

NWT CUMULATIVE IMPACT
MONITORING PROGRAM (NWT CIMP)
ACTION PLAN 2021-2025

LE PROGRAMME DE SURVEILLANCE DES
EFFETS CUMULATIFS DES TNO (PSECTNO)
PLAN D'ACTION 2021-2025

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Executive Summary

The Northwest Territories Cumulative Impact Monitoring Program (NWT CIMP) is a source of environmental monitoring and research in the Northwest Territories. The program conducts, coordinates, and funds the collection, analysis and reporting of information related to environmental conditions. Its goal is to support resource management decision-making and sustainable development by furthering our understanding of cumulative impacts.

NWT CIMP defines cumulative impacts as changes in the environment¹ from combinations of human activities and natural processes occurring across the landscape and over time².

Coordinated, long-term environmental monitoring and research is critical for NWT CIMP to meet its mandate and goals. NWT CIMP provides environmental monitoring and research information for consideration in decision-making³ and to understand and respond to changing conditions at local, regional and territorial scales.

The Action Plan outlines our vision, mandate, governance, principles and outcomes for the program for 2021-2025.

To realize its vision, NWT CIMP conducts four main activities, referred to as 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.

Within these activity areas, overarching goals have been identified. Each goal in turn has specific associated objectives, as described in Section 8. The goals in the 2021-25 Action Plan are to:

- **Identify and promote cumulative impact monitoring priorities of key decision-makers for caribou, water and fish;**
- **Identify how NWT CIMP can better consider, support and facilitate Indigenous knowledge in resource management decisions;**

¹ Environment: The components of the Earth including: (a) land, water and air, with all layers of the atmosphere; (b) all organic and inorganic matter and living organisms; and (c) the interacting natural systems that include components referred to in (a) and (b).

² Adapted from Canadian Council of Ministers of the Environment (2014) *Canada-wide Definitions and Principles for Cumulative Effects*. CCME website. (<https://ccme.ca/en/res/cedefinitionsandprinciples1.0e.pdf>, accessed 29 April 2021).

³ Please see Appendix A for a list of Common decision-makers in the NWT.

- **Ensure that Indigenous governments and organizations continue to guide the design and implementation of NWT CIMP through the Steering Committee;**
- **Develop and implement a GNWT-Environment and Natural Resources (ENR) Cumulative Impact Framework;**
- **Conduct and support regional environmental cumulative impact monitoring, using Indigenous and scientific approaches;**
- **Address high priority cumulative impact monitoring and research questions of key decision-makers for caribou, water and fish;**
- **Support and promote Indigenous Knowledge cumulative impact monitoring projects;**
- **Report relevant NWT CIMP-supported monitoring and research results directly to co-management boards;**
- **Ensure NWT CIMP monitoring and research results are accessible to communities and the public; and**
- **Facilitate the NWT Environmental Audit every five years in accordance with the *Mackenzie Valley Resource Management Act (MVRMA)*.**

This five-year Action Plan (2021-2025) builds on the successes of previous years. NWT CIMP continues to prioritize monitoring and research related to caribou, water and fish focusing in areas experiencing current or proposed development, or landscape change.

The program continues to emphasize the priorities of key regulatory decision-makers⁴, including the Mackenzie Valley Environmental Impact Review Board (MVEIRB), Renewable Resources Boards, Land Use Planning Boards and Land and Water Boards of the Mackenzie Valley. NWT CIMP continues to advance the better understanding of cumulative impacts, with a greater emphasis on long-term and regional monitoring and analysis.

The Action Plan is the foundation for outreach and engagement with external partners. NWT CIMP welcomes interested parties to partner with us in this important work.

For more information, please visit www.nwtcimp.ca or contact nwtcimp@gov.nt.ca.

⁴ Please see Appendix A for a list of Common decision-makers in the NWT.

Sommaire

Le Programme de surveillance des effets cumulatifs des Territoires du Nord-Ouest (PSECTNO) contribue aux activités de surveillance et de recherche environnementales aux TNO.

Il coordonne, dirige et finance la collecte, l'analyse et la diffusion de renseignements sur les conditions environnementales. 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.

Le PSECTNO définit les effets cumulatifs comme des changements environnementaux⁵ causés par une combinaison d'activités humaines et de phénomènes naturels qui s'accumulent au fil du temps et sur l'ensemble du territoire⁶.

Pour remplir son mandat, le PSECTNO doit mener des activités de surveillance et de recherche environnementales à long terme. Ce travail permet de recueillir des données qui peuvent être prises en compte dans le processus de décision⁷ et de comprendre l'évolution des conditions aux échelles locale, régionale et territoriale et de s'y adapter.

Le plan d'action énonce les idées, le mandat, la gouvernance et les principes du PSECTNO ainsi que les résultats que l'on escompte du programme de 2021 à 2025.

Pour concrétiser ses idées, le PSECTNO se livre à quatre activités principales, communément appelées 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 environnementale;
- 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 chaque domaine d'activité, le PSECTNO a déterminé des objectifs globaux qui ont, eux aussi, des cibles précises, comme énoncées à l'article 8 du plan d'action. Voici les objectifs globaux du plan d'action de 2021-2025 :

⁵ Environnement : Les éléments naturels de la Terre : (a) la terre, l'eau et l'air et toutes les couches de l'atmosphère; (b) toutes les matières organiques et inorganiques ainsi que les organismes vivants; (c) les systèmes naturels en interaction qui comprennent les éléments précités aux points (a) et (b).

⁶ Adapté du document *Définitions et principes pancanadiens pour les effets cumulatifs* du Conseil canadien des ministres de l'Environnement (2014). Site web du CCME. (<https://ccme.ca/fr/res/cedefinitionsandprinciples1.0f.pdf>, consulté le 29 avril 2021).

⁷ Veuillez consulter l'annexe A pour obtenir une liste des décideurs ordinaires des TNO.

- **Déterminer et promouvoir les priorités des décideurs clés concernant les activités de surveillance des effets cumulatifs liés au caribou, à l'eau et au poisson;**
- **Déterminer la façon dont le PSECTNO peut mieux tenir compte des connaissances traditionnelles dans les décisions liées à la gestion des ressources ainsi que de favoriser et de faciliter leur utilisation;**
- **Veiller à ce que les gouvernements et organisations autochtones continuent à orienter la conception et la mise en œuvre du PSECTNO par l'entremise d'un comité directeur;**
- **Élaborer et mettre en œuvre un cadre régissant les effets cumulatifs pour le ministère de l'Environnement et des Ressources naturelles du GTNO;**
- **Exercer une surveillance des effets cumulatifs à l'échelle régionale et l'appuyer en utilisant les connaissances autochtones et scientifiques;**
- **Aborder les questions hautement prioritaires des décideurs clés sur les activités de surveillance et de recherche concernant les effets cumulatifs liés au caribou, à l'eau et au poisson**
- **Appuyer et encourager les projets de surveillance des effets cumulatifs utilisant les connaissances traditionnelles;**
- **Communiquer directement aux conseils de cogestion les résultats provenant des activités de surveillance et de recherches soutenues par le PSECTNO;**
- **Faire en sorte que les collectivités et leurs résidents puissent avoir accès aux résultats provenant des activités de surveillance et de recherche**
- **Organiser la vérification environnementale quinquennale des TNO conformément à la *Loi sur la gestion des ressources de la vallée du Mackenzie (MVRMA)*.**

Ce plan d'action quinquennale (de 2021 à 2025) s'appuie sur les réussites des années précédentes. Le PSECTNO continue d'accorder la priorité aux activités de surveillance et de recherche liées au caribou, à l'eau et au poisson et concentre ses efforts dans les régions où des projets de développement ont lieu ou ont été proposés, ou qui subissent des changements de paysage.

Le PSECTNO continue à insister sur les priorités des autorités réglementaires clés⁸, comme l'Office d'examen des répercussions environnementales de la vallée du Mackenzie, les conseils de gestion des ressources naturelles, les offices d'aménagement territorial, les offices des terres et des eaux de la vallée du Mackenzie. Dans leurs activités, le PSECTNO continue à favoriser la compréhension des effets cumulatifs, en accordant une importance particulière aux activités régionales à long terme de surveillance et d'analyse.

Le plan d'action est le fondement qui permet au PSECTNO de sensibiliser et d'engager les partenaires externes. Le PSECTNO invite les parties concernées à collaborer avec eux pour effectuer cet important travail.

Pour en savoir plus, consultez le www.enr.gov.nt.ca/fr/services/programme-de-surveillance-des-effets-cumulatifs-psec-des-tno. Vous pouvez également écrire à nwtcimp@gov.nt.ca.

⁸ Veuillez consulter l'annexe A pour obtenir une liste des décideurs ordinaires des TNO.

1. Introduction

The Northwest Territories Cumulative Impact Monitoring Program (NWT CIMP) is a source of environmental⁹ monitoring and research in the Northwest Territories. The program conducts, coordinates and funds the collection, analysis and reporting of information related to environmental conditions. Its goal is to support resource management decision-making and sustainable development by furthering our understanding of cumulative impacts to caribou, water and fish.

NWT CIMP defines cumulative impacts as changes in the environment from combinations of human activities and natural processes occurring across the landscape and over time¹⁰.

Coordinated, long-term environmental monitoring and research is critical for NWT CIMP to meet its mandate and goals. NWT CIMP provides environmental monitoring and research information for consideration in decision-making¹¹ and to understand and respond to changing conditions at local, regional and territorial scales. This information is provided through the [NWT Discovery Portal](#), [Inventory of Landscape Change webviewer](#), [Mackenzie Datastream](#), and our website, www.nwtcimp.ca.

To realize its vision, NWT CIMP conducts four main activities:

- 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.

Cumulative impact monitoring is a requirement of settled land claims in the NWT and the *Mackenzie Valley Resource Management Act* (MVRMA). NWT CIMP is guided by a Steering Committee of representatives from Indigenous, federal and territorial governments as well as co-management boards. The program is delivered by the Department of Environment and Natural Resources (ENR), Government of the Northwest Territories (GNWT).

NWT CIMP engages a wide range of partners to establish priorities and conduct cumulative impact monitoring and research. These partners include Indigenous governments and organizations, co-management boards, universities, and federal and territorial government departments. NWT CIMP uses

⁹ For NWT CIMP's work, Environment is defined as the components of the Earth including: (a) land, water and air, with all layers of the atmosphere; (b) all organic and inorganic matter and living organisms; and (c) the interacting natural systems that include components referred to in (a) and (b).

¹⁰ Adapted from Canadian Council of Ministers of the Environment (2014) *Canada-wide Definitions and Principles for Cumulative Effects*. CCME website. (<https://ccme.ca/en/res/cedefinitionsandprinciples1.0e.pdf>, accessed 29 April 2021).

¹¹ Please see Appendix A for a list of Common decision-makers in the NWT.

all sources of knowledge, including Indigenous Knowledge¹² and science, as sources of monitoring information. Community based monitoring and capacity building are supported principles, when linked to monitoring and research of cumulative impacts.

The five-year Action Plan (2021-2025) outlines the vision, mandate, principles, activity areas, goals and objectives for the program, and builds on the successes of previous years. NWT CIMP continues to prioritize monitoring and research related to caribou, water and fish focusing in areas experiencing current or proposed development, or landscape change.

The program will continue to emphasize the priorities of key regulatory decision-makers, including the Mackenzie Valley Environmental Impact Review Board (MVEIRB), Renewable Resources Boards, Land Use Planning Boards and Land and Water Boards and of the Mackenzie Valley. NWT CIMP will continue to advance the better understanding of cumulative impacts, with a greater emphasis on long-term and regional monitoring and analysis.

The Action Plan is a foundation for outreach and engagement with external partners. NWT CIMP welcomes interested parties to partner with us in this important work.

2. Vision

The NWT CIMP Steering Committee has established a meaningful vision statement:

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

This statement reflects a program guided by its partners to collect and analyze multiple sources of knowledge to understand cumulative impacts. The program provides results to northern decision-makers such as regulators, Indigenous governments and organizations, and governments to support the wise use of NWT resources.

¹² Traditional Knowledge is knowledge and values, which have been acquired through experience, observation, from the land or from spiritual teachings, and handed down from one generation to another (1997) *Government of the Northwest Territories Traditional Knowledge Policy Implementation Framework*. ENR website. https://www.enr.gov.nt.ca/sites/enr/files/gnwt_traditional_knowledge_implementation_framework_-_2009.pdf, accessed 22 July 2021). While “traditional knowledge” is the term used in the Policy, ENR is currently using the term Indigenous Knowledge, to be more inclusive of all knowledge holders, and to more specifically recognize the knowledge that has been and is currently being created by Indigenous peoples, groups, and organizations. Where possible, knowledge will be referred to using the preferred terminology of the knowledge holder or community.

3. Mandate

NWT Cumulative Impact Monitoring Program

NWT CIMP was created to fulfill constitutional and legal requirements for environmental monitoring and auditing. These requirements are contained in the Gwich'in, Sahtú and Tłı̄chq land claim agreements, as well as Part 6 of the *Mackenzie Valley Resource Management Act* (MVRMA):

146 The responsible authority shall, subject to the regulations, analyze data collected by it, scientific data, traditional knowledge¹³ and other pertinent information for the purpose of monitoring the cumulative impact on the environment of concurrent and sequential uses of land and water and deposits of waste in the Mackenzie Valley.

147 (1) A responsible authority that is a minister of the Crown in right of Canada shall carry out the functions referred to in section 146 in consultation with the first nations and the Tłı̄chq Government.

Section 146 states the environmental monitoring function of NWT CIMP. It is to collect and analyze data for the purpose of monitoring cumulative impacts of development on the environment. All available information should be used in cumulative impact monitoring.

Section 147 outlines the requirement to meaningfully involve Indigenous governments and organizations in the design and implementation of NWT CIMP. The Gwich'in, Sahtú and Tłı̄chq land claim agreements contain similar provisions.

Although the MVRMA does not apply to the Inuvialuit Settlement Region (ISR), a Memorandum of Understanding with the Inuvialuit Game Council has been in place since November 2003 that formally includes the ISR in NWT CIMP and the NWT Environmental Audit. Since 2010, the Inuvialuit have chosen to take part in all aspects of the Audit, except the review of the regulatory regime. Following devolution of the program to the GNWT in 2014, the Inuvialuit Game Council and the GNWT signed a renewed Memorandum of Understanding.

¹³ While “traditional knowledge” is the term used in the MVRMA, ENR is currently using the term Indigenous Knowledge, to be more inclusive of all knowledge holders, to be more inclusive of all knowledge holders, and to more specifically recognize the knowledge that has been and is currently being created by Indigenous peoples, groups, and organizations. Where possible, knowledge will be referred to using the preferred terminology of the knowledge holder or community.

NWT Environmental Audit

Part 6 of the MVRMA requires an independent audit of environmental monitoring and the MVRMA regulatory regime every five years. Previous audits were conducted in 2005, 2010, 2015 and 2020. Section 148(3) of the MVRMA states that:

148 (3) *An environmental audit shall include*

- a) an evaluation of information, including information collected or analyzed under section 146, in order to determine trends in environmental quality, potential contributing factors to changes in the environment and the significance of those trends;*
- b) a review of the effectiveness of methods used for carrying out the functions referred to in section 146;*
- c) a review of the effectiveness of the regulation of uses of land and water and deposits of waste on the protection of the key components of the environment from significant adverse impact; and*
- d) a review of the response to any recommendations of previous environmental audits.*

The MVRMA also states that the participation of Indigenous governments and organizations is required. Each of the settled land claim organizations must be involved in developing the Audit Terms of Reference and participating in the Audit. In practice, all interested regional Indigenous governments and organizations are included in the Audit Steering Committee.

While the Audit itself is conducted by an independent auditor, NWT CIMP is responsible for facilitating the Audit and working with the Audit Steering Committee to set the Terms of Reference and provide advice to the Auditor.

Priorities

NWT CIMP's monitoring resources must be focused and partnerships strengthened and expanded to understand cumulative impacts and environmental trends over a large geographic area. Key NWT decision-makers have guided NWT CIMP to focus its monitoring and research on three priority valued components (VCs): **caribou, water, and fish**, given their importance to the people of the NWT.

From 1999 to 2011, NWT CIMP examined multiple VCs. In 2011, the number of VCs was narrowed through a survey and multi-partner workshop and confirmed by the NWT CIMP Steering Committee. The results of a territory-wide 2018 NWT CIMP Environmental Monitoring Results Workshop and 2020 survey indicated that these VCs are still important today. The Steering Committee confirmed and recommended that NWT CIMP continue to focus resources on **caribou, water and fish**.

Large information gaps remain for caribou, water and fish VCs. Specific [monitoring and research Blueprints](#) have been developed for each of the three VCs in partnership with NWT land and water decision-makers, subject-matter experts, and the NWT CIMP Steering Committee. Updated yearly, the Blueprints provide NWT CIMP funding applicants with current priorities to address and guide the program's work.

4. Governance

The NWT CIMP governance model (Figure 1) shows the program as both a conductor and coordinator of cumulative impact monitoring. Northern decision-makers identify cumulative impact monitoring and research questions. The NWT CIMP Steering Committee provides guidance to ensure that the program addresses these needs and aligns with the interests of Indigenous governments and organizations and the territorial and federal governments.

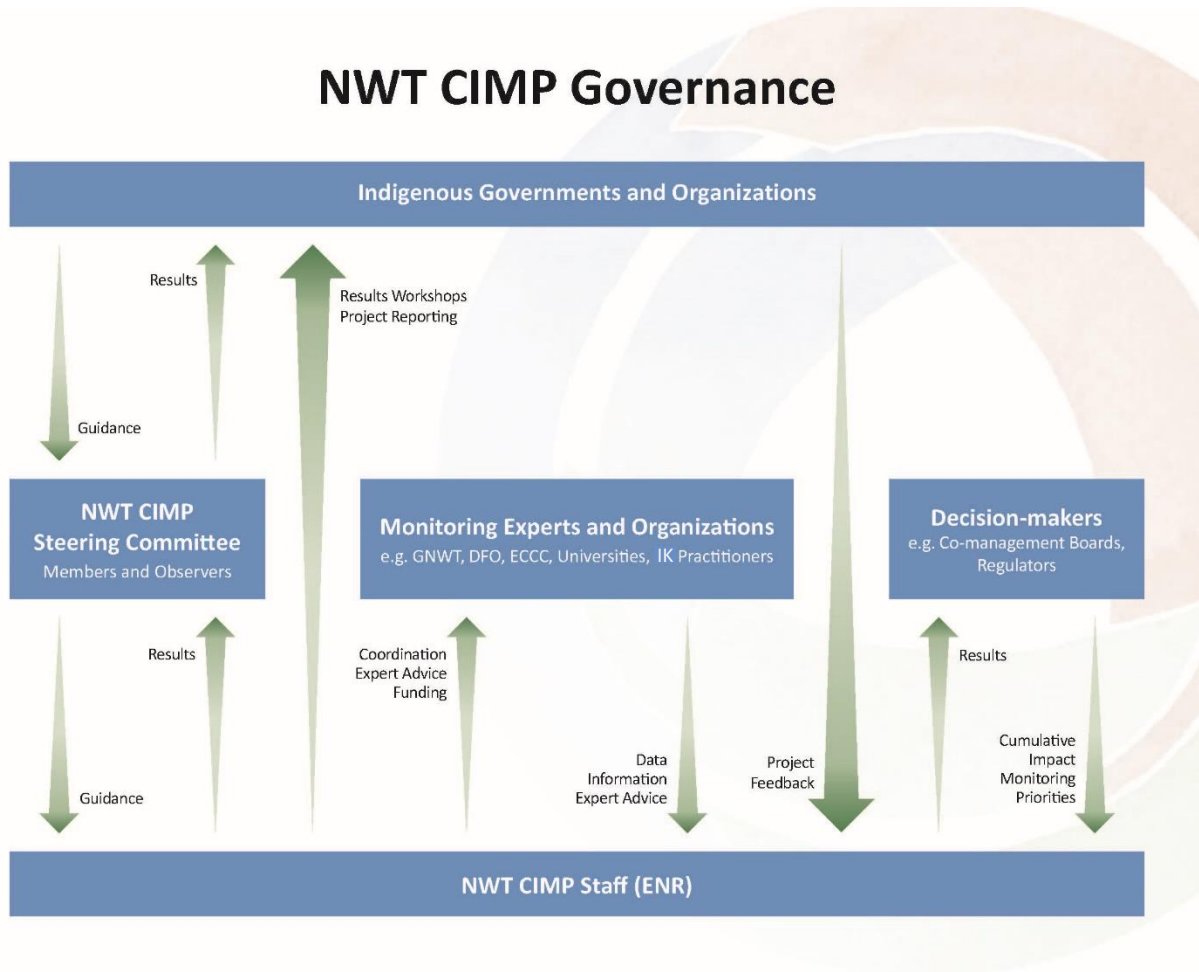


Figure 1. NWT CIMP governance model. Note: Government of the Northwest Territories (GNWT); Department of Fisheries and Oceans (DFO); Environment and Climate Change Canada (ECCC).

NWT CIMP Steering Committee

Meaningful partnerships with Indigenous governments and organizations in the design and delivery of NWT CIMP are a legal requirement and key to the program’s success. Indigenous governments and organizations participate in all aspects of the program through the NWT CIMP Steering Committee (Table 1). The Steering Committee provides high-level guidance and ensures that the program continues

to meet the needs of Indigenous governments and organizations. Steering Committee members consult with their organizations on key decisions, and share monitoring results and information.

Indigenous governments and organizations listed as Observers receive all materials and correspondence and have a standing offer to become members at any time.

Recently, the NWT CIMP Steering Committee has been included as a panel on the newly established NWT Climate Change Council (Council). The Council is a forum for information-sharing, collaboration and engagement between Indigenous governments and organizations, representatives of NWT communities and the GNWT, with input from external partners. It advances GNWT climate change and environment programs in alignment with Indigenous governments and organizations and community perspectives, interests and knowledge. The reciprocal relationship between NWT CIMP and the NWT Climate Change Council promotes holistic decision-making for leaders across the NWT.

Table 1: NWT CIMP Steering Committee

Members	Observers
Gwich'in Tribal Council	Akaiicho Territory Government
Sahtú Secretariat Incorporated	Dehcho First Nations
Tłı̨chǫ Government	Environment and Climate Change Canada
Northwest Territory Métis Nation	Fisheries and Oceans Canada
Inuvialuit Game Council	Mackenzie Valley Land and Water Board
North Slave Métis Alliance	Mackenzie Valley Environmental Impact Review Board
Government of the Northwest Territories	Aurora Research Institute
Government of Canada	Canadian Association of Petroleum Producers

Audit Steering Committee

The NWT Environmental Audit process and independent Auditor are guided by the Audit Steering Committee (ASC) composed of Indigenous, territorial and federal government representatives. Many NWT CIMP Steering Committee member organizations participate on the Audit Steering Committee (section 8.3) when active, during the Audit's five-year cycle. The ASC collaboratively develops the Terms of Reference for the Audit, helps select the Auditor and provides input. Meaningful participation of Indigenous governments and organizations in the Audit is an MVRMA obligation.

5. Connections between NWT CIMP and existing GNWT plans, strategies and initiatives

Efforts to monitor and understand cumulative impacts are integrated and aligned with other important GNWT initiatives (Table 2).

Table 2: Connections between NWT CIMP and existing GNWT plans, strategies and initiatives

Plan, strategy or initiative	NWT CIMP Connection
GNWT Land Use Sustainability Framework	NWT CIMP supports the GNWT Vision of “ <i>Working together, northerners will responsibly and sustainably manage the lands, waters and natural resources of the Northwest Territories for the benefit of current and future generations</i> ” through credible and unbiased monitoring and research data used in northern decision-making.
ENR’s Sustainable Development Policy (2005)	NWT CIMP promotes and supports the sustainable use and development of natural resources.
GNWT Indigenous Knowledge Policy (1997)	NWT CIMP promotes Indigenous Knowledge for cumulative impact monitoring, which supports the GNWT Indigenous Knowledge Policy. This helps to incorporate Indigenous Knowledge into government decisions and actions where appropriate.
ENR Strategic Plan (2015)	NWT CIMP contributes to ENR’s goal of Ecosystem Health through improving the understanding of cumulative impacts.
2030 NWT Climate Change Strategic Framework and Action Plan (2019)	Climate change is the driver of many landscape changes associated with cumulative impacts. NWT CIMP funds monitoring and research projects to better understand the impact of large landscape changes to its priority valued components.
Knowledge Agenda (2017)	NWT CIMP addresses many of the research priorities outlined in the Knowledge Agenda’s environmental stewardship and natural resource management themes. This includes the use of long-term baseline monitoring to assess cumulative impacts and develop regional assessments and providing information to the interdepartmental Indigenous Knowledge Working Group.
Healthy Land, Healthy People Conservation Action Plan (2016)	NWT CIMP collaborates internally with ENR staff and externally with Indigenous governments and organizations and territorial Protected Area Management Boards to ensure consistency in monitoring programs that will in turn support the management of territorial Protected Areas. NWT CIMP’s work also supports the maintenance of regional ecosystem connectivity, which contributes to territorial conservation goals.
Water Stewardship Strategy (2016)	NWT CIMP is a water partner and provides monitoring and research information, including environmental trends, cumulative impacts and baseline conditions. This information supports decision-making and the wise use of NWT water resources.
Bathurst and Boreal Caribou Range Planning	NWT CIMP funds monitoring and research projects that contribute to cumulative impact assessment methods and modeling approaches used to inform the <i>Bathurst Caribou Range Plan</i> and methods associated with boreal caribou range planning.

6. Principles

Within its mandate, NWT CIMP has the following key principles:

1) Indigenous governments and organizations are involved in all aspects of the program.

Meaningful participation of Indigenous governments and organizations in NWT CIMP is established in the MVRMA and settled land claims. GNWT-ENR is committed to including Indigenous governments and organizations in the design and implementation of NWT CIMP through guidance roles on the NWT CIMP Steering Committee, the Audit Steering Committee and the NWT Climate Change Council.

2) Cumulative impact monitoring includes measuring both human disturbance and natural changes.

NWT CIMP has adapted the Canadian Council of Ministers of the Environment's (CCME) definition of cumulative impacts as *'changes in the environment from combinations of human activities and natural processes occurring across the landscape and over time'*¹⁴. Both human disturbance and natural events, such as forest fires, have compounding impacts on land and water use. Cumulative impacts are related to the effects and interactions of human activities as well as the effects of a dynamic natural environment. NWT CIMP's definition differs from the Mackenzie Valley Environmental Impact Review Board's (MVEIRB) definition where cumulative impacts are *the effects of a proposed development in combination with other human activities*, which accounts only for the impacts of human activities.

3) NWT CIMP is focused on monitoring cumulative impacts that are relevant to land and water use decisions.

The program emphasizes the monitoring priorities of the co-management boards, including MVEIRB, the Land and Water Boards, the Renewable Resource Boards and Land Use Planning Boards of the Mackenzie Valley. NWT CIMP outlines these priorities through monitoring and research Blueprints developed for caribou, water and fish. Updated yearly, these Blueprints guide NWT CIMP funding proposals.

NWT CIMP recognizes there are many organizations with responsibilities related to land and water use and many ways to contribute to regulatory decisions. For instance, monitoring information may be used by developers to improve their regulatory submissions, or by Indigenous participants to inform their regulatory interventions.

¹⁴ Adapted from Canadian Council of Ministers of the Environment (2014) *Canada-wide Definitions and Principles for Cumulative Effects*. CCME website. (<https://ccme.ca/en/res/cedefinitionsandprinciples1.0e.pdf>, accessed 29 April 2021).

4) **Scientific and Indigenous Knowledge are equally important sources of monitoring data.**

A requirement to consider scientific and Indigenous Knowledge is clearly laid out in the MVRMA. NWT CIMP continues to support the collection and analysis of all sources of knowledge. The NWT CIMP Steering Committee has identified Indigenous Knowledge as a gap in monitoring and research information. NWT CIMP recognizes that all types of knowledge represent different ways of knowing and that integration of the two in a single project is not always required. Therefore, NWT CIMP has established, and continues to refine, both Science and Indigenous Knowledge Project Funding Guides and application forms.

5) **NWT CIMP supports community-based monitoring and capacity building when they support monitoring cumulative impacts.**

NWT CIMP focuses on monitoring that meets the needs of northern decision-makers. Community-based monitoring and capacity building are supported when they contribute to NWT CIMP's primary objective of monitoring cumulative impacts.

6) **NWT CIMP supports monitoring and research of landscape change resulting from climate change when they support monitoring cumulative impacts.**

NWT CIMP recognizes that climate change is a driver of many landscape changes. NWT CIMP funds monitoring and research projects to better understand the impact of large landscape changes to its priority valued components. Monitoring Blueprints for caribou, water and fish reflect this principle.

7) **NWT CIMP supports effects-based and stressor-based approaches to generate needed information for decision-makers.**

There are two general approaches taken to monitor cumulative impacts: effects-based monitoring and stressor-based monitoring.

Effects-based monitoring reports on past and present environmental conditions and identifies the cause-and-effect relationships between ecosystem components. This is the main approach that NWT CIMP has taken in the past. This approach's strength is a greater understanding of the ecosystem; however, there is rarely enough available data to prove causality.

In contrast, *stressor-based monitoring* focuses on predicting the potential effects of future disturbances relative to the current state of the ecosystem. This approach requires documenting current human disturbances on the landscape, and using monitoring data to predict future scenarios. It allows decision-makers to compare the potential future results of their present actions.

NWT CIMP supports a combination of effects-based and stressor-based monitoring approaches to provide the most useful information to decision-makers.

8) NWT CIMP supports using common and standardized data collection and analysis protocols.

A key requirement to monitor cumulative impacts is using common data collection and analysis protocols to ensure data are comparable between sites, regions and even across the territory. However, a barrier to the adoption of common data protocols is that each organization collects and analyzes data for different reasons and may not have flexibility in how the data are collected or analyzed. Given this constraint, NWT CIMP continues to encourage organizations to provide metadata that allow others to understand how the data were collected and analyzed to better assess the data for themselves. NWT CIMP promotes the adoption of common data collection and analysis protocols.

9) Cumulative impact monitoring can include baseline monitoring where required.

Monitoring data in the NWT are often scarce, even in areas of existing development; however, adequate baseline data are needed before cumulative impacts can be monitored. Therefore, in priority areas with inadequate baseline data, NWT CIMP may provide support for baseline monitoring.

Note: NWT CIMP does not provide support for baseline monitoring in areas where it is clearly the responsibility of another agency (e.g. government or industry). The monitoring required under Transboundary Agreements for government and water licences for industry are examples where this monitoring is clearly the responsibility of another agency or organization.

10) NWT CIMP relies on a partnership approach to ensure its success.

Throughout its history, NWT CIMP has developed meaningful partnerships with interested monitoring partners to successfully achieve its goals. In addition to partnering with organizations with monitoring mandates, the program continues to partner with agencies responsible for the development, assessment and management of NWT resources.

7. Outcomes

The following key outcomes are expected as NWT CIMP takes steps to achieve its vision:

- Monitoring partners, including Indigenous governments and organizations, are fully engaged in NWT CIMP.
- NWT CIMP generates credible and unbiased data, analyses and summaries of environmental monitoring information specific to caribou, water and fish about:
 - cumulative impacts,
 - environmental trends, and
 - baseline conditions.
- Monitoring information is housed, presented and shared in ways that support environmental decision-making and sustainable development.

8. Activity areas, goals and objectives

This section describes the work that NWT CIMP will conduct from 2021 to 2025. It is organized around the program's four activity areas. Each activity area includes goals, performance indicators and objectives. The goals are listed below for each activity area. Further details follow.

8.1 Goals at a glance

A1. Work with partners to understand key monitoring priorities

- 1.1. Identify and promote cumulative impact monitoring priorities of key decision-makers for caribou, water and fish.
- 1.2. Identify how NWT CIMP can better consider, support and facilitate Indigenous Knowledge in resource management decisions.
- 1.3. Indigenous governments and organizations continue to guide the design and implementation of NWT CIMP through the Steering Committee.

A2. Conduct, coordinate and fund cumulative impact monitoring, research and analysis

- 2.1 Develop and implement a GNWT-ENR Cumulative Impact Framework.
- 2.2 Conduct and support regional environmental cumulative impact monitoring, using Indigenous and scientific approaches.
- 2.3 Address high priority cumulative impact monitoring and research questions of key decision-makers for caribou, water, and fish.
- 2.4 Support and promote Indigenous Knowledge cumulative impact monitoring and research projects.

A3. Communicate Results to Decision-makers and the Public

- 3.1 Report relevant NWT CIMP-supported monitoring and research results directly to co-management boards.
- 3.2 NWT CIMP monitoring and research results are accessible to communities and the public.

A4. Facilitate the NWT Environmental Audit

- 5.1 Ensure that the NWT Environmental Audit is conducted every five years, in accordance with the MVRMA.

8.2 Goals and objectives for each activity area

A1. Work with partners to understand key monitoring priorities

NWT CIMP focuses its efforts and funding to address information gaps related to our priority VCs: caribou, water and fish. Although the program benefits from this focus, large information gaps remain. NWT CIMP will continue to focus on caribou, water and fish, particularly for residents relying on the land for food and water.

A1 Work with partners to understand key monitoring priorities	
Goal 1.1	Identify and promote cumulative impact monitoring priorities of key decision-makers for caribou, water and fish
	<i>Within the lens of caribou, water and fish, NWT CIMP will identify and focus on the monitoring priorities of co-management boards and government agencies that make major resource management decisions. NWT CIMP recognizes that there are many organizations with responsibilities related to resource management in the NWT, and that a focus on informing resource management decisions can also help address these needs.</i>
Initial	<ul style="list-style-type: none"> # of decision-making needs meeting(s)
Performance	<ul style="list-style-type: none"> % of projects that address a decision-maker’s need
Indicators	<ul style="list-style-type: none"> % of projects that address Indigenous government and organization information needs and/or are developed in response to a community concern
Objective	Deliverable Date
1.1.1 <i>Maintain and improve relationships with key decision-makers by developing closer linkages and facilitating regular discussions about decision-making needs. NWT CIMP will facilitate at least one meeting a year.</i>	2021 onwards
1.1.2 <i>Work with key decision-makers and the NWT CIMP Steering Committee to develop detailed cumulative impact monitoring priorities for 2021-2025, for caribou, water and fish. NWT CIMP will facilitate a multi-partner meeting.</i>	2022
1.1.3 <i>Through the NWT CIMP Steering Committee, identify opportunities to include Indigenous Knowledge relevant to cumulative impact monitoring in the detailed priorities.</i>	2022
1.1.4 <i>Use detailed cumulative impact monitoring priorities to refine monitoring Blueprints. Refined monitoring Blueprints will replace the requirement of support letters from decision-makers in NWT CIMP’s funding process. Annual check-ins with co-management partners will occur for minor adjustments.</i>	2022 Annual Check-ins: May-July
1.1.5 <i>Identify and promote standardized monitoring and research methods and protocols in collaboration with subject-matter experts and co-management partners. Standardized monitoring methods are incorporated into the Funding Guides and made available on the NWT CIMP website.</i>	2022

<p>Goal 1.2 Identify how NWT CIMP can better consider, support and facilitate Indigenous Knowledge in resource management decisions</p> <p><i>The NWT CIMP Steering Committee has expressed the need for increased use of Indigenous Knowledge in cumulative impact monitoring. NWT CIMP will support and facilitate the use of Indigenous Knowledge in resource management decisions. Efforts to improve partnerships with Indigenous governments and organizations, explore how Indigenous Knowledge is considered in decision-making, and increase internal capacity are underway.</i></p>		
Initial Performance Indicators	<ul style="list-style-type: none"> # of engagement meetings held with Indigenous governments and organizations partners # of meetings held to incorporate Indigenous Knowledge into northern decisions 	
	Objective	Deliverable Date
1.2.1	<i>Maintain and improve partnerships with Indigenous governments and organizations. This may occur through presenting program information at Chief and Council meetings, Annual General Assemblies, etc.</i>	<i>2021 onwards</i>
1.2.2	<i>Facilitate a meeting series on incorporating Indigenous Knowledge into decisions with Indigenous governments and organizations and northern decision-makers. Objectives of these meetings will be determined with partners.</i>	<i>Meeting series commences 2022. To occur every 6 months or as specified by partners.</i>
1.2.3	<i>Increase GNWT-ENR support for Indigenous Knowledge projects that increase a better understanding of cumulative impacts.</i>	<i>2021 onwards</i>
<p>Goal 1.3 Indigenous governments and organizations continue to guide the design and implementation of NWT CIMP through the Steering Committee</p>		
Initial Performance Indicators	<ul style="list-style-type: none"> # of Steering Committee meetings annually 	
	Objective	Deliverable Date
1.3.1	<i>Engage with Indigenous governments and organizations through meetings of the NWT CIMP Steering Committee.</i>	<i>Up to 4 meetings annually</i>

A2. Conduct, coordinate and fund cumulative impact monitoring, research and analysis

With key priorities articulated in the monitoring Blueprints, NWT CIMP staff members are developing a cumulative impact framework, conducting and funding regional cumulative impact monitoring, addressing high priority needs of decision-makers and supporting Indigenous Knowledge cumulative impact monitoring and research projects.

A2 Conduct, coordinate and fund cumulative impact monitoring, research and analysis		
Goal 2.1	Develop and implement a GNWT-ENR Cumulative Impact Framework	
	NWT CIMP will develop and implement a GNWT-ENR Cumulative Impact Framework (CIF), connecting monitoring and modeling outcomes to resource management decisions. Concepts will be developed and tested focusing initially on water quality, followed by landscape metrics.	
Initial Performance Indicators	<ul style="list-style-type: none"> GNWT-ENR CIF is publicly available 	
	Objective	Deliverable Date
2.1.1	<i>Develop a GNWT-ENR Cumulative Impact Framework (CIF). The Framework will outline the steps to monitor and predict cumulative impacts.</i>	2022
2.1.2	<i>Implement the GNWT-ENR CIF, focusing on water quality. NWT CIMP will conduct analyses of key environmental indicators for water quality to better understand cumulative impacts.</i>	2022 onwards
2.1.3	<i>In collaboration with subject-matter experts, NWT CIMP will determine how to apply the GNWT-ENR CIF analyses to landscape metrics related to forest and wildlife management.</i>	2024 onwards

<p>Goal 2.2 Conduct and support regional environmental cumulative impact monitoring and research, using Indigenous and scientific approaches</p> <p>NWT CIMP will conduct and support regional monitoring and research initiatives that contribute to understanding cumulative impacts, and provide the results to decision-makers.</p>		
Initial Performance Indicators	<ul style="list-style-type: none"> • Complete one ‘Current State Assessment’ for a priority area • Complete one regional summary with an Indigenous Knowledge focus • Complete one spatial analysis • Update the Inventory of Landscape Change, Human Disturbance Dataset annually 	
	Objective	Deliverable Date
2.2.1	<i>Use standardized collection and analysis methods to better understand regional changes.</i>	2021 onwards
2.2.2	<i>Conduct cumulative impact water quality monitoring in priority areas, investigating spatial lake water quality to fill this key gap noted in the 2020 Environmental Audit.</i>	2021-2025
2.2.3	<i>Support and conduct cumulative impact monitoring and research through an Indigenous Knowledge initiative.</i>	2022 onwards
2.2.4	<i>Analyze, maintain and improve the human disturbance dataset from the Inventory of Landscape Change. This online Inventory provides spatial data related to human and natural disturbance.</i>	2023

<p>Goal 2.3 Address high priority cumulative impact monitoring and research questions of key decision-makers for caribou, water, and fish</p> <p>NWT CIMP will address the key priorities of the co-management boards and government agencies that make major resource management decisions, as well as community concerns. With key priorities identified in the monitoring Blueprints, NWT CIMP funds cumulative impact monitoring and research projects and coordinates efforts between project leads.</p>		
Initial Performance Indicators	<ul style="list-style-type: none"> • % of projects that directly address high priority cumulative impact questions of key decision-makers • % of projects led by or partnered with an Indigenous community or co-management organization • % of projects whose results address a community concern 	
	Objective	Deliverable Date
2.3.1	<i>Use the monitoring Blueprints to assess and distribute funding through a collaborative robust funding process and efficient reporting requirements.</i>	<i>September – May annually</i>
2.3.2	<i>Coordinate funded projects and monitoring collaborations through NWT CIMP staff project liaison activities. Project status and summaries are shared with the Steering Committee.</i>	<i>Ongoing</i>

<p>Goal 2.4 Support and promote Indigenous Knowledge cumulative impact monitoring and research projects</p> <p>NWT CIMP staff will work with Indigenous governments and organizations to better support and encourage Indigenous Knowledge cumulative impact monitoring and research projects and promote their use in resource management decisions.</p>		
Initial performance indicators	<ul style="list-style-type: none"> • % of projects that focus on Indigenous Knowledge 	
	Objective	Deliverable Date
2.4.1	<i>Support and facilitate Indigenous governments and organizations in conducting Indigenous Knowledge cumulative impact monitoring and research projects.</i>	<i>2021-2025</i>
2.4.2	<i>Support and promote Indigenous governments and organizations in analyzing or summarizing Indigenous Knowledge monitoring information, as appropriate, for decision-making.</i>	<i>2021-2025</i>

A3. Communicate Results to Decision-makers and the Public

NWT CIMP recognizes the importance of monitoring and research results being published in peer-reviewed literature to ensure a high standard of work and availability. It is essential that results also be presented in plain language that is broadly understood by decision-makers and the public.

Given the legislated mandate of NWT CIMP with respect to land and water use decisions, it is important to report results directly to decision-makers through regulatory processes. Results and opportunities for feedback must also be presented to communities in which the monitoring or research occurs.

A3 Communicate Results to Decision-makers and the Public		
Goal 3.1	Report relevant NWT CIMP-supported monitoring and research results directly to co-management boards	
	Regulatory decision-makers may have specific ways that information is to be submitted such as through an environmental assessment process. NWT CIMP staff reports relevant results directly to decision-makers through formal and informal processes.	
Initial Performance Indicators	<ul style="list-style-type: none"> • % of project results that are provided to decision-makers • % of decision-maker-specific deliverables generated and available 	
	Objective	Deliverable Date
3.1.1	<i>Report results directly to co-management boards, as agreed to through the regular discussions about decision-making needs.</i>	<i>Ongoing</i>

Goal 3.2	NWT CIMP monitoring and research results are accessible to communities and the public	
<p>NWT CIMP results are easily available to a broad audience. Researchers are expected to explain and discuss ongoing results directly with the communities. NWT CIMP ensures that projects have robust communication plans that inform the public on a regular basis. NWT CIMP annually hosts regional results workshops where project results are shared.</p>		
Initial Performance Indicators	<ul style="list-style-type: none"> • # of community presentations provided • # of records posted to NWT Discovery Portal • # of reports and peer reviewed publications generated • # of plain language summaries developed 	
Objective		Deliverable Date
3.2.1	<i>Monitoring and research results are presented in both plain language and scientific publications, in diverse formats.</i>	<i>Ongoing</i>
3.2.2	<i>Monitoring and research results and opportunities for feedback are presented to communities where the monitoring or research is occurring.</i>	<i>Annually</i>
3.2.3	<i>Project summaries and updates are provided to Indigenous governments and organizations and shared publicly.</i>	<i>2021-2025</i>
3.2.4	<i>Monitoring and research results are available on the NWT Discovery Portal and/or the NWT CIMP website.</i>	<i>Ongoing</i>
3.2.5	<i>Monitoring data for water, where appropriate, are uploaded to the Mackenzie DataStream.</i>	<i>Ongoing</i>

A4. Facilitate the NWT Environmental Audit

The NWT Environmental Audit is an MVRMA obligation that NWT CIMP facilitates. NWT CIMP is audited in the process, so must work at an arms-length from the Auditor.

A4 Facilitate the NWT Environmental Audit	
Goal 4.1	<p>Ensure that the NWT Environmental Audit is conducted every five years, in accordance with the MVRMA</p> <p>The next Environmental Audit will be released in 2025. NWT CIMP staff will work with the Audit Steering Committee to develop the Audit Terms of Reference, select an Auditor and facilitate interactions throughout all stages of the Audit. The Audit Steering Committee consists of Indigenous, federal and territorial government representatives.</p>
Initial Performance Indicators	<ul style="list-style-type: none"> • Completion of the 2025 NWT Environmental Audit report • Release of the 2025 NWT Environmental Audit report
<i>Objective</i>	Deliverable Date
4.1.1	<p><i>Facilitate completion of the Terms of Reference for the 2025 Audit with the Audit Steering Committee.</i></p> <p>2022</p>
4.1.2	<p><i>Contract independent Auditor.</i></p> <p>2023</p>
4.1.3	<p><i>Coordinate Audit Steering Committee and Auditor, as required.</i></p> <p>2022-2025</p>

Appendix A: Common decision-makers in the NWT

The organizations below shape northern resource management decisions. In particular, they help set the monitoring priorities for NWT CIMP. Project results are communicated to these organizations to help make evidence-based decisions.

Indigenous Governments/Organizations

Akaiitcho Territory Government
Dehcho First Nations
Inuvialuit Joint Secretariat
Inuvialuit Regional Corporation
Tłı̄chǫ Government

Gwich'in Tribal Council
North Slave Métis Alliance
Northwest Territory Métis Nation
Sahtú Secretariat Incorporated

Northern Resource Management Boards

Environmental Impact Review Board
Inuvialuit Water Board
Gwich'in Land and Water Board
Gwich'in Renewable Resources Board
Wek'èezhii Land and Water Board
Wek'èezhii Renewable Resources Board

Mackenzie Valley Environmental Impact Review Board
Mackenzie Valley Land and Water Board
Sahtú Land Use Planning Board
Sahtú Renewable Resources Board
Ts'udé Niljné Tuyeta Management Board
Thaidene Nënë xá dá yáti

Government of the Northwest Territories

Education, Culture and Employment
*(Prince of Wales Northern Heritage Centre;
Aurora Research Institute)*
Executive and Indigenous Affairs
Environment and Natural Resources

Infrastructure
Industry, Tourism and Investment *(NWT Geological Survey)*
Lands
Municipal and Community Affairs

Government of Canada

Crown-Indigenous Relations and Northern Affairs Canada
Fisheries and Oceans Canada
Environment and Climate Change Canada
Parks Canada
Natural Resources Canada

Please visit www.nwtcimp.ca for additional information.