

SUMMARY REPORT

CLIMATE CHANGE RESEARCH TRENDS IN NUNAVUT (2004-2021)

Based on Licensing, Permitting & Funding Databases



JULY 2025

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Report designed by Faith Rahman

To download this summary report, or for more information on this project, scan the **QR code** to visit: <https://straightupnorth.ca/making-research-work-for-nunavummiut/>

Floating ice cover photo & related floating ice photos throughout this report by Annie Spratt from unsplash.com.



Nakurmiik — Thank you — Merci

We wish to acknowledge everyone who has supported — and contributed data to — the Climate Change Research Trends in Nunavut project.

Research Licensing & Permitting Agencies

Nunavut Research Institute
Fisheries and Oceans Canada
Government of Nunavut — Department of Environment (Wildlife Research)
Parks Canada

Federal Funding Programs

Crown-Indigenous Relations and Northern Affairs Canada:
Climate Change Preparedness in the North Program
Indigenous Community-Based Climate Monitoring Program

Indigenous Services Canada:
Climate Change Health Adaptation Program

We are grateful for generous funding support from:

SSHRC  CRSH



CANADA RESEARCH CHAIRS
CHAIRES DE RECHERCHE DU CANADA

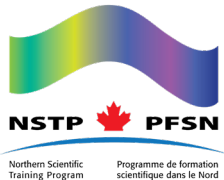


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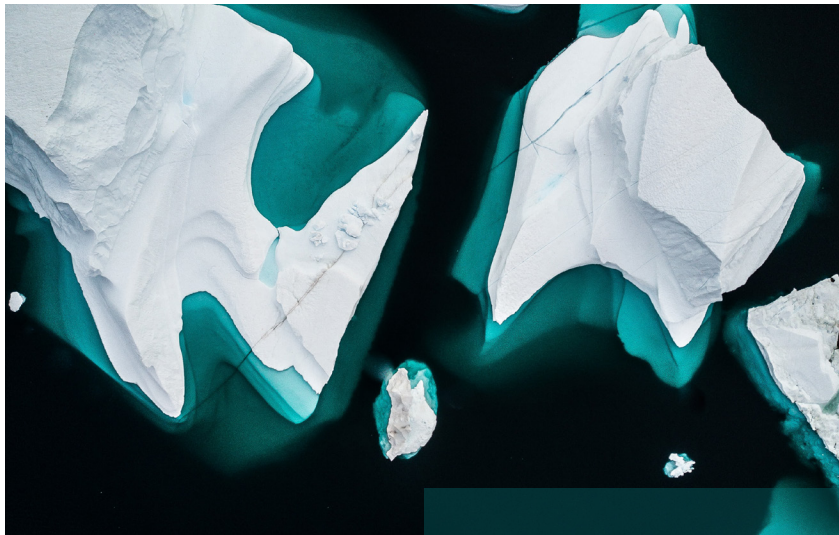
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LIST OF ABBREVIATIONS

Abbreviations	Explanation
CCHAP	Climate Change and Health Adaptation Program
CCPN	Climate Change Preparedness in the North Program
CCRRA	Climate Change Risk and Resiliency Assessment
CCS	Climate Change Secretariat
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
CWS	Canadian Wildlife Service
DFO	Fisheries and Oceans Canada
DOE	Department of Environment, Government of Nunavut
GN	Government of Nunavut
ICBCM	Indigenous Community-Based Climate Monitoring Program
ISC	Indigenous Services Canada
ITK	Inuit Tapiriit Kanatami
NGO	Non-Governmental Organization
NRI	Nunavut Research Institute
NTI	Nunavut Tunngavik Inc.
PI	Principal Investigator
SUN Team	StraightUpNorth Research Team, McMaster University



ABOUT THIS REPORT

The Government of Nunavut (GN) Climate Change Secretariat (CCS) is interested in learning about the kinds of climate change research that have been happening in Nunavut over the years. Together, with the Nunavut Research Institute (NRI) and StraightUpNorth (SUN) Research Team at McMaster University (Hamilton, Ontario), we collaborated to look at climate change research trends. In this project, we explored the question:

What types of climate change research have taken place in Nunavut between 2004 and 2021, and how have these trends shifted over the last two decades?

This summary report highlights key results on the following:

- 1. How much climate change research has taken place;
- 2. Where climate change research has been taking place in Nunavut;
- 3. Who has been leading climate change research; and
- 4. What climate change topics & themes have been covered.

ABOUT THE CLIMATE CHANGE SECRETARIAT (CCS)

Embedded within the Government of Nunavut’s Department of Environment (DoE), the CCS aims to build a climate resilient Nunavut by coordinating initiatives and raising climate awareness across the GN and Nunavut communities. The Secretariat

addresses climate change through three interrelated areas: **Adaptation, Mitigation, and Knowledge Mobilization.**

The Adaptation Section focuses on ensuring Nunavummiut (people of Nunavut) are prepared for and have the resources available to adapt to climate changes. This includes ensuring climate change adaptation measures are incorporated into decision-making and policies.

The Mitigation Section focuses on greenhouse gas reduction, energy conservation, and supporting alternative energy development in the territory, in order to reduce Nunavut’s reliance on fossil fuels.

The Knowledge Mobilization Section supports Nunavummiut in learning about climate change, understanding its impacts, and providing resources to help the GN, and all Nunavummiut, take climate action.



Nunavut Research Institute in Iqaluit, NU. (Photo: Faith Rahman)

ABOUT THE NUNAVUT RESEARCH INSTITUTE (NRI)

Established in 1995, the NRI is a part of the Science Division of Nunavut Arctic College and is responsible for licensing health, social, physical/natural sciences and Inuit knowledge research in or about Nunavut in accordance with Nunavut’s *Scientists Act*.

This report is based on databases from 4 research licensing/permitting agencies & 3 federal funding programs.

ABOUT THE STRAIGHTUPNORTH (SUN) RESEARCH TEAM

The SUN Team at McMaster University aims to address community-identified priorities through north-south partnerships. The goal is for research to benefit community partners, contribute to decision-making, improve research practice, and support Inuit self-determination in research.

WHY WAS THIS REPORT CREATED?

This summary report was created for three main reasons:

- To share results with organizations who provided data,
- To make results publicly accessible, and
- To inform licensing and permitting approaches in tracking climate change research.

WHAT INFORMATION WAS USED?

To create this report, research project summaries from **seven databases** were reviewed from research licensing, permitting, and funding agencies.

7 Databases reviewed for the analysis of this project

4 Research licensing & permitting databases from agencies including:

- Nunavut Research Institute
- Government of Nunavut Department of Environment (Wildlife Research)
- Fisheries and Oceans Canada
- Parks Canada

3 Federal funding program databases:

- Climate Change and Health Adaptation Program (CCHAP)
- Climate Change Preparedness in the North Program (CCPN)
- Indigenous Community-Based Climate Monitoring Program (ICBCM)

THE NRI’S SCIENTIFIC RESEARCH LICENSES

The NRI grants Scientific Research Licenses under Nunavut’s *Scientists Act*. **The Act only applies to research in three types of scientific research (Physical and Natural Sciences, Health Sciences, and Social Sciences and Traditional Knowledge)** which make up about 60% of all research in Nunavut. Climate change research can fall into any one of these three disciplines, which would require a license from the NRI.

ADDITIONAL RESEARCH PERMITS

In addition to the NRI’s Scientific Research Licenses, researchers may need other permits for their projects. *We did not have access to data on archaeology and migratory bird research permits, so they are not included in this report.* Project summaries of the next three permit types are included:

- **Wildlife Research Permit** — GN DoE (Wildlife Research): For research relating to flora and fauna, including mammals, birds, insects, wildlife habitat.
- **National Parks Research Permit** — Parks

Canada: For research conducted on National Parks and National Heritage Sites.

- **Fisheries Research Permit** — DFO: For researchers that would like to fish, sample, and/or handle fish and marine mammals for scientific purposes.

FEDERAL CLIMATE CHANGE FUNDING PROGRAMS

Government of Canada funding programs supporting climate change-related projects were included to **highlight community-based projects not necessarily covered by a research license or permit.** *The three federal funding programs are listed in the box on the opposite page.* These programs are led by:

- Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) (for the CCPN and ICBCM databases); and
- Indigenous Services Canada (ISC) (for the CCHAP database).



Photo: Faith Rahman

CLIMATE CHANGE “RESEARCH” VS. “INITIATIVES”

In this report, the terminology of “climate change research” is used to also describe “climate change initiatives.”

Climate change research: Refers primarily to academic and governmental scientific research included in the 4 research licensing/permitting databases.

E.g. Research in the discipline of Inuit science and knowledge, on physical and mental health, or plants and animals. Many studies of this kind typically aim to be published afterward as academic papers.

Climate change initiatives: Are typically projects of a more applied nature, not necessarily resulting in academic publications. These are mainly projects funded by the 3 federal funding programs.

E.g. Projects led by local community groups, such as funding a climate change coordinator position, improvements to community roads/buildings, and engaging youth in water quality monitoring projects.

Overall, “climate change research” includes both climate change research and initiatives.

CLIMATE CHANGE THEMES



Photo: CCS

WHAT IS THE CCRRA?

The **Climate Change Risk and Resiliency Assessment (CCRRA)** was conducted by the CCS to understand the potential risks that climate change poses to Nunavut, and how the Government of Nunavut can build resiliency through its policies, programs and services to better manage these risks. As climate change intensifies, Nunavut’s natural, built, and social systems face increasing challenges that require proactive planning and adaptation measures.

The CCRRA provides a territory-wide analysis of climate hazards and their impacts on the **most prominent aspects of life for Nunavummiut** including **Infrastructure and Services**, **Healthy Environment**, **Inuit Culture and Heritage**, **Food Sovereignty**, **Health, Safety, and Well-being**, **Livelihoods and Growth**, and **Community** (see opposite page). These aspects were identified through engagement with key territorial groups, organizations, departments, and agencies, capturing diverse perspectives and experiences across the territory.

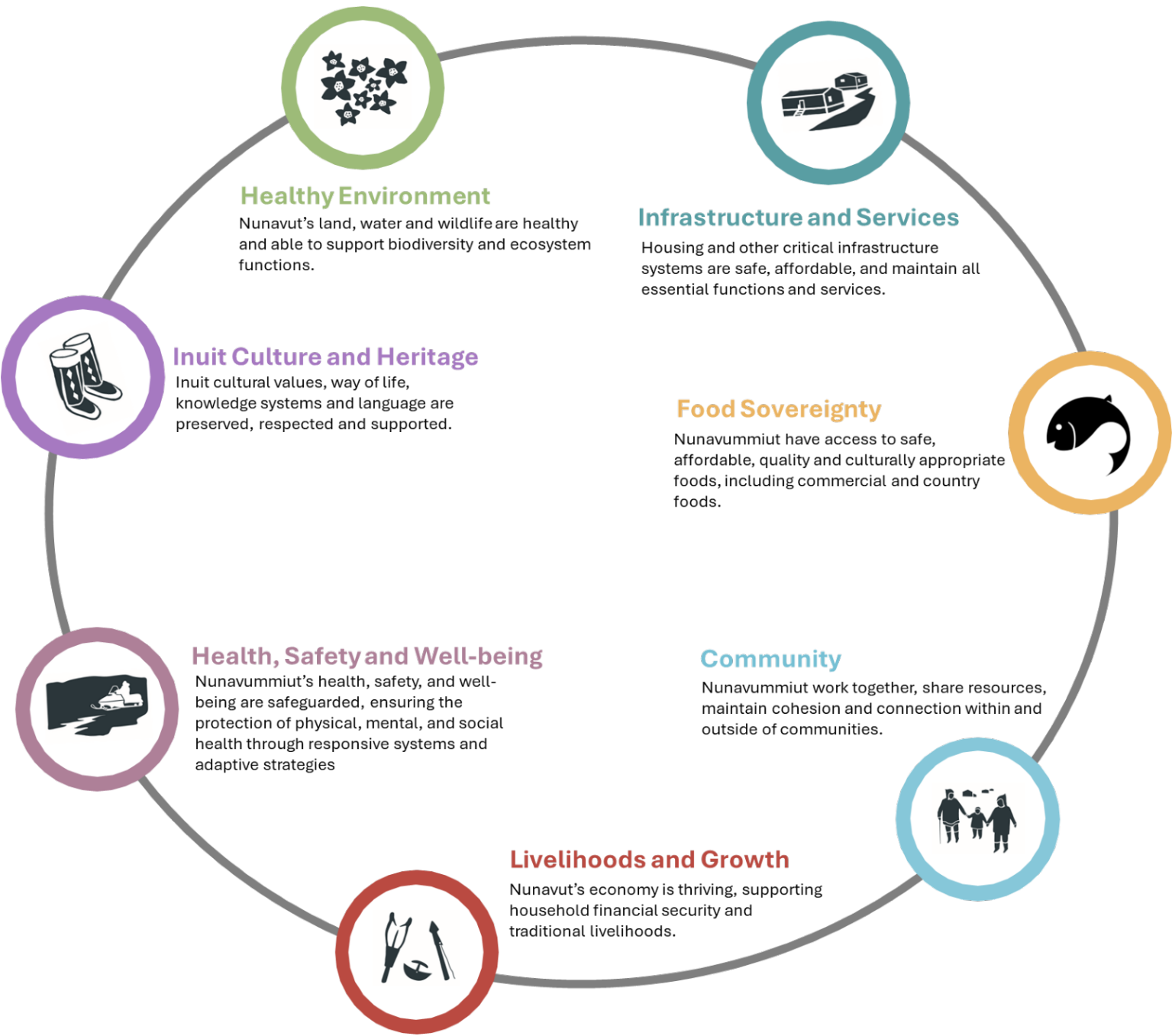
CCRRA “ASPECTS” VS. “THEMES”

The CCS’ **seven CCRRA aspects** are used in this report to organize the different types of climate change research. The aspects include the fields of Inuit, social, physical/natural, and health sciences. **In this report, the CCRRA aspects will be referred to as “CCRRA themes”** because the 7 aspects were also used as themes in this research project. In this way, the themes are specifically relevant to the CCS and help contribute to their goals.

HOW WERE THE THEMES USED IN THIS PROJECT?

Project summary documents from all seven databases were organized by CCRRA aspect/theme. These themes helped to identify and track the focus of research across projects from different databases. However, all themes in this project overlap and relate to one another. **While some projects were categorized to one theme, others were categorized to more than one** (e.g. a project can be in both the “Healthy Environment” and “Inuit Culture and Heritage” themes). To organize this information, a computer program (*NVivo qualitative analysis software*) was used to help keep track of the themes for every project summary represented in this report.

7 CLIMATE CHANGE RISK & RESILIENCY ASPECTS



Credit: CCS

PROJECT AT A GLANCE

3

CLIMATE CHANGE FUNDING
PROGRAM DATABASES

4

LICENSING & PERMITTING
DATABASES

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CLIMATE CHANGE RISK &
RESILIENCY THEMES

18

YEARS OF NUNAVUT
CLIMATE CHANGE RESEARCH

736

CLIMATE CHANGE
PROJECT DOCUMENTS

KEY TRENDS

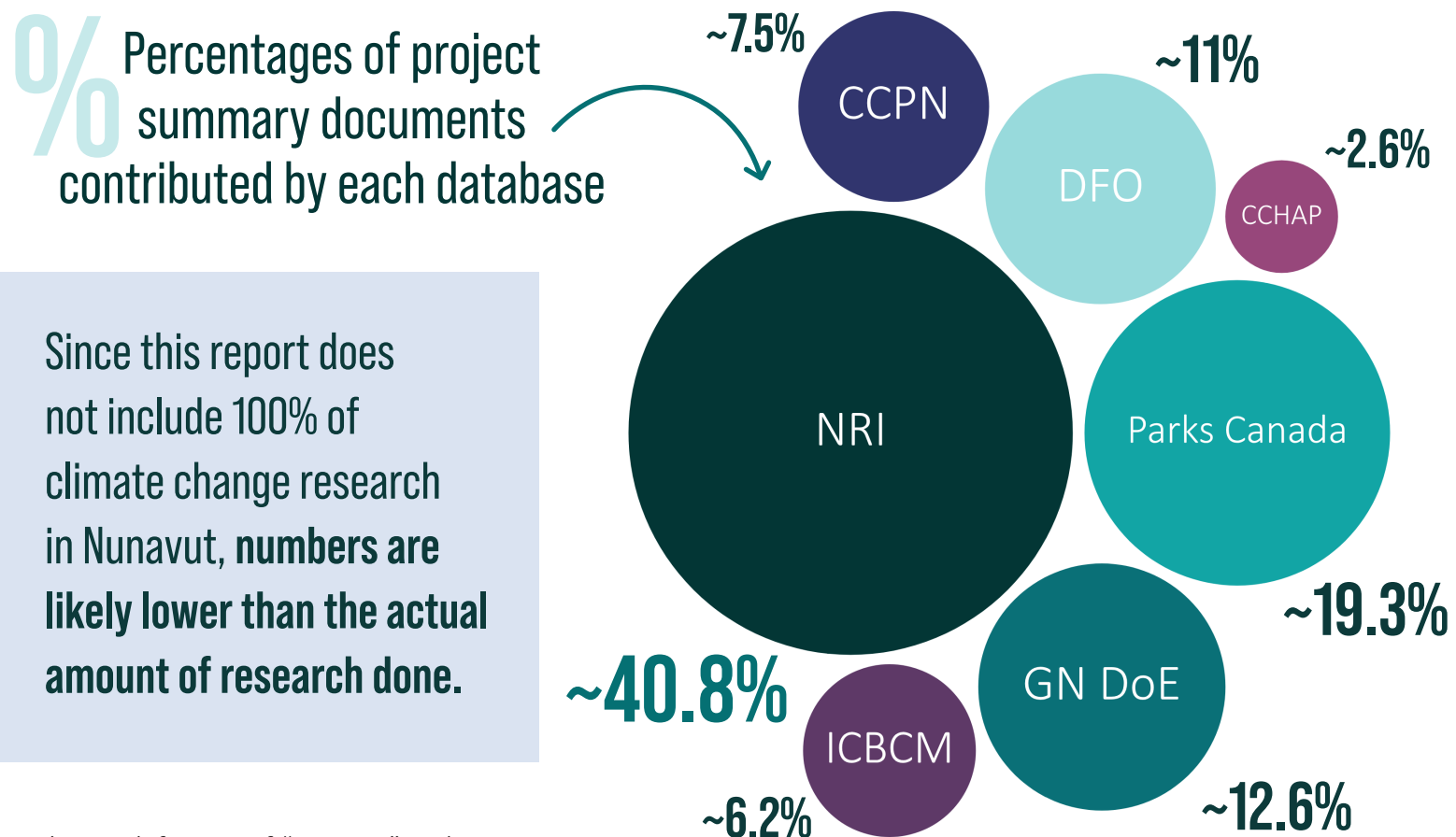
A BRIEF OVERVIEW

Between 2004 and 2021, climate change research in Nunavut increased by around 6 projects* per year.

Photo: Faith Rahman

HOW MUCH CLIMATE CHANGE RESEARCH HAS BEEN TAKING PLACE?

Between 2017 and 2019, annual climate change project activities* increased greatly when the 3 federal funding programs (CCHAP, CCPN, ICBCM) began in 2016.



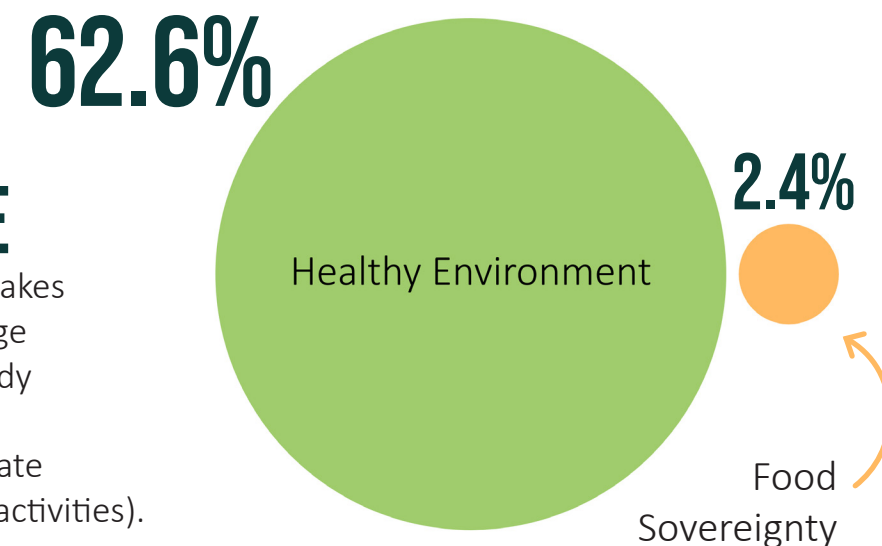
Since this report does not include 100% of climate change research in Nunavut, numbers are likely lower than the actual amount of research done.

*For a definition of “projects” and “project activities,” see note on p. 12.

Above: See page opposite the Table of Contents for a List of Abbreviations.

CLIMATE CHANGE RESEARCH BY THEME

- The **Healthy Environment** theme makes up **62.6%** of all annual climate change project activities included in this study (1095 activities).
- Food Sovereignty** has the least climate change project activities (**2.4%** - 42 activities).



WHO HAS BEEN LEADING THE MOST RESEARCH?

- 1 Canadian Universities (551 projects)
- 2 Government of Canada (234 projects)
- 3 Nunavut Inuit Organizations (102 projects)

WHERE HAS THE MOST RESEARCH BEEN TAKING PLACE?

- Most projects take place in the Qikiqtani region (including communities, field sites, etc.).
- Communities where the most climate research has taken place include:

- 1 Iqaluit (61 projects)
- 2 Kugluktuk (50 projects)
- 3 Cambridge Bay (37 projects)

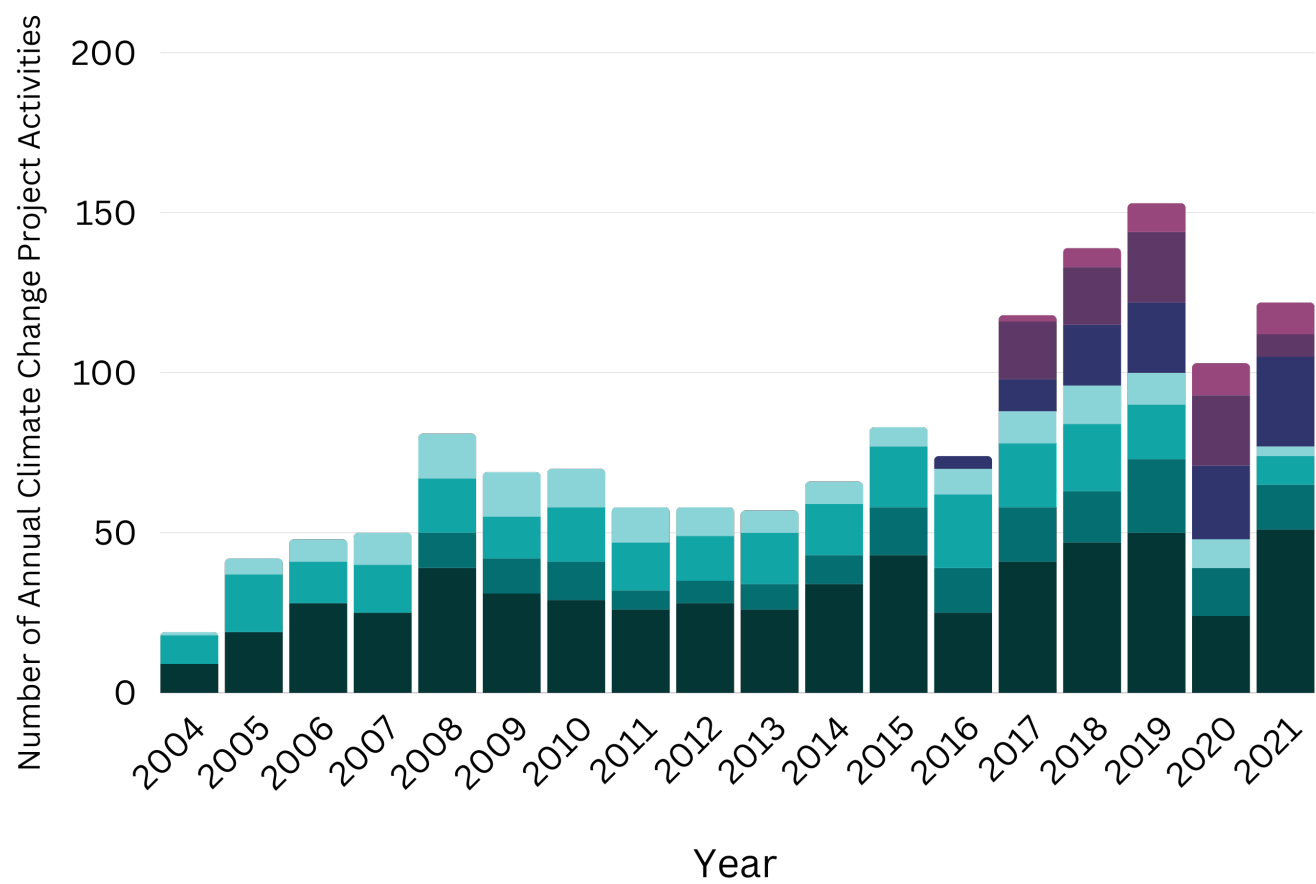
KEY MESSAGES

- Most climate change research focuses on the **Healthy Environment** theme and **physical/natural science disciplines** (e.g. Marine & Aquatic Ecosystems).
- Least climate change work focuses on the themes of **Health, Safety & Wellness** (e.g. Mental Health, Cultural Health) and **Food Sovereignty**.

Northern-led climate change research covers a **wider range of themes & topics than southern-led research**, including a greater focus on Inuit knowledge and social and health sciences.

HOW MUCH CLIMATE CHANGE RESEARCH HAS TAKEN PLACE?

Number of Climate Change Project Activities* Between 2004 and 2021

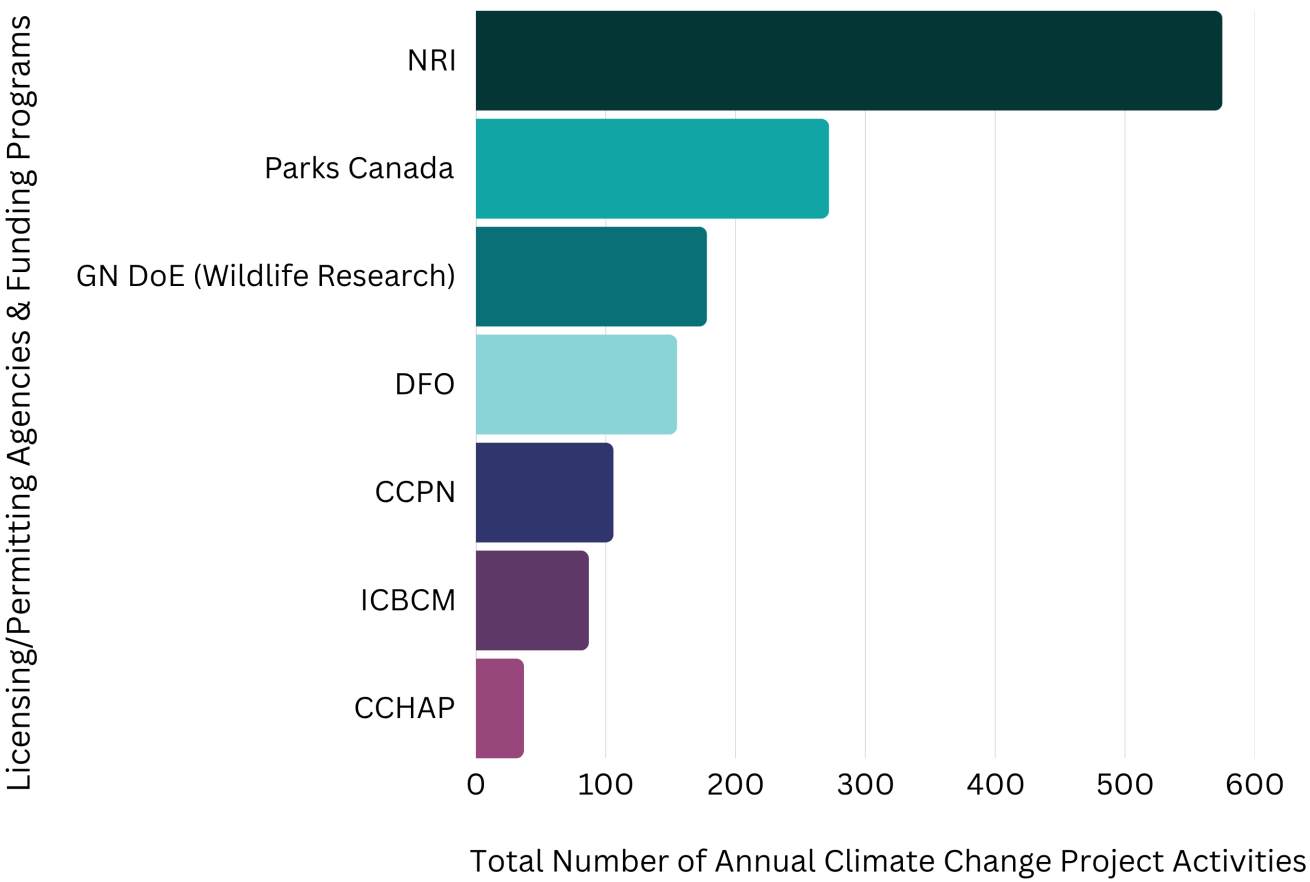


- Climate Change Adaptation Program (CCHAP)
- Indigenous Community-Based Climate Monitoring Program (ICBCM)
- Climate Change Preparedness in the North Program (CCPN)
- Fisheries & Oceans Canada (DFO)
- Parks Canada
- Government of Nunavut Department of Environment (GN DoE)
- Nunavut Research Institute (NRI)

WHAT DO THESE COLOURS MEAN?

- Purple/Magenta:** Federal Funding Program Databases
- Blue Green/Teal:** Research Licensing & Permitting Databases

Number of Climate Change Project Activities* by Licensing, Permitting & Funding Database (2004-2021)



575 climate change project activities were contributed by projects from the NRI database from 2004-2021.

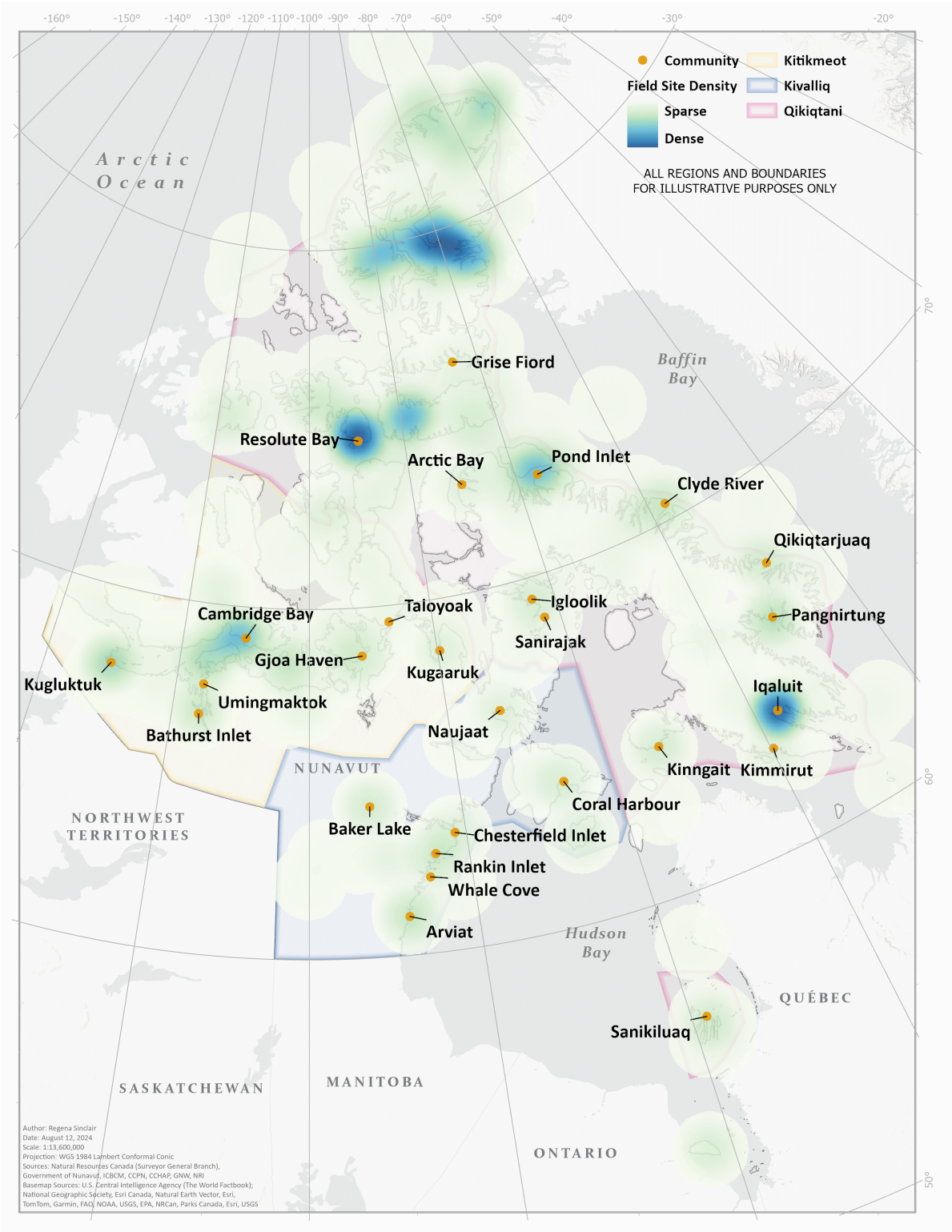
*NOTE ON PROJECT ACTIVITIES:

WHAT DO THESE TERMS MEAN?

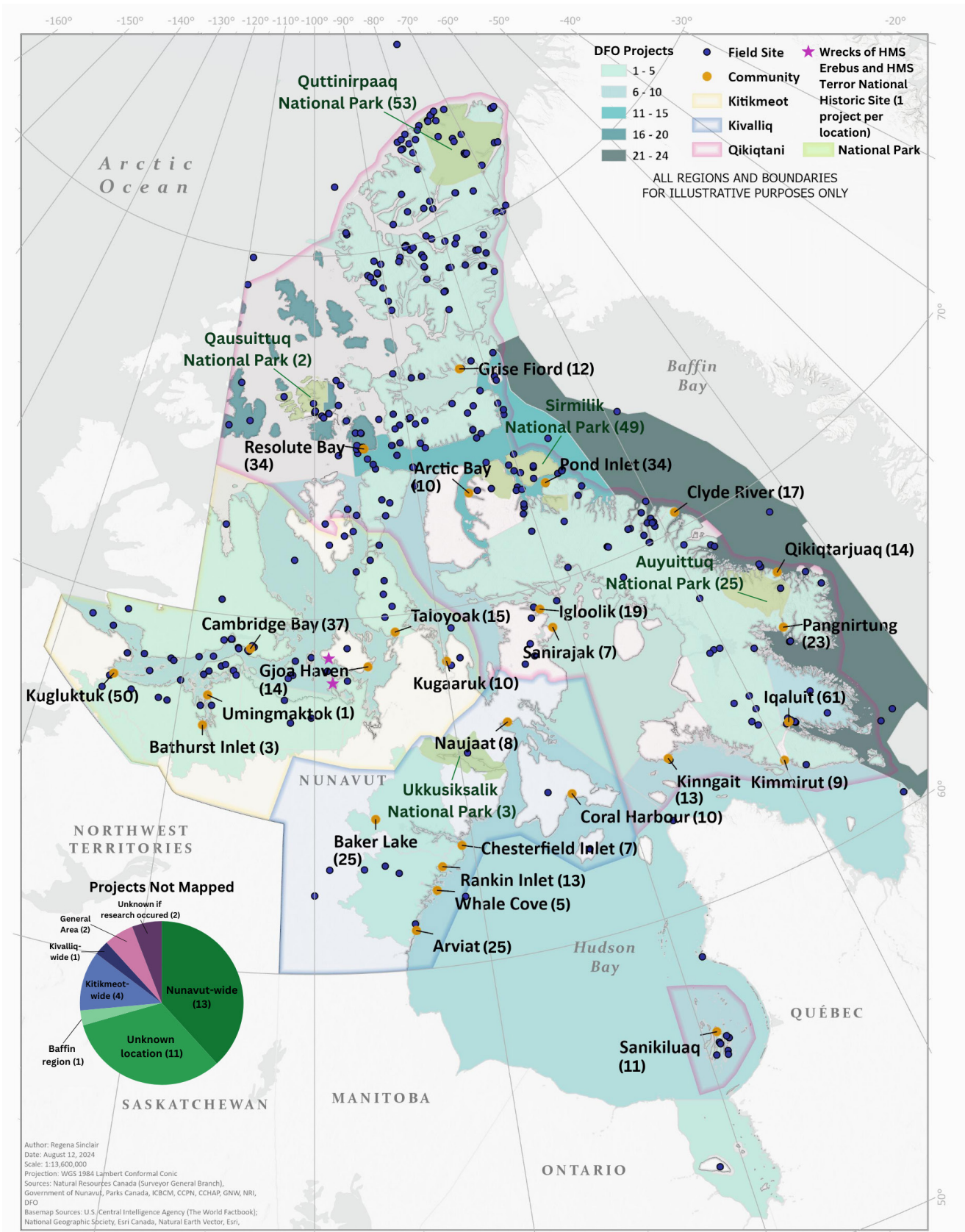
- Project Activities:** Refer to when a project was counted every year it was active, which may include every year tracked by an active license, permit, or funded by a federal program. (E.g. A project funded annually from 2016-18 had three project activities, one for each of the three years.)
- Projects/Project Summaries:** Refer to the number of unique (or different) projects included across the entire study. (E.g. A project funded from 2016-18 would be represented by one project summary as one unique project overall.)

WHERE HAS CLIMATE CHANGE RESEARCH BEEN TAKING PLACE?

Project Field Site Density in Nunavut (2004-2021)



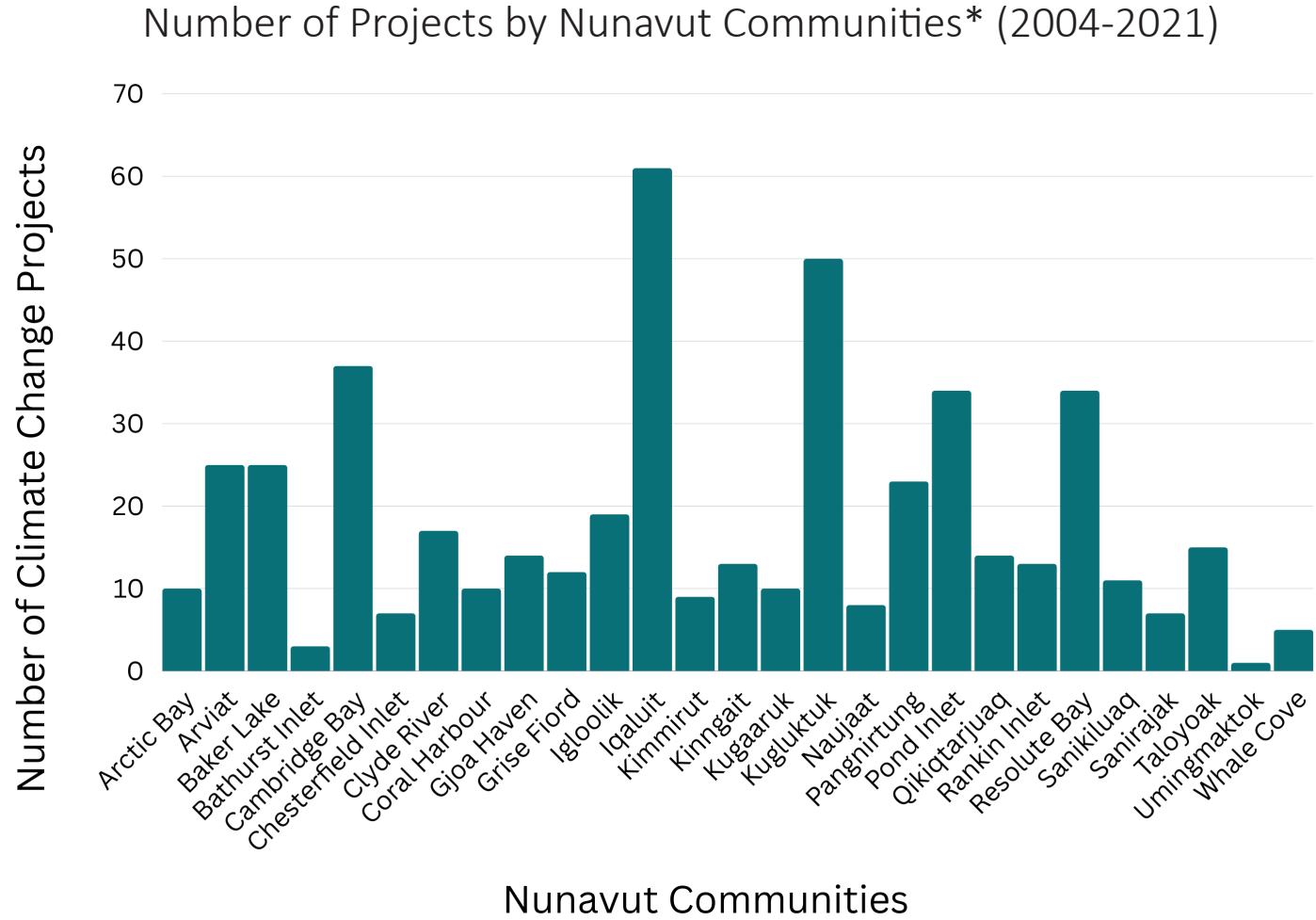
Projects Across all Regions of Nunavut (2004-2021)*
(Communities, Unique Field Sites, National Parks and Historic Sites, and Marine Areas)



*Refer to the note on p. 15 for clarification on Bathurst Inlet and Umingmaktok, shown on map as communities. In contrast to the map on the opposite page, this map features unique field sites which represent the overall locations of climate change work but do not account for the multiple projects/project activities that have taken place in the same field sites.



WHERE HAS CLIMATE CHANGE RESEARCH BEEN TAKING PLACE? (CONTINUED)

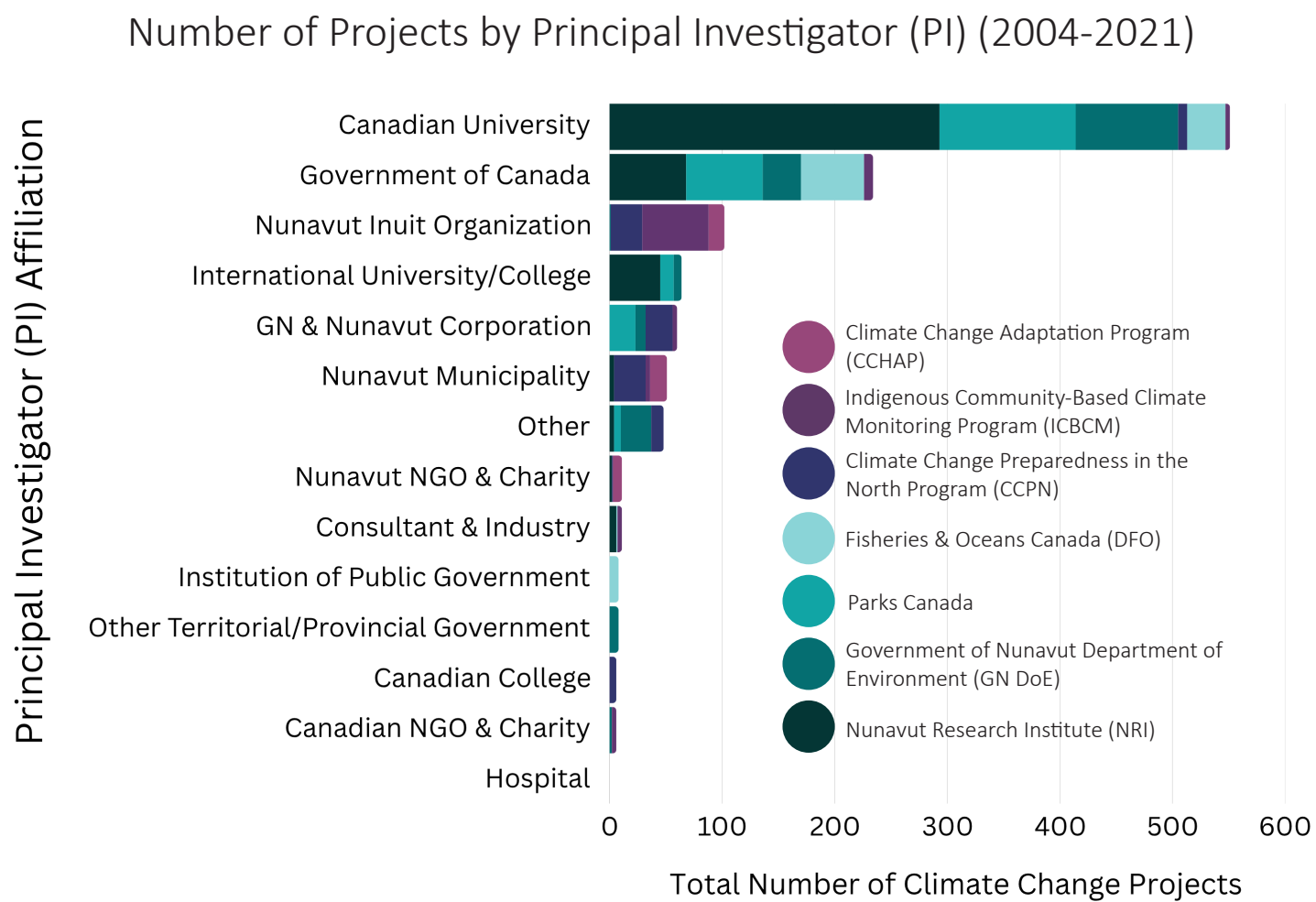


***NOTE ON NUNAVUT COMMUNITIES:**

Bathurst Inlet and Umingmaktok are not considered a part of Nunavut’s 25 official communities. For the purposes of this study, they were included as communities rather than field sites when projects specifically identified these two locations by name.



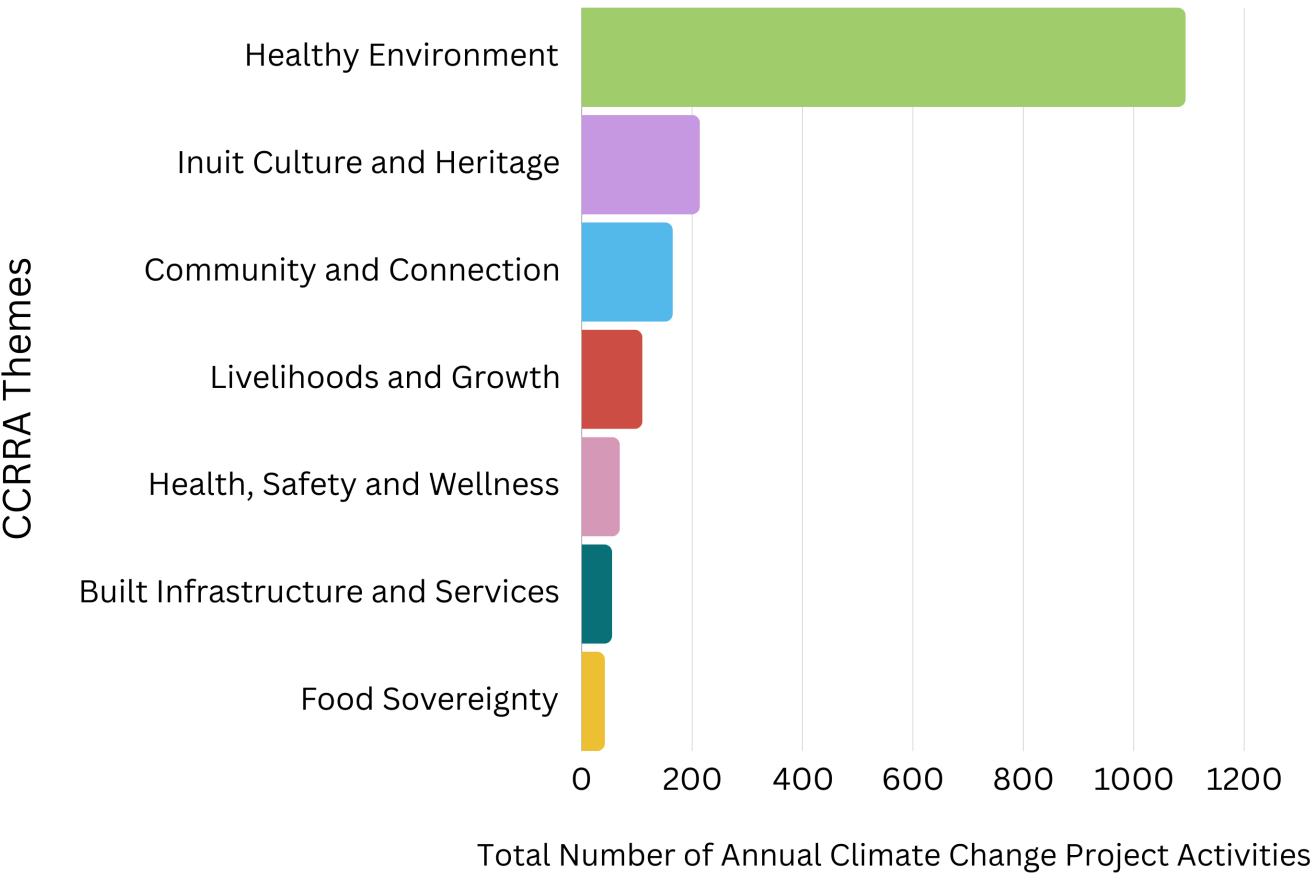
WHO HAS BEEN LEADING CLIMATE CHANGE RESEARCH?



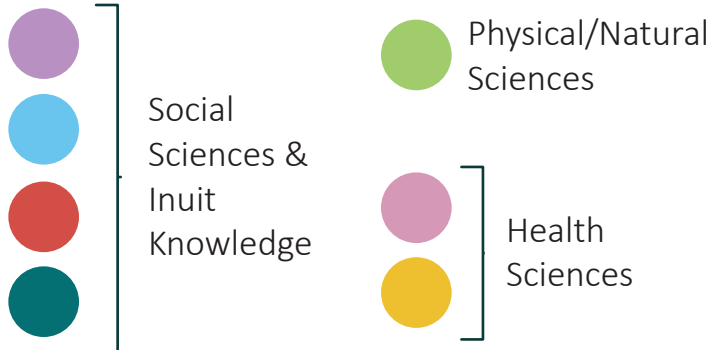
Southern-based institutions lead the most licensed/permitted climate change research.

WHAT CLIMATE CHANGE THEMES HAVE BEEN COVERED?

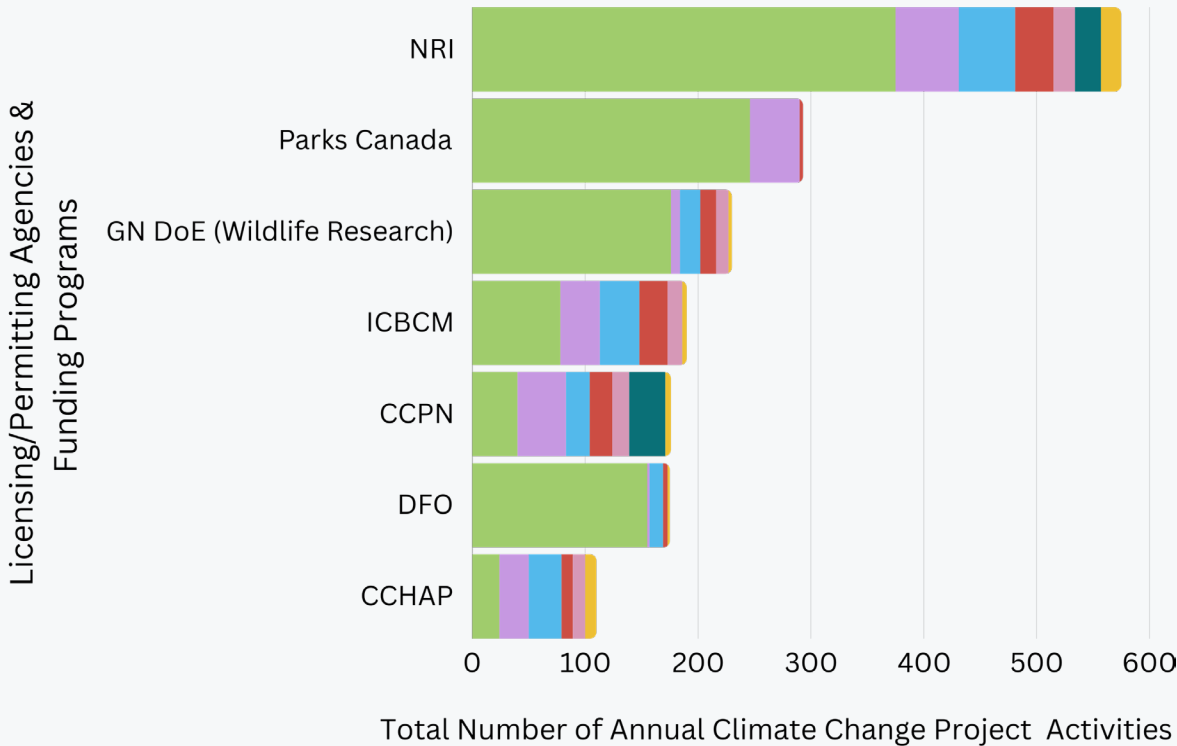
Number of Project Activities in Nunavut (2004-2021) by CCS Climate Change Risk and Resiliency Assessment (CCRRA) Themes



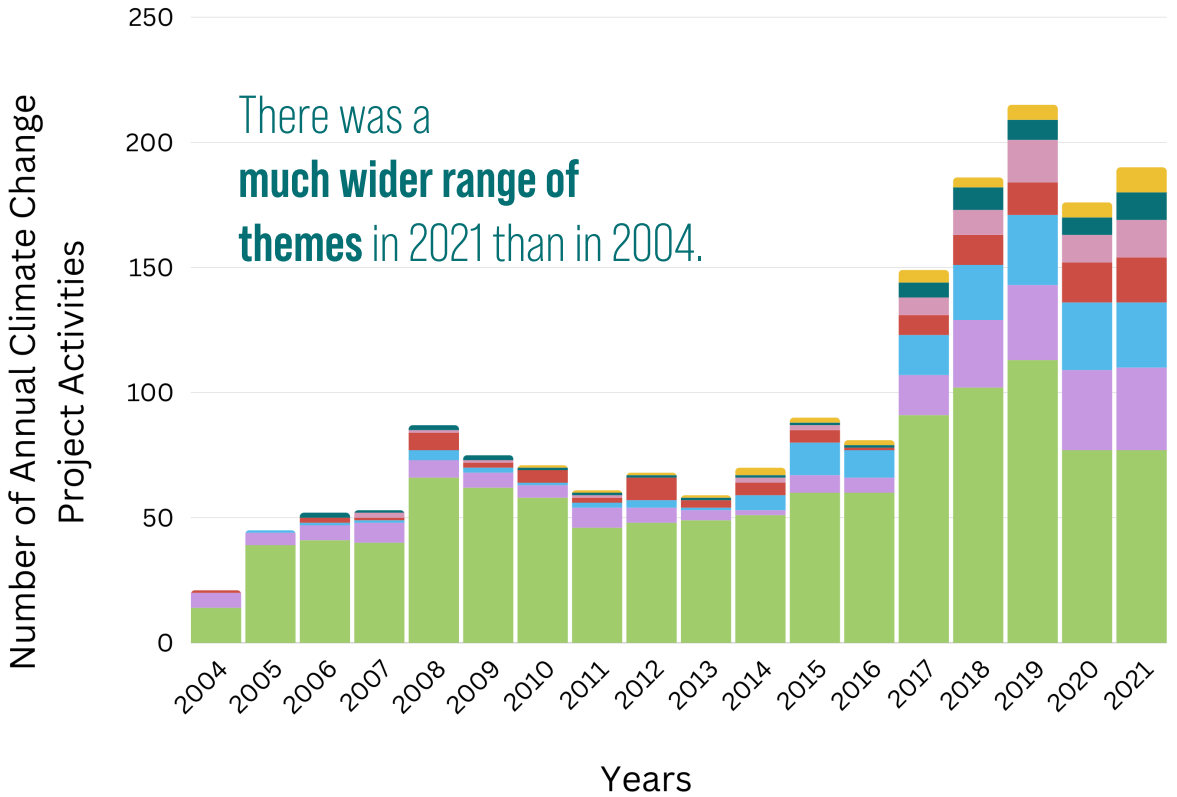
ALL THREE main scientific research disciplines were considered for each CCRRA theme. Broadly, this is one way the themes can be organized by discipline:



Number of Project Activities in Nunavut (2004-2021) by CCRRA Themes and Databases

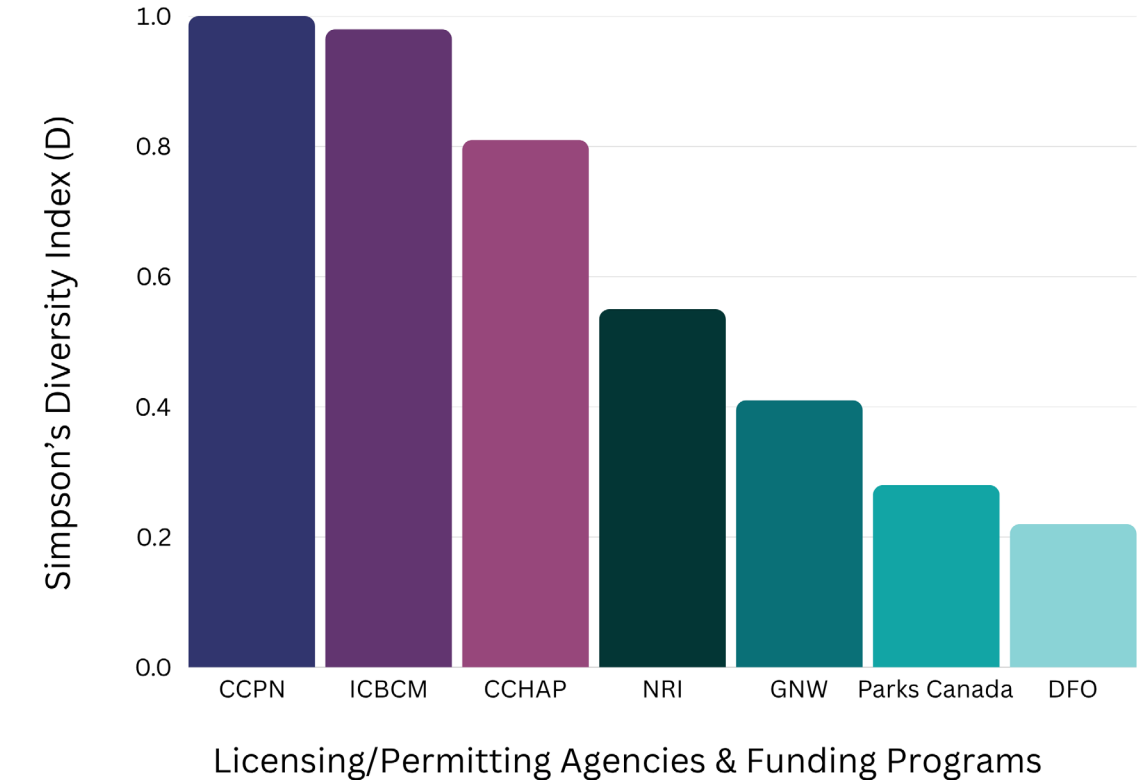


Number of Project Activities in Nunavut by Theme Between 2004 and 2021





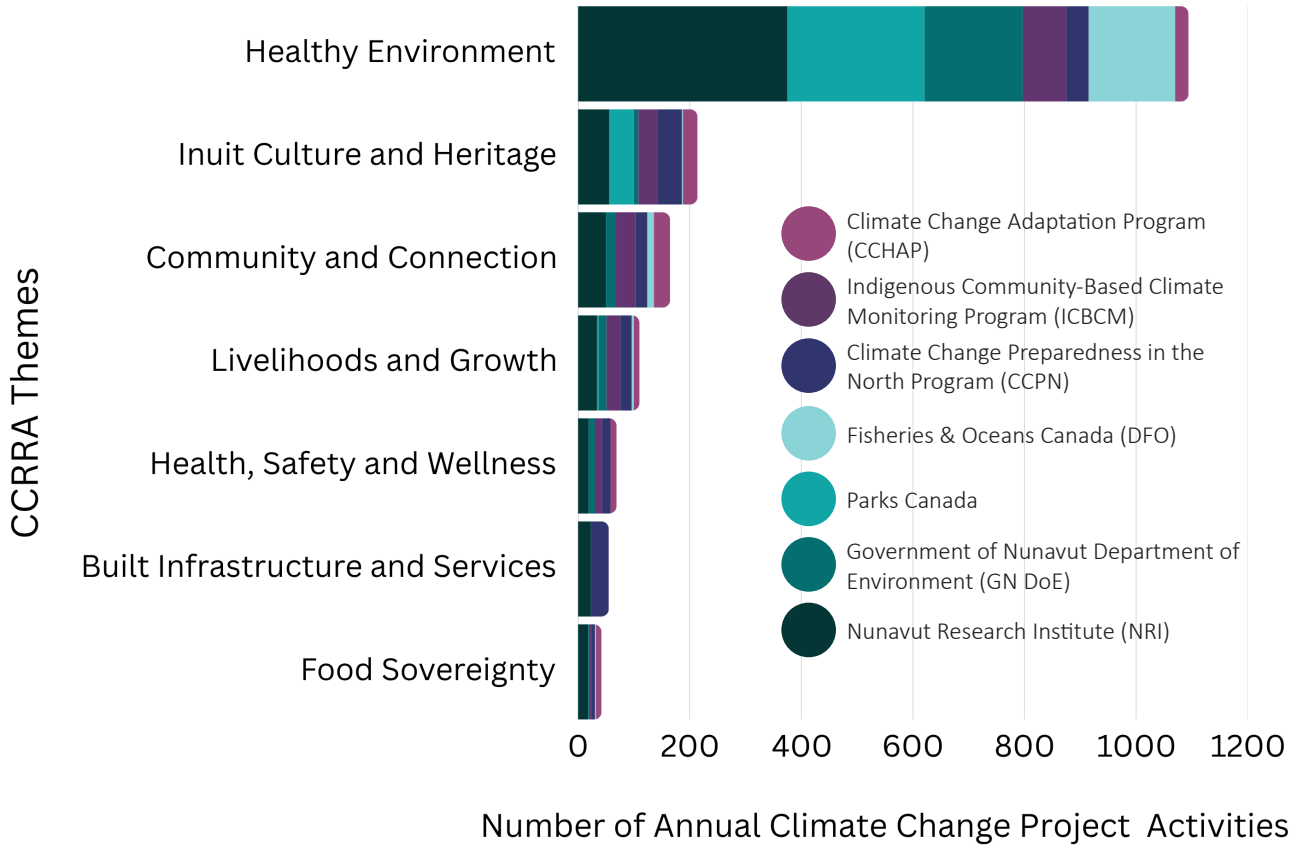
Thematic Diversity of Each Database According to CCRRA Themes & Simpson’s Diversity Index (2004-2021)



- The bar graph above compares the diversity of CCRRA themes. In other words, **if the bar is closer to 1.00, the database covers a wider range of themes.**
- Although every database contributed a different number of project summary documents to this study, the Simpson’s Diversity Index was used for a consistent way to compare databases along a single scale.

WHICH DATABASES CONTRIBUTED TO WHICH THEME?

Number of Project Activities per CCRRA Theme by Database (2004-2021)



CCPN covers the widest range of CCRRA themes, with its 106 project activities (2016-2021) having been categorized to all seven themes.



FUTURE CONSIDERATIONS

As we conducted this project, we identified opportunities to streamline licensing, permitting, and funding processes in relation to interdisciplinary research such as climate change.



FOR LICENSING, PERMITTING & FUNDING AGENCIES:

- **Licensing and permitting agencies** — To collaborate by sharing a **set list of information to track and request** from climate change research projects.
- **Funding programs** — **To track additional suggested project information**, based on other databases, such as:
 - Community consultation plans,
 - Proposed use of local knowledge,
 - Opportunities for local participation,
 - Team member names & roles, and
 - Field researcher and/or administrative team member names.

FOR FUNDING AGENCIES:

- To fund more projects in:
 - 1) Health, Safety & Wellness, and**
 - 2) Food Sovereignty.**
 - More specifically, in the themes of Mental Health and Cultural Health.
- To continue and increase funding for **Inuit-led, community-based work** (e.g. Nunavut Inuit organizations), which tend to address northern priorities that include a **wider range of climate change themes**.
- To improve funding opportunities for non-governmental organizations, institutions of public government, and hospitals.

How can climate change research in Nunavut better prioritize northern priorities & Inuit-led work through streamlined licensing, permitting, and funding processes?

FOR RESEARCHERS:

- To engage in more research in **social sciences & health sciences** for more balance in the research disciplines covered.
- To expand collaborations with different local northern organizations (e.g. Nunavut Inuit organizations, hospitals, etc.).
- To work with a **wider range of climate change themes**, since they are all interrelated.

RESOURCES

INTERESTED IN LEARNING MORE?



GOVERNMENT OF NUNAVUT CLIMATE CHANGE SECRETARIAT (CCS)

- [CCS Website & About CCS](#)
- [Climate Change Adaptation Map by Community](#)
- [Climate Change Inuit Qaujimajatuqangit](#)
- [Alternative Energy Projects Map](#)
- [CCS Publications](#) — Climate change strategies, adaptation plans, etc.



NUNAVUT RESEARCH INSTITUTE (NRI)

- [NRI Website & About NRI](#)
- [Nunavut Research Licenses, Permits, Approvals Summary](#) — Flowchart & summary table
- [Research License Application \(All Disciplines\)](#) — Online application form
- [Obtaining a Research License Under Nunavut's Scientists Act: A Guide for Applicants](#) (2021)
- [NRI Publications](#)
 - [Climate Change Research Trends & Gap Analysis \(1997-2004\)](#) (2005)
 - [Inuktitut Climate Change Terminology](#)
 - [Negotiating Research Relationships with Inuit Communities: A Guide for Researchers](#) (2006) (NRI & ITK)

NRI RESEARCH DATABASES

- [Isirvik Nunavut Research Portal](#) (Since 2004) — Digital database of research licensed by the NRI across Nunavut (map & table view)
- [Compendiums of Research Licensed Under the Scientists Act](#) (Since 1997)

STRAIGHTUPNORTH (SUN) RESEARCH TEAM, MCMASTER UNIVERSITY

- [StraightUpNorth Website & About the Team](#)
- [Making Research Work for Nunavummiut](#) (2021-2026) — Broader research project



GOVERNMENT OF CANADA

- [Canada in a Changing Climate Reports](#) — Collection of national & regional climate change reports
 - [Chapter 6: Northern Canada \(2022\)](#)
 - [For Our Future: Indigenous Resilience Report \(2024\)](#)
- [Canadian Centre for Climate Services](#)

FEDERAL FUNDING PROGRAMS

- [CCHAP](#) — Climate Change and Health Adaptation Program
 - [ClimateTelling](#) — CCHAP projects map
- [CCPN](#) — Climate Change Preparedness in the North Program
- [ICBCM](#) — Indigenous Community-Based Climate Monitoring Program

INUIT TAPIRIIT KANATAMI (ITK)

- [ITK Website & About ITK](#)
- [National Inuit Strategy on Research \(NISR\)](#) (2018)
 - [NISR Implementation Plan](#) (2018)
- [National Inuit Climate Change Strategy \(NICCS\)](#) (2019)
- Negotiating Research Relationships:
 - [A Guide for Communities](#)
 - [A Guide for Researchers](#)

ADDITIONAL NUNAVUT RESEARCH LICENSE & PERMIT APPLICATIONS

- [Fisheries and Oceans Canada \(DFO\)](#) — Fisheries Research Permit
- Government of Nunavut (GN)
 - [Wildlife Research Permit Application](#) — Department of Environment (Wildlife Research Section)
 - [Archaeology and Palaeontology Application](#) — Department of Culture and Heritage
- [Migratory Bird Permit Application Forms](#) — Canadian Wildlife Service (CWS)
- [Risks & Collection Permits](#) — Parks Canada
- [Species at Risk Permit Applications](#) — CWS, DFO, Parks Canada

NUNAVUT TUNNGAVIK INC. (NTI)

- [NTI Website & About NTI](#)
- [Department of Research Monitoring and Evaluation Contact](#)
- [Climate Change Terminology in Inuktitut & Inuinnaqtun](#) (2005) (GN & NTI)

NUNAVUT RESEARCH ORGANIZATIONS

- [Agqiumavvik Society](#) (Arviat)
- [Arctic Eider Society](#) (Sanikiluaq)
- [ArcticConnexion](#) (Multiple communities)
- [Ikaarvik](#) (Multiple communities)
- [Ittaq Heritage and Research Centre](#) (Clyde River)
- [Kitikmeot Heritage Society](#) (Cambridge Bay)
- [Nattilik Heritage Society](#) (Gjoa Haven)
- [Qaujigiartiit Health Research Centre](#) (Iqaluit)

Researchers are also encouraged to reach out to the **Regional Inuit Association, Hamlet Office, Hunters and Trappers Association, Visitor's Centre**, and other organizations in each community you work in, to get recommendations on important local research groups and initiatives.

RESOURCES FOR RESEARCH ETHICS & GUIDELINES

- See opposite page for Inuit Tapiriit Kanatami (ITK) Inuit research strategies
- [Examples of Inuit-Centred Research Frameworks](#) — Evolving list compiled on the StraightUpNorth website, including several models developed by Nunavut research organizations (on this page)
- [ACUNS Ethical Principles for the Conduct of Research in the North](#) (2003)
- [Government of Canada Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2](#) (2018)
- [Summary of Research Ethics Guidelines](#) — Summary table by UArctic with links to research ethics guideline documents for Indigenous & northern contexts

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Photo: CCS

CLIMATE CHANGE RESEARCH IN NUNAVUT

July 2025

Summary Report: Climate Change Research Trends in Nunavut (2004-2021)
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