

Cree Nation of Whapmagoostui

Climate Change Adaptation Action Plan



developed by the Cree Nation of Whapmagoostui and the Cree Nation Government

facilitated by InsightShare

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This report is an output from a project managed by the Cree Nation Government and the Cree Nation of Whapmagoostui. It was delivered by InsightShare with the financial support of Indigenous and Northern Affairs Canada.

Report compiled and designed by Marleen Bovenmars. Credit front cover: Frances Bobbish / Credit back cover: Marleen Bovenmars

Why do we need this plan?

Climate change is happening; it is unavoidable, and it will have widespread impacts on human and natural systems. Some regions—like those at more northern latitudes—are experiencing changes faster than others. The Cree Territory of Eeyou Istchee, in the subarctic region of Northern Québec, has experienced an increase in air temperature of 1.5 °C over the past 35 years. Winter temperatures have increased by 2-3 °C over that same period, and could increase by as much as 5.5 °C by 2050. More instances of extreme weather, shifting seasons, and receding sea ice have also been observed. These changes are impacting the Cree communities of Eeyou Istchee in a variety of ways.

Our community Whapmagoostui is located at the mouth of the Great Whale river on the coast of the Hudson Bay. Many impacts caused by climate change are already affecting our way of life. Summers are drier and winters are shorter. The thickness and extent of the ice on the bay, rivers and streams is increasingly unpredictable. The weather is more changeable with more frequent severe weather events. There are fewer berries and they are smaller in size. Wildlife is less healthy and behaving differently. These changes are all of great concern to us as they threaten our land access, food security, health, safety, and infrastructure.

As Cree of Eeyou Istchee we have proven our resilience throughout history, having adapted and kept our traditional practices alive in the face of great environmental and social change. However, the severity of observed and projected climatic changes necessitates urgent action to protect our natural and cultural heritage, identity, livelihoods, health and infrastructure for future generations. It is time for us to come together and plan how we will respond. This report describes our provisional plans to cope with and adjust to current and future climate scenarios.

<u>Click here</u> to watch the video version of our adaptation plan.

"We should work together to combat this issue that is slowly destroying our lives. It is up to us, we are the ones who are responsible for our actions. If we respect our Earth, it will flourish again."

Samson Petagumskum, elder

How was this plan developed?

This plan came out of a community-based participatory project that took place between February and July 2019. The goal of this project was to bring together the community members of Whapmagoostui to identify appropriate solutions to cope with climate change impacts and to increase our resilience.

As a starting point, we used the findings and recommendations from the 'Climate Change in Eeyou Istchee' project by the Cree Trappers' Association (2009-2011). This initiative identified the observed impacts of climate change and adaptation measures for Cree communities (Mistissini, Waskaganish and Whapmagoostui). The main recommendations were: to create local climate change committees, to implement community-based monitoring, to establish safety programs and to involve Cree youth.

To move forward, our project adapted a participatory approach, that included the training of a local coordinator and video team to conduct interviews with community members. In addition, a series of community meetings and screening events were held. The findings and recommendations that resulted from this process are presented in this climate change adaptation plan as well as a 50 minute video. Our hope is that these outputs may guide our community members and other Cree communities in the planning and implementation of actions that will help to lower the risks associated with present and future climate change.



Whapmagoostui

With a population of over 1000 people, we are a very vibrant Cree community rich in culture. We are situated at the mouth of the Great Whale river, on the coast of the Hudson Bay. Our community, Whapmagoostui ($\cdot \dot{d} < \neg d^{\circ} \supset \Delta$ /Wâpamekuštui), which means Place of the Beluga is the most northern Cree community within the 55th parallel, which is in Nunavik, Quebec. We are unique, as we are the only Cree community in this region that requires access by air or boat.

Within this territory, we have lived side by side our Inuit twin community, Kuujjuarapik. We value the practice of our traditional activities and Cree way of life. This includes our Cree language that is still very strong, and the practice of intergenerational knowledge exchange being passed down from our elders to our children. Although our community is deeply rooted in our traditional ways, we also embrace the availability of new technologies that improve the quality of our community's daily lives.

As the land is central to our identity, culture and practices, it is important that we maintain and have decision-making power over the development of our land and its impacts. We have always consciously taken care of the ecosystems on our land and the resources it provides us. Development must be done responsibly and in a way that will protect the environment, maintain our Cree way of life, ensure safe access to the land, our continued practice of traditional activities and the transmission of Cree culture and language.

We can already see and feel the impacts of climate change that have affected our traditional food system, our health and safety, infrastructure and much more. Today, it is important for us to come together to discuss how climate change is affecting our community, and how we can work together to adapt to these changes to preserve our Cree way of life.

<u>Click here</u> to watch the chapter of our video that introduces our community.



Climate change and adaptation

What is climate change? The term climate change describes shifts in Earth's long term weather patterns. Over the past several centuries, human influence on the climate has caused those shifts to accelerate. Our influence on the climate is primarily through greenhouse gas emissions like carbon dioxide, which trap heat and warm the planet.

This then leads to many indirect effects on communities and ecosystems. The terms climate and weather are often confused, but the difference is time scales. Weather is a short term phenomenon, while climate is an average of weather patterns over a long period of time. When we look at the weather forecast, we may be looking for how much it will rain tomorrow, but climate is an average of that rainfall over many years. So when we use the term climate change, we are really describing change on a scale of decades, centuries, and even millennia.

The indirect effects of climate change are wide-ranging. A warmer planet means warmer oceans, with declining sea ice and ice sheets, and rising sea levels. On land, permafrost is retreating, and the average spring snow-cover is decreasing. Extreme weather events like storms and floods are increasing in strength and frequency. Even the seasons are shifting, with summers becoming longer and drier, and winters shorter and wetter. These effects have cascading effects on people and their built environment, and can become cumulative with other stressors like pollution or deforestation.

"Elders have told me, that in the past it was much easier to read the signs of what kind of weather it would be in forthcoming days."

Robbie Kawapit, hunter

These changes are driven by greenhouse gas emissions, which come from things like our cars, power generators, factories, and farms. The most significant greenhouse gas is carbon dioxide, but there are others, including methane and nitrous oxide. They work by trapping energy from the sun that would otherwise escape back into space. This is known as the greenhouse effect.

There are two ways we can respond to climate change: through mitigation, and through adaptation. Climate change mitigation is the act of reducing the long term effects of climate change, mainly through the reduction of greenhouse gas emissions. However, the effects of climate change have already been set in motion. Mitigation will not slow changes down enough to avoid harmful impacts. Climate change adaptation is urgently needed. Adaptation is the act of adjusting to current and future climate conditions.

As Whapmagoostui's Climate Change Adaptation Plan, this document describes the impacts of climate change on Whapmagoostui, as well as possible responses to these impacts developed by the community. It is steeped in the observations and traditional knowledge of generations of Cree, who have lived on this land since time immemorial.

"We should seek for ways to work together in looking after our home, the Earth which was given to us to reside in." Louisa Wynne, Chief, Whapmagoostui First Nation

<u>Click here</u> to watch the "Climate change and Adaptation" chapter of our video.



What is changing in our climate?

In the last decades, our community members have observed many changes in our local climate. We noticed that overall temperatures are higher, that the winters have been shorter and the summers longer. This change in the seasons is most visible in the later freeze-up and earlier breakup of the ice on the bay, lakes, rivers and streams. We have also observed that the weather patterns have become less predictable, with more frequent extreme weather events such as heavy rains, sudden winds and heatwaves.

"The elders were our predictors for upcoming weather. They knew how to read the clouds and the sky. Now there are times that their predictions turn out to be wrong." Jacob Dick, hunter

<u>Click here</u> to watch the "Climate change in our territory" chapter of our video.



Area	Past Trends *	Pro	Projected trends (2050)	
Temperature	Ť	Ť	3.6°C increase in mean air temperature, with a 5.5°C increase in the winter. High regional and seasonal variability.	
Rain	Ť	Ť	13-20% increase in rainfall and more extreme precipitation. High uncertainty about the scale of the increase and regional variability.	
Snow	Ļ	ţ	Large year-to-year variability and likelihood of differing snow trends across the region.	
Weather	Ť	Ť	Weather has become more unpredictable. The intensity and frequency of extreme weather events (storms, droughts etc.) will increase.	
lce	Ļ	Ļ	Ice forms later in autumn and melts earlier in spring.	
Rivers	Ť	Î	2-15% increase in river discharge, but significant variability due to hydroelectric flow modifications. Earlier start of maximum river discharge.	

Past and projected trends for the Eeyou Istchee Territory (Information source: Hennigs & Bleau, 2017) * Past trends have been observed by both Cree land users and scientific studies.



How does permafrost play a role?

Permafrost

Permafrost is a type of soil that remains frozen for at least 2 consecutive years. In Canada, permafrost is present in about 30% of the territory. More specifically to Nunavik, there are different degrees of permafrost and the presence of continuous permafrost is strongest in the most northern parts of the territory. Further south, discontinuous permafrost makes up 50-90% of its landscape. Where Whapmagoostui is situated, the permafrost is discontinuous and scattered, existing beneath roughly 10-50% of the surface.

Changes in the landscape

Due to the effect of climate change on our planet's warming temperatures, permafrost is beginning to thaw and melt away. As ice in permafrost melts, small puddles and ponds of water begin to form on the land's surface. These so-called permafrost ponds are increasingly appearing across the landscape in Nunavik. This can cause the ground to become less stable and slump, which can harm the natural ecosystems on the territory.

Changes in the water and atmosphere

The permafrost ponds are hot spots for the generation of greenhouse gasses, such as carbon dioxide and methane. As permafrost continues to thaw, it increases the emissions of carbon being released from soils and sediment that were previously frozen. The runoff of sediment and soil into the bodies of water can affect the natural ecosystem as it enters into the lake and streams. In the future, as the amount of permafrost ponds continue to form, it would be important to know how to monitor the effects on the water quality.

"One of the main changes as a result of permafrost thaw, that even people from the community can observe is that during the last couple of decades the vegetation has changed a lot. In the past there was less vegetation."

Jérôme Comte, Professor National Institute of Scientific Research



How are the water bodies affected?

The dams

Next to global warming, another environmental factor that influences many of the changes presented in this report is the La Grande hydropower complex. We have observed many changes in our environment since the construction of the complex. However, as climate, weather and biodiversity patterns are very complex, it is hard for us to distinguish to what degree the changes that we observe are due to climate change and to what degree they are caused by the dams or other human influences. In most cases the changes we observe are the result of a complex combination of factors.

Rivers, streams and lakes

We have observed that the width and the flow of the Whapmagoostui river have decreased upstream. Nowadays it looks like the river only flows in the middle. In addition, the amount of water in the rivers and streams has diminished and as a result the water level is not as high as it used to be. We also noticed that lakes and ponds are drying up.

"The water is diminishing so much. I am very concerned because everyone uses the water like the animals, plants, and human beings." Eddie Masty Sr., elder and hunter

The bay

There has been a significant change in the ice on the bay. Along the North and South coast, the ice is thinner and hence not as strong and predictable as in the past. Only the shores are frozen and whenever a strong wind blows, the ice drifts from the coast. We believe that, next to climate change, the dams play a key role in the diminished ice quality. When the doors of the dams are opened a lot of fresh water is released. This fresh water flows into the bay and mixes with the bay water. It is our understanding that the mixing of the freshwater and the salty bay water has negative impacts on ice conditions. We have also observed that the surface temperature of the bay water has increased.

"From the air, I noticed that the bay water looked different, I could tell it was mixed with fresh water." Samson Petagumskum, elder

<u>Click here</u> to watch the "Climate change, dams and water" chapter of our video.

How is our travel affected?

Unpredictable weather

Many of us have noticed how our weather has become more unpredictable and how it can change very quickly and drastically. Nowadays, we sometimes have three or four different types of weather in one single day. The same goes for the wind, we can sometimes observe four different wind directions in a day. Strong winds or heavy rains can appear quickly. All of these unpredictable and sudden changes can cause safety risks for people traveling on the ice or on the water in boats.

"The bad weather comes abruptly. It gets windy, rainy, or snowy. It wasn't like that back then." Sometimes people can't be outdoors when the weather is like that."

Eliza Kawapit, elder and hunter

Walking on the snow

Overall, the timing and quality of snow has been changing from year to year. It has become less predictable. Another clear change we observed is in the hardness of the snow. In the past, the snow used to be harder. As a result, we could walk without snowshoes more often, especially in the spring, and it was easier for people to get things such as firewood. Nowadays, the snow is often only hard for a short period in the morning.

Travel on the ice

Our community members who have been traveling on the ice for many years have clearly noticed how the ice conditions have changed drastically. Ice has been forming later and has started to thaw earlier, the overall thickness and strength has diminished. Even streams are sometimes not completely frozen underneath the snow. The ice melts from underneath and can often look sturdy at the surface when in fact it is not strong enough to allow for safe travel. Because of the unpredictable weather patterns, we no longer know exactly when and where the ice on the rivers, streams and lakes becomes risky. Recently two young people lost their lives due to an accident in a dangerous zone. There have been accidents, even in areas where the ice looked sturdy.

"I am worried about the people who travel out on the land. We don't know exactly when the rivers and lakes become dangerous." Allan George, elder

Travel to our camps

As a result of the later freeze-up and earlier break-up and decrease in thickness, we generally can no longer go out on the ice in November. Nowadays, the ice is only thick enough in December. In the spring, the ice becomes unsafe earlier. As a result the period that we can safely travel to our camps over land and ice is strongly diminished. In May, we are very limited in terms of the places we can reach by skidoo. In June, skidoos can no longer be used and canoes are needed. Increasingly, people can only travel to their camps with an airplane. This has made camp life less accessible or inaccessible for many families because of the high costs of flights.

"We advise people to check the ice before traveling, to always take their emergency gear, to use life jackets in summer and to let others know where they are going at all times."

Josie George, Public Safety Officer

<u>Click here</u> to watch the "Climate change and travel" chapter of our video.



Priority response: Safe travel routes for all

Our travel vision for the future is to make safe travel routes - around our community and to our hunting grounds and camps - accessible to all. The ice on the bay, our rivers, creeks and lakes will continue to get thinner and increasingly more unpredictable. We will therefore invest in the construction and maintenance of ATV trails and bridges. We would also like to have cabins along the main travel routes in case people have mechanical issues. Every family deserves to travel safely and enjoy their time together in the bush!

"I would like to tell youth to go with an adult to go hunt. They can teach them about the hazards that can come with the weather." George Pachano, hunter

Potential collaborating actors and roles

- Whapmagoostui Band & Kuujjuarapik Municipality: collaborate to develop collective travel safety-management measures

- Tallymen, elders and experienced hunters: contribute their extensive knowledge of the land and ice; provide safety messages, especially in the spring.

- Local experts: mark the dangerous areas, train the rescue teams

- Public Safety Officer: collaborate to develop collective travel safety-management measures; coordinate rescue team trainings.

- Trained Rescue teams: carry out rescue operations in case of accidents

- Eeyou Marine Region Board: monitor the ice conditions; report on how much salt and fresh water are mixed together in the bay

- The Plan Nord: provide potential funding, for example the improvement ATV and skidoo trails and constructing bridge-crossings.

<u>Click here</u> to watch the "Safe Travel Vision" chapter of our video.



How is the flora affected?

Plants and trees

We have observed that climate change has had an effect on many kinds of vegetation. During hotter summers, the vegetation does not grow as well. Some trees look unhealthy and are not growing as easily as they did a long time ago. Other trees seem to rush to grow. In addition, some of us have spotted new species of plants and trees around our traplines. Especially noticeable are the tall tree species that used to only grow down south.

> "They rush to grow. The grass and trees. Long ago, things didn't' grow so fast. It took its time to grow." James Kawapit Sr., elder and hunter

Berries

In the springtime, some plants including the berry bushes are not growing as they used to. As a result, some types of berries only start to grow much later and they don't grow as well. Sometimes the berries look burned. We also observed that the blueberries and the black berries are smaller now than in the past and that they are not as abundant as they used to be a long time ago. We used to be able to find them everywhere.

"Those red berries (raspberries), they sell them here in the stores. They used to grow here too in this area when I was young, we used to eat them. But now I never see them anywhere." Lucy Petagumskum, elder

<u>Click here</u> to watch the "Climate change and flora" chapter of our video.



How are the birds affected?

Declining vegetation

We have observed that there are less waterfowl now than in the past and that their flight patterns are different. It appears that they fly over and no longer land around here because of a lack of food. The vegetation that they eat used to grow more abundantly along the salt sea coastal area. It is our impression that this vegetation has been damaged by the damming projects, because there is more fresh water diluting the sea water. However, we wonder if the general increase of the water temperature as a result of climate change has also contributed to this change in vegetation.

Declining species

For starters, there are less snow geese. The grouse has also noticeably declined over the span of 10 years. The ptarmigan too has become quite rare, whilst in the past there used to be many around here. Even the arctic tern has not been spotted for many summers now. In the 20th century, we would see many different types of waterfowl when we camped in the south, for example the brant. However, we have not spotted any brants flying since the 1980s. In the old days, people lived off nesting birds in the summertime. Nowadays, there are hardly any birds having their young in this area. Even the ducklings have disappeared. Finally, the loon population has decreased, just like the small fish that they eat.

"On the coast, there were so many small fish on the sandy beach. The loons ate these kind of fish, they were like small sardines." Samson Petagumskum, elder



Size and health

The waterfowl used to be fat and good to eat. However, nowadays they are not in the same condition as they used to be. The snow geese don't seem to have any fat and sometimes they are so lean that they can't be eaten. The ducks are also very thin. The meat of the ptarmigan has also changed. The twigs that the ptarmigan eat do not grow as well nowadays. This we understand makes their meat turn darker.

Changed behaviour

Long ago, our hunters knew on which days the geese would fly. Nowadays, it is unpredictable if or when they will fly. We also observed that geese are sometimes flying over during the night. The geese used to land when they reached the coast but we noticed that since the reservoirs have been built, they just fly straight out into the bay.

> "When they fly during the day, they fly so high. Just a tiny speck in the sky, that is how high they fly." Robbie Kawapit, hunter

Increasing and new species

Cranes used to be scarce a long time ago. Now we have noticed a clear increase in the number of cranes as well as in the number of eagles. We have also observed various species of birds in our areas that we never saw in the past. We believe that these species are slowly moving further North due to the hotter summers in the South and the increasing temperatures in the North. We have seen large birds such as swans and even a pigeon was spotted in our community.

<u>Click here</u> to watch the "Climate change and birds" chapter of our video.



How are the fish affected?

Size, health and numbers

We have also observed changes in the fish in the bay, rivers and lakes. The fish used to be very good long ago. Their appearance, size and quality has changed. Generally they are thinner and smaller. When they are in very poor condition we say "Nibuuch" ("They are dead"). The whitefish are especially small now. Only in the big lakes the fish seem to be less affected. The "Nuudimiiwasuuch" (round back fish) have also decreased in numbers.

"The fish are not so fat, even when it is the right season. After their spawning, they are very lean. It is the case not only for the fish inland. They are also like that on the coast."

John Rupert, hunter

Causes

We suspect that the fish have been affected by the changes in the water. As a result of La Grande hydro power complex, the river is less broad upstream and more fresh water mixes in with the salty bay water. The temperature of the water has also increased, maybe partly due to the dams and partly due to climate change. We would like to better understand what is affecting the numbers and quality of fish.

"When the water turns warm, fish go way down to the bottom. The big lakes they would get warmer in the summer, but not as warm as now." Robbie Kawapit, hunter

<u>Click here</u> to watch the "Climate change and fish" chapter of our video.



How are the mammals affected?

Declining species and sicknesses

In the realm of mammals, we have observed that the muskrat and porcupine have declined in numbers. Since about 4 years now, we have noticed that the porcupine is scarce. Both mammals are not as fat and healthy as they used to be, because their food is not as abundant. The caribou are affected and their populations have been declining. We noticed that the caribou's food grows less North and East of our community. The behaviour of the caribou has changed too. It travels back and forth around the community. Finally, we have observed worrying sicknesses in mammals, for example in the porcupine, the beaver and the caribou.

"You can see the sickness on the Porcupines liver. It is the same with the beaver. For the Caribou, it's visible on the meat. It is said not to consume this game."

Eliza Kawapit, elder and hunter

Species coming nearer and new species

Just like with the birds, we have also spotted species of mammals that we would never see in the past. Some of the species have come from far away but they seem to be here to stay. In the past, we would never see big mammals like the moose in our area. Now moose are not a rare sight anymore. We think the increased number of moose have contributed to the decline in ptarmigan because they eat the same kind of bush. Another example is the Polar Bear. We see them quite often nowadays. Polar bears live off seals. However, since the ice conditions have been deteriorating, there are not that many seals lying on the ice anymore. Hence, it seems that it is harder for the polar bear to catch them. The polar bears are now coming onto the dry land to look for food. There have been occasions that polar bears have come close to and even once into the community. The other animals that we have spotted coming closer to and into the community are black bears, foxes and even wolves. Finally, in our hunting areas we have spotted or caught other rare animals.

<u>Click here</u> to watch the "Climate change and mammals" chapter of our video.



What about our food security?

Healthy diet

Our food vision for the future is for healthy food to be affordable to everyone in our community. We would like our diet to be balanced between wild, locally harvested meat and locally grown fresh produce. The diets of our community members today have changed extensively compared to our diets in the past. It is important that all our community members are aware of how to incorporate fruits and vegetables into a balanced diet.

"It is necessary that we keep our community clean. The animals that come to town and that are harvested, they can consume things that are dangerous and that could harm us."

Anne Sandy

Unpredictable population cycles

Climate change is affecting the abundance and cycles of the animals. In the past, elders were able to predict when the animals would return in large numbers after a period of absence. However, climate change is affecting the accuracy of the elders' and tallymen's predictions of the weather. Additionally, these changes fluctuate so drastically from year to year that it's difficult to establish a pattern. Due to the unpredictability of climate change, community members who hunt should be aware of the condition of the species populations in the area.

<u>Click here</u> to watch the "Climate change and food security" chapter of our video.

Response priority: Sustainable harvesting

As Cree we were gifted with the opportunity to harvest. We have depended on the harvesting of wild game to sustain ourselves throughout time. To be able to keep wild meats as a key part of our diet, we need to be careful to not over harvest any species. It is important for everyone to only kill as much as is reasonable for consumption and to avoid killing more animals than can be cleaned.

There has been a drastic decline in number of caribou and people kill a lot of them when they come close to our community. It is said that some people kill caribou for nothing. For this reason, there should be a collaborated effort between the Cree and the Inuit to protect and preserve the remaining caribou. We could maybe even collaborate with our Inuit sister community to farm caribou. In order to be able to harvest sustainably, we need to monitor the variation in the abundance of the key species that we harvest, such as waterfowl, birds and the caribou. It is also important that we monitor the health of animals (i.e. signs of diseases, pests, etc.). For instance, as there are more and more moose, it's important to know what risk they carry with them, such as diseases or if they are a predator to other species or compete with another species for food, etc. There are organizations that constantly do research to monitor and study the animals. We could ask them about the status of different species and possibly work with them in our community. We need to raise awareness, especially about declining or invasive species.

Efforts to raise awareness among the youth could actually motivate them to be more active in traditional activities and go out on the land more often. Our elders should take part in cultural programs so that they can share their knowledge about harvesting sustainably to the younger generation who have less experience. The community should promote the existing programs. Finally, we need to assess the need to put more regulations in place (i.e. enforcing a quota on the number of animals hunted), as the rich knowledge of the elders are declining.

"We could develop a control system, like game wardens. It exists for Polar Bears. There is a limit to how many can be harvested. The same thing could apply to the Caribou." Benjamin Masty, Youth Coordinator

Potential collaborating actors and roles

- Cree Nation Government: oversee the monitoring of different species in the Cree territories

- Whapmagoostui Band & Kuujjuarapik Municipality: collaborate to oversee the monitoring locally

- Tallymen: carry out the monitoring (those who are most knowledgeable)
- Tallymen & Hunters: record what they've harvested into the geo-portal
- Cree communities: collaborate at a regional level and exchange information

- Community members: share their observations about the appearance and health of the animals and the quality of the meat

<u>Click here</u> to watch the "Sustainable Harvesting Vision" chapter of our video.



Response priority: Growing locally

Climate change may be contributing to the difficulty of accessing a sufficient amount of traditional foods, such as wild meat and berries. In addition, our community is very isolated and the majority of our food is imported all the way from the south. Because of the large distance travelled, the fresh vegetables and fruits in our shops are expensive and regularly not in the best condition.

For this reason we plan to build greenhouses to grow vegetables, fruits, herbs and medicinal plants organically and possibly even to farm fish. This way we can monitor what is being produced and how. We can produce things without harmful chemicals and only grow things that are healthy.

"Often the vegetables and fruit in our community are not as fresh as we would like them. When we have a local production facility, we can prevent rotting vegetables." Louisa Wynne, Chief, Whapmagoostui First Nation

Growing our food locally, instead of ordering food from down south, will also bring big economic advantages. It will decrease the costs of food and will make food more affordable to all community members. Very importantly it will also provide more local employment, especially for the youth.



Learning to grow and cook

In addition, school children and youth could come to the greenhouse to learn about growing food and nutrition through hands-on activities. Cooking classes could also be provided for everyone to learn how to cook affordable and healthy meals.

While many of our elders have great knowledge about preparing traditional wild meat, some of our youth are more familiar with how to prepare meals with the fruits and vegetables available in our stores. Cooking classes with locally harvested produce could therefore also promote the exchange of knowledge between the youth and elders.

Greenhouse pilot project

Our chief, Louisa Wynne is currently in discussions with a company called Éau, who has provided a proposal for a hydroponics greenhouse which could provide the way to pilot our vision. Soon, she will hand over the responsibility to Whapmagoostui Eeyou Enterprise Development Corporation (Weedco) to head this project. While the first plan was set to cost \$15 million, there are now discussions underway to scale it down by 50% to make the project more feasible. Before planting anything in the greenhouse there should first be a study to find out what kind of fruits and vegetables community members are interested in growing.

Potential collaborating actors and roles

- Weedco: take the lead on the greenhouse pilot project
- Whapmagoostui Band & Kuujjuarapik Municipality: contribute to the coordination
- Plan Nord: potentially provide funding
- Chisasibi Greenhouse Project: share lessons and provide advice
- Cree School Board: coordinate the education of school children in the greenhouse
- WhaleMart, Northern and Coop: potentially sell the products produced locally
- Cree Health Board
- Apitisiiwin Skills Development
- Laval University & McGill University

<u>Click here</u> to watch the "Local Food Vision" chapter of our video.



What about our buildings?

Damage to buildings

Our public buildings and housing are affected by the changing climate and especially the more frequent extreme weather events. For example, we have observed damaged roofs from heavy wind. It also seems that our houses become brittle from the quick changes between sudden cold and sudden heat, which occurs often and damages the houses. Finally, we wonder if increasing tides and more frequent extreme rainfalls might cause problems with flooding or landslides in the future. The melting of permafrost could also affect the stability of buildings.

"Due to heavy rain a stream appeared near my late friend David Sandy's hunting cabin. The rain from that day caused a landslide there." Samson Petagumskum, elder

Health concerns

Another factor of concern is that some of the material used in our houses is not really suitable to our Northern climate. As a result mold is a common challenge for many households. Mold strongly affects the quality of the air we breathe and is dangerous for our health. Air exchangers can help to reduce mold from forming. However, many households don't have them yet. As for the households which possess an air-exchanger, it is often not being used; possibly in order to save money on electricity or because of a lack of understanding of the benefits of using it.

"The mold issue needs to be brought out in the open and to be talked about. Health specialists need to be consulted on how to minimize mold." Matthew Mukash, business man

<u>Click here</u> to watch the "Climate change and infrastructure" chapter of our video.



Response priority: low-cost eco-homes

There is a need for more housing units in our community. Our housing vision for the future is that all new houses that we build would be durable and eco-friendly (i.e. eco-homes). These homes would be affordable for low-income families to rent and eventually to buy. They would have green energy sources, such as solar panels and a biomass unit. They would also be built to be suitable to the Northern climate and to consume less energy, thus cheaper to live in. We would also like these homes to be designed according to our local needs, cultural preferences and lifestyle.

Achievements

Two of these eco-homes have already been built in our community. They were built by a local team of 14 youth who were trained in carpentry whilst being guided by an eco-homes expert. They will soon be completed and inhabited! It is important to seize the opportunity of the capacity that was recently built to improve our community.

Future plans

Building more homes would make sense in terms of their ecological impact and also financially and health wise. Besides the lower energy costs, the maintenance costs of this type of home are lower than regular houses since the materials last longer. For example, the walls of the current eco-homes are made of magnum, a durable and good insulation material. Finally, the construction method and selection of appropriate materials ensure that there is considerably less condensation in these houses. This reduces the likelihood of mold forming in the homes and hence ensures a better air quality.

Potential collaborating actors and roles

- Whapmagoostui Band Office: contractor
- Supershell: construction company (who built the 2 existing units)
- Canada Mortgage and/or CIRNAC: potential funders to construct new units
- Habitat for Humanity: potentially sponsor some of the labor and materials again
- Home Depot: potentially sponsor some of the materials again

<u>Click here</u> to watch the "Eco-homes Vision" chapter of our video.



What about our energy sources?

Dirty and expensive energy

Gas consumption is a major factor which contributes to climate change. Our power station contributes to a lot of pollution. In addition gas is very expensive. Yet we all use it to fill up our cars, generators and skidoos.

"We worked on it for a long time, 6 years to be precise, to change the source of energy for our community." Matthew Mukash, business man

<u>Click here</u> to watch the "Climate change and energy" chapter of our video.

Response priority: Community-owned renewable energy system

As climate change progresses, we should expect more frequent extreme weather events that could lead to power outages. At the same time, the construction and use of alternative energy sources is becoming more accessible and affordable.

Our energy vision for the future is to obtain a community-owned, clean energy system, that would allow us to be energy-sufficient, provide a more reliable energy source (less chance of power outage) and reduce our community's ecological footprint. Biomass, wind and solar energy are cleaner sources of energy.

A clean energy system would replace our diesel generated power-plant, that negatively affects our environment as well as our health. A hybrid power plant using both biomass and wind is a safer source of energy compared to having diesel tanks and furnaces in or outside the homes. Diesel tanks can cause dangerous oil spills in or next to our homes and energy cut-outs can damage peoples' appliances.



With our own local green energy sources, heating households and public buildings would be more affordable. The energy created would be sold to Hydro-Québec who would redistribute it through its network. Constructing and running this system would bring new employment opportunities, expertise and profits to our community. In order to be able to run the new energy plant, external experts will come to our community to train local workers.

Achievements

Our community has received grants coming from the Québec and Federal governments which have been added to our community fund for energy efficient projects. Our band council and that of Kuujjuarapik have signed an agreement to work together on making our green energy vision a reality. Our first biomass plant will soon start to provide energy to our arena. Funding has also been secured for a feasibility study to evaluate how the biomass project could be extended to houses and other public buildings.

Future plans

The use of wind and solar is the first phase that has been agreed upon, but the bigger part of the plan is to have a hybrid plant that uses both biomass and wind energy. The excess energy could be stored in a battery that could be installed in the homes to decrease the cost of energy. Within two years, we've planned for the hybrid system to be applied to other public buildings, such as the band office. After that, the plan is for the energy system to be extended to peoples' homes so that eventually our whole community will benefit. The current projected timeline is for the whole community to be heated with green energy by 2021.

Potential collaborating actors and roles

- Whapmagoostui and Kuujjuarapik Band Councils: contractors, taking the lead together
- Québec and Federal governments: potentially providing additional funding
- Skilled community members: carrying out the construction work and running the system
- Nimchu Iskudow: energy development company
- Whapmagoostui Eeyou Economic Development Coorporation

<u>Click here</u> to watch the "Clean Energy Vision" chapter of our video.



What about our education, culture and wellbeing?

An approaching crisis

There is a lot that we still need to learn about climate change. It is time for us to make the urgent changes in order to preserve and take care of our Earth. Immense amounts of damage to the environment is seen worldwide and the destruction is rising towards a major crisis. It's very important for the people of Whapmagoostui to find out what is going on with the Earth in general and how it is affecting our local environment.

"We have to think about it, those who are living here now. Where we can go for the future, so it doesn't affect us as much." Jordan Masty, Former Youth Chief

Environmental education for all

A program is needed to better educate our people in regards to climate change. The Cree Health Board, the Cree School Board and the Cree Nation Government could join forces to take the lead in providing environmental education in Cree communities. Traditionally, education starts in the home. However, if the parents and elders in our communities are not aware of the global climate dynamics and the complex and interrelated causes of the environmental changes around us, then it is difficult for them to fully educate our youth.



Empowering youth

Our children and youth need to be taught about climate change and the effects it has and will have on our way of life. They need to see the actual damages occurring in other countries and on our own lands. Our youth will need to be well informed about how our environment can be preserved for future generations. They need to be taught how to care for their own lives and those of others and to learn how to help each other. Our experienced hunters and our elders are the best people to teach our youth about all the local changes. They can take our youth out onto the land and show them these changes in person. We could start by educating those who are already interested and slowly this will attract more youth to join.

"There are those youth who are very strong with practicing our cultural ways because they go out on the land every year for the spring and fall. But there are also those who want to go but who can not because they don't have anyone to go with." Benjamin Masty, Youth Coordinator

Cultural celebration

We should use the land as an educational tool. In general, we should practice more cultural activities, and not only engage in them when there are gatherings. Long ago, our ancestors took real pride in all that they did and in all that what was provided for them by the land. We are not passing down our knowledge and our Cree lifestyle enough. It is important that we take better care of it, because the education system today is all based on intellectual knowledge. Whereas what we as Cree people have always followed was spirituality.

"Spirituality is the very essence of who we are. Today the materialistic way of life is very strong. The spiritual way of life is slowly weakening." Robbie Dick Sr., elder and hunter

<u>Click here</u> to watch the "Climate change and education" chapter of our video.



Response priority: a land and culture camp

Our education vision is for our youth to be proud, knowledgeable and skilled stewards of our land and culture. To support this vision we aim to develop an exciting and accessible annual land-based camp. During this three week-long camp, elders would transfer valuable knowledge and skills to youth. Through hands-on activities, the youth would learn important teachings about reading and respecting our land. They would also explore cultural practices and learn about climate change from a global perspective. We would like to develop this program in collaboration with another Cree community, such as Chisasibi. The camp would take place at a beautiful location where youth would be excited to stay. In terms of attendees, we would like to give priority to youth who never, or rarely go out on the land.

Potential collaborating actors and roles

- Youth Department: lead the coordination of the project
- Elders Committee: contribute to the planning and facilitation of activities
- Cultural Department: contribute to the planning and facilitation of activities
- Cultural Department: contribute to the planning of activities
- Cree School Board: provide educational advice and guidance
- Badabin Eeyou School: encourage children and youth to attend the camp
- Cree Trappers' Association

<u>Click here</u> to watch the "Education Vision" chapter of our video.



Response priority: Healthy lifestyle

We should consider consulting professionals and experts not only about how we can adapt to all the environmental changes but also about the projected impacts on our health and wellbeing. We need to learn how to take care of ourselves and how to live better stronger lives in the wake of climate change. We should also consult with our elders. They can teach us on how to move forward, how to live with these changes and how to take care of ourselves - body, mind and spirit - to stay strong. We could work more outside to reduce our indoor energy consumption. That is just one individual choice, that could encourage others to follow the positive example. We could also walk more, like we used to do in the past. If we stop relying so much on our vehicles, we could improve our health and at the same time decrease our energy consumption.

> "Setting a more healthy active lifestyle would benefit many of us. We should do it for our future, for our children and our grandchildren." Jacob Dick. hunter

Potential collaborating actors and roles

- Miyupimaatisiiun Committee
- Cultural Department
- Elders Committee
- Cree School Board & Badabin Eeyou School: include lifestyle advice in curriculum
- Cree Sports Department
- Cree Health Board
- Youth Department

<u>Click here</u> to watch the "Healthy Lifestyle Vision" chapter of our video.



Response priority: Preserving traditional medicine

Fortunately the plants that we traditionally harvest to use as medicines do not seem to be affected. We have many sources for our Cree medicine. Inland, Labrador tea is growing well; the plants are abundant and big. Labrador tea is very useful for various sicknesses. It can be used for colds or other ailments. We observed that the tamarack trees are also growing well. The bark of the tamarack tree can be used whenever someone is sick. It can also be applied on rashes or open wounds. We have sometimes experienced that when Western medicine didn't work, Cree medicine did. As our medicinal plants have very valuable healing properties and as they are still growing well we could put efforts into preserving the sources and spreading our healing knowledge.

"Nowadays our Cree medicine isn't used much. However if we start to use it more again we would have plenty of it!" Agnes Kawapit, elder

Potential collaborating actors and roles

- Elders Committee: oversee activities/events that would promote the transfer of knowledge.

- Local medicine experts: share their knowledge.
- Cree Health Board: share their knowledge.
- Laval University
- Cultural Department

<u>Click here</u> to watch the "Climate change and traditional medicine" chapter of our video.



Response priority: Tourism to inspire

We would like to see our youth getting involved in tourism. There are many opportunities. They could take guests out onto the land to hunt or to do sightseeing by ATV or canoe. This way we could share with others our way of life and our culture. It could also create new employment opportunities. Transferring and spreading our Cree knowledge could benefit non-Cree people too. When we correct ourselves, we can help others. When we set a good example, others can easily follow it.

Potential collaborating actors and roles

- Cultural Department
- Cree Outfitting Tourism Association
- Weedco & Economic Development Officer
- Miyupimaatisiiun Committee
- Cree Trappers' Association
- Kuujjuarapik Municipality
- Cree Health Board

<u>Click here</u> to watch the "Tourism Vision" chapter of our video.



Conclusion

Response priority: collaboration

We really have to think about climate change now. All of us who are living here now we have to find out where can we go from here so that we won't be greatly affected in the future.

Keep in mind that we want this Action Plan to be a living document... it should evolve and change over time! A revision of this Action Plan should be done periodically.

Everyone agrees: Youth must be involved in all responses and as much as possible. Their message was clear throughout the climate change adaptation video; youth are ready to be fully engaged in this and want to work together in finding solutions to coping with climate change impacts. Exchanges of knowledge between youth and elders should be promoted.

"We should seek for ways to work together in looking after our home, the Earth which was given to us to reside in." Louisa Wynne, Chief, Whapmagoostui First Nation

<u>Click here</u> to watch the "Action & Collaboration" chapter of our video.



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