



Winter 2020

# IMALIRIJIT & NUNAMI SUKUIJAINIQ

**Results Summary for Community  
Organizations and Contributors**

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Presented to the Northern  
Village of Kangiqsualujjuaq



Credit to Geneviève Dubois and Justine-Anne Rowell for the illustrations found in this report. Report layouts by Geneviève Dubois. Credit to 2019 Imalirijiit and Nunami Sukuinjainiq team for the pictures. Inuktitut translation of this report by Ida Baron.

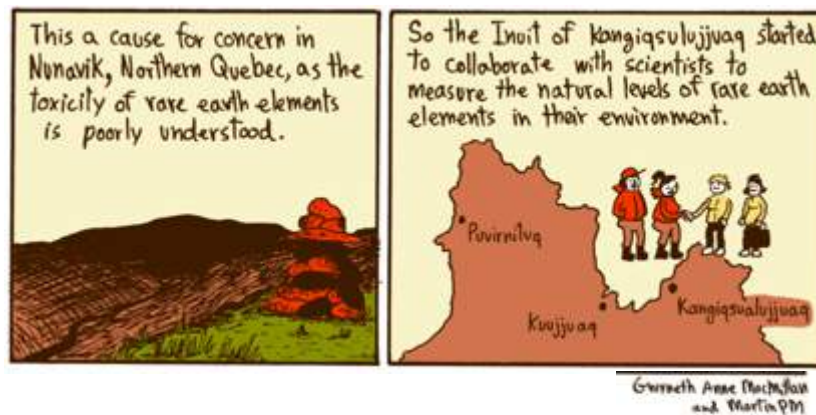
# Contents

This report presents the 2019-2020 activities of the Imalirijit and Nunami Sukuijainiq projects.



## The Origin of Imalirijiit Project

The Imalirijiit project began in 2016 following a partnership between local organizations in Kangiqsualujjuaq (Nunavik), and a group of researchers (Université du Québec à Trois-Rivières). Kangiqsualujjamiut were concerned about the possibility of a rare earth elements (REE) mining project starting its operations in the upper watershed of the George River (Strange Lake). The George River is essential to the traditional activities of fishing, hunting and gathering and the community wanted to start its own long-term community-based environmental monitoring program to collect baseline (or reference) data before any mining activities impact the water and environment quality in the watershed.

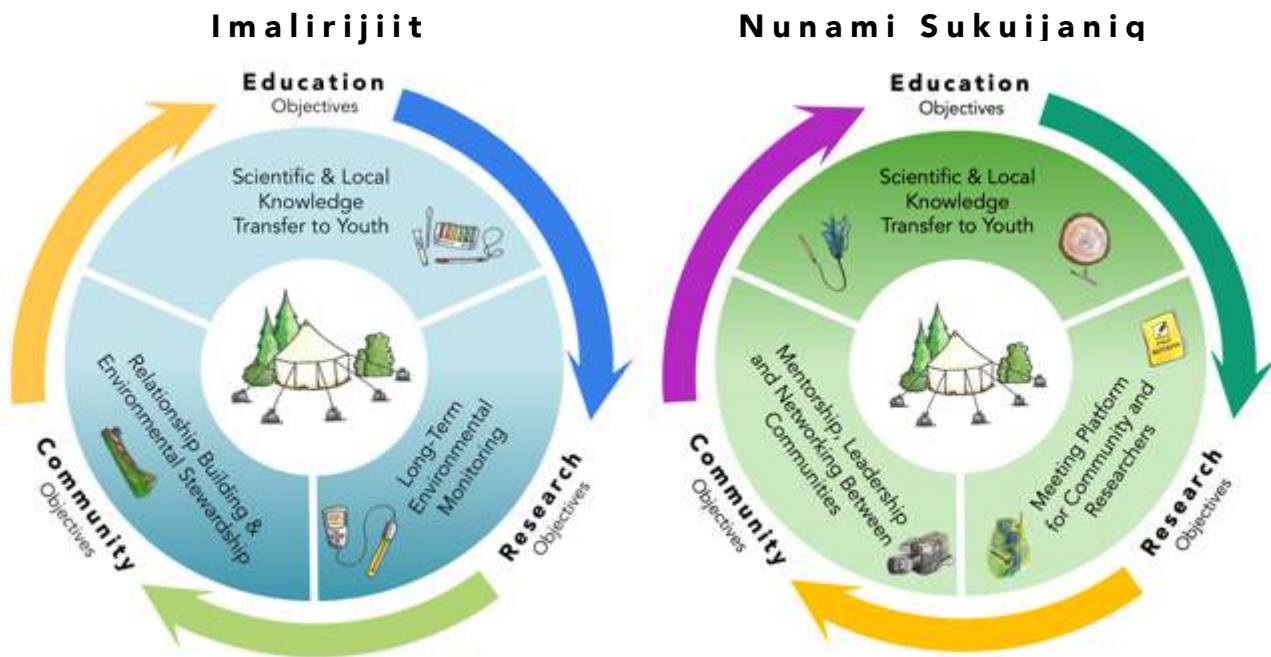


## Objectives

This partnership between the community and researchers led to the creation of a Science Land Camp program involving youth, Elders, local experts and researchers. Named Imalirijiit (“Those Who Study Water”) by the youth participants in 2016, this Land Camp program uses a hands-on, land-based approach to share knowledge about water quality sampling and environmental stewardship and to encourage youth’s interest in the natural sciences.

## Nunami Sukuijainiq: Imalirijiit's Little Sister

Winner of the 2018 Arctic Inspiration Prize, Nunami Sukuijainiq ("Science on the Land") is a new branch of the project led by the Youth Committee in collaboration with researchers. One of its main goals is to create a land-based meeting platform for researchers and community members to do better science, together. The themes of Nunami Sukuijainiq Land Camps have broadened to arctic ecology, and include winter ecology and marine ecology, themes asked for by the community for the past few years. This project provides opportunities for youth to go on the land, learn about science and connect with their Elders. It also allows youth from other communities to participate in the Land Camps, and to be part of a mini-serie of documentary films. Another goal is to mentor other communities wanting to start their own project with their specific objectives.



The figures below show the specific objectives of Imalirijiit and Nunami Sukuijainiq regarding education, research and community, as well as their complementarity. The Science Land Camp remains the central element in these two projects for successful and collaborative science and science education programs.

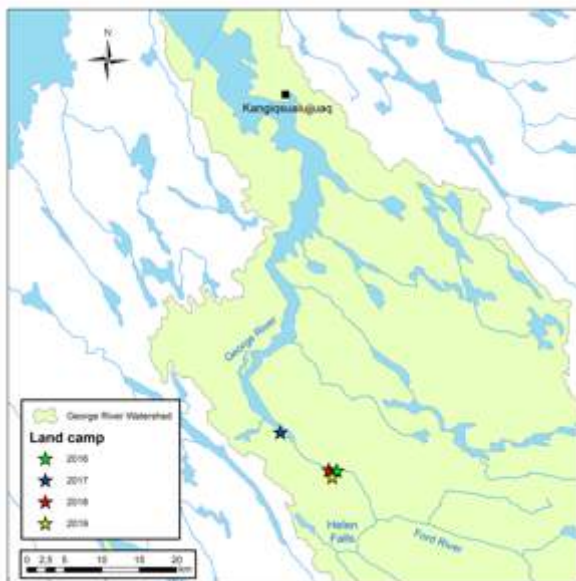
## Imalirijiit vs. Nunami Sukuijainiq

The table below presents a summary of the main differences of Imalirijiit and Nunami Sukuijainiq.

	<b>Imalirijiit</b>	<b>Nunami Sukuijainiq</b>
Connecting youth from different Nunavik communities	NO	YES
Monitoring the George River environment	YES	NO
Studying different ecosystems (lake, river, sea) and winter ecology	NO	YES
Creating documentary films	NO	YES
Building a database on water quality	YES	NO
Mentoring other communities for the creation of their own project	NO	YES

## Imalirijiit Land Camp 2019

In summer 2019, the Science Land Camp was from July 3<sup>rd</sup> to 9<sup>th</sup>. The campsite was at the same location than the 2016 and 2018 editions, in a larch (pingi) dominated forest with a high lichen cover. The 2017 site on the bedrock was too small for the size of our group (36 people).



### The Group (36 people)





## Our Local coordinators and Young Helper

This year, Anita Annanack (left picture) and Suzie Annanack (middle picture) worked with the program as local coordinators. They took good care of the well-being of the youth, helped facilitated activities and prepared camp ceremonies. Their presence and enthusiasm on the field was a real support for the team.

We hired Brenda St-Aubin (right picture) to help us organize the 2019 Land Camp, before and after the camp. She was also hired as a boat assistant for the day trips needed to bring the entire group and the camping gear to the campsite, and pick us up. It was a pleasure working with this resourceful and reliable young lady.

### A Very Special Thank You

A warm thank you to our cooks Kitty (right) and Emily (left) for working hard during the Land Camp making sure we had delicious meals to give us energy to learn and enjoy this outdoor adventure!





## Our 2019 Inuk Science Mentor at the Camp

Lynn Mike, ETP student in 2019

From Pangnirtung, Nunavut

“ My name is Lynn Mike, born and raised in Pangnirtung, NU. I was an alumni with Nunavut Sivuniksavut Program. I completed my 1<sup>st</sup> year of Environmental Technology Program, at Arctic College in Iqaluit (Nunavut) and extended my 2<sup>nd</sup> year for fall 2020. I am home and working full time with Government of Nunavut.

During the Imalirijiit project, within this project, I was the Inuk Mentor, and the activities I did were : verifying the different types of clouds, helping with tree coring, soil sampling, and insect collection with the other mentors.

Although the youth were communicating very well, I learned to have more patience and gained some knowledge and skills from being a leader throughout the camp. My personal highlights during the camp were doing the soil sampling and facing my fear with the insects. I really enjoyed the stories from the Elders and throat singing with Anita, the social worker. ”



# 2019 Land Camp Journal



## DAY 1

We left the community on July 3<sup>rd</sup> and traveled under a cloudy sky. We set up the camp in the afternoon, had supper and played board games in the evening.

## DAY 2

We took measurements of the water quality and collected water samples in the river for laboratory analyses. Lynn Mike taught us how to take good field notes, and later on, we had a scavenger hunt using GPS during which we learned about climate change. We also learned about microorganisms (bacteria, mold and yeast) that naturally live in the environment.

## DAY 3

We did a plant ecology activity during which we identified the tree species in a 10 X 10m square, estimated the height of some trees with the stick method and evaluated their age by taking core samples to look at the growth rings. We did a video workshop where the youth interviewed some camp's participants. Finally a sketch mapping activity took place, where we had to draw a map of the river from memory. The Elders told us stories in the evening.



## DAY 4

We had a science free day. We dyed bandanas using tie-dye techniques and went to Helen Falls for a picnic. The guides facilitated a survival activity in the afternoon, under pouring rain. The youth learned how to make a bow and arrows, build a shelter in the forest and light a fire with damp wood. We had a mid-camp ceremony and played Imalirijiit bingo.

## DAY 5

We started the day by looking for invertebrates (bugs with no bones) that live in the bottom of the river (benthos). We also collected insects on the ground using insect traps. We later sorted and identified the benthos and the insects. We took measurements on fish caught by nets, and collected some samples (ear bones, stomach contents). We did water sampling as well and played board games at night.

## DAY 6-7

For our last activity day, we took soil samples and designed water filters. We draw a big collective map of the river with the help of the Elders and the guides. We had our traditional closing ceremony followed by a bonfire and Elders' stories. On day 7, we packed, and returned to the community.

## Story Telling by the Elders

We had the great pleasure to attend two evenings of story telling by the Elders. On day 3, Sarah Pasha Annanack and Susie Morgan told traditional and local stories. On the last night of the Land Camp, for the closure ceremony, Lucas Ammak Etok told us stories about the time when people used to cut trees in the upper George River area and logged the trunks in rafts down the river, up to the village, where there was a sawmill at the time. Thanks to Samuel Lagacé for providing english translation.

### Stories Told

A blind boy saved by a loon (Susie)

A girl that was taken by a golden eagle (Susie)

Story about Elisapie from Labrador (Susie)

A man who met a little mermaid on his way to Kuujjuaq (Sarah Pasha)

Logging times in Kangiqsualujjuaq (Lucas)



## Learning from the Local Knowledge Holders

The guides involved in Imalirijiit are very motivated and they share their time and knowledge very generously with us. This year, they organized a survival activity during the Land Camp. Lucassie made a bow and arrows (right) and the guides prepared a shelter from cut trees (bottom). They also showed us how to light a fire under the pouring rain.



## The Guides

From upper left to bottom right : Peter, Matthew, Jimmy, Lucassie, Neekalak, Henry and Mark.



## What will we do next?

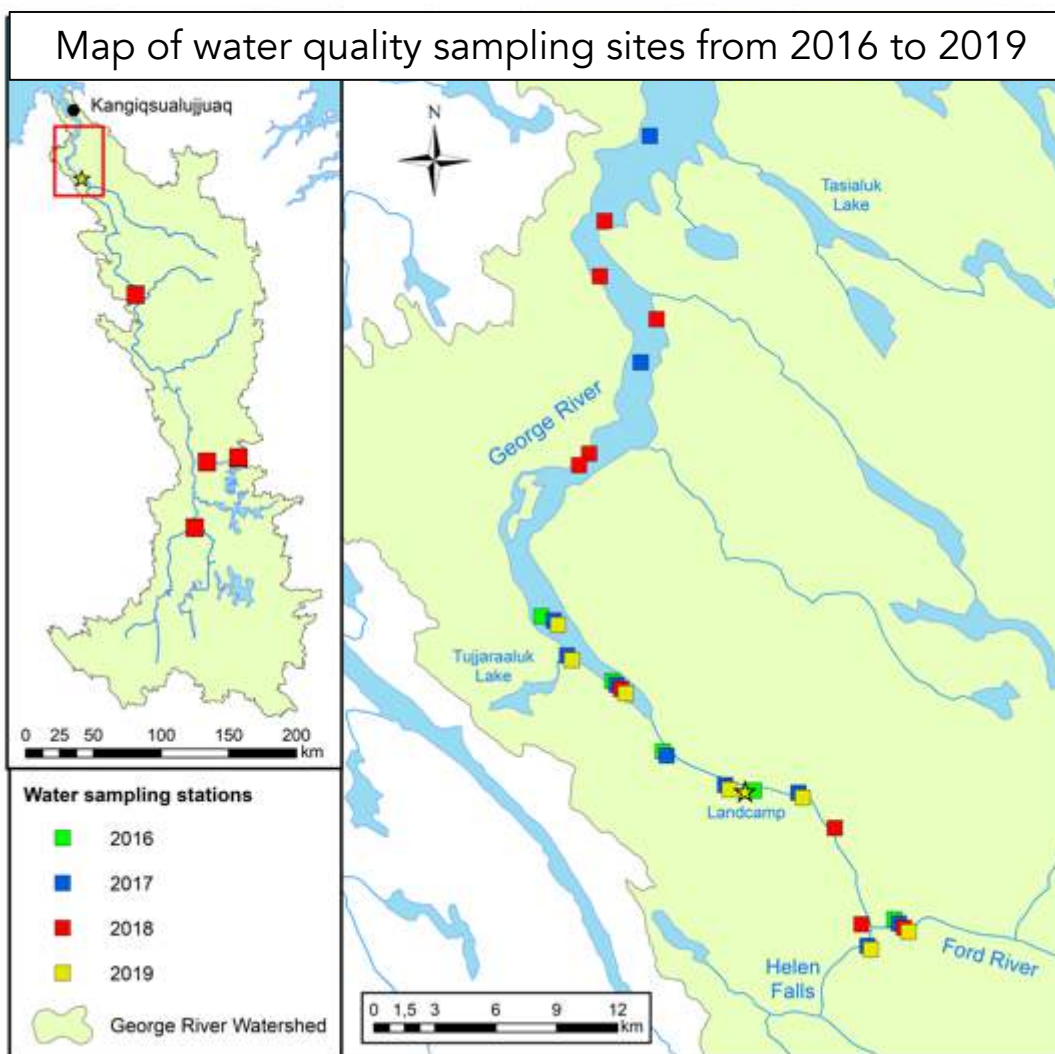
Nunami Sukuijainiq program (winner of 2018 Arctic Inspiration Prize) will take the lead for the winter camp that will take place from March 16<sup>th</sup> to 20<sup>th</sup> 2020. Six youth (15 to 20 years old) from Ivujivik, Salluit and Kangiqsujuaq will be invited to join eight to ten youth from Kangiqsualujjuaq for a winter camp at Tasikallak, near the eastern coast of the Ungava Bay. The Land Camp activities will be a good balance between scientific sampling and cultural activities. The science themes will be arctic char populations and winter habitat, beavers, snow, ice and more.



Copyright Makivik Corporation

## 2019 Data Collection

During the 2019 Science Land Camp, we collected water samples at some of the 2018 water quality sampling stations to contribute to the water quality database that was started in 2016 (see map below). We also collected lichen samples along the river and near the community, as indicators of the air quality. Gwyneth Anne MacMillan (Université de Montréal), the science coordinator for the 2019 camp, was in charge of these samples, with the help of the youth.



## 2019 Data Collection

Tree cores and slices were also collected by José Gérin-Lajoie (Université du Québec à Trois-Rivières) with the help of youth and guides. Finally, Sara Bolduc (Université Laval), sampled Arctic Char around the community, after the Land Camp, with the help of Ned L. Annanack and Karen Annanack.



Tree slices

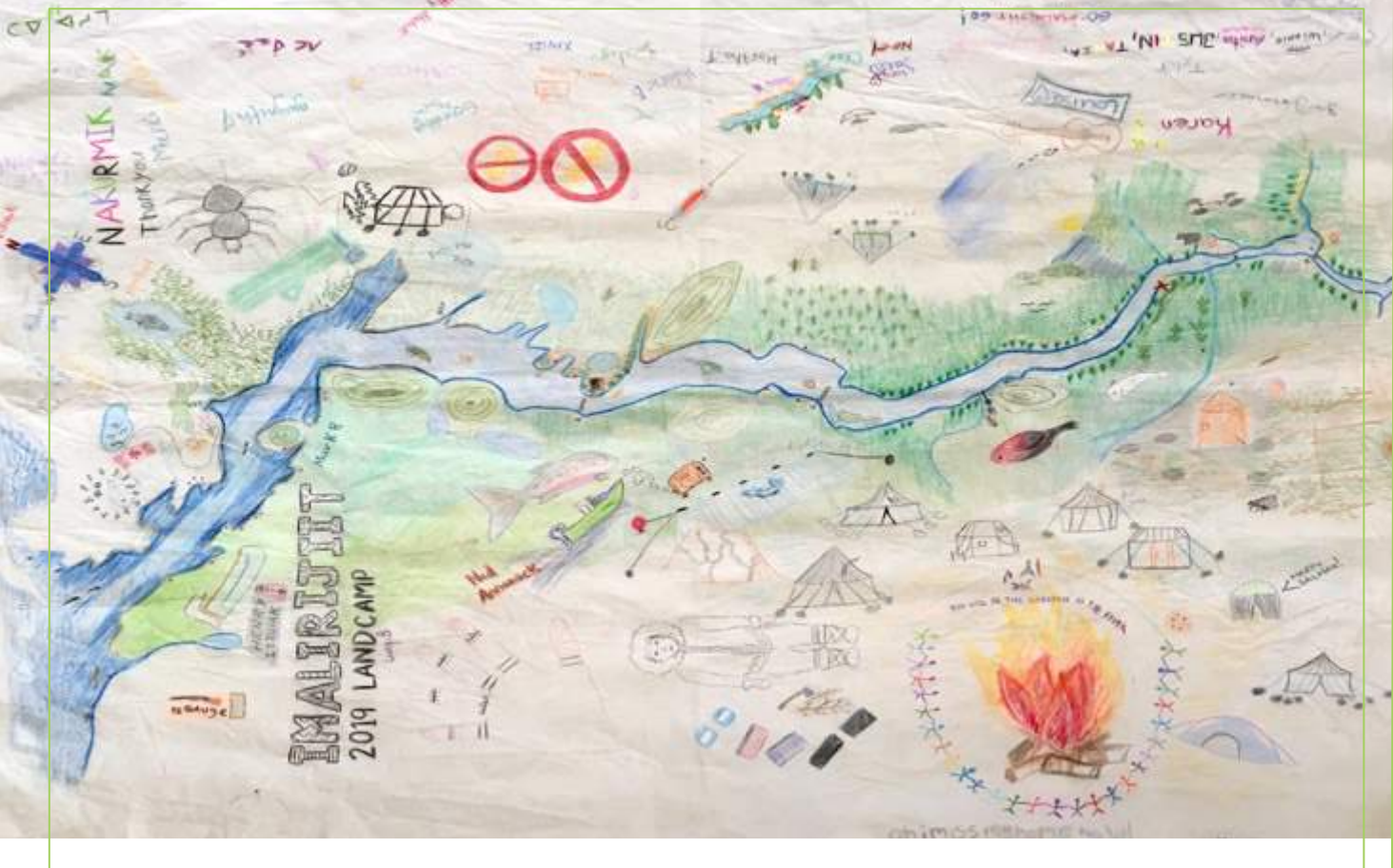


Gwyneth, Tania and Justin sampling water



Sara and Xavier holding Arctic Char and Cod





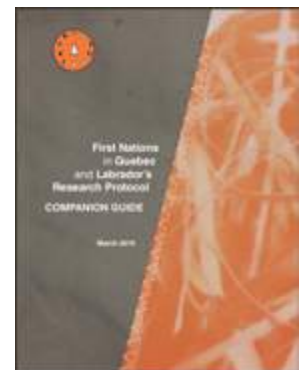
## Geography Workshops

During the Land Camp, Cloé Fortin (Geography student at Université de Montréal) facilitated two workshops on sketch mapping. Sketch maps are different than formal maps because they are based on human knowledge, memories and feelings. They tell a story about an environment. We did individual sketch maps at first and then a big collective one. In our collective sketch map (upper picture), we can see how the participants of the Land Camp (youth, guides, Elders, researchers) perceived the George River environment, the base camp and the village. The map illustrates elements that have been observed (i.e. animals, campsite, mountains) and activities that took place during the camp (i.e. boating, bonfire, insect collection, fishing).



## What will we do next?

The researchers are currently analyzing the data collected during the Imalirijiit Land Camps and are working on a scientific report that should be released and presented to the community in 2020. The community and researchers are also jointly working on a research agreement to ensure that all steps of the project are respectful and satisfying for both parties. The science team visited the community in February 2020 to meet representatives from several local and regional organizations (NV, KRG, Youth Committee, LNUK, Land-Holding, etc.) during the Parnasimautik session. We are following guidelines and templates produced by Inuit Tapiriit Kanatami and First Nations in Quebec and Labrador.





## **A Great Man and Amazing Guide**

We want to pay a special tribute to Joshua Annanack who passed away in 2019. Joshua was part of the Imalirijiit project from its start in 2016. He guided José Gérin-Lajoie and Élise Rioux-Paquette (Nunavik Parks) for the first scouting trip in June 2016, showing us the rapids, potential camping spots, and locations for scientific activities. He came as a guide in the 2016 and 2018 Land Camps.

Joshua was a very experienced guide on the George River, and such a kind, humble and helpful man. He was always helping with the water sampling, taking care of everybody, teaching his navigation skills to the youth, telling stories, encouraging the youth to learn about the river and cheering up the whole team when we were facing some challenges.

He was a real inspiration and a great role model for all of us. He did the opening speech in 2018 and talked about the importance of respect and working all together. He was generously sharing his knowledge with everybody, always curious to learn new things, and showing great interest in the complementarity between Inuit knowledge and scientific knowledge.

We will miss this great man and amazing guide.

Nakurmiimarialuk Joshua!

*From the Imalirijiit team*



## **Interview with the Elders**

**By Eleonora Townley and Jeannie Annanack**

Sarah Pasha Annanack (left) and Susie Morgan (right) have participated in the Land Camps since 2018. They have generously shared their knowledge each time. We wanted to share their vision of the project.

**Q: What do you like about the Imalirijiit Land Camps?**

**A:** We like teaching youth. It was fun all the time and moving around the camp doing science.

**Q: What is important for you about this project?**

**A:** Water sampling, learning about the water. We want the youth to learn our knowledge.

**Q: Does the project have an impact on youth?**

**A:** It is important to study water because we have to know if our water is good or bad. Youth have to learn from it too.

**Q: What impact does this project have on your perception of research?**

**A:** We enjoyed the camp and also learning new things about science.

**Q: What do you wish for its future?**

**A:** We want the project to continue all the way, and go to different camping areas to do more science. Teach more of our knowledge to youth. There is a lot to teach to youth.





## Interview with the Ittulak Family

By Eleonora Townley and Jeannie Annanack

Kitty Annanack Ittulak (cook), Henry Ittulak (guide) and their son Tyler (youth participant) have participated in the Land Camps from 2017 to 2019. We wanted to know more about their experience and perception.

**Q:** What do you like about Imalirijiit Land Camps?

**A:** We like to go camping with youth. Youth see things that they wouldn't see and experience. We also learn about science with water sampling, fish samples and others. We camp with lots of people too.

**Q:** What is important for you in this project?

**A:** Being out on the land for a week. It is also a good way to make money for guides, cooks, Elders, coordinators and others that work at the camp. Camping is very fun too.

**Q: Does the project have an impact on youth?**

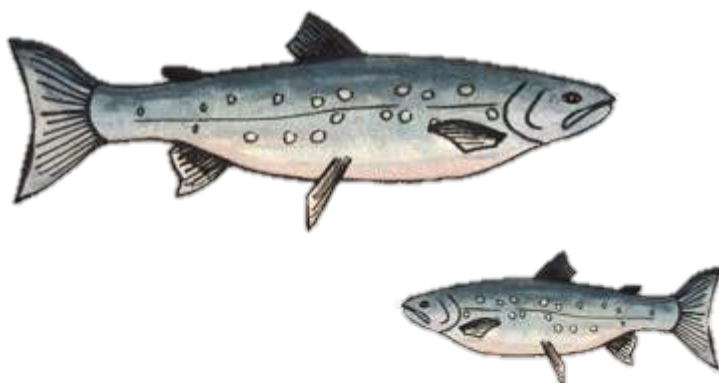
**A:** Yes it does, because it gets youth out on the land, gets them out of town for a week to experience the land. They also learn science.

**Q: Has the project changed over the years?**

**A:** Yes, every year different pollutions are affecting our land. We learn new things with science.

**Q: What do you wish for its future?**

**A:** For the project to continue because youth go out camping and learn science and culture.





## Nunami Sukuujainiq Documentary Films

Thanks to the Arctic Inspiration Prize, the Nunami Sukuujainiq project will produce three short documentary films. The first documentary shows the Science Land Camp experience during the 2019 summer camp on the George River and explains the origin and the goals of the project. The second film will relate our first Winter Science Land Camp in March 2020. Finally, a third one will cover the upcoming Marine Science Land Camp.





## Introducing Samuel Lagacé

The filmmaker who produced the first short documentary film.

Samuel grew up in Kangiqsualujjuaq for the first part of his life. After high school, he moved south to further his studies. Having had an interest in movie making when he was younger, he decided to study in cinema. After 2 years of working for various production companies in the South he moved back up north to bring back what he had learned.

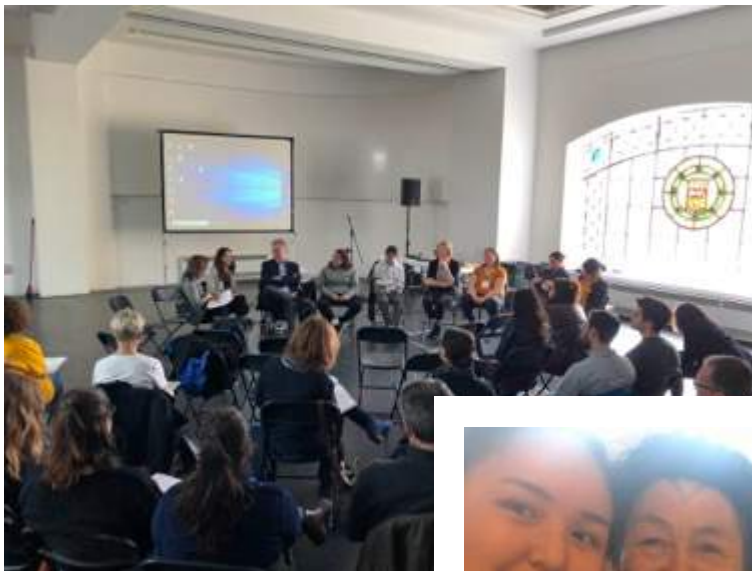
Now based in Kuujjuaq, and working at Tumiit Media for the past 4 years, he has worked on various projects all over Nunavik. Kangiqsualujjuaq, being his hometown, is always a special place for him to go back to. When the Imalirijiit team approached him to produce a short film of their project on the George-River he accepted without hesitation.



“I was very excited to have the opportunity to go back home and go further than I had ever been up the river. Our seven-day trip up the George-River is a trip I will never forget! I am extremely grateful for all the research that is being done on the river. I had a great time capturing images of the area and various activities. It was an honour to be part of the Imalirijiit team!”

## 2019 Inuit Studies Conference (Montreal)

Two members from the Youth Committee (Eleonora Townley and Jeannie Annanack), two youth (Jocelyn Etok and Justin Assevak) and a representative from KRG (Hilda Snowball), traveled to Montreal to present, with some researchers involved in the project (Geneviève Dubois, Gwyneth Anne MacMillan, José Gérin-Lajoie and Marc Amyot), the Nunami Sukuujainiq Land Camp Program to the audience during the 2019 Inuit Studies Conference. All had a chance to talk about their experience of being part of Nunami Sukuujainiq.



Part of the Nunami Sukuujainiq team presenting the project to the audience



Selfie with Ajuu Peter, an artist, lawyer and activist from Nunavut

Some participants were interviewed for the Radio-Canada scientific radio show *Les Années Lumière*. Nancy Etok provided french and inuktitut translation during the presentation and for the interview.



## Imalirijiit and Nunami Sukuujainiq Outreach in 2019

- Article in the SEPAQ *Bulletin de conservation* 2019
- Oral presentation in Quebec City at OHM Nunavik annual conference on February 11<sup>th</sup> 2019
- Oral presentation in Kangiqsualujjuaq at Parnasimautik conference in March 2019
- Article in Above and Beyond Magazine in March 2019
- Oral presentation in Kuujjuaq at Nunavik Mining Workshop on April 30<sup>th</sup> 2019
- Oral presentation in Austria (EGU conference) in April 2019
- Interview at the Radio Program *Espaces Autochtones en direct: Les Changements climatiques en Arctique* (CBC/Radio-Canada) on May 24<sup>th</sup> 2019
- Short movie in Kangiqsualujjuaq (CEN) on July 12<sup>th</sup> 2019
- Round Table in Montreal (Inuit Studies conference) on October 3<sup>th</sup> 2019
- Interview at the Radio Science Program *Les Années Lumière* (CBC/Radio-Canada) on October 6<sup>th</sup> 2019
- Oral presentation in Toronto at SETAC conference on November 5<sup>th</sup> 2019
- Short movie and oral presentation in Halifax at ArcticNet ASM on December 5<sup>th</sup> 2019



## 2019 Land Camp Participants

### Youth and kids

Jocelyn Etok

Justin Assevak

Karen Annanack

Louisa Etok

Lucy Baron

Malinda Annanack

Martha Tukkiapik

Noel Tukkiapik

Pascal Annanack

Tania Morgan

Tyler Ittulak

Valerie Baron

Valle-Noah Annanack

Winnie Annanack

### Elders

Sarah Pasha Annanack

Susie Morgan

Lucassie Ammak Etok

### Cooks

Emily Emudluk

Kitty Annanack Ittulak

### Local Coordinators

Anita Annanack

Susie Annanack

### Guides

Henry Ittulak

Jimmy Jararuse

Mark R. Annanack

Mathew Etok

Neekalak Annanack

Peter Annanack

### Assistant

Sarah Charlotte Annanack



**2019 Land Camp Participants**  
**Boat Drivers and Assistants for day trips**

Adamie Albert Annanack  
Aleva Annanack  
Brenda St-Aubin  
Brendan Laroche  
Charlie Annanack  
Danny Daniel Annanack  
David Dan Annanack

Elijah Baron  
Felix St-Aubin  
Jack Annanack  
Jaiku Arnatuk  
Judy Allaku  
Kenny Arnatuk  
Mike Annanack

Sammy Unatweenak  
Shelly Annahatak  
Stanley Sam Annanack  
Timothy Baron  
Williamie Annanack  
Willie Arnatuk

## Field Team 2019



Anita Annanack  
Youth Coordinator



Cloé Fortin  
Geography Student



Eleonora Townley  
Project Manager



Geneviève Dubois  
Biologist and Steering  
Committee Member



Gwyneth A. MacMillan  
Biologist and Steering  
Committee Member



Jeannie Annanack Stewart  
Project Manager



José Gérin-Lajoie  
Biologist, Project  
Leader and Steering  
Committee Member



Lynn Mike  
ETP Student  
at Arctic College, Iqaluit



Samuel Lagacé  
Filmmaker



Sara Bolduc  
Fish Biologist



Susie Annanack  
Youth Coordinator



Xavier Dallaire  
Fish Biologist

## Professors



Esther Lévesque  
Plant Ecologist  
Université du Québec  
à Trois-Rivières



Jan Franssen  
Physical Geographer  
Université de Montréal



Jean-Pierre Dedieu  
Physical Geographer  
Université de Grenoble-Alpes



Jean-Sébastien Moore  
Fish Biologist  
Université Laval



Marc Amyot  
Ecotoxicologist  
Université de Montréal



Thora M. Herrmann  
Human Geographer  
Université de Montréal



## **Financial and In-kind Support**

We would like to thank Polar Knowledge Canada, the Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) - Indigenous Community-based Climate Monitoring Program, Arctic Inspiration Prize, ArcticNet, la Société Plan Nord, the Makivik Corporation, the Kangiqsualujjuaq Youth Committee, the Northern Scientific Training Program, the Centre d'Études Nordiques (CEN), the Qiniqtiq Landholding Corporation, Nunavik Parks and Air Inuit for providing essential financial and in-kind support.





## NAKURMIIMARIALUK

### A Big Thank You

From all the team members (Steering Committee, Youth Committee, researchers and students), Nakurmiik to Kangiqsualujjamiut for being so involved in this project and for welcoming our researcher team since 2015. This collaborative project is flourishing thanks to your great support and commitment. We can be proud of what we have accomplished together in the last 5 years.

Special thanks to the Northern Village of Kangiqsualujjuaq and Nunavik Parks. Thank you for providing material, financial and human resources that contribute to the success of this project.



## Contact

If you have any comment or question about this report, the Imalirijiit project or the Nunami Sukuijainiq project, please contact us by email or visit our websites.

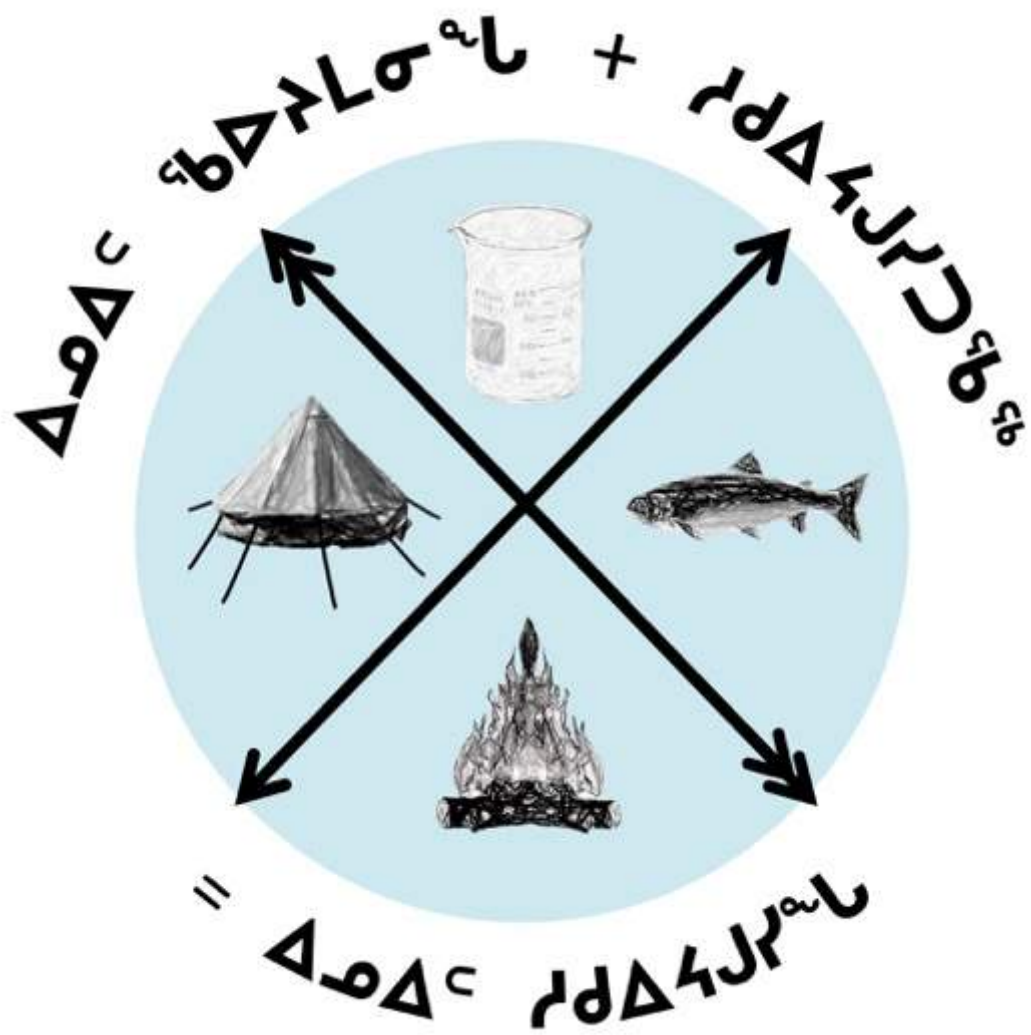
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**For information on Nunami Sukuijainiq program:**  
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