



**Canadian Hydrographic Service Report to the
Third meeting of the Arctic Regional Hydrographic Commission
October 9-12, 2012
Tromsø, Norway**

This report addresses the Arctic-related activities of the Canadian Hydrographic Service for the past year.

1. Organizational Updates

The Canadian Hydrographic Service is a branch of the Ecosystems and Ocean Science Sector of Fisheries and Oceans Canada, with offices in Ottawa; Sidney, British Columbia; Burlington, Ontario; Mont-Joli, Quebec; Halifax, Nova Scotia; and St. John's, Newfoundland and Labrador.

National coordination is expected to be achieved through a governance structure, with the Dominion Hydrographer as the functional head of the organization, a Senior management Committee consisting of the directors managing each of offices and key functions, and a suite of national committees and working groups. CHS had been using the Canadian Coast Guard vessels as its primary platform for hydrographic surveys, but recently, it has been expanding its survey coverage through use of vessels-of-opportunity, partnerships and AUV, areal and satellite platforms to better utilize innovative technologies.

2. Surveys

The Canadian Hydrographic Service has continued the second year of the Arctic Charting and Mapping Pilot Project. This is a multi-year, multi-agency collaboration in Canada's Arctic for the collection of hydrographic data to serve the objectives of charting, marine archaeology and ecosystem science. This project includes five federal government departments, a territorial government, and academia, all collaborating in a multi-platform approach to collect data in the Victoria Strait area needed to support marine transportation and underwater archaeology, and to improve the understanding of Arctic coastal zone ecosystems. The extensive media coverage of this project has emphasized to the Canadian public the need for improved charting in Canada's Arctic

CHS is also participating in an interdepartmental program of developing strategic marine corridors in the Arctic to prioritize navigational services in the Arctic in support of sustainable development, improved safety of navigation, enhanced community well-being

and responsible management of internal Arctic waters. The selection of marine transit routes will be based on traffic levels (both existing and projected), resource developments, level of risk to the safety of navigation, environmental protection, and traditional uses.

3. New Charts and New Editions in the Canadian Arctic

During the past year the Canadian Hydrographic Service has released the following new charts and new editions in Canada's Arctic waters:

New Charts	Chart Number	Title	Scale
ENC	CA573406	Grise Fiord	20000
ENC	CA573393	Taloyoak	20000
ENC	CA573395	Pangnirtung	20000
ENC	CA573396	Cape Dorset	10000
ENC	CA573397	Igloolik	10000
ENC	CA573401	Pond Inlet	10000
ENC	CA573400	Hall Beach	10000
ENC	CA473381	Arctic Bay	40000
Raster	R/M7784	Victoria Strait	150000

New Editions	Chart Number	Title	Scale
ENC	CA373394	James Ross Strait	80000
ENC	CA373338	Lambert Channel and/et Cache Point Channel	80000
ENC	CA473332	Cambridge Bay	30000
ENC	CA273298	Barrow Strait and/et Wellington Channel	300000
ENC	CA273258	Committee Bay - Pelly Bay	500000
ENC	CA373267	Queen Maud Gulf Eastern Portion	150000
ENC	CA373128	Crozier Strait and/et Pullen Strait	100000
ENC	CA273313	Lancaster Sound Eastern Approaches/Approches Est	500000
ENC	CA473342	Kugluktuk	50000
ENC	CA373262	Victoria Strait	150000
Paper	7310	Jones Sound	300000

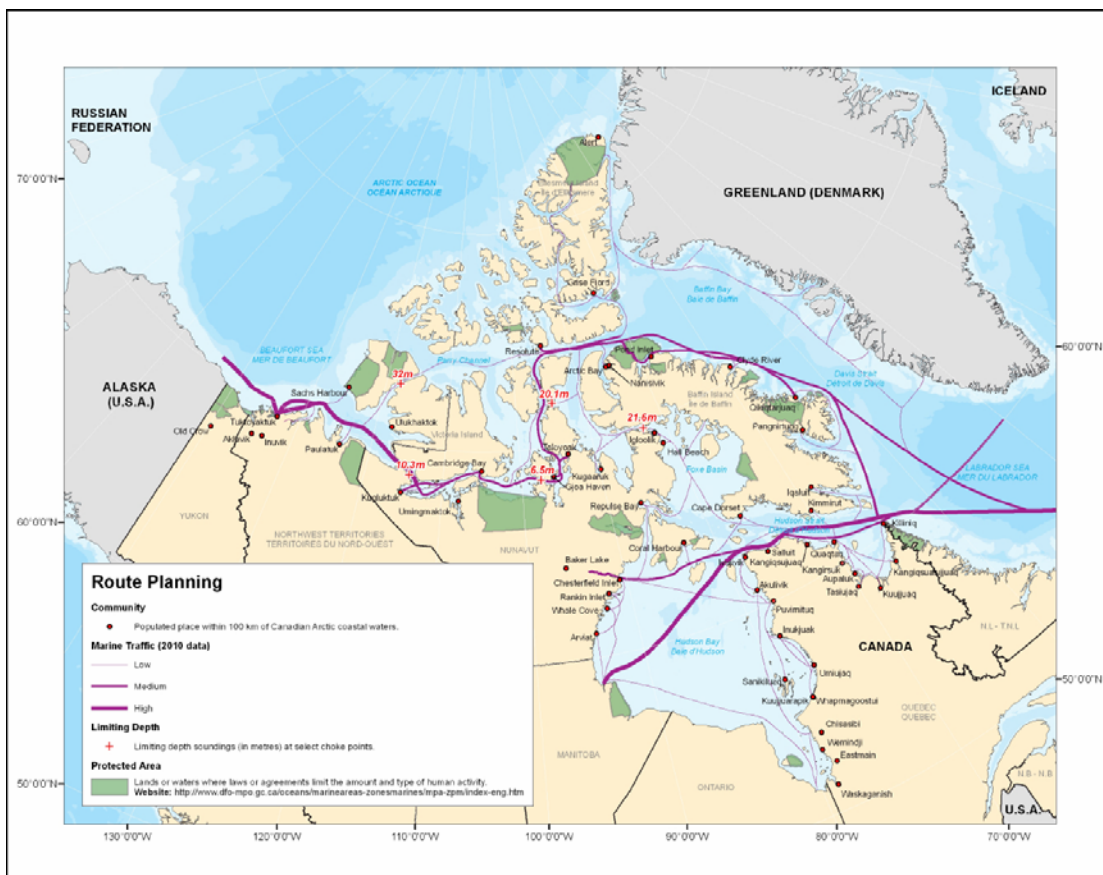
4. New Publications and Updates

a) New Publications

In the past year CHS has published a new edition of Sailing Directions 403 *Western Arctic*.

CHS has also developed a Draft Arctic Voyage Planning Guide; this document provides mariners with information on:

- Route Planning
- Legislation and Regulations
- Charts, Publications and Carriage Requirements
- Marine Communication
- Ice Conditions
- Weather Services



A panel from the Draft Arctic Voyage Planning Guide

b) Updated Publications

- CHS publishes seven volumes of the Canadian Tide and Current Table annually. Volume 4 covers the Arctic and Hudson Bay. It is available on-line:

<http://www.waterlevels.gc.ca/eng/data/predictions/2012#vol4>

- Four volumes of Sailing Directions cover the Arctic:

ARC 400E	General Information, Northern Canada
ARC 401E	Hudson Strait, Hudson Bay and Adjoining Waters
ARC 403E	Sailing Directions Western Arctic
P102	Arctic Canada Vol. 2
P104	Arctic Canada Vol. 3

- Chart 1, Symbols, Abbreviations and Terms

This can be accessed on line at:

<http://www.chs-shc.gc.ca/publications/chart1-cartel/index-eng.asp>

- Chart Catalogue

Catalogue 4 covers Canada's Arctic waters.

5. MSI in the Canadian Arctic

The Canadian Coast Guard, of Fisheries and Oceans Canada, is responsible for MSI activities in Canadian Waters.

The Canadian Coast Guard provides details of the broadcast schedule (and content) for maritime safety information (weather and navigational warnings) for all 22 MCTS (Marine Communications and Traffic Services) Centres in the publication "Radio Aids to Marine Navigation". This publication includes diagrams of the locations of the transmitting antennas (infrastructure) and MCTS Centre locations.

MSI broadcast services in the Canadian Arctic, are currently provided by Inuvik MCTS and Iqaluit MCTS on VHF, MF and HF using broadcast mediums such as radiotelephony, radiofacsimile, and NAVTEX.

In accordance with the GMDSS Master Plan, for Arctic NAVAREAs/METAREAs XVII and XVIII:

1. The Canadian Coast Guard is the registered provider of navigational warning information to be disseminated (scheduled 2x daily) via the Inmarsat-C SafetyNET service. Both NAVAREAs are operated from a single location. Equipment is fully redundant and a business continuity plan is in place.
2. Environment Canada is the registered provider of weather and ice information to be disseminated via the Inmarsat-C SafetyNET service.

The Canadian coverage using the SafetyNET service has been fully operational since June 2011 with no problems noted.

6. C-55

The CHS is investigating a GIS solution to update the Canadian entry to this publication.

7. Capacity Building

Not Applicable

8. Oceanography

a) Tide Gauge Network

CHS operates four permanent tide gauges in the Canadian Arctic: Alert, Broughton Island, Holman and Tuktoyaktuk; new gel batteries have been installed at two of these sites. In 2013 CHS plans to strengthen the underwater installations for these permanent gauges to limit ice damage.

This year CHS also retrieved a current meter that had been in place for a year at Eureka and year-long tide gauges from Resolute, Cambridge Bay and Spence Bay. Three year-long tidal gauges were installed at Gjoa Haven, the Belcher Islands and Hudson Strait; CHS is using new Aanderaa SeaGuard submersible gauges at these sites.

9. Other Activities

a) Participation in IHO Working Groups

Savi Narayanan of the Canadian Hydrographic Service was elected as the Chair of IRCC in June, 2012. CHS also participates in IRCC working groups WENDWG and GEBCO. The Canadian Coast Guard participates in WWNWS.

Under HSSC CHS participates in TSMAD, DIPWG, CSPCWG, DQWG and TWLWG.

b. MSDI Projects

CHS is working with Natural Resources Canada (NRCan) on developing a national Marine Spatial Data Infrastructure, which includes four national MSDI pilot projects. One of these projects will be based in the Arctic as part of the development of an Arctic Spatial Data Infrastructure.

c. Meteorology

Environment Canada is responsible for providing marine forecasting services to mariners.

10. Conclusions

Canada is attempting to enhance its focus in the Arctic through these projects and through international collaboration.