

## Laurier researchers search for solutions as warming climate changes the North

News May 18, 2018 by [Greg Mercer \(/waterlooregion-author/greg-mercer/261716C4-B225-40C6-8EDB-E898ECD2C751/\)](#) [✉](mailto:gmercer@therecord.com)  
(<mailto:gmercer@therecord.com>) Waterloo Region Record



*Wilfrid Laurier University's Scotty Creek Research Station in the Northwest Territories has been measuring the retreat of permafrost in the north since the 1990s. - Courtesy Wilfrid Laurier University*

WATERLOO — Bill Quinton doesn't have to look far from Scotty Creek Research Station in the Northwest Territories to see how quickly the arctic's permafrost is disappearing.

Quinton, director of [Wilfrid Laurier University's Cold Regions Research Centre \(https://www.wlu.ca/academics/research/research-centres/centre-for-cold-regions-and-water-science.html\)](https://www.wlu.ca/academics/research/research-centres/centre-for-cold-regions-and-water-science.html), has been studying climate change in the far north since the 1990s, and his research station at Scotty Creek has been on the run as the ground thaws and collapses beneath it.

"We're on our third camp since 1999. We have to keep moving as that edge disappears" Quinton said. "It's a landscape in transition, and it's happening really quickly."

The Scotty Creek station, a remote site accessible only by water plane, is at the front lines of the permafrost thaw in the northern territory. For Quinton, it provides an ideal outdoor laboratory to measure that change and help predict its impact on water and land resources for northern communities.

"When it disappears, the land transforms profoundly. You lose forests, and they're replaced by wetlands," Quinton said.

From wildfires to food security to hydrology, Laurier's researchers have long probed the impact of climate change in a part of Canada where the pace of warming is more pronounced. On average, temperatures in the Northwest Territories have warmed by about 3 C since the 1950s.

For many northern Indigenous communities, their traditional way of life is being profoundly affected.

"For many of them, the relationship to the land is No. 1. The land is the basis of everything, and it's changing," said Andrew Spring, a research associate with [Global Water Futures \(https://www.wlu.ca/academics/research/northern-research/global-water-futures.html\)](https://www.wlu.ca/academics/research/northern-research/global-water-futures.html) and the [Laurier Centre for Sustainable Food Systems \(https://researchcentres.wlu.ca/centre-for-sustainable-food-systems/index.html\)](https://researchcentres.wlu.ca/centre-for-sustainable-food-systems/index.html).

Much of Spring's work is focused on the impact of climate change as it relates to food sources, from wild game to fish stocks to rising water levels in northern communities. One of his projects involves building garden boxes in the village of Kikasa, to promote locally grown produce instead of expensive store-bought, processed foods.

As the Northwest Territories warms, caribou herds have declined. Laurier's researchers are trying to help Indigenous communities switch to other species for protein, such as deer or muskox, which are increasingly moving north.

"We're trying to learn lessons about how they dealt with those changes in the past," Spring said. "They're seeing deer, which is brand new. But they don't have it in their tradition how to properly and respectfully harvest that animal."

Compounding problems is the growing severity of forest fires. Those fires, caused by dryer and hotter summers, are changing the ecological structure of the boreal forests that blanket much of the north.

More fires mean communities are forced to evacuate more often, and have to adapt their harvesting methods to the new kind of forests that grow back after the blazes.

"Year after year, we seem to be having these historically unprecedented fire years. This is becoming the new norm," said [Jennifer Baltzer \(http://www.chairs-chaire.gc.ca/chairholders-titulaires/profile-eng.aspx?profileId=2837\)](http://www.chairs-chaire.gc.ca/chairholders-titulaires/profile-eng.aspx?profileId=2837), Laurier's Canada Research Chair in Forests and Global Change.

She's also seeing dramatic changes to the northern tundra and new shrubs growing where they never did before, and is trying to understand what those changes mean for wildlife and water resources.

For people in the north who are trying to adapt to their warming world, it's critical information.

"It changes all of those ecosystem functions," Baltzer said. "For northern communities, there is a real desire to know what are the implications for these changes, from what kind of animals this new system will support to what kind of fish it will support."

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