



# FISHES

Fostering Indigenous Small-scale fisheries  
for Health, Economy, and Food Security

## Spring 2022 Project Update

### Project Overview

FISHES is a multidisciplinary research program that brings together partners from across the North. FISHES aims to learn from both genomic technologies and Indigenous Knowledge to better understand relationships among fish, people, and the changing environment. The project strives to enhance local capacity by identifying and supporting project outcomes aligned with our partners priorities, specifically those surrounding local and regional food security, subsistence harvesting and potential opportunities for subsistence and commercial fisheries.



Community-led sampling



Harvest study



Elders mapping workshop



Women's knowledge workshop



Community  
Engagement



Management  
Strategies



Genome Québec



Ontario Genomics



Genome Canada



Polar Knowledge  
Canada

Savoir polaire  
Canada

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Carleton University<sup>1</sup>, Spence Bay Hunters and Trappers Organization<sup>2</sup>, Université Laval<sup>3</sup>

**This spring, we spent time in Taloyoak to work with the Spence Bay Hunters and Trappers Association to learn from Elders, active harvesters and women in the community.**

- We met with Elders to map local fishing sites and learn their priorities for commercial fishing
- We met with harvesters registered in the Harvest Study to share more about the project and receive feedback on how we can improve
- We connected with several harvesters who will help us sample arctic in potential sites for commercial fisheries
- We met with women in the community to learn about their experiences on the land, resources important for fishing and their priorities for future work



***We would like to thank Elizabeth Aiyout and Joseph Quqqiq Sr. for helping us connect with Elders in Taloyoak, inspire directions for future work and interpreting during our workshops. We would also like to thank John Bryan Idlout and Pierrette Karoo for playing a key role in planning and facilitating our time during the visit.***

Cindy Aiyout	Cindy Kopak	Annie Paniloo	Jimmy Oleekatalik
Jewel Aiyout	Jane Kripanik	Tommy Paniloo	Alice Quayaut
Aiyaoot	Ernie Lyall	Candance Pauloosie	Donna Saittuq
Angie Aklah	Denis Jordan Lyall	Christie Pauloosie	James Saittuq
Brandy Aklah	John Lyall	Jeanie Pauloosie	Bruce Takolik
Peter Aqqaq	Mark Lyall	Sharion Poodlat	Alolak Takolik
Andrew Anguttitauruq	David Nanook	Diane Mannilaq	David Totalik
Mary Attunga	Rhoda Nanook	Pamela Mannilaq	Colleen Tucktoo
Cody Avadluk	Paul Ogruk	Josie Marquiq	Johnny Tucktoo
Naomi Eetoolook	Andrew Panigayak	Fiona Neevecheak	Bessie Uguqtuq
Sheldon Inuksuaq	Isaac Panigayak	Jayko Neeveacheak	Johnny Ukuqtunnaq
Rebecca Karoo	Lenny Panigayak	Viola Neeveacheak	



# INDIGENOUS FISHING

# ENVIRONMENTAL STRESSORS

Commercial Fishing

Subsistence Fishing

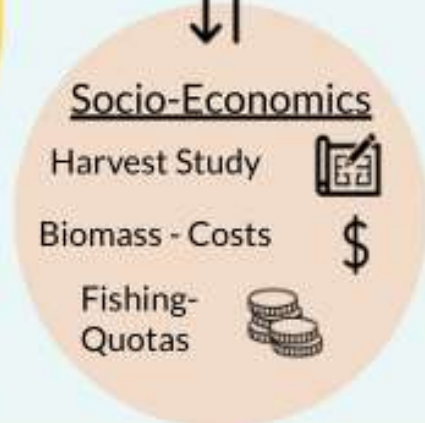
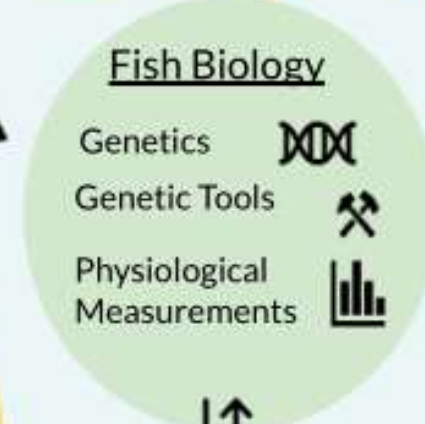
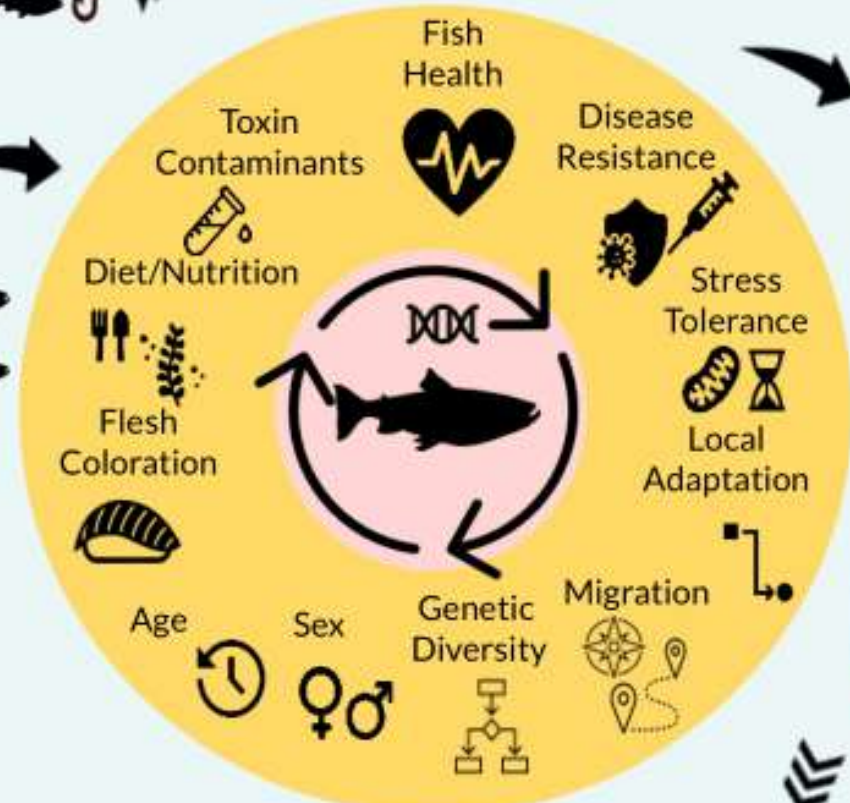
Ocean Pollution

Pathogens

Salinity

Hypoxia

Climate



# Community-led sampling



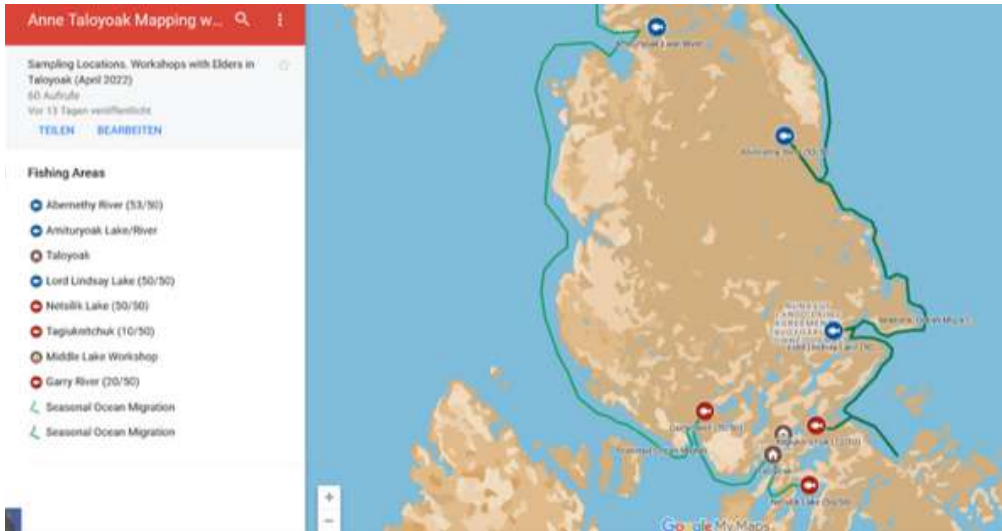
Join our Facebook groups to stay up to date

## Traditional Women's Knowledge Workshop

Private group · 10 members

## FISHES Taloyoak

Private group · 7 members



<https://www.google.com/maps/d/u/0/edit?mid=1RUhtzxAFkEPkF8Ft1pVw1TKYyDC3Q0&usp=sharing>



Potential sites of new commercial fisheries as identified by members of the HTA and twelve Elders we talked to in the community

### Winter (Frozen-over)

- Abernethey Lake and River
- Ilau'nalik/Iluviqtaalik
- Taginitchuk (Sagvak Inlet "Salty Water")
- Amittuqruaq
- Tasialuk
- Inner Creswell Bay
- Aksalikkat
- Aviqtunnuap Tasia
- Kanngiqlukruaq
- Tasiqruaq



### Summer (Open-water)

- Abernethey Lake and River
- Ilau'nalik
- Taginitchuk (Sagvak Inlet "Salty Water")
- Itsuaqtuqvik (Thom Bay)



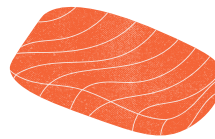
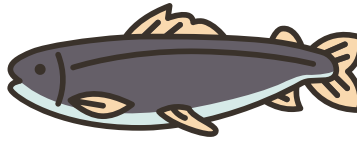




**“An Inuk will know if a fish is edible or not - we know what to eat. It's our diet, this is what we eat. We know what we can eat and what is not good to eat (Taloyoak May 2022)”**

**Elders avoid eating arctic char that have**

- Thin skin that appears fragile or tearing off
- Skin lesions
- Lumps in the skin or over the bone
- White spots on the skin or flesh



While seeing unhealthy arctic char are more common in the late summer and early fall, the populations near Taloyoak are healthy and Elders have not seen an abnormal amount of unhealthy fish in recent years.

Currents are weak and the water is cooler on the western side of Boothia.

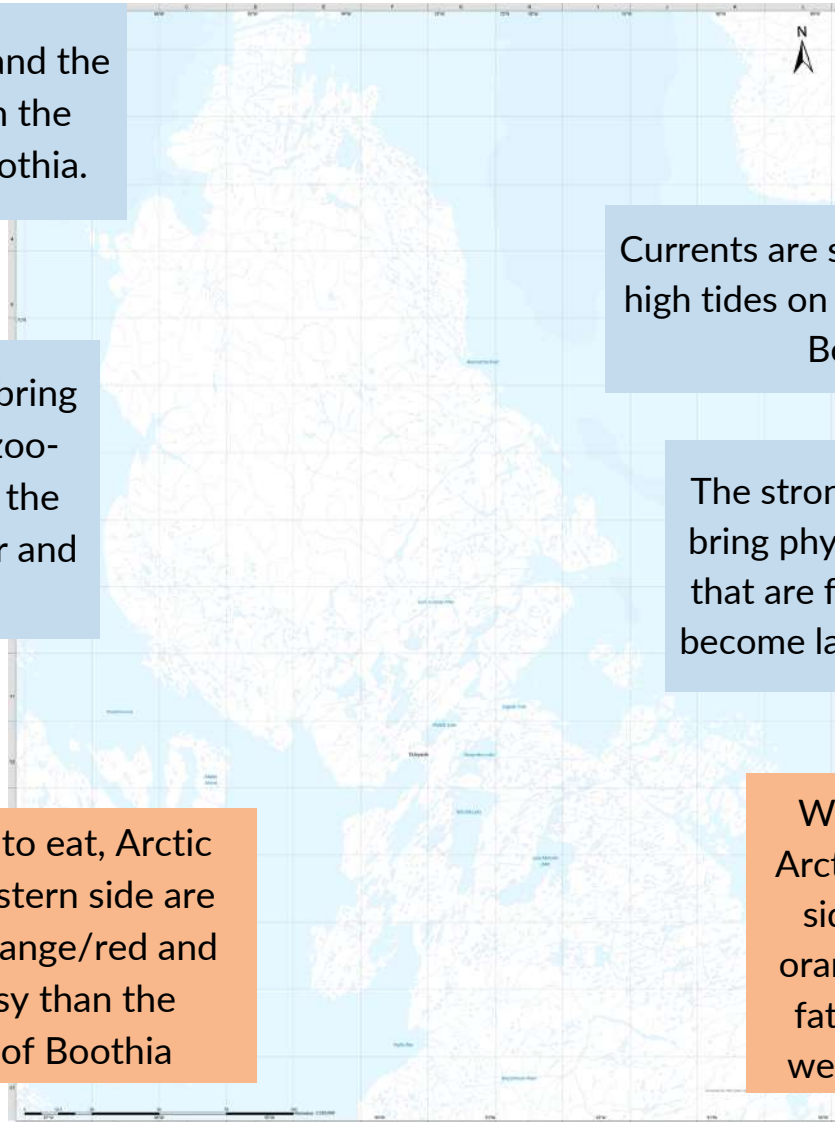
Weaker currents bring less phyto- and zoo-plankton and so, the shrimp are smaller and thinner.

With less food to eat, Arctic char on the western side are typically less orange/red and less fat/greasy than the eastern side of Boothia

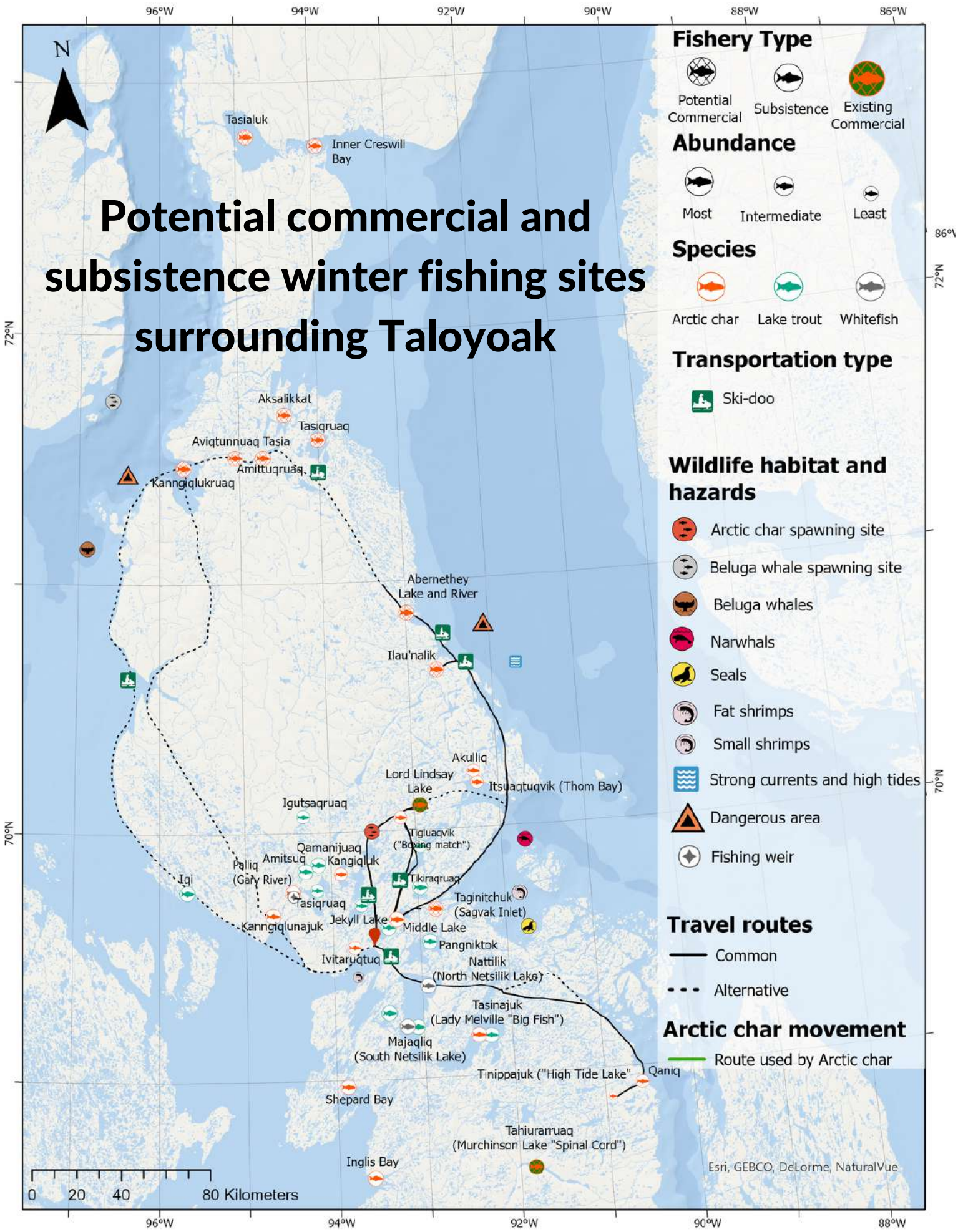
Currents are strong and produce high tides on the eastern side of Boothia.

The strong and warm currents bring phyto- and zoo-plankton that are fed on by shrimp who become large, fat and abundant

With more food to eat, Arctic char on the eastern side are typically more orange/colourfull and are fatter/greasier than the western side of Boothia



# Potential commercial and subsistence winter fishing sites surrounding Taloyoak





# Potential commercial and subsistence summer fishing sites surrounding Taloyoak

## Fishery Type

-  Potential Commercial
-  Subsistence
-  Existing Commercial

## Abundance

-  Most
-  Intermediate
-  Least

## Species

-  Arctic char
-  Lake trout
-  Whitefish

## Transportation type

-  ATV
-  Boat


## Wildlife habitat and hazards

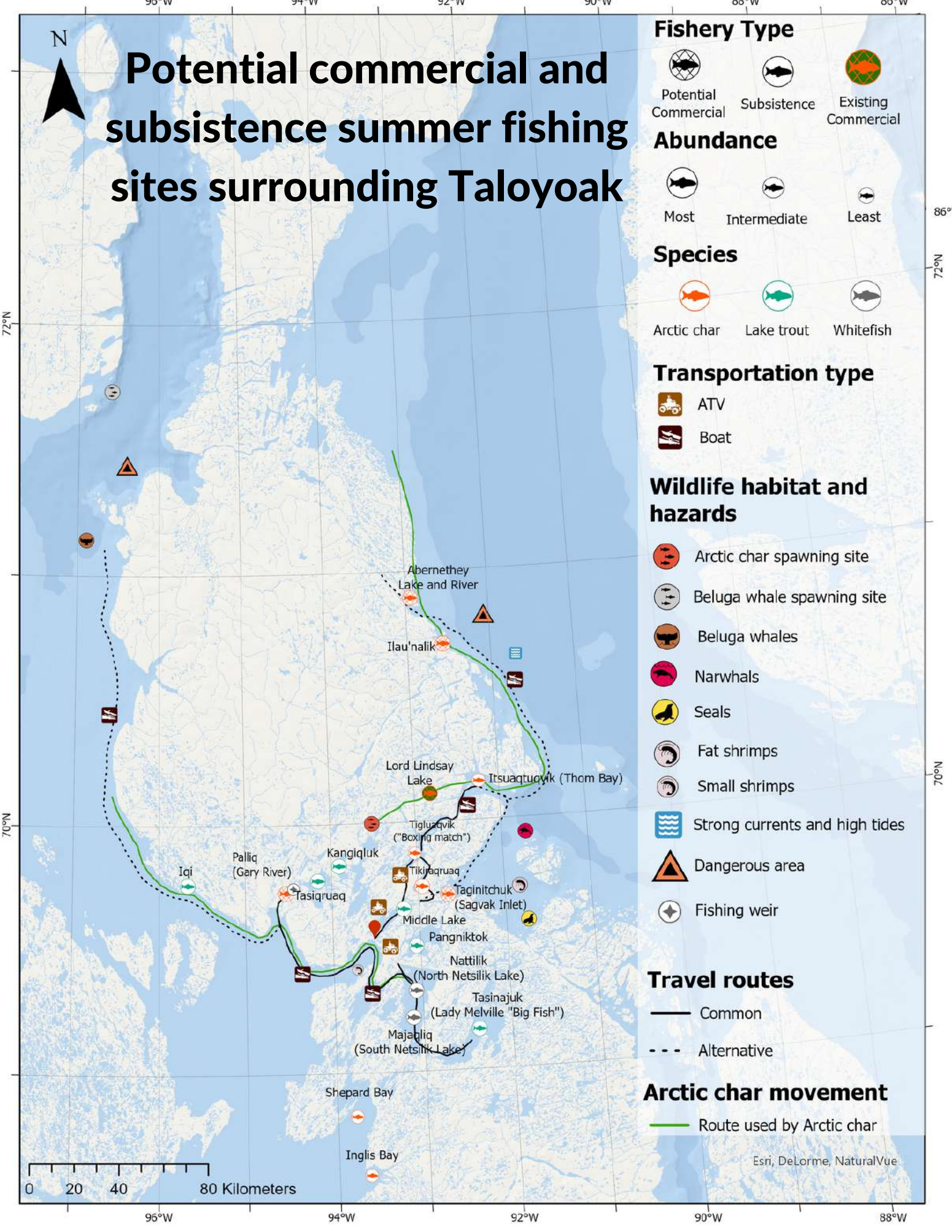
-  Arctic char spawning site
-  Beluga whale spawning site
-  Beluga whales
-  Narwhals
-  Seals
-  Fat shrimps
-  Small shrimps
-  Strong currents and high tides
-  Dangerous area
-  Fishing weir

## Travel routes

-  Common
-  Alternative

## Arctic char movement

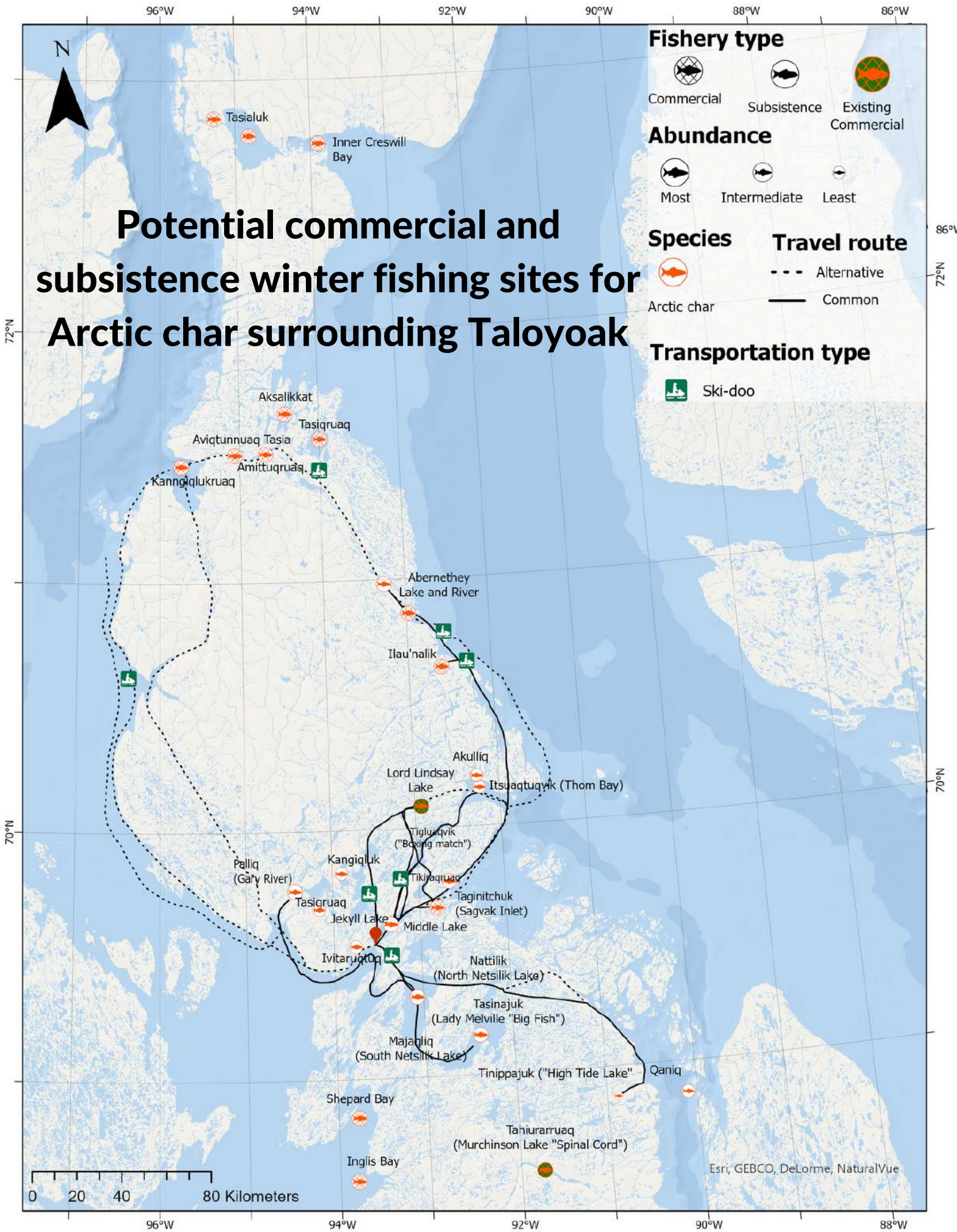
-  Route used by Arctic char



Esri, DeLorme, NaturalVue



# Potential commercial and subsistence winter fishing sites for Arctic char surrounding Taloyoak









## In early May, we met with 18 women to learn about:

- Their experiences on the land
- Resources needed to support camping and hunting trips
- Their experiences with processing and preparing harvested goods
- Their priorities for future work focusing on women's knowledge of fish, wildlife and climate change

### How to process and prepare harvested meat and fish?

Species	Harvest preparation techniques
Caribou	<p>Year-round:</p> <ul style="list-style-type: none"> <li>• Plan how to butcher and portion out</li> <li>• Skin caribou</li> <li>• Freeze harvested meat</li> </ul> <p>Fall:</p> <ul style="list-style-type: none"> <li>• Bury/cache with rocks (or make box to prevent wolverines from accessing)</li> </ul> <p>Summer:</p> <ul style="list-style-type: none"> <li>• Dehydrate or dry (Mipku) (keeps flies away)</li> <li>• Soak in salt for 3 hours</li> <li>• Boil with open fire using heather</li> </ul>
Fish	<p>Year-round:</p> <ul style="list-style-type: none"> <li>• Gut/Fillet while thawed (with spoon and knife/ulu)</li> <li>• Vacuum pack</li> <li>• Freeze</li> </ul> <p>Fall:</p> <ul style="list-style-type: none"> <li>• Bury/cache with rocks (or make box to prevent wolverines from accessing)</li> <li>• Dry fish by hanging in sun (Piffi)</li> </ul> <p>Summer:</p> <ul style="list-style-type: none"> <li>• Soak in salt for 3 hours</li> <li>• Boil with open fire using heather</li> <li>• Make fish skin bags, jewelry or tents</li> </ul>
Birds	<p>Year-round:</p> <ul style="list-style-type: none"> <li>• Pluck feathers</li> <li>• Boil</li> </ul>
Seal	<p>Year-round:</p> <ul style="list-style-type: none"> <li>• Hunt with harpoons or guns</li> <li>• Butcher and store in its skin tied with rope</li> </ul> <p>Fall/winter:</p> <ul style="list-style-type: none"> <li>• Bury/cache</li> <li>• Ferment underground</li> </ul> <p>Summer:</p> <ul style="list-style-type: none"> <li>• Prepare blubber for winter</li> </ul>
Vegetation & Water	<p>Summer:</p> <ul style="list-style-type: none"> <li>• Use collected berries for jam or eat fresh/frozen</li> <li>• Boil water or cook meat/fish on open fire burning collected heather</li> <li>• Collect and drink fresh water from lake or river</li> </ul>

### Resources, infrastructure and equipment needed to support women's role in food security

#### Building:

- To gather harvested meat and fish in community freezer
- To hold more community feasts to encourage community-wide sharing
- To prepare harvested meat and fish with others

#### Training/workshops:

- More opportunities to learn how to process fish and meat for food and goods
- Classes on sewing nets

#### Equipment:

- Drying racks (especially August-September) to borrow from HTA
- Materials to sew and repair nets





**We heard that women most often lead the financial and logistic planning for camping and hunting trips - including buying, collecting and packing all gear, grub/cookware and clothing/bedding. We heard men do play a larger role in purchasing and maintaining transportation vehicles.**



**Resources needed for a 3-day hunting/camping trip when frozen-over**

Transportation	Ski-doo Honda
Gear	Tent (or go to cabin) Ice auger or chisel Gun Ammo Nets Hooks and fishing lines Sleds Satellite phone (Zoleo, Spot finder, Inreach) Pots and pans Foam Mattress Rope Tarp Knife and ulu Coleman stove Ilaut (ice scoop) Naptha Gas (15-20 gallons for 8 miles roundtrip) Spare machine parts (i.e. sparkplugs and drive belts)
Grub and cookware	Dishware Tea pots Grub Medication (First aid, pain killers)
Clothing and bedding	Caribou skins Blankets Kamiks/boots Parka Mitts Sunglasses Sewing (needles, threads, thimble, scissors)



***We have registered 25 harvesters and recorded over 45 hunting trips this season so far***

[https://fishes.gcrc.carleton.ca/index.html?module=module.inreach\\_who\\_is\\_out](https://fishes.gcrc.carleton.ca/index.html?module=module.inreach_who_is_out)

Name	Device ID	Out	In	Duration
Cody Avadluk	FISHES-03	2022-05-27 2:00:00 EDT		1 month ago
Paul Ogruk	FISHES-04	2022-06-01 2:00:00 EDT		1 month ago
Peter Aqqaq	FISHES-02	2022-06-02 2:00:00 EDT		1 month ago
JB Idlout	FISHES-08	2022-07-15 2:00:00 EDT		5 days ago
JB Idlout	FISHES-07	2022-06-30 2:00:00 EDT	2022-07-04 2:00:00 EDT	



We are using InReach devices and online surveys to learn about harvesters' observations and experiences whilst hunting and fishing.

### **During our next the rest of the trips this year, we will**

- Hold workshops to learn more from women about their knowledge of the health and diversity of regional arctic char populations
- Hold workshops and interviews to learn from women about their knowledge of mammals, climate change and food security
- Hold workshops with harvesters registered in the study to learn more about their trips and about the costs and longevity of their equipment and transportation
- Hold small workshops or interviews with Elders to learn about their experiences with Arctic char throughout their childhood and adulthood
- Sample arctic char at select lakes
- Plan future work with our partners