

Cape Bounty Arctic Hydrological Observatory (CBAWO)
Melville Island, Nunavut



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Annual report

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Landscape and water processes at Cape Bounty, Melville Island

Our work is intended to determine how climate change affects the land and water. Our work involves obtaining water and sediment samples from the streams and lakes at Cape Bounty. This study is the longest record of changes in rivers and lakes in Nunavut and will be useful for understanding how water and the land will respond to climate and permafrost change, and the potential effects on wildlife and vegetation. We have been doing this work since 2003 and hope to continue in the future.

In 2014, we had a camp at Cape Bounty from May 21- August 9 with up to eight people, including Debbie Iqaluk from Resolute. Every day, we sampled the rivers and lakes to measure sediment, water quality and flow. We are monitoring how the land is responding to permafrost disturbance that occurred in 2007, the warmest year on record. We also sampled the lakes for water, sediment and water quality, and collected fish samples to measure the mercury in them. We also installed instruments in one of the lakes and two cameras that will take pictures of the lake ice every hour.

In 2015, we will have a camp from late June to late August. Initially, we start plant measurements. In late July, the work will expand to collect soil, stream and lake water samples and maintain weather and permafrost stations. With these samples, we will measure the water quality by sampling the water and measuring sediment, salts, carbon and nutrients. We will install soil water measuring equipment for the summer, and some instruments to measure gases coming from the soil and plants. We will also sample the fish and lakes for mercury, and we expect Debbie Iqaluk (or another resident of Resolute) to work at the camp in late July. In August, we will remove instruments from the lake to obtain the data, and return them to the lake, and collect sediment cores. We will also collect permafrost and soil samples.