

2005; Nuttall et al 2005; Pearce et al. 2009; Séguin and Berry 2007; and Turner and Clifton 2009).

From the literature review the following environmental impacts associated with climate change were identified that were applicable to the Dehcho Region:

- More unpredictable weather and occurrences of extreme weather;
- Warmer winters and warmer temperatures in lakes in rivers;
- Changes in the amount of snow and rain;
- Increase in the number, size, and frequency of forest fires;
- Changes to migration routes of caribou, birds, and fish;
- New wildlife and plant species;
- Habitat changes for existing wildlife and plants;
- Changes in the timing of ice break-up and freeze-up;
- Increased melting of permafrost, impacting roads, bridges and buildings;
- Less predictable ice conditions, and;
- Lower water levels for lakes and rivers including the Mackenzie River.

Many of these impacts are already being observed and experienced by our people. A list of the references cited in this report is included in the form of an annotated bibliography provided in Section 8. For each source a summary is provided highlighting the climate change research that has been conducted in partnership with Aboriginal communities in northern Canada, as well as any gaps in the research.

3.3. Preparation for Interviews

Prior to conducting any interviews with community members the JMRFN applied for ethics clearance and a research permit from the Aurora Research Institute. The JMRFN ethics clearance application was approved September 10, 2010. A copy of the letter of approval and the research permit are included in Appendix 2.

An interview guide was developed that includes instructions on how to conduct the interview, and the questions to be asked. This document was reviewed and approved by the Project Lead. A standard consent form was also drafted prior to the interviews, and reviewed and approved by the Project Lead. A copy of both the finalized interview guide and the consent form are included in Appendix 3 and 4 respectively.

As part of the youth engagement strategy proposed for this project to raise awareness among youth about climate change and its impacts at the community level, PACTeam Canada prepared a presentation about climate change, an experiment to demonstrate what an enhanced greenhouse gas effect is, and a school assignment for the students to complete. A copy of the lesson plan for the experiment conducted is included in Appendix 5.

3.4. Interviews and School Presentation

Seven semi-structured one-on-one interviews were conducted with community members by Margaret Ireland and Ryan Brown (PACTeam Canada) at the JMRFN Band Office. Prior to beginning the interviews, participants were asked to review, or have translated the consent form and sign the form if they agreed to be interviewed. Four of the interviews were conducted in English, and three were conducted in Slavey. Margaret Ireland conducted the interviews in Slavey, and when necessary provided

translation services for the other interviews. The interviews were recorded using digital audio recorders, and participants were assigned a personal identification number (PIN) to protect their anonymity.

The Project Lead and PACTeam Canada coordinated with the teacher at the Jean Marie River School for a Ryan Brown to give a presentation about climate change to the students. PACTeam also provided educational materials about climate change and the environment, generously donated by Enviro Kids. The students conducted the experiment mentioned above that demonstrated how the accumulation of greenhouse gases due to pollution is creating climate change in form of global warming. The students were provided the instructions and materials to conduct the experiment and record the results. Finally, the assignment developed by PACTeam was given to the teacher to have the students complete and consisted of each student answering questions about their own observations of weather, and then to ask older family or community members about their memories of the weather in the past, in order for the student to better understand how long term weather patterns (a.k.a. climate) change over time.

The answers to these questions are not being included in the results of this project; the questions are for educational purposes only, with the purpose of engaging youth about the significance of climate change and its impacts at the community level.

3.5. Translation and Transcription of Interviews

Margaret Ireland translated and transcribed the three interviews conducted in Slavey, and transcribed another interview completed in English. PACTeam Canada transcribed the other three interviews done in English.

3.6. Thematic Analysis of Interview Results and Vulnerability Assessment

The thematic analysis of the findings from the interviews and the resultant vulnerability assessment of JMR to climate change identified six themes to categorize observations and related impacts of climate change shared by participants during the interviews, and six areas where JMR is particularly vulnerable to climate change. The observations and impacts associated directly and indirectly with climate change for each theme are summarized in the Section 4. The findings of the vulnerability assessment are listed in Section 5. Preliminary findings from the interviews were also presented at Health Canada's Environmental Health Research Division's *Climate Change and Health Pan Arctic Results Workshop* held in Ottawa on February 8-11, 2011.

3.7. Climate Change Focus Group Session

Posters for each theme identified in the thematic analysis were created showing the observations and related impacts for each of these themes. In order to verify the results from the interviews, clarify any potential misinterpretations of the knowledge shared by interviewees, and to identify any gaps a focus group was organized in the community and was conducted on March 8-9, 2011 at the JMR Administration Office. Each poster has a matrix and participants were asked to prioritize the importance of health related climate change impacts based on four criteria; vulnerability, magnitude, duration, and ability to adapt. Results of the focus groups are described in Section 4. Participants included members of the Working Group, interviewees, Elders, and other interested community members for a total of eight participants.

A presentation was also given at the school to follow up with the students about the climate change activity left with them in September of 2010. Students discussed how the weather is changing and could change in JMR, and how this could affect the community.