Annual report

Apex River Project

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Water sources and change for the Apex River, Iqaluit

We started this research project studying the Apex River in 2013 to determine how the river has changed during the past 40 years and how it is sensitive to future change. This research was started because of the interest of the City of Iqaluit and other local groups, and we have begun a research program that we hope can be sustained for a long period and meet the needs of residents and organizations in Iqaluit, while building local experience and expanding capacity for water research.

We have met with researchers at the Nunavut Research Institute and AANDC, as well as representatives from the City of Iqaluit many times from November 2012 to the present. We try to do so at every opportunity and in 2016 we continued to meet with these groups on a regular informal basis. We were also interviewed for CBC North radio and television to describe our research plans and early results.

In 2015, we were successful in obtaining ArcticNet funding for this project, which is providing support until 2018, including local costs through our collaborators at the Nunavut Research Institute, especially Jamal Shirley. We are also working with Dr. Murray Richardson and Dr. Elyn Humphreys from Carleton University (Ottawa) and Dr. Jan Fransson from the University of Montreal on this project.

We carried out field research in collaboration with the Nunavut Research Institute during the period of June-August 2016. Students and researchers sampled snow, river, and lake water in the Apex River watershed for analysis of water quality and to determine the different sources of the water including a detailed project looking at how water moves in the soil. This sampling was carried out in collaboration with researchers at NRI from May until freeze-up in October. Sampling during snowmelt was carried out and we worked intensively on water flows into and out of a lake to better determine the water balance. We sampled the main river at four locations regularly all summer and measured flow at three locations to supplement the Water Survey of Canada gauge near Apex. For the fourth year, we sampled 20 lakes at the end of July for water quality and to determine how much evaporation had occurred over the summer. We are currently analysing the data, but have found that different parts of the watershed are more sensitive to evaporation than others, and this will affect the sources of water during dry years, especially in late summer and autumn.

In 2017, we plan to continue to sample the snow, river and lakes in a similar manner, starting in May and continuing until freeze up in the autumn. The sampling involves driving or walking to sites in the watershed, and returning the samples to NRI for processing. We will work to coordinate this sampling with other NRI sampling programs, and seek opportunities to collaborate with other groups interested in the river including collaborators from Carleton University, University of Montreal, Environment and Climate Change Canada and the Canada-Nunavut Geoscience Office. As we did in 2016, we will install electronic data recorders to measure water depth at several locations in the river and lakes and remove these at the end of the summer. These recorders do not use any hazardous material and will not be visible to residents on the land.

As part of our visits to Iqaluit, we intend to meet with community members, government and community groups to discuss our research and share results. We will also talk to the media so information about our research is available to more residents, hopefully through TV, radio and newspaper interviews.