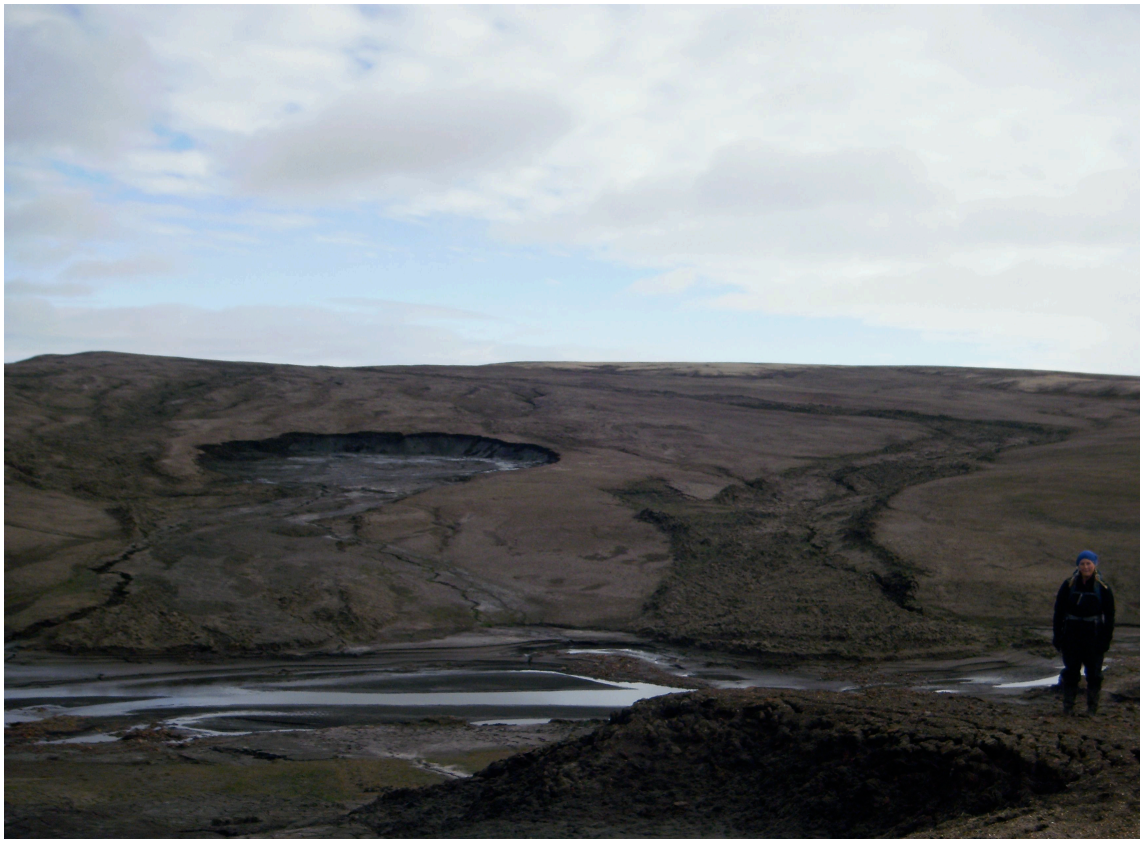
# Report of 2010 Field Activities
# Drake Point, Sabine Peninsula, Melville Island



Dr. Melissa Lafrenière
Department of Geography
Queen's University, Kingston, ON K7L 3N6
Phone 613-533-6000 x 78720
Email: Melissa.lafreniere@queensu.ca

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**Project Title:** High Arctic permafrost landscape stability and water quality, Sabine Peninsula, Melville Island, Nunavut

**Field Activities**
In the summer of 2010, we investigated water chemistry and permafrost disturbances across a large study area (150 $km^2$) near Drake Point, Melville Island.76 deg 27' N, 108 deg 33' W). The field season was very short (July 10-20$^{th}$) due to dry conditions and difficulty finding a landing strip close to the study area. We had 4 people in camp for 10 only days. .

We measured, identified and determined the type of many permafrost (active layer) disturbances in areas with different bedrock types. We also used these observations to create maps of the different types of disturbances and types of bedrock. This is important to help us use satellite pictures to find other changes in permafrost conditions across the large study area. We also collected water from streams for chemical analysis. Because July 2010 was very dry, we could not collect as many water samples as we had planned. We also purchased a detailed satellite picutre of the study area, and photographed and identified the types of vegetation in the area to match the field observations with the satellite photos.

**Community activities**
We hired one person (Absolem Idlout) from the hamlet of Resolute to help collect samples and watch for bears and other wildlife.

So far we have not met with the community to discuss our work, as we have very few results from our very short 2010 field season. We planned to meet with community members at the end of the field season in 2011.

**Preliminary results**
We found there was a lot of difference in the chemistry of water across the study area. Some streams have very acidic waters with a lot of dissolved minerals, and other streams were not acidic and had almost no dissolved rock minerals. The wide range of water types found indicates that we need to sample many more streams samples from areas with different rocks and disturbances to understand what controls the water chemistry in the area.

**Proposed activities for 2010**
We will continue to compare the maps of permafrost disturbances from air photographs (1954, 1974) and satellite images (2007-2010) to what we see on the ground, so that we can use the satellite pictures to find how disturbances change across different bedrock and vegetation types. We will study many landslide sites in detail to determine how summer thaw depths, soil water, and soil type effect where landslides occur. We will start water sampling earlier in July 2011 (July 1$^{st}$) to collect water for chemical analysis from a greater number and diversity of sites. We will also test the accuracy of satellite pictures by continuing to measure permafrost disturbances, soil water amounts, and vegetation types. We will have 4 people in camp from July 1-30, 2011.