

Summary A1255: Climate Change Impacts on Winter Roads and Lake/River Ice Conditions – Effects on First Nations Communities in Northern, Central and Eastern Manitoba and the Capacity to Adapt.

Climate change has become a significant issue that has implications for all Canadians. First Nations in northern Manitoba are particularly susceptible to the impacts of climate change due to their geographic location in the middle of the continent at relatively high latitude. Many of these First Nations are dependent upon cold weather and reliable ice, winter road, and trail conditions in order to maintain their physical, social/cultural, and economic way of life. Despite its potential impact, the implications of climate change on winter road reliant First Nations in Manitoba have never been thoroughly investigated or documented. In order to address this issue, our organization, the Centre for Indigenous Environmental Resources (CIER), accessed funds from the Aboriginal and Northern Community Action Program (ANCAP, through Indian and Northern Affairs Canada, INAC) and the Climate Change Impacts and Adaptation Program (CCIAP, through Natural Resources Canada, NRCan).

The specific objectives of our research were to:

- Identify and document changes in ice conditions, winter roads and access trails;
- Identify the economic, physical (personal health and safety), social, and cultural roles that river/lake ice, winter roads and access trails play in Manitoba First Nations;
- Assess the economic, physical, social, and cultural impacts that changes in ice conditions, winter roads, and access trails have had and/or will have in the future on these communities;
- Determine if strategies exist (and if any have been successfully implemented) for addressing impacts associated with changing ice conditions, winter roads, and access trails; and,
- Identify any barriers to, or drivers of, action regarding responses to changes in the winter road and lake/river ice conditions.

STUDY DESIGN

To address the above objectives, CIER collected and integrated information from five First Nations (Barren Lands First Nation, Bunibonibee Cree Nation, Poplar River First Nation, St. Theresa Point First Nation, and York Factory Cree Nation) and from a number of external sources (including the academic community, provincial and federal government departments, First Nations political/advocacy organizations, road construction companies, transportation companies, and others). Information was gathered from First Nations through a combination of interviews and surveys. Community-based researchers (one from each of the five communities) facilitated the gathering and interpretation of information from their communities. External data were gathered by conducting a literature search and through a combination of surveys and interviews with external information holders. An External Advisory Committee (comprised of nine individuals from First Nations Tribal Councils and regional organizations, government and university departments) provided CIER with guidance throughout the project regarding project design, information sources, and data interpretation.

RESEARCH FINDINGS

Community members and external organizations described changes in weather (in winter, spring, summer, and fall), water and ice conditions, and winter roads and access trails. Although gradual in nature, many of the changes were described as being most profound in the last ten years. Changes were attributed to a variety of factors, with warming climatic conditions (i.e. climate change) being predominant amongst them.

Community members also described significant impacts of these changes on many aspects of their daily lives, including social/cultural activities, personal health and safety, financial, and community operations. Impacts were summarized into nine key issues, including:

Issue #1. Reliability of winter roads;

Issue #2. Personal safety on winter roads;

Issue #3. Winter road failure and emergency preparedness;

Issue #4. Personal safety on trails and frozen water bodies;

Issue #5. Decreased participation in sustenance activities;

Issue #6. Personal health concerns;

Issue #7. High cost of living;

Issue #8. Decreased participation in social/recreational activities; and,

Issue #9. Hindrance of community operations and economic development. Community members and external organizations described a number of strategies (and associated barriers to and drivers of action) for addressing the impacts of climate change on their daily lives. CIER examined these strategies, identified gaps, and developed a series of recommendations to address these gaps. CIER summarized this information into seven overarching strategies at the community-level and seven interrelated overarching strategies at the government-level through which impacts of climate change on ice, winter roads, access trails, and First Nations could be addressed. Actions by First Nations regional organizations can support both the community-level and government-level strategies in order to help form a bridge between the two groups.

Community-Level Strategies Government-Level Strategies

1. Increase Security of Winter Roads Increase Security of Winter Roads

2. Develop a Community Climate Change Action Plan

Support Community Climate Change Action Plans

3. Develop a Communication Strategy Increase Communication with First Nations

4. Increase Social/Cultural/Recreational Opportunities

Support Social/Cultural/Recreational Opportunities

5. Increase Consumption of Local Foods Support Consumption of Local Foods

6. Enhance Community Safety Enhance Community Safety

7. Increase Funding Opportunities for Community Operations

Increase Funding Opportunities for Community Operations

Success in addressing climate change impacts on winter road reliant First Nations will ultimately rely upon actions undertaken at all levels since the strategies are often interrelated and dependent upon each other to solve the problem. Given the varied and large number of observations, impacts, and strategies that were identified during this study, the CIER project team concludes that winter-road reliant First Nations communities should start the process by developing their own Community Climate Change Action Plan that identifies climate change impacts, solutions, and priorities that are unique to their own communities. The seven overarching strategies identified above can serve as a starting point for First Nations who wish to undertake this process.