



Welcome to SmartICE

Carolann Harding
CEO

A graphic consisting of several overlapping geometric shapes in shades of blue, teal, and grey, creating a modern, abstract background for the logo.

SMARTICE

Who We Are

- SmartICE is a community-oriented social enterprise offering 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.



Community Operations



○ INITIAL PILOT SITES

○ EXPANSION SITES



VALUES

Inuit-Driven

Inuit communities shape and drive direction.

Benefits Community

Inuit and their communities are the primary beneficiaries.


Innovative

Combining Inuit knowledge and technology.

Youth Focus

Youth have opportunities to learn and work.

Inuit Societal Values

- 
- A group of Inuit people are shown in a snowy, outdoor setting under a clear blue sky. They are wearing heavy winter clothing, including parkas with fur-lined hoods, balaclavas, and various hats. The individuals are looking towards the camera or slightly away, creating a sense of community and shared experience.
- Caring for the environment (*Avatittinnik Kamatsiarniq*) and community (*Pijitsirniq*)
 - Being innovative and resourceful (*Qanuqtuurniq*)

With climate change, sea ice is changing and is less predictable.



The SmartICE corporate video can be found [linked here](#).

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.

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

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



For SmartICE it starts in the community...

Dr. Trevor Bell



Community Management Committees

Community Management Committee



Dr. Trevor Bell



Our Solutions

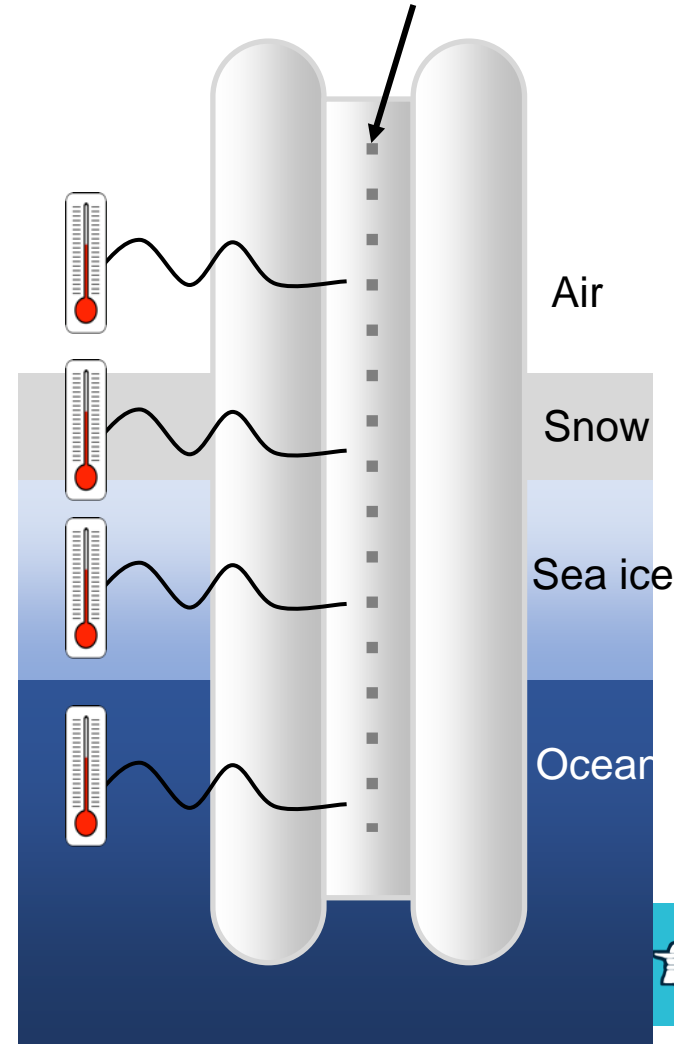


SmartBUOY

sea-ice thickness sensor

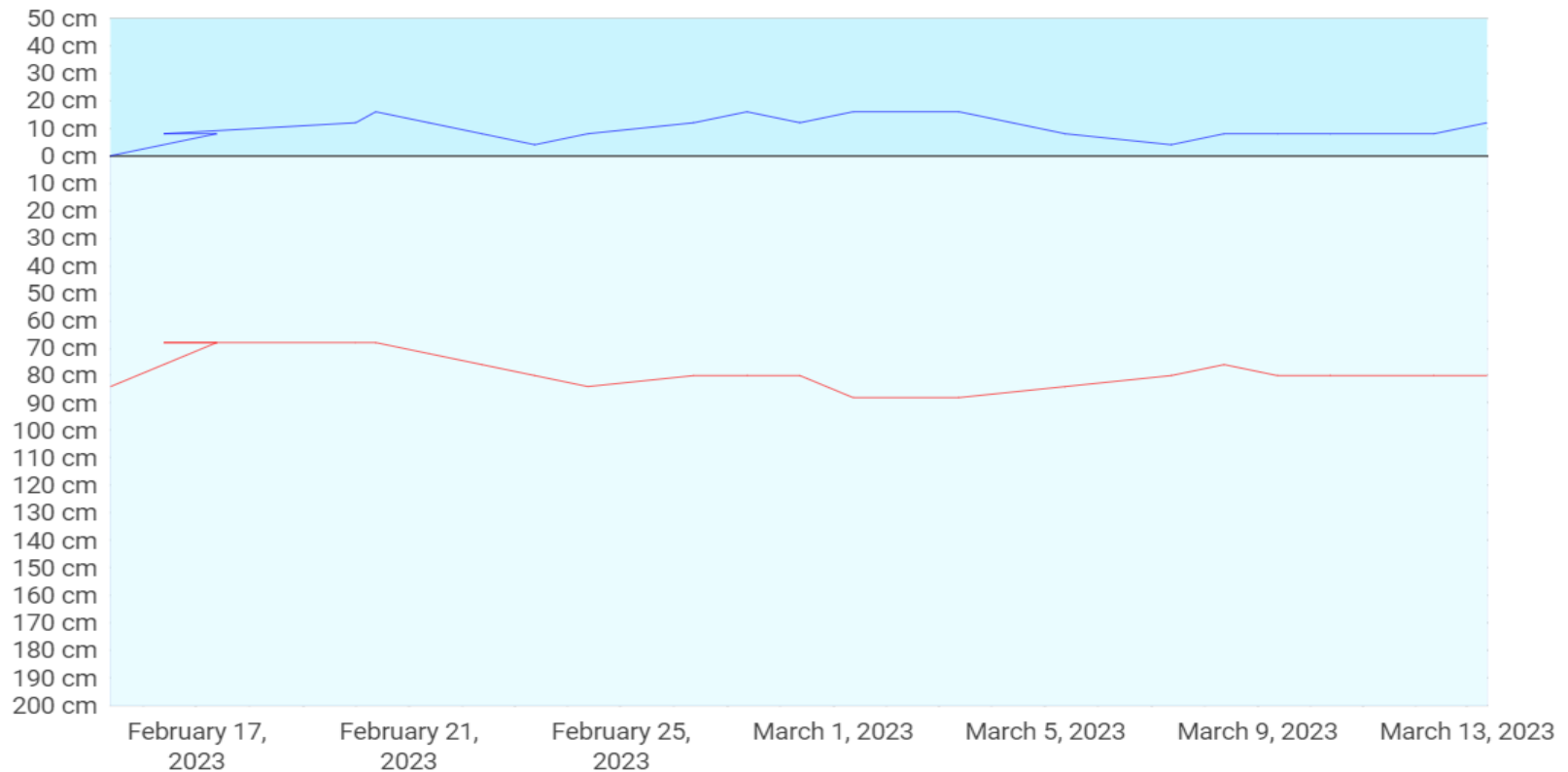


Thermistors



SmartBUOY Data on SIKU

Nain SmartBUOY 2023-2



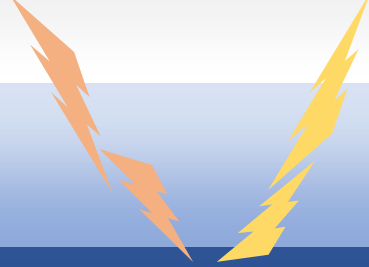
SmartQAMUTIK



Snow

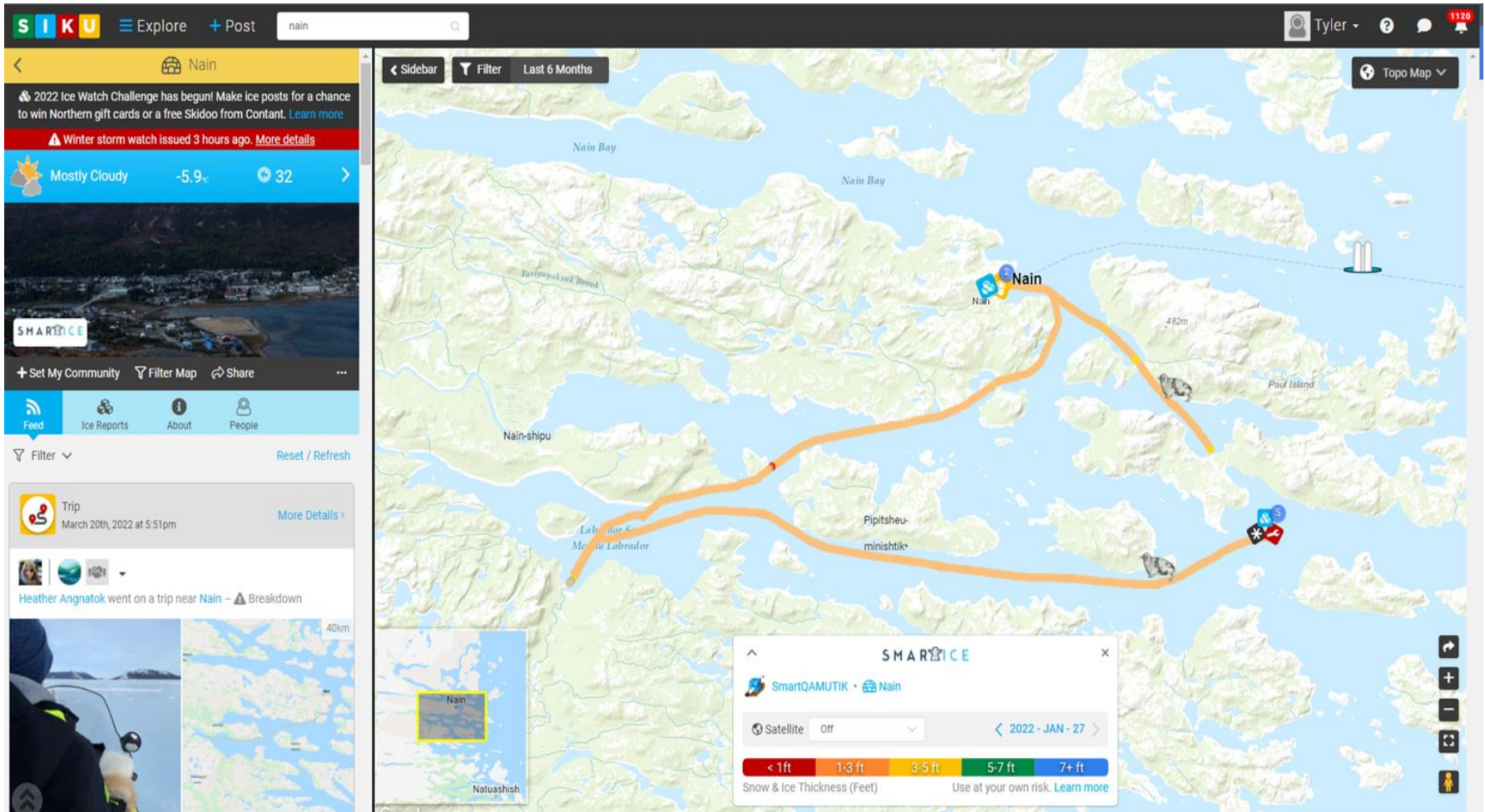
Sea ice

Ocean





SmartQAMUTIK Data on SIKU



Staying Calm and Problem Solving



Andrew Arreak,
Regional Operations Lead, Qikiqtaaluk Region
Pond Inlet, Nunavut

SMARTICE

SMARTICE

SMARICE

SmartBUOY deployed near Anaktalak to monitor ice thickness. See details below.

Legend:

- SmartBUOY
- Rattles
- Pontoon Crossing
- Ship Track
- Open Water

Scale: 0 5 10 20 KM
0 3.25 6.5 13 M

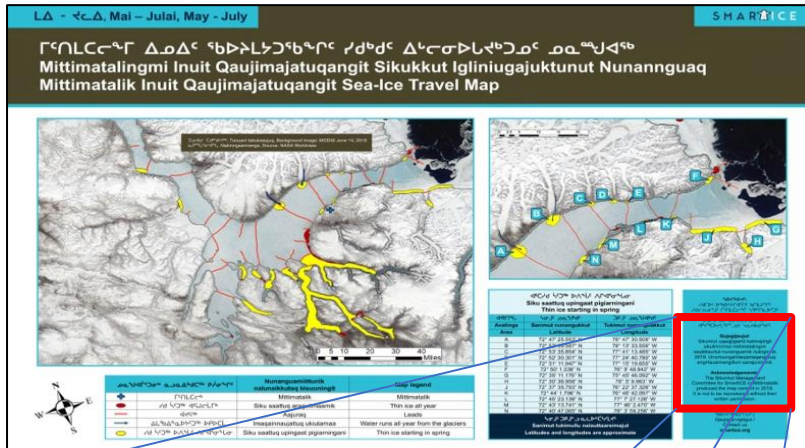
©SmartICE 2023

Cartographer: Shawna Dicker.



MARICE

Community ownership of SmartICE data

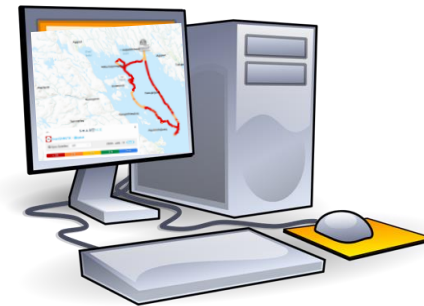
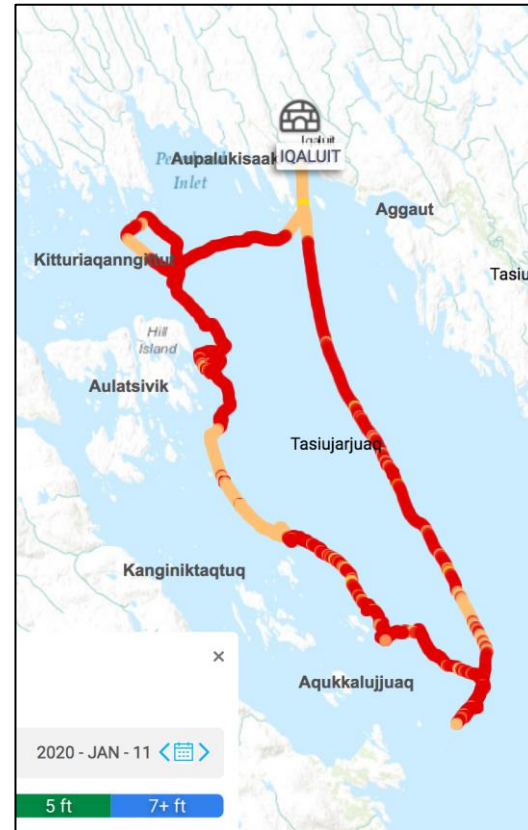


Qujagijaujut:

Sikumiut uqaujjigiartit katimajingit
sikulirinirmut mittimatalingmi
saqittilaurtut nunanguamik ilulinginnik
2019. Unurtuungalirtaujariaqangittuq
angirtausimangilluni sanajuvinirnit.

Acknowledgements:

The Sikumiut Management Committee for SmartICE in Mittimatalik produced the map content in 2019. It is not to be reproduced without their written permission.



Travel Safety – Traditional Knowledge

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ᐱᓄᐱᓐᓴᓐᓴᓐ ᐅᐱᓐᓴᓐᓴᓐ ᐱᓐᓴᓐᓴᓐ?
Pivagijarsimaviit ingiraniarlutit sikukkuut?
Are you prepared to travel on the sea ice?

Gaujigiaqatutit Silanniarutit
 Annuk silanniarutit annuk silanniarutit annuk silanniarutit.

Check the Weather Forecast
 And ask experienced hunters about recent conditions and their trust (Gaujigiaqatutit).

Inuutlutit Aulaaqatigillutit
 Never Travel Alone
 Two heads are better than one.

Pirulungnartu Qangatinnag
 Accidents Happen
 Always take a first aid kit, even if you're only planning to go for a few hours.

Saputisimajuniarutit
 Protection
 Carry a first aid kit, even if you're only planning to go for a few hours.

Nakeakannirlutit Nautiluaniarlutit
 Extra Supplies
 Pack more food, water and fuel than you expect to use. And always clean up after yourself, don't leave garbage lying around.

Igaak
 Shades
 On a sunny day, always wear sunglasses out on the ice so you don't become snow blind.

Lunar Tides
 Be aware of the moon phases; they could make or break your trip. The full moon creates a lot of water everywhere, more low tides and less and stronger ocean currents. Rough ice may get rougher, and leads may get wider and deeper water areas may get larger.

Pitumirtillugu
 Tusaumajutitqapaktutit
 Keep in Touch
 Keep a radio, satellite phone, and SPOT device.

Uquunassugunnarlutit
 Stay warm
 Pack a lamp, stove, hot, candles, matches, lights, and sleeping bags to keep warm.

Qaujimalutit Namiminnagarpit
 Know Where You Are
 Keep a map of the area, and share your travel routes with family and friends.

Urkkaa
 Shelter
 The weather can change, travel delays happen. Carry a tent for protection from the outside elements. Check the Sikumiut map and add the coordinates of your shelter area before you go.

Annuraagagikaniarpaglutit
 Extra Clothing
 What are you going to wear if you accidentally get wet?

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Illustration by James Hutz, Minnesota.

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Qaujimajariaqartut aulaniaruviit sikukkuurniaruvit?
What to know as you travel on the sea ice?

Gaujigianginnarlugu
 Check the sea ice strength regularly with your harpoon.
 1. Insert it and hammer down through it.
 2. Stab it. If it doesn't go through it's safe to walk on.
 3. Stab it. If it doesn't go through it's safe for snowmobile travel.

Aajuraq
 Leads
 When leads do not refreeze it is a sign that spring has come. Be careful of leads, you may fall in with the wrong step.

Qaujimalutit Naukkut Ikaariqarmangaat
 Know Where to Cross
 High ridges along leads can be difficult and dangerous to cross. Look for meltwater streams flowing from the ice for areas to cross. The stream will have melted the ice creating a channel that is a lower and safer area to cross.

Nuvuqaarinnaga Imaunaga
 Clouds Over Sea
 Dark clouds, fog, and rain from over open water and sea are good indicators that the ice edge is close. Clouds are also a warning to beware safely at the ice edge, as it is more prone to break up.

Immattiliqitqut
 Flooded Ice
 Melt ponds start to get bigger later in the spring when warmer foods the ice. Don't drive the water, it's too salty.

Salaraq
 Rotten Ice
 Spring is really when the ice starts to rot, leaving rotten ice. Be careful, as the ice is about to break up.

Siginimut Qilinginga
 Reflections
 Sky reflected on the melt ponds may hide you from a potential danger.

Pilagiarniq
 Ice Bridges
 Areas of stable ice between where leads begin, and are called ice bridges. They are safe places to cross when leads get too wide. Share their locations with others in the community.

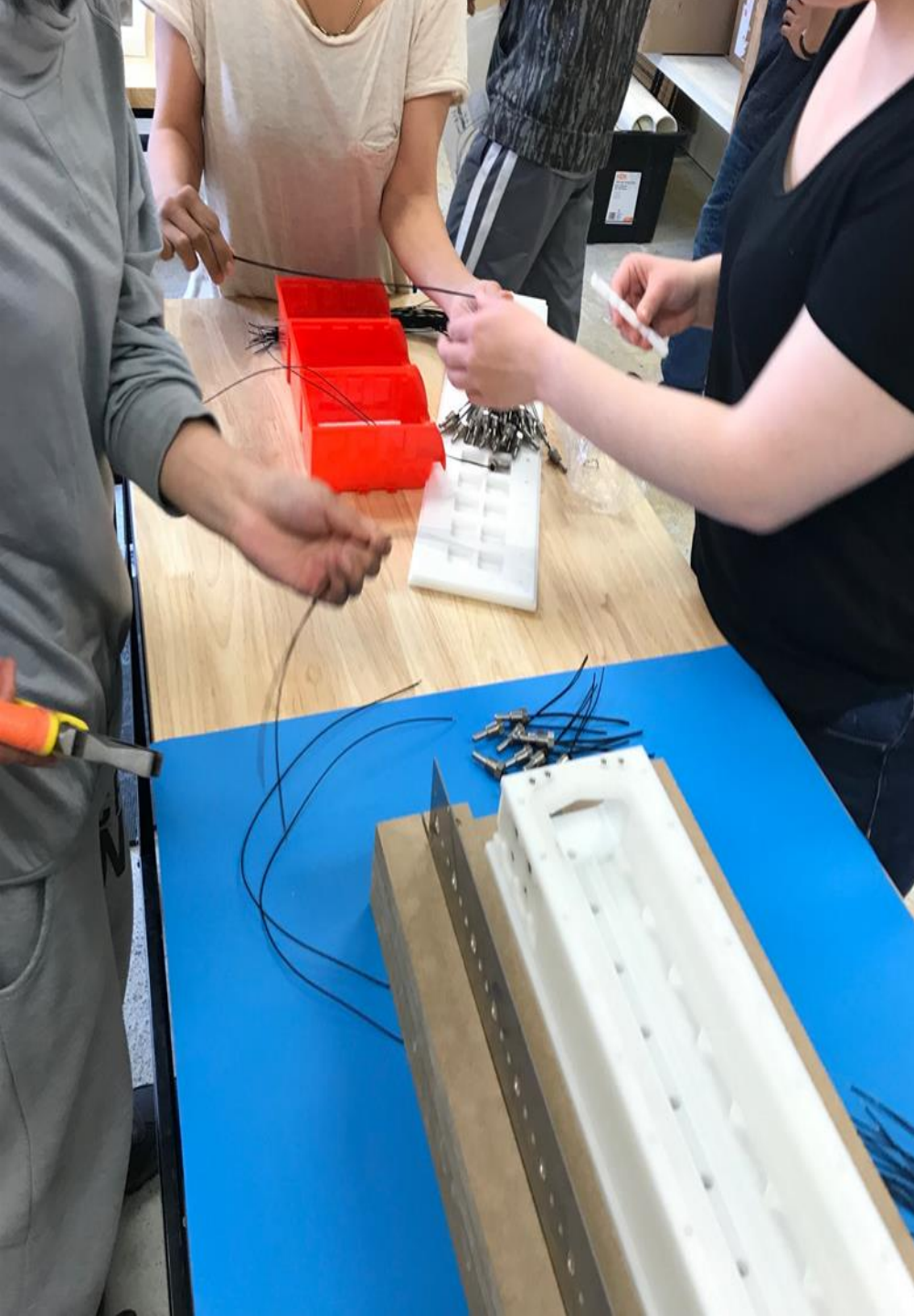
Qaujigiarlugu Ikaariqinnig
 Check Before You Cross
 Crossing of flooded ice may cause one side of a lead to be higher than the other, called an ice ledge. Pick a crossing spot where the ice and water are more level.

Puktalla
 Melt Ponds
 Ponds of freshwater from melting snow begin to form on the ice at the start of spring. This water can freeze to thick but warm your rubber boots to keep your feet dry.

Kilaajuk
 Drainage Holes
 Pay attention to drainage holes and white spots in the footed ice, they can swallow you whole.

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Illustration by James Hutz, Minnesota.



Northern Production Centre

Nain, Nunatsiavut

SMARTICE



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.



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

SmartICE Employment Readiness and
Technology Development Program

SMARTICE



2023 Operator Training



SMARTICE

Maximizing Social Impact



Smart MOVES 2022-2023 Ice Season



Nakummek

Thank you

S M A R  I C E