

Government of  
Northwest Territories

# NWT Climate Change Risks & Opportunities Assessment

Informing Our Shared Resilience  
to a Changing Climate in the NWT

Learn about NWT's key climate risks  
and opportunities findings and ongoing  
actions to strengthen resilience.



A summary and long  
version are available.

For more information, please visit:  
[www.gov.nt.ca/ecc/en/services/climate-change](http://www.gov.nt.ca/ecc/en/services/climate-change)





# Core Resilience Values to Climate Change in the NWT

The Assessment adopted a values-based approach, focusing on the experiences and perspectives of those most affected by climate change.

This assessment determined that there are 5 core resilience values that matter most to residents for increasing resilience\* and adapting to a changing climate in the NWT.

The NWT core resilience values provided a framework for assessing the impacts of climate hazards and for identifying the most concerning climate risks— those that have the highest potential to compromise or threaten climate change resilience in the NWT.

*\*Resilience refers to the capacity to recover quickly from difficulties.*

## Core Resilience Values:

Ecosystems



Health and Wellbeing



Connection to the  
land and culture



Infrastructure and access  
to essential services



Business and Economy



# What were the Key Climate Hazards Identified?

Seven key hazard categories were identified through the project.

For each category of hazard, both historical climate trends and future changes were considered.

River Erosion



Climate & Weather Changes



Permafrost Thaw



Coastal Changes



Fresh Water Changes



Wildlife Changes



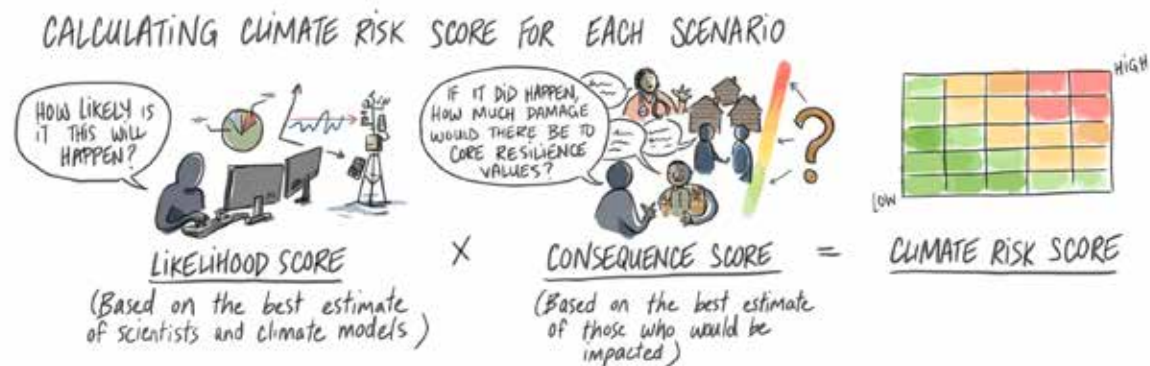
Wildfires





# How did we identify the key risks?

Experts and NWT residents worked together on the following steps to determine the key risks to NWT resilience values:



**Step 1:** Developed Climate Risk Scenarios for each hazard

**Step 2:** Calculated the Climate Risk Scoring

**Step 3:** Determined the Climate Risk Score by ranking the scenarios

*Data limitations and more details on the methodology are summarized in the long version of the Assessment.*





# Summary of Key Risks to NWT Resilience Values

## **Risks to ecosystems (Land, Water and Wildlife)**

- Permafrost thaw is changing NWT landscapes.
- NWT biodiversity is impacted.
- The quality and quantity of surface and groundwater is changing.
- Longer and intense wildfire seasons are likely to alter NWT landscapes.
- Permafrost thaw and longer wildfire seasons are likely to increase carbon dioxide emissions from the landscape.

## **Risks to health and well-being**

- The safety and well-being of many NWT communities is threatened by flooding and wildfires.
- Climate change is affecting physical health conditions for some NWT residents.
- Climate change is threatening the mental well-being of some NWT residents.
- Climate change is increasing food insecurity challenges in the NWT.

## **Risks to connection to the land and culture**

- Less predictable weather and ice conditions are affecting people's ability to access the land safely.
- Climate change is having a profound impact on Indigenous knowledge, culture, and identity.
- Culturally important places and heritage sites are being threatened by thawing permafrost, wildfires, erosion, sea-level rise, and flooding.

## **Risks to infrastructure and access to essential services**

- Supply chains in the NWT are being disrupted as the impacts of climate change intensify.
- Shoreline infrastructure and buildings will likely be at risk from more rapid erosion processes and flooding.
- Increasing extreme weather events, changes in precipitation and in some cases, changes in soil conditions bring new risks that need to be considered when building, maintaining and operating infrastructure.

## **Risks to business and economy**

- The high cost to adapt and respond to climate change and climate-related disasters can cause financial losses or constraints for governments, businesses, and residents, affecting economic resilience in the NWT

## **Vulnerabilities exacerbated by climate change**

- Cross Cutting Vulnerability themes were also identified, such as, resource, labour, and capacity shortages, unequal impacts on certain communities and groups, and a lack of climate data.





## ACTIONS ADVANCING RESILIENCE IN THE NWT

# Climate Risks to Ecosystems

### ONGOING ACTIONS:

GNWT collaborates with Communities, ENGO's, Industry, and Indigenous Governments and Indigenous Organizations to establish manage and monitor a network of protected and conserved areas in the NWT.

As part of land use planning, these areas provide refuge for increasingly threatened species and ecosystems, and greater resilience to a changing climate.

Indigenous Protected and Conserved Areas (IPCAs) are lands and waters where the primary role in protecting and conserving ecosystems is through Indigenous laws, governance, and knowledge systems. Culture and language are fundamental to these areas.

Northern Voices, Northern Waters: NWT Water Stewardship Strategy is a made-in-the- North strategy developed collaboratively with water partners in the NWT. Some actions in the action plan address the impacts of climate change on NWT water systems.





## ACTIONS ADVANCING RESILIENCE IN THE NWT

# Climate Risks to Health and Well being

### ONGOING ACTIONS:

The GNWT Purple Air initiative provides access to data on air quality to inform communities during wildfire season.

GNWT works with NWT communities to review and update their emergency plans and offer community emergency planning workshops to all community governments.

GNWT developed the Emergency Management Organization (EMO) Portal for community governments to access all tools and templates to assist with community emergency management, such as a Community Package as well as an updated template for a Community Emergency Plan.

A partnership between the NWTAC and the GNWT obtained federal funding for the 29 fire-prone communities to create fuel breaks and implement fire fuel reduction strategies.



## ACTIONS ADVANCING RESILIENCE IN THE NWT

# Climate Risks to Connection to Land and Culture

### ONGOING ACTIONS:

GNWT's Hunters and Trappers' Disaster Compensation program provides support to harvesters who have suffered loss due to extreme weather events.

The Berry Research Project aims to improve understanding of the NWT's environment, inform environmental stewardship actions.

Coastal erosion risk assessments are being undertaken to better understand how Inuvialuit cultural and archaeological sites are being impacted by climate change.

A partnership with SmartICE, Tuktoyaktuk Community Government Council, the Tẖı́ ho Government, and Łutsël K'é Dene First Nation provides equipment and training to 20 Indigenous Guardians to monitor ice thickness.





## ACTIONS ADVANCING RESILIENCE IN THE NWT

# Climate Risks to Infrastructure and Access to Essential Services

### ONGOING ACTIONS:

The GNWT and CIRNAC are piloting a Risk-Based Approach to Community Planning using the Northern Infrastructure Standard Initiative (NISI) standards inform on land-use planning.

GNWT is conducting a study infrastructure vulnerability assessment for GNWT's inventory against predicted climate impacts.

Wilfrid Laurier University measures the thickness of the ice on Great Slave and Great Bear Lakes.





## ACTIONS ADVANCING RESILIENCE IN THE NWT

# Climate Risks to Business & Economy

### ONGOING ACTIONS:

Strengthening food security and local food production supports the NWT economy and its diversification. Sustainable food systems can contribute to environmental stewardship, mitigation, and climate change resiliency.

The Future Harvest Partnership collaboration between Wilfrid Laurier University, the Territorial Agrifood Association, and the GNWT engages with food producers and communities of the NWT to co-create research and generate useful insights for innovation and policy that can inform the development of a climate-resilient local food system.

The GNWT in partnership with the Canadian Northern Economic Development Agency provides funding to support small NWT businesses dealing with the impacts of wildfire evacuations.





## ACTIONS ADVANCING RESILIENCE IN THE NWT

# Climate Risks to Cross Cutting Vulnerabilities

### ONGOING ACTIONS:

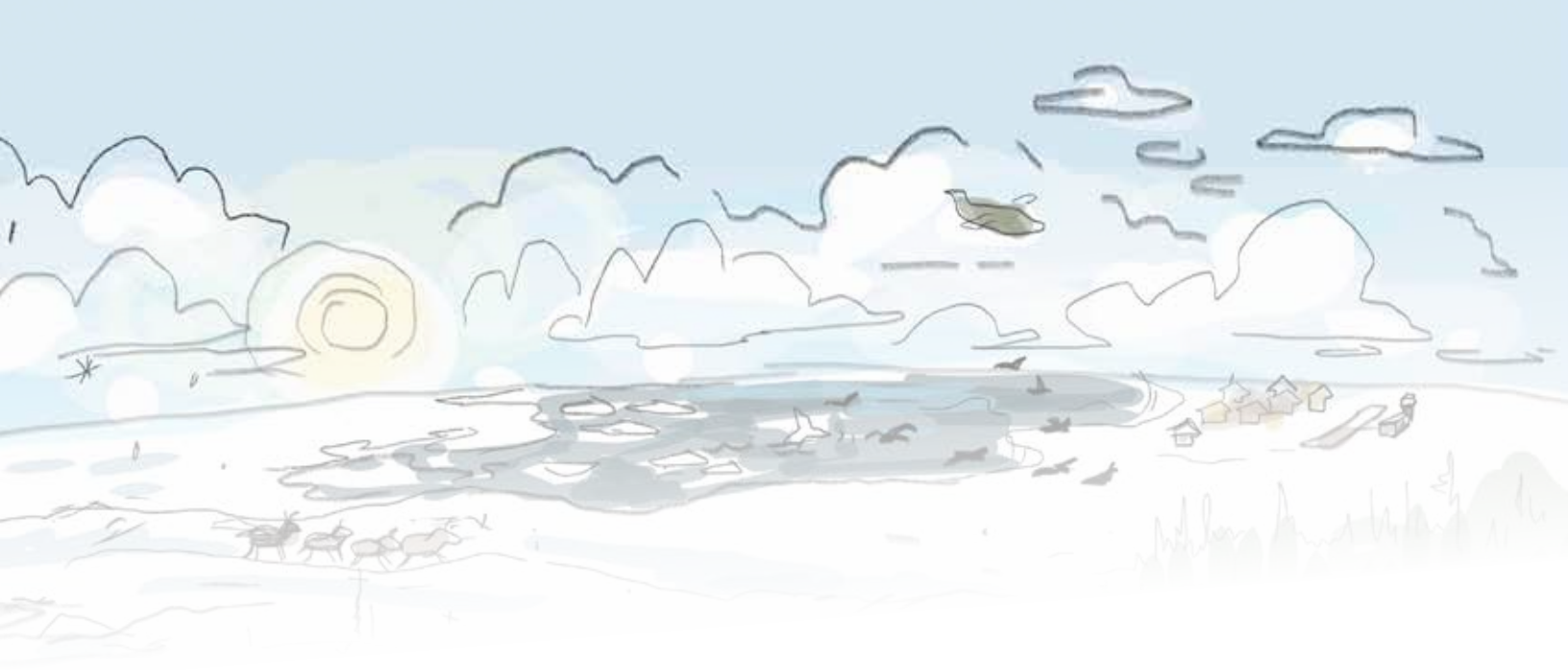
Addressing governance, sustainability and data gaps while planning for socio-economic inequities will be key to increasing capacity and resilience.

The NWT Climate Change Library ([www.climatelibrary.ecc.gov.nt.ca](http://www.climatelibrary.ecc.gov.nt.ca)) provides technical climate change information relevant to the NWT.

Housing NWT is already upgrading and building climate-resilient homes that are more resistant to wildfire and ground instability from permafrost thaw.

GNWT, NWT communities, and the federal government are collaborating on hazard maps and flood maps to identify climate change risks.





## ACKNOWLEDGEMENTS

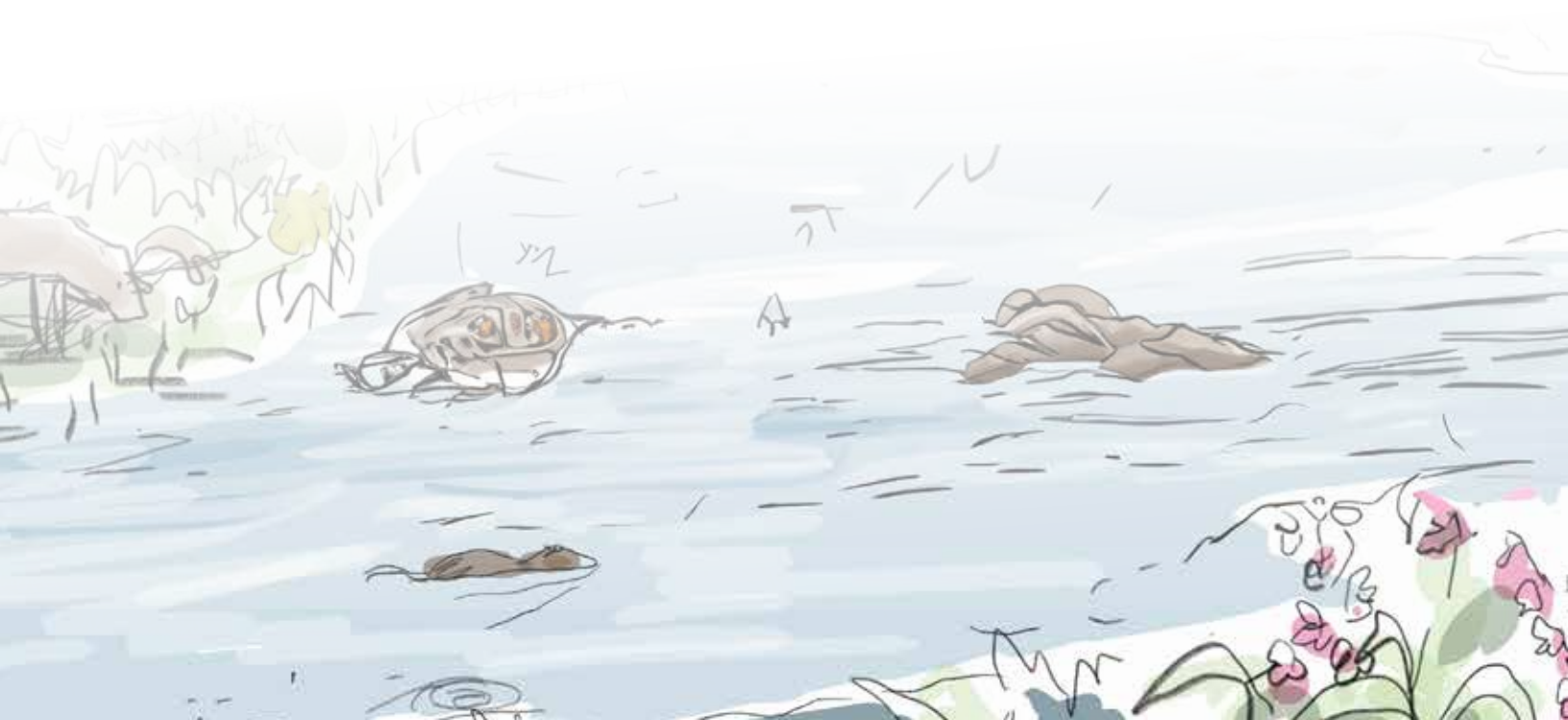
The Climate Risk Institute assisted in the development and completion of the Assessment, including engagement activities.

The images for this poster were created to summarize the themes of the Government of the Northwest Territories Climate Change Risks and Opportunities Assessment report. Artwork copyright Alison McCreesh, 2024.

## WHO WAS INVOLVED IN THE ASSESSMENT?

The NWT Risks and Opportunities Assessment was informed by two years of discussions across the NWT with residents, public servants, local and Indigenous leaders, civil society, youth, federal agencies, experts and academia.

The NWT Climate Change Youth Council were directly involved, and the NWT Climate Change Council provided guidance throughout the project.

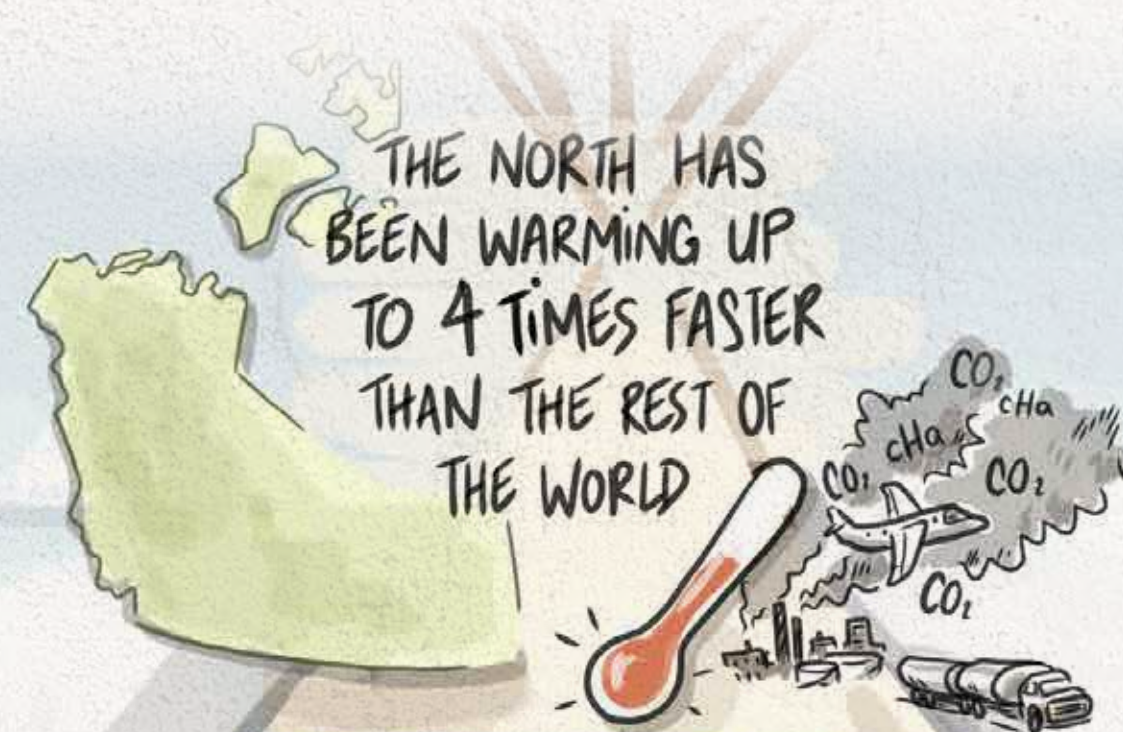




# INCREASING OUR SHARED RESILIENCE TO CLIMATE CHANGE IN THE NWT



Scan to view the NWT Climate Change Risks & Opportunities Assessment.



THERE ARE KEY CLIMATE CHANGE HAZARDS:



WHICH CREATE SIGNIFICANT IMPACTS



ON ECOSYSTEMS • LANDSCAPES • COMMUNITIES • RESIDENTS

WE MUST WORK TOGETHER ON CLIMATE PREPAREDNESS & ADAPTATION ACTIONS



GUIDED BY OUR NWT VALUES FOR CLIMATE CHANGE RESILIENCE



ECOSYSTEMS



HEALTH & WELL-BEING



CONNECTION TO THE LAND & CULTURE



INFRASTRUCTURE & ESSENTIAL SERVICES



BUSINESS & ECONOMY

AND LET'S NOT FORGET THAT THE IMPACTS OF CLIMATE CHANGE DISPROPORTIONATELY AFFECT CERTAIN COMMUNITIES, AND GROUPS AND AMPLIFY EXISTING INEQUITIES!