Past modes of climate variability from varved sediments

Location: South Sawtooth Lake, Fosheim Peninsula, Ellesmere Island.
Time frame: May 22nd to June 2nd, 2011.
Researchers: Pierre Francus and David Fortin (leaders, INRS-ETE, Quebec City), with Nick Balascio (University Massachusetts), Mark Abbott (University Pittsburgh) and Joseph Stoner (Oregon State University).
Description: This project seeks to reconstruct the Canadian High Arctic climate of the past by analysis annual laminations (or varves) from lake sediments.
The goal of this field season is to retrieve 15 m long sediment cores from 2 sites at South Sawtooth Lake that contains a record of the last 8000 years.
Methodology: Long sediment cores from the bottom of the lake will be retrieved directly through the lake ice using a *Uwitech* piston coring system. The system is entirely manual and only uses an electric winch that is powered by a generator. 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. During the field season, two means of transportation will be used: airplane to reach the field locations and snowmobile on the lake ice and snow. We hope to leave the site prior to snowmelt. No hasardous material is brought in the field and we will bring everything back to Resolute Bay. Sediment cores retrieved from the lakes will be brought back intact to our laboratory and analyzed in order to provide multidisciplinary paleoenvironmental reconstructions.
Data: These data will be used for two PhD projectsData will eventually be made freely available in world data centers and the Polar Data Catalog.
Reporting: We will also provide NRI with an annual report. Results will be published in scientific journals and conferences, and on web sites. If results are important, press releases will be made.