



ለጥራት ማረጋገጫ ምዝገባ 2023 ለጥራት ማረጋገጫ ምዝገባ  
ጥራት ማረጋገጫ ምዝገባ ለጥራት ማረጋገጫ ምዝገባ

Mary Sanborn-Barrie  
&  
Tom Kingdon



# Geological Survey of Canada (GSC)

- The GSC is Canada's oldest federal agency, founded in 1842
- ᐅᑦᓂᕈᓗ ᓄᓇᓴᖃᑎᓪᓰᒃᓱᑦ ᔨᓚᑕ ᓄᑕᐅᓴᖃᑦᓴᑦ ᓀᓲᓛᑦᔭᓂᓪᓰᑦ  
ᑎᓯᓪᓸᑎᓴᖃᓶᓂᑦ, ᐱᓯᐳᖃᑎᑕᐅᓯᓚᓴᑦ 1842-ᓯ
- A branch of Natural Resources Canada
- ᐳᑕᑦᓯᐱᓴᓀ ᓄᓇᓯᐅᑕᑦᓵᓂᓪᓰᑦ ᔨᓚᑕ
- Manages the GEM-GeoNorth program
- ᐳᑕᑕᐅᓴᖃᓂ ᓄᓇᓴᖃᑎᓪᓰᓂᖃᓂ ᐅᓴᓴᓴᓂᐳᖃᑕᐅᓴᓴᓂᖃᓂᑕᓂ  
ᐅᓴᓴᓴᓂᖃᓂᐅᑎᖃᓂᓴ - ᐅᓯᐅᓴᖃᑕᓴᓂᑦᓯᓯ ᐱᑕᓴᑎᑕᑎᓴᓴᐅᓴᖃᓂ



**The GSC is responsible for developing an understanding of the geoscience of Canada through studies in:**

- natural hazards
- mineral potential
- climate change
- environmental geoscience
- and more!

፲፩ ወርሃ ጳጉሜ ፳፻፲፭ ዓ.ም. በዓ.ም. ፳፻፲፭ ዓ.ም.  
 ለጉዳዩ ምርጫ ምክር ቤት ማህተም ማቅረብ  
 ወይም ማሳሰብ ማለት ነው፡፡  
 ፲፩ ወርሃ ጳጉሜ ፳፻፲፭ ዓ.ም. በዓ.ም. ፳፻፲፭ ዓ.ም.

- $\mathcal{M} \models \varphi \rightarrow \psi$
- $\mathcal{M} \models \varphi \wedge \psi$
- $\mathcal{M} \models \varphi \vee \psi$
- $\mathcal{M} \models \neg \varphi$
- $\mathcal{M} \models \Box \varphi$
- $\mathcal{M} \models \Diamond \varphi$

- 
- GEM-GeoNorth / GEM-GéoNord**
- Legend / Légende**
- GEM-GeoNorth Program Area / GEM-GéoNord zone de programme
  - Southern Limit of GEM-GeoNorth Program / Limite sud de GEM-GéoNord
- 1:22M
- Natural Resources Canada / Ressources naturelles Canada
- Canada

→ ወደፊት ለመሄድ የሚችል ማህበራዊ ምክንያቶችን ለመለየትና ለመቀነስ ማስቻል  
- ለወጪዎች ምክንያቶች ምሳሌ፡ ለጥራት ደረጃ ምክንያቶች ምሳሌ፡ ለጥራት ደረጃ ምክንያቶች ምሳሌ



## : ᐃᐅᐅᓐᓂᓂᐅᓐ GEM: GeoNorth

- geoscience supporting economic and/or infrastructure development in co-development with Indigenous organizations in the North

- ᓂᓐᓂᓐ ᓐᓂᐅᓐᓂᓐ ᐃᓂᓐᓂᓐ  
ᐅᓐᓂᓐᓂᓐᓂᓐ ᐃᓐᓂᓐᓂᓐ  
ᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᐃᓐᓂᓐᓂᓐ  
ᓂᓐᓂᓐᓂᓐᓂᓐ ᐃᓐᓂᓐᓂᓐ  
ᐃᓐᓂᓐᓂᓐᓂᓐ



**GEM: GeoNorth**

- geoscience supporting economic and/or infrastructure development in co-development with Indigenous organizations in the North
- ᐃᓄᑦ ᑭᓚᐅᔨᕐᑭᓂᑦ ᐃᓚᕐᑭᓂᑦ  
ᐅᓇᐅᕐᑭᓂᑦ ᐃᓄᑦ ᐃᓄᑦ ᐃᓄᑦ  
ᐃᓄᑦ ᐃᓄᑦ ᐃᓄᑦ ᐃᓄᑦ ᐃᓄᑦ  
ᐃᓄᑦ ᐃᓄᑦ ᐃᓄᑦ ᐃᓄᑦ ᐃᓄᑦ  
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2021-2028

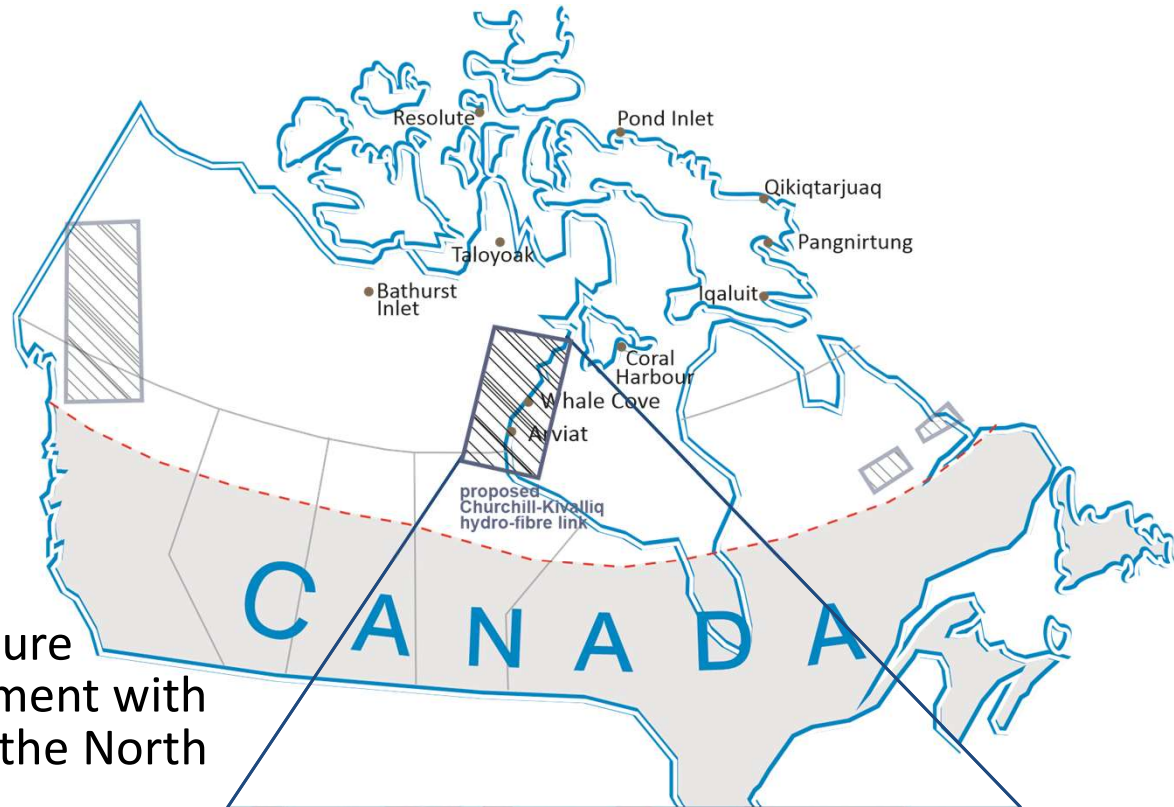


Image courtesy of KIA

# **GEM: GeoMapping for Energy & Minerals**

- address significant geoscience knowledge gaps
- ᐃᖅᐅᓯᑲᓴᓂᖅ ᖅᐅᓱᕐᓂᖅ ᓵᖅ ᖅᐅᓱᒪᕐᐅᖅᓴᓂᖅ ᓴᐅᖅᐅᓂᖅ

2009-2013

2014-2020

**: ▶▶<sup>96</sup> C<sup>96</sup> כ<sup>97</sup>**

# GEM: GeoNorth

- geoscience supporting economic and/or infrastructure development in co-development with Indigenous organizations in the North

- ሙሉ ምዕራባዊ ልማት  
የሚከተለውን ልማት ለማሳካት  
ሚገባ ለሚገባው ልማት ማሳካት  
ሚገባ ለሚገባው ልማት ማሳካት  
ሚገባ ለሚገባው ልማት ማሳካት  
ሚገባ ለሚገባው ልማት ማሳካት



2021-2028

2021-2028

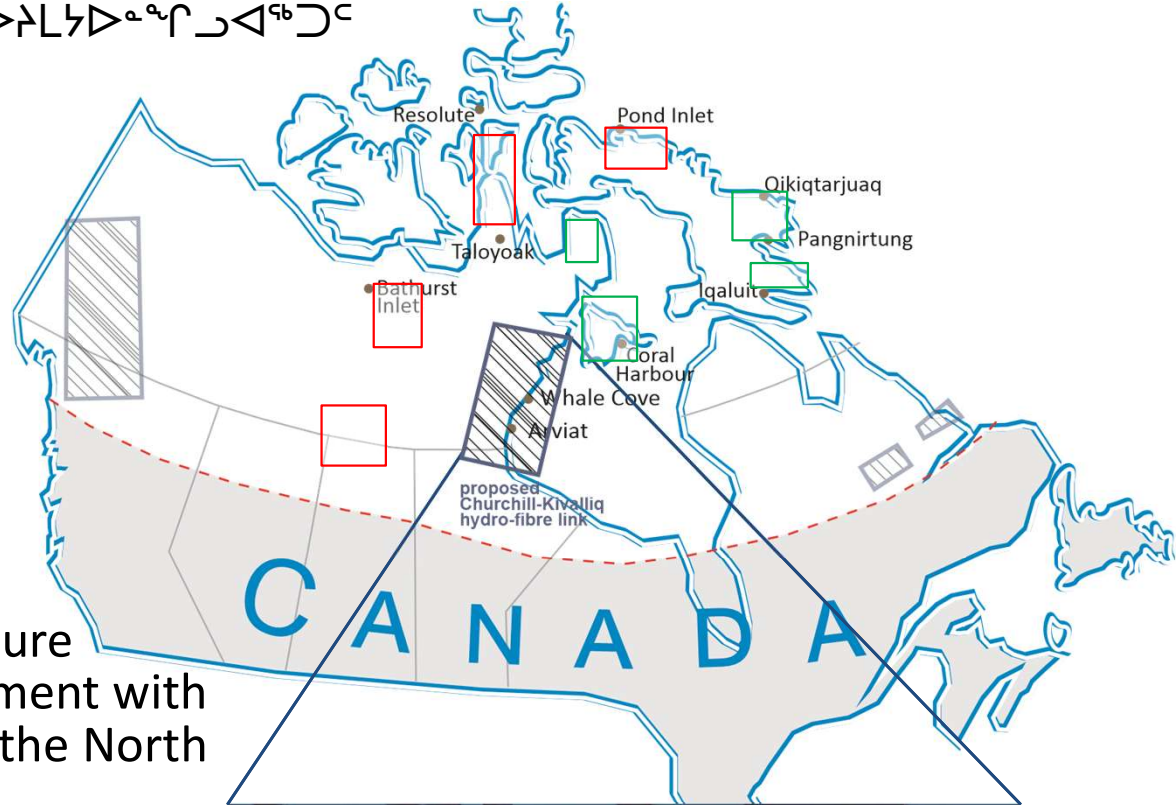
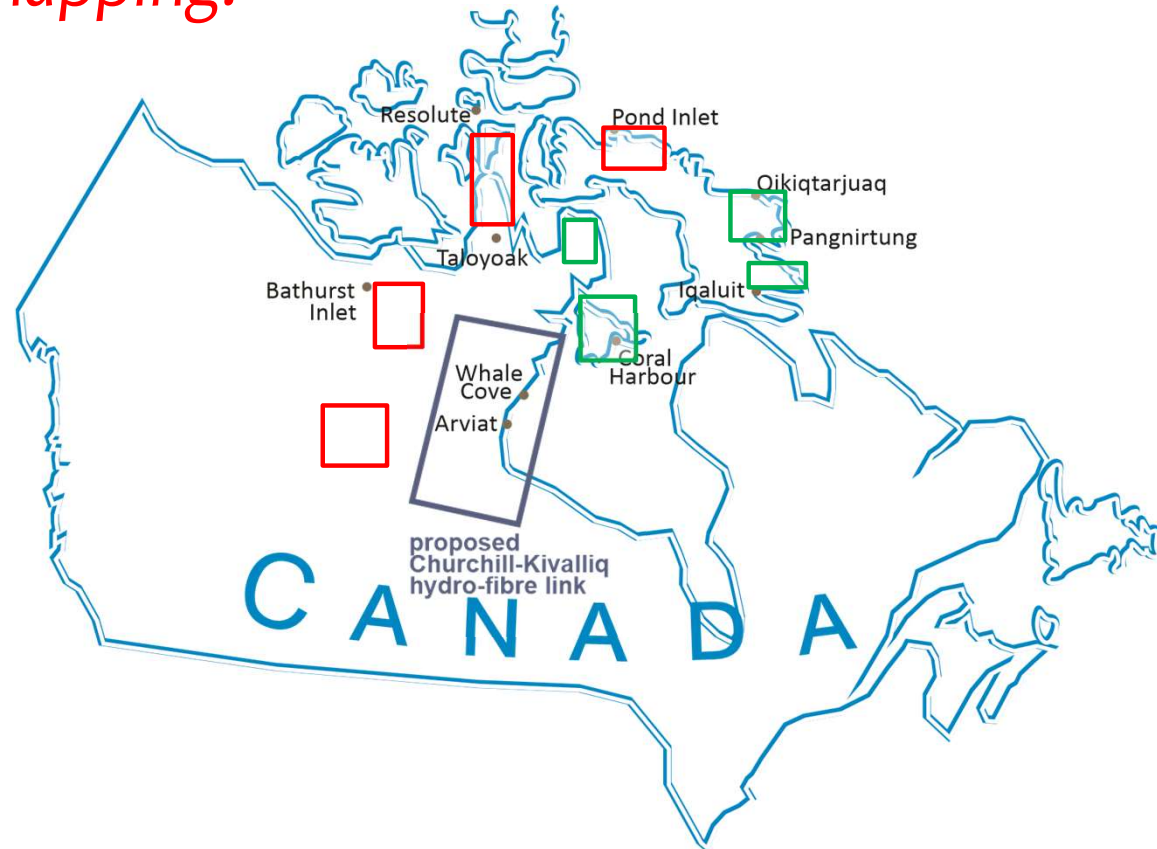
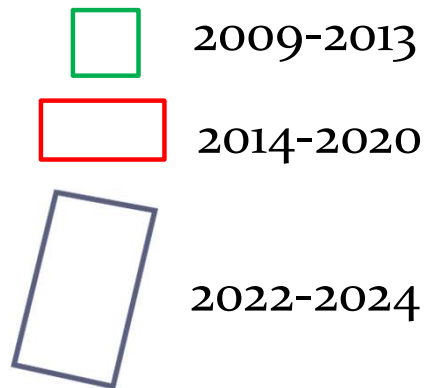


Image courtesy of KIA

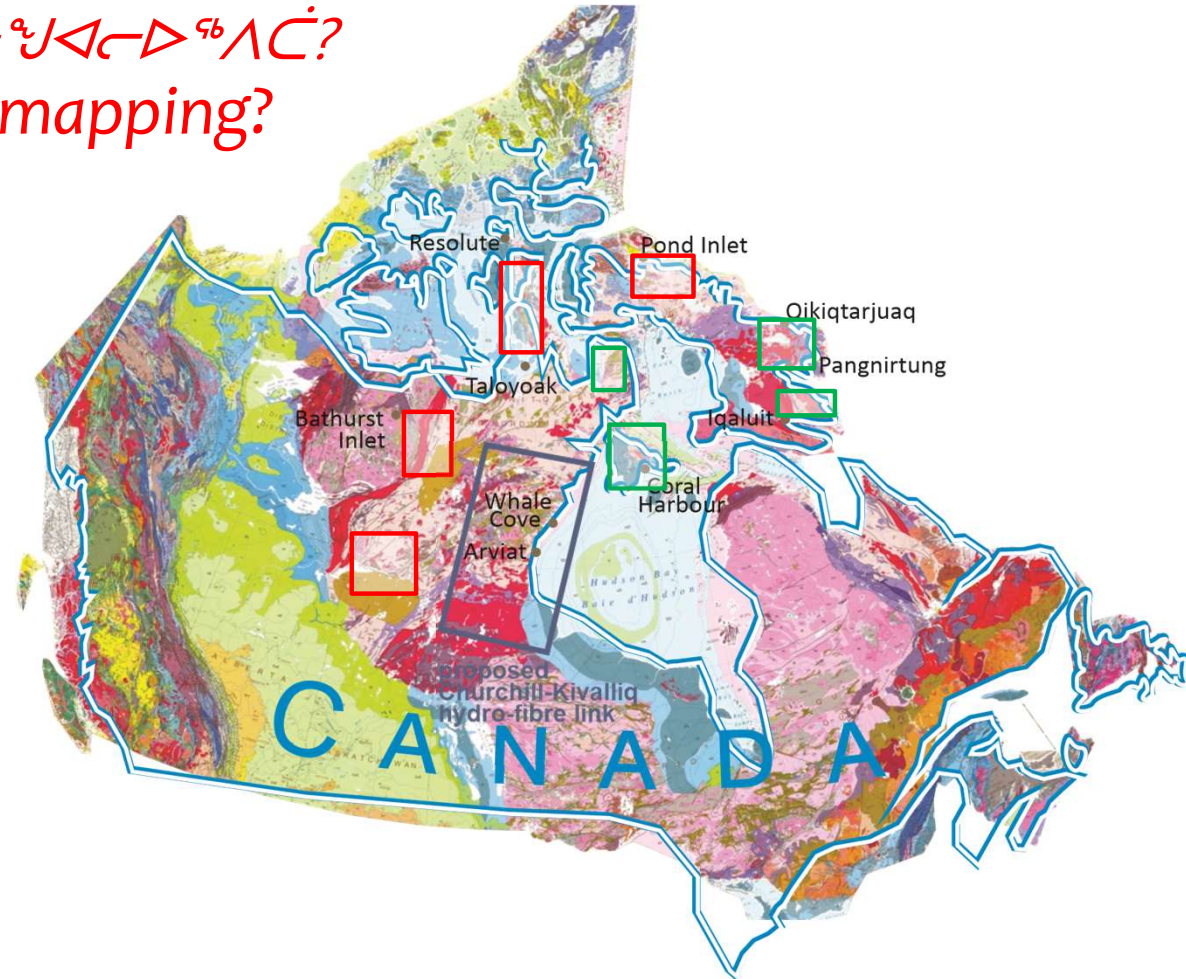
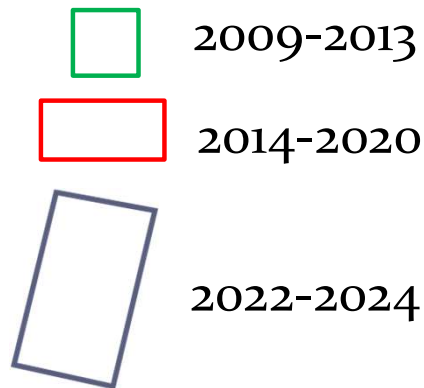
## ᖃᓄᐱᓚᓐ ᓄᓇᓂᓐ ᓄᓇ ᓐᓴᐱᓕᐅᖃᐱᓕ? Why geoscience mapping?



- to identify different rocks, of different ages formed by different processes
- ᓇᓂᓇᐱᓐᓴᓂᓐ ᐅᓚᖃᓐ, ᐅᓂᐅᓐᓴᓂᓐ ᐅᓚᖃᓐᓴᓂᓐ ᐱᓚᓴᓐᓴᓂᓐ ᐱᓚᓴᓐᓴᓂᓐ
- to discover natural sources of carving stone, building materials & metals
- ᓇᓂᓴᓂᓐ ᐅᓚᓂᓐᓴᓂᓐ ᓇᓴᓂᓐᓴᓂᓐ, ᐱᓚᓴᓂᓐ ᐱᓚᓴᓂᓐ ᐱᓚᓴᓂᓐ ᓇᓴᓂᓐᓴᓂᓐ
- to learn what rocks reveal about the evolution of the land over millions of years
- ᐱᓚᓴᓂᓐ ᐅᓚᖃᓐ ᓇᓴᓂᓐᓴᓂᓐ ᓇᓴᓂᓐᓴᓂᓐ ᓇᓴᓂᓐᓴᓂᓐ ᓇᓴᓂᓐᓴᓂᓐ



# ᖃᓄᐱᓪᓴᓪᓴ ᓄᓇᓴᓪᓴ ᓄᓇ ᓇᖅᓴᐱᓪᓴᐱᓪᓴᐱᓪᓴ? Why geoscience mapping?



- to identify different rocks, of different ages formed by different processes
- ᓇᓄᓇᐱᓪᓴᐱᓪᓴ ᐱᓪᓴᖃᓪᓴ, ᐱᓄᐱᓪᓴᐱᓪᓴ ᐱᓪᓴᖃᓪᓴᐱᓪᓴᐱᓪᓴ ᐱᓪᓴᖃᓪᓴᐱᓪᓴᐱᓪᓴ ᐱᓪᓴᖃᓪᓴᐱᓪᓴᐱᓪᓴ
- to discover natural sources of carving stone, building materials & metals
- ᓇᓄᓄᓄᓄ ᐱᓪᓴᐱᓪᓴᐱᓪᓴ ᓇᓄ ᓇᖅᓴᐱᓪᓴᐱᓪᓴ, ᐱᓪᓴᐱᓪᓴᐱᓪᓴ ᐱᓪᓴᐱᓪᓴᐱᓪᓴ ᐱᓪᓴᐱᓪᓴᐱᓪᓴ ᐱᓪᓴᐱᓪᓴᐱᓪᓴ
- to learn what rocks reveal about the evolution of the land over millions of years
- ᐱᓪᓴᐱᓪᓴᐱᓪᓴ ᐱᓪᓴᖃᓪᓴ ᓇᓄᓄᓄᓄ ᓇᖅᓴᐱᓪᓴᐱᓪᓴ ᖃᓄᐱᓪᓴᐱᓪᓴᐱᓪᓴᐱᓪᓴ ᓄᓇ ᓴᓪᓴᐱᓪᓴ ᐱᓪᓴᐱᓪᓴᐱᓪᓴ



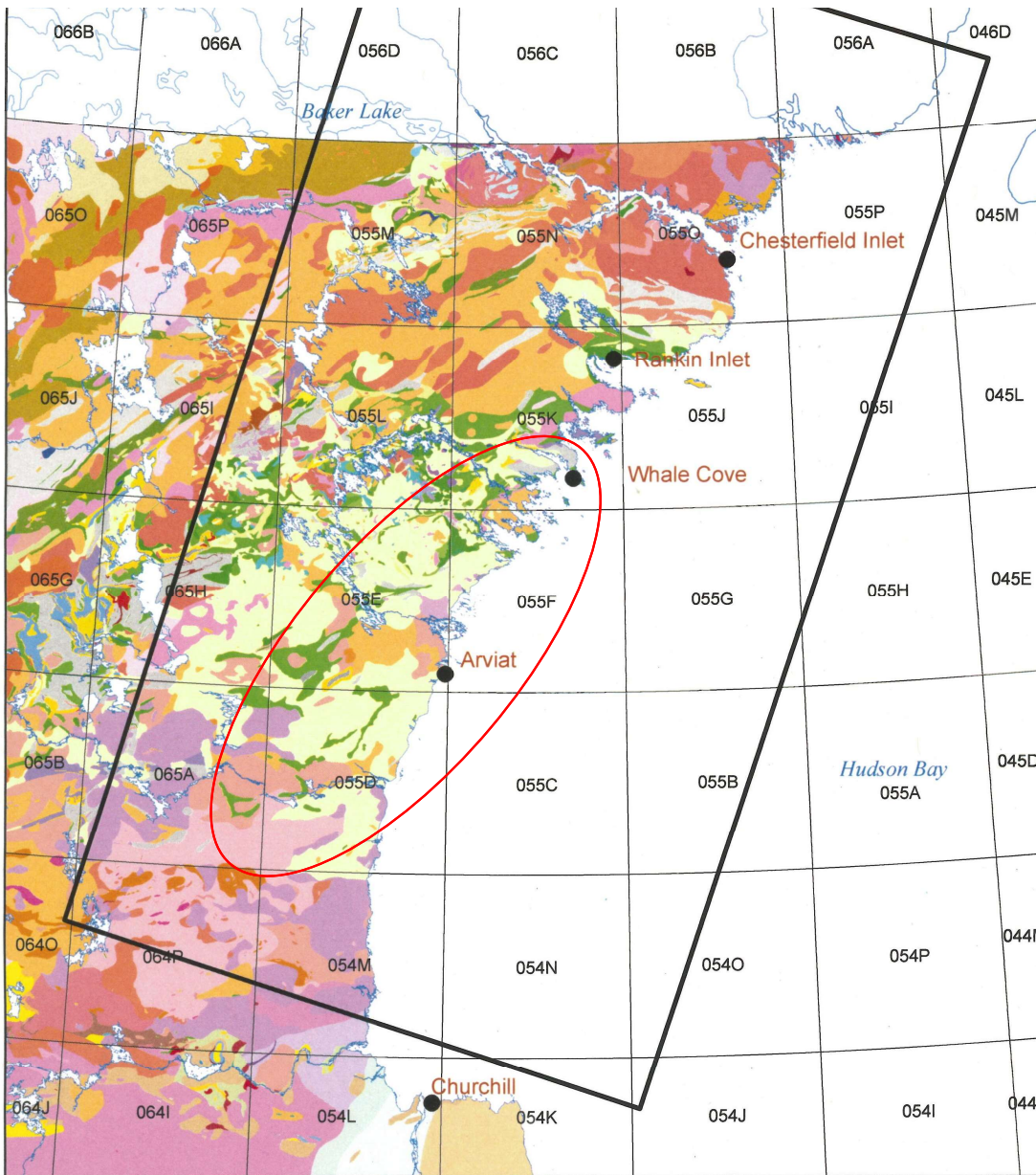




ᖃᓄᓚᑦᑤᓂᑦ ᓄᓇᒥᖅ ᖃᑭᑦᑤᓂᖅ  
ᐱᓕᓚᑦᑤᑭᓂᑦᑤᑦ?

**What types of  
geoscience activities?**

- a new community-involved geology map could be made
- ᓄᑦᖅ ᓄᓇᓕᓐᓂ-ᐱᓕᓚᖅᑭᖅᑤᑦᑤᑦ ᓄᓇᒥ ᓄᓇᓐᑭᑦᑤᑦᑤᑦ ᓄᓇᓐᑭᑦᑤᑦᑤᑦᑤᑦ
- modern age constraints obtained
- ᐱᓐᓇ ᐃᓄᑦᑤᑦᑤᑦᑤᑦ ᖃᓄᐃᓕᑦᑤᑦᑤᑦᑤᑦᑤᑦᑤᑦ ᐱᓚᑦᑤᑦᑤᑦ
- potential for carving stone, building materials & metals assessed
- ᑭᑦᑤᑦᑤᑦᑤᑦᑤᑦᑤᑦᑤᑦ, ᐃᓐᑤᑦᑤᑦᑤᑦ ᐃᓕᖅᑤᑦᑤᑦ ᐃᓐᑤᑦᑤᑦ ᑦᑤᑦᑤᑦᑤᑦᑤᑦᑤᑦ



0 100 km



Churchill - Kivalliq hydro-fibre link

ᑦᑤᑦᑤᑦᑤᑦᑤᑦᑤᑦ ᐃᓐᑤᑦᑤᑦᑤᑦᑤᑦ ᐃᓐᑤᑦᑤᑦᑤᑦᑤᑦ



☐ Churchill - Kivalliq hydro-fibre link

## What types of geoscience activities?

- [illegible]

How?



## COMMUNITY-BASED LEARNING

ᐃᑦᑲᑦᑲᑦ-ᐱᑦᑲᑦᑲᑦ  
ᐃᑦᑲᑦᑲᑦ





## COMMUNITY-BASED LEARNING

ወርሃዊ-ሰላሳዊ  
ፈርድ

Whale Cove is situated on rocks formed by an ancient volcanic event  
በዋላቲ ወርሃዊ ሰላሳዊ ፈርድ ለፈረንሳይ ለፈረንሳይ ለፈረንሳይ





# COMMUNITY-BASED LEARNING

**မေ့ရံစ-အုလံစ**  
**အကံဂုဏ်**

Whale Cove is situated on rocks formed by an ancient volcanic event, while Arviat has abundant post-glacial sand deposits  
 ᑭᐱᓕᓂᓄᓇ ᓄᓇᐅᓪᓴᓂ ᓴᓐᓴᓂ ᐅᓴᓴᓂ ᑕᐃᒫᓐᓇᐃᓕᓂᓄᓄ ᐃᓄᒫᒫᓐᓴᓂ ᐃᓴᒫᒫᓂᓴᓂ,      ᑕᐃᒫᒫᓂ ᐃᓴᐃᐃᓂ ᐅᓄᓴᓂᑐᓶᓂ ᓯᓄᐃᓐᓇᐃᓂᓴᓂ ᓯᐅᓴᓴᓂᑐᓴᓂ.





**Δ<sup>a</sup>σ<sup>b</sup>Δ<sup>c</sup> bNL<sup>c</sup>Δ<sup>b</sup>**

- become familiar with what geoscience information exists;
- ከግሪፍና ማረጋገጫ ሰነድ ጋር ማሳሰብ፤
- decide where observations & data could be obtained by new mapping
- ፈተናዊ ምርመራዎችን ለማድረግ የሚገቡትን ቦታዎች ማመልከት፤





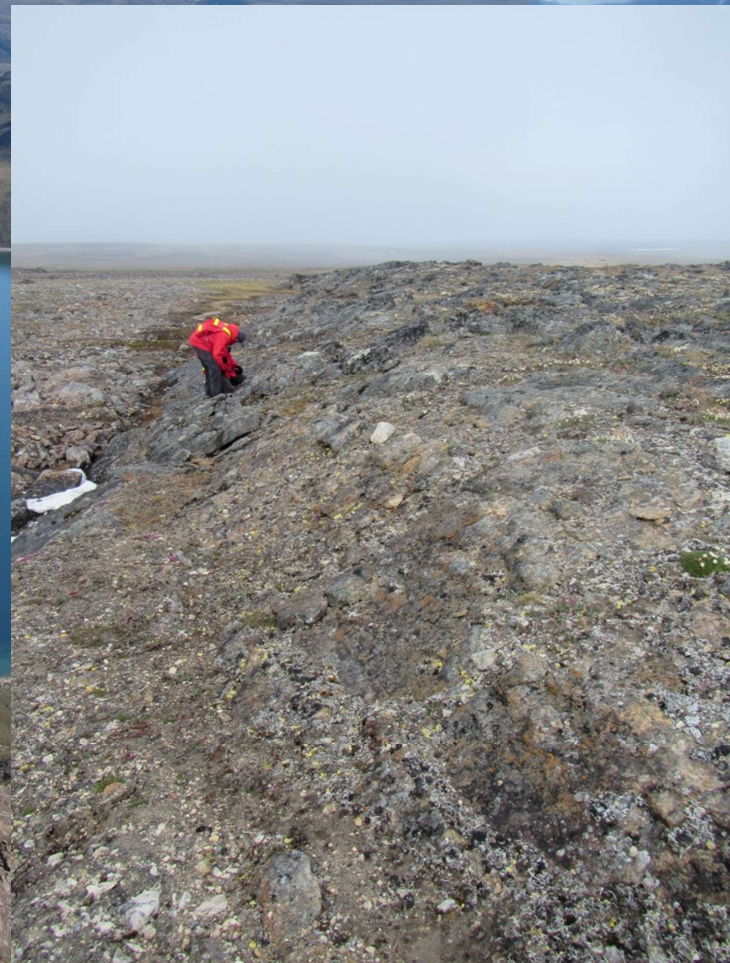
An aerial photograph showing a vast, deep blue body of water, likely a fjord or a large lake, surrounded by rugged, rocky terrain. The land is covered in sparse vegetation and has a brownish-grey hue. Several small, rocky islands and peninsulas are visible in the water. The sky is a clear, bright blue. In the bottom right corner, a portion of a metallic structure, possibly part of an aircraft or a surveying instrument, is visible, showing rivets and a curved surface.

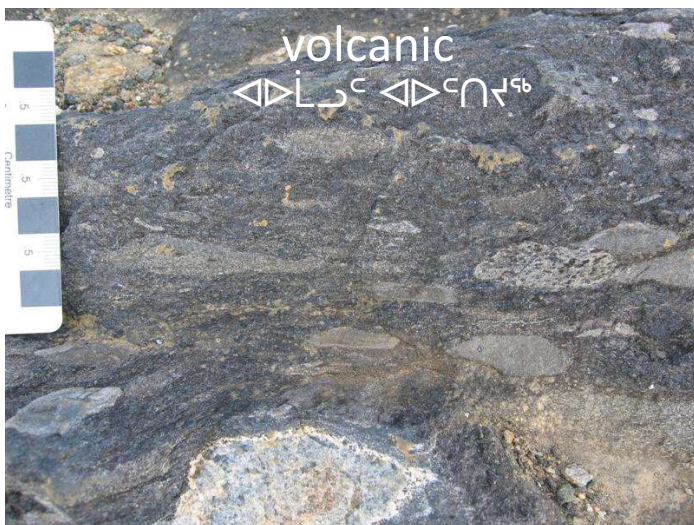
መፈ ምድላገርጋጽፍ  
FIELD MAPPING



# მედიკალური FIELD MAPPING

- locate, examine, describe and photograph exposed rocks
- დამზადება, გეოგრაფიკული, გეოლოგიური და გეოგრაფიკული რუკების დამზადება





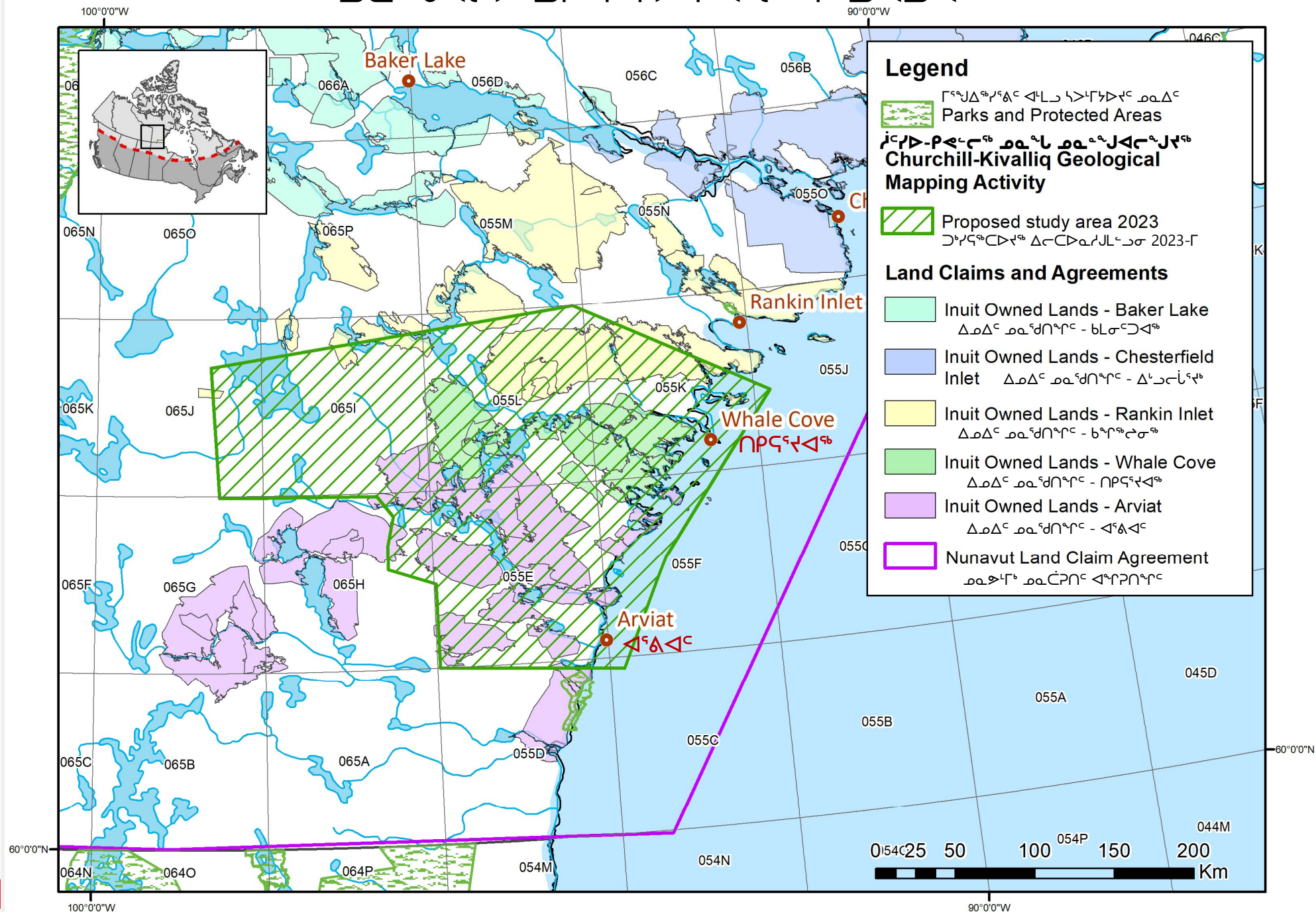
- observations of different rock types “ground-truth” geology maps
- ርዕሰ ስራው ለግራኒትና ግኔይስ 'መለኮ-ደረጃ' ምርመራ ማድረግ

መለኮ ደረጃ ምርመራ



# Geological Mapping the Churchill-Kivalliq Corridor

ᓄᓇᓂᓄᓐᓂᓐ ᓂᓄᓐᓂᓐ ᓂᓄᓐᓂᓐ ᓂᓄᓐᓂᓐ ᓂᓄᓐᓂᓐ



## ΔΓ°σΔ<sup>9</sup>⊂⊂<sup>c</sup> ▷<∩∟<C SCHOOL VISITS

- why rocks & minerals are important
- ᖃ⊂Δ<sup>4</sup>L<sup>c</sup> ▷<sup>7</sup>ᖃ<sup>c</sup> Δ<sup>4</sup>L<sup>⊂</sup> ▷<sup>7</sup>ᖃ<sup>9</sup>σΔ<sup>4</sup>ᖃ<sup>4</sup>Δ<sup>c</sup> Λ<sup>4</sup>L∩▷<sup>9</sup>
- what they reveal about earth evolution
- ρ<sup>7</sup><sup>c</sup> ᖃ<sup>9</sup>PC▷<sup>9</sup> ᓄᓇ<sup>9</sup>ᖃΔ<sup>9</sup>▷<sup>c</sup> Δ<sup>9</sup>ᖃ<sup>9</sup><<sup>c</sup>Δ<sup>c</sup>Δ<sup>c</sup>∟<sup>⊂</sup>∟



[illegible]

# ᄒᆞᆫᆫᆫᆫᆫᆫ -TIMING



**2022**

## ᄒᆞᆫᆯᆡᆫ - TIMING

- [illegible]

## ᄒᆞᆫᆯᆡᆫ - TIMING

- 2023**

- ❖ የዎችን ርብረብ ያየውን የግኝት ስርዓት አስተዳደርና ማስፈለግ ሲያደርጉ ለዚህ ዓመት ለማድረግ የሚገቡትን ሁሉም ሰነዶች እና ሰነዶችን ያስቀምጡ
- ለአስተዳደር ስርዓት የሚገቡትን ሰነዶች በየደረጃው ርብረብ ላይ ባለው መልኩ ያስቀምጡ
- በበሽታ ስርዓት ውስጥ ያለውን ስርዓት 2023 ዓ.ም ለአስተዳደር ስርዓት፣ በበሽታ ስርዓት ውስጥ ያለውን
- ለዚህ ስርዓት ውስጥ ያለውን ስርዓት ንዑስ ስርዓት 2024-፣ ለአስተዳደር ስርዓት ስርዓት
- ለዚህ ስርዓት ውስጥ ያለውን ስርዓት ያስቀምጡ ለአስተዳደር ስርዓት ስርዓት 2023
- ❖ Seek & review community applications to participate in work related to geoscience activities
- Undertake geoscience activities in Whale Cove and Arviat including field mapping
- Write a report on findings from 2023 field work, co-authored by community mappers
- Apply for any additional licenses for 2024 activities
- Arrange logistical support for field-based activities in July 2024

## 2022

# ᖃᖃᖃᖃᖃ - TIMING

- ✓ ᐃᑭᑦᐅᑦᐅᑦᐅᑦ ᖃᖃᖃᖃᖃ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ
- ✓ ᖃ- ᐅᑦᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ
- ✓ ᐅᑦᐅᑦᐅᑦᐅᑦ ᖃᖃᖃᖃᖃ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ
- ✓ Introduce project to KIA and communities of Whale Cove and Arviat thru letters
- ✓ Meet with KIA to discuss priorities, Iqaluit
- ✓ Introduce project to Whale Cove and Arviat residents thru face-to-face consultation
- ❖ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ
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- ❖ Get feedback on interest & potential activities
- Apply for all licenses (Nunavut Research Institute) & permits (Land Use) to undertake field mapping in summer 2023
- Arrange logistical support for field-based activities in July 2023

## 2023

- ❖ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ
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- ❖ Seek & review community applications to participate in work related to geoscience activities
- Undertake geoscience activities in Whale Cove and Arviat including field mapping
- Write a report on findings from 2023 field work, co-authored by community mappers
- Apply for any additional licenses for 2024 activities
- Arrange logistical support for field-based activities in July 2024

## 2024

- ᐅᑦᐅᑦᐅᑦ ᐅᑦᐅᑦᐅᑦ
- Final year





# FEEDBACK & DISCUSSION

## Contact us:

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