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Public Opinion Research on Extreme Temperatures and Alerting Programs in Northern Canada

Executive Summary

Prepared for Environment and Climate Change Canada

Supplier name: Earnscliffe Strategy Group
Contract number: K3B42-210961/001/CY
Contract value: $ 69,371.43 (including HST)
Award date: March 17, 2021
Delivery date: September 10, 2021

Registration number: POR-132-20
For more information on this report, please contact Environment and Climate Change Canada at: POR-ROP@ec.gc.ca

Ce rapport est aussi disponible en français.

Canada

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September 2021

This public opinion research report presents the results of a series of one-on-one interviews conducted by Earnscliffe Strategy Group on behalf of Environment and Climate Change Canada. The research was conducted from June to August 2021.

Cette publication est aussi disponible en français sous le titre : Recherche sur l'opinion publique concernant les températures extrêmes et les programmes d'avertissement dans le Nord canadien – Resumé

Catalogue Number: En4-452/2-2022E-PDF

International Standard Book Number (ISBN): 978-0-660-41510-9

Related publications (registration number POR-132-20):

Catalogue Number: En4-452/2-2022F-PDF (Executive Summary-French)
ISBN: 978-0-660-41512-3

Executive Summary

Earnscliffe Strategy Group is pleased to present the following report to Environment and Climate Change Canada (ECCC) summarizing the results of the qualitative research on extreme temperatures and alerting programs in northern Canada.

Environment and Climate Change Canada's (ECCC) mandate is to protect the safety and security of Canadians and their property. Public weather alerts are the main avenue for this action. The Meteorological Service of Canada (MSC) has recently established, in partnership with Health Canada (HC) and the provinces and territories, a world-class Heat Warning and Information System across the majority of Canada. This system provides health-based Heat Warning criteria and services through advance notifications to public health partners supporting their Heat Alert Response Systems (HARS).

The MSC does not currently have a regionally appropriate service in Nunavut, Northern Quebec (Nunavik), and the High Arctic of the Northwest Territories and Yukon to protect Northern Canadians during extreme heat events. The MSC has heard anecdotally from Service Meteorologists that there are heat concerns at temperatures lower than one would expect within the Northern Canadian population, in particular the high arctic. However, the current population size and health data limitations in Northern Canada have prevented Health Canada from completing a thorough and informative heat-health analysis for the development of Heat Warning thresholds, nor is there international research to support this action. At the same time, climate change has increased the prevalence of extreme heat events in the North. Consequently, the determination of health-based Heat Warning criteria and thresholds is a priority to protect the population.

In order to develop an appropriate Heat Warning Program and effective messaging system for the North, further investigation into Northern Canadians' perceptions, needs, and current understanding of extreme temperature and their associated warning systems were required.

In addition to helping ECCC better understand Northern Canadians' opinions and needs related to extreme heat, the department also aims to use this research to better understand how the existing extreme cold warning program in the North is used and how the warnings influence decision-making for Northern Canadians. As Nunavut, Northern Quebec, and the High Arctic have the most extreme cold temperatures in Canada, this research will help improve the existing Extreme Cold Warning Program to better suit the needs of Canadians in the North.

The total contract value of the project was $69,371.43 including HST.

To meet ECCC's objectives for this project, Earnscliffe conducted a wave of qualitative research. The research entailed a total of 52 one-on-one interviews conducted by phone from June 11 to August 12, 2021. The target audiences included Indigenous and non-Indigenous members of the general population living in Canada's North (outside Yellowknife and Whitehorse, where existing criteria for heat warning systems are not appropriate), Indigenous Elders living in Canada's North and public health and emergency management officials. In total, we conducted 35 interviews with the general population, 4 with Elders, 8 with health officials and 5 with emergency management officials. The interviews were approximately 40 minutes in length and participants received an honorarium of $200.

It is important to note that qualitative research is a form of scientific, social, policy, and public opinion research. Qualitative research is not designed to help a group reach a consensus or to make decisions, but rather to elicit the full range of ideas, attitudes, experiences, and opinions of a selected sample of participants on a defined topic. Because of the small numbers involved, the participants cannot be expected to be thoroughly representative in a statistical sense of the larger population from which they are drawn and findings cannot reliably be generalized beyond their number. As such, results are directional only.

The key findings from the research are presented below.

Key Findings

Weather and Climate Change

- Participants clearly distinguished between weather (current conditions) and climate change (the changes in weather observed over time, attributed to human activity).

- While most are concerned about climate change, intensity varied. Some are very concerned, and cited dramatic changes they have observed including:
    - Warmer temperatures in the winter and summer;
    - Thawing permafrost causing their homes to sink;
    - Unreliability of ice roads and ice thickness, which pose supply chain and safety issues for hunting and fishing;
    - Changes to animal and insect species in their area; and,
    - Frequency of forest fires and impact of forest fire smoke on air quality and health.

- Those who were less concerned about climate change explained that they were enjoying the warmer weather and opportunity to do more outside. A few also felt concern about climate change was overblown and perhaps part of a historic warming period.

Extreme Temperatures

- A common attitude held by almost all participants was that they find extremely cold weather easier to handle than extreme heat. Participants explained that they expect the weather to be reliably cold during the winter. They are used to preparing for the cold and the infrastructure in their communities was built to help them live in these conditions.
    - In contrast, extreme heat occurs less predictably. Many felt it may be happening more often and is more difficult to manage. Their bodies are not accustomed to the heat and their houses were not built to help them stay cool (e.g., they retain heat and do not have air conditioning).

- Asked what they view as extreme cold requiring them to take precautions, participants mentioned a range of anywhere between -30 to -50 degrees Celsius. Participants acknowledged that at temperatures in that range, they would need to dress more warmly and reconsider travel (in case of vehicle breakdown) or carry more clothes/blankets in their

vehicle. Some noted that they do not go outside when it gets extremely cold, while a few said they usually continue with most of their normal activities.

- One weather condition that was sometimes mentioned as arriving with extreme cold was ice fog. Those mentioning it clearly see it as a condition that may impact either their own plans (because of poor visibility) or life in the community (because flights in and out are disrupted).

- The hot temperatures at which participants feel uncomfortable ranged from the low 20s to 30s. Answers seemed to vary by region – those in Nunavut more often mentioned temperatures in the low to mid 20s, while those in Yukon seemed to mention temperatures in the 30s more often.
  - Many noted that they have trouble keeping their house cool because none of their homes have air conditioning and were built to retain heat. Some also mentioned feeling more lethargic or getting a headache in the heat.
  - Some would keep their existing plans, while taking precautions such as carrying more water, wearing sunscreen, etc. However, others said they would try to stay inside and avoid going out or seek out a place to cool off or swim.
  - Some would appreciate an extreme heat warning, but the group who did was divided on when they would like to receive them – about half felt a day in advance would be sufficient, while others wanted a few more days to prepare, cool their house down, etc.

- While hot temperatures can be an inconvenience, participants seemed more concerned about the impacts of weather events that can accompany hot weather rather than the temperature itself. Participants, particularly those in Yukon, often spoke about forest fire smoke as part of what they consider weather, because it is triggered by heat and thunder/lightning storms.

- Shorter winters and abrupt changes in weather conditions and temperatures in the fall and spring emerged as perhaps even greater concerns than extreme cold or extreme heat. Several participants noted that ice is not reliably frozen for as long and is not as thick as it was in the past. This means they don't always know if it is safe to go out on the ice to hunt/fish and use ice roads.

- Health officials indicated a number of public health-related concerns that did not arise as frequently among the other participants:
  - They noted that vulnerable populations such as those experiencing homelessness or Elders and the elderly are more affected by extreme weather, whether it be directly due to the conditions or due to the isolation that can occur when others are unable to visit them.
  - Those who go "out on the land" were also a segment of the population these respondents mentioned as being of concern, given the impacts of climate change on ice conditions and the ability to move about and access traditional sources of food (e.g., hunting, fishing).

Sources of Weather Information

- Most use ECCC's weather resources in some capacity, either through the website or the WeatherCAN app. Other sources often mentioned include the iPhone weather app, Windy, Weather Network app, and firesmoke.ca (health officials specifically).
    - Several participants also explained that the weather is a very common topic of conversation among family and friends in the North.

- Most access weather reports using their smartphone or computer. A few rely on radio and TV.
    - They are most often looking for temperature, wind (particularly for wind chill and to determine if the wind is strong enough to cause significant waves on rivers and lakes), chance of precipitation, and storm warnings. All of the above have some bearing on how they plan their activities.

- Participants feel the weather forecast is often inaccurate, but do not blame ECCC or other providers for errors. Many believe it is simply too difficult to predict weather in the North because it can vary dramatically based on precise location and can change rapidly.

- Participants felt that ECCC's weather information quality is not bad, but that it does often miss the mark. A few examples include either not notifying them of storms or predicting a storm that never materializes.
    - Asked what ECCC and other weather providers could do differently, participants mentioned major weather event accuracy, placing weather stations in more locations, more frequent updates, including citizens in reporting in small communities (including consulting elders), winter road conditions, reporting the weather in Indigenous languages, and marine forecasting.

Research Firm:

Earnscliffe Strategy Group Inc. (Earnscliffe)
Contract Number: K3B42-210961/001/CY
Contract award date: March 17, 2021

I hereby certify as a Representative of Earnscliffe Strategy Group that the final deliverables fully comply with the Government of Canada political neutrality requirements outlined in the Communications Policy of the Government of Canada and Procedures for Planning and Contracting Public Opinion Research. Specifically, the deliverables do not include information on electoral voting intentions, political party preferences, standings with the electorate or ratings of the performance of a political party or its leaders.

Signed:  Date: September 10, 2021

Doug Anderson
Principal, Earnscliffe