



Arctic Charting

The Canadian Arctic stretches across northern Canada, from the Beaufort Sea east to Baffin Bay and southwards to 60° north latitude.

Canada's Arctic covers more than 4.4 million square kilometres and contains more than 36,000 islands! About 47 per cent is underwater with intricate coastlines characterised by inlets, channels, fjords and bays.

Nautical charts are the roadmaps for Canada's navigable waterways that provide mariners with the information necessary to establish sailing routes & facilitate safe passage.

Canadian Hydrographic Service



Consists of Canada's experts in hydrographic surveying and marine cartography with a mandate to produce and deliver navigational charts, publications and services for Canada's vast navigable waters.

Hydrographic Surveys

Survey quality is determined by the accuracy of the equipment used. In general, the more recent the survey, the more accurate the data.

Areas are considered *adequately surveyed* where the international hydrographic standards for surveying have been met. This includes continuous bottom profiles and modern radio- or satellite-positioning systems used to survey vessel positions.

The latest surveys frequently consist of full bottom coverage using multi-beam sonar, sweep multi-transducer sweep systems and airborne laser bathymetry systems resulting in near 100% bottom sonification which is considered surveyed to modern standards.



Collaboration

Partnering with the Canadian Coast Guard, the Royal Canadian Navy, Natural Resources Canada, Parks Canada, ArcticNet and others allows the Canadian Hydrographic Service to expand its ability to collect more hydrographic data across a vast and challenging environment, while also supporting sovereignty, archeology and aquatic science.

Marine Corridors

A Marine Corridor is an area where there exists a measureable amount of diverse marine transportation in support of navigation activities and economic development such as community resupply, mining, oil & gas, tourism and passage.

How much of the Canadian Arctic is charted? (as of 2015)

- Approximately 10% of Canada's Arctic waters are ADEQUATELY SURVEYED, with 1% surveyed to MODERN STANDARDS
- Approximately 32% of the Arctic Marine Corridors are ADEQUATELY SURVEYED, with an additional 3% of them surveyed to MODERN STANDARDS



The primary tool for the acquisition of water depths is the Multibeam Echo-sounding System, also simply known as multibeam.

Multibeam sonars transmit hundreds of beams of sound through the water, relaying the information to the computer to allow hydrographers to "see" the shape of the seafloor.

Tidal information is also key to accurate charting. Tidal data can be collected both at the surface using water observations and underwater using tide gauges that can be lowered to the seabed and released to the surface at a later date.

Maritime transportation is the primary means of transport for supplies to northern communities accounting for nearly 95% of Arctic goods.

tide gauge