

4.2. Seasonal Weather Patterns

Based on the observations of the community members interviewed, seasonal weather patterns in the last 15-20 years have changed quite noticeably. The most common trends observed for all seasons has been a general warming, especially in winter, and the weather in all seasons has become increasingly unpredictable.

The warming trend being observed and experienced by our community is causing environmental changes that are impacting the plants and animals, as well as our community, that are a part of the ecosystem and our culture. Table 1 lists the observations and impacts associated with changes in seasonal weather patterns. Many of the observations and impacts in Table 1 overlap with the other themes, as it is the changes in the seasonal weather patterns that are causing many of the changes to the environment and our community.

One of the more significant observations is the change in the timing of freeze up and major snowfalls in late fall/ early winter. In the past, freeze up happened earlier and quicker than it does now and usually well before any significant amount of snow had fallen. Now freeze up occurs about 2-3 weeks earlier, and there is a lot more snowfall before the ground, rivers, and lakes freeze solid. We have also noticed that this increased snowfall early in winter acts like an insulator keeping the ground from freezing, and the ice cover on rivers and lakes from thickening, like it did in the past.

The change in the timing of freeze up and precipitation alone has caused many impacts to both the environment and members of our community. For our hunters and trappers access to TLU areas is becoming more restricted because travelling out on the land in late autumn, before everything freezes, is becoming more difficult and dangerous to do. Even in winter travelling over land is more risky, and people need to pay particular attention when crossing the ice.

“In the past there would be just a few centimeters of snow and then it gets very cold, which freezes the ground very solid and as a result people could go anywhere on the land. In the last recent years the ground does not freeze, and we get a very heavy snowfall, which makes it very difficult to go on the land, you see for yourself what it is like right now; the lakes are not frozen. When you travel in the bush you have to follow trails, the ground is too mushy under the snow.” (*Douglas Norwegian, November 2011; translated by Margaret Ireland*).

There have also been increased cases of community members going through ice on lakes and rivers. Thankfully nobody has suffered any serious injuries, but there is the increased potential for these incidences to be more serious, and it also makes rescue efforts in the area more difficult to do because of the softer ground and thinner ice cover.

The increased unpredictability of the weather in all seasons is also a common observation, especially since our TK that we use to predict the weather is not working anymore. The inability for us to predict the weather is not just a concern for our community and culture, but this is also a concern for the environment. Many of the indicators we use to predict the weather are based on observations of animals. We are unable to predict the weather because the animals we observe are not behaving the same, as if they are confused about what season it is. This observation is also supported by people saying their pets are shedding at unusual times in the year.

“In the past few years I observed that the winters are mild with a few cold spells, this suits me fine. There are pros and cons to the mild winter. A couple of years ago, I had my cat and dog to the vet. I was complaining to the veterinarian that my cat and dog are

steadily shedding hair all year round. He told me that the unpredictable weather is confusing the animals as well. It makes me wonder if the unpredictable weather is baffling the domestic pets than what is truly happening to the animals in the wild.” (*Margaret Ireland, September 2010*).

“At the same time too, back in those days when Dad and... and then the Elders were still with us, they would look up in the sky and they would predict the weather. They’ll see and say tomorrow is going to be sunshine... so the Elders used the sky and the surroundings to predict what the weather is like. But within the last 10-15 years the Elders were saying we can’t predict our weather anymore because the weather is changing up here, so it’s hard for them to predict it.” (*Stanley Sanguetz, September 2010*)

It is also important to note that the many of the changes observed in seasonal weather patterns play a major role in the observations and impacts documented for the other themes, such as Rivers and Lakes.

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Jean Marie River First Nation in the Face of a Changing Climate

Table 1: Climate Change Observations and Impacts Associated with Changes in Seasonal Weather

Theme	Observations	Impacts	Relation to Health	Vulnerability Ranking	Magnitude	Duration	Ability to Adjust
Weather							
Fall	<ul style="list-style-type: none"> There is more rain and snow (record breaking snowfall on October 14, 2010) Fall is more unpredictable Milder temperatures The ground and lakes and rivers take longer to freeze. 	<ul style="list-style-type: none"> Travel overland is more difficult and dangerous because the ground does not freeze through and ice on lakes and rivers is thinner and covered by snow – harder to predict weather using TK Trapping season start about a month later Reduced access to country foods and less time spent out on the land 	Increases in injuries and deaths caused by travelling accidents	Medium	Medium	Long	Easy
			Reduced availability of country foods in the community resulting in more dependence on store bought foods	Medium	Medium	Long	Moderate
			Less opportunities to practice and pass on traditional knowledge and cultural practices	Medium	Medium	Long	Moderate
Winter	<ul style="list-style-type: none"> Milder temperatures More snow, especially at the start of winter Snow acts like an insulator not allowing the ground or ice to freeze through Cold spells are not as long More mid-winter melting 	<ul style="list-style-type: none"> Travel overland is more difficult and dangerous because the ice on lakes and rivers is thinner and covered by snow Increased exposure to extreme weather (e.g. cold spells) – harder to predict weather using TK Use less fuel to heat homes More difficult to maintain trap lines and hunt Reduced access to country foods and less time spent out on the land 	Increases in injuries and deaths caused by travelling accidents	Medium	Medium	Intermediate	Moderate
			Reduced availability of country foods in the community resulting in more dependence on store bought foods	Medium	Medium	Intermediate	Moderate
			Less opportunities to practice and pass on traditional knowledge and cultural practices	High	Strong	Long	Moderate
Spring	<ul style="list-style-type: none"> More snow in the spring Starts cold, warms up quickly, and then gets cold again Break up starts earlier and is quicker 	<ul style="list-style-type: none"> Increased chance of rivers flooding into the community and roadsides creating greater potential of road closures due to rapid melting Trapping season ends about a month sooner Travel overland is more difficult and dangerous 	Increases in injuries and deaths caused by travelling accidents	Medium	Weak	Intermediate	Moderate
			Reduced availability of country foods in the community resulting in more dependence on store bought foods	High	Medium	Long	Moderate
			Less opportunities to practice and pass on traditional knowledge and cultural practices	Medium	Medium	Long	Difficult
			Health risks and physical and emotional stress associated with flooding and road closures	Medium	Medium	Intermediate	Difficult
Summer	<ul style="list-style-type: none"> Longer and hotter More heat waves that last longer Violent storms not seen before Less rain Ground and trees are drier 	<ul style="list-style-type: none"> Increases in cases of sun stroke, and skin and eye problems People avoid going outside Longer growing season Children swimming in rivers Damage to buildings from severe wind storms Increase chances of forest fires near the community 	Increased exposure to UV radiation causing more skin and eye problems	High	Medium	Intermediate	Easy
			Increased cases of heat stroke	High	Medium	Intermediate	Easy
			Health benefits and risks associated with swimming	Medium	Weak	Short	Easy
			Increase in injuries and emotional stress from extreme weather events	Medium	Medium	Short	Easy
			Health risks associated with forest fires	High	Medium	Short	Easy