The Naskapi Climate Change and Caribou Project

Assessment of Climate Change Impacts on the Caribou, the Land, and the Naskapi Nation, and Identification of Priority Adaptation Strategies

Kawawachikamach Community Workshop Report – February 2012

Have you noticed changes in the weather, on the land, the ice and the snow?

Have you observed changes in behavior, health status, and population trends of caribou?

Is climate change affecting you and your activities on the land?

Looking at the effects, what can be done at the individual and community level to adapt or take advantage of future changes and effects?

How can we monitor climate change?

WHAT ARE THE GOALS OF THE PROJECT?

- To deepen our understanding of the impacts of climate change on the caribou, the land, and Naskapi society
- To identify the impacts for which it is necessary to be especially careful
- To develop tools, community monitoring processes and guidance documents that will help to adapt to the impacts of climate change on the caribou, the land and resource use in the Naskapi territory in ways that are appropriate to the Naskapi context
- To increase awareness about climate change and foster Naskapi participation in finding climate change strategies
- To train young Naskapi in climate change and caribou monitoring.

Our climate is changing…

We need to understand how this could affect caribou, our land and our life so we can plan to adapt to these changes. Planning for our community's future is about making decisions that will be good for us and our grandchildren. Many factors influence our planning and one of these should also be climate change.

Scientists have been studying the effects of climate change over the world and are now in a better position to forecast what is coming our way in the next few years if the warming trend continues.
It is an important time to record the knowledge held by Naskapi, especially the wisdom of the Elders. The knowledge of our elders and hunters is based on many years of life on the land and with the caribou is precious for our understanding of climate change. It can help us define ways to adjust to change and cope with the impact.

This is a step in developing a traditional knowledge research and monitoring program for climate change and caribou in the Naskapi territory, involving participation of elders, hunters and youth. Traditional knowledge was documented during the workshop.

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The observations presented in this report were discussed during the NNK Community Workshop, held in February 2012. Over the next weeks interviews with hunters will be carried out. We would appreciate it if you could give us feedback during the next workshop, planned for April 2012.

CLIMATE CHANGE AND CARIBOU IN KAWAWACHIKAMACH – RESULTS OF THE WORKSHOP

The workshop was held in February 2012 at the Naskapi Community Center. A total of 45 elders and participants from the community were present and shared their knowledge and observations on changes in the climate and caribou.

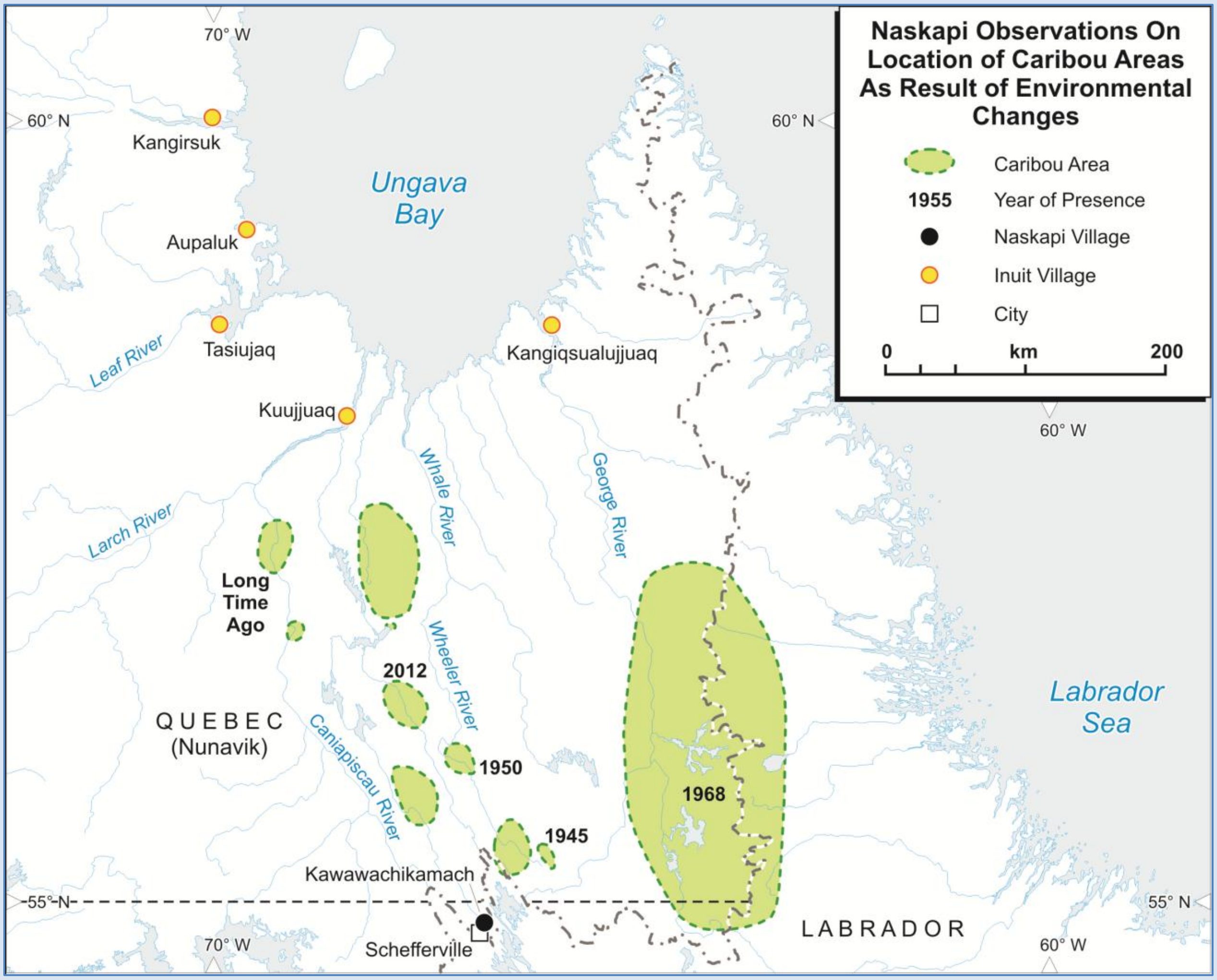
Here is a summary of observations made by the elders, and a few examples of impacts that these changes in weather patterns have on the caribou, land use and Naskapi society.

CATEGORY	OBSERVATION/CHANGE	IMPACTS
Weather	▪ The weather has gotten warmer (overall). ▪ Weather changes suddenly nowadays. It is more unpredictable than in the past. ▪ The hole in the atmosphere changes the climate.	▪ It is more difficult to predict the weather now. People feel less comfortable to read the weather. ▪ More equipment is needed now when traveling on the land to guarantee that hunters are safe if weather changes suddenly. ▪ Planning for travel on the land is more difficult because of increased unpredictability of weather conditions.
Temperature	▪ Warmer (overall) ▪ Very cold days are less frequent than they used to be in winter. ▪ There used to be more extreme cold 10 years ago. ▪ Cold is not as severe as in the past.	▪ It was nice and cold in our winter camps, now it is not anymore.
Seasons	▪ Winter, summer have gotten warmer. Spring has warmed up, too. ▪ Summers are longer. ▪ Cold weather comes later in fall. ▪ Winter is two months shorter. ▪ Less snow in winter. ▪ Spring and winter changed the most. ▪ January used to be very cold, but not anymore. ▪ The cold seasons are shorter.	▪ Some trails can't be used anymore. ▪ Hunting season/time needs to be adapted.
Rain	▪ There is less rain than before. ▪ More rain in the first rainfall. ▪ More rain in summer, esp. last two years	
Snow	▪ Less snow (in general) ▪ There is no big snowfall in March as used to be. ▪ The first snowfall arrives two months later (in October/November). ▪ Less snow than in the past, esp. in December. ▪ The type of snow changed. ▪ The number of snowstorms is less.	▪ Less snow on the ground in spring makes travel on the land more difficult. ▪ Certain travel routes along the shore of lakes are no longer accessible because of changes in snow conditions. ▪ Limited travel out on the land meant that people have been eating less game/country food.
Ice (on lakes and rivers and in general)	▪ Since the last three years some lakes around Kawawa do not freeze at all. ▪ Spring ice is less thick. ▪ The lakes and rivers freeze over later (late	▪ In the past thick ice made access to wildlife easy, now it becomes difficult. ▪ Changes in ice and temperature on lakes make it harder to practice ice

	November). ▪ Rivers do not freeze through. ▪ Lake ice is thinner. ▪ Small streams are no longer frozen, there is snow on top but it’s not frozen under the snow. ▪ Lake ice thaws sooner and faster (in May). ▪ There used to be 3-4 feet of ice on the lakes, now it is around 2 feet dep. ▪ Holes on the ice are causing water on the ice.	fishing in winter. ▪ We have to wait longer to go out on the lake. ▪ When travelling on the land, using unsafe trails is dangerous for younger people and less experienced hunters. That is why we are teaching hunting safety in school now. ▪ There are more accidents on ice (i.e., people have fallen through the ice). ▪ The conditions of the ice are different, more difficult to pass. One cannot travel along the shore of lakes by ski-doo anymore. ▪ Trails in spring and winter are affected. ▪ Need to adjust travel routes depending on where safe areas are.
Caribou	▪ The caribou are less abundant. ▪ Since 6 years we do not see caribou anymore around Kawawa. ▪ Caribou tends now to stay at Labrador area throughout the year. ▪ The caribou used to roam the streets of Kawawa, now it stays only at the George River in the North ▪ Caribou group sizes have decreased. Small groups are now scattered around the land. In the past there were large herds. ▪ The cycle of the caribou changed. Caribou migration patterns have changed: ▪ The size of the caribou is smaller. ▪ Higher calf mortality. ▪ Caribou are thinner than they used to be. ▪ The fat of the caribou is reduced; in the past the fat was thick like 4 fingers, now it is only 2-3 fingers. ▪ The body weight of the caribou is reduced. ▪ Sickness in the bones of the caribous. ▪ Caribou are less healthy. They have cancer. ▪ Caribous have been observed to be infected with parasites. ▪ The behaviour of caribou has changed. ▪ The fur of caribou has become thinner.	▪ It takes longer to hunt caribou and fewer caribou are killed in the community. ▪ There has been a decrease in the amount of caribou being consumed, as caribou migration patterns have changed. ▪ People have to use bush planes now for caribou hunting. ▪ People used to boil the bones of caribou, now there are abnormalities in bones. ▪ The caribou meat tastes different. It used to taste better before. People have to be more careful about the meat they are eating. ▪ Decreasing caribou hunt means that people are relying more on store-bought food today. It affects human health.
Bear	▪ There are more bears in summer than before.	▪ Dangerous
Wolves	▪ There is an increase in wolves.	
Moose	▪ Moose is new to the area. ▪ There was no moose in the area 30 years ago. They are moving in to this region.	
Fox	▪ There are a lot more foxes (red fox) since five years in and around Kawawa and Schefferville. ▪ Fox population is increasing. ▪ Foxes are not scared. There come close to houses. ▪ Strange behavior of fox.	▪ Dangerous for spread of diseases, i.e. rabies. ▪ Fox can transmit rabies to dogs. Dangerous for human health.

Small mammals	▪ There is an increase of marten in the area. ▪ Minks are more abundant. ▪ Small mammals are less in the area.	
Geese and waterfowls	▪ There are less geese. ▪ There are fewer ducks.	▪ Negative impact on goose hunting. ▪ Ducks taste different.
Ptarmigan	▪ Ptarmigans decreased. ▪ In February, there used to be plenty of Ptarmigans in Kawawa. This year there are not seen anymore.	
Birds	▪ There are more bald eagles. ▪ In summer specific birds eat insects, now these birds are gone. ▪ We have lost many birds.	
Fish	▪ Fish populations have changed; there is less fish. ▪ There are less trout. ▪ The fish are smaller.	▪ Less fish affects Naskapi food security. ▪ Abnormalities in wildlife have impact on human health.
Insects	▪ Flies and mosquitos that were commonly observed in the region are now seen less often.	
Plants and Trees	▪ Trees and plants changes when the weather changes. ▪ Plants used to be healthier near Kawawa. ▪ Growth of tamarack is strange nowadays. ▪ Tamaracks do not have the color that there used to have in the past. ▪ The needles of the spruce changed. ▪ There are more forest fires. ▪ There is less vegetation growing in general near Kawawa. ▪ Plants do not bloom as well as they used to in the past.	
Berries	▪ There are less berries. ▪ Berries are not growing anymore near the airport. ▪ The coloration of berries changes from red to orange/yellow. ▪ Berries are much drier today. Berries are of not good quality. ▪ Berries are smaller.	▪ Animals feed on berries; less berries has an impact on their food availability. ▪ Change of the diet of animals has implications on the health of the people.
Land	▪ The entire landscape changes. ▪ Trees are brown from dust in summer. ▪ Drier land conditions. ▪ Land freezes later.	
Environmental pollution	▪ Increasing levels of environmental pollution and contaminants. ▪ Fish is affected by pollution. ▪ Numerous outfitting camps in the central part between Schefferville and Kujjuaq, where people are leaving their garbage on site.	▪ Pollution gets disseminated to others fishes through the food chain, and ultimately to humans. ▪ Outfitting camps are impacting caribou due to pollution, noise. Caribou changes routes to avoid the camps.
Mining	▪ Noise and shaking of the ground due to the mines is affecting the caribou. ▪ The caribou stopped coming around Kawawa a couple of years ago, it is about the same time the drilling started.	▪ The start of new mining will play a major role on caribou habitat. ▪ Mining activities causes animals to leave their natural habitats and start coming closer to human spaces.

Community elders identified and recorded spatial information on caribou migration patterns and impacts on summer and winter range of caribou.



Community elders are mapping the changes in caribou changes in caribou numbers and migration in Naskapi territory.

Mr. Philip Einish, Mr. David Swappie, Mr. Donald Peastitute are documenting the changes in caribou migratory movements because of environmental

WHAT CAN BE DONE TO ADDRESS IMPACTS OF CLIMATE CHANGE?

CREATION OF A CLIMATE CHANGE WORKING GROUP

The workshop participants proposed as action to:

- establish a Naskapi climate change working group.
- create jobs for monitoring and environmental officer

The working group could include the members of the community who are currently enrolled in the Naskapi Rangers Program.

MONITOR CLIMATE CHANGE AND CARIBOU IN NASKAPI TERRITORY

A key action to consider is a way to keep close track of changes that are occurring in caribou and on Naskapi territory as a result of climate change:

- Develop a framework and strategic work plan for a Caribou Naskapi Traditional Knowledge Monitoring Program with concrete objectives (what), clearly defined methods (how), timelines (when), and responsibilities (who).
- Initiate a youth program in caribou monitoring and stewardship using storytelling as a tool.

The following climate change **indicators** need to be observed:

• Early melting of ice on lakes and rivers
• Monitor trails and implement a warning system through the radio, Naskapi website and other means.
• Changes in snow quantity / quality and depth
• Changes in caribou behavior, health, migration patterns
• Changes in predators (wolves)
• Foxes, • Ptarmigan, • Appearance of new animals
• Berries, plants and trees

RAISE AWARENESS ON CLIMATE CHANGE AND CARIBOU

- Respect people, caribou, land and culture.
- Elaboration of school curricula on climate change and caribou:
  - Learning Unit 1) *Why do we care* = introduce students to caribou management, and to understand what climate change is and how it occurs;
  - Unit 2) *What is its name* = student will understand the different caribou herds and bout the value of caribou to Naskapi and northern communities ;
  - Unit 3) *Stressors* = students will learn how environmental, climatic and human development influence behaviour, migration, and health of caribou throughout their seasonal life cycle;
  - Unit 4) *Impacts* = Focus on understanding the effects of climate change in their region on impacts on Northern Animals; Impacts on land, hunting & lifestyles; local stories, knowledge, and observations;
  - Unit 5) *Research* = students will gain an understating of the work conservation biologists do throughout their annual cycle, Traditional Knowledge and Caribou Management;
  - Unit 6) *What I can do?* = discussion in class on contribution at home, at school, in our communities to solutions for climate change and caribou conservation
- Organize outdoor land camps for youth to learn traditional skills from community elders and experienced community members

OBSERVATIONS, IMPACTS AND ADAPTIVE ACTIONS

Potential adaptation actions were identified by workshop participants and the project team for a Climate Change Adaptation Action Plan. They are illustrated in the diagrams. Interviews will be carried out and a follow-up workshop will be held in later in 2012 to complete and finalize the Climate Change Adaptation Action Plan.

Hunting and Travelling

Observation	Impacts	Adaptation Actions	Time Frame
Earlier freeze-up and melting of lakes and rivers Thinner ice Less snow; Different type of snow	• Dangerous travel • Impact on hunting and land-based activities • Difficult access to wildlife • Impede ice-fishing • Affects trails in Winter and Spring	• Warning system • Safety Education	Short-term
		• Monitoring of ice conditions of trails on inland and lakes • Awareness program	Mid-term
Less snow; Different type of snow	• Hinder travelling in Winter and Spring • Inaccessibility to travel routes along the shore of lakes • Impact on trapping	• Monitoring • Find alternative travel routes • Use Naskapi radio for regular reporting on travel and camp conditions • Use small laminated maps (for ski-doo) to document changes on the land that could affect travel	Short-term
Warmer Winter, Summer and Spring More rain in summer	• More difficult planning for travel on the land • Dangerous travel • Hunting season/time needs to be adapted • Impede travelling in Summer • Some trails cannot be used	• Mentor programs between experienced hunters and youth • Continue actual Naskapi caribou hunt monitoring program • Safety Education • Learn from what other northern communities are doing	Mid-term Long-term
More forest fires	• Impact on travelling hunting and harvesting		
Increased unpredictability of weather conditions	• Dangerous travel • More difficult planning for travel on the land		

Diagrams adapted from Center for Indigenous Environmental Resources Inc. 2006. Climate Change Planning Tools for First Nations. & CTA 2010.

When we used to go to Lake John to camp, the ice used to be very thick and there were piles of snow. Today, when you go with a ski-doo on the lake you can hear the ice cracking.

Before the condition of the climate was really good, but now, everything on the land has changed and nothing is the same anymore. Characteristics of snow have changed. Observations from workshop participants.

Animals

Observation	Impacts	Adaptation Actions	Time Frame
Moore wolves Less caribou Decrease in group size Change in caribou cycle Changes in caribou migration Smaller caribou Caribou less healthy Skinner caribou Bad fur quality	• Use of bush planes now for caribou hunting • Hunting season/time needs to be adjusted • It takes longer to hunt caribou and fewer caribou are killed in the community • Food security • Loss of revenue	• Set in place a Caribou Naskapi Traditional Knowledge Monitoring with defined methods (how), timelines (when), and responsibilities (who) • Put in place a process of sharing knowledge on caribou migration between MNRF biologists and hunters • Naskapi caribou hunt monitoring program	Mid-term Mid-term In Progress
Less geese Change in geese behavior	• Less opportunity to hunt geese • Food security	Monitoring	Mid-term
More moose More marten and mink	More opportunities to trap and hunt	More research on impacts of climate change on small animals	Mid-term
More bears in summer Change in bear behavior	Danger to people and	Warning system Safety program	Short-term
Less fish Smaller fish	Food security		
Less Mosquitos and flies	Less birds	Nest monitoring	Mid-term
Changes and unpredictability of weather conditions	• Dangerous travel to camps • Changing conditions of camps increase risk of personal injury • Decreased participation in subsistence activities	• Promote opportunities at school for teaching land skills development, and continue support summer camps • Purchase radio/satellite phones to facilitate communication between hunters and local radio • Emergency shelters on the land • Provide access to safety equipment (GPS, radio) on a loaning basis	Mid-term Long-term

In the past, caribou used to travel in one big herd. Now you see small little groups of 30 or 40, scattered over the land.

Long ago, when there was lots of caribou, the hills where covered, it looked like if the hills were moving.

We haven't seen caribou for six years now.

We used to measure the fat of the caribou by fingers. In the past it was tick like 4 fingers, but now it is about 2 o 3 fingers. The body condition of the caribou changed.

Moose has been increasing over the last years. When I was young there were no moose in the area. Now they are moving in to this region.

Between Kawawa and Kujjuaq are many outfitting camps. The caribou avoids the camps and roam more in the north.

There is too much noise and shaking of the ground because of the mines. This is affecting the caribou. The caribou stopped coming around Kawawa a couple of years ago, it is about the same time the drilling started.

Observations from workshop participants.

Health and Well-being

Observation	Impacts	Adaptation Actions	Time Frame
Anomalies in caribou, fish and other wildlife	Impact on human health, concern that climate change may introduce new diseases	Community monitoring to record observations of abnormalities in wildlife (e.g. parasites, change in coloration, disease)	Long-term
More foxes	Increase of rabies and rabit animals in Kawawa and Schefferville	• Increase stock of human rabies vaccines in CLSC • Supply information in Naskapi of what to do it bitten by a rabit animal	Short-term
Changing weather patterns and unpredictable conditions	Higher risk of injury (reduced personal safety)	• Organise emergency training	Short-term
		• Host elder/Experienced hunter sessions on local radio to discuss safety measures on the land • Establish emergency response plan and assess how well could community respond in worse-case scenario (e.g. group of hunters stranded, plane crash)	Mid-term
Changing weather patterns, travel conditions and species availability Less berries	• Affect access to country foods, • Impacts food security • Increases reliance on store-bought foods (less nutritious)	• Support local harvesting and group hunt • Support food sharing	In Progress
		• Teach about nutrition and preparation of store-bought food in a healthy way • Local food bank	Short-term
		• Teach about local traditional food	Mid-term
Damage to medicinal plants	Loss of healing practices	• Document local plant knowledge • Teach traditional healing practices	Mid-term
Industrial activity/mining	Concerns about environmental pollution	• Community monitoring of land and water resources for contamination • Increase awareness of health consequences of consuming contaminants	Long-term

I am thinking about the country food we used to eat long ago. Today there is diabetes. When we moved here, there was only one case with diabetes. There is social change. It impacts on the health of people.

In the past our grandmothers were teaching their daughters about upbringing, today people use electronics.

Observations from workshop participants.

Culture and Learning

Observation	Impacts	Adaptation Actions	Time Frame
Changing weather patterns and unpredictable weather conditions	People need to develop new, stronger skills to predict weather, watch the land and travel safety. Youth is particularly at risk. Hinder people to participate in traditional subsistence activities, which could affect other ways of traditional life (e.g., values, oral history, and language)	• Organize land camps for youth to learn traditional skills from experienced hunters	In Progress
		• Maintain community site that can be used for multi-purpose cultural programs (moveable tent) • Organize activities for youth to learn/practice traditional skills related to hunting/traveling in different seasons and conditions	Short-term
		• Host elder/Experienced hunter sessions on local radio to discuss safety measures on the land • Promote elder-run programs and activities	Mid-term
		• Organize more opportunities for elders to spent time with youth on the land	Short-term
		• Support opportunities to teach traditional skills and knowledge (e.g. healing practices, story-telling) • Identify opportunities to record and pass on oral history of how Naskpi have adapted to environmental changes throughout their history, involve youth in process andL disseminate among community members (e.g. radio, multi-media) • Train youth in environmental and caribou monitoring (e.g. form environmental stewards, organize a science camp)	Long-term

We need to go back to understand our land.

Observations from workshop participants.

Next…

This workshop facilitated sharing of experiences and key messages from our elders and members of the community. It provided an opportunity for Naskapi Elders to express their concerns in relation to climate change and the preservation of caribou, the land, and Naskapi culture. Elders remain pivotal to the transmission of traditional knowledge to future generations.

Looking forward …

The project team will carry out interviews and held a follow-up workshop in April 2012 to validate the information gathered during the workshop, and receive your feedback and comments. We would especially like to discuss adaptive actions that could be undertaken in the community to monitor climate change and caribou.

If you have any questions/suggestions/comments, in the meantime, or if you wish to learn more about this project, please feel free to contact us.

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