

Multibeam Technology: the key to understanding geological process active on the seabed of the Arctic Ocean and lakebed of the Great Lakes

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Simrad EM 300 and 3002 multibeam sonar systems are being routinely used to map geological processes active on the Arctic Ocean seabed and Great Lakes lakebed. The technology is well suited for spatial and temporal mapping of engineering, environmental and archaeological issues related to offshore development. Over the last 7 years these systems have mapped seabed ice scours, abandoned artificial islands, seafloor contaminants, bedrock pop-ups, granular resources, gas vents, mud volcanoes, submarine slumps, benthic ecosystems, and relict drowned waterfalls and drainage channels. Quantitative analyses of these high resolution multibeam data provide the georeferenced information required for determining the rates and timing of geological processes active on the seabed/lakebed - including ice scour impact rates, gas venting and mud volcanism. The ability to rapidly generate interpreted bottom topography and classification base maps allows for results to be transmitted to users with very rapid turn around time.