

Environmental Change and Off-road Transportation in Churchill, MB

By

Justin Gilligan

A Thesis submitted to the Faculty of Graduate Studies of
The University of Manitoba
in partial fulfillment of the requirements of the degree of

Master of Arts

Centre for Earth Observation Science
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Abstract

The effects of environmental change are significant to the lives of people in the North, especially those with a close connection to and reliance on the land. The implications of environmental change are creating new risks, hazards and opportunities for off-road travel associated with accessing land/water based resources and recreation. This research highlights how environmental change is altering the snowmobile season, the boating season and the all-terrain vehicle season. Consistent with Traditional/Local and Scientific observations, the snowmobile season is decreasing in length and the boating season is increasing in length. While all-terrain vehicles are generally capable of travelling year round there are new and increased hazards associated with this type of transportation during certain seasons. In addition, several new risks and hazards face harvesters travelling on the land as a result of recent changes in the environment.

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Chapter 1: Introduction

Environmental change, including climate change, poses certain changes to the way harvesters in Churchill, MB, travel on the land. Travel in the North is typically done by boat, snowmobile and all-terrain vehicle and environmental changes have disrupted these modes of transportation (Nickels et al., 2006). Although Churchill is a very modern town many Churchillians still live off the land relying on harvesting activities such as hunting, fishing and trapping for monetary income and food sustenance. The town's population is made up of people of very diverse ethnic backgrounds, including Indigenous groups (Cree, Dené, Inuit and Métis), non-Indigenous groups, and mixed groups (those who have Indigenous and non-Indigenous ancestors). As of 2001, of 963 people in Churchill, 485 indicated they were of Aboriginal ethnicity (Statistics Canada, 2006).

While some Indigenous people of Churchill continue to follow the hunting, trapping and fishing way of life in the tradition of their ancestors, there also exist non-Indigenous Churchillians who practice in these activities, some in the footsteps of their ancestors and some for the first time in their family history (Fleming, 1988). In 1971, Koolage refers to a group of Eurocanadians who he calls 'The old Eurocanadian society' of Churchill that originally came to Churchill to trap or act as entrepreneurs during the town's early years. Koolage also describes a group of people "who come 'North' for the purpose of making their fortune and [to] find a new social and economic niche which allows them expanded opportunities for self-fulfillment. They have either joined the ranks of the old Eurocanadian society... or "gone native"." referring to the fact that they

would develop a close tie to the land and Indigenous groups through activities such as hunting, trapping and fishing (1971, p. 39).

As environmental change, including climate change, progresses, many scientists are recording changes that are taking place to northern environments. There are also many predictions of how these changes will continue to occur as climate change progresses. The *Impacts of a warming Arctic: Arctic climate impact assessment* states that changes in climate will result in serious changes in the environment such as reduced ice and snow cover, thawing permafrost, diminishing lake and river ice, rising sea level, rising river flows, and increasing precipitation, to name a few (Hassol, 2004). If these predicted trends materialize, as many scientists believe they will, then the way that the people of Churchill, and the entire North, travel on the land will change significantly. Through the presentation of linkages between Local Knowledge (LK) (including Traditional Knowledge (TK)) and 'western' Scientific Knowledge (SK), this study presents an analysis of how changes to the environment have altered how the harvesters in Churchill travel on the land.

Purpose

The purpose of this project was to work with local harvesters to determine how environmental change has altered the way they travel on the land by boat, snowmobile and all-terrain vehicle. Through the study and linkage of Traditional/Local Knowledge and Scientific Knowledge, the anticipated outcome of this research is to present a holistic understanding from both knowledge sets on how environmental change is altering these types of transportation.

Objectives

The objectives of this research are as follows:

1. To connect with local people to determine the focus of the study.
2. To document local harvesters' observed changes to the environment and how they have affected off-road travel.
3. To link the Traditional/Local Knowledge with Scientific Knowledge and present a holistic understanding of the effects of climate change on off-road travel.

Parameters

This study took place in the community of Churchill, MB (including the surrounding areas used by hunters, trappers and fishers) and included local harvesters from the community. Participants have all lived in Churchill for at least 10 years and are from Cree, Dené, Métis, Inuit and non-Aboriginal Canadian ethnic backgrounds. Participants were mostly active harvesters of resources (active meaning someone who partakes in any combination of harvesting activities at least 10 times a year) who as a result have an in-depth knowledge of travelling off-road. Also, 8 of the 9 study participants are men. This research took place during 2006 and 2007 and the data collected is limited to experiences from the study participants lives. Data collection took place during the summer of 2006 and the winter of 2007.

Justification

For thousands of years Indigenous people of the North have relied on

traditional/country food for sustenance. Harvesting activities such as hunting, trapping and fishing are extremely important to Northern Indigenous communities for economic, social and traditional reasons as well as personal well-being. Environmental change is an increasingly important issue in northern communities. This is partly due to the fact that environmental change is increasingly limiting the ability of Northern communities to access harvesting resources (Huntington et al, 2005). If the weather continues changing or becomes more unpredictable, as many scientists are indicating (Hassol, 2004, Huntington et al., 2005, Lafortune et al., 2004; Jolly et al., 2002), then this brings into question Northerners' ability to carry out their traditional daily activities. This justifies why studies that work with harvesters to determine the implications of such changes on the people of the North need to be carried out.

Thawing permafrost, timing of freeze-up and break-up, declining snow cover and increasingly unpredictable weather is disrupting travel conditions. In turn, this results in decreased harvests of traditional/country foods (Hassol, 2004, Jolly et al., 2002, Nickels et al., 2006, & Nutall et al., 2005). Decreased harvests have serious implications in Northern communities. Harvesting activities are important for the maintenance of cultural identity, social relationships and personal well-being in Indigenous communities. In fact, when unable to consume traditional/country foods, Indigenous people have indicated decreases in vitality, health and personal well-being (Nutall et al., 2005).

Northerner's ability to access these resources is very important. The chairwoman of the Inuit Circumpolar Conference, Sheila Watt-Cloutier, indicates that the reduced quality and safety of travel conditions in the North is equivalent to closing the roads to Northerner's grocery stores. Watt-Cloutier goes on to indicate that "ice and snow

represent transportation, represent mobility” (Blue, 2006). Given the previous, it is disheartening to learn that climate change will bring reduced snow cover, increasingly thin ice conditions, thawing permafrost, decreases in river and lake ice, melting glaciers, increasing sea-levels and retreating summer sea-ice to the North. All of those are environmental variables with serious implications for travel in the North (Hassol, 2004). These facts combine to demonstrate a need for a research project on the implications of environmental change on harvesters’ off-road transportation in Manitoba’s North. Given that Churchill is a northern community with a proportion of the population who harvest for sustenance, there is a demonstrated need to understand the implications of environmental change on harvester’s off-road transportation in Churchill.

Limitations

This study is not without its limitations. One limitation is that participation was voluntary. As a result study participants were hard to recruit at times. In certain instances it was difficult for participants to commit to spending time working with the researcher, which is understandable due to personal time constraints. This research looked at the Local and Traditional Knowledge of one community out of many throughout the Arctic and Subarctic. Also, this research focused on the concept of climate change and given the fact that 2005 had the highest global temperature in over a century, this may have influenced study participants’ concepts of climate change (Environment Canada, 2007a). In addition, I had access to a snowmobile and an all-terrain vehicle but not to my own boat or truck. As a result, I was fully able to participate in activities which required a

snowmobile or all-terrain vehicle but when travelling by boat or truck, I was only able to participate if space permitted.

Potential Benefits to the Environment, Community and Economy

This project contains several potential benefits for the environment, the community and the economy. Understanding our environment is important in stewardship, sustainability and conservation. By understanding how the actions of people who harvest in Manitoba's North will be altered by environmental change, we can further understand how our environment is changing and how people's way of life is changing in response. The findings from this report will be useful to scientists and policy makers addressing environmental issues in Manitoba's north (see Appendix D). This is because it will help further raise their understanding of the relationship between environmental change and Northern peoples' way of life.

This is an important issue to Churchill because the land surrounding the community has been used for harvesting activities for thousands of years by various Indigenous groups and their ability to access many of these resources is threatened by environmental change. These activities are very important to Northern communities because they promote community and cultural identity as well as healthy lifestyles and increased personal and communal well-being. When a community's ability to access these resources is limited or decreased their ability to harvest traditional/country foods is decreased as well. And as mentioned previously, Indigenous peoples have reported negative psychological and health impacts when decreasing ability to harvest traditional/country foods is experienced (Nutall et al., 2005). Understanding the current

situation in Churchill and working with harvesters to increase awareness and safety is of utmost importance to the community.

The economy of Manitoba's North can also benefit from this project. As mentioned previously, understanding how travel on the land, water and ice will change is essential for eco-tourism operators, hunting lodges and fishing lodges who depend on travelling on land, ice and water to provide their customers with the service and experience offered. In order to optimize their outfit and the products and services they offer, it is important for these operators to understand how environmental change will alter off-road travel.

The Importance of Community Relationships and Trust

On my preliminary trips to Churchill, two local active harvesters indicated that too many researchers come to Churchill, get what they need, take off and are rarely heard from again (Fitzpatrick, 2006; G. Lundie, 2006). For this reason, G. Lundie (project mentor and community liaison) suggested that I come to the community and take some time to be with locals, build trust, create relationships and most importantly, follow through with disseminating my research (2006). Relationship building was initiated during the April and June field trips, when no data collection took place. Rather than immediately conducting interviews, relationships were created and strengthened within the community as a preliminary step. This is one of the most important aspects of the project and a cornerstone to the success of this research. Trust and relationship building was, in the eyes of the researcher, successfully carried out during the April, June, July, August and February field trips to Churchill.

Community Profile

In 2006, Churchill had a population of 923, down 4.2% from 963 in 2001 (Statistics Canada, 2007b). While unavailable for the 2006 census data, the following detailed community information is from the Statistics Canada community profile of Churchill, Manitoba in 2001 (Statistics Canada, 2006). Of the total Churchill population in 2001, 800 speak English only. In 2001, 485 residents identified themselves as Aboriginal and this group includes Cree, Métis, Dené and Inuit people (Statistics Canada, 2006). Of these 485, 245 reported North American Indian (i.e. Cree or Dené) single response, 185 reported Métis single response, 35 reported Inuit single response and 15 reported multiple Aboriginal responses (Statistics Canada, 2007a).

There were 590 persons with earnings and the average earnings of this group were \$28, 951. There were a total of 250 families and the median family income was \$52, 864. Of a total of 563 private dwellings in Churchill, 390 are occupied.

In 2001 there were 585 people in the experienced labor force, 10 of whom were in the 'Agriculture and other resource-based industries', 20 in 'manufacturing and construction industries', 60 in 'wholesale and retail trade', 20 in 'finance and real estate', 150 in 'health and education', 175 in 'business services' and 145 in 'other services'. Figure 1 demonstrates the location of Churchill in relation to Manitoba. Figure 2 highlights common reference points used by harvesters in Churchill in addition to local routes I have traveled during participant observation activities. These maps were created using ESRI ArcView 3.2 with the Manitoba Land Initiative 1:500,000 Manitoba base map (Manitoba Conservation, 2005).

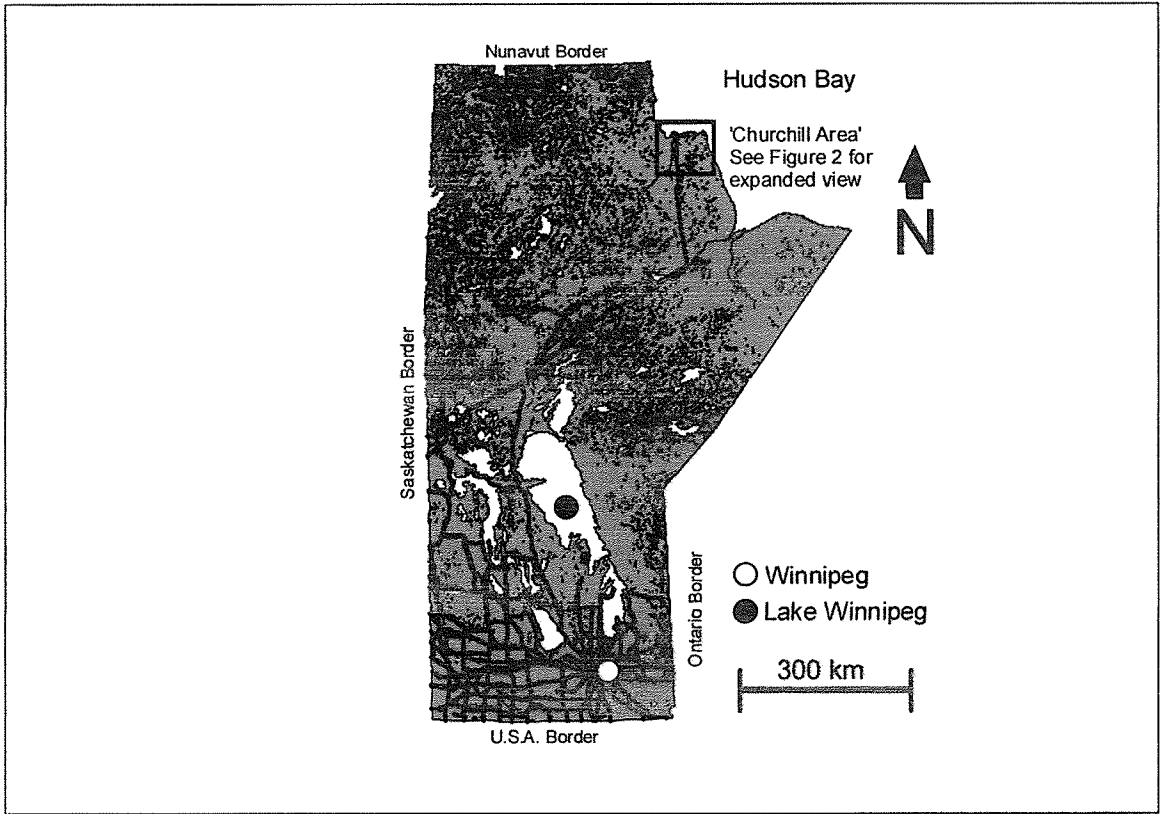


Figure 1: Location of Churchill, Manitoba. Derived from Manitoba Land Initiatives 1:500,000 Manitoba base map. © 2001, Her Majesty the Queen in Right of Manitoba. All rights reserved. Used with permission, permission granted August 15, 2007.