



CANADIAN HYDROGRAPHIC SERVICE

Supporting the Protection of Canada's Territorial Waters

Canada's coastline, measuring almost 250,000 kilometres, is the longest in the world. It is also part of a network of points used to establish the country's territorial sea, which is a belt of coastal waters extending 12 nautical miles from baselines originally set in 1967.

For more than 40 years, Canada has exercised jurisdiction and sovereign rights over its territorial sea.

The territorial sea is one of six maritime zones outlined in international law and Canada's *Oceans Act*. As a coastal state, Canada has distinct rights and responsibilities related to each of these zones.

Work in Progress

With far-reaching and diverse safety, environmental, economic and other implications, maritime boundaries need to be clearly delineated and broadly understood.

The Canadian Hydrographic Service (CHS) does its part by continually surveying Canada's coastline and waters, and updating its charts and other information products.

The process of producing authoritative charts involves far more than simply incorporating the latest data findings. Our chart makers, for instance, must have a thorough understanding of principles concerning the slope and area of the earth (geodesy) when dealing with old surveys and data points, and possess the know-how to make them compatible with Global Positioning System devices and other modern positioning technology.



The USCGC Healy (right) equipped for collecting multibeam data and the CCGS Louis S. St-Laurent (left) equipped with seismic gear as the two nations co-operate on bathymetric surveys of the Arctic seabed.

Charting the Icy Depths

CHS is currently engaged in some internationally significant survey projects that aim to uncover data that could confirm, enhance or even significantly alter accepted knowledge about our maritime boundaries.

For instance, our hydrographers are engaged in a multi-year project to chart the depth, contour and slope of the continental shelf in the Beaufort Sea in the Western Arctic, and the Lomonosov and Alpha ridges in the Eastern Arctic. This bathymetric data, in addition to data being collected in the Atlantic Ocean, will be used to form the scientific evidence to support Canada's extended jurisdiction to the continental shelf under the United Nations Convention on the Law of the Sea (UNCLOS).



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Adapting to Arctic Conditions

Arctic conditions, particularly weather and ice, can be challenging. That is why CHS hydrographers use techniques and devices optimally suited to the environmental conditions in the Far North.

Arctic Ice Camps

During Arctic winters, our hydrographers settle in, manage and work around ice camps for months at a time, using through-the-ice sonar techniques and other methods to gather data.

In 2010, our ice camp was located off Borden Island, Northwest Territories.



The base camp seen here is part of the Canadian Forces Base on Ellesmere Island located in Alert, Nunavut. Canada and Denmark are collaborating to develop a joint interpretation of the information collected, thereby reducing the possibility of overlapping claims and disputes.



CHS regularly lends its expertise to a range of exciting and crucial collaborative activities, such as:

- Compiling, analyzing and organizing scientific, technical and legal information to assess Canada's maritime boundaries, along with Natural Resources Canada.
- Supporting federal government departments in other matters related to maritime boundaries. CHS plays an important role in providing scientific expert testimony that helps the federal government address transgressions found with regards to pollution, fishing etc.
- Charting all international boundaries that are agreed upon with our maritime neighbors – the United States, Denmark and France. Charting these boundaries communicates to mariners and the general public the extent and complexity of Canada's offshore jurisdiction where a range of maritime laws are enforced. Depiction of maritime boundaries on public documents one expression of Canada's sovereignty.

For more information about the Canadian Hydrographic Service and what our hydrographers are doing to survey, chart and determine the limits of Canada's maritime boundaries, please visit:
www.chs-shc.gc.ca

