

## **Ice Dynamics and Cryospheric Changes in Northern Canada**

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Fieldwork in May 2017 at White Glacier, Axel Heiberg Island, continued the long-term mass balance measurements there. This included measurement of snow depth and ice melt at 40 stakes along the glacier centerline, the downloading of 4 GPS units to measure the glacier's speed, and the installation of new thermistors to measure the glacier's internal temperature. These indicate that ice near the top of the glacier has a temperature of approx.  $-10^{\circ}\text{C}$  at a depth of 12 m below the surface, apparently little changed since the 1980s.

In July 2017, we undertook further work to service and download the weather stations and GPS units at White Glacier, and to download a total of 8 timelapse cameras located on and around the glacier. On nearby Good Friday Bay Glacier we downloaded 3 GPS systems to measure the speed of the ice automatically over the winter, to see if it is changing over time. Timelapse cameras at Good Friday Bay and Iceberg glaciers also enable us to monitor the production of icebergs over the past year. Summer 2017 was generally cold and snowy over the glaciers, with limited melt even in July.

Near Trinity Glacier, SE Ellesmere Island, we deployed a total of 10 iceberg trackers to monitor the drift of these features. We found that one iceberg travelled ~300 km between mid-August and mid-October, before becoming grounded near to Grise Fiord. Another iceberg travelled >1000 km from Bylot Island to just north of Pangnirtung in the space of 6 weeks. We also downloaded timelapse cameras and GPS units near and on Trinity Glacier to monitor how it's changing over time.