

CCGS *Amundsen*: Adapting seabed data acquisition in Arctic environments

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The CCGS *Amundsen* departed on its inaugural expedition in 2003 with the mandate of supporting environmental research in the Canadian Arctic. Throughout its yearly scientific expeditions, the vessel's array of echo sounders has continuously acquired seabed data; averaging over 250 square kilometres of multibeam data coverage per day. The *Amundsen*'s collection of seafloor data has since supported projects nationally and internationally, and has grown to be Canada's largest Arctic seafloor data contribution from a singular vessel.

Amundsen Science, the organization based at Université Laval (Québec) that manages the scientific mandate of the ship, coordinates an extensive range of university and governmental research applications for each Arctic expedition. Cohesiveness between the vessel's pool of equipment, Coast Guard crew, and technicians allow the *Amundsen*'s unique operational approach to thrive in continually changing survey environments. Certain challenges introduced by the Arctic, however, force the exploration of alternatives beyond the vessel's array of echo sounders. Shortages of prior bathymetric data coverage in remote areas, sea ice obstruction, and more pose safety concerns for the vessel and its crew. As a result, new platforms and equipment are implemented to the *Amundsen*'s continuously improving arsenal of instruments. This poster explores the interdependent relationships between the *Amundsen*'s multibeam and other equipment onboard the vessel, complexities of adhering hydrographic data collection to various environments, new additions to the *Amundsen*'s available pool of equipment, and operations to be considered in future expeditions. Amundsen Science encourages the collaboration and adaptability required to cope with the Arctic's challenging environment, while striving to optimize operations and excel Arctic research.

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