



Responding to
Climate Change
in the NWT
ANNUAL REPORT

RAPPORT ANNUEL
La lutte contre
le changement
climatique aux TNO

2023-2024

Le présent document contient la
traduction française du sommaire

Government of Northwest Territories
Gouvernement des Territoires du Nord-Ouest



Climate Action – Year In Review

The Government of the Northwest Territories (GNWT) continues to prioritize our commitment to responding to climate change. This includes working with the NWT Climate Change Council and updates to the Council of Leaders as well as engagement with Indigenous Governments and other partners across the NWT.

The GNWT continues to work on our changing climate through guidance from GNWT policies including the 2030 NWT Climate Change Strategy Framework and Action plans, which is complemented by the 2030 Energy Strategy emission reduction activities, and the NWT Carbon Tax. New in this reporting period was a combined engagement, “Our Energy and Climate Future in a Changing World” when the GNWT engaged with partners, stakeholders and the public to discuss the approach to energy and climate change mitigation in the NWT. A further highlight was the continued work towards a Risks and Opportunities Assessment that could outline the biggest climate change risks to NWT residents and may also outline opportunities for adaptation

and further research in the north. Climate Change continues to affect everyone, but its impacts are felt more severely in the North. Addressing these challenges calls for strong partnerships and ongoing collaboration. While the Department of Environment and Climate Change leads these efforts, responsibility for reducing climate-related risks is shared among all GNWT departments and agencies. The GNWT continues to work in partnership with Indigenous and community governments, the Government of Canada, co-management boards, non-government organizations, academic institutions and industry to implement meaningful change in programs, services or projects.

Key 2023-2024 Highlights:

Advancing the NWT's First Climate Change Risks and Opportunities Assessment

The GNWT has made significant progress towards releasing the first [NWT Climate Change Risks and Opportunities Assessment](#), "Informing Our Resilience to a Changing Climate in the NWT." This report will identify the most pressing climate-related challenges facing NWT residents and communities over the next 10 years, while also highlighting opportunities for collaboration and resource sharing to help people adapt and prepare for environmental changes.

Shaped by input from across the NWT — residents, public servants, local and Indigenous leaders, civil society organizations, youth, federal agencies, and academia — this assessment will also draw on guidance from the NWT Climate Change Council and NWT Climate Change Youth Council. It is part of a broader effort to update the NWT Climate Change Action Plan under the 2030 NWT Climate Change Strategic Framework. For example, in 2023–24, the GNWT held workshops with its directors and staff to identify major risks and prioritize proposed actions, and hosted a facilitated workshop for members of the NWT Climate Change Council in February 2024.

Seven key climate change hazards have been identified:

- Changes in climate and weather
- Changes to plants and wildlife
- Changes to freshwater
- Changes to marine and coastal areas
- Wildfires
- Thawing permafrost
- River erosion

These issues pose the greatest risks to the NWT's ability to adapt to climate change. The Assessment is being built around five core values, called NWT Values for Climate Change Resilience, which represent what matters most to the Northern way of life:

1. Ecosystems
2. Health and Well-Being
3. Connection to the Land and Culture
4. Infrastructure and Essential Services
5. Business and Economy

Launching the NWT Climate Change Library

In March 2024, the GNWT launched an online [NWT Climate Change Library](#) that centralizes climate research, technical reports, and innovative tools. Accessible to researchers, communities, students, and the general public, this open-access repository promotes knowledge sharing and supports evidence-based decision-making, helping all NWT residents better understand and respond to climate challenges.

Key features include:

- **Comprehensive Information:** The library houses an extensive collection of peer-reviewed articles, reports and technical documents covering various aspects of climate change, including mitigation strategies, adaptation techniques and climate modeling.
- **User-Friendly Interface:** Designed to cater to both experts and newcomers, the library is easy to navigate and straightforward to use.
- **Search and Filter Tools:** Powerful search and filtering features make it easy to find the information you need.

- **Cutting-Edge Research:** By featuring the latest findings from academic institutions and scientists, the library ensures users have access to the most up-to-date climate data.
- **Open Access:** Committed to knowledge sharing, the library offers open access content, making it accessible to everyone.

Engaging on “Our Energy and Climate in a Changing World”

In 2018, the GNWT committed to reviewing the 2030 Energy Strategy and 2030 Climate Change Strategic Framework after five years. This review aimed to determine if any adjustments were needed and whether the NWT should adopt more ambitious long-term emissions reduction targets. To support this process, the GNWT launched “Our Energy and Climate Future in a Changing World,” a broad engagement initiative held from June to October 2023. The initiative included a public submission period, multiple in-person meetings, and a three-day multilateral dialogue attended by 148 representatives.

Key things that were heard during the engagement included:

1. **Increase the Emissions Reductions**
Target: The NWT should raise its level of climate effort, either by 2030 and/or by 2050).
2. **Revise Roles and Responsibilities:**
Indigenous governments and Indigenous organizations want to be more involved in decisions about energy and climate change.
3. **Economy and Affordability are Key:**
The GNWT needs a realistic plan to deploy clean energy infrastructure that

will shield Northerners from increases in energy costs.

4. **Utilities Will Play a Critical Role:** The utility regulator, electrical utilities, the GNWT, and interested Indigenous governments and Indigenous organizations should work together to develop appropriate planning, regulatory, and policy tools.
5. **Use Known and Proven Technologies :**
Rely on well-known clean energy solutions (like solar, wind, hydro, biomass) that already work.

A summary of the feedback gathered from this engagement is presented in the ‘What We Heard’ document, available [on the GNWT’s website](#).

Improving GNWT Capacity for Terrain Mapping

The GNWT secured funding to improve terrain mapping capabilities through the Northwest Territories Geological Survey (NTGS). This funding will establish a Community Terrain Mapper position at NTGS for a three-year term from 2024 to 2027. This position is critical for advancing action items related to permafrost and geohazards outlined in the NWT Climate Change Action Plan and Strategic Framework. This position will lead the development of geo-surficial mapping of NWT communities. Geo-surficial mapping helps scientists and planners understand the physical characteristics of an area. This is crucial for activities like construction, highway rehabilitation, and natural resource management. Additionally, it helps identify areas at risk of natural hazards like flooding, permafrost degradation, and erosion.

The position is expected to be filled in 2024.

Bilan de l'année sur la lutte contre le changement climatique

Le gouvernement des Territoires du Nord-Ouest (GTNO) continue de prioriser la lutte contre le changement climatique, notamment en travaillant avec le Conseil sur le changement climatique des Territoires du Nord-Ouest (TNO) et en tenant le Conseil des dirigeants au courant des dernières nouvelles, en plus d'échanger avec des gouvernements autochtones et d'autres partenaires dans l'ensemble des TNO.

Le GTNO continue de lutter contre le changement climatique en s'appuyant sur ses politiques, comme le Cadre stratégique sur le changement climatique pour 2030 et le plan d'action, que soutiennent les activités de réduction des émissions de la Stratégie énergétique 2030 et la taxe sur le carbone des TNO. Pendant la période visée par le rapport, le GTNO s'est lancé dans une démarche d'échanges intitulée « Notre avenir énergétique et climatique dans un monde en transformation », dans le cadre de laquelle il s'est entretenu avec des partenaires, des parties prenantes et le public au sujet de l'approche adoptée pour gérer les questions liées à l'énergie et à l'atténuation des effets du changement climatique aux TNO. Un autre point fort a été la poursuite des travaux relatifs à une évaluation des risques et des possibilités qui pourrait mettre en évidence les plus grands risques liés au changement climatique pour les

résidents des TNO et les possibilités d'adaptation et de recherche dans le Nord. Le changement climatique continue de toucher tout le monde, mais ses effets sont durement ressentis dans le Nord. Pour relever ces défis, il faut des partenariats solides et une collaboration continue. Bien que le ministère de l'Environnement et du Changement climatique dirige ces efforts, la responsabilité de la réduction des risques liés au changement climatique est partagée entre tous les ministères et organismes du GTNO. Ce dernier continue de travailler en partenariat avec les gouvernements autochtones et les administrations communautaires, le gouvernement du Canada, les conseils de cogestion, les organisations non gouvernementales, les établissements d'enseignement et l'industrie afin de mettre en œuvre des changements significatifs dans les programmes, les services ou les projets.

Faits marquants de la période 2023-2024

Progression de la première évaluation des risques et des possibilités liés au changement climatique aux TNO

Le GTNO a réalisé des progrès considérables en vue de la publication de la première évaluation des risques et des possibilités liés au changement climatique aux TNO, intitulée « Renforcer notre capacité d'adaptation commune au changement climatique aux TNO ». Ce rapport identifiera les défis climatiques les plus urgents auxquels les résidents et les communautés des TNO feront face au cours des 10 prochaines années, tout en soulignant les possibilités de collaboration et de partage des ressources pour aider les gens à s'adapter et à se préparer aux changements environnementaux à venir.

Façonnée par les contributions des Ténois, des fonctionnaires, des dirigeants locaux, des leaders autochtones, des organisations de la société civile, des jeunes, des organismes fédéraux et des universités, cette évaluation s'appuiera également sur l'orientation fournie par le Conseil sur le changement climatique et du Conseil jeunesse sur le changement climatique des TNO. Elle s'inscrit dans le cadre d'un effort plus large visant à mettre à jour le plan d'action sur le changement climatique relatif au Cadre stratégique sur le changement climatique des TNO 2030. Par exemple, en 2023-2024, le GTNO a organisé des ateliers avec ses directeurs et son personnel pour déterminer les principaux risques et établir l'ordre de priorité des actions proposées, et a animé un atelier pour les membres du Conseil sur le changement climatique des TNO en février 2024.

Sept principaux risques liés au changement climatique ont été relevés :

- Changements concernant le climat et les conditions météorologiques;

- Changements concernant la faune et la flore;
- Changements concernant l'eau douce;
- Changements concernant les zones maritimes et côtières;
- Feux de forêt;
- Dégel du pergélisol;
- Érosion des rivières.

Ces enjeux constituent les principaux risques pour la capacité des TNO à s'adapter au changement climatique. L'évaluation s'articule autour de cinq valeurs fondamentales, soit les valeurs des TNO pour la capacité d'adaptation au changement climatique, qui incarnent ce qui compte le plus pour le mode de vie nordique :

1. Écosystèmes
2. Santé et bien-être
3. Lien avec la nature et la culture
4. Infrastructures et services essentiels
5. Affaires et économie

Lancement de la Bibliothèque sur le changement climatique des TNO

En mars 2024, le GTNO a lancé en ligne la [Bibliothèque sur le changement climatique des TNO](#), qui rassemble au même endroit des recherches sur le changement climatique, des rapports techniques et des outils novateurs. Accessible aux chercheurs, aux collectivités, aux étudiants et au grand public, cette base de données en libre accès favorise le partage des connaissances et soutient la prise de décisions fondées sur des données probantes, afin d'aider tous les Ténois à comprendre les effets du changement climatique et à agir en conséquence.

Les éléments clés sont notamment les suivants :

- **Des renseignements exhaustifs** : la bibliothèque abrite une vaste collection d'articles, de rapports et de documents techniques validés par des pairs et couvrant divers aspects du changement climatique, notamment les stratégies d'atténuation, les techniques d'adaptation et la modélisation climatique;
- **Une interface conviviale** : conçue pour répondre aux besoins des experts comme des personnes moins versées ce domaine, la bibliothèque est facile à parcourir et à utiliser;
- **Des fonctionnalités de recherche et de filtrage** : des fonctions de recherche et de filtrage efficaces permettent de trouver facilement les renseignements dont vous avez besoin;
- **Un contenu issu de recherches de pointe** : la bibliothèque présente les dernières découvertes des universités et des scientifiques, ce qui permet d'avoir accès à des données climatiques récentes;
- **Un accès libre** : dans une volonté de partage de connaissances, la bibliothèque permet à tous les types d'utilisateurs d'accéder au contenu gratuitement et en tout temps.

Échanges sur « Notre avenir énergétique et climatique dans un monde en transformation »

En 2018, le GTNO s'est engagé à réexaminer la Stratégie énergétique 2030 et le Cadre stratégique sur le changement climatique 2030 au bout de cinq ans. L'objectif de cet examen était de déterminer si les TNO devaient apporter des modifications et adopter des objectifs à long terme plus ambitieux en matière de réduction des émissions. Pour

soutenir ce processus, le GTNO a lancé l'initiative « Notre avenir énergétique et climatique dans un monde en transformation », un vaste programme d'échanges qui a eu lieu de juin à octobre 2023. L'initiative comprenait une période pour la soumission des observations du public, plusieurs réunions en personne et un dialogue multilatéral sur trois jours auquel ont participé 148 représentants. Les principaux points abordés au cours des échanges sont les suivants :

1. **Revoir à la hausse les objectifs de réduction des émissions** : les TNO devraient augmenter le niveau d'effort pour le climat d'ici 2030 ou 2050.
2. **Revoir les rôles et les responsabilités** : les gouvernements et les organisations autochtones veulent participer davantage à la prise de décisions sur les questions de l'énergie et du changement climatique.
3. **Miser sur l'économie et l'accessibilité financière** : le GTNO a besoin d'un plan réaliste pour déployer une infrastructure de production d'énergie propre qui protégera les Tenois des augmentations du coût de l'énergie.
4. **Reconnaître le rôle crucial que joueront les entreprises de services publics** : l'organisme chargé de la réglementation des entreprises du secteur public, les entreprises du secteur de l'électricité, le GTNO et les gouvernements et organisations autochtones intéressés doivent collaborer pour élaborer des outils de planification, de réglementation et d'orientation appropriés.
5. **Utiliser des technologies connues et éprouvées** : il faut s'appuyer sur des solutions d'énergie propre bien maîtrisée (comme l'énergie solaire, l'énergie éolienne, l'énergie

hydraulique et la biomasse) qui fonctionnent déjà.

Un résumé des commentaires recueillis lors de ces échanges est présenté dans le rapport sur ce que nous avons entendu, accessible [sur le site Web du GTNO](#).

Amélioration de la capacité du GTNO en matière de cartographie de terrains

Le GTNO a obtenu un financement pour améliorer ses capacités de cartographie de terrains par l'intermédiaire de la Commission géologique des Territoires du Nord-Ouest (CGTNO). Ce financement permettra de créer un poste de cartographe communautaire de terrains à la CGTNO pour une durée de trois

ans, de 2024 à 2027. Ce poste jouera un rôle essentiel dans l'avancement des actions liées au pergélisol et aux géorisques décrits dans le plan d'action et le Cadre stratégique sur le changement climatique des TNO. Le titulaire de ce poste dirigera l'élaboration de la cartographie géosuperficielle des collectivités des TNO. La cartographie géosuperficielle aide les scientifiques et les planificateurs à comprendre les caractéristiques physiques d'une zone. Cette action est cruciale pour des activités comme la construction, la réfection des routes et la gestion des ressources naturelles. En outre, elle permet de repérer les zones exposées à des risques naturels, tels que les inondations, la dégradation du pergélisol et l'érosion.

Le poste devrait être pourvu en 2024

Appendix A:

Status of all Climate Change Actions

The table on the following pages provides progress updates for all actions identified in the *2030 Climate Change Strategic Framework Action Plan 2019-2023* as of March 31, 2024. Progress updates for all actions advanced under the *Energy Strategy* and the NWT Carbon Tax are available in the *Energy Initiatives Report 2023-24* and the *Carbon Tax Annual Report 2023-24*.

PHOTO: TUKTOYAKTUK, NWT (GNWT)



Appendix A

Goal 1: Transition to a Lower Carbon Economy

Action Areas	Action Items	Lead, Partners	Status
1.1 Transitioning to a lower carbon economy	A. Implement the actions and initiatives outlined in the action plan associated with the <i>Energy Strategy</i> and its associated action plans	INF	Completed (fully met)
	B. Implement NWT carbon pricing	FIN	Completed (ongoing)
1.2 Addressing climate change in environmental assessment and licensing / permitting of resource development and other projects	A. Collaborate on policy development, information requirements and tools to integrate climate change considerations	ECC	Completed (ongoing)
	B. Include climate change considerations in GNWT submissions to regulatory boards	ECC	On Track (In progress)
1.3 Determining the potential value of natural carbon sinks	A. Undertake work to estimate carbon stored in NWT ecosystems	ECC	On Track (In progress)
1.4 Improving GHG emissions tracking and reporting	A. Improve GNWT emissions tracking	ECC	On Track (In progress)
	B. Refine GNWT and NWT reporting methods	ECC	On Track (In progress)
6.1 Determining the potential value of natural carbon sinks Determine the potential economic value of stored carbon in the ecosystem		ECC	On Track (In progress)
6.2 Implement composting in small to medium-sized communities to reduce greenhouse gas emissions from community landfills • Undertake planning and feasibility work Provide support for projects		ECC	On Track (In progress)

Appendix A

Goal 2: Improve Knowledge of Climate Change Impacts

Action Areas	Action Items	Lead, Partners	Status
2.1 Supporting the GNWT Knowledge Agenda – climate change research	A. Leverage existing research programs to incorporate community-based participation through the development of community and academic partnerships	ECC	Completed (ongoing)
	B. Support additional interdisciplinary research addressing economic, health, social and environmental change related to climate change	ECC	Completed (ongoing)
	C. Link traditional and local knowledge holders with researchers in discussions or research about climate change	ECC	Completed (ongoing)
	D. Work with other jurisdictions, industry and academia on climate change related research, development, and best practices for public infrastructure	INF	Completed (ongoing)
	E. Collaborate with the Transportation Association of Canada and the Canadian Permafrost Association on climate change related initiatives	INF	Completed (ongoing)
2.2 Supporting conservation network planning	A. Develop a renewed strategy for conservation network planning	ECC	Completed (ongoing)
2.3 Enhancing the use of traditional and local knowledge	A. Build climate change education into the Take a Kid Trapping and hunter education programs	ECC	Completed (ongoing)
	B. Support the collection, analysis or synthesis of traditional knowledge through the NWT Cumulative Impact Monitoring Program to better understand environmental trends and cumulative impacts for use in decision-making	ECC	Completed (ongoing)
2.4 Improving management and use of data / information	A. Inventory and evaluate NWT environmental data and data products to support climate change actions	ECC	Completed (ongoing)
	B. Develop and implement a central online resource to share climate change knowledge and information	ECC	Completed (ongoing)
	C. Improve dissemination of climate change results and products	ECC	On Track (In progress)

Action Areas	Action Items	Lead, Partners	Status
2.5 Climate and weather	A. Evaluate monitoring network requirements, potential monitoring redundancies and prioritize monitoring gaps	ECC	On Track (In progress)
	B. Continue, and develop options to Enhance climate monitoring at NWT monitoring sites	ECC	On Track (In progress)
	C. Develop a plan for a northern climate hub to support delivery of climate services and products	ECC, ECCC (CCCS)	On Track (In progress)
	D. Develop climate projections and climate indices	ECC	On Track (In progress)
	E. Continue to monitor rates and dynamics of coastal erosion along the Beaufort Sea	NRCan	Completed (ongoing)
2.6 Permafrost	A. Collect existing ground temperature data along the Dempster and Inuvik-Tuktoyaktuk highways	ITI (NTGS)	Completed (ongoing)
	B. Develop a plan to undertake regional terrain sensitivity and geohazard mapping and monitoring	ITI (NTGS)	On Track (In progress)
	C. Compile ground temperature and geotechnical datasets for the NWT	ITI (NTGS)	Completed (ongoing)
	D. Undertake community terrain mapping through a pilot study of two communities	ITI (NTGS)	Complete (In progress)
	E. Undertake permafrost related research along the Dempster and Inuvik-Tuktoyaktuk highways	ITI (NTGS)	Completed (ongoing)
	F. Collaborate and advise on academic permafrost research in NWT	ITI (NTGS)	Completed (ongoing)
	G. Work to increase human resource capacity to enable progress on permafrost-related actions	ITI (NTGS)	Completed (ongoing)
2.7 Water and wetlands	A. Continue NWT water quality and water quantity monitoring which can contribute to the assessment of climate-related changes in quality and flow over time (including community-based water monitoring programs)	ECC	Completed (ongoing)

Action Areas	Action Items	Lead, Partners	Status
	B. Continue to support the snow survey network to contribute to a better understanding of climate-related change in winter precipitation	ECC	Completed (ongoing)
	C. Undertake NWT Wetland Inventory Mapping	Ducks Unlimited Canada	Completed (ongoing)
	D. Assess cumulative impacts to water, including climate change, as reflected in the NWT Cumulative Impact Monitoring Program Water Blueprint	ECC	Completed (ongoing)
2.8 Forests and vegetation	A. Monitor changes to forest growth, productivity, health and regeneration after natural and human-caused disturbances in the context of the changing climate	ECC	Completed (ongoing)
	B. Conduct vulnerability assessments for forest landscape areas of interest	ECC	Completed (fully met)
	C. Improve understanding of changing wildfire regimes	ECC	On Track (In progress)
	D. Produce baseline NWT-wide vegetation classifications	ECC	On Track (In progress)
2.9 Wildlife	B. Continue monitoring invasive and non-indigenous species and assess impacts from range shifts on wildlife	ECC	Completed (ongoing)
	C. Establish the NWT Pests, Pathogens and Invasive Species Council	ECC	Completed (fully met)
	D. Utilize the NWT Pests, Pathogens and Invasive Species Council to support rapid response programs and educational materials on future pests, pathogens and invasive species issues due to the changing climate	ECC	Completed (ongoing)
	E. Disseminate current and new information on the health and distribution of wildlife, including diseases and parasites	ECC	Completed (ongoing)
	F. Continue using remote sensing techniques to assess wildlife habitat and impacts due to climate change	ECC	Completed (ongoing)
	G. Enhance the knowledge of species presence, distribution and status to determine future needs based on a changing climate	ECC	Completed (ongoing)
	H. Assess cumulative impacts on caribou, including from climate change, as reflected in the NWT Cumulative Impact Monitoring Program Caribou Blueprint	ECC	Completed (ongoing)

Action Areas	Action Items	Lead, Partners	Status
2.10 Fish and marine mammals	A. Continue to improve baseline monitoring of species health and distribution with an emphasis on priority species of marine, anadromous and freshwater fishes, and marine mammals	DFO (Fisheries and Oceans Canada)	On Track (In progress)
	B. Continue monitoring temperature-dependent contaminants in subsistence species	DFO	On Track (In progress)
	C. Continue to monitor impacts of diseases and parasites on species	DFO	On Track (In progress)
	D. Assess cumulative impacts to fish, including climate change, as reflected in the NWT Cumulative Impact Monitoring Program Fish Blueprint	ECC	Completed (ongoing)
2.11 Human health and well-being	A. Communicate alerts and develop advisories related to extreme weather, natural disasters impacting health, zoonotic diseases and poor outdoor air quality	HSS	Completed (ongoing)
2.12 Public safety	A. Ensure residents, first responders, communities and the GNWT are better prepared to deal with the impacts of climate-related hazards	MACA	Completed (ongoing)
	B. Update community emergency plans and incorporate methods for identifying and monitoring climate change-related hazards and adapting to the increase in frequency and severity of such hazards	MACA	Completed (ongoing)
2.13 Culture and heritage	A. Continue research to assess impacts on heritage resources from climate-driven landscape disturbances	ECE	Completed (ongoing)
2.14 Public and community infrastructure	B. Seek funding to fill community infrastructure gaps	MACA	Completed (ongoing)
	C. Improve documentation of GNWT infrastructure stability via more rigorous asset management activities on both vertical (i.e. buildings) and horizontal (i.e. highways and runways) infrastructure	INF	Completed (ongoing)
	D. Update climate change risk assessments for both vertical and horizontal GNWT infrastructure	INF	Completed (ongoing)
	E. Collect and analyze ground temperature data to support the general knowledge base for GNWT infrastructure planning, design, construction and climate change impact monitoring	INF	Completed (ongoing)
	F. Continue to explore the potential for remote sensing and other technology to acquire data to allow monitoring and analysis of settlement and movement of GNWT infrastructure	INF	Completed (ongoing)

Action Areas	Action Items	Lead, Partners	Status
<p>7.1 Enhancing the use of traditional and local knowledge</p> <p>Document, use and transfer climate change related knowledge as prioritized by Indigenous governments to support decision-making pertaining to action areas</p>		ECC	Completed (ongoing)
<p>7.2 Climate and weather</p> <ul style="list-style-type: none"> • Undertake further climate modeling to predict future landscape change • Implement a northern climate services hub 		ECC	On Track (In progress)
<p>7.3 Permafrost</p> <ul style="list-style-type: none"> • Establish a permafrost monitoring network for the NWT • Establish a permafrost data management system • Analyze collected ground temperature data • Assess sensitive permafrost terrain and inventory permafrost-related geohazards • Interpret future permafrost behaviour across natural and built environments 		ITI (NTGS)	On Track (In progress)
<p>7.4 Water and wetlands</p> <p>Review monitoring networks to assess appropriateness for determining trends and/or impacts related to climate change</p> <ul style="list-style-type: none"> • Prioritize and enhance water monitoring networks to improve assessments of climate change impacts • Undertake climate change vulnerability assessments on priority surface waterbodies to inform management decisions • Identify and assess use of innovative technology for the remote assessment of water, snowpack and ice to assess changes including those related to a changing climate 		ECC	On Track (In progress)

Action Areas	Action Items	Lead, Partners	Status
<p>7.6 Wildlife</p> <ul style="list-style-type: none"> Assess indirect effects of climate change (such as parasites, diseases and pathogens) on species at risk Conduct monitoring, including community-based monitoring, to track species as they extend their ranges and become established in the NWT and assess resulting long-term impacts Develop surveillance systems to support predictions of species distribution changes Enhance monitoring of invasive and non-indigenous species for ongoing assessment of impacts from range shifts on wildlife 		ECC	Completed (ongoing)
<p>7.7 Human health and well-being</p> <ul style="list-style-type: none"> Support health vulnerability assessment(s) by external parties (e.g. consultants, researchers, etc.) to evaluate the impact of climate change on the physical and mental health and social well-being of northern communities Work with partners and the public to establish the requirements for a baseline surveillance and monitoring system for health-related climate change indicators such as mental health and social well-being, injuries, food and water security, environmental contaminants, extreme weather events, and natural disasters, zoonotic diseases, chronic diseases and infectious disease 		HSS	Completed (ongoing)
<p>7.8 Public safety</p> <ul style="list-style-type: none"> Update the NWT Hazard Identification Risk Assessment to better predict which hazards could occur more frequently or become more extreme in the future Develop disaster mitigation plans for communities potentially impacted by the adverse effects of climate change Evaluate approaches to improve flow monitoring, flood prediction and emergency planning Monitor the condition of community trails 		MACA	Completed (fully met)
<p>7.9 Culture and heritage</p> <ul style="list-style-type: none"> Conduct vulnerability mapping for heritage resources at risk of destruction from coastal erosion in the Beaufort Sea Region 		ECE	Completed (on going)

Action Areas	Action Items	Lead, Partners	Status
7.10 Community infrastructure <ul style="list-style-type: none"> • Prioritize community infrastructure gaps to mitigate the impacts of climate change 		MACA	On Track (In progress)

Appendix A

Goal 3: Build Resilience and Adapt to a Changing Climate

Action Areas	Action Items	Lead, Partners	Status
3.1 Implementing the GNWT Land Use Sustainability Framework	A. Integrate climate change adaptation and mitigation factors into GNWT decision processes affecting land, water, and natural resources	ECC	Completed (ongoing)
	B. Develop climate change indicators	ECC	Completed (ongoing)
3.2 Completing / reviewing regional land use plans	A. Work collaboratively within regional planning processes to incorporate climate change considerations into land use plans	ECC	Completed (ongoing)
3.3 Implementing the conservation network	A. Establish Thaidene Nënë candidate protected area	ECC	Completed (ongoing)
	B. Establish Dinàgà Wek'èhodi candidate protected area	ECC	On Track (In progress)
	C. Establish Ts'udé Niljné Tuyeta candidate protected area	ECC	Completed (ongoing)
	D. Conclude planning and decisions for remaining candidate areas	ECC	On Track (In progress)
3.4 Applying permafrost expertise	A. Provide permafrost expertise for NWT projects and initiatives	ITI (NTGS)	Completed (ongoing)
3.5 Implementing wildlife plans / strategies (key species, species at risk, invasive species)	A. Finalize and implement the Bathurst Caribou Range Plan, including the conservation of key habitats where climate change impacts are expected to be pronounced	ECC	Completed (ongoing)
	B. Finalize the Boreal Caribou Range Plans, including management of climate change impacts on the ecosystem	ECC	Completed (ongoing)
3.6 Capturing carbon in forests	A. Increase forest carbon sequestration by silvicultural practices including planting in areas that have not returned to the forest after natural disturbances, and thinning in areas that are overly dense	ECC	Completed (ongoing)
3.7 Responding to human health risks	A. Promote and support health and wellness activities to build community resiliency to climate change impacts	HSS	Completed (ongoing)
	B. Work with communities to identify potential cleaner air shelters, and modifications required to reduce impacts of wildfire smoke on human health	HSS	Completed (ongoing)
3.8 Increasing local food security and production	A. Support country food-related research, including climate change impacts to community food security	ECC	Completed (ongoing)

Action Areas	Action Items	Lead, Partners	Status
	B. Implement a sustainable livelihoods action plan to support country food research and programs	ECC	Completed (ongoing)
	C. Implement the NWT Agriculture Strategy to increase local food production	ITI	Completed (ongoing)
3.9 Improving capacity and resilience of health and social services	A. Assess if essential services can be provided during extreme weather and climate-related events	HSS	Complete (ongoing)
3.10 Updating Community emergency plans and operations and maintenance procedures	A. Address climate-related hazards and adaptation measures in updated community emergency plans and operations and maintenance procedures (e.g., floods, blizzards, wildfires, permafrost thaw, coastal erosion)	MACA	Completed (on going)
3.11 Enhancing wildfire disaster mitigation	A. Update and implement community wildfire protection plans	ECC	Completed (ongoing)
	B. Support the implementation of FireSmart principles and consider the use of FireSmart programs for all communities	ECC, MACA	Completed (ongoing)
3.12 Community hazard mapping	A. Design a hazard mapping program, including permafrost, flooding, wildfire, erosion and other climate-related impacts	ECC	On Track (In progress)
3.13 Safely accessing land, water and ice	A. Pilot community-focused ice information products to support on-ice travel and travel in ice-filled waters	ECCC	On Track (In progress)
	B. Implement the SmartICE monitoring and information service in select NWT communities to facilitate safe passage over ice	SmartICE	Completed (ongoing)
	C. Incorporate extreme weather warnings into public alerting system	MACA	Completed (fully met)
3.14 Supporting the Northern Infrastructure Standardization Initiative (NISI)	A. Continue active participation in the development of additional standards for northern infrastructure (NISI Phase III)	INF	Completed (fully met)
3.15 Adapting infrastructure to a changing climate	A. Construct the Tłı̄ch̄o All Season Road	INF	Completed (fully met)
	B. Construct the Great Bear River Bridge	INF	On Track (In progress)
8.1 Habitat management, biodiversity and restoration <ul style="list-style-type: none"> Undertake a gap analysis for the NWT Biodiversity Action Plan Develop strategies to prevent, as well as adapt to, invasive and non-indigenous wildlife, fish, marine mammal, insect, and plant species 		ECC	On Track (In progress)

Action Areas	Action Items	Lead, Partners	Status
8.2 Supporting regional priorities <ul style="list-style-type: none"> Support communities experiencing impacts through focused resilience and adaptation initiatives 		ECC	On Track (In progress)
8.3 Applying geohazard expertise <ul style="list-style-type: none"> Increase technical capacity for addressing climate change-related geohazards in development applications and public and community infrastructure 		ECC	Completed (on going)
8.4 Permafrost research coordination and application <ul style="list-style-type: none"> Ensure permafrost research conducted by Canadian and international agencies is coordinated and communicated to inform NWT decision-making 		ITI (NTGS)	Completed (on going)
8.5 Implementing wildlife plans/strategies (key species, species at risk, invasive species) <ul style="list-style-type: none"> Work with wildlife co-management partners to consider and address climate change impacts on habitat for all barren-ground caribou herds within the NWT Implement an overall climate change adaptation strategy for wildlife management Consider regulatory amendments (seasons, conditions, and areas) to the Wildlife Act depending on changes in species distribution 		ECC	Completed (on going)
8.6 Responding to human health risks <ul style="list-style-type: none"> Develop and deliver educational and outreach materials to support communities in building resiliency and adapting to human health concerns 		HSS	On Track (In progress)
8.7 Increasing local food security <ul style="list-style-type: none"> Building on the priorities to be identified in a sustainable livelihoods action plan, work collaboratively with partners to identify and secure funding to support projects Invest strategically in food production opportunities that address climate change risk mitigation through the implementation of the NWT Agriculture Strategy and Canadian Agriculture Partnership between the GNWT and the federal government 		ITI, ECC	Completed (on going)
8.8 Enhancing wildfire disaster mitigation <ul style="list-style-type: none"> Establish modified community fuel breaks based on a risk-management approach 		ECC	Completed (on going)

Action Areas	Action Items	Lead, Partners	Status
8.9 Community hazard mapping <ul style="list-style-type: none"> • Develop outstanding components of the hazard mapping program, including permafrost, flooding, wildfire, erosion and other climate-related impacts. • Provide information and training to communities to use hazard maps 		ECC	On Track (In progress)
8.10 Protecting threatened heritage resources <ul style="list-style-type: none"> • Conduct detailed studies/excavations of significant heritage resources at threat of destruction from climate-driven processes • Develop remote sensing-based monitoring protocols for heritage resources at risk of impact 		ECE	Completed (ongoing)
8.11 Upgrading public and community infrastructure <ul style="list-style-type: none"> • Prepare and submit a federal funding application for planning and environmental studies for the Slave Geological Province Road • Development of a collaborative GNWT and Yukon Government climate research network using existing and additional monitoring instrumentation and coordinating new research and development projects along the Inuvik-Tuktoyaktuk and Dempster highways • Undertake improvements, as needed, to respond to specific climate change related impacts to infrastructure 		INF	Completed (ongoing)
8.12 Responding to risks to private infrastructure <ul style="list-style-type: none"> • Provide guidance and information to the public regarding risks and management options for privately owned infrastructure affected by climate change 		ECC	On Track (In progress)

Appendix A

Cross-Cutting: Leadership, Communication, and Capacity-Building

Action Areas	Action Items	Lead, Partners	Status
4.1 Reflecting climate change in governance and policy tools	A. Establish internal GNWT guidance mechanisms: <ul style="list-style-type: none"> • Director-level Climate Change Working Group • Assistant Deputy Ministers Climate Change Committee • Deputy Ministers Energy and Climate Change Committee • Energy and Climate Change Committee-of-Cabinet 	ECC	Completed (ongoing)
	B. Coordinate GNWT climate change related project work	ECC	Completed (ongoing)
	C. Add climate change considerations to new / revised territorial legislation and policies	ECC	Completed (ongoing)
	D. Complete a jurisdictional scan of effective policy tools to support the Action Plan's implementation	ECC	Completed (fully met)
	E. Include climate change content in existing community and Indigenous government training resources, and expand online governance training to include climate change	MACA	Completed (ongoing)
4.2 Pursuing funding sources for climate change initiatives	A. Develop funding requests to address climate change priorities	ECC	Completed (ongoing)
4.3 Establishing External guidance mechanisms to foster collaboration	A. Develop options for the establishment of an NWT climate change council or advisory body	ECC	Completed (fully met)
4.4 Information sharing and education initiatives	A. Develop and implement a climate change outreach and communication plan	ECC	Completed (ongoing)
4.5 Supporting community- based monitoring efforts	A. Continue community-based monitoring and implement additional community-based monitoring sites on a priority basis	ECC, CIRNAC	Completed (ongoing)
4.6 Training for Indigenous and Community governments	A. Ensure residents, first responders, communities and the GNWT are trained to be better prepared to deal with the impacts of all hazards, ranging from low through to very high risks	MACA	Completed (on going)
	B. Deliver workshops on adaptation, mitigation and best practices	MACA	Completed (on going)
	C. Deliver climate change training through School of Community Government programming and workshops	MACA	Completed (ongoing)

Action Areas	Action Items	Lead, Partners	Status
4.7 Adaptation planning and support (regional and local level)	A. Integrate adaptation planning into emergency management, community plan and strategic plan workshop content	MACA, ECC	On Track (In progress)
	B. Support regional or community adaptation planning and implementation of adaptation initiatives	ECC	On Track (In progress)

Appendix A

Cross-Cutting: Economic Impacts and Opportunities

Action Areas	Action Items	Lead, Partners	Status
5.1 Estimating the overall economic cost implications of the combined impacts that may occur in the NWT due to climate change	A. Undertake a study focusing on: <ul style="list-style-type: none"> Impacts on infrastructure Impacts on quality of life Impacts on economic activities Cost-benefit analysis of adaptation measures 	ECC	On Track (In progress)
10.1 Undertaking sectoral assessments and adaptation planning <ul style="list-style-type: none"> Scope key sectors including, but not limited to, transportation, ice roads, mining, agriculture, forestry, tourism and fisheries to determine economic impacts and opportunities Explore opportunities to collaborate with think-tanks, academics and international stakeholders regarding the costs and benefits of climate-related changes in the NWT 		ITI	Completed (ongoing)
10.2 Regional forest harvest that substitutes low biomass for imported fossil fuels <ul style="list-style-type: none"> Assessment and implementation of community led harvesting for fuelwood for personal dwellings and district heating systems 		ECC	On Track (In progress)