

PROJECT DESCRIPTION

In the autumn of 2012, Coldwater Consulting Ltd. undertook a series of field campaigns on the Kapuskasing, Ivanhoe and Blanche Rivers in northern Ontario. Coldwater's work included bathymetric and land surveying, measurement of currents and discharge, and installation of data recorders.

PROJECT APPROACH

These boat and land-based campaigns were conducted in a series of 8-10 day bush deployments. The remote location and heavy rains and snow encountered made for challenging logistics.

All surveys were conducted using real-time kinetic GPS surveying. This system provided survey data for topographic and shallow river surveys. It also provided a measurement of the local water surface elevation that was used to adjust depths measured by boat-mounted sonar equipment to geodetic datum.

An acoustic Doppler current profiler (ADCP) was used to measure velocities, river discharge and bathymetry. This system is equipped with an integrated WAAS/GLONASS differential GPS which provides the plan location of the ADCP unit within an accuracy of $\pm 0.3\text{m}$. Depth data was supplemented by 200 kHz single beam and 83 kHz side-scan sonar units also equipped with differential GPS. Side-scan sonar and visual observations were used to characterize river bank and river bed roughness and composition.

Coldwater also supplied and installed pressure and temperature loggers for long-term monitoring of conditions on the three rivers.

CLIENT

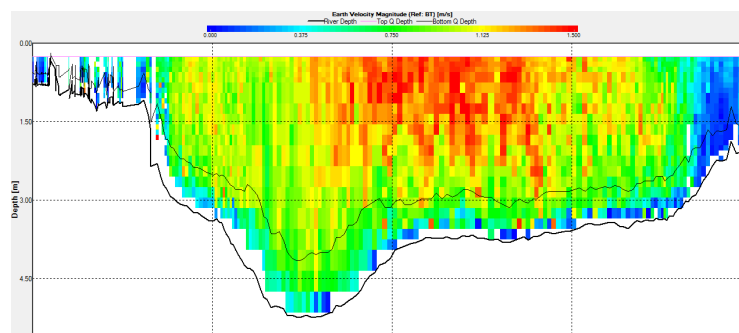
Xeneca Power Development
Toronto, ON

LOCATION

Kapuskasing, ON

DATE

2012



River discharge was determined from flow speed cross-section measurements collected using a towed ADCP