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Research makes a difference



Researcher Oliver Sonnentag spoke about Wilfrid Laurier University's 10-year partnership and research at the Arctic Research Institute in Inuvik July 22.

Findings at research institute assist territorial government

by Shawn Gillick
Northern News Services

A 10-year partnership agreement between the Arctic Research Institute in Inuvik and Ontario's Wilfrid Laurier University is leading to some good results in climate-change research.

Researchers Phil Marsh from Wilfrid Laurier and Oliver Sonnentag from the Université de Montréal presented some of the results of their work to date and an overview of the May 2010 agreement with the Laurier Institute of Cold Region and Water Science.

The agreement, which runs until 2020, is helping the NWT to conduct what's being called integrated environmental research and monitoring.

"It's a large program with a broad mandate," said Jolie Gareis, the manager of the Western Arctic Research Centre at the Aurora Research Institute.

"The overall goal is to help the NWT government," Marsh said.

One of the primary objectives is to provide a framework of how climate change, particularly the rapid warming in the region, is affecting the ecosystem, he said.

"There are lots of questions," said Marsh, zeroing in on the fracking that's been happening in the Sahtu as an example.

It's not clear yet how the activities are impacting the hydrology of the area, he said, particularly of flooding.

"Those are the kinds of questions the partnership is interested in," he said.

Since it was signed, Marsh said most of the research has been carried out in the southern end of the NWT, but that's beginning to change.

An important component of research in the North is having the input of residents, he said.

"There are some significant challenges in community engagement," said Marsh. "It takes time to gain partnership trust between research scien-

tists and community members, but there are lots of opportunities as well. We're establishing relationships, and reinforcing relationships started earlier in the southern Mackenzie.

"There's been efforts to expand the partnership in the last couple of years. Laurier had hired new professors. We're expanding the existing research sites."

One of the things that's being examined carefully is the changeover in vegetation in the Delta region as shrubs explode in population.

"The region is warming, which isn't a surprise, but it's also drying, which is (a surprise)," said Marsh. "Shrubs are expanding throughout the tundra area, and we're looking at that for what it means for stream flow."

"With a warming climate, we should get more shrubs, greater snow depth and warming soil," he added.

Shrubs tend to hold deeper snow cover, Marsh said, which may have impacts on hydrology.

"But the trends aren't going in the way we would expect."

Snow melt is occurring earlier, in late April and early May, Marsh said, due to rising temperatures, but the shrubs are "storing snow" in patches later than anticipated, providing a new source of moisture.

Rainfall is also increasing in June, but more study is needed to better establish what's going on.

Sonnentag's work indicated some of the same things. There has been a substantial change in vegetation cover, particularly in areas of discontinuous permafrost.

The presentations generated few questions from the small audience, although one person did question data that showed the average snow depth in the Inuvik region and around the Delta has decreased substantially since 2002.

That's contrary to what Delta residents have been seeing, he said, and Marsh agreed that was something that needed to be explained.