

# Preparing for Arctic Research in Canada

## A Guide for Swiss Researchers

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*Measurement of Arctic snow properties for interpretation of microwave remote sensing at Trail Valley Creek, Northern Canada*

## **INTRODUCTION**

This report intends to help Swiss researchers prepare for field projects in the Canadian Arctic. It outlines a step by step process for these preparations:

- Step 1: Gather the relevant information
  - Connecting with local and regional authorities
  - Permitting
  - Connecting with Canadian research partners
  - Logistics
  - Training
- Step 2: Engage
  - Linking with northern communities and indigenous organizations
- Step 3: Prepare for travel
  - Collecting all relevant documentation
- Step 4: Reporting and follow – up

To ensure that each step has been completed, a checklist has been included

Next, links have been inserted to additional resources specific to the northern region in Canada where you plan to work

The report concludes by showcasing two specific opportunities:

- Working at the Canadian High Arctic Research Station
- Working in Northern National Parks

The following main information sources are gratefully acknowledged:

- Polar Knowledge Canada
- Inuit Tapiriit Kanatami
- Polar Continental Shelf Program
- Canadian Network of Northern Research Operators
- Territorial Governments of Yukon, Northwest Territories and Nunavut
- Parks Canada

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## STEP 1: GATHER THE RELEVANT INFORMATION

### CONNECTING WITH LOCAL AND REGIONAL AUTHORITIES

Initiating and sustaining partnerships with local organizations and community members is a priority in northern research. Before you begin planning your project, consider which local and/or regional organizations should be aware of, and involved in, your upcoming research. Important points of contact may include:

- Hamlet or community council offices
- Land claims organizations
- Indigenous representative organizations
- Co-management boards
- Territorial government departments
- Research institutes

### PERMITTING

- Permitting for research in Canada's North is an essential process that requires ample time and planning. Key considerations:
  - **Where** you are conducting your research will determine which regional permitting authorities you must contact;
  - The nature and scope of your research will determine **what** permits you require;
  - Be aware of **when** permit applications are due, as review and processing times for research permits can be lengthy to allow permitting authorities to engage with local groups and evaluate potential impacts. Start your applications early;
  - Find out **who** you need to involve in your research, as permitting processes often require applicants to engage and collaborate with communities that are nearby;
  - Connect with a research station in the region you intend to visit to get expert advice on **how** to navigate region-specific permitting processes

### Regional Permitting Authorities

The following links summarize regional permitting processes, provide important contact information and direct you to official permitting authorities in Canada's North:

- Yukon: [Government of Yukon Department of Tourism and Culture](#)
- Northwest Territories: [Aurora Research Institute](#)
- Nunavut: Nunavut Research Institute (<https://www.nri.nu.ca/research-licencing-nunavut>)
- Nunatsiavut: [Nunatsiavut Research Centre](#)

\*\* Important reminder: researchers must obtain ethics reviews for their research projects involving human subjects and/or Indigenous knowledge. Note that researchers may have to independently attain these ethics reviews through their affiliated academic or research institution, in addition to going through local permitting processes. Consult the [Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans](#) for more detail about research ethics reviews.

### **Federal Permitting Authorities**

Research that involves [marine or freshwater scientific research](#), [migratory birds](#), [species at risk](#) (terrestrial and aquatic), [protected areas](#) or [national parks](#) falls under federal jurisdiction and will require additional permits.

For marine scientific research that is not funded by a government foreign to Canada, please seek the necessary permits from Fisheries and Oceans Canada;

- For research that involves aquatic species at risk including fish, shellfish, crustacean, marine animal or marine plants please seek a permit under the [Species at Risk Act](#)
- For research that will be located in Marine Protected Areas (MPA's), please consult Fisheries and Oceans Canada on your research in the following regions- [Anguniaqvia niqiqyuam MPA](#) and [Tarium Niryutait MPA](#)

### **OTHER RELEVANT DEPARTMENTS AND AGENCIES**

- **Global Affairs Canada**
  - International marine scientific research in Canadian waters must be approved by the Defence and Security Relations Division of [Global Affairs Canada](#) (email [igr@international.gc.ca](mailto:igr@international.gc.ca)). See Canadian Border Services Agency memorandum on [Foreign Scientific or Exploratory Expeditions in Canada](#) for more information.
- **Canadian Border Services Agency**
  - Border Information Service: 1-800-461-9999 (within Canada), 204-983-3500 or 506-636-5064 (outside of Canada)
  - Foreign Expeditions and Arctic Research: [FEAR-EERA@cbsa-asfc.gc.ca](mailto:FEAR-EERA@cbsa-asfc.gc.ca)
- **Fisheries and Oceans Canada**
  - General enquiries: (by phone) 613-993-0999, (by email) [info@dfo-mpo.gc.ca](mailto:info@dfo-mpo.gc.ca)
  - [Contact information for regional offices](#)
- **Canadian Coast Guard**
  - General enquiries: (by phone) 613-993-0999, (by email) [info@dfo-mpo.gc.ca](mailto:info@dfo-mpo.gc.ca)
  - Regional emergency numbers for [Search and Rescue](#) and [Marine Pollution Incident](#)

For marine scientific research funded by a government foreign to Canada, Global Affairs Canada facilitates the review and approval of applications. Researchers interested in conducting marine scientific research in areas under Canadian jurisdiction or



**Map depicting the locations of key CNNRO research facilities in Canada's North**  
(each blue dot represents one facility, the Canadian High Arctic Research Station, CHARS, is indicated by a star)

## **LOGISTICS:**

The Polar Continental Shelf Program (PCSP) provides advice and logistics coordination and planning for eligible research initiatives in Canada's North. If your logistics needs are beyond what a research station or local authority can provide, consider applying to PCSP for logistics support during their annual application period, which usually occurs in October of the year preceding your field research project. Their website is at: <https://www.nrcan.gc.ca/science-and-data/science-and-research/arctic-science/polar-continental-shelf-program/10003>

- Researchers from Canadian federal and territorial governments, universities, and northern organizations are eligible to apply for direct, in-kind support and logistics coordination from PCSP (i.e., PCSP may be able to defray all or a portion of direct logistics expenditures for projects).
- International Researchers may apply for PCSP logistics coordination support in Canada's North that, if feasible, would be provided on a recoverable basis (i.e., all expenditures associated with the logistics provided for a project would be invoiced to the client).
- PCSP can provide field equipment for loan to eligible projects for work in Canada's North, including communications equipment, camping gear, winter clothing, field vehicles, and safety supplies.

## **Local Authority and Community Contacts**

Continue communicating and, where possible, building partnerships with local authorities. Throughout this process, visiting researchers should be aware that some northern and Indigenous communities may have limited capacity to engage with researchers.

## **TRAINING**

Research in the North comes with significant challenges, and having the right training is essential to the health and safety for your research team. Consider the lists below and consult with a local authority or research station for more insight into what is required for your research project:

- **Occupational Health and Safety:**
  - [Canadian Centre for Occupational Health and Safety](#)
- **Health and Safety for remote locations:**
  - Wilderness first aid and wilderness first responder
  - Snow and ice safety
  - Predator defense and firearm licences
  - Certificates associated with vehicle operation in field



- Rabies vaccinations

## REGION-SPECIFIC RESEARCH INFORMATION

To determine which organizations you should involve in your research, begin by learning more about the community/region you will be visiting in the [REGION-SPECIFIC INFORMATION](#) section. Communicating with relevant local organizations should be the first stage of your research planning process and should continue throughout your project. These partnerships have the potential to benefit your research in many ways, and are essential to ensuring northern and Indigenous perspectives are central to the research activity conducted in Canada's North.

A map is included below to identify the Northern regions in Canada that each have their specific research management approach:



- 1 Yukon
- 2 Northwest Territories
- 3 Nunavut
- 4 Nunavik (northern Quebec)
- 5 Nunatsiavut (northern Labrador)



## STEP 2: ENGAGE: LINKING WITH NORTHERN COMMUNITIES

### COMMUNITIES

Research in Canada's North benefits from community input and participation. Collaboration should be central to all stages of the research process, and communities can contribute to the planning, collection of samples, and data interpretation of research projects. Consider the following questions:

- What are the relevant community/ representative organizations you should engage with at the local and regional level?
- Have you connected with these organizations to discuss your research plans and to inquire about local and/or regional research procedures and resources?
- Does your project address a 'priority area' that many northern regions and communities have set for research?
- Could your research benefit from having community input in defining research objectives?
- Youth are important voices in northern research. How can youth be involved in, and contribute, to your project?
- Can local Indigenous Knowledge be utilized in the development and delivery of research activities?
- How will you share your data with the community following your research project?
- How will you ensure language barriers do not prevent meaningful engagement with community members?

### Northern Communities

Find out more about the peoples and places of Canada's North by clicking on the 'Communities' link in each region of the [REGION-SPECIFIC INFORMATION](#) document.

### Research Ethics for working with Indigenous peoples

- There are a number of resources available to help introduce researchers to the ethics of working with Indigenous peoples on research:
  - [Existing Protocols and Initiatives](#)
  - [Panel on Research Ethics: research involving First Nations, Inuit, and Métis Peoples of Canada](#)
  - [National Inuit Strategy on Research](#)

\*\*Reminder: researchers must obtain ethics reviews for their research projects involving human subjects and/or Indigenous knowledge. Note that researchers may have to independently attain these ethics reviews through their affiliated academic or research institution, in addition to going through local permitting processes. Review the [Tri-](#)

[Council Policy Statement: Ethical Conduct for Research Involving Humans](#) for more detail about research ethics reviews.

### **Indigenous Knowledge**

- Indigenous Knowledge (IK) is a body of knowledge generated through lived experiences, and multiple generations of observations, skills, cultural practices and analyses. IK is fundamentally important to the practical application of science and research in the North. When engaging with Indigenous communities in the North, POLAR encourages researchers to approach IK and scientific knowledge on the basis of equality and mutual respect. Researchers are encouraged to utilize, as appropriate, Indigenous Knowledge in the planning and delivery of their research activities. The following links can provide more information on the respectful incorporation of IK:
  - [Negotiating Research Relationships with Inuit Communities](#)
  - [Ethics guide on research and First Nations Traditional Knowledge](#)

### **Indigenous Languages**

Languages and dialects vary considerably across First Nations, Métis, and Inuit communities. While English and French can be prevalent in the North, it is suggested that researchers use the local language by hiring an interpreter and paying for translations when possible (i.e. community meetings, plain language summaries for local partners). Note that some permitting applications in Nunavut will *require* translation. For more information on Inuit languages, you can find [online resources](#) compiled by the Government of Nunavut.

## STEP 3: PREPARE FOR TRAVEL

### TRAVEL AND DOCUMENTATION

You may need to obtain a valid entry document to travel to Canada, such as an [Electronic Travel Authorization \(eTA\)](#) or a [visa](#). Consider applying for the necessary travel documents before booking your flights to Canada. If applying for a visa, ensure you are applying for the appropriate category (i.e., work, study or visitor permit), based on the specifics of your research project. If you are an international researcher, ensure you review and understand the Canadian Border Services Agency's information on [foreign-based research in Canada](#).

Consult the [REGION-SPECIFIC INFORMATION](#) document and click on the 'Getting There' links for general information about airlines and travel in Canada's North.

### PERSONAL SAFETY AND EQUIPMENT

It is essential that you take the appropriate steps to ensure your health and safety *before* you travel to Canada's North.

#### Health Insurance and Air Ambulance Coverage

You must have health insurance that includes medical evacuation by air ambulance when operating in remote northern regions. As costs vary regionally, consult with a research station or local authority in Canada's North to determine the recommended minimum coverage for medical emergencies and medical evacuation.

#### Gear

Conducting research in Canada's North, even during the summer season, requires specialized gear. Be aware of weather conditions for the time of year that you will be conducting your research and consult your affiliated research station for any additional equipment needs. It is important to arrive prepared, as equipment can be limited in remote northern communities and/or field sites and pre-planning is required.

## STEP 4: REPORTING AND FOLLOW-UP

### PERMIT REPORTING

Permits often require researchers to submit reports to issuing authorities after their project is complete. Upon receiving your official permits, be sure to note reporting guidelines and due dates.

### COMMUNITY FOLLOW-UP

Community follow-up is key to respecting local and Indigenous participation in research, and to building a positive and thriving research community in Canada's North.

- You can share information with communities in many ways. Examples include:
  - Short, plain-language reports and posters
  - Community meetings
  - 'Coffee house' or presentations for youth
  - Speaking with local radio stations and newspapers
  - Joining local social media pages
- \*Whenever possible, ask local authorities or research stations about how best to conduct outreach. POLAR would also be interested in hearing how your research and community engagement went as an opportunity to share best practices. Please feel free to email us at [info@polar.gc.ca](mailto:info@polar.gc.ca).

Researchers are asked to send published reports to local authorities and governments who assisted in their work. This ensures that data and knowledge about the North is available for local, regional and national decision-making.

### CANADIAN DATA CATALOGUES

To support full and open access to data and facilitate future research in Canada's North, research results should be disseminated in as many Canadian forums as possible. Researchers are asked to share metadata records in national data catalogues, such as the [Polar Data Catalogue](#), and enable access to datasets.

## Checklist for Conducting Research in Canada's North

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The steps outlined in this document are necessary for safe, respectful and successful northern research. Before you arrive to Canada's North, it is recommended to read and work through this checklist.

### Gather information: At least one year prior to project

- **Local and regional authorities**

- I have identified what local and regional organizations should be engaged in my upcoming research and I have reached out to these organizations to involve them during the earliest stages of my project.
- Involving local authorities from the nearest community to your field site in developing, planning and conducting your project is essential to responsible and respectful research in Canada's North.

- **Permitting**

- I have investigated what regional research permits and licences I will require for my project.
- Find out more about research permits in Canada's North at Polar knowledge Canada's [website](#) and connect with an established research station via the [Canadian Network of Northern Research Operators](#) (CNNRO) to gain tips for navigating region-specific permitting processes.

- **Connecting**

- I have reached out to an established research station through the CNNRO to discuss my research project, investigate the facility's capabilities and assess equipment needs.
- (If necessary) I have connected with the [Polar Continental Shelf Program](#) (PCSP) to submit an application for additional logistics support. The application period occurs in October of the year preceding the project.

- **Training and logistics**

- I have investigated what training and logistical support is needed to conduct research safely in remote sites.

Consult with your research station to confirm what certifications you will need prior to your arrival.

### Engage: Throughout project

- **Communities**

- I have continued to communicate with First Nations, Métis, Inuit and/or other northern communities closest to my field site to involve them in all stages of my project.

- **Canadian and international researchers**

- I have investigated whether there are already projects underway in Canada's North that align with my research and, where possible, I will collaborate with my Canadian and international research counterparts.

### **Prepare: 3 months prior**

- **Travel and equipment**

- I have health and air ambulance (MEDIVAC) insurance to cover medical emergencies.
- (If applicable) I have obtained a valid entry document to travel to Canada and I am aware of Canadian border information pertaining to foreign-based research.
- I have the necessary personal safety equipment needed.
- Specialized equipment can be limited in remote northern communities and/or field sites and planning is required to ensure you have all the necessary protective equipment.

### **Follow-up: 6-12 months post**

- **Permit reporting**

- I have met all reporting requirements outlined in my research permits.

- **Community follow-up**

- Based on the engagement strategy I developed with local authorities, I have actively engaged First Nations, Métis, Inuit and/or other northerners throughout my project and communicated my research results back to the communities.

## **PLANNING TO WORK AT THE CANADIAN HIGH ARCTIC RESEARCH STATION**

A state of the art research facility located in the Canadian Arctic community of Cambridge Bay, Nunavut at 69 degrees latitude North.

The Canadian High Arctic Research Station (CHARS) campus operated by [Polar Knowledge Canada](#), has been designed and built to optimize innovation in Arctic science and technology, to welcome visitors, and to provide researchers with the accommodation and technical services they need. It's an innovative facility that can support a wide range of research needs – from ecosystem monitoring, to DNA analysis – and where Indigenous Knowledge is recognized as fundamentally important to the co-creation of new knowledge.



*The Canadian High Arctic Research Station. Photo by Janice Lang, DRDC/DND*

### **Key links:**

- [Funding for Researchers](#)
- [Apply for Research Support at the CHARS campus](#)
- [Use Public Areas of the CHARS campus](#)

### **Main Research Building**

Learn about spaces and laboratories inside the Main Research Building of the CHARS campus.

### **Using the CHARS campus**

Equipment and research support at the CHARS campus.



## **Design and Construction**

Details about the construction of the CHARS campus

## **Videos and Podcasts**

## **Field and Maintenance Building**

Supporting facility of the CHARS campus

## **Accommodations**

Lodging for visiting researchers

## **Tour of the CHARS Campus**

See inside the Main Research Building!

## Research in Northern National Parks

The combined area of Canada's national parks is just over 300,000 square kilometres, approximately the size of Italy. Most of this territory consists of roadless regions north of the 60th parallel. A map is provided below to show the location and names of Northern National Parks in Canada:



*Map of northern National Parks*

Reasons to consider conducting research in a National Park:

- Most National Parks have long – term data sets of ecological integrity monitoring that researchers can build on
- They also have regular logistics support and have infrastructure that may be available for researchers
- All Parks have conducted consultations with local communities and have co-developed research priorities
- The permitting system for research in National Parks has been clearly established: If you are interested in conducting research in a national park, the on-line [Research and Collection Permit System](#) can help you.

Click this link to learn more about [research in northern national parks](#).

And to find more information on a specific National Park, click on:

<https://www.pc.gc.ca/en/pn-np/recherche-parcs-parks-search>



*Parks Canada staff servicing a weather station at Quttinirpaaq National Park, Ellesmere Island*

For any additional information you may need to prepare for your research project in Northern Canada, please feel free to reach out to Polar Knowledge Canada at [info@polar.gc.ca](mailto:info@polar.gc.ca) or contact the author of this report at: [martin.raillard@gmail.com](mailto:martin.raillard@gmail.com)