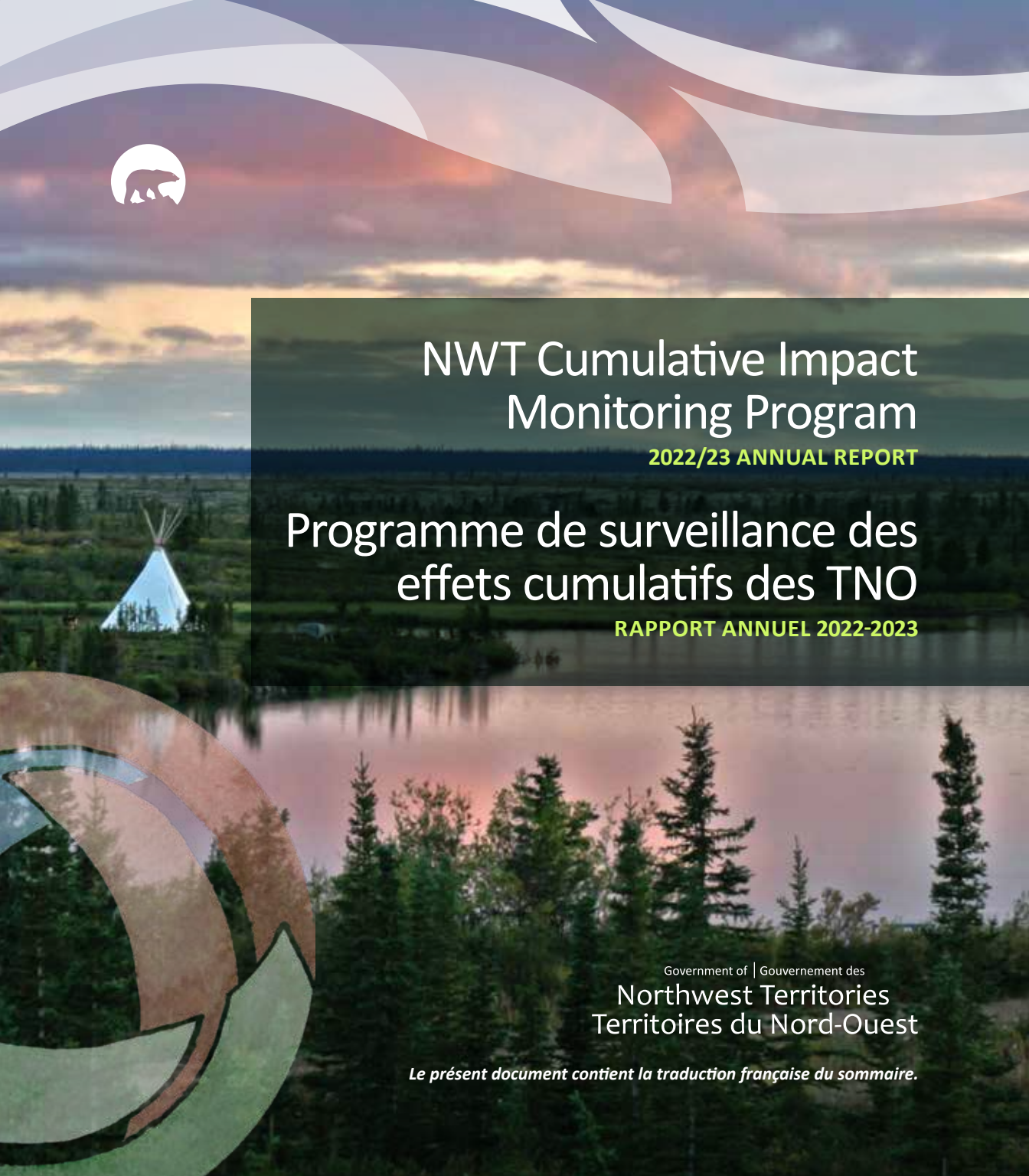

NWT Cumulative Impact Monitoring Program

2022/23 ANNUAL REPORT

Programme de surveillance des effets cumulatifs des TNO

RAPPORT ANNUEL 2022-2023

Government of | Gouvernement des
Northwest Territories
Territoires du Nord-Ouest

Le présent document contient la traduction française du sommaire.

To watch and understand the land so that it can be used respectfully forever.

NWT CIMP vision
(developed by NWT CIMP Steering Committee)

Cumulative impacts are the combined effects that human activities and natural processes have on our environment.

Cumulative impact monitoring is a legislative requirement in the NWT. It is a key feature of the Gwich'in, Sahtú and Tłı̨chǫ̀ land claim agreements, as well as Part 6 of the *Mackenzie Valley Resource Management Act* (MVRMA). Monitoring cumulative impacts is important because, over time, the results of many individual resource management decisions can lead to changes to environmental conditions.

Cover Credit: Tawna Brown Photography, www.nwtarts.com

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EXECUTIVE SUMMARY

The Northwest Territories Cumulative Impact Monitoring Program (NWT CIMP) promotes and supports cumulative impact monitoring and research with an emphasis on community capacity-building in the NWT.

While many organizations monitor the NWT environment, NWT CIMP is mandated to understand cumulative impacts and environmental trends. We achieve this by conducting, coordinating, and funding the collection, analysis and reporting of environmental monitoring and research information. Funding is available through an annual call for project proposals.

NWT CIMP is focused on cumulative impacts related to three valued components that key decision-makers agree are of critical importance to the people of the NWT: **caribou, water,** and **fish**.

The goal of the program is to support resource management decision-making and sustainable development by improving our understanding of cumulative impacts. NWT CIMP considers all sources of knowledge, including Traditional Knowledge[1] and scientific information.

Monitoring results are available at **www.NWTDiscoveryPortal.enr.gov.nt.ca**.

[1] NWT CIMP defines Traditional Knowledge as: facts, information, skills, values, and beliefs which have been acquired through experience, observations or by oral means from the land or from spiritual teachings and handed down through generations. Where possible, knowledge will be referred to using the preferred terminology of the knowledge holder or community.' Our Steering Committee prefers to use this term instead of Indigenous Knowledge.

PROGRESS ON OUR ACTION PLAN

NWT CIMP is guided by a five-year (2021-2025) Action Plan that includes four key activity areas:

1. Working with partners to understand key monitoring priorities;
2. Conducting, coordinating, and funding cumulative impact monitoring, research, and analysis;
3. Communicating results to decision-makers and the public; and
4. Assessing the program and the regulatory regime by facilitating the NWT Environmental Audit.

The Action Plan and additional information is available at **www.nwtcimp.ca**.

PROJECT HIGHLIGHTS

29 projects were supported across the NWT:

- 7 projects focused on **caribou**, 5 focused on **fish**, 9 focused on **water**
- 7 projects focused on multiple valued components
- 1 project focused on a topic related to caribou, fish and water
- Of the 29 projects, 7 involved the use of Traditional Knowledge
- $1.86M in funding distributed by NWT CIMP, leveraged $3.39M in partner funding

160 communication products created for NWT CIMP-funded projects:

- 10 peer-reviewed publications
- 51 various reports and plain-language summaries
- 17 academic presentations
- 11 videos, 15 social media posts, 4 web maps
- 52 community presentations to share and discuss project results

SOMMAIRE

Le Programme de surveillance des effets cumulatifs des Territoires du Nord-Ouest (PSECTNO) promeut et appuie la surveillance et la recherche sur les effets cumulatifs, en mettant l'accent sur le renforcement des capacités des collectivités ténoises.

Plusieurs organismes surveillent l'environnement ténois, mais le PSECTNO se distingue par le mandat qui l'oriente : comprendre les effets cumulatifs et les tendances environnementales. Pour y parvenir, l'équipe effectue, coordonne et finance la collecte, l'analyse et la communication d'informations environnementales et de données de recherche. Le financement est accessible à partir d'un appel de propositions annuel.

Le PSECTNO porte sur les effets cumulatifs liés à trois composantes valorisées (CV) qui, de l'avis des décideurs, sont d'une importance cruciale pour les Ténois : **le caribou**, **l'eau** et **le poisson**.

Le Programme vise à faciliter la prise de décisions relatives à la gestion des ressources et au développement durable grâce à une meilleure compréhension des effets cumulatifs. Les responsables du PSECTNO considèrent toutes les sources de connaissances, y compris les connaissances traditionnelles[1] et les données scientifiques.

Les résultats de la surveillance se trouvent à l'adresse suivante : **www.nwtdiscoveryportal.enr.gov.nt.ca**

[1] Le PSECTNO définit les connaissances traditionnelles de la façon suivante : les faits, les informations, les compétences, les valeurs et les croyances qui ont été acquis par l'expérience, les observations ou par voie orale à partir de la nature ou des enseignements spirituels et qui ont été transmis de génération en génération. Dans la mesure du possible, les connaissances seront désignées en utilisant la terminologie privilégiée du détenteur des connaissances ou de la collectivité. Notre comité directeur préfère utiliser ce terme plutôt que celui de connaissances autochtones.

AVANCÉES DU PLAN D'ACTION

Le PSECTNO est défini par un plan d'action quinquennal (2021 à 2025) qui comprend quatre grands domaines d'activité :

1. Collaboration avec les partenaires pour définir les priorités clés en matière de surveillance
2. Coordination, exécution et financement de la surveillance, de la recherche et de l'analyse des effets cumulatifs
3. Communication des résultats aux décideurs et à la population
4. Évaluation du programme et du cadre de réglementation en facilitant la vérification environnementale aux TNO

Pour en savoir plus sur le plan d'action et obtenir des renseignements supplémentaires, consultez le **www.enr.gov.nt.ca/fr/services/programme-de-surveillance-des-effets-cumulatifs-psec-des-tno**.

FAITS SAILLANTS SUR LES PROJETS

29 projets ont été appuyés aux TNO :

- 7 projets axés sur **le caribou**, 5 sur **le poisson** et 9 sur **l'eau**
- 7 projets axés sur de multiples composantes valorisées
- 1 projet portant sur un sujet lié au caribou, au poisson et à l'eau
- Sur les 29 projets, 7 projets comprenant la collecte et l'analyse des connaissances traditionnelles

- 1,86 million de dollars de financement distribué au titre du PSECTNO et 3,39 millions de dollars de financement provenant de partenaires

160 produits de communication publiés dans le cadre des projets financés par le PSECTNO :

- 10 publications évaluées par les pairs
- 51 résumés en langage clair et rapports
- 17 présentations universitaires
- 11 vidéos, 15 publications sur les réseaux sociaux et 4 cartes interactives
- 52 présentations communautaires pour faire état et discuter des résultats de projets

1. WORKING WITH PARTNERS TO UNDERSTAND KEY MONITORING AND RESEARCH PRIORITIES

MONITORING PRIORITIES

Our monitoring and research priorities (**Blueprints**) for caribou, water and fish and guidance on **Traditional Knowledge Monitoring Ideas** align with the 2021-2025 NWT CIMP Action Plan. The Blueprints are developed with input from our Steering Committee and northern regulatory decision-makers to help ensure that they meet decision-makers' needs.

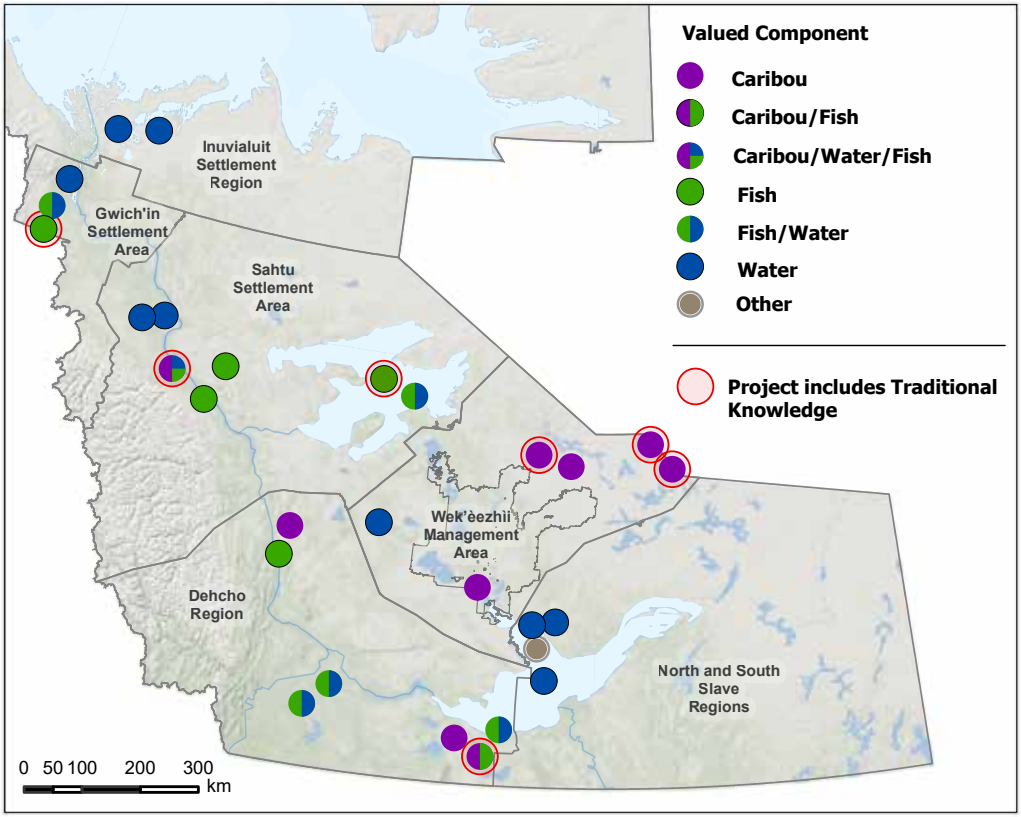
NWT CIMP-funded projects identified as being able to contribute to a future decision-making process or addressed a community concern: 100%.

NWT CIMP STEERING COMMITTEE

NWT CIMP continued to engage and support its Steering Committee, made up of representatives from eight regional Indigenous, territorial and federal governments, as well as co-management boards. The Steering Committee met three times in 2022/23 to provide guidance on the overall program and reviewed 18 project funding proposals. *We also celebrated our 100th meeting!*

NWT CIMP Steering Committee Meeting, February 2023.

MAP OF 2022/23 NWT CIMP PROJECTS



2. CONDUCTING, COORDINATING AND FUNDING CUMULATIVE IMPACT MONITORING, RESEARCH AND ANALYSIS

NWT CIMP conducts, coordinates, and funds the collection, analysis and reporting of information related to environmental conditions.

NWT CIMP FUNDING PROCESS:

- The program continues to fund projects to generate new knowledge about caribou, water and fish. The knowledge furthers our understanding of cumulative impacts and environmental trends.
- NWT CIMP established a relationship with Polar Knowledge Canada to provide a special one-time funding opportunity for 2023/24 for barren-ground caribou monitoring and research through the *Collaborative Barren-ground Caribou Initiative: understanding drivers of population trends.*

PILOT STUDY TO MONITOR CUMULATIVE IMPACTS OF WATER QUALITY IN LAKES:

- NWT CIMP completed a third field season for a pilot study in the Yamba Basin, testing a method of predicting the risk of cumulative impacts on lakes, modeling drivers of change and coordinating multiple water quality sampling programs.
- Benthic macroinvertebrate (aquatic bugs) sampling will be added next field season to better inform long-term trends in lakes.
- Preliminary results show that the water quality is very good in the entire study area, located north of Lac de Gras.
- Data analysis is on-going.

See Section 5 for summarized projects that finished in 2022/23.

29 Projects were supported across the NWT

7 Projects focused on caribou

5 Projects focused on fish

9 Projects focused on water

1 Project focused on a topic related to caribou, fish and water

7 Multiple valued components

7 Of the 29 projects, 7 projects included the use of Traditional Knowledge

$1.86M in funding distributed by NWT CIMP, leveraged $3.39M in partner funding

SUPPORTING INDIGENOUS COMMUNITIES

Twenty-four (24) funded projects were developed directly in response to community concerns, with ten of these projects being completed this year. Below are examples of projects that helped address community concerns directly (CIMP210, and CIMP217 are summarized in Section 5). A complete list of all projects funded by NWT CIMP is available at **www.nwtcimp.ca**.

CIMP #	Valued Component	Community Concern	Region
CIMP210	Water Fish	Impacts to stream health by permafrost thaw-driven road slumping and new channelization issues along roads	Inuvialuit
CIMP211	Water Fish	Permafrost thaw slumping impacts on freshwater ecosystem health, including water quality and instream biota	Gwich'in
CIMP212	Water	Ice safety and the impact of legacy mining pollution on aquatic habitats	North/South Slave
CIMP214	Caribou	Impacts to caribou migration, health and habitat use from diamond mines and access roads	Wek'eezhii
CIMP215	Water	Changes is water quality from contaminants by oil and gas-related activities in the Sahtú Settlement Area	Sahtú
CIMP216	Water	Water quality and health of aquatic ecosystems near Fort Good Hope	Sahtú
CIMP217	Fish	Permafrost thaw slumping impacts in the Peel River Watershed has on culturally important fish	Gwich'in
CIMP219	Caribou	Severe wildfire (2014) impacts on caribou habitat availability	Dehcho
CIMP225	Water	Water quality in Gwich'in Settlement Area and need for enhanced community-based monitoring	Gwich'in

3. COMMUNICATING RESULTS TO DECISION-MAKERS AND THE PUBLIC

One key goal of NWT CIMP is to ensure environmental monitoring information, including all NWT CIMP-funded project results, are easily accessible to key decision-makers and the public.

160 Communication Products

released for NWT CIMP-funded projects.

10
Peer-reviewed publications

51
Reports and plain-language summaries

11
Videos, 15 social media posts, 4 web maps

17
Academic Presentations

52
Community presentations to share and discuss project results

SUPPORTING DECISIONS ABOUT ENVIRONMENT

NWT CIMP focuses on providing information to regulators and the public to support effective environmental decision-making. Project Leads were required to contact local decision-makers as part of the funding application process to ensure projects met decision-makers' needs. Several examples of projects that can contribute to northern environmental decision-making are highlighted below. More information on some of these projects is provided in Section 5.

CIMP #	Main Topic	Informing Environmental Decisions	Decision-Makers Most Likely to Use Results
CIMP210	Water	Results from along the Dempster-Inuvik-Tuktoyaktuk corridor can help determine impacts to water quality of streams and inform the feasibility of future development projects.	Gwich'in Renewable Resources Board, Inuvialuit Regional Corporation, GNWT - Infrastructure
CIMP212	Water	Results from the North Slave region can inform recommendations for improved ice safety and changes to water quality, future management decisions and climate adaptation strategies.	Mackenzie Valley Land and Water Board, GNWT - Infrastructure
CIMP214	Caribou	Results of this predictive model can be used in wildlife management by helping to understand the role of disease in the Bathurst caribou herd. The results provide options for future monitoring and management of population dynamics.	Tłı̨chǫ Government, Wek'èezhìi Renewable Resources Board, GNWT - Environment and Climate Change
CIMP217	Fish	Results provide new insight on broad whitefish habitat and traditional use in the Peel River watershed. They can help inform natural resource and cultural heritage management decisions, including adaptation planning.	Gwich'in Renewable Resources Board, Gwich'in Tribal Council, Fisheries and Oceans Canada

Credit: T. Connolly

K'atl'odeeche First Nation Field Technician keeping watch for floating logs, debris, and gillnet buoys during the fisheries ecosystem study in the western basin of Great Slave Lake, summer 2022.

COMMUNICATION WITH COMMUNITIES AND THE PUBLIC

Two-way communication about monitoring and research projects directly with communities continued to be a key activity of the program. All NWT CIMP Project Leads are required to engage with local communities or Indigenous governments and Indigenous organizations prior to and during their project, and to report their results directly to them.

NWT CIMP hosts an annual, regional workshop to help share project results and ideas. This workshop is an opportunity to bring together community members, regulators, government, and researchers to discuss results and provide feedback, and encourages the development of partnerships.

In December 2022, NWT CIMP and the Tłı̨chǫ Government co-hosted a two-day workshop in Behchokǫ̀ that focused on projects underway in the Wek'èezhìi region. A workshop summary report including links to presentations is available under Resources at **www.nwtcimp.ca**.

Credit: WLU, CIMP226

Tłı̨chǫ community members and researchers from Wilfrid Laurier University and Queen's University engage in a discussion at a meeting held in Whatì, NWT.

Participants at the NWT CIMP Results Workshop in Behchokǫ̀.

ONLINE INFORMATION SOURCES

Information and knowledge generated by NWT CIMP continues to be publicly available. The next sections highlight where this information can be found.

NORTHERN ENVIRONMENTAL RESEARCH BULLETINS

Program staff worked with Project Leads to develop and publish 17 plain language summaries of their projects. An archive of 50+ Research Bulletins is available under Results at **www.nwtcimp.ca**.

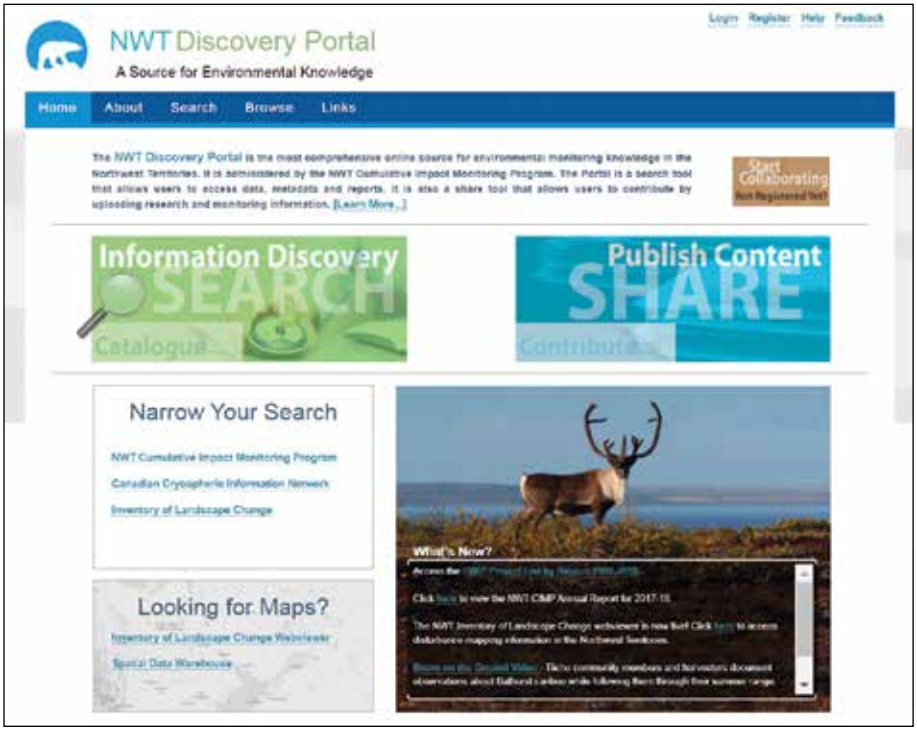
INVENTORY OF LANDSCAPE CHANGE (ILC) WEB VIEWER

Comprehensive and annually updated data layers of human development and natural disturbance, such as roads and forest fires, are available online through the Inventory of Landscape Change Web Viewer under Finding Data and Information at **www.nwtcimp.ca**. This tool can be used to explore cumulative impacts by layering data layers. To download entire data layers, contact **nwtcimp@gov.nt.ca**

NWT DISCOVERY PORTAL

The NWT Discovery Portal continued to be the most comprehensive online source for environmental monitoring knowledge in the NWT. There is a wide range of information to meet the needs of various audiences, including scientific journal articles, plain language presentations, data, and maps: **www.nwtdiscoveryportal.enr.gov.nt.ca**.

The easiest way to find NWT CIMP project results is to consult the list of funded projects from 1999 to 2023 on the NWT Discovery Portal main page and then conduct a search using the NWT CIMP project number (e.g., CIMP197). A list of projects funded in 2022/23 is available at the end of this report.



4. FACILITATING THE NWT ENVIRONMENTAL AUDIT

The NWT Environmental Audit is an independent review to assess the effectiveness of the regulatory regime, as well as the quality of environmental information and processes related to monitoring cumulative impacts. It is meant to check how well our regulatory system is working to protect the environment.

The Audit is an obligation of the Gwich'in, Sahtú and Tłı̨chǫ land claim agreements and a legislated requirement of the *Mackenzie Valley Resource Management Act* (MVRMA). The Audit highlights both successes and challenges. A key purpose of the Audit is to consider the challenges and provide useful recommendations that will improve how the environment is managed.

The MVRMA requires an Environmental Audit to be completed at least every five years by an independent consultant. The last NWT Environmental Audit was released in the fall of 2020.

Preparations have begun for the next Audit, to be released in 2025.

For more information visit this website:
www.enr.gov.nt.ca/en/services/nwt-environmental-audit.

5. HIGHLIGHTED PROJECT SUMMARIES

Twelve (12) projects were completed in 2022/23; the results of six of these projects are summarized below. Detailed project results can be found by searching for the NWT CIMP project number (e.g. CIMP197) on the NWT Discovery Portal (**www.nwtdiscoveryportal.enr.gov.nt.ca**).

CARIBOU FOCUSED PROJECTS

Cumulative effects assessment of four barren-ground caribou herds in the NWT (CIMP207)

Jody Pellissey, Wek'eezhi Renewable Resources Board (jpellissey@wrrb.ca)

The Gwich'in, Sahtú, and Wek'èezhìı Renewable Resources Boards worked with the Government of the Northwest Territories and the Wildlife Management Advisory Council (NWT) to develop three decision-support tools to simulate and assess cumulative impacts on barren-ground caribou:

1. *Landscape change simulation model* –simulates habitat and vegetation changes by forecasting changes in climate, wildfires, shrub expansion, and human land-use.

2. *Population dynamics simulation models* –simulates how populations for each herd may respond to changes in climate, vegetation, land-use, harvest levels, and vital rates, such as recruitment and calf/adult female survival.

3. *Indigenous knowledge summaries* – Summaries of publicly-available Indigenous perspectives and observations on the trends and factors affecting caribou populations, habitat, and health.

These tools will help predict the cumulative impacts of climate change, project development, and management strategies on the habitat quality and population dynamics of the Cape Bathurst, Tuktoyaktuk Peninsula, Bluenose-West, and Bluenose-East herds of barren-ground caribou.

Work is continuing to expand the project to the Bathurst herd, continues to improve models developed, and build capacity by training technical staff on using these decision-support tools.

Credit: Parks Canada

Bluenose-West caribou in Tuktut Nogait National Park.

Cumulative effects of fire, permafrost, and human development on caribou habitat and recovery (CIMP219)

Jennifer Baltzer, Wilfrid Laurier University (jbaltzer@wlu.ca)

The increasing frequency and intensity of wildfires in the NWT may prompt increasing permafrost thaw. These combined disturbances may degrade caribou habitat, but exactly how it will impact important vegetation eaten by caribou is unclear.

Results from field surveys of 200+ sites showed that:

- Thaw is occurring at most permafrost sites that were monitored, but the greatest rates of thaw were at sites impacted by recent wildfires.
- Vegetation types are sensitive to many environmental factors when recovering from wildfire, including time since fire, soil moisture, and the presence or absence of permafrost.
- Vegetation impacted by both wildfire and permafrost thaw can have different initial recovery patterns from those only recovering from wildfire. There are some signs that sites impacted by both disturbances may be slower to recover.

Results of this project are being used to develop a tool that can be used by decision-makers to help them identify ecosystems at risk of permafrost thaw and anticipate the impact on caribou habitat.

Credit: E. Wegener

Examining post-fire burn with re-growth of vegetation.

WATER FOCUSED PROJECTS

Development of a biological monitoring program to detect change in stream health along the Dempster-Inuvik-Tuktoyaktuk corridor (CIMP210)

Jordan Musetta-Lambert, Environment and Climate Change Canada (jordan.musetta-lambert@ec.gc.ca) and Joseph Culp, Wilfrid Laurier University (jculp@wlu.ca)

Based on community concerns, this project established a stream biomonitoring program along the Dempster-Inuvik-Tuktoyaktuk Highway (ITH) to study the effects of road development on stream ecosystem health. To do this, water quality and ecosystem function in streams along the ITH and Dempster Highways were examined. The project also tested the effectiveness of sampling methods capable of standardized use in northern biomonitoring programs.

The project found that:

- Indigenous partners are successfully running community- based monitoring. They have successfully received certification (Canadian Aquatic Biomonitoring Network - CABiN) using a standardized monitoring method.
- Overall, surface runoff from the highways has not had a measurable effect on water quality or benthic macroinvertebrates.

Ongoing monitoring will help establish trends to ensure early warning of potential change in the water quality and biological condition of these freshwater systems. Monitoring using CABiN allows users access to various supports including online training, and a nation-wide database. Using standardized methods allows for comparisons across projects and watersheds.

Credit: J. Musetta-Lambert

2022 Canadian Aquatic Biomonitoring Network (CABIN) certification program along the Inuvik-Tuktoyaktuk Highway in Hans Creek certifying both Inuvialuit and Gwich'in participants.

Credit: Tawna Brown Photography, www.nwtarts.com

Investigating the seasonality of subarctic lakes in a changing climate using satellite and field data (CIMP212)

Homa Pour, Wilfrid Laurier University (hpour@wlu.ca)

The duration of ice cover on northern lakes is being impacted by warming winter conditions. This project looked at the relationship of ice growth and melting/evaporation between Ryan and Landing lakes in the North Slave region to better understand the cumulative impacts of multiple stressors on these lakes. Both lakes were of similar surface area (1 km^2) but consisted of different total depths (4.3 m in Landing Lake, 91 m in Ryan Lake).

Information collected included water profiles, sediment cores, snow and ice measurements and bathymetric mapping (water depth) of lakes. Temperature profiles through the air-snow-ice-water column were also measured continuously over the winter.

Project results include:

- Quickly rising air temperatures creates a temperature profile in the snow that is not straight forward.
- Quickly falling air temperature increases the difference in temperature between the air and ice, which causes heat to escape from the ice into the air faster.
- Ice growth rates depend on water temperatures which were largely influenced by the depth of a lake. Deeper lakes were found to have colder water temperatures and faster ice growth rates.
- The deep lake (Ryan Lake) with relatively cold water temperatures was more sensitive to rapid changes in air temperatures than the shallow lake (Landing Lake) with warmer waters.
- Ice growth in shallow lakes was slowed by the release of heat trapped in lake sediments, particularly following freeze-up.

These project results provide important information for decision-makers responsible for the management of infrastructure (including ice road development and maintenance) and water resources in the NWT.

FISH FOCUSED PROJECTS

Monitoring, modeling, and prediction of Great Slave Lake productivity and food-web dynamics (CIMP132)

Xinhua Zhu, Fisheries and Oceans Canada (xinhua.zhu@dfo-mpo.gc.ca)

Working with community members, Fisheries and Oceans Canada has been studying Great Slave Lake (GSL) since 2011. Water, invertebrates (aquatic bugs) and fish are collected to understand the current conditions of the GSL ecosystem. This information is needed to help understand how potential changes could impact the sustainability of the largest freshwater fishery in western Canada.

The project found that:

- During the summer, most of the lake has warm water to depths of 10-15 meters and cool water (<5°C) below.
- The amount of invertebrates was variable over time, depth, and lake bottom types.
- 24 different fish species were identified. Among those, Lake Whitefish, Lake Trout, and Inconnu are most important for ecological and economic values.
- The temporal trend of Lake Whitefish catch per unit effort (CPUE) showed a 17% increase (12.49±8.16kg) during 2011-2022, compared with historical CPUE 10.36±6.10kg in 1973-1996.
- The average body size of Lake Whitefish increased 2% (423.51±2.79mm) in 2007-2021, versus 415.48±1.38 mm in 1972-2006.

Food web models are important tools to better support the development of ecosystem-based fisheries management strategies. Future data collection, expansion of sampling sites, and the model-based simulation will help inform GSL fisheries decisions.

Credit: L. Alsip

University of Manitoba student checking the geographic coordinates of a sampling grid for a fisheries ecosystem study in the western basin of Great Slave Lake, summer 2022.

Impacts of permafrost degradation on łuk dagaii habitat in the Peel River Watershed (CIMP217)

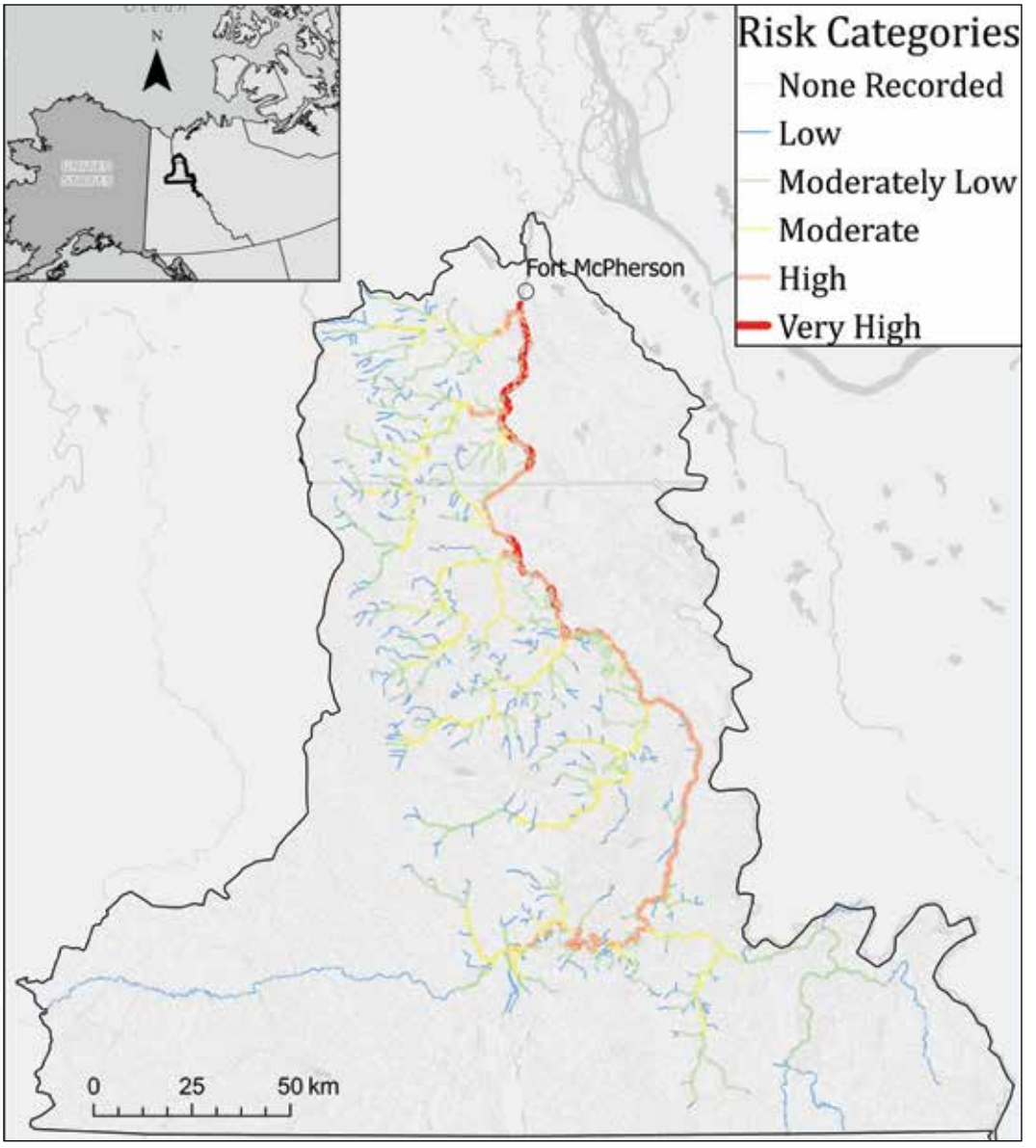
Trevor Lantz, University of Victoria (tlantz@uvic.ca)

In northwestern Canada, increased temperatures and precipitation are intensifying permafrost thaw slump activity. Gwich'in fishers are concerned about the impact of permafrost slumping on fish. This project used spatial overlay analysis combining Gwich'in and scientific knowledges to map łuk dagaii (broad whitefish, Coregonus nasus) habitat in the Peel River Watershed.

The project found that:

- The mainstem of Teetł'it Gwinjik (the Peel River) stretching from Teetł'it Zheh (Fort McPherson) down to the mouth of Tr'ineeditr'aii Njik (Wind River) is at high- to very-high risk of continuing to experience the impact of sediment flow from the slumps upstream.
- This area contains important fish habitat and has a high potential risk of experiencing the impact of heavy sediment input from the slumps upstream.
- Other areas of high risk include large sections of Gwatoh Taii Njik (Stony Creek) and Vitrekwa and Trail Rivers.

This project improves our understanding of the impact of climate-driven permafrost thaw on important fish habitat. These results could help inform regional resource management decision-making and adaptation planning, as well as help fill knowledge gaps of fish habitat and traditional use in the Peel River Watershed.



Potential impact of slumping on culturally and ecologically important fish habitat in the Peel River Watershed within the Gwich'in Settlement Region (black line), NWT. Inset map shows the portion of the Peel River Watershed investigated.

6. LIST OF 2022/23 NWT CIMP FUNDED PROJECTS

CIMP#	Project Type	VC	Project Title	Lead Organization	Funding Year
CIMP94	TK	Caribou	Tłı̨chǫ̀ Ekwǫ̀ Nàxoèhdee K'e: "Boots on the Ground" Bathurst Caribou monitoring program	Tłı̨chǫ̀ Government	14 of 16
CIMP127	Science	Fish and Water	Monitoring for impacts of harvest and climate change on Great Bear Lake aquatic system	Department of Fisheries and Oceans	11 of 12
CIMP132	Science	Fish and Water	Integrated Eco-monitoring and assessment of cumulative impacts of Great Slave Lake fisheries	Department of Fisheries and Oceans	12 of 12
CIMP154	Science	Fish and Water	Understanding fish mercury concentrations in Dehcho lakes	University of Waterloo	10 of 12
CIMP186	Science	Other	NWT Permafrost Mapping Collective	NWT Geological Survey	3 of 3
CIMP187	Science	Caribou	Vegetation productivity and phenology across the Bathurst caribou range	Queen's University	7 of 7

CIMP#	Project Type	VC	Project Title	Lead Organization	Funding Year
CIMP191	TK	Caribou and Fish	Watching the land: Knowing the cumulative impacts of change	Kátł'odeeche First Nation	5 of 6
CIMP205	Science	Caribou	Identifying habitats that influence body condition and fitness of adult female boreal caribou in the southern Northwest Territories	GNWT – ENR (now ECC)	3 of 3
CIMP207	Science and TK	Caribou	Cumulative Effects Assessment of Four Barren-ground Caribou Herds in the NWT	Wek'eezhi Renewable Resources Board	3 of 3
CIMP210	Science	Water	Development of a Biological Monitoring Program to Detect Change in Stream Health Along the Dempster-Inuvik-Tuktoyaktuk-Corridor	Wilfrid Laurier University	4 of 4
CIMP211	Science	Fish Water	Impacts of Permafrost Thaw Slump Extent, Severity and Persistence on Stream Biotic Health	Wilfrid Laurier University	3 of 3
CIMP212	Science	Water	Investigating the seasonality of subarctic lakes in changing climate using satellite and field data	Wilfrid Laurier University	3 of 3
CIMP214	Science and TK	Caribou	Bridging Traditional and scientific knowledge through a novel predictive approach to understanding the role of pathogens in the decline of a key Arctic species	University of Calgary	2 of 2
CIMP215	Science	Water	Aquatic ecosystems in the Fort Good Hope area as indicators of environmental change	Institut national de la recherche scientifique	3 of 3
CIMP216	Science	Water	Hydrocarbon-derived compounds (anthropogenic and natural) in water bodies in the Sahtú	Environment and Climate Change Canada	3 of 3
CIMP217	Science and TK	Fish	Impacts of permafrost degradation on łuk dagaii habitat in the Peel River Watershed	University of Victoria	3 of 3
CIMP219	Science	Caribou	Cumulative effects of fire, permafrost, and human development on caribou habitat and recovery	Wilfrid Laurier University	3 of 3

CIMP#	Project Type	VC	Project Title	Lead Organization	Funding Year
CIMP220	Science	Caribou	Can caribou coexist with human development in Northern Canada? Forecasting land use changes using resource development potential mapping to improve caribou future forecasts	University of British Columbia	2 of 3
CIMP221	Science	Fish	Arctic Salmon – Building Capacity and Assessing Interactions Among Salmon and Arctic Fishes in the Mackenzie River, NT	Department of Fisheries and Oceans	2 of 3
CIMP222	Science	Fish	Contaminants (PAHs, mercury) in the Mackenzie River and fish health assessments: implementation of classic and new molecular screening tools for environmental monitoring and stressor assessment	Environment and Climate Change Canada	2 of 3
CIMP223	Science	Fish and Water	Murky Waters: Impacts of Disturbances on the Mobilization and Downstream Delivery of Mercury and Methylmercury	University of Alberta	2 of 3
CIMP224	TK	Caribou Water Fish	A Century of Petroleum Extraction at Tłegǫ̀hłı (Norman Wells): Indigenous Knowledge for Indigenous Guardianship	Sahtú Renewable Resources Board	2 of 3
CIMP225	Science	Water	Tracking environmental change in the Gwich'in Settlement Area: enhancing community-driven monitoring of lakes and rivers	Wilfrid Laurier University	2 of 2
CIMP226	Science	Water	NWT Streams and Rivers of the future: How permafrost thaw and groundwater activation are changing water resources	Wilfrid Laurier University	1 of 3
CIMP227	Science	Water	Recovery of the mine-impacted landscape in the Yellowknife region	Queen's University	1 of 3

CIMP#	Project Type	VC	Project Title	Lead Organization	Funding Year
CIMP228	Science	Fish	Updated assessments and investigations of mercury in Sahtú lakes food webs with a changing environment	Environment and Climate Change Canada	1 of 2
CIMP229	TK	Fish	Social-ecological change in the Sahtú (Great Bear Lake) watershed: Cumulative impacts on Dene ts'ı̨lı̨ (knowledge and cultural identity) and relationships to fish	Délı̨nę Got'ine Government	1 of 3
CIMP230	Science	Water	Monitoring good water for First Nation water governance in Akaitcho	Akaitcho Territory Government	1 of 3
CIMP231	Science	Water	Understanding the cumulative impacts of beaver activity on stream health in the Inuvialuit Settlement Region	Wilfrid Laurier University	1 of 3

Contact information

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