



# Welcome to SmartICE

Carolann Harding  
CEO

A graphic consisting of several overlapping geometric shapes in shades of teal, blue, and light green, arranged in a dynamic, angular pattern.

SMARTICE

# Who We Are

- SmartICE is a community-oriented social enterprise offering a suite of climate change adaptation tools, designed to incorporate sea-ice monitoring data with local Indigenous knowledge of sea ice conditions, which can contribute to more informed decisions regarding safe land, water, and sea ice use.
- An award-winning social enterprise servicing Canada's north, SmartICE is working with Indigenous youth to locally manufacture and deliver SmartICE's advanced sea-ice environmental monitoring systems.



# Why SmartICE?

- Climate change is transforming environments around the world.
- Nowhere faster than in Canada's North and Indigenous communities.
- Sea ice is decreasing and less predictable, which is increasing travel risk for Indigenous peoples and northern communities.
- Sea ice connects communities and essentially serves as a highway for people to travel the land and hunt for country food.



## On 'very thin ice': Warm winter causing problems along Labrador's north coast



Ice will likely be thinner throughout the season: Canadian Ice Service

CBC News · Posted: Jan 22, 2021 6:00 AM NST | Last Updated: January 22, 2021



# Climate Change

- The temperatures in the Arctic continue to rise at **three times the global annual average**
- Snow and ice are melting at an increasing rate.
- Arctic annual air temperatures from **October 2021 to September 2022 were the sixth warmest dating back to 1900.**
- Arctic air temperatures have warmed faster than the global average.
- The Arctic's seven warmest years since 1900 have been the last seven years.



○ INITIAL PILOT SITES

○ EXPANSION SITES

**“Travelling on the sea ice  
is essential to maintain our  
way of life”**

**Andrew Arreak,  
Regional Operations Lead  
Pond Inlet**



# Inuit Societal Values



- Caring for the environment (*Avatittinnik Kamatsiarniq*) and community (*Pijitsirniq*)
- Being innovative and resourceful (*Qanuqtuurniq*)

# Community Management Committee







# Our Solutions

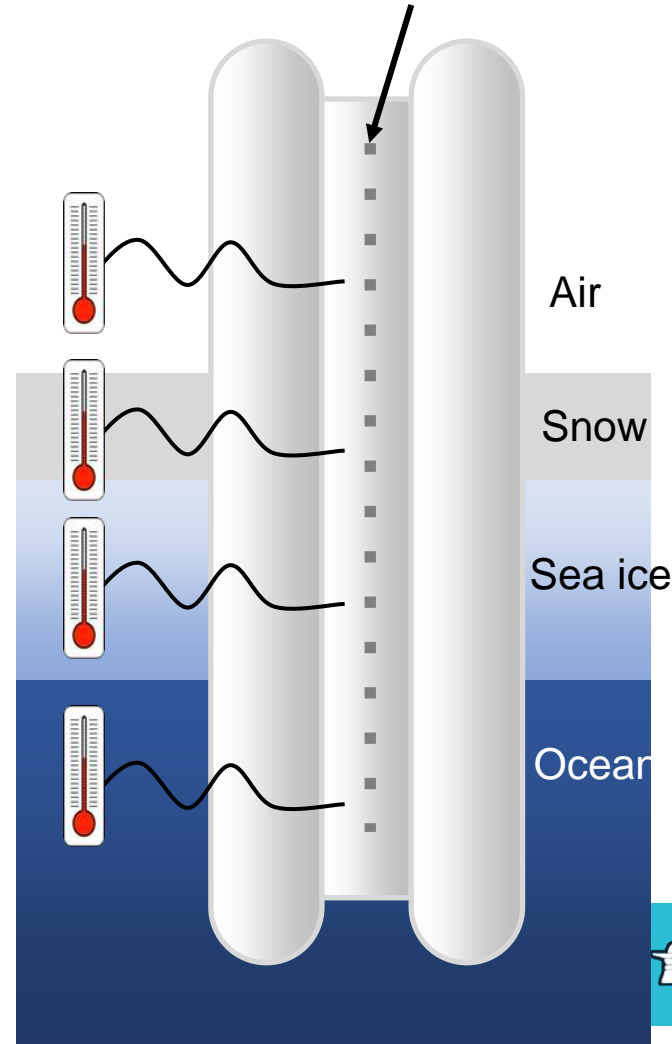


# SmartBUOY

sea-ice thickness sensor

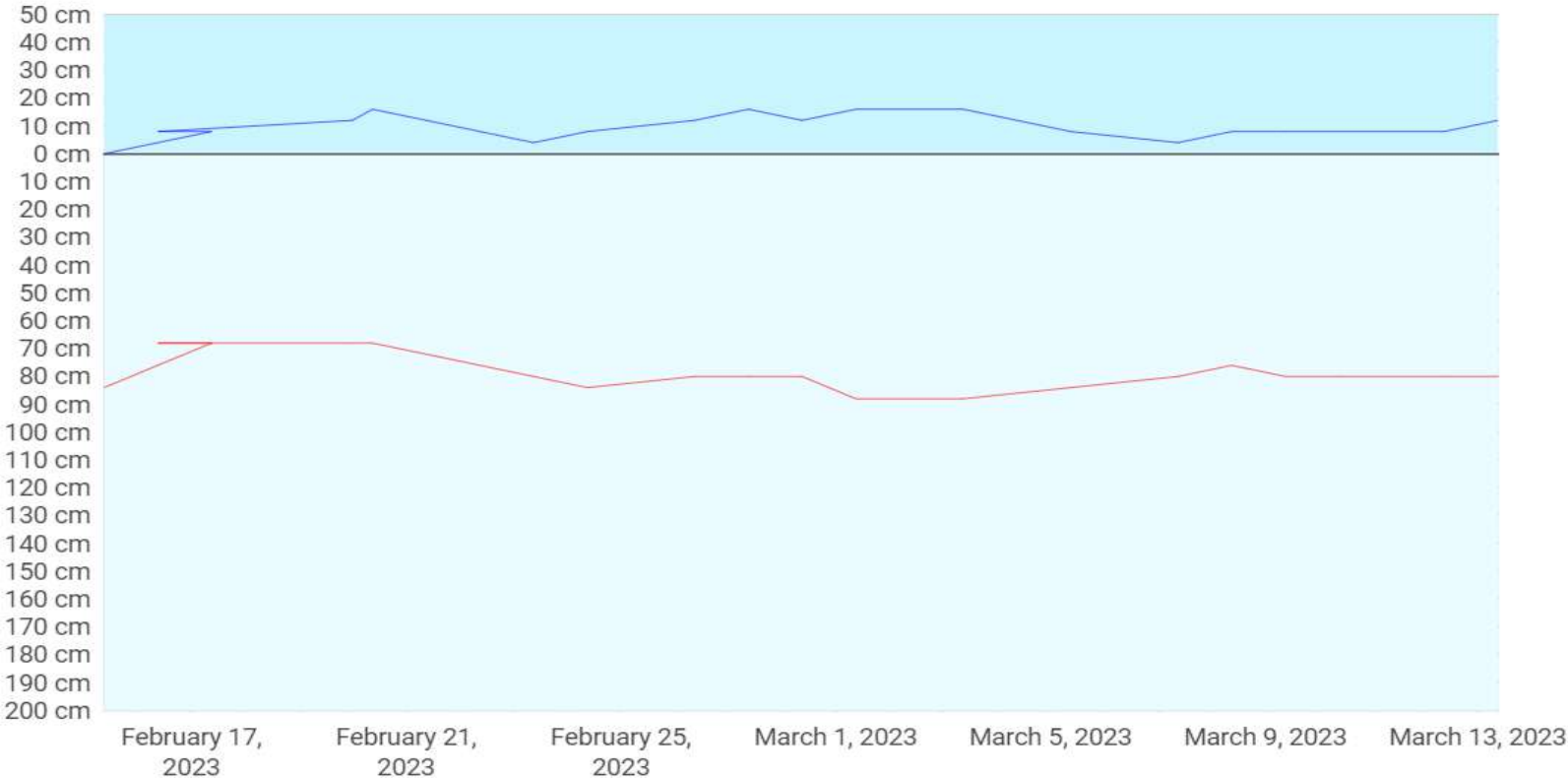


Thermistors



# SmartBUOY Data on SIKU

Nain SmartBUOY 2023-2



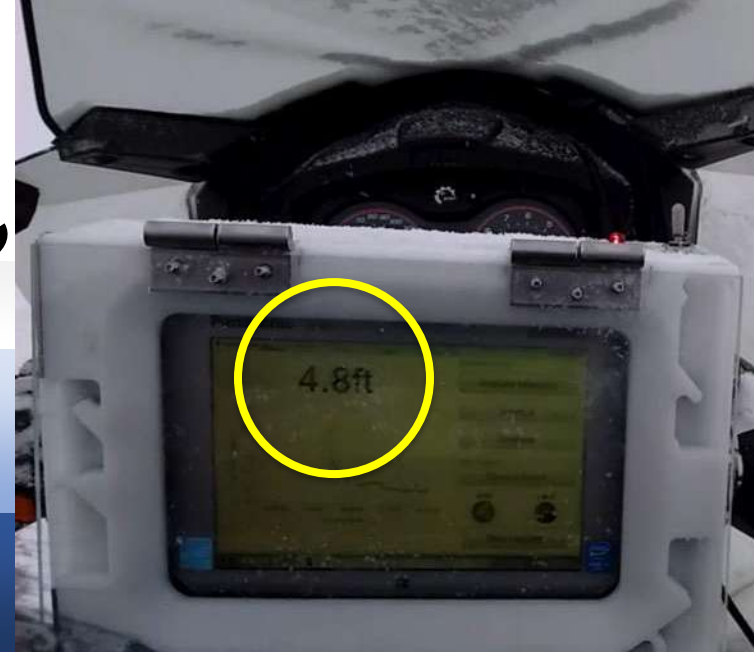
# SmartQAMUTIK



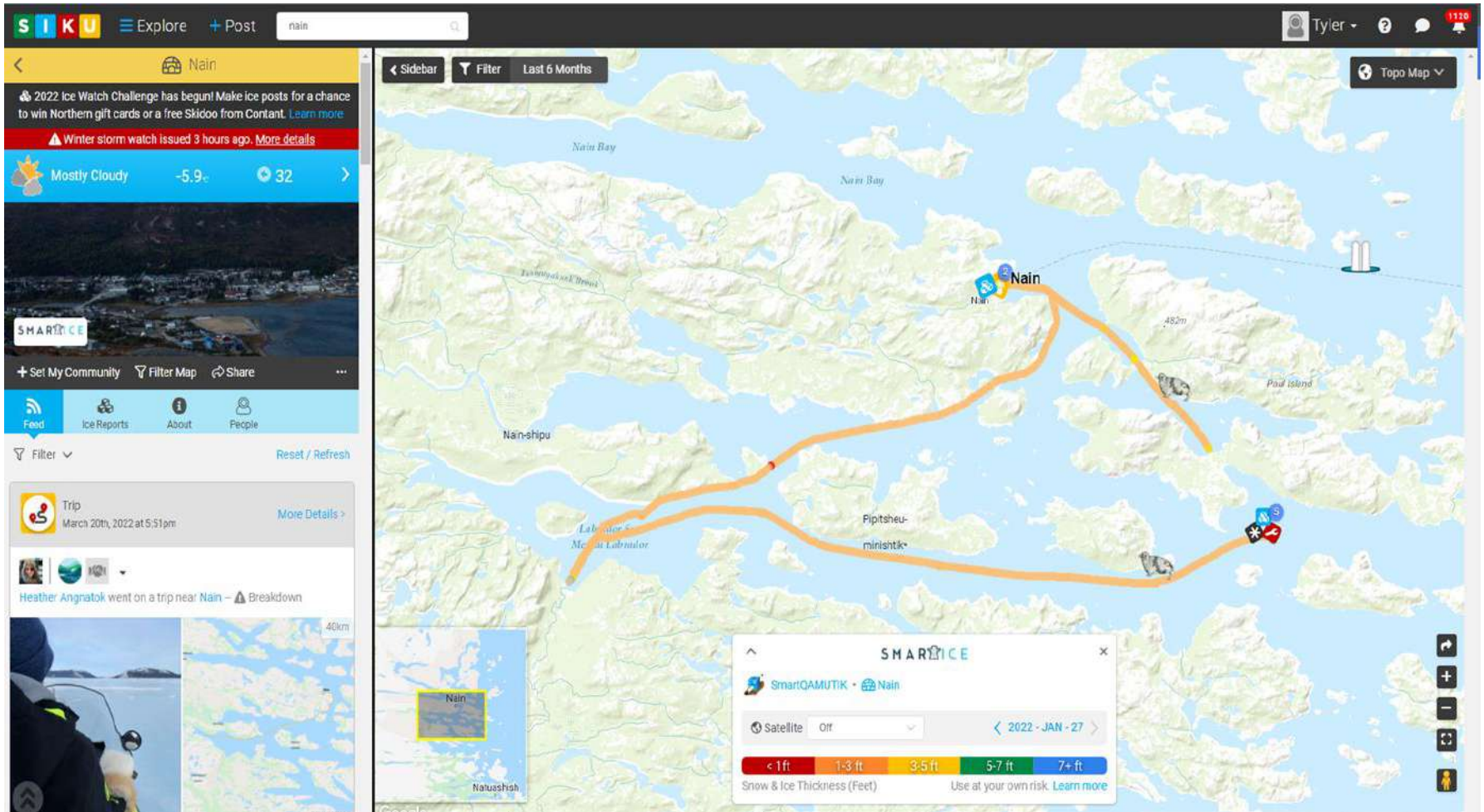
Snow

Sea ice

Ocean



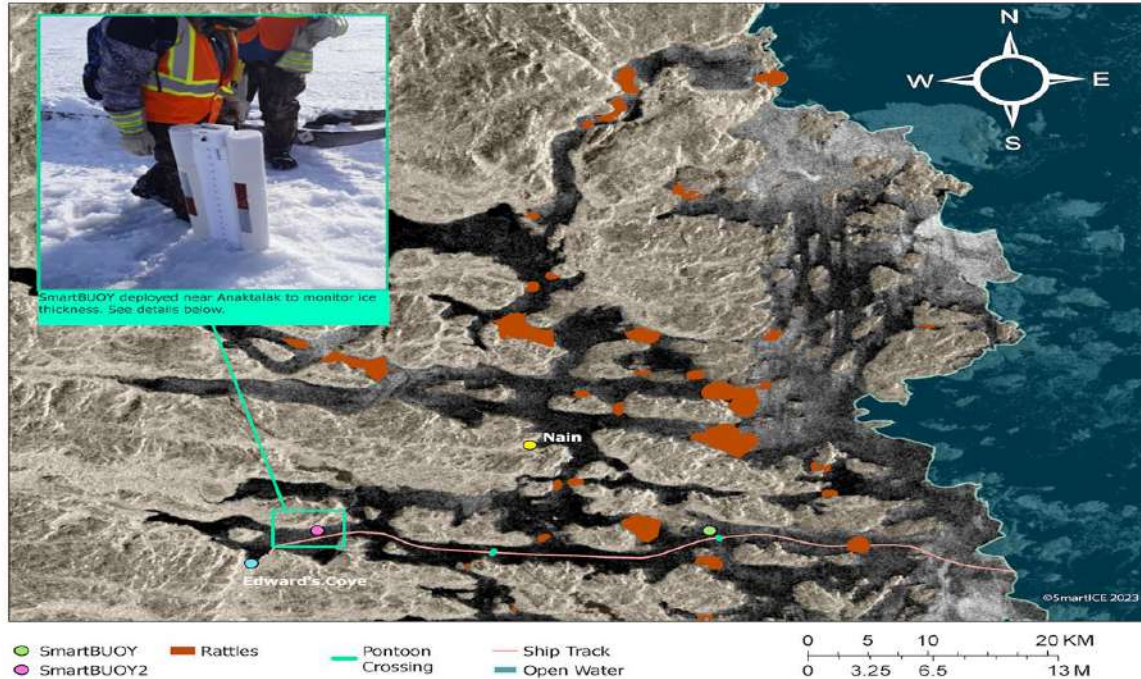
# SmartQAMUTIK Data on SIKU



# Satellite Imagery – Weekly Maps

## SMARTICE

### February 8, 2023 Ice Conditions around Nain



To find the SmartBUOY ice thickness information, go to [SIKU.org](https://www.siku.org). Go to the [Nain Community Page](#) and click on SMARTICE, then select Nain SmartBUOY 2.

This map indicates sea ice conditions around Nain on February 08, 2023. Rattles shown in red, may or may not freeze over during this time so take extreme caution when travelling in these areas. The pink line is the ship track. Everything in blue is open water. This map is meant to act as a guide and not a safety map. Please exercise care when travelling on the sea ice. If unsure of ice thickness, check manually with your harpoon or axe and always carry an emergency communication device. Be aware of the ice conditions when travelling and don't travel alone.

Cartographer: Shawna Dicker.



Esri, NASA, NGA, USGS, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, NRCan, Parks Canada

## SMARTICE

# Travel Safety – Traditional Knowledge

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## ᐱᑦᐱᑦᐱᑦᐱᑦ ᐅᑦᐱᑦᐱᑦᐱᑦ ᐱᑦᐱᑦᐱᑦ?

### Pivagijarsimaviit ingiraniarlutit sikukkuut? Are you prepared to travel on the sea ice?

- Qaujigiatatutit Silaniarlutit**  
Check the Weather Forecast  
Use an app or website to check the weather forecast before you travel.
- Inuutututit Aulagaat angilutit**  
Never Travel Alone  
Travel with a partner.
- Pirulungnartu Qangutinnag**  
Accidents Happen  
Always wear your seat belt and only drinking to go for a bar home.
- Saputisimajunnarlutit**  
Protection  
Only if the ice is very strong, use a protection to avoid injury.
- Extra Supplies**  
Pack more food, water and fuel than you expect to use. And always bring an extra supply.
- Igaak**  
Shades  
Only a sunny day when you are on the ice. Use a hat and sunglasses.
- Lunse Tides**  
Be aware of the tides when the ice is thin or breaking. The tide can make the ice of water higher. Use low tides and always use your compass. Watch for they get caught, and watch for get water and get out as soon as possible.
- Piturnit Ullagu**  
Use a compass when you are on the ice. It is a good idea to have a compass with you. It is a good idea to have a compass with you. It is a good idea to have a compass with you.
- Tusuunajutit qapkuutit**  
Keep in Touch  
Keep your phone in your pocket when you are on the ice. Bring a walkie-talkie, satellite phone, and GPS device.
- Uqumaaugunnaarlutit**  
Stay warm  
Wear a warm jacket, hat, mittens, gloves, and a sleeping bag to keep warm.
- Qauimilutit Naminiingaaqpit**  
Know Where You Are  
Only if the ice is very strong, use a protection to avoid injury.
- Unkua**  
Shelter  
The weather can change. Use a shelter to protect you from the wind and rain. Use a tent or a shelter to protect you from the wind and rain.
- Anuraagaqkanipagutit**  
Extra Clothing  
Pack more clothes than you think you need. What are you going to wear if you suddenly get wet?

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## ᐱᑦᐱᑦᐱᑦᐱᑦ ᐅᑦᐱᑦᐱᑦᐱᑦ ᐱᑦᐱᑦᐱᑦ?

### Qaujimajariaqartut aularniaruvit sikukkuumiaruvit? What to know as you travel on the sea ice?

- Qaujigianginnarluq**  
Check the sea ice strength regularly with your harpoon.  
Use a harpoon to check the strength of the ice. Use a harpoon to check the strength of the ice. Use a harpoon to check the strength of the ice.
- Ajuraq**  
Leads  
Leads are thin pieces of ice that break off from the main ice. They are dangerous to travel on.
- Qaujmelutit Naukkut**  
Know Where to Cross  
High tides and low tides can be dangerous. Use a compass to find the best way to cross.
- Nuvuqparnanga Inuungna**  
Clouds Over Sea  
Dark clouds can mean a storm is coming. Use a compass to find the best way to cross.
- Inmatliqtiqtiq**  
Flooded Ice  
Flooded ice is ice that has water on top. It is dangerous to travel on.
- Salaruq**  
Rotten Ice  
Rotten ice is ice that has melted and refrozen. It is dangerous to travel on.
- Sicinimut Oqilingsa**  
Reflections  
Reflections can be dangerous. Use a compass to find the best way to cross.
- Pilagiarnie**  
Ice Bridges  
Ice bridges are thin pieces of ice that connect two larger pieces of ice. They are dangerous to travel on.
- Qaujigiarluq**  
Check Before You Cross  
Check the strength of the ice before you cross. Use a compass to find the best way to cross.
- Puktaito**  
Melt Ponds  
Melt ponds are pools of water that have formed on the ice. They are dangerous to travel on.
- Kilajujuk**  
Drainage Holes  
Drainage holes are holes in the ice that have formed. They are dangerous to travel on.

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# We are a WISE

- SmartICE is a Work Integrated Social Enterprise (WISE)
- In May 2019, SmartICE opened the Northern Production Centre (NPC) in Nain, Nunatsiavut where local indigenous youth participate in the unique SmartICE **Employment Readiness and Technology Development Program.**
- This project delivers training to youth, especially those “not in education, employment or training” (NEET), aims to reduce barriers for education and employment and also focuses on individual well-being.



## SmartICE Employment Readiness and Technology Development Program

- Technical training
- Translatable employment skills
- Certifications, workplace training
- Social and emotional learning
- Traditional activities
- Safe and supportive environment
- Build confidence
- Employment skills



## 2023 Operator Training



SMAR ICE

# Maximizing Social Impact



# Smart MOVES Report Cards





Nakummek

Thank you

SMARTICE