



PROPOSED EXPANSION OF NAHANNI NATIONAL PARK RESERVE

Glacier Retreat Research & Monitoring

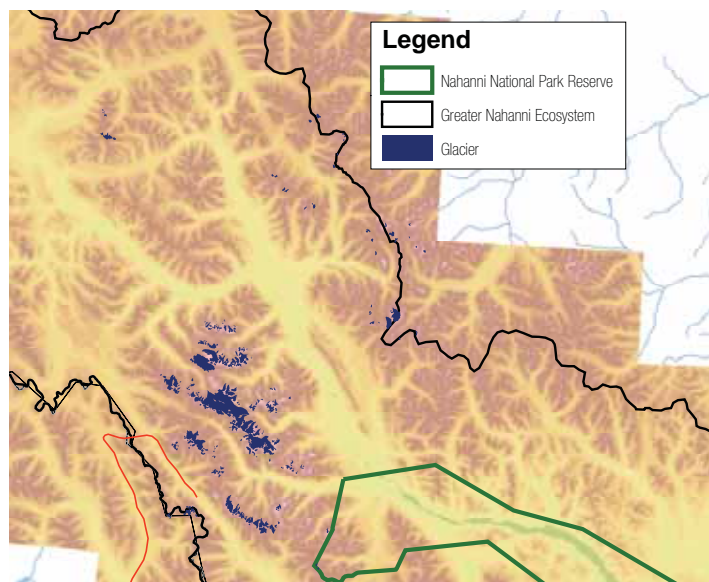
Parks Canada and the Nahanni Expansion Working Group have sponsored research studies related to the proposed expansion of Nahanni National Park Reserve. In the Dehcho region, these studies will help provide the information needed to propose a new boundary for Nahanni National Park Reserve. Additional studies may be required in the Sahtu Settlement Area.

WHY STUDY NAHANNI'S GLACIERS?

Climate change is already impacting northern ecosystems. Shrinking ice fields and glaciers are among the clearest examples of this impact, and the glaciers of the Northwest Territories are no exception. The territories' largest number of glaciers is in the Greater Nahanni Ecosystem. A few are inside Nahanni National Park Reserve, but most are located just outside current park boundaries.

WHAT DO WE WANT TO LEARN?

We want to learn more about the glaciers as they are now, how they might change and how that might affect the future of the Greater Nahanni Ecosystem. Parks Canada hopes to



North Moraine Hill Glacier in the Ragged Range. The previous extent of the glacier is shown by the transition zone visible along the mountain slopes in the background. Photo: Steve Catto, Parks Canada.

work with the Geological Survey of Canada to set up a long term glacier monitoring study.

HOW WAS THE RESEARCH DONE?

First-time field surveys were done at two locations in 2005:

- Brintnell Glacier at the head of Bologna Creek
- North Moraine Hill Glacier

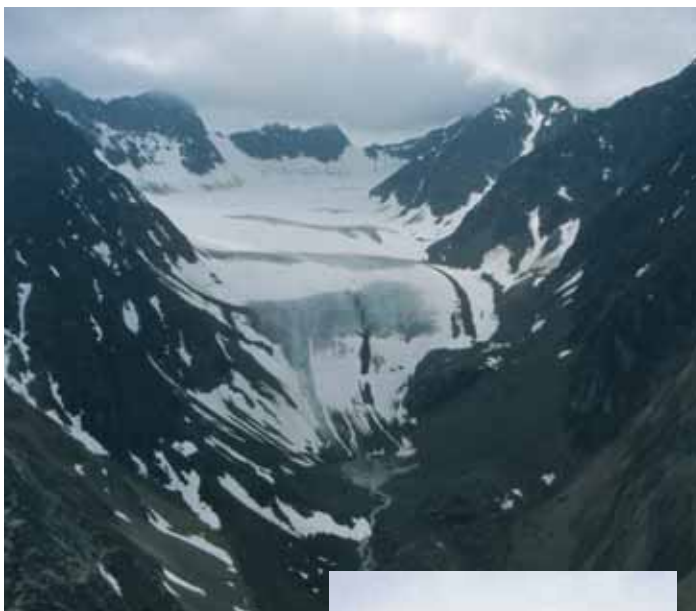
Lichens were located and measured on recessional moraines to estimate glacier retreat. (Recessional moraine = dirt, gravel and boulders left behind when glaciers melt)

The previous extent of the glaciers was determined using aerial photographs from 1949.

The current leading edge of each of the glaciers was mapped using a GPS.

Recessional moraines and alpine habitat next to the timberline were searched for evidence of former forest cover





A glacier in the Ragged Range.
Photo: Steve Catto, Parks Canada.

Dan McCarthy sets up a GPS base station for mapping the present-day ice front of Brintnell Glacier. Photo: Steve Catto, Parks Canada.



(tree stumps, logs); tree cores and cross-sectional discs can give information on past glacier activity and rain/snowfall patterns.

WHO DID THE WORK?

- Geological Survey of Canada, Natural Resources Canada
- Brock University
- Parks Canada staff

WHAT ARE THE MOST IMPORTANT THINGS WE HAVE LEARNED SO FAR?

Over 100 lichen samples were measured and recorded on boulders and recessional moraines around the Brintnell Glacier study site. Identifying marks were placed nearby that will allow for future lichen monitoring at the site.

The comparison of photographs from 1949 and current mapping showed significant reduction in the size of both the Brintnell and North Moraine Hill glaciers.

Despite their northern location, glaciers in the Ragged Range are thought to be shrinking at a significant rate.

The rate of reduction may be similar to that seen in the more southern Rocky Mountains, and shows that climate change is having measurable ecological impacts in the Greater Nahanni Ecosystem.

DO YOU HAVE QUESTIONS?

Please contact us! Your questions, views and opinions are very important. Your voice will be heard.

For more information, please contact:

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Dan McCarthy of Brock University measuring lichens along a recessional moraine of Brintnell Glacier. Photo: Steve Catto, Parks Canada.

