA Guest Account  
Mistissini Guest Account  
Niskamoon Guest Account

## METADATA



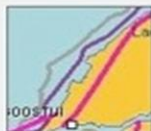
This section will take you to the GeoConnections Discovery Portal where you can search for additional information available for the Cree territory.  
Click here to view this section

### Compatibility Issues

The Interactive Maps will require Internet Explorer 6 or above to run. If you do not have IE please update your browser.



## GENERAL MAPS



This section provides access to a variety of geospatial layers available for Eeyou Istchee including thematic information, topographic maps and satellite images. It also provides access to important documents relevant to the geospatial layers shown on the map.

[Click here to view this section](#)

## CTA MAPS



This section provides access to the CTA Cabins Map Application and the Trapline Map. You must be a registered user with the Cree Trappers Association to access these maps. You can also use this section to access the cabins insurance form and the trapline transfer form.

[Click here to view this section](#)

## COTA MAPS



This component provides access to the Outfitting Map and database, Tourism Map and Community Maps. It also facilitates access to new outfitting applications, license renewal and the to new non-Cree applications subject to the right of first refusal.

[Click here to view this section](#)

## MISTISSINI



This section provides access to information related to the ATO Park Infrastructure as well as a variety of geospatial layers including thematic information, topographic maps and satellite images.

[Click here to view this section](#)

[Cree Stories and Placenames](#)

## NISKAMOON



The Niskamoon Information Management System (NIMS) consolidates information about Niskamoon-funded projects in a geo-referenced format. NIMS is a publicly available database and includes minutes of board meetings, resolutions and policies.

[Click here to view this section](#)

## CLIMATE CHANGE



Indian and Northern Affairs Canada has funded a project for the "Identification of Climate Change Impacts and Adaptation Measures for the Hunters, Trappers and Communities of Eeyou Istchee".

[Click here to view this section](#)





# Climate Change Geoportal

CTA Climate Change - Google Chrome

app.creegeoportal.ca/climatechange/?sessionid=hpu9q7mnksvqdreormcegl1qn6

CTA Climate Change v1.0

Zoom In Zoom Out Pan Full Extent Prev Extent Next Extent Map Info

## Map details

- Map Layers
- Years of Climate Change Observation
- Search
- View Climate Change Record - [ID#2009-143]

Edit or View Existing Climate Change OI

Edit Discard Cancel Zoom To Submit

## Climate Change Information

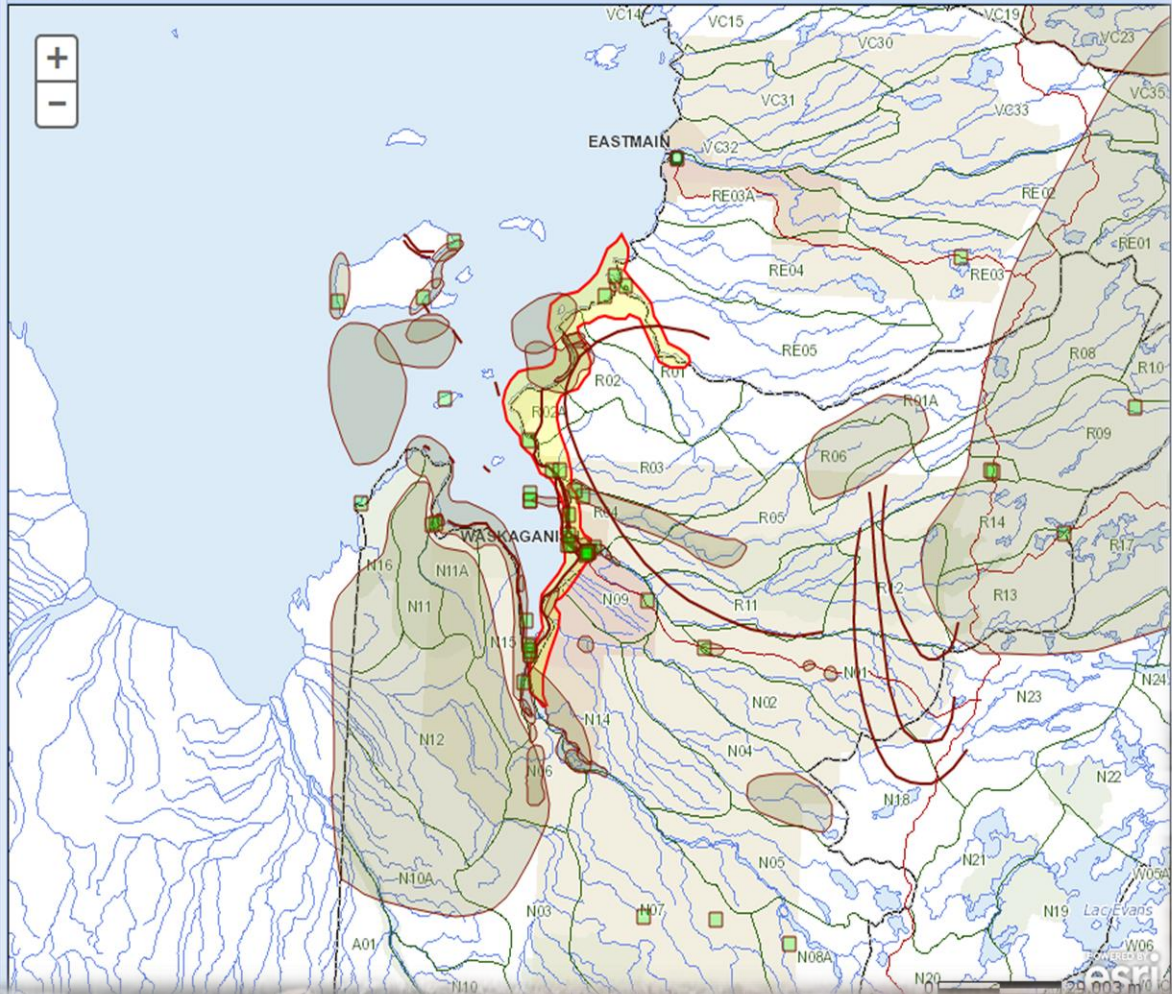
Id	2009-143
Theme	Wildlife
Category	Mammals
Total Area	81179.689 km <sup>2</sup>
Perimeter	285.779 km

Info Photo

## Climate Change Attributes

Observation	Moose:
Community	Waskaganish
Changes	More moose along the bay
Period Of Change	23-24 septembre 2009
Impact	

## Area map





# Summary for Whapmagoostui

OBSERVATIONS	IMPACT	TYPE	POSSIBLE SOLUTIONS	RESPONSIBILITY
<ul style="list-style-type: none"> <li>Late freeze-up/early break-up</li> <li>Changes in snow quality and quantity</li> <li>Changes in ice quality (thinner)</li> <li>Bad ice along the coast</li> <li>Weather harder to predict</li> </ul>	Dangerous traveling conditions	Safety Food security	<ul style="list-style-type: none"> <li>Monitoring of ice conditions along main traveling path on the bay and inland</li> <li>Promoting the use of flotation suit for people traveling by skidoos on the Bay</li> <li>Developing an awareness program in the community and in the school</li> <li>Building more Landing strips in camps</li> </ul>	Police and Safety department are marking ice path on an ad-hoc basis. The program could be made permanent if we secure funding
	Shorter hunting season	Economic		
	Less land use means less control	Political Cultural		
	Access to camp in spring is dangerous because of thin ice	Safety Economic		
<ul style="list-style-type: none"> <li>Change in river level</li> <li>Sand bar in the River</li> <li>Beluga are rare in the river</li> </ul>	Dangerous traveling conditions	Safety	<ul style="list-style-type: none"> <li>Installing channel marker in the River</li> </ul>	
	Loss of a resource ?	Food security?	<ul style="list-style-type: none"> <li></li> </ul>	
<ul style="list-style-type: none"> <li>Skinnier Caribou</li> <li>Less snow geese</li> </ul>	Access to resources	Food security	<ul style="list-style-type: none"> <li>Exchange with other communities</li> <li>Sending hunting parties to get caribou for the communities</li> </ul>	Done on an ad-hoc basis by some hunters
<ul style="list-style-type: none"> <li>More polar bear</li> <li>More black bear</li> <li>Change in black and polar bear behaviour</li> </ul>	Danger to people and property (camp)	Safety	<ul style="list-style-type: none"> <li>Monitoring polar bear around the community</li> </ul>	
<ul style="list-style-type: none"> <li>No more seals</li> <li>Whitefish and trout are smaller</li> <li>More sucker fish</li> </ul>	Lost of resources	Food security	<ul style="list-style-type: none"> <li></li> </ul>	

# Summary for Waskaganish

OBSERVATIONS	IMPACT	TYPE	POSSIBLE SOLUTIONS	RESPONSIBILITY
<b>Thinner Ice</b>	Dangerous traveling conditions	Safety Food security Health	<ul style="list-style-type: none"> <li>Monitoring of ice conditions along main traveling path on the bay and inland</li> <li>Promoting the use of flotation suit for people traveling by skidoos on the Bay (Whapma)</li> <li>Developing an awareness (certification?) program in the community and in the school</li> <li>Ice roads follow-up website</li> </ul>	Band Council CTA Committee with elders, tallyman
<b>Earlier Break-up</b> <b>Late Freeze-up</b>	Shorter hunting season	Economic Food security Health		
<b>More open water in the Spring</b>	Less land use means less control	Political Cultural		
	Access to camp in spring is dangerous because of thin ice	Safety Health Economic		
<b>Stronger Wind</b>	Dangerous traveling conditions Impact on infrastructures	Safety Food security Health Infrastructure	<ul style="list-style-type: none"> <li>Warning system</li> </ul>	
<b>Shorter ice cover</b>	Coastal erosion	Infrastructure	<ul style="list-style-type: none"> <li>Protection of coast around village and camps</li> <li>Relocation of camps</li> </ul>	
<b>Less Caribou</b> <b>Change in geese behaviour</b>	Access to resources	Food security Health	<ul style="list-style-type: none"> <li>Exchange with other communities</li> </ul>	
<b>More polar bear</b> <b>Change in black bear behaviour</b>	Danger to people and property (camp)	Safety	<ul style="list-style-type: none"> <li>Monitoring polar bear around the community</li> </ul>	

# Summary of Main Issues

Observations	Impacts	Solutions
Change in weather patterns	<ul style="list-style-type: none"><li>• Safety</li><li>• Access to land</li></ul>	Monitoring
Change in ice and snow quality	<ul style="list-style-type: none"><li>• Food Security</li><li>• Health</li></ul>	Awareness Training Monitoring
Change in animals and plants	<ul style="list-style-type: none"><li>• Economic</li><li>• Infrastructure</li><li>• Cultural</li></ul>	Monitoring



# Wildlife Issues in EMR

- ▶ Waskaganish
  - Increasing presence of polar bears in the EMR islands
  - Changing patterns in snow geese migration
- ▶ Whapmagoostui
  - Polar bear (behaviour and number)
  - Beluga (less common in the river mouth)
  - Changing patterns in snow geese migration



# Moving Ahead



# Local Climate Change Committees

- ▶ A short term need identified by the communities and the study team
- ▶ Potential members include:
  - CTA, Safety Resp., LEA, Fire chief and Police chief Cree Health Board, Cree School Board
- ▶ Possible Role:
  - Identify local priorities to address climate change impacts
  - Prepare and review existing emergency response plans for winter travel and/or provide additional safety equipment, for example, GPS tracking systems
  - Identify funding sources and request funding
  - Follow up on the adaptive actions identified
  - Build capacity in the communities



# Monitoring

- Wildlife in the EMR region (Polar and black bear, beluga, snow geese)
- Collect data on ice and weather conditions (for example, weather stations, still cameras, ice probe, water level gauge)
- Monitor the main travelled ice routes and implement an awareness program and warning system (example of Nunavik)
- Youth should be involved in monitoring (learning how to collect data and analyze it)



# Security Training and Awareness Programs

- Should target youth (but not only youth)
- Part of Cree school curriculum and possibly Ashumi
- Involvement of Tallymen & Elders
- Possible certification



# Food for thought...

- ▶ Wildlife Research
  - Increase monitoring effort in identifying climate-sensitive species and detecting change
  - Climate Change Vulnerability Index (Young et al. 2010) as a potential tool for assessing species vulnerability.
  - Studying competition between new species and species already present
  - Understanding adaptive behaviour of species in the context of climate change
  - Identify specific management actions with regard to climate change impacts
- ▶ Implementation of the agreement should strive to consider climate change influences in management decision: regional & local level, short and long-term effects.
- ▶ Establish funds/program for land users to enable project to mitigate, adapt and/or understand effect climate change on wildlife



**Meekwehch ❖ Nakurmiik ❖ Thank you**