SCIENTIFIC RESEARCH LICENCE APPLICATION
LAND, FRESHWATER & MARINE BASED RESEARCH

NRI strongly recommends that applicants review the following documents prior to submitting an application: *Scientific Research Licencing Guidelines* and *Negotiating Research Relationships in Inuit Communities: A Guide for Researchers.*
For more information about the Nunavut Research Institute (NRI) please visit our web site www.nri.nu.ca

IMPORTANT

This application fulfills the requirements for the NIRB environmental screening.
Please be advised that your application will not be processed until the application form, project summary, and maps are received.

SECTION 1: APPLICANT INFORMATION

1a. Project Title Tracking Paleoenvironmental Change in the latest Mesoproterozoic (ca. 1.1 billion years old) Bylot Supergroup, Baffin Island

1b. Project Number

Please indicate if applicant has submitted any previous application(s) to NRI related to this project proposal? Yes ___ No X
If yes, please indicate the previous NRI licence number: ___

Please indicate if applicant has submitted any previous application(s) to NIRB related to this project proposal? Yes ___ No X
If yes, please indicate the previous NIRB project number(s): ___

2. Applicant's full name and mailing address:

Galen Halverson
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3450 University St., Montreal QC, H3A 0E8

Phone: 1-514-398-4894
Fax:
Email: galen.halverson@mcgill.ca

3. Field Supervisor's name and mailing address:

Peter Crockford
Dept. of Earth and Planetary Sciences, McGill Univ.
3450 University St., Montreal QC, H3A 0E8

Phone: 514-995-4397
Fax:
Email: Peter.crockford@mail.mcgill.ca

4. Other Personnel list (name, position, affiliation)

Marcus Kunzmann, Student, McGill University
Timothy Gibson, Student, McGill University
Sarah Worndle, Student, McGill University
Malcom Hodgkiss, Student, McGill University
Noah Planavksy, Yale University

SECTION 2: AUTHORIZATION NEEDED

1. Indicate all authorizations associated with the project proposal:

- [X] Regional Inuit Association (RIA)
- [X] Nunavut Water Board (NWB)
- [ ] Nunavut Planning Commission (NPC)
- [ ] Department of Indian And Northern Development (DIAND)
- [ ] Department of Fisheries and Oceans (DFO)
- [ ] Community Government & Services (CG&S)
- [X] Nunavut Research Institute (NRI/GN)
- [ ] Department of Culture, Language, Elders, and Youth (CLEY/GN)
- [ ] Canadian Launch Safety (CLS)
- [ ] Environment Canada (EC)
- [ ] Department of Environment (GN)
- [ ] Department of National Defense (DND)
- [ ] Hamlet
- [ ] Parks Canada (PC)
- [ ] Canadian Wildlife Service (CWS)
- [X] Other (please specify): Hunters and Trappers Association (Pond Inlet)

2. List the active permits, licenses, or other rights related to the project proposal and their expiry date:

Have applied for permission to the Hunters and Trappers Association (Pond Inlet) as well as permits from the QIA and Nunavut Water Board. I have been informed by DIAND that we do not require a permit for the proposed activity

3. Have you applied for all authorizations required to conduct the project proposal activities?

X YES ☐ **NO**

SECTION 3: PROJECT PROPOSAL DESCRIPTION

1. Indicate the activities related to the project proposal:

- [X] Temporary camp (to be removed at end of field season)
- [ ] Permanent camp (to remain for life of authorization)
- [ ] Construction of recreational or safety cabin
- [ ] Temporary fuel storage (to be removed at end of field season)
- [ ] Permanent fuel storage (to remain for life of authorization)
- [ ] Placement of structures for life of permit (other than camp or cabin – i.e. scientific instruments)
- [ ] Placement of permanent structures (other than camp or cabin – i.e. scientific instruments)
- [ ] Air surveys (i.e. geophysical, wildlife)
- [ ] Use of aircraft/watercraft/land vehicle for personnel drop-off and pick-up to project location
- [ ] Use of on-site mechanized vehicles (i.e. atv, snowmobile, truck, zodiac)
- [ ] Sewage or grey water disposal via sump
- [ ] Hazardous waste storage or disposal
- [ ] Solid waste disposal
- [ ] Chemical storage
- [ ] Explosives storage
- [ ] Soil testing
- [ ] Soil disposal/ soil storage
- [ ] Incineration of combustible wastes and removal of non-combustible wastes
- [ ] River/ stream/ lake crossing or work/ bridge
- [ ] Drainage alteration
- [ ] Geoscientific sampling by diamond drilling
- [ ] Geoscientific sampling by soil sampling
- [ ] Geoscientific sampling by trenching
- [ ] Geoscientific sampling by borehole core
- [ ] Blasting
- [ ] Channeling
- [ ] Excavation
- [ ] Hydrological testing
- [ ] Abandonment and restoration
- [ ] Site restoration (fertilization/ grubbing/ scarification/ spraying/ recontouring)
- [X] Research
- [ ] Ecological survey
- [ ] Harvesting
- [ ] Removal of vegetation for scientific purposes
- [ ] Other:

2. Personnel

Total No. of personnel on site	6	Total No. of days on-site	24	**Total No. of Person days (A) × (B) = 144**

3. Timing

Period of operation:	**July 28, 2014**	*to*	**August 21, 2014**
Proposed term of authorization:	**July 26, 2014**	*to*	**August 30, 2014**

Please outline the phases of the proposed project (construction/ operation/ decommissioning) including the timing and scheduling of each phase.

This project will involve only temporary camps comprising only tents, which will be erected and taken down upon arrival and departure

4. Location(s) of data collection:

Location Name	Region North Baffin, South Baffin, Kivalliq, Kitikmeot	Co-ordinates Lat (degree / minute), Long (degree / minute)	NTS Map Sheet #	Land Status Crown, Commissioners', Inuit Owned
Camp 1.	**North Baffin**	**N72°09'03"; W79°06'48"**	**38 B4**	**Inuit**
Camp 2.	**North Baffin**	**N72°23'16"; W81°11'38"**	**48 A7**	**Inuit**
Camp 3.	**North Baffin**	**N72°44'36"; W83°40'05"**	**48 A11-12**	**Inuit/Crown**

If the project proposal includes a **camp**, please provide the coordinates of the camp location
Lat (degree/minute) _____ Long (degree/minute) _____
NTS Map Sheet # (if different from above) _____

Camp 1: Near Angmaat Mt. (N72°09'03", W79°06'48"): July 28 to August 9
Camp 2: Near Alpha River (N72°23'16", W81°11'38"): August 9 to 15
Camp 3: Shale Valley (N72°44'36", W83°40'05"): August 15 to 21

The Nunavut Impact Review Board may require additional location information in a subsequent Project Specific Information Requirement (PSIR) submission. This may take the form of a digital Geographic Information Systems (GIS) file.

SECTION 4: NON-TECHNICAL PROJECT PROPOSAL DESCRIPTION

Please attach a non-technical description of the project proposal, no more than 500 words, in English and Inuktitut (+Inuinnaqtun, if in the Kitikmeot). The project description should outline the following:

- Project Title
- Researcher's Name and Affiliation
- Project Location
- Timeframe
- Project Description
  - purpose
  - goals & objectives
  - method of transportation
  - any structures that will be erected (permanent / temporary)
  - restoration / abandonment plans

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- Methodology
  - collection protocol
  - collection mechanisms
  - indicate why specific communities or individuals were selected for your research
- Data
  - short term & long term use of data
  - other uses of data
- Reporting
  - How will the research results be communicated to the individual participants, communities, regional and Nunavut organizations?
  - Will the research result in a publication?

SECTION 5: MATERIAL USE

1. List equipment (including drills, pumps, aircrafts, vehicles etc.):

Equipment type and number	Size – dimensions	Proposed use
Helicopter	Bell 206L	Drop offs and camp moves
Camp stoves	10x10 cm footprint	Meal preparation
Rifles		Protection against polar bears
Flare Guns		Protection against polar bears

2. Detail fuel and hazardous material use:

Fuel	Number of Containers and Capacity of Containers	Total Amount of Fuel (in Litres)	Proposed Storage Methods
Diesel			
Gasoline			
Aviation fuel			
Propane		25	In a single 25L Jerry Can
Other			
Hazardous Materials and Chemicals		**Total Amount of Hazardous Materials and Chemicals (in Litres)**	

3. Detail daily water consumption rates

Daily amount (in Litres)	Proposed water retrieval methods	Proposed water retrieval location
50	Water from snow melt will be boiled.	We will be collecting water from streams and rivers fed by melting snow. We will also rely on local advice on the best locations to retrieve water. Water will only be used for drinking and cooking.

4. Have you applied for a Class A License with the Nunavut Water Board?

☐ **YES** **[X]NO**

SECTION 6: WASTE DISPOSAL AND TREATMENT METHODS

1. List the types of waste:

Type of waste	Projected amount generated	Method of Disposal	Additional treatment procedures
Sewage (human waste)	5 L/day	burial	
Greywater			
Combustible wastes			
Non-Combustible wastes			
Overburden (organic soil, waste material, tailings)			
Hazardous waste			
Other: Kitchen waste	50 kg	Removal to Pond Inlet and Arctic Bay with helicopter	

2. Will you be incinerating combustible waste, removing all solid waste, and removing the ash generated from incineration?

☐ **YES** **X NO**

SECTION 7: COMMUNITY INVOLVEMENT & REGIONAL BENEFITS

1. List the community representatives that have been contacted and provide the minutes of the meetings if available:

Community	Name	Organization	Date Contacted
Pond Inlet		Hunter and Trappers Association	February 11, 2013 (and subsequently sent a letter via email and hard copy)
Arctic Bay	Joeli Qamanirq	Hamlet	February 16, 2013 (told me to contact Pond Inlet)
Pond Inlet		Hamlet Office	February 16, 2013 (no reply)

2. How will the proposed project benefit Nunavut?

This work will increase our understanding of the geological history of North Baffin Island.

4. Describe and attach documentation regarding community support or concerns for the proposed project:

Permission and guidance regarding best practices has been requested from the Pond Inlet Hunters and Trappers Association has been

5. Is there a traditional knowledge component to this research project? If yes, please explain:

While there are no direct traditional knowledge aspects of this work, any information we find regarding historical sites will be shared with local organizations.

SECTION 8: GENERAL QUESTIONS

1. Do you give NRI permission to publish project information in the Nunavut Research Institute Annual Compendium of Research Undertaken in Nunavut?

[X] YES ☐ **NO**

3. In addition to the application form, applicants are required to submit additional information in an electronic format to the Manager, Research Liaison, cfilion@nac.nu.ca. Please check that the following have been submitted to NRI:

[X] **Project Summary** -in English and Inuktitut (+Inuinnaqtun, if in the Kitikmeot)
[X] **NTS Maps** of the project

Applicant:

Signature	Title	Date
	Assoc. Prof	25/03/14

Title of Project: Tracking Paleoenvironmental Change in the latest Mesoproterozoic (ca. 1 billion years old) Borden Basin, Baffin Island

Research Leader: Galen Halverson, McGill University

Project Location: The Borden Basin: between Pond Inlet and Arctic Bay (near Milne Inlet)

Timeframe: July 28, 2014 to August 21, 2014

Project Description: This project will entail studying the superbly exposed and well-preserved sedimentary rocks of the Borden Basin in northern Baffin Island. The goal for this year is to establish three camps in different parts of the basin at which we will carry out geological mapping, describe and log the rocks, and collect hand specimens for geochemical analysis. The purpose of this research is to study changes in the global environment around 1 billion years ago, when these rocks of the Borden Basin were formed. Specifically, our research group will investigate changes in seawater chemistry and the diversity of life at the time, as recorded in these strata. This project will complement a similar project on somewhat younger rocks in northwestern Canada. All samples will be fist-sized or smaller and will be collected by hand (with a geological hammer) from rocks on the surface (that is, no digging). This research will be a component of several PhD theses. We have coordinated with the Polar Continental Shelf Program for helicopter transport to and from the field, along with moves between camps. Our camps will comprise only tents and we will have no motorized equipment with us. All waste will be returned to Pond Inlet or Arctic Bay for appropriate disposal. All field party members will have wilderness first aid and firearms safety training.

Methodology: Baffin Island is one of few places in the world where rocks where c. 1 billion-year-old sedimentary rocks are well preserved and accessible. Geological mapping will be carried out on satellite imagery and aerial photos and subsequently compiled in a GIS database. Sedimentary rocks will be logged and described in detail, during which time samples will be collected for subsequent geochemical analysis. These will be performed at McGill University. All samples will be catalogued at McGill University and be made available to other researchers up request so as to minimize the need for return trips to Baffin Island to collect new specimens.

Data: All data will be incorporated in PhD theses and publications arising from the research. Once the data is published, it will be made available to the public via Halverson's website at McGill University or by email request.

Reporting: The results of the research will be incorporated in PhD theses and scientific publications and presented at international conferences. The theses and publications will be made available to NRI and other organizations upon request, either as hard copies or electronically.

ᐱᓕᕆᐊᑉ ᐊᑎᖓ: ᖃᐅᔨᓴᕐᓂᖅ ᐅᐊᑦᑎᐊᕈᕐᔪᐊᓗᓐᓂᑦ (Paleoenvironmental) ᐊᓯᔾᔨᖅᑐᑦ ᒫᓇᐅᓂᖅᓴᒥᑦ (Mesoproterozoic) (ca. 1 ᐱᓕᐊᓂ ᐊᕐᒍᓂᑦ ᐱᑐᖃᐅᓂᖃᖅᑐᑦ) ᐃᑉᐱᑭᑦᑐᕐᔪᐊᖅ ᐃᒪᖓᓂ, ᕿᑭᖅᑖᓗᒃ

ᖃᐅᔨᓴᖅᑎᓪᓗᐊᑕᖅ: ᒐᐃᓕᓐ Hᐃᐅᕗᓴᓐ, ᒪᒥᐅᑦ ᓯᓚᑦᑐᓴᕐᕕᒃᔪᐊᖅ

ᐱᓕᕆᐊᖅ ᓇᒦᓐᓂᖓ: ᐃᑉᐱᑭᑦᑐᕐᔪᐊᖅ ᐃᒪᖓᓂ: ᐊᑯᓐᓂᖓᓂ ᒥᑦᑎᒪᑕᓕᒃ ᐊᒻᒪ ᐃᑉᐱᐊᕐᔪᒃ (ᖃᓂᒋᔭᖓᓂ Milne Inlet)

ᐊᑯᓂᐅᓂᖓ: ᔪᓚᐃ 28, 2014 ᑎᑭᑦᑐᒍ ᐋᒡᒌᓯ 21, 2014

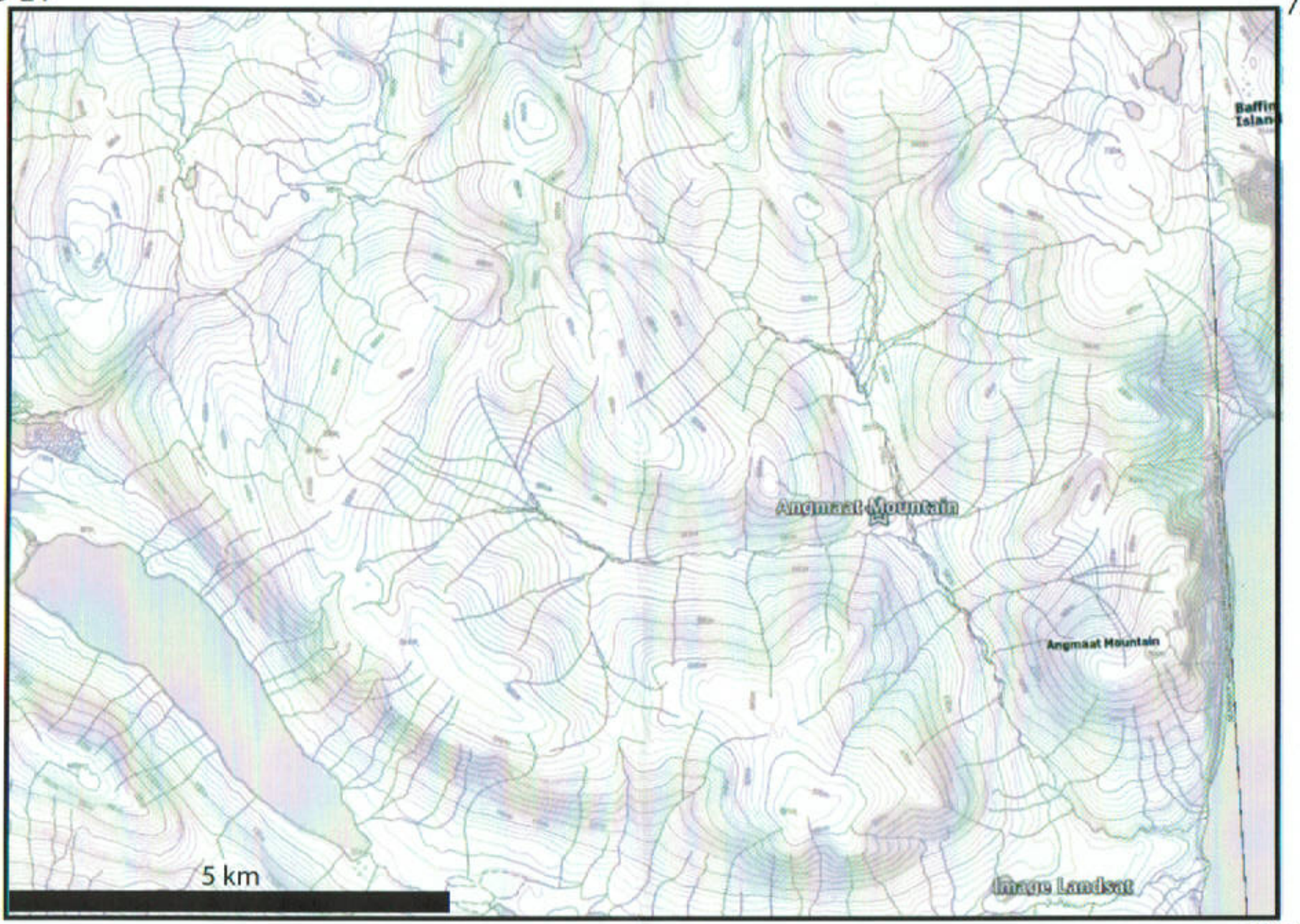
ᐱᓕᕆᐊᖅ ᓇᓗᓇᐃᔭᖅᓯᒪᓂᖓ: ᑖᓐᓇ ᐱᓕᕆᐊᖅ ᖃᐅᔨᓴᕐᓂᖃᕐᓂᐊᖅᑐᖅ ᑕᑯᔭᐅᑎᐊᖅᑐᓂᑦ ᐊᒻᒪ ᐱᐅᖅᓯᐊᖅᓯᒪᓕᑎᐊᖅᑐᓂᑦ ᐃᖅᑲᖓᓂ ᐅᔭᖅᑲᓂᑦ ᐃᑉᐱᑭᑦᑐᕐᔪᐊᖅ ᐃᒪᖓᓂ ᐅᐊᓐᓇᖓᓂ ᕿᑭᖅᑖᓗᑉ. ᑐᕌᒐᕆᔭᖓ ᑕᒪᑐᒪᓂ ᐊᕐᕌᒍᒥ ᐋᖅᑭᓱᓗᑕ ᐱᖓᓱᓂᑦ ᓇᔪᒃᑕᑦᑕᓂᐊᖅᑕᑎᓐᓂ ᑕᕝᕙ ᓂᖅᓴᐅᖅᒋᑦᑐᖅ ᐃᒪᖓ ᓄᓇᖑᐊᓕᐅᕐᓂᐊᖅᑕᕗᑦ, ᓇᓗᓇᐃᔭᕐᓗᑎᑦ ᐊᒻᒪ ᑎᑎᕋᕐᓗᑎᑦ ᐅᔭᖅᑲᐃᑦ, ᐊᒻᒪ ᓄᐊᑦᑎᓗᑎᑦ ᖃᐅᔨᓴᕐᓴᓂᑦ ᐃᓄᓕᕐᒥᓐᓂ ᐅᔭᖅᑲᐃᑦ. ᐱᔾᔪᑎᒋᔭᖓ ᖃᐅᔨᓴᕐᓂᐅᔪᒧᑦ ᖃᐅᔨᓴᕐᓗᑎᑦ ᓯᓚᖓ ᐊᓯᔾᔨᖅᑐᑦ ᓯᓚᕐᔪᐊᒥ ᖃᓂᒋᔭᐸᓗᖓᐊᓂ 1 ᐱᓕᐊᓐ ᐊᕐᕌᒍᓂᑦ, ᑖᒃᑯᐊ ᐅᔭᖅᑲᐃᑦ ᐃᑉᐱᑭᑦᑐᕐᔪᐊᖅ ᐃᒪᖓᓂ ᐅᔭᖅᑲᕈᖅᑎᑦᑐᓂᑦ. ᐱᓗᐊᖅᑐᒥ, ᖃᐅᔨᓴᖅᑎᒃᑯᑦ ᖃᐅᔨᓴᕐᓂᐊᖅᑐᑦ ᐊᓯᔾᔨᖅᑐᓂ ᑕᕆᐅᖓ ᐃᒪᖓ ᐊᒻᒪ ᐊᒥᒻᒥᓂᖕᒥᑦ ᐆᒪᔪᐃᑦ ᑕᐃᒪᓐᖓᓂᐅᓚᐅᖅᓯᒪᔪᒥᑦ. ᑕᕝᕙ ᓂ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᐅᔭᖅᑲᓂᑦ ᖁᓕᓖᖅᑐᓂᑦ. ᑖᓐᓇ ᐱᓕᕆᐊᖅ ᐃᑲᔪᕐᓂᖃᕐᓂᐊᖅᑐᖅ ᐊᔾᔨᐸᓗᐊᓂ ᐱᓕᕆᐊᖑᔪᒥᑦ ᐱᑐᖃᐅᖅᑎᓂᖅᓴᓂᑦ ᐅᔭᖅᑲᓂᑦ ᐅᐊᓐᓇᖓᑕ ᐱᖓᓐᓇᖓᓂ ᑲᓇᑕᒥ. ᖃᐅᔨᓴᕐᓴᓕᒫᑦ ᐊᒻᒪᒍᑦ ᑎᒍᑎᑐᑦ ᐊᖏᓂᖃᕐᓂᐊᖅᑐᑦ ᒥᑭᓂᖅᓴᐅᓗᑎᒃᓵᓂᑦ ᐊᒻᒪ ᐊᒻᒪᓄᑦ ᓄᐊᑕᐅᓂᐊᖅᑐᑦ (ᐅᔭᕋᑦᑎᐊᖃᕐᓗᑎᒃ) ᐅᔭᖅᑲᓂᑦ ᓄᓇᐅᑉ ᖃᖓᓃᑦᑐᓂᑦ (ᐳᐊᕐᓇᔭᓇᐊᖃᕐᓂᕐᕆᑉᑕ). ᓱᑖᓐᓇ ᖃᐅᔨᓴᕐᓂᐅᔪᖅ ᐃᓚᒋᓂᐊᖅᑕᖓ ᐊᒥᓱᒐᓚᐅᔪᓂᑦ PhD ᑎᑎᕋᖅᑕᐅᓯᒪᔪᓂᑦ. ᐱᓕᕆᖃᑎᖃᖅᓯᒪᔪᑦ ᐅᑭᐅᑕᖅᑐᒥ ᓯᑯᕐᒪᓂ ᐱᓕᕆᐊᒥ ᖁᑦᑐᒍᓕᒃᑯᖅᑎᑕᐅᓗᑎᑦ ᐅᐸᑦᑐᑦ ᐊᐅᓪᓚᓴᕐᕕᒋᓗᑎᓪᓗ ᖃᐅᔨᓴᕐᕕᐅᔪᑦ, ᐊᒻᒪ ᓅᑦᑎᖃᑦᑕᓂᕐᒧᑦ ᓇᔪᖅᑕᐅᓂᐊᖅᑐᓂᑦ. ᓇᔪᖅᑕᖅᑕᕗᑦ ᐊᑐᕐᓂᐊᖅᑐᑦ ᑐᐱᕐᓂᑦ ᐊᒻᒪ ᐊᐅᓚᑎᒨᖅᑐᑦᑲᔾᔨᖅᑎᑦᑐᒍᑦ. ᐊᑦᑕᑯᓕᒫᑦ ᐅᑎᖅᑎᑕᐅᓂᐊᖅᑐᑦ ᒥᑦᑎᒪᑕᓕᖕᒧᑦ ᐃᑉᐱᐊᕐᔪᒻᒧᒃᓂᑦ ᐃᒥᑕᐅᑎᐊᕈᓇᓂᐊᕐᒪᑕ. ᖃᐅᔨᓴᖅᑕᓕᒫᖑᔪᑦ ᓯᓚᐃᓐᓇᒦᓐᓂᕐᒧᑦ ᐋᓐᓂᖅᑐᓄᑦ ᐃᓕᓐᓂᐊᖅᓯᒪᓂᐊᖅᑐᑦ ᐊᒻᒪ ᖁᐱᕐᕈᓄ ᐊᑦᑕᓇᖅᑕᐃᓕᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᖅᑎᑕᐅᓗᑎᑦ.

ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ: ᕿᑭᖅᑖᓗᒃ ᐃᓚᒋᔭᐅᔪᖅ ᐊᒥᒍᓗᐊᕆᑦᑐᓂ ᓯᓚᕐᔪᐊᒥᑦ ᐅᔭᖅᑲᕆᑦ 1 ᐱᓕᐊᓂ ᐊᕐᕌᒍᓂᑦ ᐱᑐᖃᐅᓂᖃᖅᑐᓂᑦ ᐊᒻᒪ ᐱᐅᖅᓯᐊᖅᓯᒪᓕᑎᐊᖅᑐᑎ ᐊᒻᒪ ᐱᔭᕆᐅᑦᑐᓂᑦ. ᓄᓇᖑᐊᓕᐅᕐᓂᐊᖅᑐᑦ ᖁᓪᓗᐊᑦᑎᑕᐅᓯᒪᔪᑯᑦ ᐊᔾᔭᓕᐅᕈᑎᒃᑯᑦ ᐊᒻᒪ ᖃᖓᑕᔫᒃᑯᑦ ᐊᔾᔨᓐᖑᐊᓂ ᐊᒻᒪ ᖃᐅᔨᐅᔪᒧᖅᑕᐅᓗᑎᑦ ᓄᓇᖑᐊᓕᐅᕈᑎᒧᑦ. ᐃᖅᑲᖓᓂᑦᑐᑦ ᐅᔭᖅᑲᐃᑦ ᑎᑎᕋᖅᑕᐅᓂᐊᖅᑐᑦ ᐊᒻᒪ ᓇᓗᓇᐃᔭᖅᓯᒪᓕᑎᐊᕐᓗᑎᑦ, ᑕᕝᕙ ᓂᐅᓕᖅᑎᓪᓗᒍ ᖃᐅᔨᓴᖅᓴᐃᑦ ᓄᐊᑕᐅᓂᐊᖅᑐᑦ ᐃᓚᐅᑎᖕᓴᓂᑦ ᐃᓗᓕᕐᒃᓯᓂᖅᖏᓐᓄᑦ ᖃᐅᔨᓴᕐᓗᑎᑦ. ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ ᒪᒥᐅᑦ ᓯᓚᑦᑐᓴᕐᕕᒃᔪᐊᒥᑦ. ᖃᐅᔨᓴᕐᓴᓕᒫᑦ ᑎᑎᕋᖅᑕᐅᓂᐊᖅᑐᑦ ᒪᒥᐅᑦ ᓯᓚᑦᑐᓴᕐᕕᒃᔪᐊᒥ ᐊᒻᒪ ᐊᑐᐃᓐᓇᕈᖅᑎᑕᐅᓗᑎᑦ ᐊᓯᖏᓐᓄᑦ ᖃᐅᔨᓴᖅᑎᓄᑦ ᐱᔭᒪᔭᖅᑕᖅᐸᑦ ᐊᐅᓚᑲᓐᓂᕐᓇᖅᑕᕐᓂᐊᖅᑲᑦ ᕿᑭᖅᑖᓗᒻᒧᑦ ᓄᐊᑦᑎᓗᑎᑦ ᓅᑕᓂ ᖃᐅᔨᓴᕐᓴᓂᑦ.

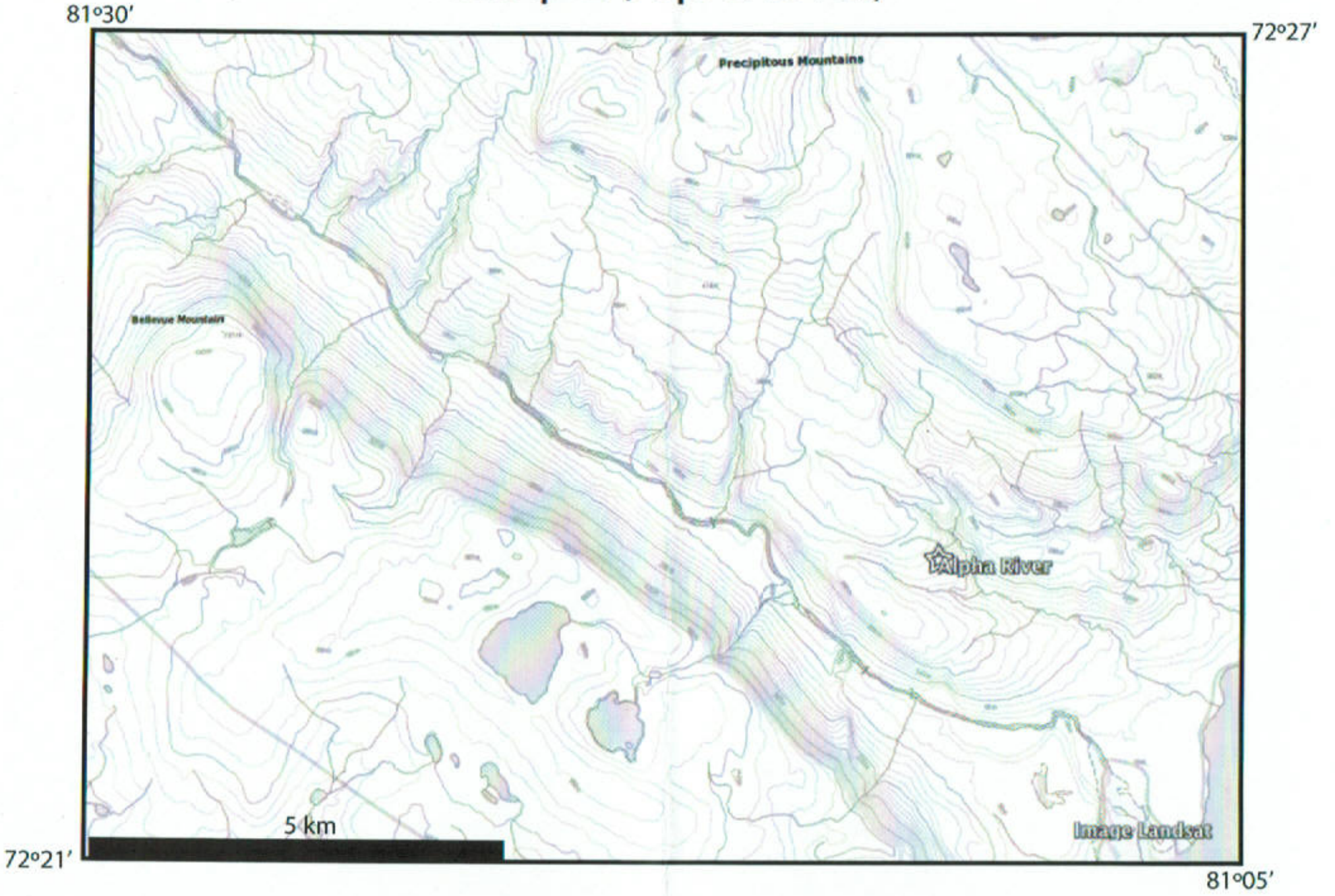
ᑐᑭᓯᐊᕈᑎᑦ: ᑐᑭᓯᐊᕈᑎᓕᒫᑦ ᑲᑎᑦᑎᑕᐅᓂᐊᖅᑐᑦ ᐊᒻᒪ ᓴᖅᑭᖅᑎᑕᐅᓗᑎᑦ ᓴᖅᑭᖅᑐᑦ ᖃᐅᔨᓴᕐᓂᐅᔪᒥᑦ. ᑐᑭᓯᐊᕈᑎᑦ ᓴᖅᑭᖅᑎᑕᐅᓯᒪᓕᕐᐊᕈᑎ, ᐊᑐᐃᓐᓇᐅᑎᑕᐅᓂᐊᖅᑐᑦ ᑭᒃᑯᑐᐃᓐᓇᕐᓄᑦ Hᐊᕗᓴᓐ ᖃᓄᐃᓯᐅᑯᑦ ᑐᑭᓯᐊᕐᕕᖕᒋᔪᑦ ᒪᒥᐅᑦ ᓯᓚᑦᑐᓴᕐᕕᒃᔪᐊᒥ ᐅᕝᕙ ᓘᓐᓃᑦ ᐱᔪᒪᔭᐅᒍᑎ ᖃᓄᐃᓯᐅᑯᑦ ᑎᑎᕋᕐᓗᑎᑦ.

ᐅᓂᒃᑳᓕᐅᕐᓂᖅ: ᖃᐅᔨᓴᕈᑎᒥᓂᑦ ᖃᐅᔨᓴᕐᓂᐅᔪᒥᑦ ᐃᓚᓕᐅᔾᔨᓂᐊᖅᑐᑦ PhD ᑎᑎᕋᖅᑕᐅᓯᒪᔪᓂᑦ ᐊᒻᒪ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᓴᖅᑭᖅᑎᑕᐅᔪᓂᑦ ᐊᒻᒪ ᑐᓂᔭᐅᓂᑦ ᓯᓚᕐᔪᐊᒥ ᑲᑎᒪᓂᖃᖅᑎᓐᓂᑦ. ᑖᒃᑯᐊ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᐊᒻᒪ ᓴᖅᑭᖅᑎᑕᐅᔪᑦ ᐊᑐᐃᓐᓇᐅᑎᑕᐅᓂᐊᖅᑐᑦ NRI-ᑯᓐᓄ ᐊᒻᒪ ᐊᓯᖏᓐᓄ ᑲᑐᔾᔨᖃᑎᒌᓄᑦ ᐱᔪᒪᔭᐅᒍᑎ, ᑎᑎᕋᖅᓯᒪᓗᓂᑦ ᖃᓄᐃᓯᐅᑯᓗᐊᕐᓂᑦ.

Camp 1 (Angmaat Mountain)



Camp 2 (Alpha River)



Camp 3 (Shale Valley)