

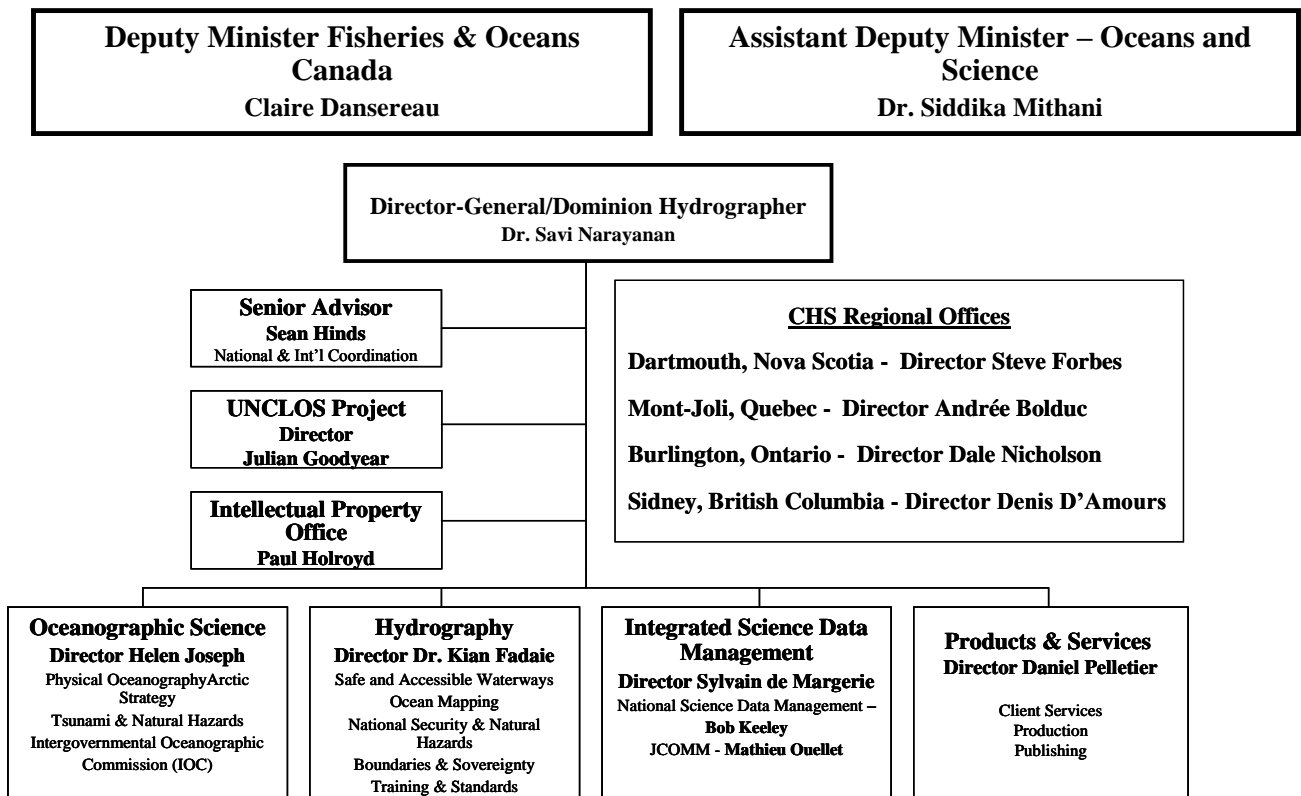


ARHC1-02A

**Canada – Ocean Science / Canadian Hydrographic Service
National Report to the Arctic Regional Hydrographic Commission
Ottawa, Canada, October 4-6, 2010**

1. Hydrographic Office/Service

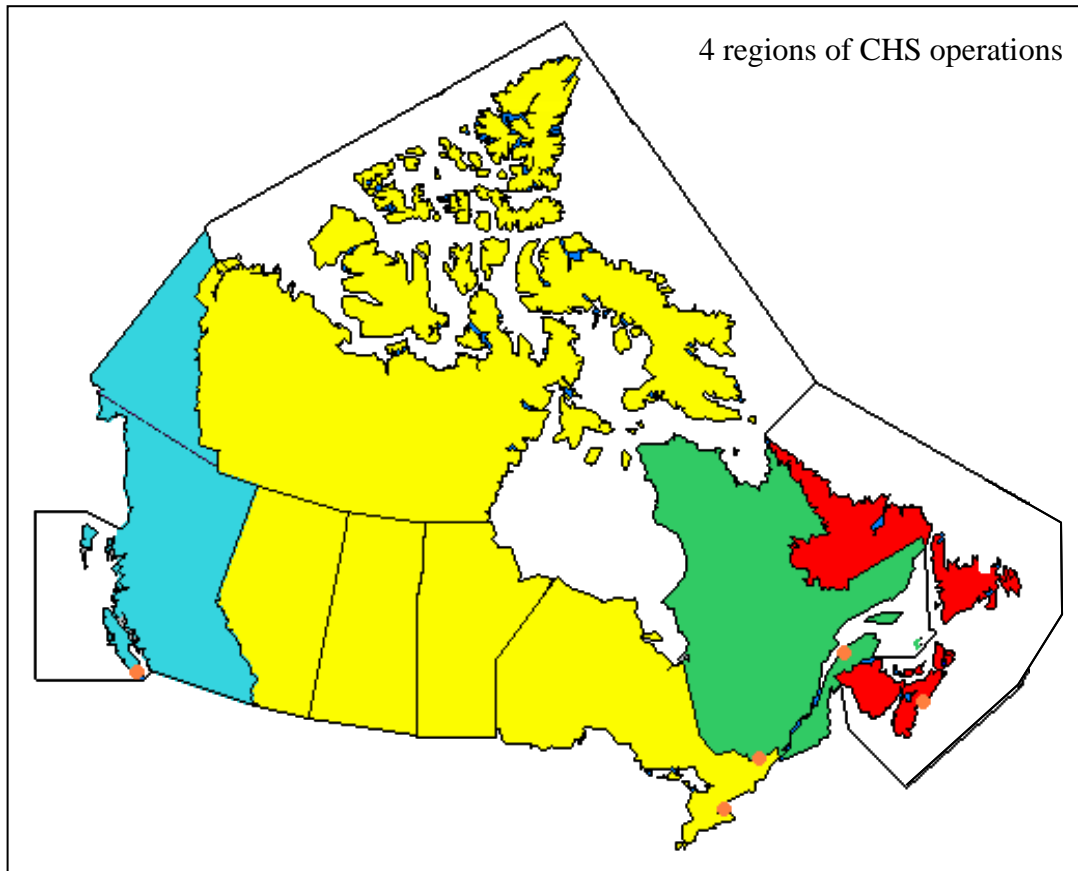
The Canadian Hydrographic Service (CHS) is a directorate under the Oceans & Science Branch of Fisheries & Oceans Canada.



CHS is structured as 4 regional offices (Atlantic Region with 1 sub-office in St. John's, Newfoundland, Quebec Region, Central & Arctic Region and Pacific Region) and one headquarters office in Ottawa, with a total full time staff in the range 250 persons more or less equally distributed across all Regional Offices and Headquarters. Majority of staff are Mutli-disciplinary Hydrographers (MDH). Mutli-disciplinary capacity is developed through a career development program consisting of formal hydrographic and cartographic training during the first 5 years of employment coupled with a rotational regime where all MDH move amongst the principle activities of Tides, Surveys, and Nautical Publications in order to maintain their skills up-to-date.



CHS nationally is an ISO 9001:2008 organization maintained since initial registration in 2001.



2. Surveys

CHS operates hydrographic surveys from all of its regional offices.

Field season varies from region to region and the purpose of the surveys, from continuous surveys in St. Lawrence to ice camps in the Arctic.

Multibeam systems are the primary ship platforms and include the CCGS Vector, CCGS Otter Bay (Pacific); CCGS Frederick G. Creed, CCGS F.C.G. Smith (St. Lawrence River and Gulf); CCGS Matthew (Atlantic); Hourston launches are the primary platforms in the Great Lakes, and in the Arctic, surveys are also conducted from icebreakers on an opportunistic basis..

Ice Camp operations have been an effective form of reconnaissance hydrographic surveys as well as for the UNCLOS.



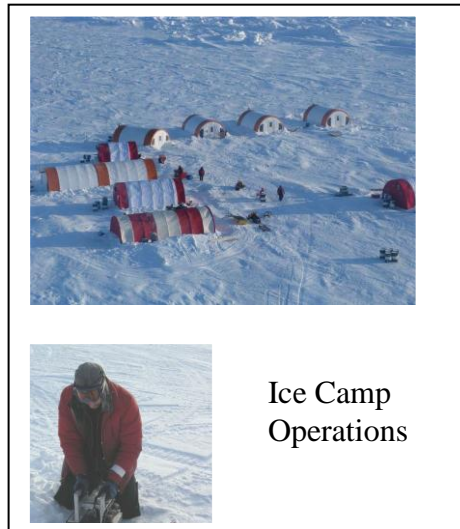
Vector, EM710 (gondola installation '09)



Matthew, EM710



Hourston Launch Arctic Operations



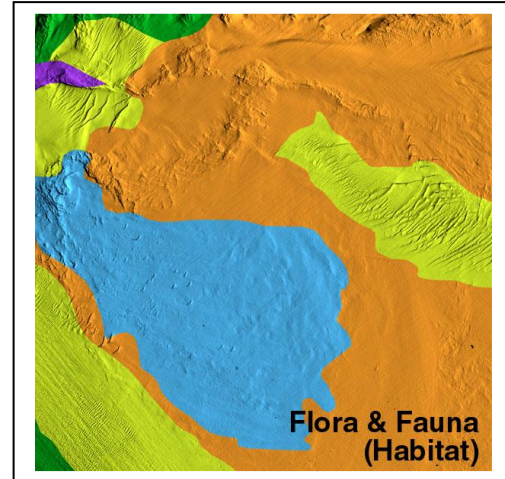
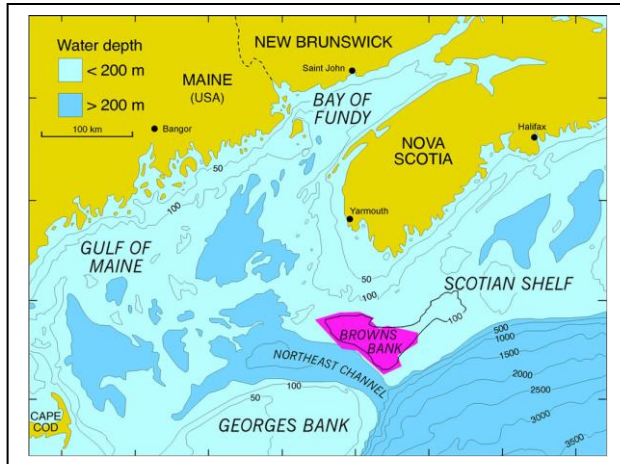
Ice Camp
Operations



F.C.G. Smith Channel Swath Vessel



Seabed mapping data is in increasing demand. CHS acquisition plan for upgraded multi-beam systems coupled with continuous sound speed velocity (Moving Vessel Profiler technology) are anticipated to improve and enhance this capacity in coming years.



4. New Charts & Updates

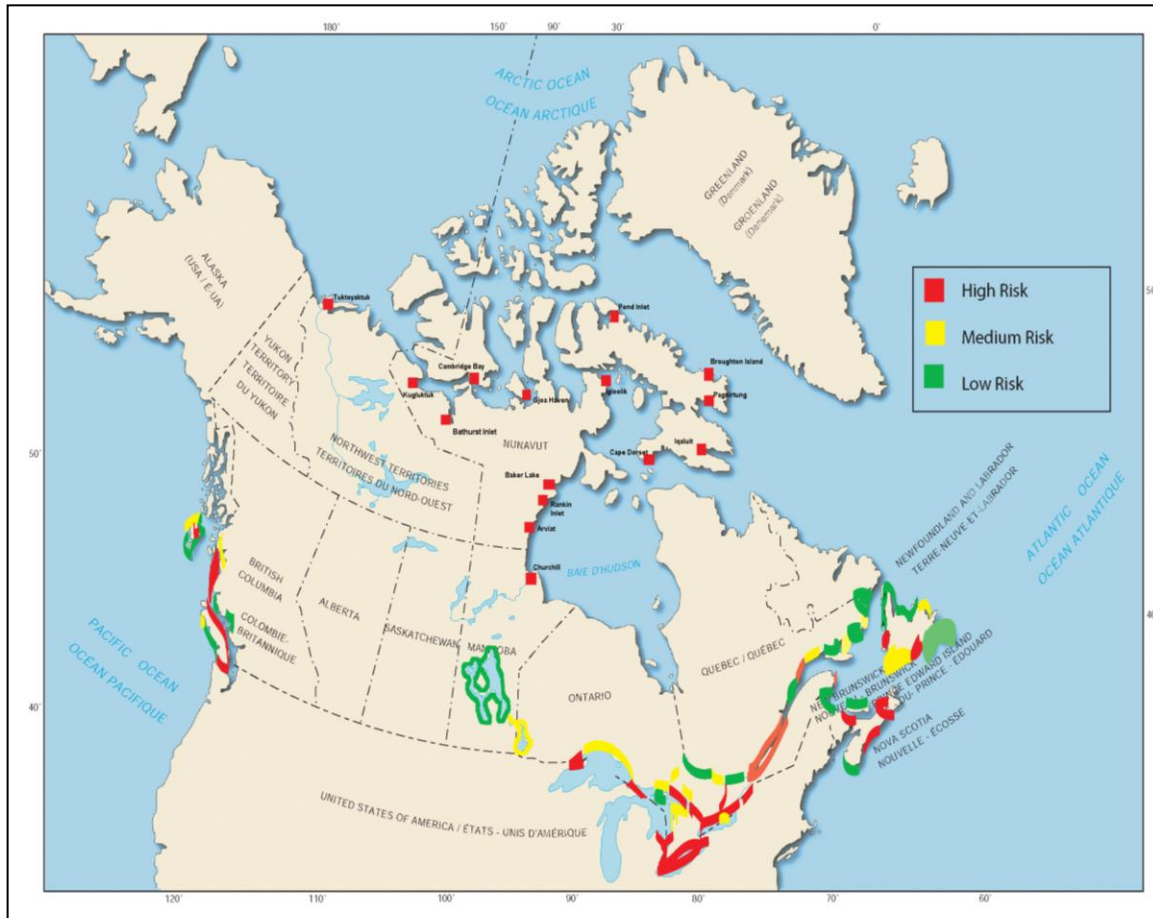
Since 2002 CHS has been using a prioritization model to drive chart production and general production operations. The model is based on several factors including traffic volume, navigational complexity, rate of coastal and depths changes, history of marine incidents etc. Highest risk areas are assessed for full production and maintenance schedule on a five year rotation. Medium and low risk areas are less frequent and may only be maintain for critical information only.

Changing traffic patterns and growth of new resource based industries in frontier areas such as the northern Pacific Coast (Asia-Pacific Gateway) and the Arctic are a growing priority and adjustments to the model will be made accordingly.

CHS maintains a chart portfolio of 950 paper charts covering all three of Canada's coastlines and major inland waterways. In addition to the paper chart coverage CHS produces Electronic Navigational Products (S-57 format)) and Raster Navigational Charts (BSB format) that cover the majority of Canada's southern traditional waters. RNC and ENC production in northern and remote areas is a priority.

In 2009-10 CHS production activities included:

- 2 new chart catalogues
- 14 new charts in paper, ENC, RNC
- 34 new editions in paper, ENC, RNC



CHS has implemented the CARIS Hydrographic Production Database (HPD). Infrastructure was acquired over a multi-year major capital project. Transition to full HPD production environment is underway.

CHS charts and publications are distributed through a network of over 700 Chart Dealers. Of these 700 Chart Dealers several are licenced to distribute CHS' digital product lines. Through licence agreements CHS' digital products are available through both IC-ENC and PRIMAR RENCs.

5. New Publications & Updates

CHS maintains several editions of nautical publications including 35 volumes of Sailing Directions, 7 volumes of Tide and Current Tables and 3 volumes of the Tidal Atlas to cover Canadian waterways. CHS collaborates with the Canadian Coast Guard



in the product printing and distribution of essential navigational publications- List of Lights, Buoys and Fogs Signals; and Radio Aids to Marine Navigation.

Updates to CHS products are available through the Notice to Mariners publication. These are available on the Canadian Coast Guard web site: www.notmar.gc.ca

Updates to CHS digital products are managed through a CHS web service. This web service contains updates to both the ENC and RNC product lines. Access to product updating is based on end-user licence agreements or by service provider licences. Updates via a monthly or bi-annual CD replacement are also available but this is a service that will sunset in the future.

Some statistics from 2009-10 include:

- 6 new editions of Sailing Direction, 4 first editions – 2 for Hudson Bay
- Tide tables – Volume 4 Arctic & Hudson Bay
- 399 Notices to mariners processed (14% in Arctic affecting all Arctic publications).

6. MSI

The transmission of Marine Safety Information is the responsibility of the Canadian Coast Guard.

7. C-55 - Status of hydrographic surveying and nautical charting worldwide

- a. Updates to *C-55 - Status of hydrographic surveying and nautical charting worldwide* are provided to IHB on an annual or bi-annual basis.
- b. Highest deficiency in modern survey and nautical charting coverage are Canada's frontier waters that include the Arctic, Hudson Bay & Labrador and portions of the northern Pacific coast.
- c. Canada does have 100% of its southern international routes covered with ENCs as well as all Canadian Ports listed in the Lloyd's top 800 list.
- d. Cruiseline visits to frontier harbours remain a challenge to ENC coverage.

8. Capacity Building

CHS is not resourced for any capacity building initiatives. The Canadian Development Agency is the principle agency in Canada to lead capacity building projects.

9. Oceanographic Activities

CHS is responsible for maintaining the hardware infrastructure and the acquisition of tides and water level data for the department not only for navigational purposes, but also for other oceanographic applications such as sea level change, tsunami and storm surges and ocean circulation in general.

