» News and information helping NWT communities make choices to adapt and thrive in a changing climate

Climate Change and NWT Communities

» together we can make a difference

A polar issue: Climate change adaptation at the forefront of International Polar Year conference

Recently, two thousand scientists and representatives of the north gathered for the International Polar Year Conference in Montreal. The theme of the conference was “From Knowledge to Action”, bringing together research, outreach and activities conducted during the past few years in order to identify action.

Climate change adaptation was a big part of the conference. A few highlights from these proceedings were:

» NORTHERN OWNERSHIP

Increasingly, northern representatives are becoming the primary authors of climate change adaptation publications, and community groups are taking a larger role in planning processes for climate adaptation.

» GLOBAL THEMES

Comparisons of adaptation from around the polar world show a few similar themes: that climate change happening at the same time as other social and economic changes and costly threats to infrastructure. Some shared needs across the world include the need for more knowledge-sharing between generations, better ability to manage emergencies, and flexibility in regulation and management of resources.

» COMMUNICATION IS KEY

A number of researchers presented on methods of communication of findings, noting that traditional methods of publishing a paper are not relevant to community members. New ideas include video, audio and websites.

Catch some video highlights of the conference **here** including interviews with leading scientists, political leaders and northern residents.

WESTERN ARCTIC MP DENNIS BEVINGTON SPEAKS AT THE INTERNATIONAL POLAR YEAR CONFERENCE IN MONTREAL, APRIL 2012.

Tough decisions made easier for Alaskan communities

» Similar to NWT, coastal communities in Alaska are faced with multiple threats from climate change. Some communities have made the tough choice to relocate. A new guide walks them through the process, and may be helpful to NWT communities

Four Alaskan communities are already planning relocation and more than 60 are considered to be under threat in the next decade.

Thawing permafrost, storm surges and flooding, and rapid erosion have had large impacts on infrastructure, transportation and quality of life in some coastal Alaskan village. The tough economic and social decision of if and how to relocate communities is a divisive, complicated and costly issue.

A new guide The Alaska Center for Climate Assessment and Policy aims to make the process easier. The guide, **Decision-making for at-risk communities in a changing climate** provides a decision-matrix that helps decision-makers determine what options are available to them using a risk-management approach and find the best one. If the decision to relocate is made, the guide walks them through planning considerations for a new site for the community including costs and timing.

While most NWT communities are not facing as drastic conditions as this, the guide still provides helpful decision-making guides, explores expected future climate change impacts, provides a framework for involving community members in decisions, assessing costs to infrastructure and guidance for sustainable community planning.

Check out the Alaska Centre's website for more adaptation and climate change policy materials.

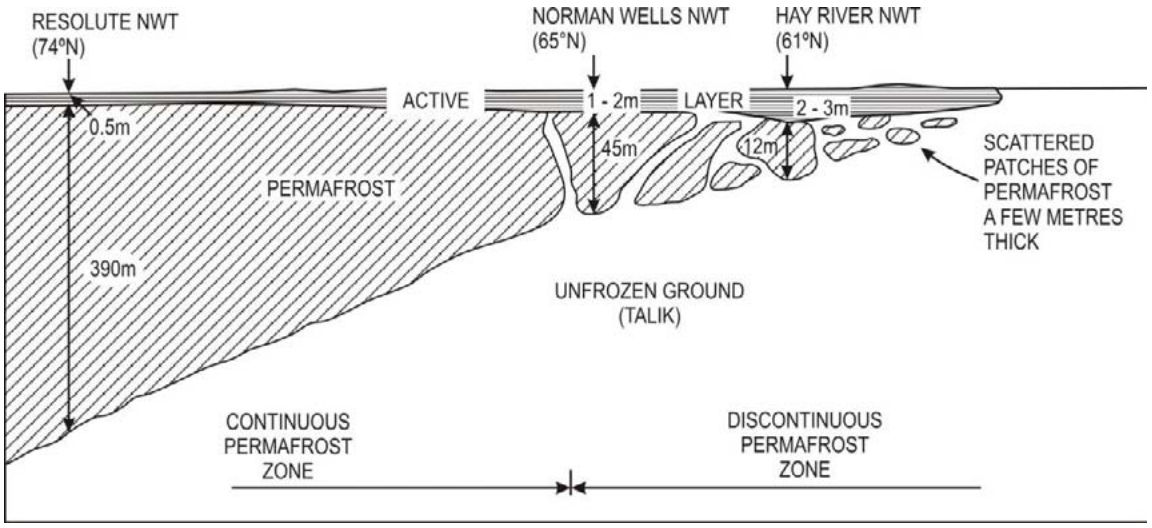
Permafrost 101: What's going on underground?

» WHAT IS PERMAFROST?

Permafrost is ground that remains frozen for longer than two consecutive years. Some permafrost contains significant amounts of ice, while other permafrost does not. The active layer is the part of permafrost that melts in summers.

» WHERE IS PERMAFROST FOUND IN NWT?

Permafrost underlies the majority of NWT communities. The temperature and thickness of permafrost varies across the NWT with climate, vegetation cover and geology.



Rays of hope in Fort Simpson

The largest solar installation in the North can be found in Fort Simpson, NWT.

A new solar photo-voltaic (PV) system in Fort Simpson will provide up to 8.5% of Fort Simpson's minimum power requirements in summer, or power for about 10 houses. This new source of power will offset 15 000L of diesel and 44.5 tonnes of greenhouse gases per year. The system is composed of 258 solar panels which stretch the length of a football field and are 13 feet or one story high.

Because of NWT's long sunny summer days, this system will generate more power than a similarly-sized system located in many other parts of the world, including Paris, London, Tokyo, or Berlin. This project is a collaboration between the Northwest Territories Power Corporation and the Government of the Northwest Territories. Read more about the project here.

Photo Credit: Arctic Energy Alliance

» EACH MINUTE ENOUGH SUNLIGHT REACHES THE EARTH TO HEAT THE ENTIRE WORLD'S ENERGY DEMAND.

Hazard Mapping

What hazards exist in your community that will be impacted by climate change? Hazards could include unstable ground due to permafrost melt, flooding or risk of slumping. Some northern communities have mapped their hazards, such as Clyde River in Nunavut and Pelly and Mayo in Yukon. Check out these maps and think about where these factors are present in your community and what that means for buildings, roads and community activities.

The NWTAC has information to help you get started in hazard mapping in their Hazard Mapping Smart Management Practices guide

PERMAFROST HAZARDS NEAR TSIIGEHTCHIC

» HOW IS PERMAFROST CHANGING?

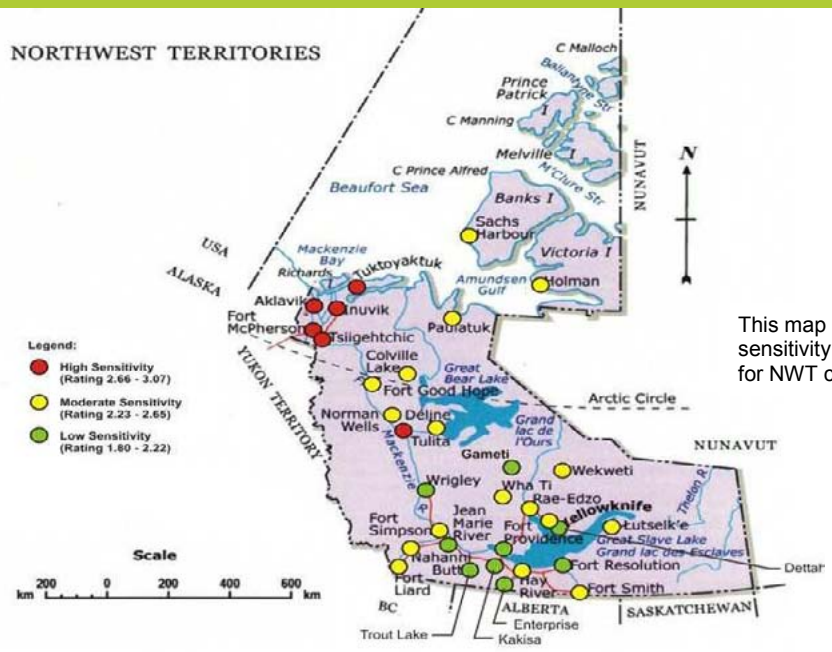
Some areas of NWT are seeing a decline in the depth and distribution of permafrost. Changes to permafrost can be caused by a number of factors, including disturbance from human activities, forest fire, vegetation and drainage changes, as well as the warming climate.

» WHAT ARE THE IMPACTS OF PERMAFROST MELT ON COMMUNITIES?

When permafrost with high amounts of ice thaws, it causes rapid changes to soil stability. This can cause erosion, slumping or landslides. Permafrost can also shift more slowly, which creates less-urgent but still pressing impacts. Permafrost melt has large impacts on any buildings, roads or infrastructure in the area, and can also impact water quality and aquatic life. Determining areas with ice-rich permafrost is important for planning sustainable infrastructure and predicting where change is likely if the permafrost thaws.

» WHAT CAN WE DO?

- Start monitoring ground temperatures and the depth of the active-layer in summer. This can be done in partnership with an academic or government institution.



This map outlines sensitivity to permafrost for NWT communities

- Map areas of permafrost in your community and begin to monitor changes over time
- Use this information to plan future development, placing infrastructure and buildings in less vulnerable areas.
- Share this information with resource managers, planners, proponents of resource development projects and residents.
- Encourage use of good building practices that protect permafrost.

» FOR MORE INFORMATION

See NWTAC's Permafrost project at nwtac.com or contact Sara Brown at sara@nwtac.com

Library corner: The latest in climate change science and adaptation reports

- The 2011 Arctic Report Card sums up the numerous changes we are seeing in the Arctic environment.
- The Pan-Territorial Adaptation Strategy is a collaboration between Yukon, Nunavut and NWT. This document identifies areas of common impacts of the three territories and will guide actions and approaches to adaptation.
- A group of academics has created a list of climate change adaptation priorities in Climate Change Adaptation : a priorities plan for Canada.
- The importance of incorporating traditional knowledge into climate change adaptation is discussed in Weathering Uncertainty: Traditional Knowledge for Climate change Assessment and Adaptation
- The National Roundtable on the Environment and the Economy has released a series of reports on climate change. Their 4th report report "Paying the Price", on the economic impacts of climate change shows that climate change will cost $21 to $43 billion per year in Canada by the 2050s. It also shows the importance of adaptation in reducing these costs.
- Did you know that the average air temperature in the Mackenzie district increased 2.2 degrees over the past 50 years? That's the strongest warming trend in Canada. Find out more at Statistics Canada's Temperature trends in Canada.

the PEMBINA institute

nwtac
NWT Association of Communities

ECOLOGY NORTH

THE AMOUNT OF C02 IN THE ATMOSPHERE IS NOW 3 TIMES HIGHER THAN AT THE START OF THE INDUSTRIAL REVOLUTION.

Scientists say we can curb global warming and its consequences if we take bold, comprehensive action now that adds up to an 80% cut in carbon emissions by 2050 or 2% a year. Let's all do our part!