**Long-term limnological and paleolimnological monitoring of Nettilling Lake, central Baffin Island, Nunavut, Canada.**

Researcher's Name and Affiliation:


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Project Location:

Lake Nettilling / CWS camp Nikko Island, Nunavut (66°35'42.10"N; 71°31'23.87"W)

Timeframe:

Fieldwork activities will be completed in early August 2013, **between 1–5 August 2013 as determined by PCSP aircraft support.**

Project Description:

Lakes and ponds are a major feature of the arctic landscape, and these contain sediment archives from which biological, physical and chemical proxies can be extracted to reconstruct climate and environmental changes through time. To explore the past and recent natural environmental climate fluctuations of central Baffin Island, we are planning on collecting sediment cores and installing data loggers in Nettilling Lake. The faunal (chironomids) and floral (diatoms) fossil assemblages within each sedimentary sequence will be analysed, along with sedimentological and geochemical analyses to quantitatively track long-term environmental changes during the last postglacial period, which covers approximately the last 6000 years.

Our research team will be transported to and from Iqaluit by regular flights from Montreal or Ottawa. Both Twin Otter and Bell 206L helicopter will be chartered by PCSP to explore the study area and to reach the appropriate study sites and camp. An inflatable Zodiac (length = 2m) with paddles will be used to take water and sediment samples near the shore of Nettilling Lake.

No structure will be erected, and the impacts of our lake sediment sampling on the environment will be minimal. The sediment and water samples represent a very small amount of material relative to the entire lake ecosystem. All our equipments are made of resistant and inert materials that neither decompose in water nor pollute the water.

Our logistic bases will be at the CWS camp on Nikko Island. Activities in the field will be conducted in a way as to minimize any disturbance of the environment. Any wastes will be collected and transported to appropriate places designated for the disposal of wastes.

Methodology:

Using the small inflatable boat with paddles, water samples (1 L at 0.5m depth) and short sediment cores (ca. 100-200 cm) will be collected from different locations using simple plastic containers and coring devices (diameter of tubes = 9 cm) that penetrate sediments by their own weight.

Data:

These data will be archived as part of ArcticNet portal (Polar Data Catalogue). The resulting database will be made available to the Nunavut Research Institute and the local communities within the study region.

Reporting:

As done over the past 25 years, we will interest and involve local communities and native students in our research activities, communicate results in local Inuit schools and/or organizations, and popularize the main research results through local radio interviews and educational publications. Results will be published in science journals and presented worldwide during international symposia and workshops.