



ROCKY MOUNTAIN OUTLOOK

Glaciologist's presentation to highlight Yukon research

By Lynn Martel - Rocky Mountain Outlook

Published: February 24, 2010 3:00 PM
Updated: February 24, 2010 8:36 PM

While, on the surface, so to speak, the field of glaciology – the study of glaciers and ice sheets – may seem gradual and short on drama, studying surge-type glaciers is especially interesting, said Dr. Gwenn Flowers, assistant professor and Canada Research Chair in Glaciology with the Department of Earth Sciences at Simon Fraser University.

Typically, surge-type glaciers flow fast for a few years then slow their flow for the next couple of decades.

"These glaciers are interesting and actually exciting," Flowers said. "It's pretty dramatic behaviour when these surges happen. They don't simply shrink and retreat when it's warm and advance when it's cold. They're on their own schedule in a way."

What's even more interesting, she added, is that surge-type glaciers in regions around the world are showing signs of changing behaviour in reaction to a warming climate.

And one area that harbours an abundance of these types of glaciers is Canada's own St. Elias Mountains in southwest Yukon, where Flowers conducts her research, looking at how climate affects the internal dynamics of these glaciers.

Flowers will share a presentation of her research at Canmore Collegiate High School next Wednesday (March 3), in the third instalment of the Canadian Rockies Snow and Ice Initiative Speaker Series.

For the past five years, Flowers and her team of four to six researchers have spent two to four weeks twice each year based at a remote camp in Kluane National Park and Reserve. To reach the sites the researchers fly to Whitehorse then drive for two and half hours to a bustling base camp run by the University of Calgary's Arctic Institute of North America, which accommodates up to 40 people at a time. After staying at the base for about a week organizing equipment and preparing for an extended stay in the wilderness, they are shuttled by a 20-minute helicopter flight to their remote sites. All team


[✉ Email](#) | [🖨 Print](#) | [📄 Letter to Editor](#) | [👤 Share](#)
Text

THE GATEWAY TO BANFF CANADA
LODGES AT CANMORE

CALL
1 866
678 3535

DEVONIAN
PROPERTIES



members must be trained in glacier travel, crevasse rescue and wilderness first aid. One year the team decided to ski out, but a minefield of crevasses slowed them to travelling only three dangerous kilometres per day, prompting Flowers to never try that again.

In the springtime the scientists bring with them a small radar system to measure ice thickness, tools and computers to download data, and equipment to conduct snow pit analysis. Springtime provides a solid surface for the researchers to tow the radar equipment behind them on a sled, and also yields a dry snowpack that the radar can read, unlike summer snow, which is wet.

The radar can then be employed to map out ice temperatures in the structure of the ice.

"The rate of ice deformation depends strongly on the ice temperature," said Flowers. "If we can image warm ice and cold ice, that information can tell us something about how the ice flows. I'm interested in looking at how ice changes over time in response to changing air temperatures."

And while in some regions around the world surge-type glaciers have ceased to surge altogether, some in Kluane have begun to show signs of changes in behaviour as a result of warmer air temperatures.

"This behaviour is unprecedented as far as we know," Flowers said. "To me, the most interesting thing is observing how our climate is starting to change the character of the surge cycles."

During their summer visit, the researchers arrive with GPS equipment to map surface elevation and track displacement of poles that have been inserted into the ice surface to calculate the flow speed of the glacier. They also set up and monitor equipment for stream gauging and delicate instruments for five year-round and two seasonal weather stations.

Flowers said she first studied glaciers in Kluane while working on her PhD in Earth and Ocean Sciences, and after working in Iceland for a time she returned her focus to the St. Elias Mountains of Canada's far north.

In addition to the region's abundance of surge-type glaciers are glaciers that discharge directly into the ocean. In the past eight years, Flowers said scientists have established that glaciers of the Coast Mountains of B.C. and Alaska and the Yukon's St. Elias Mountains are making the largest contributions to sea levels of any areas where glaciers discharge into an ocean.

While the southern Colorado native said she looks forward to a dose of eastern Rockies sunshine, she also looks forward to sharing her research with an audience that's familiar with the glacial environment.

"I'm sure many people [in the Bow Valley] have made observations of their own of glacier change over the years," Flowers said. "I hope to highlight the role of glacier flow, or 'dynamics', in the overall picture of glacier change to help people understand which processes are directly driven by climate and which are more complicated and difficult to interpret."

Dr. Gwenn Flowers' presentation at Canmore Collegiate High School on Wednesday (March 3), starts at 7 p.m.

WHAT PEOPLE ARE READING

Brooklyn, NY arrived from news.search.yahoo.com reading www.albertalocalnews.com - NBC cuts ceremonies to air new show

2 users from *Canada* reading Red Deer Advocate - Your Best source for Local Community News delivered in print or online

Calgary, Canada arrived from google.ca reading Rocky Mountain Outlook - Glaciologist's presentation to highlight Yukon research

Saint Albert, Canada arrived from google.com reading Red Deer Advocate - Your Best source for Local Community News delivered in print or online

Renton, WA reading Red Deer Advocate - Sting nets record haul of electronics, discs

Calgary, Canada arrived from albertalocalnews.com reading Red Deer Advocate

[grab this](#) · news blog

Most Read Stories

[This week](#) | [Last week](#)

- Alberta grizzly population "shockingly" low *Rocky Mountain Outlook* • Feb-17-2010
- Climate change risk more than just a few degrees *Rocky Mountain Outlook* • Feb-24-2010
- At the rate we're going, all we'll have left is photos *Rocky Mountain Outlook* • Feb-17-2010
- Canmore more than weekend homes *Rocky Mountain Outlook* • Feb-24-2010
- K-Country ridge guards treasures trove of data *Rocky Mountain Outlook* • Feb-24-2010
- McKeever's Olympic hopes dashed at last minute *Rocky Mountain Outlook* • Feb-27-2010
- Lack of new construction to affect Bow Valley real estate market *Rocky Mountain Outlook* • Feb-17-2010
- Parks moving to restore Cascade pit *Rocky Mountain Outlook* • Feb-17-2010
- Ice climber rescued from Cascade waterfall *Rocky Mountain Outlook* • Feb-17-2010
- Dusk to dawn closure no brainer *Rocky Mountain Outlook* • Feb-24-2010
- Photo radar creates new millionaire *Rocky Mountain Outlook* • Feb-24-2010
- Culvert facelifts to improve fish movement *Rocky Mountain Outlook* • Feb-17-2010
- Town seeks to take on care of aging willows *Rocky Mountain Outlook* • Feb-24-2010
- Installation seeks to capture feel, memories of The Diner *Rocky Mountain Outlook* • Feb-24-2010
- Ice Art *Rocky Mountain Outlook* • Feb-24-2010

[more local news from around AB](#) »