

# Highlights from the Pan-Territorial Permafrost Workshop



## CONTEXT

Permafrost thaw is one of the largest and most costly climate change impacts in the north. Warming temperatures, due to human-induced climate change, have resulted in increased instability of permafrost across the territories.

There is a large amount of work being done to address permafrost thaw in the North. However, there is often difficulty communicating permafrost research results to those who most need it. There continues to be a need for consistent and meaningful two-way dialogue between researchers and local decision makers to ensure that research and infrastructure needs are being met.

The 2013 Pan-Territorial Permafrost Workshop was held in Yellowknife, Northwest Territories from November 5 to 7, 2013 to facilitate this dialogue through discussions on the impacts of climate change on permafrost and to identify opportunities to reduce these impacts.

## PARTNERS

- The Government of Yukon
- The Government of the Northwest Territories
- The Government of Nunavut
- Aboriginal Affairs and Northern Development Canada (AANDC)
- Canadian Northern Economic Development Agency (CanNor)

  
Pan-Territorial  
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Left: Nunavut workshop participants

Right: Shoreline erosion is an ongoing problem in Nunavut and thawing permafrost is a contributing factor. The Government of Nunavut is working to ensure that municipal infrastructure, such as wharves along the coastline, are being designed to withstand these changes.  
Credit: D.Forbes

## HIGHLIGHTS

The objectives of the workshop were to allow participants to share information, to engage people from across many diverse sectors impacted by permafrost, and to build personal linkages across, and within, these diverse sectors.

The workshop focused on facilitating the creation of partnerships and cooperative relationships while supporting discussions about the challenges associated with permafrost in the North and potential solutions. In total, 210 delegates attended the event, either in person or via live webcast, including representatives from the Canadian territorial and federal governments, the Alaska state government, Aboriginal and municipal governments, universities, businesses and non-government organizations.

The workshop was organized by the Pan-Territorial Adaptation Partnership, a collaboration between the Governments of Nunavut, NWT and Yukon. The three

governments agreed in 2010 to work together on climate change, to share practical adaptation measures and to identify opportunities for further collaboration.

Over the three day workshop presentations were made on the sectors impacted by permafrost degradation in the North, followed by break-out discussion sessions. Discussions focused on mapping and communities, buildings, transportation, mining and oil and gas.

The workshop summary report as well as videos of the presentations is available on the Pan-Territorial Adaptation Website ([www.northernadaptation.ca](http://www.northernadaptation.ca)).





Left: To adapt to a shorter winter road season, the GNWT Highways Department is building permanent bridges on the Mackenzie Valley Winter Road. The permanent bridges reduce the amount of time required to construct the winter road and protect stream crossings from early spring melt allowing the winter road season to be extended.

Right: NWT workshop participants



## THEMES AND CHALLENGES

Over the course of the workshop participants identified eight themes and challenges, which flowed through the dialogue of the workshop during breakout sessions, presentations and question periods:

- The **climate is changing** in the North and as a result, permafrost is thawing.
- The impacts of permafrost thaw are **affecting all areas of life** in the North, including infrastructure, geographic landscape, ecology and areas of traditional and cultural importance.
- The **costs of permafrost thaw** are being felt in many sectors and are likely to increase as permafrost continues to warm and its distribution is reduced. Not only are there infrastructure costs from permafrost degradation, but also human and ecological costs of landscape changes.
- **Traditional knowledge and community partnerships** are essential for studying and reducing permafrost impacts. We should all strive to combine traditional knowledge with scientific understanding to provide decision-makers with adequate information.
- **Modern technologies and tools** can help with permafrost detecting, monitoring and mapping and are becoming more available. Participants and presenters also noted that technologies now exist that can help re-establish permafrost.
- **Models and projections** of future changes to permafrost are useful and improving. This is resulting in increased availability and confidence in permafrost related impact predictions and risk assessments.
- **Hazard mapping** and developing standards are essential for decision making.
- While **communication** between various sectors continues to be a challenge, it is improving. It was specifically noted that communication between traditional and local knowledge holders with scientists is improving through events such as this workshop.



Left: Yukon workshop participants



Right: Thawing permafrost is affecting landscapes across the north and impacts the industrial activities taking place. Through research initiatives, landscape hazard mapping and enhanced information sharing, Yukon government is working with industry to incorporate climate change considerations into their decision making.

## MOVING FORWARD

The Pan-Territorial Adaptation Partnership has committed to hosting a climate change adaptation workshop every two years. It is not yet clear what the next workshop will cover but it will undoubtedly reflect some of the outcomes and evaluation of the 2013 permafrost workshop.

For those who attended the permafrost workshop – either in person or via webcast – as well as for those who could not, the Pan-Territorial Adaptation Partnership has prepared a summary report of what took place; a legacy document that furthers the goals of the workshop. The workshop report as well as videos of all the presentations are available online at [www.northernadaptation.ca](http://www.northernadaptation.ca).

The goals of the workshop were to bring front-line decision makers from the northern territories together with permafrost researchers and experts, to share knowledge, form connections and look at possibilities for adaptation in the future. The workshop successfully met these goals, based on the overall positive response from participants, the diverse attendees and the conversations generated between community members and permafrost experts.

Responsibility lies with workshop participants and all stakeholders to maintain the momentum generated at the workshop on climate change adaptation. It is expected that permafrost research, monitoring and thaw-prevention activities will arise from the new or strengthened connections made at the workshop.

The workshop provided the territorial governments with more information about permafrost impacts as well as valuable input into potential policy and project directions. This knowledge will help each territory advance its climate change adaptation programs and help integrate adaptation issues into everyday decision-making.

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