The Permafrost Outreach Program

Infrastructure Vulnerability to Permafrost Degradation Project

Projected outcomes for April 2011

- special initiative of permafrost and climate data
- inventory of Yukon Government infrastructure
- web-based permafrost portal and communication network
- Yukon infrastructure risk and vulnerability assessment

Permafrost Monitoring

Eight shallow (<7 ft deep) ground temperature boreholes 2 inches in diameter have been drilled at Whitehorse, Carcross school, Crocus Creek, Ross River, Dawson, Old Crow and Watson Lake since 2007 (Pany and Yoshikawa, 2009). Boreholes were surveyed to install Pt100 (100 ohm at 0°C) sensors that measure hourly air and ground temperatures at varying depths. The data loggers collect daily temperatures at different depths and record temperature changes. The data will also provide baseline data that will be used for the Yukon Government’s Climate Change Secretariat. The Infrastructure Vulnerability to Permafrost Degradation project is funded by the Indian and Northern Affairs Canada (INAC) Impacts and Adaptation initiative and administered by the Yukon Government’s Climate Change Secretariat.

Frost tube data collected by students during winter and spring 2008/2009 show the coldest permafrost was measured at the Beaver Creek and Old Crow stations. Since 2008, frost tubes have been installed in Whitehorse, Carmacks, Dawson, Ross River, Watson Lake, and Whitehorse since 2007 (Pany and Yoshikawa, 2009). The coldest permafrost was measured at the Whitehorse and Old Crow sites, with temperatures ranging from -15°C to -35°C.

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