

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 Improved retrievals of snow depth on sea ice for numerical sea ice prediction applications

1b. Project Number

Please indicate if applicant has submitted any previous application(s) to NRI Yes No related to this project proposal?

If yes, please indicate the previous NRI licence number: _____

Please indicate if applicant has submitted any previous application(s) to NIRB Yes No related to this project proposal?

If yes, please indicate the previous NIRB project number(s): _____

2. Applicant's full name and mailing address:

<u>Stephen Howell</u>	Phone: <u>416-739-5709</u>
<u>Climate Research Division, Environment Canada</u>	Fax: <u>416-739-5700</u>
<u>4905 Dufferin Street, Toronto, ON M3H 5T4</u>	Email: <u>Stephen.Howell@ec.gc.ca</u>

3. Field Supervisor's name and mailing address:

<u>Stephen Howell</u>	Phone: <u>416-739-5709</u>
<u>Climate Research Division, Environment Canada</u>	Fax: <u>416-739-5700</u>
<u>4905 Dufferin Street, Toronto, ON M3H 5T4</u>	Email: <u>Stephen.Howell@ec.gc.ca</u>

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

<u>Chris Derksen, Research Scientist, Environment Canada</u>	<u>Joshua King, Visiting Fellow, Environment Canada</u>
<u>Arvids Silis, Physical Scientist, Environment Canada</u>	_____
<u>Peter Toose, Physical Scientist, Environment Canada</u>	_____

SECTION 2: AUTHORIZATION NEEDED

1. Indicate all authorizations associated with the project proposal:

- | | | | |
|-------------------------------------|--|-------------------------------------|--------------------------------------|
| <input type="checkbox"/> | Regional Inuit Association (RIA) | <input checked="" type="checkbox"/> | Environment Canada (EC) |
| <input type="checkbox"/> | Nunavut Water Board (NWB) | <input type="checkbox"/> | Department of Environment (GN) |
| <input type="checkbox"/> | Nunavut Planning Commission (NPC) | <input type="checkbox"/> | Department of National Defense (DND) |
| <input type="checkbox"/> | Department of Indian And Northern Development (DIAND) | <input type="checkbox"/> | Hamlet |
| <input type="checkbox"/> | Department of Fisheries and Oceans (DFO) | <input type="checkbox"/> | Parks Canada (PC) |
| <input type="checkbox"/> | Community Government & Services (CG&S) | <input type="checkbox"/> | Canadian Wildlife Service (CWS) |
| <input checked="" type="checkbox"/> | Nunavut Research Institute (NRI/GN) | <input checked="" type="checkbox"/> | Other (please specify): |
| <input type="checkbox"/> | Department of Culture, Language, Elders, and Youth (CLEY/GN) | | NASA |
| <input type="checkbox"/> | Canadian Launch Safety (CLS) | | ESA _____ |

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

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

YES NO

SECTION 3: PROJECT PROPOSAL DESCRIPTION

1. Indicate the activities related to the project proposal:

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

2. Personnel

Total No. of personnel on site = (A)	5	Total No. of days on-site = (B)	11	Total No. of Person days (A) × (B) = 55
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3. Timing

Period of operation:

March 31, 2014

to

April 10, 2014

Proposed term of

March 1, 2014

to

April 30, 2014

authorization:

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

For ground activities:

Five research personnel from Environment Canada will arrive at Eureka via charter aircraft from Resolute in late March. The five scientists will establish a temporary field camp just west of Eureka on the sea ice (Nansen Sound) for approximately 11 days (31 March through 10 April 2014). From this camp, they will conduct snow on sea ice surveys in the surrounding area. Their mode of travel will be snowmobiles. The camp will be decommissioned with all waste removed on approximately 10 April 2014.

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
Eureka	North Baffin	79:59:41:N:85:48:48:W	049G15	

If the project proposal includes a **camp**, please provide the coordinates of the camp location

Nasen Sound (just a few km west of Eureka on the sea ice

Lat (degree/minute)

79:59:41N

Long (degree/minute)

85:48:48:W

NTS Map Sheet # (if different from above)

See attachment

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
- 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
Snowmobiles (5)	175 kg each	Transportation

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	9 drums	~1845	Drums
Propane	3x20 lb tanks		Standard commercial propane canisters
Skidoo Oil		33	Standard commercial oil containers
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
10	Melting multi-year sea ice/snow	Nearby multi-year sea ice/snow

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

YES

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)		Buried	
Greywater		There will be very little greywater, as we don't do a lot of dishwashing. We will mainly wipe out pots and bowls with paper towels and burn the towel. The remainder freezes in the pot and seasons the next meal.	
Combustible wastes	Minimal (if any)	Burning. Ash bagged and removed.	
Non-Combustible wastes	0.5 kg/day	Bagged and removed.	
Overburden (organic soil, waste material, tailings)			
Hazardous waste			
Other:			

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

YES

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
PCSP	Tim McCagherty	Polar Continental Shelf Project	Nov 20 2013
Eureka station	John Maclver	Environment Canada	Nov 1 2013

2. How will the proposed project benefit Nunavut?

Scientific measurements acquired during this field program will ultimately increase understanding of global climate change in the Arctic providing important information affecting Nunavut. Scientific measurements will be carried out over the Arctic sea ice adjacent to Eureka; stations Eureka will only be used as a accommodation for scientists. This project will not provide local employment or training opportunities to Nunavut.

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

No community support has been solicited and no community concerns are known.

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

No

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?

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:

Project Summary -in English and Inuktitut (+Inuinnaqtun, if in the Kitikmeot)

NTS Maps of the project

Applicant:


Signature

Research Scientist
Title

Nov 26, 2013
Date