Results of a community survey on environmental forecasting uses and needs

Full Inuktitut/English bilingual report will be available in February 2024 at:
https://straightupnorth.ca/community-wwic-uses-and-needs/

14

Kangiqtugaapingmiut
Participated

Photo: Marlene Iqaqrialu
Thank you!
We wish to acknowledge the **14 Kangiqtugaapingmiut** who participated in this survey between September and December 2021: Gregory Joanas and 13 Kangiqtugaapingmiut who asked to remain anonymous. Thanks to everyone for their time and sharing their experiences.

This project was funded by ArcticNet, the Climate Change Preparedness in the North Program (CIRNAC), the Canada Research Chairs program, and Environment and Climate Change Canada (ECCC) Science and Technology Branch. This project was also endorsed as part of the Year of Polar Prediction.

We received tremendous support from our research partners at SmartICE, Arctic Eider Society, Ittaq Heritage and Research Centre, Environment and Climate Change Canada, Carleton University, Memorial University of Newfoundland, and University of Ottawa. We would especially like to thank Aqqiumavvik Society staff in Arviat for their support in coordinating survey activities across Nunavut.
| 01 | ᐃᑦᑐᕐᓂᐊᕐᒥᒃ ᑲᕐᒪ ᖃᓄᑦ | 20 | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ |
| 02 | ᐃᓄᑦ ᐃᓄᑦ | 24 | ᖃᓄᑦ ᐃᓄᑦ | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ |
| 03 | ᖃᓄᑦ ᐃᓄᑦ | 25 | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ | ᖃᓄᑦ ᐃᓗᐊᓂᒃ ᖃᓄᑦ |
| 04 | ᖃᓄᑦ ᐃᓄᑦ | 26 | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ | ᖃᓄᑦ ᐃᓗᐊᓂᒃ ᖃᓄᑦ |
| 05 | ᖃᓄᑦ ᐃᓄᑦ | 27 | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ |
| 06 | ᖃᓄᑦ ᐃᓄᑦ | 30 | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ |
| 08 | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ | 33 | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ |
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| 15 | ᖃᓄᑦ ᐅᓪᓗ ᐃᓗᐊᓂᒃ ᖃᓄᑦ | | |
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Photo: Marlene Iqaqrialu
ABOUT THIS PROJECT

Our research team includes Inuit, northern, and southern researchers who have worked together for many years in Nunavut communities. Over the years we have heard from Nunavummiut (people of Nunavut) that services providing information on weather, water, and ice conditions are not easy to use, access, or understand. We have also heard that the information is not always accurate for local conditions. This, along with increasingly unpredictable weather, and changing sea ice conditions, has made it harder and riskier for Nunavummiut to hunt and travel safely. We developed this project to learn how Nunavummiut are using environmental information to make decisions about safe travel on the land (including water and ice).

Our goal is to help improve the information that is available, and how it is communicated in northern communities. To accomplish this goal, we created a survey to get feedback from communities across Nunavut. Survey questions were developed together with input from all team members, as well as from environmental service providers, Inuit organizations, and northern governments and research organizations.

We work together according to the Aajiiqatiginingniq research framework, outlined by the Aqqiumavvik Society working with Elders from across Nunavut. This framework guides how we make decisions, and build consensus on our research approach and results. Surveys were facilitated by Local Research Coordinators working in their home communities. We also worked together in two collaborative analysis workshops to interpret survey results and decide on key messages for service providers and for Nunavut communities.

Ultimately, we hope that the results of this project will help service providers and decision-makers make their information more relevant and accurate for Nunavummiut, in support of safe travel.

Collaborative analysis workshop in Arviat, Nunavut (October 2021, photo: Gita Ljubicic)
PARTNER COMMUNITIES

Training and collaborative analysis workshops with Local Research Coordinators, Elder mentors, and project partners between October 2019 and December 2022.

Photos: Natalie Carter and Gita Ljubicic
### 2018 - 2022

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Details</th>
</tr>
</thead>
</table>
| **2018**   | - **Canada**
  - English-Canadian Agreement on the Engagement of Arctic Research Scientists (CAES) 2018-2022
    - Explore the impact of climate change on the Arctic region
    - Identify strategies for sustainable development in the Arctic
    - Conduct research on the Arctic environment
  - **Lutjens, ON**

| **2019**   | - **Canada**
  - English-Canadian Agreement on the Engagement of Arctic Research Scientists (CAES) 2018-2022
    - Explore the impact of climate change on the Arctic region
    - Identify strategies for sustainable development in the Arctic
    - Conduct research on the Arctic environment
  - **Lutjens, ON**

| **2019-2020** | - **Canada**
  - English-Canadian Agreement on the Engagement of Arctic Research Scientists (CAES) 2018-2022
    - Explore the impact of climate change on the Arctic region
    - Identify strategies for sustainable development in the Arctic
    - Conduct research on the Arctic environment
  - **Lutjens, ON**

| **2020**   | - **Canada**
  - English-Canadian Agreement on the Engagement of Arctic Research Scientists (CAES) 2018-2022
    - Explore the impact of climate change on the Arctic region
    - Identify strategies for sustainable development in the Arctic
    - Conduct research on the Arctic environment
  - **Lutjens, ON**

| **2021**   | - **Canada**
  - English-Canadian Agreement on the Engagement of Arctic Research Scientists (CAES) 2018-2022
    - Explore the impact of climate change on the Arctic region
    - Identify strategies for sustainable development in the Arctic
    - Conduct research on the Arctic environment
  - **Lutjens, ON**

| **2021**   | - **Canada**
  - English-Canadian Agreement on the Engagement of Arctic Research Scientists (CAES) 2018-2022
    - Explore the impact of climate change on the Arctic region
    - Identify strategies for sustainable development in the Arctic
    - Conduct research on the Arctic environment
  - **Lutjens, ON**

| **2022**   | - **Canada**
  - English-Canadian Agreement on the Engagement of Arctic Research Scientists (CAES) 2018-2022
    - Explore the impact of climate change on the Arctic region
    - Identify strategies for sustainable development in the Arctic
    - Conduct research on the Arctic environment
  - **Lutjens, ON**

| **2022**   | - **Canada**
  - English-Canadian Agreement on the Engagement of Arctic Research Scientists (CAES) 2018-2022
    - Explore the impact of climate change on the Arctic region
    - Identify strategies for sustainable development in the Arctic
    - Conduct research on the Arctic environment
  - **Lutjens, ON**
### KEY PROJECT ACTIVITIES (2018 - 2022)

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2018</td>
<td>• <strong>collaborative project planning</strong> meeting at ArcticNet conference in Ottawa, Ontario</td>
</tr>
</tbody>
</table>
| **January - November 2019**| • **collaborative survey development** (involving our project proposal team, Local Research Coordinators, and a number of external reviewers)  
  - this led to survey questions, wording, and options that were much more clear, relevant, and accessible for Nunavummiut  
  - it also means results can be more meaningful and impactful to researchers, northerners, and policymakers |
| **October - November 2019**| • training sessions with Local Research Coordinators near Montreal, Quebec and in Iqaluit, Nunavut                                       |
| **December 2019 – March 2020**| • Local Research Coordinators facilitated surveys in their home communities                                                             |
| **March 2020**            | • surveys put on hold due to the COVID-19 pandemic (see page 4. for more details)                                                        
  - we started working together on a plan for how to safely continue the project                                                        |
| **June 2021**             | • Local Research Coordinators restarted survey facilitation  
  - this could only happen after public health and research license/ethics restrictions allowed it, and with local community organizations’ support  
  - Local Research Coordinators also followed up with some earlier participants to clarify answers                                          |
| **October 2021**          | • **collaborative analysis workshop** in Arviat, Nunavut                                                                                   |
| **November 2022**         | • Local Research Coordinators stopped facilitating surveys in their home communities                                                      |
| **December 2022**         | • **collaborative analysis workshop** in Paris, Ontario, presentations of refined results at ArcticNet conference in Toronto, Ontario  |

SURVEY TIMELINE DURING THE COVID-19 PANDEMIC

PAUSED SURVEY FACILITATION due to universities prohibiting travel and in-person research

REVISED UNIVERSITY AND NUNAVUT ETHICS to follow public health protocols and resume survey

RESUMED ONLINE SURVEY FACILITATION then PAUSED SURVEY FACILITATION due to territory-wide shutdown

RESUMED ONLINE AND IN-PERSON SURVEY FACILITATION and followed all public health protocols

PAUSED SURVEY FACILITATION due to territory-wide shutdown

RESUMED ONLINE AND IN-PERSON SURVEY FACILITATION and followed all public health protocols

ENDED SURVEY
SURVEY FACILITATION BY LOCAL RESEARCH COORDINATORS

In total, 19 Local Research Coordinators were involved in the project, and they completed 360 surveys across 8 communities in Nunavut.

Local Research Coordinators invited community members to participate based on certain criteria. Specifically, we wanted to learn about uses and needs of weather, water, ice, and climate information and services from community members who were actively travelling on the land (including water and ice) in the last three years (since 2017). This included men and women of all ages and experience levels, and they could be experienced hunters, seasonal travellers, or people who just like to get out on the land.

Local Research Coordinators facilitated the surveys in English or Inuktut based on participant preference. They used Qualtrics survey software to enter responses on iPads. They facilitated the survey in a community office or in participants’ homes, based on individual comfort level. Some participants did the survey on their own using an online survey link, when COVID-19 pandemic public health restrictions prevented in-person surveys. Participants were compensated for their time. We obtained research ethics and license approvals before we started the survey.

For more information about this report and the larger study please contact:

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Natalie Carter, McMaster University, carten7@mcmaster.ca

Gita Ljubicic, McMaster University, gita.ljubicic@mcmaster.ca

To access a Nunavut-wide report, and other community reports, please visit:

https://straightupnorth.ca/community-wwic-uses-and-needs/
At the 2021 and 2022 collaborative workshops, Local Research Coordinators developed twelve key messages for service providers:

- **Provide more the information that is specific to communities**
- **Increase the number of pages and sites to go to when accessing online environmental products**
- **Increase awareness of local services and programs**
- **Need more real time weather information (update more often)**
- **Faster and more affordable internet**
- **Need more weather stations in key hunting areas**
- **Increase the number of VHF Repeaters and cell towers (address calling for help)**
- **Increase the number of colour-coded visuals (easy to interpret and use)**
- **Create forecast products that are easy to interpret and use (colour coded visuals)**
- **Create colour-coded visuals for ease of interpretation**
- **Ease of interpretation**
- **Increase forecast and more detailed wind information**
- **Needs to trust in products, leads to work on accuracy (short term forecast)**

**KEY MESSAGES FOR SERVICE PROVIDERS**

- **Provide more tide information that is specific to communities**
- **Make ice charts and satellite images simpler to use (add links)**
- **Address cost and subsidize northern InReach/SPOT subscriptions**

**KEY MESSAGES FOR SERVICE PROVIDERS PROVIDERS**
At the 2022 collaborative analysis workshop, Local Research Coordinators developed seven key messages for community organizations:

1. Develop training programs to meet community needs (e.g. land skills, traditional forecasting, apps, devices, mapping)
2. Raise awareness about available training programs (for all community members, hunters and non-hunters)
3. Develop a list of useable/reliable sites and apps to help make the best decisions in travel
4. Create a list of reliable community sources (who to learn from)
5. Share more information in communities about environmental conditions and hazards
6. Always travel with an inReach or SPOT device
7. Raise awareness about ways to share and access information (local radio, CB/VHF channels, specific social media options)

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UNDERSTANDING THE NUMBERS IN THIS REPORT

PERCENT

100% = all 14 participants

Most of the survey results in this report are shown as % (percent) where 100% means all 14 participants in Clyde River who completed the survey.

Sometimes participants could choose more than one answer, so totals in some figures don’t add to 100%.

In this example from p. 13, participants could choose more than one method of transportation.

COUNTS

Count = the number of participants giving that answer

Some of the charts show the results in percent and the count (actual number) of participants who gave that answer.

In this example from p. 12, snowmobiles are owned or regularly used by 86% of participants (12 participants).
PARTICIPANTS
Participants = everyone (all 14 people) who did this survey in Clyde River

RESPONDENTS
Respondents = only the participants who answered follow-up questions
There are some questions in the survey that not everyone answered. Participants who answered "no" to a question would skip to the next section. But participants who answered "yes" to the same question would be asked some related follow-up questions. When we show the results to follow-up questions, we call this group of participants "respondents", because they were the ones who answered the question.

Respondents = only the participants who completed maps
Some participants did not complete travel maps (due to technical issues and other reasons). When we show the maps, we call this group of participants "respondents", because they were the ones who completed maps.

In this example from p. 26, 43% of the participants said "yes there are places in Clyde River where people meet to talk about recent travel conditions".

Are there places in Clyde River where people tend to meet and talk about recent travel conditions?

Of the 6 respondents who said "yes there are places", 83% go to these places to listen or ask for advice and 17% go to share observations or advice.

Only the participants who said "Yes, there are place", were asked the follow-up question, "Do you got to these places to listen or ask for advice?" This smaller group of participants who answered the follow-up question are called respondents. So the percent shown for respondents are out of the total who answered the question, and not the total of participants.
UNDERSTANDING THE NUMBERS IN THIS REPORT (CONTINUED)

RESPONDENTS
Respondents = only the participants who use forecasting products

WAYS THAT KANGIQTUGAAPINGMIUT RESPONDENTS ACCESS POLAR SERVICES

Some participants did not use every type of environmental forecasting information (i.e. weather forecasts, marine forecasts, ice services, tide tables, satellite images).

In this example from p. 33, of the respondents who access weather forecasts, 5 of them go on online using a personal computer to access weather forecasts.

Of the respondents who access satellite images, 2 of them access satellite images online using a personal mobile device.
UNDERSTANDING THE MAPS IN THIS REPORT

TOTAL TRAVEL

MAP COLOURS AND LEGENDS

Each coloured box on the maps represents a certain number of respondents who travelled to that area, and all of the types of transportation they used to travel there (e.g. if a respondent went to an area by ATV and by snowmobile, it is counted as having travelled to the area twice).

Darker/brighter colours = more respondents went there.
Lighter colours = less respondents went there.

Respondents = only the participants who completed maps

Some participants did not complete travel maps (due to technical issues and other reasons). When we show the maps, we call this group of participants "respondents", because they were the ones who completed maps.
Survey participants ranged in age from 20 to 79 years, with the highest proportion (21%) being between 30–34 years old. No one under the age of 20 or 80 years and older, participated in the survey.

All participants identify as male.

100% of participants identify as an Indigenous person, and as Inuit.

100% of Indigenous respondents identify as Inuit.
Participants were asked about which languages they speak.

Most participants speak English (79%) and all speak Inuktitut.

It is important to understand how long participants have lived in Clyde River as this relates to (although does not necessarily determine) how much experience they have with travel on the land, water, or ice.

Most participants (86%) have lived in Clyde River for 20 or more years.
### TRAVEL EQUIPMENT

#### TYPES OF EQUIPMENT KANGIQTUGAAPINGMIUT SURVEY PARTICIPANTS OWN OR REGULARLY USE

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snowmobile</td>
<td>12</td>
</tr>
<tr>
<td>Cell phone</td>
<td>12</td>
</tr>
<tr>
<td>Boat</td>
<td>9</td>
</tr>
<tr>
<td>All-Terrain Vehicle (ATV)</td>
<td>9</td>
</tr>
<tr>
<td>Short-wave radio</td>
<td>9</td>
</tr>
<tr>
<td>Computer</td>
<td>6</td>
</tr>
<tr>
<td>Satellite phone</td>
<td>6</td>
</tr>
<tr>
<td>InReach or SPOT device</td>
<td>6</td>
</tr>
<tr>
<td>Tablet</td>
<td>4</td>
</tr>
<tr>
<td>GPS*</td>
<td>4</td>
</tr>
<tr>
<td>Dog team</td>
<td>2</td>
</tr>
<tr>
<td>Vehicle (truck, car, SUV*)</td>
<td>1</td>
</tr>
<tr>
<td>6 participants</td>
<td>1</td>
</tr>
<tr>
<td>None of the above</td>
<td>1</td>
</tr>
</tbody>
</table>

* GPS: Global Positioning System; SUV: Sport Utility Vehicle; SPOT: Satellite Personal Tracker; Short-wave radio e.g. CB, SBX, VHF

Snowmobiles and cell phones are the types of equipment most often owned or regularly used by participants, followed by boats, AAVTS, and short-wave radios (CB, SBX, VHF).

Many (64%) participants have access to the internet in their home. This is important to know because it affects what kinds of environmental forecast information they might be able to access.
TRAVEL HABITS

METHODS OF TRANSPORTATION SURVEY PARTICIPANTS USE TO TRAVEL ON THE LAND

When survey participants travel on the land, water, and sea ice, snowmobile is the most common method of transportation used, followed by boat and ATV. Participants also travel by vehicle, dog team, and on foot.

Survey participants use different types of transportation at different times of year. Snowmobiles are used all through the year. ATVs are used from March through December. Boats are used from May through December.

In different times of year, survey participants spend different lengths of time on the land. Most commonly, participants are on the land for hours or days at a time. In May through August the number of participants that are out on the land for weeks at a time, increases. Some travel for longer periods of time.
TRAVEL HABITS

REASONS KANGIQTUGAAGINGMIUT PARTICIPANTS USUALLY TRAVEL ON THE LAND

Survey participants travel on the land, water, and ice for many reasons. Most often they travel to hunt on sea ice, hunt on land (inland), and hunt in the ocean.
WHERE KANGIQTUGAAPINGMIUT RESPONDENTS TRAVEL (TOTAL TRAVEL)

Number of respondents who travelled in the selected area

To access full page maps visit
https://straightupnorth.ca/community-wwic-uses-and-needs/
WHERE KANGIQTUGAAPINGMIUT RESPONDENTS TRAVEL (BY AGE)

AGES 16 TO 24 TRAVEL
- 1 respondent completed maps

AGES 25 TO 34 TRAVEL
- 4 respondents completed maps

AGES 35 TO 49 TRAVEL
- 6 respondents completed maps

AGES 50 TO 69 TRAVEL
- 5 respondents completed maps

AGES 70 AND ABOVE TRAVEL
- 2 respondents completed maps

Number of respondents who travelled in the selected area

Geographic Coordinate System: GCS WGS 1984; Projection: Lambert Azimuthal Equal Area; Maps created by Regena Sinclair, June 28, 2023; Service Layer Credits: HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
WHERE KANGIQTUGAAPINGMIUT RESPONDENTS TRAVEL (BY MODE OF TRAVEL)

SNOWMOBILE TRAVEL

18 respondents completed maps

ATV TRAVEL

5 respondents completed maps

BOAT TRAVEL

17 respondents completed maps

DOG TEAM TRAVEL

2 respondents completed maps

ON FOOT TRAVEL

1 respondent completed maps

Number of respondents who travelled in the selected area

Geographic Coordinate System: GCS WGS 1984; Projection: Lambert Azimuthal Equal Area; Maps created by Regena Sinclair, June 28, 2023; Service Layer Credits: HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
Kangiqtugaapingmiut participants check many types of weather conditions before they travel on the land, water, sea ice, and snow. Wind strength, wind direction, blowing snow, and window of clear weather are the weather conditions most commonly considered necessary to check before travelling.
WATER CONDITIONS
KANGIQTUGAAPINGMIUT
PARTICIPANTS CHECK BEFORE THEY TRAVEL

Kangiqtugaapingmiut participants check many types of water conditions before they travel on the land. Wave direction, wave height, and strong current areas are the water conditions most commonly considered necessary to check before travelling.
Kangiqtugaapingmiut participants check many types of ice conditions before they travel on the land. Position of the floe edge, and sea ice thickness, ice roughness, position of multi-year ice, location and size of leads and polynyas, over flow, ice ridges, snow depth on ice, position of grounded icebergs, and river and lake ice thickness are the ice conditions most commonly considered necessary to check before travelling.
Kangiqtugaapingmiut participants check many other environmental conditions before they travel on the land. Trail conditions, cloud height/formation, animal/bird behaviour, moon stage, stars, snow drifts, and animal/bird migration are the other environmental conditions most often considered necessary to check before travelling.
When planning a trip, Kangiqqtugaapingmiut participants access many sources of environmental information before they travel on the land. People who are on the land, people met during travel (on the land), and people who recently travelled in the area are information sources that participants most often consider necessary to check before travelling.

While on the land and when deciding to return home talking to people met during travel on the land, talking to people who have recently taken the route or been close to the area respondents are going to, and talking to people in their home community are the information sources used most by Kangiqqtugaapingmiut.
**CONTACTING COMMUNITY INFORMATION SOURCES**

**Contacting people on the land while in Clyde River**

<table>
<thead>
<tr>
<th>Method</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB, HF (SBX), VHF</td>
<td>12 respondents</td>
</tr>
<tr>
<td>Cell phone</td>
<td>4 respondents</td>
</tr>
<tr>
<td>inReach or SPOT</td>
<td>2 respondents</td>
</tr>
<tr>
<td>Satellite phone</td>
<td>1 respondent</td>
</tr>
<tr>
<td>Home phone</td>
<td>1 respondent</td>
</tr>
</tbody>
</table>

% of respondents (out of a total of 14 respondents who contact people on the land)

**Respondents who contact people on the land to ask about environmental conditions while they themselves are in Clyde River** mostly use short-wave radios (CB, HF(SBX), VHF) or cell phones to contact them.

**Contacting people in Clyde River while on the land**

<table>
<thead>
<tr>
<th>Method</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB, HF (SBX), VHF</td>
<td>13 respondents</td>
</tr>
<tr>
<td>Satellite phone</td>
<td>3 respondents</td>
</tr>
<tr>
<td>Cell phone</td>
<td>1 respondent</td>
</tr>
<tr>
<td>inReach or SPOT</td>
<td>1 respondent</td>
</tr>
</tbody>
</table>

% of respondents (out of a total of 13 respondents who contact people in Clyde River)

**Respondents who contact people in Clyde River to ask about environmental conditions while they themselves are on the land** mostly use short-wave radios (CB, HF(SBX), VHF).
CONTACTING OTHERS FOR HELP

If Kangiqtugaapingmiut participants get stranded or have an accident on the land, 100% (out of a total of 14) can call for help.

Most participants would call a family member (79%), a friend (64%), or local search and rescue (57%) for help. Respondents would also call Hunters and Trappers Association (7%) and Nunavut Emergency Management (7%).

To call for help, most participants use a short-wave radio (CB, HF(SBX), VHF) (93%). They also use InReach or SPOT (43%), satellite phone (29%), or cell phone (7%).
The majority (79%) of participants share their observations of weather, water, ice, or snow conditions with others in Clyde River.

Most (72%) participants said there are people regularly going on community radio in Clyde River, or CB/HF(SBX)/VHF radio, to share warnings or provide advice about weather, water, or ice conditions. A few (7%) participants did not know if people regularly go on community radio in Clyde River, or CB/HF(SBX)/VHF radio, to share warnings or provide advice about weather, water, or ice conditions.
GATHERING TO TALK ABOUT TRAVEL CONDITIONS WITH OTHERS IN CLYDE RIVER

Are there places in Clyde River where people tend to meet and talk about recent travel conditions?

- Yes 43%
- No 36%
- I Don't Know 21%

Of the 6 respondents who answered "yes there are places"

- 83% go to these places to listen or ask for advice
- 17% go to share observations or advice

Just less than half (43%) of participants said there are places in Clyde River where people tend to meet and talk about recent travel conditions, or weather, water, ice and other environmental conditions. Of the 6 respondents who said there are places where people meet, most (83%) go to those places to listen or ask for advice, and a few (17%) go to those places to share observations or advice.

PLACES KANGIQTUGAAPINGMIUT GATHER TO TALK ABOUT TRAVEL CONDITIONS

- Dock
- Ilisaqsivik
- Nunami
- On the land
- Outside
SOCIAL MEDIA KANGIQTUGAAPINGMIUT USE TO SHARE TRAVEL CONDITIONS

Do Kangiqtugaapingmiut use social media to talk about travel conditions?

There were 6 Kangiqtugaapingmiut participants who identified being aware of Facebook pages where people share observations or advice about weather, water, and ice conditions.

It is important to note that some respondents have their own knowledge of the weather, water, ice, and snow conditions so they do not check social media for this information.

Of the 6 respondents who said "yes"

6 (100%) use the information shared over social media

Commonly used social media

Facebook (personal pages)

Topics, descriptions, and photos include

- Hunting stories
- Trip descriptions and pictures
- Weather conditions
When asked about local weather stations, it is notable that nearly as many participants said that they do not know if there are local weather stations as said that local weather stations exist. Of the 7 participants who said there are local weather stations in Clyde River, all of them said the weather station information is available in Clyde River, and all of them said that they use the information.

When asked about local water and ice monitoring programs, 10 participants said that they do not know if there are local water and ice monitoring programs, and 4 said local water and ice monitoring programs do not exist.
COMMUNITY MONITORING PROGRAMS (CONTINUED)

Remote cameras are cameras placed in areas where a photographer cannot be at the camera to take photos. Remote cameras often have a self-timer built into the camera so photos can be taken at specific times. An example is a remote camera mounted somewhere near a floe edge, with a built-in timer that is set to take a photo at noon each day.

When asked about remote cameras, it is notable that more participants said that they do not know if there are remote cameras than said that remote cameras do or do not exist. Of the 5 participants who said there are remote cameras, 4 said the remote camera information is available in Arviat, and all of them said they use the remote camera information.

Ittaq is a partner in this project, and through them we know there are local monitoring programs in Clyde River, including the Kangiqtugaapik (Clyde River) Weather Station Network, and Angunasuktiit. However, survey responses suggest that community members are not widely aware of these programs, or they did not associate them with the way the questions were asked in the survey.
COMMUNITY MONITORING PROGRAMS (CONTINUED)

Kangiqtugaapingmiut participants identified one community-based monitoring program run by a local organization. A wide range of conditions are monitored related to weather.

<table>
<thead>
<tr>
<th>LOCAL WEATHER STATIONS</th>
<th>PROGRAM PROVIDER</th>
<th>WHAT IS MONITORED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kangiqtugaapik (Clyde River) Weather Station Network - includes current weather at Akuliaqattak, Silasiutitalik, Ailaktalik, Nattiqsujuq, Qajaakuviup gikigtanga, and Kangiqtugaapik Airport.</td>
<td>Ittaq Heritage and Research Centre</td>
<td>Sky condition, air temperature, wind direction, wind speed, maximum wind gust, relative humidity, pressure, barometer, and ground temperature</td>
</tr>
</tbody>
</table>
Along with community sources of information to decide if it is safe to travel, Kangiqtaugaapingmiut respondents use a wide range of weather forecasts, marine forecasts, icecharts/services and satellite images available. There may be other information sources available beyond those mentioned by respondents.

**WEATHER FORECAST PRODUCTS USED**

- Environment Canada (www.weather.gc.ca)
- Kangiqtaugaapik (Clyde River) Weather Station Network (https://clyderiverweather.org)
- Radio
- Weather Network (https://www.theweathernetwork.com/ca/weather/nunavut/clyde-river)
- Windy (www.windy.com)

**MARINE FORECAST PRODUCTS USED**

- Environment Canada marine forecast (www.weather.gc.ca/marine)
- Kangiqtaugaapik (Clyde River) Weather Station Network (https://clyderiverweather.org)
- Radio

**ICE CHARTS/SERVICES USED**

- Canadian Ice Service (https://www.canada.ca/en/environment-climate-change/services/ice-forecasts-observations/latest-conditions.html)
- Environment Canada (www.weather.gc.ca)
- NASA EOSDIS worldview (https://worldview.earthdata.nasa.gov)

**SATELLITE IMAGE PRODUCTS USED**

- NASA EOSDIS Worldview (https://worldview.earthdata.nasa.gov)
Of the forecasting products used, respondents most often rely on weather forecasts, and the other services are less often used.

Of the 86% of participants who use **weather forecasts**, 8% experience challenges when accessing them. Of the 71% of participants who use marine forecasts, 8% experience challenges when accessing them. **Ice services** were used by 43% of participants and of these, 8% experience challenges when accessing them. Those who experience challenges accessing those service said they challenge occurs when the internet is down. **Satellite images** were used by 29% of participants, and none of them experience challenges when accessing them. Tide tables were used by 7% of participants and none of them experience challenges when accessing them.
Kangiqtugaapingmiut respondents access environmental forecast products in a range of ways, and mostly by going online using a personal mobile device or personal computer, or listening to community radio.

**Respondents access polar services**

WAYS THAT KANGIQTUGAAPINGMIUT

RESPONDENTS ACCESS POLAR SERVICES

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- Community radio
- Online - personal computer
- Online - personal mobile device
- Online - public computer
- Telephone services
- Local TV channel
- Local cable TV channel
- Other radio
- Other TV channel
- Someone else looks it up or prints a copy

<table>
<thead>
<tr>
<th>Community Radio</th>
<th>Online - Personal Computer</th>
<th>Online - Personal Mobile Device</th>
<th>Online - Public Computer</th>
<th>Telephone Services</th>
<th>Local TV Channel</th>
<th>Local Cable TV Channel</th>
<th>Other Radio</th>
<th>Other TV Channel</th>
<th>Someone Else Looks It Up or Prints</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>35</td>
<td>5</td>
<td>0</td>
<td>15</td>
<td>20</td>
<td>15</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

number of respondents who access services
Participants are interested in information about past changes to weather, water or ice conditions (related to climate change), as well as forecasting or predictions.

Slightly more participants are interested in information about changes over a year and over 2-10 years, than over a season, or 11-50 years, or more.
**INTEREST IN LONG-TERM ENVIRONMENTAL CHANGES**

 INFORMATION ABOUT PAST OR FUTURE CHANGES FOR MAKING DECISIONS

<table>
<thead>
<tr>
<th>Topic</th>
<th>PAST</th>
<th>FUTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timing of sea ice break-up/freeze-up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in sea ice thickness</td>
<td></td>
<td></td>
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<tr>
<td>Changing position of the floe edge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in length of open water season</td>
<td></td>
<td></td>
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<tr>
<td>Changes in ocean temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timing of river or lake ice break-up/freeze-up</td>
<td></td>
<td></td>
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<tr>
<td>Changes in air temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in the amount of multi-year ice or icebergs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in river or lake ice thickness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in precipitation patterns (rain and snow)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in snow pack, density, and accumulation on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in water level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in prevailing wind direction or speed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in position of leads and polynyas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in permafrost (extent, stability, thaw, slump)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Areas affected by erosion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

More respondents are interested in having information about past environmental changes than about future changes. Common topics of interest included changes in timing of sea ice break-up/freeze-up, and sea ice thickness.
INTEREST IN TRAINING

Respondents who said they were interested in receiving training on survival skills and navigating the land (8 participants), observing and understanding environmental conditions (7 participants), local environmental monitoring programs (8 participants), and accessing or using social media pages or groups (8 participants), were invited to describe the kinds of training they are interested in. Respondents were also asked to share about who they would like to learn from, and environmental conditions they would like to learn more about. The points below were organized by report writers to group them into similar topics.

- Gaining Familiarity with Technology
  - How to use GPS

- Strengthening Hunting and Inuit Cultural Practices and Skills
  - Learn more about hunting and helping other hunters
Results of a community survey on environmental forecasting uses and needs

DECEMBER 2023