Climate Change in Eeyou Istchee
Identification of Impacts and Adaptation Measures for the Cree Hunters, Trappers and Communities

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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

Winter 1961-1990

Summer 1961-1990

Winter 2041-2070

Summer 2041-2070

Source: Ouranos, Savoir s’adapter 2010
Precipitation Change

Winter 1961-1990

Summer 1961-1990

Winter 2041-2070

Summer 2041-2070

Source: Ouranos, Savoir s’adapter 2010
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
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
Climate Change Geoportal

CTA Climate Change v1.0

Map details
- Map Layers
- Years of Climate Change Observation
- Search
- View Climate Change Record - [ID#2009-143]
- Edit or View Existing Climate Change Oil
- [X]

Climate Change Information
- Id: 2009-143
- Theme: Wildlife
- Category: Mammals
- Total Area: 81179.689 km²
- 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

Map: EASTMAIN

Legend
- Red: New
- Green: Old
# Summary for Whapmagoostui

<table>
<thead>
<tr>
<th>OBSERVATIONS</th>
<th>IMPACT</th>
<th>TYPE</th>
<th>POSSIBLE SOLUTIONS</th>
<th>RESPONSIBILITY</th>
</tr>
</thead>
</table>
| • Late freeze-up/early break-up  
• Changes in snow quality and quantity  
• Changes in ice quality (thinner)  
• Bad ice along the coast  
• Weather harder to predict | Dangerous traveling conditions  
Shorter hunting season  
Less land use means less control  
Access to camp in spring is dangerous because of thin ice | Safety  
Food security  
Economic  
Political Cultural  
Safety Economic | • Monitoring of ice conditions along main traveling path on the bay and inland  
• Promoting the use of flotation suit for people traveling by snowmobiles on the Bay  
• Developing an awareness program in the community and in the school  
• Building more Landing strips in camps | Police and Safety department are marking ice path on an ad-hoc basis. The program could be made permanent if we secure funding |
| • Change in river level  
• Sand bar in the River  
• Beluga are rare in the river | Dangerous traveling conditions  
Loss of a resource? | Safety  
Food security? | • Installing channel marker in the River | |
| • Skinnier Caribou  
• Less snow geese | Access to resources | Food security | • Exchange with other communities  
• Sending hunting parties to get caribou for the communities | Done on an ad-hoc basis by some hunters |
| • More polar bear  
• More black bear  
• Change in black and polar bear behaviour | Danger to people and property (camp) | Safety | • Monitoring polar bear around the community | |
| • No more seals  
• Whitefish and trout are smaller  
• More sucker fish | Lost of resources | Food security | • | |
<table>
<thead>
<tr>
<th>Observations</th>
<th>Impact</th>
<th>Type</th>
<th>Possible Solutions</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinner Ice</td>
<td>Dangerous traveling conditions</td>
<td>Safety. Food security</td>
<td>• Monitoring of ice conditions along main traveling path on the bay and inland</td>
<td>Band Council. CTA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health</td>
<td>• Promoting the use of flotation suit for people traveling by skidoos on the Bay (Whapma)</td>
<td>Committee with elders, tallyman.</td>
</tr>
<tr>
<td>Earlier Break-up.</td>
<td>Shorter hunting season</td>
<td>Economic. Food security</td>
<td>• Developing an awareness (certification?) program in the community and in the school</td>
<td></td>
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<tr>
<td>Late Freeze-up</td>
<td></td>
<td>Health</td>
<td>• Ice roads follow-up website</td>
<td></td>
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<tr>
<td>More open water in the Spring</td>
<td>Less land use means less control</td>
<td>Political. Cultural</td>
<td></td>
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<tr>
<td></td>
<td>Access to camp in spring is dangerous</td>
<td>Safety. Health.</td>
<td></td>
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<tr>
<td></td>
<td>because of thin ice</td>
<td>Economic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stronger Wind</td>
<td>Dangerous traveling conditions</td>
<td>Safety. Food security</td>
<td>• Warning system</td>
<td></td>
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<tr>
<td></td>
<td>Impact on infrastructures</td>
<td>Health. Infrastructure</td>
<td></td>
<td></td>
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<tr>
<td>Shorter ice cover</td>
<td>Coastal erosion</td>
<td>Infrastructure</td>
<td>• Protection of coast around village and camps</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Relocation of camps</td>
<td></td>
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<tr>
<td>Less Caribou Change in geese behaviour</td>
<td>Access to resources</td>
<td>Food security. Health</td>
<td>• Exchange with other communities</td>
<td></td>
</tr>
<tr>
<td>More polar bear Change in black bear behaviour</td>
<td>Danger to people and property (camp)</td>
<td>Safety</td>
<td>• Monitoring polar bear around the community</td>
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# Summary of Main Issues

<table>
<thead>
<tr>
<th>Observations</th>
<th>Impacts</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in weather patterns</td>
<td>• Safety</td>
<td>Monitoring</td>
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<tr>
<td></td>
<td>• Access to land</td>
<td></td>
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<tr>
<td>Change in ice and snow quality</td>
<td>• Food Security</td>
<td>Awareness</td>
</tr>
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<td></td>
<td>• Health</td>
<td>Training</td>
</tr>
<tr>
<td></td>
<td>• Economic</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Change in animals and plants</td>
<td>• Infrastructure</td>
<td></td>
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<tr>
<td></td>
<td>• Cultural</td>
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</tr>
</tbody>
</table>
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
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