Paleoclimatic reconstruction of the Canadian High Arctic using bioindicators

This project, conducted by Pierre Francus and his team from the INRS-ETE, Quebec City, seeks to reconstruct the Canadian High Arctic climate of the past. The field work, carried out between May 27th and June 12th by a team composed of Vicky Tremblay and François Lapointe (PhD. and M.Sc. students respectively) will be led by David Fortin (Post-doc.).

The goal of this field season is to retrieve 1 m long sediment cores from the small, shallow (10 m) and organic-rich lake at the head of Strathcona Fjord. It is important to act as soon as possible as the fluvial erosion near the lake might cause its disappeance. Two miles to the east there is a large, deep detritic lake where we would like to obtain bathymetric measures and collect as well short sediment cores to ascertain the presence of sedimentary lamination.

Sediment cores from the bottom of the lake will be retrieved directly through the lake ice with portable gravity and percussion corers made of nylon. Core tubes are polycarbonate (2 3/4'' diam.). Holes will be drilled in the ice with an ice auger provided by PCSP. A temporary camp will be erected for the duration of the work. Another goal of this field trip is to install a meteorological station at South Sawtooth Lake. A small automated station (2-meter high tripod) will be left on site for the coming years and will be subsequently serviced every summer. During the trip, two means of transportation will be used: airplane to reach the field locations and snowmobile on the ground.

Sediment cores retrieved from the lakes will be brought back intact to our laboratory and analyzed in order to provide multidisciplinary paleoenvironmental reconstructions. These data will be used for two PhD projects and will be published in scientific journals. They will eventually be stored on world data centers. We will also provide NRI with an annual report. No hasardous material is brought in the field and we will bring everything back to Resolute Bay (except the weather station).

Finally, V. Tremblay intends to stay in Resolute Bay for a week in order to meet the children at the elementary school to acquaint them with the research we're doing in the North.