

# LIGHTHOUSE

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REVUE DE L'ASSOCIATION CANADIENNE D'HYDROGRAPHIE

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## Editorial Staff/Équipe de rédaction

Editor/Rédacteur en chef:	vacant
Layout/Mise en page:	J. Weedon
Translation/Traduction:	B. Labrecque
News/Nouvelles:	CHA Branches
Advertising/Publicité:	G. McFarlane
Finance/Finance:	P. Travaglini
Distribution:	E. Brown

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All **LIGHTHOUSE** correspondence should be sent to  
*Adressez toute correspondance au:*

**LIGHTHOUSE**, Canadian Hydrographic Association

CHS Central & Arctic, Jim Weedon  
867 Lakeshore Road, P.O. Box 5050  
Burlington, ON Canada L7R 4A6  
Telephone/Téléphone: (905) 336-4841  
Fax/Télécopieur: (905) 319-6916  
E-mail/courriel: layoutlighthouse@hydrography.ca



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**Dune de Buctouche**

Photograph Courtesy of DFO

## Dune de Buctouche Lighthouse

Positioned on Canadian Hydrographic Service chart #4909  
List of Lights # 1122.00

Position: 46 degrees 27 minutes 40.1 seconds N,  
64 degrees 36 minutes 46.2 seconds W

Charted characteristics: Fl 4s 11m 7M

The lighthouse is located at the southern end of Dune de Buctouche, on the coast of the Northumberland Strait, east of the town of Bouctouche\* New Brunswick. The lighthouse marks the dune and the entrance to Baie de Buctouche. The dune on which it sits is 12km of shifting sand owing it's existence and constant change to the winds, tides and ocean currents. The Dune de Buctouche is part of the Irving Eco-Centre which was developed by J.D. Irving Ltd to protect and restore the dune and it's unique habitat. For more information on the Irving Eco-Centre: La dune de Bouctouche visit: [http://www.jdirving.com/environment.aspx?id=318&ekmense1=8\\_submenu\\_108\\_btnlink](http://www.jdirving.com/environment.aspx?id=318&ekmense1=8_submenu_108_btnlink)

(\*the official name for the town is Bouctouche and for the dune and bay is Buctouche.)

## directors/directeurs

### *National President:*

George P. McFarlane  
6420 Edenwood Drive  
Mississauga ON L5N 3H3  
Tel: (905) 824-1953  
E-mail: geomac66@sympatico.ca

### *National Secretary:*

Kirsten Greenfield  
4900 Yonge Street. Toronto, ON M2N 6A6  
Bus: (416) 512-5815 Fax: (416) 512-5830  
E-mail: kirsten.greenfield@pwgsc.gc.ca

### *National Treasurer:*

Christine Delbridge  
867 Lakeshore Rd. Burlington, ON L7R 4A6  
Bus: (905) 319-6918 Fax: (905) 319-6916  
E-mail: Christine.Delbridge@dfo-mpo.gc.ca

### *Please address All Correspondence for CHA*

#### *National to:*

Canadian Hydrographic Association - National  
6420 Edenwood Drive  
Mississauga ON L5N 3H3

#### *V-P Pacific Branch:*

Ken Halcro  
P.O. Box 6000, 9860 W Saanich Rd.  
Sidney, BC V8L 4B2  
Bus: (250) 363-6669 Fax: (250) 363-6323  
E-mail: Ken.Halcro@dfo-mpo.gc.ca

#### *V-P Central Branch:*

Roger Cameron  
867 Lakeshore Rd. Burlington, ON L7R 4A6  
Bus: (905) 336-4539 Fax: (905) 319-6916  
E-mail: Roger.Cameron@dfo-mpo.gc.ca

#### *V-P Ottawa Branch:*

Dr. Kian Fadaie  
615 Booth St. Ottawa, ON K1A 0E6  
Bus: (613) 995-4290 Fax: (613) 947-4369  
E-mail: Kian.Fadaie@dfo-mpo.gc.ca

#### *V-P Section du Québec.*

Bernard Labrecque  
53 St. Germain Ouest Rimouski, PQ G5L 4B4  
Bus: (418) 775-0812 Fax: (418) 775-0654  
E-mail: Bernard.Labrecque@dfo-mpo.gc.ca

#### *V-P Atlantic Branch:*

Bruce Anderson  
P.O. Box 1006 Dartmouth, NS B2Y 4A2  
Bus: (902) 426-0574 Fax: (902) 426-1893  
E-mail: Bruce.Anderson@dfo-mpo.gc.ca



# Message from the National President

## Mot du Président national



Greetings to All.

This is my final National President's Message as my second term of office comes to a close February 18, 2013.

It has been my privilege to serve as National President of the CHA for the past two terms. I wish to thank all my colleagues for entrusting me with the responsibility of the leadership of the CHA over the past five and a half years. It has been an extremely rewarding experience! I sincerely hope I have been worthy of that trust, that I have contributed to the growth of our association and that I am leaving it in a much better state than I found it. I must compliment all the hardworking Branch Vice Presidents and Committees for their cooperation and dedication to ensuring that our common aims and objectives were encouraged, promoted and largely met. Together we sought to meet our governance requirements / responsibilities and aggressively promote the

aims and objectives of the Canadian Hydrographic Association. We have sought to improve our ongoing relationship with our major partner the CHS and with our affiliated professional bodies CIG, THSOA, FIG, ACLS.

We are now being challenged to respond to the provisions of the recently enacted "Not for Profit" Legislation; a task the new administration will have to wrestle with. We have updated our website, sustained our financial support to capable and deserving students, and held three successful CHC International Hydrographic Conferences, as well as attending US Hydro Series of bilateral conferences sponsored by the Hydrographic Society of America (THSOA).

We continued production of Lighthouse (one of the few remaining print journals for Hydrography). We have a pressing need for a new Editor, so please step forward!

The National President Election process is well underway under the very capable stewardship of Sean Hinds and his committee. Its completion by year end will ensure a smooth transition of leadership and I look forward to the handover of responsibility early in the new year.

The past year has not been without it's sad moments and we pause to extend our association's condolences to the families of Rear Admiral G. Steve Ritchie, C.B., DSC and Professor Dr. Volker Boeder, the latter passing in a tragic accident while executing a hydrographic survey on the Rhine River.

I would like to close on a more upbeat note as we extend our congratulations to Rob Hare (formerly of CHS Pacific) for recognition of his "Excellence in his profession, serving the people of Canada" by being awarded the Queen's Jubilee Medal. Well done Rob!

Sincerely,  
George McFarlane, National President - CHA



# Message from the National President

## Mot du Président national



Bonjour à tous,

Ceci est mon dernier message en tant que président national puisque que mon deuxième mandat se terminera le 18 février 2013.

Ce fut un privilège de vous servir en tant que président national de l'ACH pendant ces deux mandats. Je tiens à remercier tous mes collègues de m'avoir confié la responsabilité de la direction de l'ACH au cours des cinq dernières années et demie. Cela a été une expérience extrêmement enrichissante! J'espère sincèrement avoir été digne de cette confiance et avoir contribué à la croissance de notre association en la laissant dans un bien meilleur état. Je dois féliciter tous les vice-présidents et les responsables de comités pour leur coopération et leur dévouement à faire en sorte que nos buts et objectifs communs aient été poursuivis, promus et largement atteints. Ensemble, nous avons cherché à rencontrer les exigences et les responsabilités de gouvernance par une promotion acharnée des buts et objectifs de l'Association canadienne d'hydrographie.

Nous avons cherché à améliorer nos relations avec le SHC, notre principal partenaire, et avec l'ACSG, la FIG, la THSOA et l'AATC, nos organismes professionnels affiliés.

La nouvelle administration aura une nouvelle tâche, soit celle de répondre aux dispositions de la loi récemment promulguée sur les organismes à but non lucratif. Nous avons mis à jour notre site internet, maintenu notre soutien financier à des étudiants méritants, et tenu avec succès trois Conférences hydrographiques du Canada, ainsi que participé aux conférences américaines bilatérales HYDRO organisées par la Hydrographic Society of America (THSOA).

Nous publions toujours la revue Lighthouse (l'une des rares revues imprimées restantes sur l'hydrographie). Nous avons un urgent besoin d'un nouveau rédacteur en chef, avis aux personnes intéressées!

Le comité pour l'Élection du prochain président national sous la gouverne de Sean Hinds va bon train. Le processus devrait être terminé vers la fin de l'année afin d'assurer une transition en douceur du leadership et des responsabilités au début de la nouvelle année.

L'année écoulée a eu ses moments tristes et notre Association offre ses condoléances aux familles du contre-amiral G. Steve Ritchie, CB, DSC et du Professeur Dr. Volker Boeder, décédé lors d'un tragique accident pendant un levé hydrographique sur le Rhin.

Je voudrais terminer sur une note plus optimiste en adressant nos félicitations à Rob Hare (anciennement du SHC, région du Pacifique) récipiendaire de la Médaille du jubilé de la Reine en reconnaissance de son «excellence à servir les Canadiens dans sa profession». Bravo à Rob!

Cordialement,  
George McFarlane, président national - ACH



# Bedford Institute of Oceanography

## 50 Year Anniversary Celebrations

Following World War II, a team of marine science champions, including Canadian icon Dr. W. E. van Steenburgh, envisioned a multidisciplinary ocean research centre that would be equipped to meet the future needs of ocean management in an emerging global economy.

In 1962, their vision became a reality when the Bedford Institute of Oceanography (BIO) opened its doors on the shores of the Bedford Basin in Dartmouth, Nova Scotia, and constructed the expedition vessel – the Canadian Coast Guard Ship *Hudson*.

The Bedford Institute of Oceanography has since built an enviable international reputation as a major centre for oceans research, technology resource management. During the last five decades the Institute has grown to be Canada's largest centre for ocean research. The Institute is now a fully integrated member of the community, and has become a central player in the marine science and technology sector in the Atlantic region.

The Institute houses over 650 scientists, engineers, technicians, natural resource and environmental managers, and support staff from a variety of disciplines. Currently, five federal departments are on site at the Institute: Fisheries and Oceans Canada, Natural Resources Canada, Environment Canada, the Department of National Defence, and Public Works and Government Services Canada.

Fisheries and Oceans Canada is represented at the Institute by four main organizations: Science (including the Canadian Hydrographic Service [Atlantic]), Ecosystem Management, Information Management and Technical Services, and the Canadian Coast Guard Agency.

Together these four organizations provide support, service delivery, scientific knowledge, and advice on a wide variety of issues regarding Government of Canada strategic outcomes and priorities related to environment, sustainable fishing, sovereignty and safe navigation.

The other departments at the Institute conduct world-class oceanographic research; providing advice and support on ocean issues including offshore energy development, sustainable use of marine natural resources, climate change, and protecting marine biodiversity and aquatic species at risk.

The staff of the five federal government departments at the Institute are now an integral part of the regional community and are key partners with local universities, industry, and social interest groups. Additionally they also provide many public tours and exhibitions including a major open house event every five years.

The Institute has held seven open houses since the Institute's establishment in 1962. The most recent event was staged over a 5-day period in 2007 and saw an estimated 18,000 to 20,000 people tour the Institute.

The following are events, activities, and publications planned in relation to the Bedford Institute of Oceanography's 50<sup>th</sup> Anniversary

### Events

#### The Bedford Institute of Oceanography's 50<sup>th</sup> Anniversary Expo

This large scale event occurred on September 17 – 23<sup>rd</sup> 2012. It was housed in large tents along the wharf of the Institute. There were 35 to 40 educational exhibits on display as well as a fish touch tank.

#### Scientific Symposium – October 23-24, 2012

The proposed theme is 'Climate Change & Adaptation' which will cover both regional and international perspectives. There will be invited presenters from Fisheries and Oceans Canada and Natural Resources Canada as well as another half-dozen international speakers.

#### BIO 50<sup>th</sup> Gala Birthday Celebration

October 25<sup>th</sup> is the exact date of the Institute opening 50 years ago. This daytime event will be by invitation. Those invited will be current employees as well as former employees who were at the institute when it first opened.

#### Nova Scotia Institute of Science Cooperative Lecture Series

The Nova Scotia Institute of Science will coordinate a guest lecture series around Nova Scotia throughout the year. Speakers will include employees from Natural Resource Canada and Fisheries and Oceans Canada as well as guest speakers.

#### The Bedford Institute of Oceanography Lecture Series

Breaking with the traditional practice of past Open Houses which featured lectures during that event, BIO 2012 will present a series of lectures throughout the year that are broadly advertised internally and externally. Topics for these lectures will stem from the Retrospective Scientific Review Book, the Crystal Award winners, the BIO Annual review as well as solicited lectures on special topics for the general public (such as corals, right whales, sharks, the Sable Gully, etc.) There will be one or two lectures per month on a different topic on Wednesday evenings at 7pm.





### *Celebrate...*

#### World Hydrography Day - June 21<sup>st</sup>

The United Nations, in its General Assembly Resolution A/60/30 of 29 November 2005, "Welcomes the adoption by the International Hydrographic Organization of the "World Hydrography Day", to be celebrated annually on June 21st, with the aim of giving suitable publicity to its work at all levels and of increasing the coverage of hydrographic information on a global basis, and urges all States to work with that organization to promote safe navigation, especially in the areas of international navigation, ports and and where there are vulnerable or protected marine areas."

## CALENDAR OF EVENTS

- HYDRO '12 Rotterdam - The Netherlands, November 13-15, 2012 ([www.hydro12.com](http://www.hydro12.com))
- CIG LIDAR Workshop and Annual General Meeting - Ottawa, Ontario, Canada, November 22, 2012
- 8th FIG Regional Conference - Montevideo, Uruguay, November 26-29, 2012 ([www.fig.net/uruguay/index.htm](http://www.fig.net/uruguay/index.htm))
- Association of Ontario Land Surveyors AGM, Toronto, Ontario, Canada, February 26-March 1, 2013 ([www.aols.org](http://www.aols.org))
- US HYDRO 201 - New Orleans, Louisiana, USA, March 25-28, 2013 ([www.thsoa.org](http://www.thsoa.org))
- FIG Working Week 2013 - Abuja, Nigeria, May 6-10, 2013 ([www.fig.net/fig2013](http://www.fig.net/fig2013))
- CIG-ISPRS Earth Observation on Global Change Conference - EOGC 2013 and CIG National Conference - Toronto, Ontario, Canada, June 4-7, 2013
- 9th National Surveyors Conference and Association of Canada Land Surveyors AGM - Niagara Falls, Ontario, Canada, June 18-21, 2013 ([www.acls-aatc.ca](http://www.acls-aatc.ca))
- United Nations World Hydrography Day - June 21, 2013
- International Maritime Organization's World Maritime Day - last week September 2013
- CIG Montréal Branch - Geomatics 2013 - Montréal, Québec, Canada, October 3-4, 2013
- CIG - ISPRS Technical Commission 2 Symposium - Toronto, Ontario, Canada, September 2014

# Call for Nominations - National President Canadian Hydrographic Association

**Canadian Hydrographic Association**  
**February 19, 2013- February 18, 2016**

## Preparations for Election

The National President's term of office will expire on February 18, 2013. In preparation for a smooth transition from our present national executive to our new executive, nominations are being solicited.

## Eligibility

Nominee must be a member in good standing with the Canadian Hydrographic Association.

## Experience Required

Leadership and the experience/skill working collaboratively within the survey profession is recommended. It is suggested that nominees for President of CHA have previous executive experience with the Canadian Hydrographic Association or a similar professional survey or geomatics organization.

## Willingness to Stand

Individuals may be nominated or may volunteer by communicating this to their CHA Branch Vice-President who will forward this to the Elections Committee no later than midnight October 19, 2012. Nominees willing to stand for election are required to provide a brief resume that must include their election position (purpose for running and/or their goals for CHA). A list of 2012 CHA Members is attached. The Elections Committee membership is as follows:

sean.hinds@dfo-mpo.gc.ca (Sean Hinds)  
kian.fadaie@dfo-mpo.gc.ca (Kian Fadaie)

## Nominations List

The list of nominees will be circulated to Branch Vice-Presidents for distribution along with appropriate voting ballots by no later than October 26, 2012. Ballots are to reach all members (incl. members at sea or on holidays) and allowing six weeks for a response.

## Counting of Ballots – The Vote

Ballots will be accepted by the Branch Executives via fax, e-mail, or hardcopy mail up to December 7, 2012. Branch Executives are to forward this collection of ballots to the Elections Committee (Sean Hinds and cc other Election Committee members) by December 10, 2012. The successful candidate will be declared on December 14, 2012.

## Additional Information

### Goals of the Association:

- Preserve our core values and aims as identified in the CHA constitution.
- Service to our members and subscribers.

### How the Association achieves its goals:

- Continuing Professional Development (CPD) through the delivery of Seminars, Presentations, Conferences, Workshops and Training for Hydrographers.
- Publish Lighthouse.
- Strategic alliances and affiliations with National and International Professional Surveyor and Geomatics Associations.

### Alliances:

International- The Hydrographic Society of America and the International Federation of Surveyors (FIG) Commission 4 (via Memorandum Of Understanding with CIG)

National- Canadian Institute of Geomatics (CIG) and the Association of Canada Lands Surveyors (ACLS). The national president or a nominee represents CHA at the CIG council as the technical councillor for hydrography. CHA and CIG have a combined hydrographic committee.

### National President- Terms of Reference:

- I. Appoint a national secretary, treasurer and any other member (where required) to the national executive.
- II. Direct the business of the Association
  - Canadian Hydrographic Conference
  - National Student Award
  - Lighthouse
- III. Support strategic alliances with National and International Surveying and Geomatics Association. This includes serving as CIG councillor for hydrography during his/her tenure and the nomination of the delegate to FIG Commission 4.
- IV. Chair a minimum of two Director's meetings and one AGM per calendar year.
- V. Offer support to Branches and foster new initiatives.

Respectfully,  
The 2012 CHA Elections Committee



## CHA 2012 Members in Good Standing

### Pacific Branch

<u>Name</u>		<u>Company</u>	<u>Member Type</u>
Arumugam	Dushan	Geomatics Data Solutions	Corporate
Calderbak	Bruce	Hydrographic Survey Consultants	Intl. Regular
Canyon	John	IIC Technologies	Corporate
Crawford	Bill	OSAP	Regular
Curran	Terry	Canadian Hydrographic Service	Regular
De Lange	Boom	Bodo Canadian Hydrographic Service	Regular
Douglas	Karen	UVic	Regular
Earl	Eric	Canadian Hydrographic Service	Regular
English	Dave	ASL Environmental Sciences Inc.	Regular
Grabowski	Les	LG Surveying Ltd.	Regular
Gundling	Tanja	Canadian Hydrographic Service	Regular
Halcro	Ken	Canadian Hydrographic Service	Regular
Hare	Rob	Canadian Hydrographic Service	Regular
Jennings	Michael J.	CHS Retired	Regular
Langford	Colin	Retired Hydrographer	Regular
Larkin	John	Retired CHS	Regular
Lessels	Craig	Canadian Hydrographic Service	Regular
Lloyd	Ian	BCIT	Corporate
Lyall	Robert	Lyall Surveys Ltd.	Regular
Lyon	Art	Retired CHS	Regular
McCulloch	Thomas	Life Member – Central	Life
Milner	Pete	Retired CHS	Regular
Mullins	Geoff	JKL Research	Regular
Nowak	Carol	Retired CHS	Regular
Oraas	Sherman	Retired CHS	Regular
Port	Brian	Retired CHS	Regular
Quin	Rick	Terra Remote Sensing Inc.	Corporate
Rapatz	Willie	Life Member - Pacific	Life
Sandilands	Sandy R.W.	Life Member - Pacific	Life
Steffens	Paul	Atek Hydrographic Surveys Ltd.	Corporate
Stephenson	Fred	Retired CHS	Regular
Strong	Brad	Canadian Hydrographic Service	Regular
Theriault	Allan	NAIT Geomatics Engineering Technology	Corporate
Tomlins	Matt	Pacific Geomatics Ltd.	Corporate
van der Have	Frank	Hoskin Scientific Limited	Corporate
Wilhelmsen	Disa	Imagenex Tech. Corp.	Corporate
Wingerter	Brian	Canadian Hydrographic Service	Regular
Woods	Michael	M&D Geomatics Ltd.	Regular

### Central & Arctic Branch

<u>Name</u>		<u>Company</u>	<u>Member Type</u>
Campbell	Jennifer	Canadian Hydrographic Service	Regular
Janzen	Tim	Canadian Hydrographic Service	Regular
Delbridge	Christine	Canadian Hydrographic Service	Regular
Kalley	Donald	Canadian Hydrographic Service	Regular
Oliff	Fred	Canadian Hydrographic Service	Regular
Walker	Jeff	Canadian Hydrographic Service	Regular
Cameron	Roger	Canadian Hydrographic Service	Regular
Herron	Terese	Canadian Hydrographic Service	Regular
Leyzack	Andrew	Canadian Hydrographic Service	Regular
Fuchs-Trapp	Helen	Canadian Hydrographic Service	Regular
Brent	Micheal	True North Marine Ltd.	Regular
Dexel	Ken	Retired CHS hydrographer	Regular
Duller	Heimo	Friend of Hydrography	Regular
Greenfield	Kirsten	Public Works & Gov't Services Canada	Regular
McParlane	George	Retired	Regular
Morrison-Duller	Julia	Friend of Hydrography	Regular
McCulloch	Tom	Retired CHS Hydrographer	Life
Marczenko	Andrew	Riggs Engineering	Regular
Brown Earl	Retired	CHS Hydrographer	Life
Halsall	John	J. Halsall Hydrographic Surveys	Regular

## Central & Arctic Branch cont'd

<u>Name</u>		<u>Company</u>	<u>Member Type</u>
MacDonald	George	Retired CHS Hydrographer	Honorary
Power	Brian	Retired CHS Hydrographer	Regular
Tinney	Brad	Retired (formerly CHS)	Regular
Evangelatos	Tim	Retired CHS Hydrographer	Honorary
Hinchley	Robert	The Ovis Group	Regular
Evens	Lourdes	Hypack Inc.	Corporate
Aarstad	Egil	Jeppeson Norway	Corporate
Easson	Richard	Tecdyne Odem Hydrographic	Corporate
Ramirez	Tony	Triton Imaging Inc.	Corporate
Schlagintweit	George	Canadian Hydrographic Service	Regular
Corriveau	Jean-Luc	Jean-Luc Corriveau Appenteur Geometre	Regular
Las	Megan	Toronto Region Conservation Authority	Regular
Mara	Adam	Bluefin Robotics	Regular (Int)
Marshall	Robert	Retired CHS Hydrographer	Regular
Mong	Eivind	Jeppessen	Regular
Wallace	Jack	Hydrographix	Regular (Int)
Rogers	Abe	Retired CHS Hydrographer	Life
Weller	Sam	Retired CHS Hydrographer	Life
Harvey	Stephanie Lynn		Regular
Medendorp	John	Retired CHS	Regular
Eden	Cathy	Toronto & Region Conservation Authority	Regular
Hall	Dr. John K	Blodgett-Hall Polar LLC	Regular (Int)
Tetrault	Jean-Claude	ACLS	Corporate
McMillan	Ken	McQuest Marine Sciences	Corporate
Sani	Anthony P.	Sani-International Technology Advisors	Corporate
Smith	Kevin	L-3 Communications Nautronix Ltd.	Corporate
Gillis	John	Kongsberg Maritime	Corporate
Garrinton	Jim	Shark Marine Technologies Inc.	Corporate
Gicante	Rebecca	ASI Group	Corporate
Kleiner	Art	C & C Technologies	Corporate
Knudsen	Judith	Knudsen Engineering Ltd.	Corporate
Ralph	Todd	Fugro Jacques GeoSurveys Inc.	Corporate
Hall	Dr. John K.	Blodgett-Hall Polar Presence LLC	Corporate
Forester-Bennet	Rupert	Pelydryn LLC	Corporate
Grava	Josh	Reson Inc.	Corporate
Gann	Eileen or John	Chesapeake Technology Inc.	Regular (Int)
Alkan	Reha Metin	Istanbul Technical University	Regular (Int)
Gerhard	John	Woolpert	Regular (Int)
Oliveira	Aluizio Maciel De	Brazilian Hydrographic Centre	Regular (Int)
Kristoffersen	Prof. Yngve	University of Ergen Norway	Regular (Int)
Dodd	David	U of Southern Mississippi	Regular (Int)
Kieninger	Karl	Hydro Marine Inc	Regular (Int)
Kerr	Adam	Retired past CHS Hydrographer	Regular (Int)
Robbins	Larry	Retired (NZ Navy)	Regular (Int)
Knight	Peter	Geomatics NZ Ltd.	Regular (Int)

## Ottawa Branch

<u>Name</u>		<u>Company</u>	<u>Member Type</u>
Fadaie	Dr. Kian	Canadian Hydrographic Service	Regular
Pelletier	Daniel	Canadian Hydrographic Service	Regular
Akerley	Nancy	Canadian Hydrographic Service	Regular
Acheson	Sheila	Canadian Hydrographic Service	Regular
Bradbury	Daria	Canadian Hydrographic Service	Regular
Hinds	Sean	Canadian Hydrographic Service	Regular
Farmer	Carole	Canadian Hydrographic Service	Regular
Hemmingway	Chris	Canadian Hydrographic Service	Regular
Hendi	Anna	Canadian Hydrographic Service	Regular
McMillan	Dr. Ann	Retired	Regular
Patterson	Lynn	Canadian Hydrographic Service	Regular
Pigeon	Denis	Canadian Hydrographic Service	Regular
Kirkpatrick	Stacey	Canadian Hydrographic Service	Regular
Wisener	Kevin	Canadian Hydrographic Service	Regular
Narayanan	Dr. Savithri	Canadian Hydrographic Service	Regular
Holroyd	Paul	Canadian Hydrographic Service	Regular



## Ottawa Branch Cont'd

<u>Name</u>		<u>Company</u>	<u>Member Type</u>
Eelhart	Michael	Geo Int Ops DND	Regular
Levesque	Serge	Canadian Hydrographic Service	Regular
Tsoukanos	Katherin	Canadian Hydrographic Service	Regular
Brunt	Doug	Canadian Hydrographic Service	Regular
Bromfield	Colin	Canadian Hydrographic Service	Regular
McGrail	Kathryn	Canadian Hydrographic Service	Regular
Ieropoli	Sergio	Canadian Hydrographic Service	Regular
Struder	Peter	Harte Struder Business Development Ltd.	Corporate
Chenier	René	Canadian Hydrographic Service	Regular
DeMagerie	Sylvain	Canadian Hydrographic Service	Regular
Marquis	Genevieve	Canadian Hydrographic Service	Regular

## Québec Branch

<u>Name</u>		<u>Company</u>	<u>Member Type</u>
Arseneau	Bernard	Institut maritime du Quebec	Regular
Dorais	Robert	Service hydrographique du Canada	Regular
Doucet	Normand	Service hydrographique du Canada	Regular
Labrecque	Bernard	Service hydrographique du Canada	Regular
Pagé	Pierre	Service hydrographique du Canada	Regular
Santerre	Dr. Rock	Université Laval	Regular
Bellavance	Laurent	Technopole Maritime du Québec	Corporate
Savard	Martial	Réformar	Corporate
Laflamme	Jean	CIDCO	Corporate
Richard	Alain	Institut maritime du Quebec	Corporate

## Atlantic Branch

<u>Name</u>		<u>Company</u>	<u>Member Type</u>
Almehmadi	Majed		Regular
Anderson	Bruce	Canadian Hydrographic Service	Regular
Burgess	Frank	Canadian Hydrographic Service	Regular
Casey	Garry	Seaforth Geosurveys Inc.	Regular
Collier	Lynn	Canadian Hydrographic Service	Regular
Cormier	Jacinthe	Canadian Hydrographic Service	Regular
Donnet	Sebastien	Golder Associates	Regular
Joyce	Heather	Canadian Hydrographic Service	Regular
King	Glen	Canadian Hydrographic Service	Regular
Goguen	Michel	Canadian Hydrographic Service	Regular
Goodyear	Julian	Retired	Regular
Grant	Stephen	Retired	Regular
Hammond	Judy	Canadian Hydrographic Service	Regular
Hanway	James	Canadian Hydrographic Service	Regular
Lamplugh	Mike	Canadian Hydrographic Service	Regular
MacDougall	Richard	Retired	Regular
McCracken	Mark	Canadian Hydrographic Service	Regular
Nickerson	Mike	Canadian Hydrographic Service	Regular
Nickerson	Sandra	Highland Geo Solutions	Regular
Rahr	Sarah	Canadian Hydrographic Service	Regular
Rockwell	Gary	Retired	Regular
Rowsell	Tom	Canadian Hydrographic Service	Regular
Rozon	Chris	Canadian Hydrographic Service	Regular
Smith	Andrew	Canadian Hydrographic Service	Regular
Therrien	Michel	Canadian Hydrographic Service	Regular
Travaglini	Paola	Canadian Hydrographic Service	Regular
Woodford	Wendy	Canadian Hydrographic Service	Regular
Zeller	Craig	Canadian Hydrographic Service	Regular
Eaton	Michael	Retired	Honorary
Masery	Dr. Salem	CARIS	Corporate
Fowler	Ashley	ODIM Brooke Ocean Ltd.	Corporate
Aitken	Jeff	DOF Subsea Canada Corp.	Corporate
Allen	John	GeoNet Technologies Inc.	Corporate
Davis	Matthew	ROMAR Ocean Solutions	Corporate



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*Subscription to Lighthouse (published twice annually).  
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867 Lakeshore Rd.  
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L7R 4A6  
905-336-4539





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E-mail: \_\_\_\_\_

Payment can be made by cheque or money order, payable to Canadian Hydrographic Association.

### Branch Offices

<b>Atlantic</b> Andrew Smith P.O. Box 1006 Dartmouth, NS B2Y 4A2 902-426-0574	<b>Ottawa</b> Sheila Acheson 615 Booth Street Ottawa, ON K1A 0E6 613-995-5249	<b>Pacific</b> Ken Halcro P.O. Box 6000 9860 W. Saanich Rd Sidney, BC V8L 4B2 250-363-6669	<b>Quebec</b> Bernard Labrecque 53, St-Germain O. Rimouski, QC G5L 4B4 418-775-0526
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### CIG News

The Canadian Institute of Geomatics will host its Annual General Meeting 2012 on Thursday, November 22, 2012 at the Capital Hill Hotel and Suites, Ottawa Ontario

The 2012 AGM will feature a LiDAR Technical Workshop and dinner. Additional Information will be posted on the CIG Web site at <http://www.cig-acsg.ca/>

### Technical Workshop held September 20, 2012

The Canadian Institute of Geomatics in conjunction with Spatial Geo-Link Limited held a Technical Workshop seminar, on September 20, 2012. This was a free event sponsored by Spatial Geo-Link Limited. Thirty participants attended including eight CIG members. Around 90% of participants were Land Surveyors. The Guest speakers were Dr. Brian Ballantyne, Senior Advisor: Tenure and Bounds, Surveyor General Branch, Natural Resources Canada, Mr. Lon Cornell, Account Manager - International Programs, TerraGo Technologies and Mr. Bryan Burns, Senior Support Analyst, also from TerraGo Technologies.. Topics presented were: "Riparian Bounds of Canada Lands: Avoiding the fallacy of anachronism in Ontario" and "Empowering the Enterprise through TerraGo GeoPDF Maps and Imagery"

### FIG News

CIG was well represented at the FIG Working Week 2012 – "Knowing to manage the territory, protect the environment, evaluate the cultural heritage", held in Rome, Italy, 6 - 10 May 2012. A formal Canadian Delegation was present, as well as several other Canadians during this event. CIG was very active making presentations and participating on Commission 7, Commission 4 and the Young Surveyors Network.

President Elect George McFarlane, on behalf of CIG, attended The 2012 Annual World Bank Conference on Land and Poverty in Washington, USA, from 23-27 April 2012. This conference is held in the United States on a yearly basis.

CIG has the pleasure of providing a formal Canadian Delegation that will participate during the 8th FIG Regional Conference, Montevideo, Uruguay from 26 to 29 November. Following this event, The Chair of Commission 7, Mr. Daniel Roberge will attend The FIG Commission 7 Annual meeting 2012 and International Symposium which will take place in San Luis, Argentina, from 30 November

to 4 December 2012. The theme of the symposium will be Land Governance in South America in an international perspective. These events are co-organized by the Consejo Federal de Catastro de Argentina (CFC) and the Federación Argentina del Agrimensores (FADA).

### ISPRS News

CIG had the pleasure of providing a formal Canadian Delegation to the The XXII Congress of the ISPRS 2012 held in Melbourne Australia from August 25 to September 1, 2012. During this event, a member of the Canadian Delegation presented The Samuel Gamble Award which is sponsored by the Canadian Institute of Geomatics in honour of Dr. Samuel G. Gamble, former President of ISPRS, and Director of the 1972 Congress. This year's winner of the Award is Kohei Cho, Japan, who in addition of his plaque also received 1,500 Swiss francs from CIG. Additional information is on the CIG Web site at <http://www.cig-acsg.ca/>

### Provincial Land Surveyors Association's - AGM

During the past few years, CIG has been working hard to reconnect with the Provincial Land Surveyors Associations. CIG had the honour of being represented during the AGM of the Association of Ontario Land Surveyors, the "Ordre des arpenteurs-géomètres du Québec" and the 8th National Surveyors Conference and AGM of the ACLS which was held in conjunction with the Saskatchewan Land Surveyors' Association.

### Other News

President Elect George McFarlane also represented the CIG during the CGERT Roundtable 3rd Annual meeting hosted by NRCan in Ottawa on June 22 & 23, 2012.

Congratulations to Dr. Songnian Li –Interim Chair of CIG Toronto Branch and Associate Editor of Geomatica on his promotion to Professor in Geomatics Engineering at Ryerson University.

### Future Events

EOGC 2013 and 2013 Annual CIG Conference will be held in Toronto at the Ryerson University Conference Center on June 4 – 7, 2013.

CIG Toronto Branch will continue to provide support to York and Ryerson Universities as they celebrate GIS Day –November 14, 2012.





# COMPETE FOR THE FUTURE

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**Membre de soutien :** **PLATINE** - toutes personnes **OR** - compagnies et organismes gouvernementaux **ARGENT** - établissements d'enseignement, associations et petites entreprises (moins de 7 employés). Les avantages comprennent des adhésions individuelles multiples, des escomptes publicitaires, des rabais pour la location de kiosques d'information et une mention dans chaque numéro de *GEOMATICA*

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# Friends of Hydrography

## *A Canadian Volunteer Group*

We invite you to the Friends of Hydrography Web Site '<http://www.canfoh.org>'

What is it and why does it exist? I was asked to write a little something about this small group and I struggled with how to explain what was often just referred to as "The Friends".

The Friends are a group of retired hydrographers, mostly former Canadian Hydrographic Service (CHS) employees, who would gather at 615 Booth Street every Tuesday for coffee and to capture and archive the history of hydrography. They combed through archival material including field reports, photos, conference proceedings and even an old publication called "Soundings" that was put out by the Dominion Hydrographer's office as a newsletter, capturing the work and social aspects of hydrography and the office. The volunteers spent hours formatting pictures of ships and launches for the website that was started long before the many prefab sites that are now available. These volunteers, who started in hydrography with pencil and paper, took on the steep learning curve of web development.

What drove these people to spend their time gathering information and recording it for the world to see? Over the years, some of the retirees had more difficulty coming in regularly and some sadly, passed away. There were a few who continued on, week after week. One volunteer, Sid van Dyck, explained that he joined the Friends because he loved his time with the Canadian Hydrographic Service and enjoyed the camaraderie of the Friends weekly work sessions. Long after the Friends numbers dwindled, Sid continued. His passion and persistence grew from one event in particular. He was researching a particular man who he remembered and wanted to include in the People section of the website. He asked someone in Human Resources if they had any information on his former colleague. Now this was long before the many privacy laws we have today, and so the HR person came back with the one bit of information on file. The man had written an exam and failed. This entire man's career in hydrography had been reduced to one remaining record of a failing grade. Sid knew the man had contributed much to the organization. He felt it was important to record the accomplishments of the people, and the organization; to record the history of the Canadian Hydrographic Service and hydrography in Canada.

This is what the Friends of Hydrography is about. The passion for history and people, accomplishments and the stories that go with hydrography over the years is captured in every word on the website. The Friends of Hydrography now needs volunteers to carry on and add to the collection of information and expand upon it. The Friends needs people like you to contribute their stories and to contribute to website development. We are in need of a website overhaul to bring it up to modern standards and allow this information to continue to be available for years to come. Keeping our history alive is important and only you can do it, because the history lies within each of you reading this edition of Lighthouse. Each of you has a piece of the history of hydrography in the work you do. If you are interested in volunteering, please contact us. Anyone with information to add, and in particular anyone with website experience is needed to help us continue this work. Email: [CANFOH@cogeco.ca](mailto:CANFOH@cogeco.ca)

We thank our many volunteers past and present including our chief archivist, the late Sid van Dyck who dedicated almost every Tuesday for over ten years to our cause and our current communications coordinator, Earl Brown who has been a great asset and has been pivotal in answering your questions. We thank the Canadian Hydrographic Association for all their support. The association and its members have allowed our little website to go on and we couldn't have done it without them.

Stacey Kirkpatrick - Canadian Hydrographic Service - Ottawa



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# Hydrographic Profiles

*This section is set aside to spotlight individuals who are making a difference in the field of hydrography. It is a chance for us to learn about them; their background, interests and passions.*

*Do know of someone who should be profiled here? If so, please let us know*



## Tom McCulloch

*The hydrographic life of Tom McCulloch....*

*A life well spent.*

Tom, as he is known to his friends and Thomas, as he was known to his mother - especially when he was misbehaving, was born in Geenock, Scotland and went to sea just before he turned 16. That was in 1941, so I will leave it up to you to determine his age should you care about such things. The 2<sup>nd</sup> World War was raging and Tom would experience the horrors of that war for the next five years. If you wish to follow up on this period of his life, I recommend two books that he has written. The first written in 2003 and entitled "*Mandalay to Norseman*" and in 2005, "*Navigator to Hydrographer*". Each of these books is available from the author.

Of importance I believe, is a word in the second book that came to form the most important part of Tom's working life and that word is "Hydrographer". After immigrating to Canada in 1948 he was employed in various shore jobs around Thunder Bay and later went back to sea on Canada's Great

Lakes and some international voyages. None of these enterprises suited him and in 1953 he applied to the Canadian Federal Government and was hired as a technical hydrographer and sent out to the Canadian Hydrographic Service office in Victoria. There he was immediately assigned to that famous old ship the *Wm J. Stewart* and his hydrographic life began. There he found out what it was like to be home for six months of every year and aboard the *Stewart*, also affectionately called the *Willie J*, for the other six months of the year carrying out surveys on the British Columbia coast under the watchful eye of his favorite "hydrographer-in-charge", Wilf LaCroix. Though he put up with this for a few seasons, it wasn't long before he found an exciting opportunity to head up the Victoria office efforts in Canada's western Arctic. This was a fortuitous move as it provided him with an opportunity to have his own survey party and each winter spend some very valuable time at headquarters in Ottawa. Later, Ottawa even gave him his own ship, the *Richardson*. He did not waste his Ottawa time and made very good impressions with those in command and was subsequently, in 1968, promoted to Regional Hydrographer of Central Region of the Canadian Hydrographic Service and lead the move of this unit from Ottawa (1970) to the newly established offices in Burlington on Lake Ontario. The Canada Centre for Inland Waters (CCIW), (previously known as the Bayfield Laboratory for Marine Sciences) had recently been created there primarily to address the acid rain problem identified in the Great Lakes and here the Central Region of the Canadian Hydrographic Service was established under Tom's direction. As Regional Hydrographer he established a very positive relationship with Canada's counter parts in the United States and it wasn't long before a joint effort to solve the acid rain problem as well as to conduct hydrographic and cartographic charting fell under his control. He was later made Director General of Bayfield Laboratory of Marine Sciences in 1978, a position he held until his retirement in 1985. This appointment to Director, I believe, must be something of a record. As far as I know he would be the only Foreign Going Master to head up a world famous scientific research institute filled full of PhDs, no less.

In his retirement, his new interests and activities would flourish. Before I go any further with Tom's enterprises, I should say a few words about his involvement in the creation of the Canadian Hydrographers Association, which, in 1988 under the leadership of B.M. Lusk, became the Canadian Hydrographic Association. The Association was created in 1966 to assist the Canadian Hydrographic Service in identifying and offering training to their employees. A professional

association was felt necessary in order to accomplish and contribute to the training that, with the advent of new and sophisticated hydrographic technologies, and the new concepts that recently appointed Dominion Hydrographers, who held PhDs, and subscribed to the popular term of the time "Publish or Perish", felt necessary to the future success of the Service. Tom was the Association's second national president. He continues his involvement with the Association and is a life member of Central Branch.

Upon Tom's retirement, he established a company (CAHOSI) that would promote hydrographic sciences within Canada. Many and various ocean sciences and survey companies in Canada provided modest financial support to this activity for a number of years. The company had marginal success and was discontinued as a result of the Federal Government's private enterprise focus that was promoted to relieve the government of activities that could be better undertaken, in their opinion, in the private sector. As there was no longer a strong advocate to promote hydrography in the government and little support from the Government to private enterprise, hydrography was relegated to a mere shadow of its former selves. Where it remains.

Tom's next enterprise was in making a proposal to Canada's International Development Agency (CIDA) to offer training to 3<sup>rd</sup> world countries in the field of hydrography. If we weren't going to do hydrography in Canada we would teach foreign countries the necessary skills. His first CIDA supported activity was in Jamaica where over a number of years a substantial number of Canadian hydrographers were contracted to conduct training sessions at the Cat B level. This was financed by the Canadian International Development Agency. The Canadian Hydrographic Service was also very helpful during this time and many pieces of surplus equipment were sent to Jamaica and attempts were made to make use of this equipment along with classroom training. If CHS was not going to carry out hydrographic surveys then why not give their surplus equipment to Jamaica. Success was moderate and three classes of new hydrographers graduated out of the program at the Cat B level.

In 1984/85 Tom negotiated a new CIDA project that would take place in Malaysia. Tom had been visiting his brother Gordon who was a plantation manager in Malaysia and after investigating Malaysia's survey programs and the Navy's hydrographic program, he negotiated a training program that would be a continuation of the training he once conducted in Jamaica. Here he would experience much more success. CIDA was encouraged to continue its support of these training programs and for the next 15 years the University of Technology Malaysia (UTM), which was situated in Johor, offered in the first instance Category B training and in the second Category A training. The International Hydrographic Organization's classification body in Monaco accredited the University (UTM) to offer these levels of training after CHA and UTM personnel offered compelling reasons to do so. Tom, CIDA and the CHA continued this program until 2002.

Under Tom's direction, the Canadian Hydrographic Association was substantively involved in support of this training and for the period 1988 to 2002 it made available many teachers and managed the finances and logistics. CIDA required a professional association to assume financial management responsibility for the project. Prior to Malaysia the Canadian Institute of Surveying, which is presently called the Canadian Institute of Geomatics, sponsored the Jamaica project but declined to take on the Malaysia training because of the large sums of money involved.

In conclusion, we can see that the CHS and the CHA along with CIDA, IHO, UTM and Tom's willingness to take his skills and other people's skills to the ends of the globe have given some parts of the world a hydrographic nautical charting presence they would not otherwise have had. In the world of shipping and *Queen Elizabeth 2* groundings we all can better appreciate hydrography and nautical charting. The roll Captain Tom McCulloch played in these enterprises will forever impress us. Good show Tom.

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# Hydrographic Profiles

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*Do know of someone who should be profiled here? If so, please let us know*



## **Rob Hare**

*Canadian Hydrographic Service - 1982 to 2012*

Rob Hare began his employment with the Canadian Hydrographic Service (CHS) in the summer of 1982 following his graduation with an honours diploma from the British Columbia Institute of Technology. He held the positions of field hydrographer and hydrographer in charge over his career with CHS.

In 1987, Rob received his Canadian Land Surveyor commission and commenced studies at the University of Calgary in the Survey Engineering program, graduating in 1991 with an honors B.Sc. degree in Survey Engineering.

In his first year after graduation from U of C, Rob began a project to determine the sources of uncertainty that contribute to chart/ENC position and depth uncertainty and to develop a methodology to allow others to assess these factors. This study of uncertainty continued throughout Rob's career and he was a member of many working groups both national and international to discuss the subject, including one charged with preparing new editions of the IHO publication S-44 "IHO Standards for Hydrographic Surveys" and another the "IHO Data Quality Working Group, (DQWG)" of which he was Vice-Chair until his retirement.

In 1993, Rob was nominated as Canada's representative on the S-44 Working Group and was also elected as Vice-President of CHA Pacific, a position he held for three years. Also in 1993, Rob started working with multibeam systems and developed equations and methodologies in order to process data. In 1994, he attended the first USCHC Shallow-water MB course in St. Andrews, NB.

Rob was promoted to supervisor of Data Validation Engineer in 1997 and was responsible for data conversion, recovery and validation of CHS data. Two years later, in 1999, Rob was promoted again to Manager of Hydrographic Surveys in the Pacific Region, where he stayed until his retirement.

In 2001, Rob was seconded to the University of Southern Mississippi for six months to work on uncertainty estimation for NAVOCEANO, in addition to working with Brian Calder on development of CUBE.

Over the next 10 years, Rob wrote and presented numerous papers and reports and during this period assisted with organizing Uncertainty Management Workshops at the CHC and US Hydro Conferences.

Rob was almost single-handedly responsible for a major shift in hydrographic data attribution and few hydrographers can claim having had as significant impact on world hydrography.

In 2012, he was nominated and received the Queen Elizabeth II Diamond Jubilee Medal, which is awarded to honour significant contributions and achievements by Canadians.



# From the Editor's Desk...

*Presented here are items that have come across the editor's desk and thought we would post them up as Items of Interest....*



## Ligh-Tie-house

"Does anyone know the origin and history of this tie?"



If you happen to know the origin or history of this tie...or happen to have one yourself... let us know!

Close up of Lighthouse picture on the tie modelled by Earl Brown.

## Hydrography Online



On the International Maritime Organization's World Maritime Day, usually celebrated during the last week in September, the Hydrography Website was officially launched to mark this special day. This new website portrays the hydrographic science of today for the Canadian public, and indeed for our colleagues in hydrography around the world, as well.

With its rich content, this website is educational for many people to learn about the extent and complexity of hydrography. It is also intended to attract young people to consider hydrography as a career. Many have contributed to the development of this site. My sincere thanks to each and every one of you. I invite everyone to delve into Hydrography Online. And, as always, your feedback is always appreciated.

<http://www.dfo-mpo.gc.ca/science/hydrography-hydrographie/index-eng.html>

Kian Fadaie, Director, Hydrography, Canadian Hydrographic Service, Ottawa, Ontario

# International Hydrographic Community News

## Obituary -

### Rear Admiral G. Steve Ritchie C.B., DSC

On 8 May 2012, the international hydrographic community lost one of its most celebrated practitioners. Steve Ritchie was a most wonderful man both professionally and socially. He will long be remembered by those who worked with him or associated with him for his many interests and originality. He was born in Burnley, Lancashire, in 1914 of Scottish parents, Sir Douglas Ritchie and Lady Margaret Ritchie. His father had been the secretary of the Port of London Authority, although it seems to have been persuasion within the Navy that set him on his hydrographic career. He was educated at the Royal Naval College, Dartmouth, which he joined at the age of 13. He went to sea at age 17 and joined the Survey Service of the Navy in 1936.

His career in the Surveying Service extended over thirty years during which he surveyed in many different parts of the world and rose in rank from Lieutenant to Rear Admiral. His service covered the years of the Second World War during which he was active surveying the beaches behind the lines in North Africa, for which he was awarded the Distinguished Service Cross (DSC) for bravery. It has been reported that during his war service he had a lucky escape when his commanding officer, Captain Hennessey, ordered him out of a boat just before it was blown up with the loss of all hands. During the invasion of northern Europe he was in command of *HMS Scott* being involved in the setting up of navigational systems for the invasion fleet. Altogether, he was in command of four survey ships and his time aboard *HMS Challenger* clearly had a strong influence on his attitude to giving hydrography a broader oceanographic mission. The ship was tasked to take a very multi-disciplinary role and as well as conventional hydrographic surveying she was employed on oceanographic and research activities across the world from the Labrador to the Pacific islands. During the time that Steve Ritchie was aboard, a small contingent of scientists from the Department of Geodesy and Geophysics, Cambridge, which included the eminent oceanographers Tom Gaskell and John Swallow, was assigned to the ship. There is no doubt that the experiences on the *Challenger* had a very strong bearing on Steve Ritchie's wider interests in the oceans. A particularly interesting part of the ship's programme was to survey and locate the deepest depth in the oceans. This being in the Marianas Trench, where a depth of 10,863 metres was reported. Subsequently other researchers from the USA, USSR and Japan have slightly refined this measurement. At a later stage he was employed on more mundane aspects of hydrography, such as surveys in the Persian Gulf and the north coast of Borneo aboard *HMS Dalrymple* but during that time new technology was appearing on the scene, first in the form of Two Range Decca. This gave him a lifelong interest in new technical developments and a constant desire to keep up to date. In 1963, he commissioned *HMS Vidal*, a thoroughly modern survey vessel in which he visited the Soviet Union and carried out surveys in the North Atlantic. Once again he

found himself in the more scientific aspects of hydrography in the international NAVADO programme in which a fleet of international survey ships measured geophysical profiles from side to side of the Atlantic. It also carried him to Trinidad and a glance of his very active social life!

As was expected of senior surveyors he spent time on assignments to the Hydrographic Office, no doubt learning much about the details of cartography and chart production. His first such assignment was as superintendent of the Oceanographic Branch (SOB) and his last was as the assistant Hydrographer. Another aspect of his career was to assist New Zealand establish a Hydrographic Office. *HMS Lachlan* had been transferred to the New Zealand Government and provided the nucleus for that operation. Before leaving his final sea going billet he became ADC to the Queen in 1965.

In January 1966, Steve was promoted to Rear Admiral and became the nineteenth Hydrographer of the navy, a post that he was to hold for five years. In 1967, he was made a Companion of the Bath (CBE). During that relatively short period his actions were to have a major and long-term effect on British Hydrography, the production of nautical charts and the wider development of navigation. The first of these was the completion of the move and consolidation of the Hydrographic Office at Taunton. Part of this move was to acquire and install three new colour presses that permitted the printing of charts in colours rather than the previous tones of black and grey. This fortunately coincided with another move and that was the adoption of the metric system, in particular the move from depth units in fathoms to metres. Although the International Hydrographic Bureau had been encouraging the use of metric units the UKHO had until that time resisted this change. Although there was considerable contention in marine circles on the way it should go he strongly supported the development of traffic separation schemes in the Dover Straits and later in the English Channel as a whole. It led to the first mandatory schemes being adopted by the International Maritime Consultative Organisation (IMCO). Finally, during his time in office he did much to encourage the construction of new survey ships.

After leaving his post as Hydrographer, in addition to taking a course on brick laying that was available to all retiring naval personnel, he was invited to join Southampton University as a research fellow. Although he failed to complete his planned hydrographic history he did hold discussions with Alan Ingham which were to lead to a much wider communication between hydrographic personnel. This was the development of The Hydrographic Society of which he became the first President. Hydrography, which at one time had been mostly confined to the navy and government personnel, had taken on, with the development of North Sea oil, a much broader mission that was employing civilian practitioners and commercial companies. The Hydrographic Society initially established itself nationally but later become international,

holding annual conferences, workshops and publishing the Hydrographic Journal. In 1972, Steve was elected president of the International Hydrographic Bureau in Monaco, which is the secretariat to the International Hydrographic Organisation (IHO). He was re-elected for a second five year period in 1977. The prime objects of the IHO are to encourage the uniformity of hydrographic charts and publications and to assist in the development of global expertise on the subject. One of the major tasks that he carried out to assist in these aims was to draft an international Convention which formed the administrative background for the detailed technical work. He took a particular interest in the work of the GEBCO (General Bathymetric Charts of the Oceans). This programme brought together hydrographers and oceanographers in the production of a global set of charts describing the bathymetry of all the oceans. He retired from the IHB to live in Scotland in 1982.

Nothing has been mentioned so far about his 'other life!' In his work he was full of originality and hard work, socially he was a 'bon vivant' and in that capacity he will be remembered internationally by many people. He was flamboyant in his dress and many will remember his red socks and striped blazer. His ruddy face and a mass of curly white hair topped this image. Some of us will remember seeing him at a Hydrographic Society Christmas party dressed as Father Christmas and dancing with a beautiful American girl! Taking advantage of his ship visiting Trinidad he became part of a 'band' during Mardi Gras celebrations. Dressed as a

butterfly he joined the dancing, something he was to repeat in other years. In the Pacific Islands we find him dressed in a grass skirt and drinking Kava with the local Fijians. From this we go to the formality of a visit by Princess Anne to the Hydrographic Office where we see him dressed in his uniform as a Rear Admiral – whether he was wearing red socks on that occasion is not known! His time in Monaco had its own special social occasions as a member of the Monte Carlo Club, social exchanges with Prince Rainier and a member of the local boules team. He met his wife Disa in 1942 on board the *SS Ceramic* on a voyage from Canada to South Africa. They had three sons and a daughter, a grandson has followed in his grandfather's footsteps and is a hydrographic surveyor.

Yet another life was his life as author and scholar. He wrote four books about hydrography and numerous articles in scientific literature. These can be found in publications such as the Journal of Navigation and the International Hydrographic Review and he also published in this journal (Hydro INTERNATIONAL). A series of highlights of hydrographic history in the Old Hydrographer's Column. These were subsequently published together in book form. During his time as Hydrographer of the Navy he was responsible for the production of numerous charts which bear his name and especially noteworthy are the annual reports of the UKHO during that time.

Adam J. Kerr 28.6.12

## Tragic Loss for International Hydrographic Community - Professor Dr Volker Böder

On 31 August, the survey ship Level A collided with a Belgian-propelled barge on the Rhine at Basel, Switzerland, and capsized. The four crew members fell overboard. Although Professor Dr Volker Böder, director of the project and professor of geodesy and hydrography at the HafenCity University Hamburg (HCU), was rescued, he sadly died in hospital the following day as a result of his injuries. Despite a large-scale search operation, the skipper of the Level A has not yet been found. The two other crew members survived the accident.

The Level A was commissioned by the Basel urban construction and transportation departments and in collaboration with the Swiss Rhine ports active in Basel, tasked with testing new equipment and technologies for measuring the shipping lanes in the Rhine. Boat and crew had arrived at Basel earlier that week and were due to remain working on the Rhine in Switzerland for a further two weeks.

Professor Dr Volker Böder made an enormous contribution to encouraging young professionals to join the hydrographic industry. He was one of the driving forces behind the

international hydrographic exchange programmes that were established between higher educational institutes throughout Europe. Professor Dr Volker Böder realised that the hydrographers of the future would be operating in a global industry and that it was therefore important for students to gain international experience at an early stage – an initiative which deserves to be remembered. He also introduced special hydrographic summer camps in Germany to promote the profession of hydrography, and on an international level he contributed to the FIG by demonstrating how hydrographers benefit the global economy, not to mention his work for FIG Commission 4.

Dr Walter Pelka, president of the HCU, comments: "At this dreadful time, our thoughts and our sympathies go out to the families of Volker Böder and the captain of the Level A. We are terribly sorry to hear about this disaster. With the loss of professor Böder, we lose someone who was a great expert in his field, whose reputation extended far beyond the HCU Hamburg. Above all, we mourn a sincere, helpful and popular colleague. Words cannot truly express what this loss means to the HCU and the world of geomatics in particular."

The hydrographic community has lost an ambassador for the modern-day hydrographic surveyor. Let us hope that we can continue his legacy.

**Acknowledgement:** The article on Steve Ritchie was originally printed in Hydro International - July/August 2012, Volume 16, Number 5; The article on Professor Dr Volker Böder was originally printed in Hydro International - September 2012, Volume 16, Number 6. Both are used with the kind permission of Hydro International.





### National Surveyors' Conference 2012

The eighth National Surveyor's Conference was held from June 6<sup>th</sup> to 8<sup>th</sup> 2012 in Regina, Saskatchewan in conjunction with the Saskatchewan Land Surveyors Association AGM.

The following members were elected to the ACLS Council positions by acclamation: Ivan Royan, President and Estelle Moisan, Vice President. J. Anne Cole also joined Council as a first year Councillor.

New CLS Commissions were presented to the following people at the Gala Dinner: Adam James Bavir, David Nathan Batten, Gavin Lawrence, Henry Dean Reiter, Michael Andrew Thompson, Vincent Villeneuve and Zhiqiang Zeng. Also at the Gala dinner, ACLS recognized the accomplishments of its newest Honorary Life Member: Gordon Webster.

### David Thompson Awards

This year the fifth annual David Thompson Awards were presented at the National Surveyors' Conference on June 8, during the Gala dinner.

In the category Innovation in Geomatics, the winner was Daniel Lachance from Altus Geomatics for the project entitled "LASDNav" for development of an app for iPhone and iPad that allows users to navigate the geospatial data in their area in real time. Finalists for this award were Jim Sutherland from Focus Corporation for "Interactive Orthophoto Plans with Embedded Media Using Consumer Level Cameras"; Mel Truchon from Tulloch Geomatics for "Mobile LiDAR Scanning for Transportation Design Purposes"; and Stephen Vickers from Focus Corporation for "DC-3 Airplane, 3D Laser Scan".

In the category Contribution to Society, the winner was Ron Robinson from Challenger Geomatics for the project entitled "First Nation Training" for an ongoing effort started in 1998 to train an aboriginal and northern workforce in Canada by offering survey workshops in various communities across the North. The finalist in this category was Daniel Lachance from Altus Geomatics for "LASDNav".

In the category Unusual Applications in Geomatics, the winner was Jim Sutherland from Focus Corporation for

the project entitled "Interactive Orthophoto Plans with Embedded Media Using Consumer Level Cameras" for the innovative use of a digital camera to capture images that would be used to compile a textured 3D model and orthophoto of a remote site in a tight time limit. The finalists in this category were Mel Truchon from Tulloch Geomatics for "Mobile LiDAR Scanning for Transportation Design Purposes"; and Stephen Vickers from Focus Corporation for "DC 3 Airplane, 3D Laser Scan".

### National Surveyors' Conference 2013

Next year's conference will be held in Niagara Falls, Ontario from June 18<sup>th</sup> to 21<sup>st</sup>, 2013 at the Crowne Plaza Hotel. It will be the first conference in which ACLS will partner with Professional Surveyors Canada!

Already booked is the amazing golf course, Thundering Waters, which is a prestigious course 1,500 yards away from the Falls!

### New CLSs

The following individuals have been awarded CLS Commissions since our last report: Christopher Bryenton, Vancouver, BC; Matthew Leblanc, Yellowknife, NT; Timothy Bunker, Gravenhurst, ON; Guillaume Dubé, Québec City, QC.

### GeoEd Canada

GeoEd Canada (Geomatics Education for Professionals) is keeping you updated on CPD opportunities that are right for you! [www.geoad.ca/forum](http://www.geoad.ca/forum) is where you can find a constant update on face to face and online courses around the country. You can use the menus on the left hand side to search just for online courses, or even just courses happening within your province!

The forums of GeoEd Canada is a free service for all geomatics professionals to keep them informed on CPD opportunities, but also to give an opportunity to talk to fellow professionals about the courses, and what you would like to see in an upcoming seminar! We encourage all geomatics professionals to use this service to take an active interest in continuing professional development. Working together we can build the type of courses that you need.

Jean-Claude Tétreault, CLS, a.-g., P. Eng., MBA  
Executive Director



### Conférence nationale des arpenteurs-géomètres 2012

La huitième Conférence nationale des arpenteurs-géomètres a eu lieu du 6 au 8 juin 2012 à Regina, Saskatchewan en collaboration avec la Saskatchewan Land Surveyors Association.

Nous tenons à souhaiter la bienvenue à leur poste au Conseil à notre nouveau président, Ivan Royan, notre vice-présidente, Estelle Moisan et notre nouveau membre du Conseil J. Anne Cole.

Des brevets d'ATC ont été remis aux personnes suivantes lors du gala de l'AATC : Adam James Bavir, David Nathan Batten, Gavin Lawrence, Henry Dean Reiter, Michael Andrew Thompson, Vincent Villeneuve and Zhiqiang Zeng. Aussi lors du dîner de Gala, ACLS ont reconnu les réalisations de son plus récent membre honoraire à vie: Gordon Webster.

### Prix David Thompson

La cinquième remise annuelle des prix nationaux en géomatique David Thompson a eu lieu lors de la soirée gala de la Conférence nationale des arpenteurs-géomètres le 8 juin 2012, dans la ville de Regina, Saskatchewan.

Dans la catégorie Innovation en géomatique, le gagnant était Daniel Lachance de Altus Geomatics pour le projet intitulé "LASDNav" pour le développement d'un « app » pour iPhone et iPad qui permettra aux usagers de naviguer dans les données géospatiales dans leur région en temps réel. Les finalistes pour ce prix étaient Jim Sutherland de Focus Corporation pour le projet intitulé "Plans ortho photos interactifs avec médias intégrés qui utilisent des caméras standards des consommateurs"; Mel Truchon de Tulloch Geomatics pour "Numérisation au LIDAR mobile pour des fins de conception de transports"; et Stephen Vickers de Focus Corporation pour "Numérisation à 3D d'un avion de type DC 3".

Dans la catégorie Apport à la société, le gagnant était Ron Robinson de Challenger Geomatics pour le projet intitulé "Formation de Première Nation" pour un effort continu depuis 1998 pour former une main-d'œuvre autochtone et du Nord au Canada en offrant des ateliers de formation en arpentage dans diverses collectivités partout dans le Nord. Le finaliste pour ce prix était Daniel Lachance de Altus Geomatics pour le projet intitulé "LASDNav".

Dans la catégorie Applications inhabituelles en matière de géomatique le gagnant était Jim Sutherland de Focus Corporation pour le projet intitulé "Plans ortho photos

interactifs avec médias intégrés qui utilisent des caméras standards des consommateurs" pour l'utilisation innovatrice de caméras numériques pour capturer des images pour être utilisées pour compiler un modèle 3D texturé et une ortho photo d'un site distant dans un délai serré. Les finalistes étaient Mel Truchon de Tulloch Geomatics pour le projet "Numérisation au LIDAR mobile pour des fins de conception de transports"; et Stephen Vickers de Focus Corporation pour "Numérisation à 3D d'un avion de type DC-3".

### Conférence nationale des arpenteurs-géomètres 2013

L'an prochain, la conférence nationale des arpenteurs-géomètres se tiendra du 19 au 21 juin 2013 à l'hôtel Crowne Plaza aux Chutes Niagara, Ontario. Ce sera la première conférence dont l'A.A.T.C sera partenaire avec Géomètres professionnels du Canada.

Nous avons déjà réservé le parcours de golf « Thundering Waters » pour le tournoi de golf de 2013. C'est un parcours prestigieux qui est n'est situé qu'à 1 500 verges des chutes.

### Nouveaux arpenteurs des terres du Canada

Les personnes suivantes ont reçu des brevets d'ATC depuis notre dernier rapport: Christopher Bryenton, Vancouver, Colombie-Britannique; Matthew Leblanc, Yellowknife, Territoires-du-Nord-Ouest; Timothy Bunker, Gravenhurst, Ontario; et Guillaume Dubé, Québec, Québec.

### GeoEd Canada

GeoEd Canada (Éducation en géomatique pour les professionnels) vous tient informé sur les meilleures possibilités de formation continue. [www.geoed.ca/forum](http://www.geoed.ca/forum) est l'endroit où vous pouvez trouver de l'information à jour constante sur des cours en ligne à travers le pays. Vous pouvez utiliser les menus sur le côté gauche pour rechercher uniquement des cours en ligne, ou même seulement des cours qui se déroulent au sein de votre province!

Les forums de GeoEd Canada est un service gratuit pour tous les professionnels de la géomatique pour les tenir informés sur les possibilités de formation continue, mais aussi de donner l'occasion de parler à d'autres professionnels sur les cours, et ce que vous aimeriez voir dans un prochain séminaire! Nous encourageons tous les professionnels de la géomatique d'utiliser ce service pour être actif dans leur formation continue. En travaillant ensemble, nous pouvons construire le type de cours que vous avez besoin.

Jean-Claude Tétreault, A.T.C., a.-g., ing., M.B.A.  
Directeur exécutif

# The Canadian Hydrographic Association Award Letter From 2012 Recipient - Eric Root

Dear CHA Student Award Committee,

I am honoured to be the recipient of the Canadian Hydrographic Association Student award for 2012. Finding a co op placement within the hydrographic industry is my next goal, and this award is a major stepping stone to its achievement. Not only does the award demonstrate support in this pursuit, but also provides financial assistance in furthering my studies. As I learn more about the field of Geomatics, I am developing a stronger understanding of its various roles and applications. This award has given me a sense of pride in the program I have chosen to complete.

Sincerely,  
Eric Root

*Eric is a student at the University of New Brunswick in the Geodesy and Geomatics Engineering program.*



See page 40 for Award information

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## Canadian Hydrographic Conference 2012

In May the 37<sup>th</sup> Canadian Hydrographic Conference (CHC 2012) was held in Niagara Falls, Canada at the Scotiabank Convention Centre. The conference was organized by the Canadian Hydrographic Association (CHA) and the Canadian Hydrographic Service (CHS) with the theme "*The Arctic: Old Challenges, New Approaches*". CHC 2012 was the continuation of a series of international hydrographic conferences which alternate annually between Canada and the United States with The Hydrographic Society of America (THSOA) hosting the American conferences. Training Workshops and a meeting of The United States – Canada Hydrographic Commission were held May 14 prior to the official opening the following day.

CHC 2012 focused on the latest advances in hydrography and highlighted applications useful to surveying and charting in the Arctic, an area that is experiencing an

extended shipping season and consequently an increase in marine traffic.

On opening day, the CHA's replica 18<sup>th</sup> century British Admiralty Launch *Surveyor* greeted delegates at the entrance to the convention centre. Crewmembers in period costume were on hand to answer questions and pose for photographs. Inside the convention centre, displays of Arctic gear including a polar expedition tent and stuffed Polar Bear complimented the conferences Arctic theme.

The Opening Ceremonies included a captivating presentation from Keynote Speaker Dr. Steve Maclean, former shuttle astronaut and President of the Canadian Space Agency who spoke of space-borne capabilities now available and their potential applications to hydrography, mapping and the monitoring of both natural and man-made events in the Arctic.



CHA British Admiralty Launch *Surveyor* and crew stand by to greet delegates to CHC2012



CHC 2012 Dignitaries left to right: Dr. Savithri Narayanan, Director General and Dominion Hydrographer Canadian Hydrographic Service, George McFarlane, President Canadian Hydrographic Association, Dr Siddika Mithani Assistant Deputy Minister Ecosystems and Oceans Science Sector, Fisheries and Oceans Canada, Roger Cameron, Conference Chair, Dr. Steve MacLean Keynote Speaker and President of the Canadian Space Agency, Captain John E. Lowell, Director, Office of Coast Survey -National Oceanic & Atmospheric Administration and Pat Sanders, President of The Hydrographic Society of America.

The conference was attended by delegates from fifteen countries and featured forty-three exhibitors displaying the latest in hydrographic related hardware, software and equipment. Ten plenary sessions covering various aspects of hydrography were presented including two sessions devoted to New and Emerging Technologies, technologies which promise to increase surveying capacity in the Arctic. The papers were of the highest quality and were well received among attendees. The traditional Poster Session was replaced with “Ping” Presentations, similar in format to standard Paper Presentations but done in a shorter timeframe. This gave authors increased exposure as well as the opportunity to gain experience presenting to larger audiences. Ping Sessions were generally scheduled to close each of the conferences ten sessions. Of note ten students attended CHC 2012, many of whom presented their research as Ping presentations.

During the conference delegates enjoyed three social events where they could mingle and network. The Icebreaker Social was held in the R-5 lounge of the Fallsview Casino Resort the evening prior to the official opening. Attendees took in the view of Niagara Falls while enjoying hors d'oeuvres and drinks.

The Exhibitors Evening was held in the Exhibit Hall of the Scotiabank Convention Centre and gave delegates

an opportunity to meet with exhibitors in a relaxed atmosphere while sampling local Niagara Wines and Beer.

The Conference Dinner was held in the Table Rock Centre on the brink of the Canadian Horseshoe Falls and featured a Cocktail hour prior to the dinner. Attendees to the Conference Dinner entered a draw for a chance to “Light up Niagara Falls” that evening. Weston Renoud a Graduate Student in the Ocean Mapping Group at the University of New Brunswick was the winner and was thrilled with this “Once in a lifetime” experience!

During the closing ceremonies Andy Armstrong gave a warm invitation to the delegates to attend US Hydro 2013 next March in New Orleans.

CHC 2012 covered a wide variety of subjects of interest to hydrography while contributing to the ongoing dialogue on the Arctic, an increasingly important Region. Based on the feedback received from both delegates and exhibitors, CHC 2012 was an unqualified success.

Conference Proceedings are available at the CHA website [www.hydrography.ca](http://www.hydrography.ca)

- Roger Cameron CHC 2012 Conference Chair





Delegates enjoying the Icebreaker



Delegates and Exhibitors at the Exhibitors Evening



Cocktail Hour

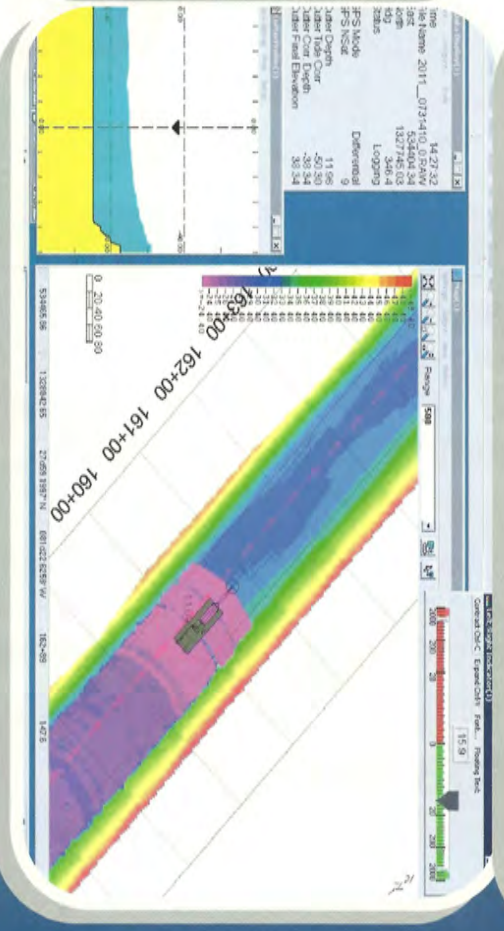
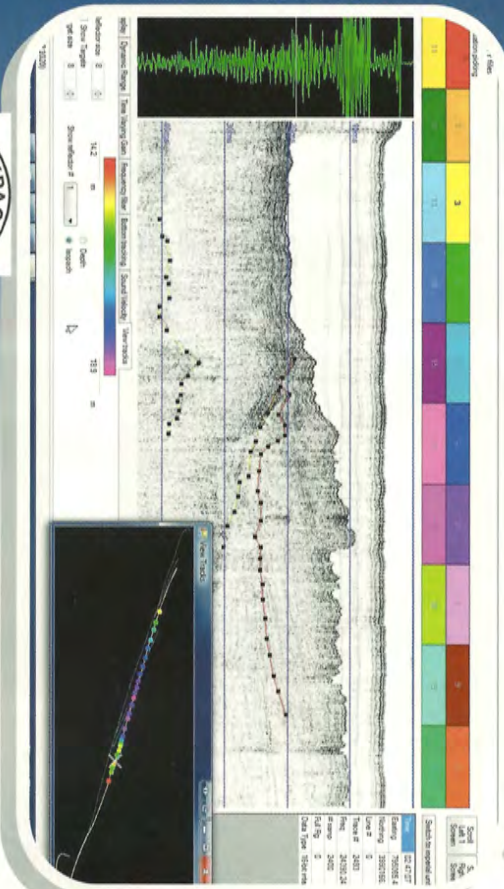
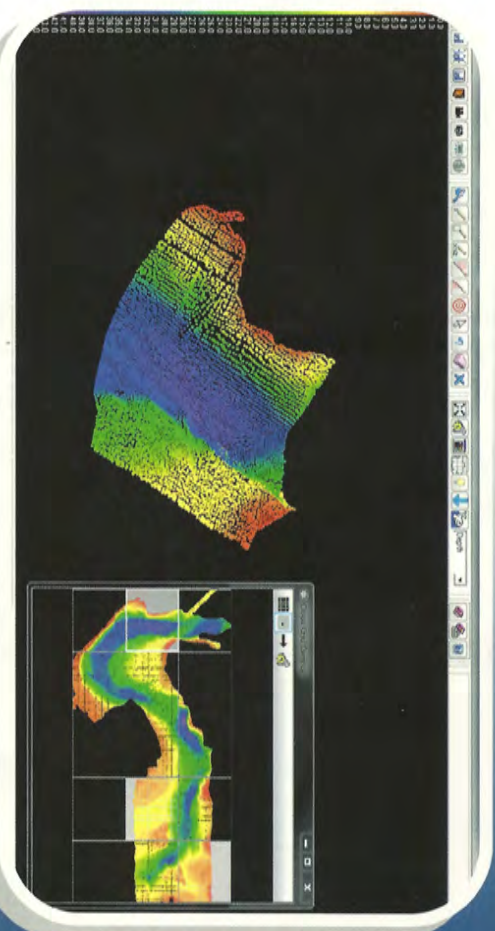
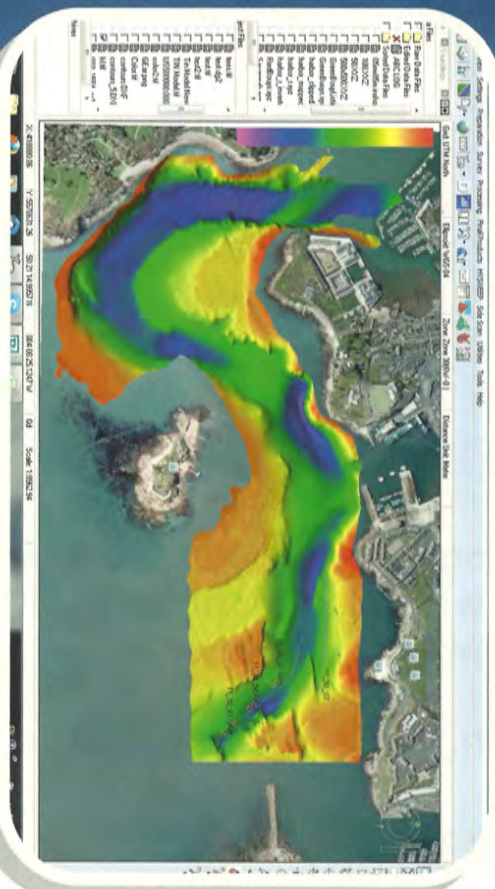


Conference Dinner



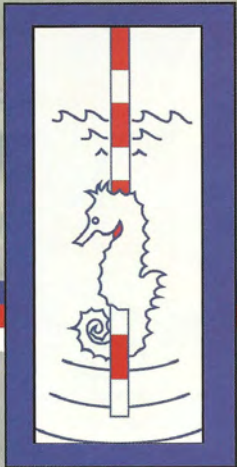
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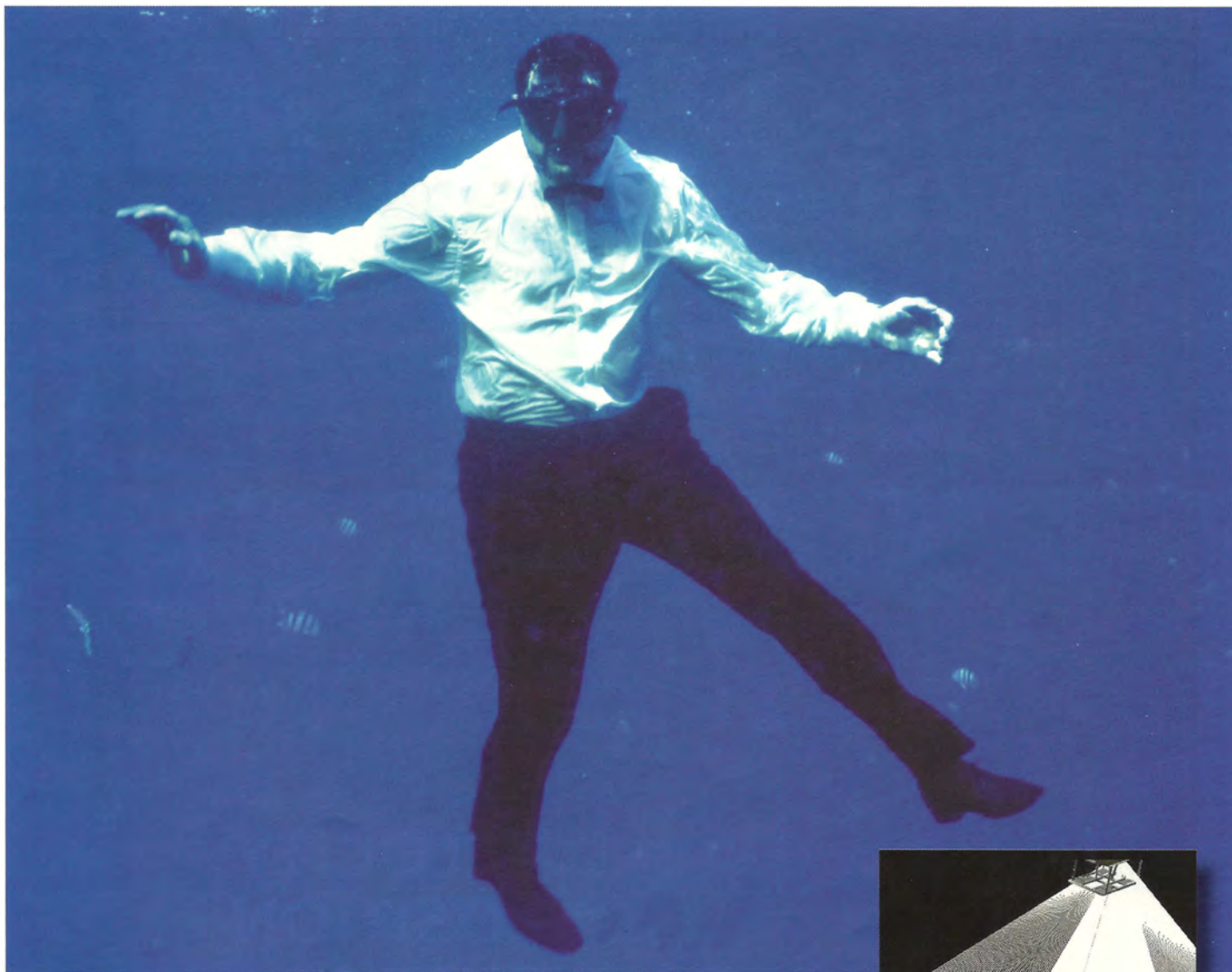
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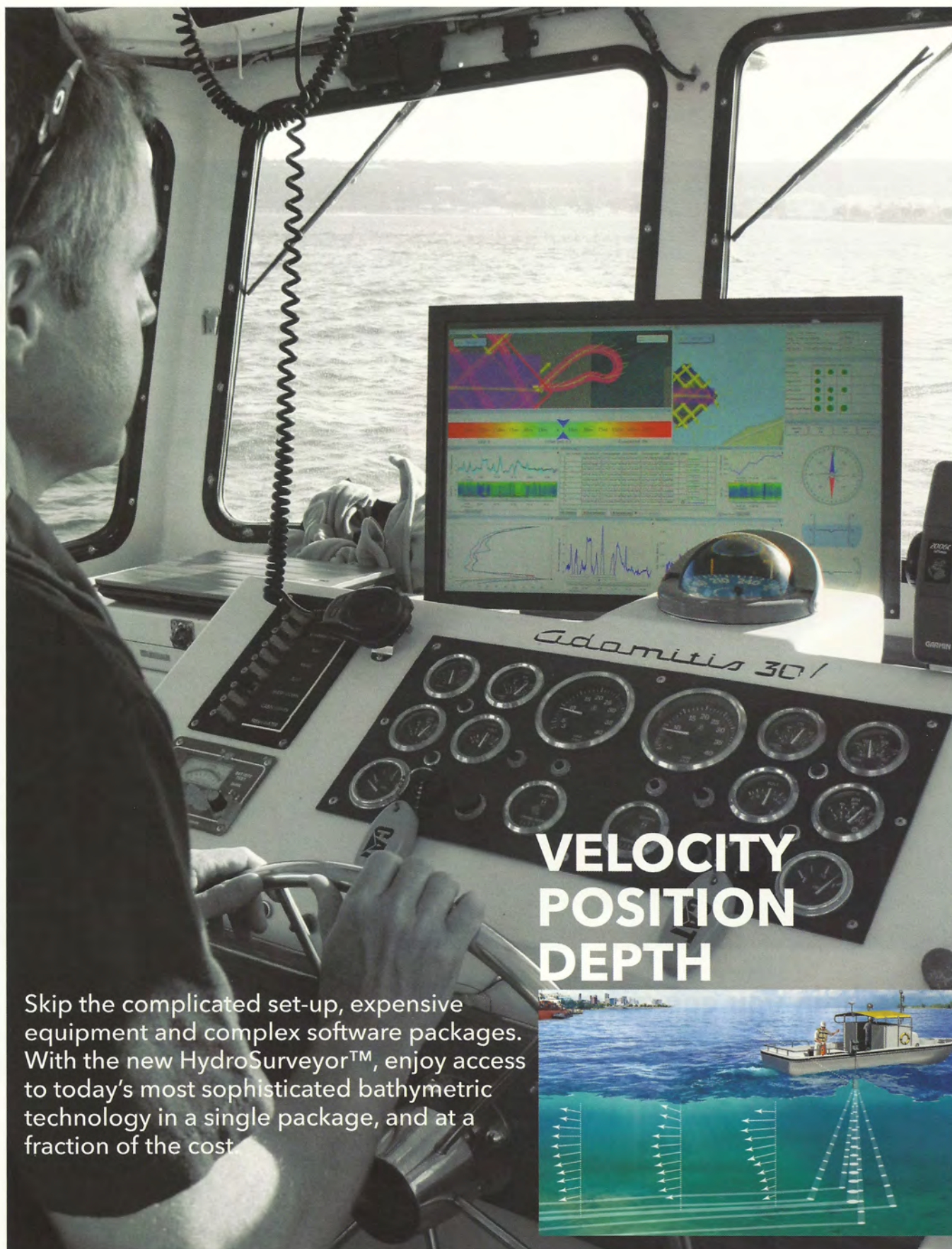
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# Need for Integrated Bathymetric and Topographic Maps in Northern Communities

By: Kian Fadaie, National Director Hydrography, Canadian Hydrographic Service, Ottawa, Canada

Mapping and charting are the precursors to the development of those to-be-developed areas. They provide the means for explorers and developers to get into not-well-known areas to survey, identify geological features and interesting landscapes for explorations, mining, transportation and other activities.

Canada has been increasingly focused on the northern regions since the last decade. However, hydrographic data and detailed geographic information for the Canadian northern region are very limited. The need for charting information grows daily as the Canadian north is posed for major development and is a major concern for marine transportation activities.

In the past, the Canadian north was well covered with permanent ice and was sparsely populated. As we witness the on-going climate change, a large span of the regions has been exposed, revealing potentials in exploration of oil, gas, minerals and precious stones. One of the significant developments in the north is the opening of the Northwest Passage, enabling a valuable pathway between Europe and the Pacific regions. Its economic impacts will be significant to Canada and the trading partners in Europe and Asia. The bathymetric and hydrographic information is vital for navigation and shipping along this passageway. This information is also vital for the development of any potential ports along the passageway.

Since the majority of the population in the North is the Aboriginal people and they have established land claims and various land ownership issues with the government, the Aboriginal communities are one of the key stakeholders of the Canadian north. As a result, new types of customized maps are being developed by the federal government for the northern territories of Canada (Customized mapping for community engagement project). These maps are focusing on the needs of the Arctic community where climate change, social and economic changes are increasingly noticeable.

The customized topographic maps for community engagement have the aboriginal names portrayed in the aboriginal language and script, with transliteration into Roman alphabet for the Inuktitut, which is written in Syllabics. This will facilitate the communication with

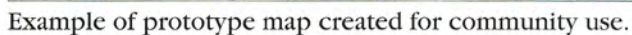
people who do not read Syllabics. The multilingual legend will show only the topographic map elements found of the Arctic. These maps will have additional features, which are necessary for navigation in the arctic regions, such as snow-mobile trails and emergency cabins, as well as important ice features, such as polynia, which are needed for safety of activities carried out on the ice. Bathymetry data are also to be included in these maps.

As the local population carry out most of their activities on ice or water in coastal areas and since climate change is increasing navigation in the region, inclusion of bathymetric information in topographic maps will increase local population engagement, collaboration and use of these integrated products. This results in Capacity building within these communities and customization of these products by:

- Increasing hydrographic, topographic and geographic knowledge of lands in the coastal areas;
- Improving the safety of activities such as hunting, fishing and travel; AND
- Improving the quality of maps and data through involvement with local organizations which are capable of "ground-truthing" and providing continuous updates as necessary in coastal zones due to the inherent dynamic nature of the Arctic region and rapid environmental changes.

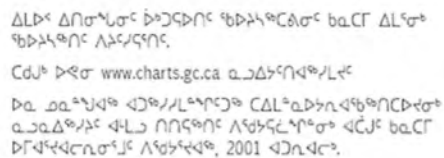
## Northern Geomatics Capacity

Several communities (e.g. Iqaluktitiaq/Cambridge Bay and Igloolik) have digital databases and capacity for geospatial information processing. Local communities were engaged in the "Customized Mapping for Community Engagement" project. This engagement resulted in the incorporation of traditional knowledge used in the development of integrated coastal maps. For any activity in the North, it would be significant to gain support from the Aboriginal communities and to include some of their cultural and traditional knowledge and information into the final products, such as the Aboriginal place names. It would also indicate the types of information they would like to see on a chart or a map for practical use of these products.



**NOTE:** Bathymetric data provided by the Canadian Hydrographic Service.  
See <http://www.charts.gc.ca/> for details.  
This map does not meet the requirements of the Charts and Nautical Publications Regulations under the Canada Shipping Act, 2001 Official

**À NOTER :** Les données bathymétriques éte fournies par le service hydrographique canadien.  
Voir le <http://www.charts.gc.ca/> pour des détails.  
Cette carte ne répond pas aux exigences sur les cartes marines et les publications nautiques sous la Loi sur la marinemarchande du Canada, 2001.



Imap hitinganinga nalunairutaa ilaliutihimayug  
haffumingat Kaanatam Taryum Uukturautiliqiyiit.  
Takulugu [www.charts.gc.ca](http://www.charts.gc.ca) naunaaitiriagianganani.  
Hamna nunaayag kiuyauhimaitut haffumingat  
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Nalunaaitauhimaningit Maligautigut malikhiimalugu  
Kaanatam Agyaquliqinirnut Atuagag, 2001  
Iltaridjutinga.



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# Assessing Capabilities for CHS' Law of the Sea Data Management in a Hydrographic Production Database

By: Serge Lévesque, Technical Advisor, Geomatics, Canadian Hydrographic Service, Ottawa, Canada  
Kian Fadaie, National Director Hydrography, Canadian Hydrographic Service, Ottawa, Canada

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Digital maritime limits and boundary data for Canada is being maintained by the Canadian Hydrographic Service (CHS). These are represented on CHS charts which have a legal status and are used in courts of law in cases of limit or boundary infringement or boundary dispute. A large part of the tracking of the charts and other nautical products in CHS's production and releases planning is performed through the Canadian Hydrographic Service Directory (CHSDIR) database. The actual production line for charts, ENC's and other nautical products uses a hydrographic production database (CARIS HPD). The Law of the Sea (LOS) data is not yet maintained as part of this database but HPD's geodetic tools that can be used to calculate maritime limits and boundaries and its history tracking functions would be useful in maintaining this data. An overview of the general setup of the CHS production database is provided to show how maritime limits and boundary data is exchanged. Presently the LOS data used in the production database is limited to mostly area objects compliant with the S-57 standard. This article reviews some of the changes required for importing and maintaining LOS data into the production database. These improvements can allow tracking of the data and nautical products tied to LOS and help plan for future improvement of the territorial sea baselines.

## Introduction

With its long coastline on three oceans, Canada's maritime sovereignty covers large expanses of maritime space. As a ratifier of the United Nations Convention on the Law of the Sea (UNCLOS), Canada has defined its territorial sea baseline, territorial sea, Contiguous Zone and Exclusive Economic Zone (EEZ). The area of the seafloor covered by its sovereignty will be expanded following the submission of the Extended Continental Shelf in 2013 and its subsequent review and recommendations of the commission. Significant amounts of LOS data is related to CHS charts. Because of its geodetic expertise and marine survey work, CHS is the custodian of Canada's maritime limits and boundaries. This data is presently maintained within a file-based system which is challenging to maintain and update. The development and use of a database would enhance the use, maintenance and updating of this information.

## Characteristics of Canadian Law of the Sea Limits and Boundary Data

Canada actively participated in the discussions leading to the United Nations Convention on the Law of the Sea. In the 1960's, following the first UN convention on the Law of the Sea, Canada produced regulations to define

its territorial sea baseline. After the entry into force of UNCLOS (1982) in 1994, the Oceans Act (1996) was proclaimed to define Canada's maritime limits according to UNCLOS. Canada's earlier maritime limits regulations became part of that Act.

The regulations describe either the maritime limits by their geographic coordinates, or by the baselines that are used to calculate them. When given in a list of points, baseline points are related to named geographic features. Their datum is rarely specified but as a general rule, based on the hydrographic chart referenced, they will be predominantly on NAD27. In addition, baseline points forming straight baselines are joined by geodesics which means that linking the turning points of a baseline by linear segments will not accurately describe the baseline. An example of the list of baseline points forming a straight baseline is given in Figure 1.

The limits and boundaries relevant to UNCLOS that are maintained by CHS are the baselines, territorial sea, contiguous zone and the Exclusive Economic Zone (EEZ). Eventually the outer limit of the extended continental shelf will also be included. These are shown in Figure 2.

AREA 4				RÉGION 4			
NOVA SCOTIA				NOUVELLE-ÉCOSSE			
Column I	Column II	Column III	Column IV	Colonne I	Colonne II	Colonne III	Colonne IV
Locality	Latitude	Longitude	C.H.S. Chart	Localité	Latitude	Longitude	Carte S.H.C.
1. Whipple Point	44°14'12"N.	66°23'48"W.	4011	1. Whipple Point	44°14'12"N.	66°23'48"O.	4011
2. Gull Rock	44°12'31"N.	66°23'24"W.	4011	2. Gull Rock	44°12'31"N.	66°23'24"O.	4011
3. Cape St. Mary	44°04'40"N.	66°12'42"W.	4011	3. Cape St. Mary	44°04'40"N.	66°12'42"O.	4011
4. Chegoggin Point	43°51'03"N.	66°10'17"W.	4011	4. Chegoggin Point	43°51'03"N.	66°10'17"O.	4011
5. Cape Fourchu	43°47'58"N.	66°10'14"W.	4322	5. Cape Fourchu	43°47'58"N.	66°10'14"O.	4322
6. Gannet Rock	43°38'26"N.	66°08'59"W.	4011	6. Gannet Rock	43°38'26"N.	66°08'59"O.	4011
7. Devils Limb	43°24'11"N.	66°02'20"W.	4011	7. Devils Limb	43°24'11"N.	66°02'20"O.	4011
8. Seal Island	43°23'34"N.	66°01'08"W.	4011	8. Seal Island	43°23'34"N.	66°01'08"O.	4011
9. Seal Island	43°23'29"N.	66°00'29"W.	4011	9. Seal Island	43°23'29"N.	66°00'29"O.	4011
10. Cape Sable	43°23'18"N.	65°37'10"W.	4215	10. Cape Sable	43°23'18"N.	65°37'10"O.	4215
11. Salvage Islands	43°27'57"N.	65°22'45"W.	4215	11. Salvage Islands	43°27'57"N.	65°22'45"O.	4215

Figure 1: Example of baseline points forming a straight baseline.

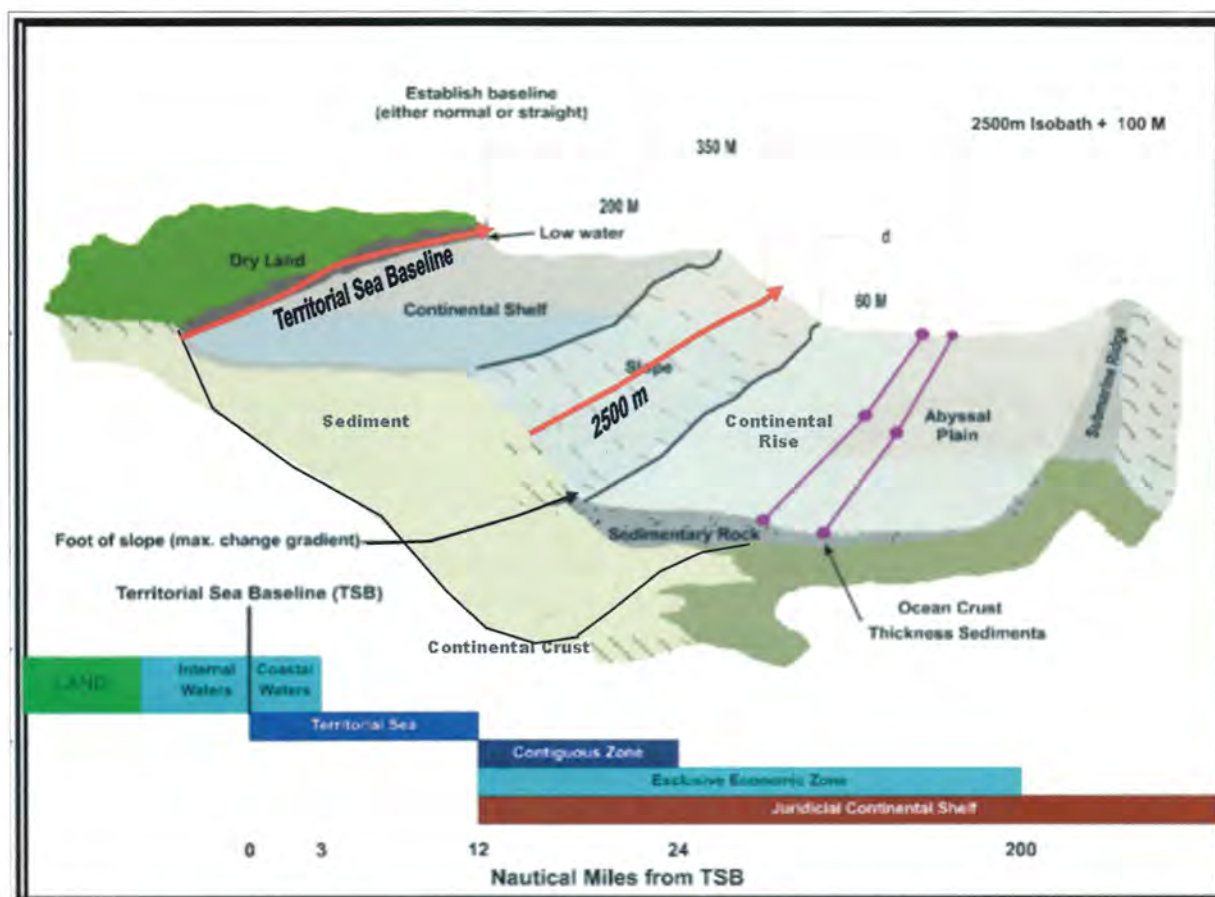


Figure 2: Maritime limits according to UNCLOS (1982). Diagram adapted from Kapoor and Kerr (1986) provide by CARIS.

## CHS Databases

CHS already uses databases as part of its chart production workflow. A brief overview of these databases is given below to better assess how this relates with limits and

boundary data. CHS uses two main databases in its chart production.

- CHSDIR (metadata)
- CARIS HPD (Hydrographic Production Database)



CHSDIR is a common database shared by all CHS regions. It handles all metadata related to chart production. It can be updated to include Law of the Sea references. Among other information, CHSDIR holds metadata relevant to:

- Chart history tracking: releases, updates, dates, versions, Notices to Mariners
- Horizontal chart Datum : NAD27, NAD83, other datum...
- Vertical chart Datum
- Chart status: Current, Replaced, Cancelled, Withdrawn
- Associated replacement charts ID.
- Geographic coverage: effective extent, maximum extent
- Cartographic parameters: scale, projection
- Nautical products associated with the paper chart: ENC, RNC
- Contributing fieldsheets

CHSDIR will soon be updated with a new user interface which has been named ARMEDO for ARchive MEtaData Online (see Figure 3).



Figure 3: New ARMEDO interface.

The information that can be found in CHSDIR/ARMEDO is quite exhaustive.

The production database on the other hand, is divided into four production schemas dividing the waters of the country between CHS offices: Pacific, Central and Arctic, Québec and Atlantic. The maritime limits and boundary data crosses the CHS offices' boundaries and is not continuous in the database. While there are links between CHSDIR and the HPD database, the most up-to-date and validated limits and boundaries data must be imported from a file-based system. This is shown in Figure 4.

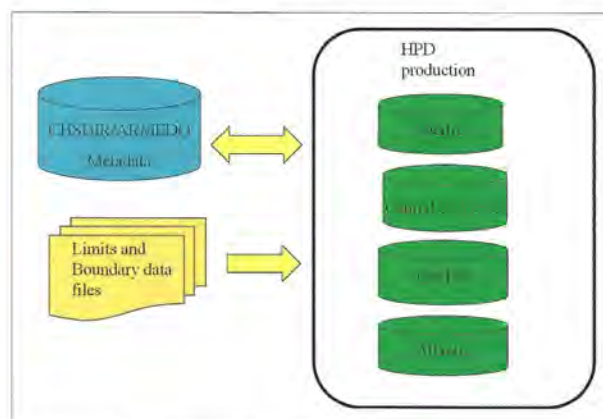


Figure 4: Present configuration of metadata and Limits and Boundary data exchange with the production database.

The LOS data that could be migrated to the production database consists of baselines and their base points as well as the calculated or published maritime limits and boundaries.

The territorial sea baseline model can be composed of straight baselines whose straight segments are geodesics and of normal baseline points which are positioned on the low water line of charts, on isolated rocks or islands and low tide elevations compliant with UNCLOS (1982).

The maritime limits delimit the Internal Waters, the Territorial Sea, the Contiguous Zone, the Exclusive Economic Zone, the Fishing Zones and the Extended Continental Shelf. The maritime boundaries are either the result of international court judgements or are obtained by mathematical calculation such as an equidistance line when agreed or disputed. Since many of these limits and boundaries are derived from the baseline and must be geodetic, their calculation can be performed with a suite of specialized geodetic tools.

### Accommodating Law of the Sea Data in a Hydrographic Production Database

The basic Law of the Sea data is not currently compatible with the operational CHS production database. In order to accommodate this data, some changes need to be implemented. This approach is already being explored by other hydrographic offices such as the United Kingdom Hydrographic Office which are using the same system.



New objects must include more line-type objects to describe the maritime limits and boundaries. This is currently a shortcoming of the S-57 standard. It includes maritime zones, not maritime limits. This means that the territorial sea, the contiguous zone and the EEZ are all area objects whereas their outer limits need to be lines that are calculated from the territorial sea baseline.

To prevent interference between the Law of the Sea work and chart production, new layering schemes are needed. They will have the effect of isolating this special data from the rest of the production. A likely way to achieve this would be to divide the LOS data between a LOS production layer and a LOS development layer.

In the short term, the general setup of the database is represented by the diagram below. The Law of the Sea data can be migrated into the HPD database but will be isolated or have a security controlled access.

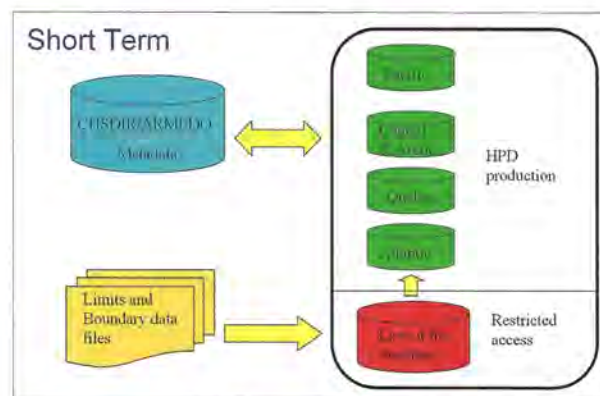


Figure 6: Diagram of the production database exchange for Limits and Boundaries and CHSDIR/ARMEDO metadata.

An improved handling of the limits and boundaries data is foreseen in the near future. To achieve this, there is a need to optimise the use of databases and of improved tools. The data structure and attribution must also comply with international standards.

To be consistent with the present production workflow dependant on CHSDIR/ARMEDO, new Law of the Sea metadata and links must be established between the production database and CHSDIR/ARMEDO.

In addition to being maintained in a database which offers history tracking, the Law of the Sea data needs to be compliant with international standards such as S-10X (TSMAD draft for a maritime boundary product specifications) and ISO standards for Geographic Information (ISO 19100). Because Canada's Treasury Board mandated the implementation of ISO 19115, and since the North American Profile of ISO 19115 has recently been approved for use by the

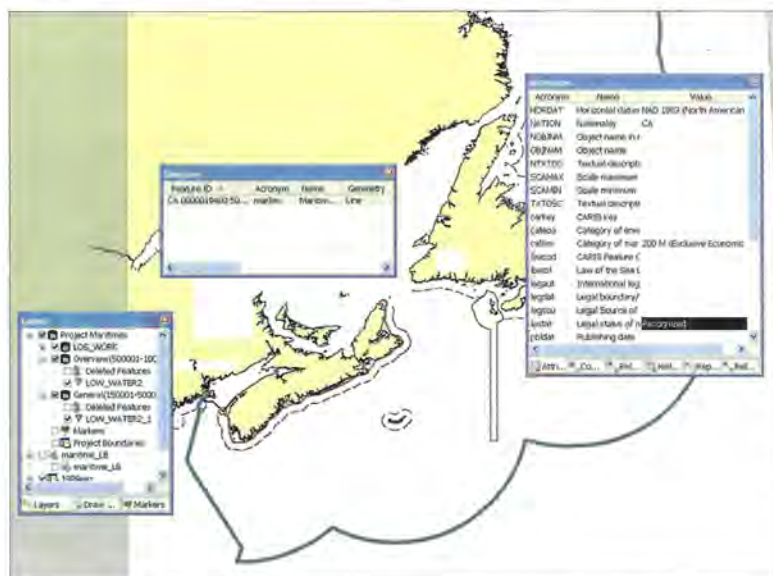


Figure 5: Example of a partial representation of Limits and Boundaries in HPD. Data from the CHS Atlantic region. Some maritime limits and boundaries are missing from this image.


government of Canada, all geomatics metadata managed by CHS has to comply with this standard by 2013.

As there is work in progress to improve the baselines, security features are needed to isolate these future maritime limits and boundaries from the production. For example, it is foreseen that baseline work being done for the extension of the continental shelf under Article 76 of UNCLOS will have an impact on all existing limits and boundaries. Until the baseline, maritime limits and boundary data are updated through new regulations, only the officially recognized maritime limits and boundaries should be available for production of nautical products.

## Conclusions

The assessment of how the Canadian Law of the Sea data can be managed within CHS's production database is proceeding. Some preliminary results indicate that the inclusion of the maritime limits and boundaries data in the production database would be beneficial as it would simplify the process for its inclusion in charts.

The first step in preparing the database for import of Law of the Sea data will be to merge the existing commercial LOS catalogue extension with the CHS catalogue for direct exchange of fully attributed data with production. This will increase the efficiency in data exchange and source data update. In fact, within the database, source data is easier to propagate to different scale ranges of products.

Consolidating the maritime limits and boundary data within the production database should streamline its maintenance and remedy the disadvantages related to file-based systems. 

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Contact: Ian Lloyd  
Tel: (604) 432-8992 FAX: (604) 456-1238  
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**CARIS (Headquarters)**

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Contact: Sheri Flanagan  
Tel: (506) 458-8533 FAX: (506) 459-3849  
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 Port Coquitlam, BC, V3C 4Z1, Canada  
 Contact: Disa Wilhelmsen  
 Tel: (604) 944-8248 FAX: (604) 944-8249  
 E-mail: imagenex@shaw.ca  
 Website: www.imagenex.com  
 (affiliation - CHA Pacific Branch)

## **Harte Studer Business Development Ltd**

200 Markland Crescent, Ottawa, ON, K2G 6A9, Canada  
 Contact: Peter Studer  
 Tel: (613) 410-3844 FAX: (613) 440-3843  
 E-mail: pstuder@hartestuder.ca  
 Website: www.hartestuder.ca  
 (affiliation - CHA Ottawa Branch)

## **Institut maritime du Québec**

53, rue Saint-Germain Ouest, Rimouski, QC, G5L 4B4, Canada  
 Tel: (418) 724-2822 FAX: (418) 724-0606  
 E-mail: infoscol@imq.qc.ca  
 Website: www.imq.qc.ca  
 (affiliation - ACH, section du Québec)

## **Hoskin Scientific Limited**

3735 Myrtle Street, Burnaby, BC, V5C 4E7, Canada  
 Contact: Frank van der Have  
 Tel: (604) 296-5463  
 E-mail: FvanderHave@hoskin.ca  
 Website: www.hoskin.ca  
 (affiliation - CHA Pacific Branch)

## **Institut maritime du Québec Département de navigation**

53, rue Saint-Germain Ouest, Rimouski, QC, G5L 4B4, Canada  
 Tel: (418) 724-2822 FAX: (418) 724-0606  
 E-mail: infoscol@imq.qc.ca  
 Website: www.imq.qc.ca  
 (affiliation - ACH, section du Québec)

## Jeppesen Norway AS

Hovlandsveien 52, P.O. Box 212  
Egersund, Norway, N-4379  
Contact: Egil O. Aarstad  
Tel: +47 51 464960 FAX: +47 51 464701  
E-mail: info@hydroservice.no  
Website: www.jeppesenmarine.com/National-Hydrographic-Services/  
(affiliation - CHA Central Branch)

## NAIT (Northern Alberta Institute of Technology) Civil and Geomatics Engineering Technologies

10240 Princess Elizabeth Ave., Edmonton, AB, T5G 0Y2, Canada  
Contact: Allan Theriault  
Tel: (780) 471-7099 FAX: (780) 471-7088  
E-mail: allant@nait.ca  
Website: www.nait.ca  
(affiliation - CHA Pacific Branch)

## Knudsen Engineering Ltd.

10 Industrial Road, Perth, ON K7H 3P2, Canada  
Contact: Judith Knudsen  
Tel: (613) 267-1165 FAX: (613) 267-7085  
E-mail: judith@knudsenengineering.com  
Website: www.knudsenengineering.com  
(affiliation - CHA Central Branch)

## Naval Meteorological and Oceanographic Office

P.O. Box 90186, Tsoying, Kaohsiung, Taiwan, R.O.C.  
Contact: James Mau (Commanding Officer)  
Tel: 886-07-5813141 ext784390 FAX: 886-07-9540149  
E-mail: jamesmao@ms21.hinet.net  
(affiliation - CHA Central Branch)

## Kongsberg Maritime

261 Brownlow Avenue, Dartmouth, NS, B3B 2B6, Canada  
Contact: John Gillis  
Tel: (902) 468-2268 FAX: (902) 468-2217  
E-mail: john.gillis@kongsberg.com  
Website: www.km.kongsberg.com  
(affiliation - CHA Central Branch)

## Pacific Geomatics Ltd

2817 144th Street, Surrey, BC, B4P 1R4, CANADA  
Contact: Matt Tomlins  
Tel: (604) 535-7851 FAX: (604) 535-7852  
E-mail: mat@pacgeo.com  
Website: www.pacgeo.com  
(affiliation - CHA Pacific Branch)

## L-3 Communications Nautronix Ltd

16 Nicolaus St., Upper Hutt 5018, New Zealand,  
Contact: Kevin Smith  
Tel: +64 4 527 0412 FAX: +64 4 527 0413  
E-mail: Kevin.Smith@L-3com.com  
Website: www.L-3com.com/nautronix/index.htm  
(affiliation - CHA Central Branch)

## Pelydryn LLC

4116 Whiting Street, Mount Pleasant, SC, 29466, USA  
Contact: Rupert Forester-Bennet  
Tel: (843) 793-9193  
E-mail: rupert@pelydryn.org  
Website: www.pelydryn.org  
(affiliation - CHA Central Branch)

## McQuest Marine Sciences Ltd

489 Enfield Road  
Burlington, ON, L7T 2X5, Canada  
Contact: Ken McMillan  
Tel: (905) 639-0931 FAX: (905) 639-0934  
E-mail: info@mcquestmarine.com  
Website: www.mcquestmarine.com  
(affiliation - CHA Central Branch)

## Réformar

310 Allée des Urselines, Rimouski, QC, G5L 3A1, Canada  
Contact: Martial Savard  
Tel: (418) 723-1986 FAX: (418) 724-1842  
E-mail: msavard@reformar.ca  
Website: www.reformar.ca  
(affiliation - ACH, section du Québec)



## RESON

100 Lopez Road, Goleta, CA, 93117, USA  
 Contact: Chris Malzone  
 Tel: 1-805-964-6260 FAX: 1-805-964-7537  
 E-mail: sales@reson.com  
 Website: www.reson.com  
 (affiliation - CHA Central Branch)

## Technopole maritime du Québec

203-125 rue de l'Évêché Ouest,  
 Rimouski, QC, G5L 4H4, Canada  
 Contact: Laurent Bellavance  
 Tel: (418) 724-9616 FAX: (418) 721-6127  
 E-mail: lbellavance@tmq.ca  
 Website: www.tmq.ca  
 (affiliation - ACH, section du Québec)

## Rolls-Royce Naval Undersea Systems

(ODIM Brooke Ocean)  
 461 Windmill Road, Dartmouth, NS, V8L 5Y3, Canada  
 Contact: Arnold Furlong  
 Tel: (902) 468-2928 FAX: (902) 468-1388  
 E-mail: sales@brooke-ocean.com  
 Website: www.brooke-ocean.com  
 (affiliation - CHA Atlantic Branch)

## Teledyne Odom Hydrographic Systems Inc.

1450 Seaboard Ave  
 Baton Rouge, LA, 70810-6261, USA  
 Contact: Richard Easson, Sales Director  
 Tel: (225) 769-3051 FAX: (225) 766-5122  
 E-mail: odom@teledyne.com  
 Website: www.odomhydrographic.com  
 (affiliation - CHA Central Branch)

## ROMOR Ocean Solutions

10-51 Raddall Avenue, Dartmouth, NS, B3B 1T6, Canada  
 Contact: Matthew Davis  
 Tel: 1-902-466-7000 FAX: 1-902-466-4880  
 E-mail: sales@romor.ca  
 Website: www.romoroceansolutions.com  
 (affiliation - CHA Atlantic Branch)

## Terra Remote Sensing Inc.

1962 Mills Road, Sidney, BC, V8L 5Y3, Canada  
 Contact: Rick Quinn  
 Tel: (250) 656-0931 / 800-814-4212 FAX: (250) 656-4604  
 E-mail: rick.quinn@terraremove.com  
 Website: www.terraremove.com  
 (affiliation - CHA Pacific Branch)

## Sani-International Technology Advisors Inc.

3075 14th Avenue, Suite 224  
 Markham, ON, L3R 0G9, Canada  
 Contact: Anthony P. Sani  
 Tel: (905) 943-7774 FAX: (905) 943-7775  
 E-mail: tsani@sani-ita.com  
 Website: www.sani-ita.com  
 (affiliation - CHA Central Branch)

## Triton Imaging, Inc.

2121 41st Ave South, Suite 211, Capitola, CA, 95010, USA  
 Contact: Tony Ramirez  
 Tel: (831) 722-7373 FAX: (831) 722-1405  
 E-mail: tramirez@tritonimaginginc.com  
 Website: www.tritonimaginginc.com  
 (affiliation - CHA Central Branch)

## Shark Marine Technologies Inc. (Canada)

4-23 Nihan Dr., St. Catharines, ON, L2N 1L2, Canada  
 Contact: Jim Garrington  
 Tel: 1-877-99SHARK (1-877-997-4275) / (905) 687-6672  
 FAX: (905) 687-9742  
 E-mail: jim@sharkmarine.com  
 Website: www.sharkmarine.com  
 (affiliation - CHA Central Branch)

## Your Company Here

Consider becoming a CHA Corporate Member.  
 Your organizations contact information would be posted here  
 for all to see as a CHA Corporate Member.  
 See the Corporate Members section for additional benefits.  
 Contact *Lighthouse* at the address listed in this journal or at  
 www.hydrography.ca



## Canadian Hydrographic Association (CHA) Corporate Membership Application

We invite your organization to become a corporate member in our association. Consider the following benefits:

*Receive three copies of each issue of Lighthouse (published twice annually).*

*An invitation to participate in CHA seminars.*

*Listing and recognition in every edition of Lighthouse.*

*An annual 250 word description of your organization in Lighthouse.*

*10% off advertising rates in Lighthouse.*

*10% off exhibitor fees at CHA sponsored events.*

*Listing and link to your home page on each CHA Branch Web site.*

*News from corporate members in every edition of Lighthouse.*

The CHA, through Lighthouse, is active in promoting the strength and diversity of organizations and companies that support the hydrographic and related communities. Get onboard with us as a corporate member and we will help you reach potential customers through our worldwide distribution.

To join please complete this form and send it along with \$150 CDN annual dues, to your nearest Branch. International Applicants please remit to Central Branch.

New membership \_\_\_\_\_ Renewal \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ Prov. / State \_\_\_\_\_ Country: \_\_\_\_\_

Telephone: (\_\_\_\_) \_\_\_\_\_ Fax: (\_\_\_\_) \_\_\_\_\_ Postal Code: \_\_\_\_\_

E-mail: \_\_\_\_\_

### Central Branch and International Applicants

Payment can be made by cheque or money order, payable to Canadian Hydrographic Association or by Visa or MasterCard. (The Credit Card debit will appear as Canadian Institute of Geomatics.)

### Atlantic, Ottawa, Pacific and Quebec Branches

Payment can be made by cheque or money order, payable to Canadian Hydrographic Association. For other methods please consult the Branch contact.

Please circle if applicable: Visa MasterCard

Credit Card Number: \_\_\_\_\_ Expiry Date: \_\_\_\_\_

Name of Cardholder: \_\_\_\_\_ Amount: \_\_\_\_\_

Signature \_\_\_\_\_ Date: \_\_\_\_\_

### Branch Offices

<b>Atlantic</b> Andrew Smith P.O. Box 1006 Dartmouth, NS B2Y 4A2 902-426-0574	<b>Central</b> Roger Cameron P.O. BOX 5050 867 Lakeshore Rd. Burlington, ON L7R 4A6 905-336-4539	<b>Ottawa</b> Sheila Acheson 615 Booth Street Ottawa, ON K1A 0E6 613-995-5249	<b>Pacific</b> Ken Halcro P.O. Box 6000 9860 W. Saanich Rd Sidney, BC V8L 4B2 250-363-6669	<b>Québec</b> Bernard Labrecque 53, St-Germain O. Rimouski, QC G5L 4B4 418-775-0526
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# Corporate Members

## Membres corporatifs

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We invite your organization to become a corporate member in our association. Consider the following benefits:

- *Receive three copies of each issue of Lighthouse (published twice annually).*
- *An invitation to participate in CHA seminars.*
- *Listing and recognition in every edition of Lighthouse.*
- *An annual 250 word description of your organization in Lighthouse.*
- *10% off advertising rates in Lighthouse.*
- *10% off exhibitor fees at CHA sponsored events.*
- *Listing and link to your home page on each CHA Branch Web site.*
- *News from corporate members in every edition of Lighthouse.*

The CHA, through *Lighthouse*, is active in promoting the strength and diversity of organizations and companies that support the hydrographic and related communities. Get onboard with us as a corporate member and we will help you reach potential customers throughout our worldwide distribution.

To join, please contact one of the Directors as listed on page 2. International applicants please remit to Central Branch. To obtain an application visit us at [www.hydrography.ca](http://www.hydrography.ca)

Annual dues for CHA Corporate Membership is \$150.00 (CDN).

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### ASI Group Ltd

ASI Group provides a complete range of hydrographic, geophysical and visual inspection techniques to conduct underwater investigations. Lake bottom surface features and targets are located, measured and mapped with precision accuracy in real-time using a combination of geophysical mapping and charting tools. In-house cartographers and graphic specialists interpret geophysical data to produce quality technical reports in hardcopy and GIS compatible formats.

ASI's survey vessels are trailerable and equipped with a wide variety of survey equipment packages. In addition to surface vessels, ASI owns and operates a fleet of purpose-built remotely operated vehicles (ROVs) to deploy sonar and video imaging in open water, tunnels and pipelines.

ASI provides greater efficiency and accuracy in mapping rivers, estuaries, channels, lakes or harbour bottom surfaces for:

- Geological investigations
- Habitat mapping and archaeological surveys
- Underwater search, survey and recovery
- Dredging surveys and volumetric determination
- Sonar profiling/imaging surveys
- Remotely operated vehicle inspections
- Integrated navigation and positioning services
- Cable and pipeline inspections.

For further information please contact:

ASI Group Ltd

Tel: (905) 641-0941 E-mail: [dkeyes@asi-group.com](mailto:dkeyes@asi-group.com) Website: [www.asi-group.com](http://www.asi-group.com)

### Association of Canada Lands Surveyors Association des Arpenteurs des Terres du Canada

The ACLS is a national self-regulating professional association. It has 560 members located across Canada (and the world), who have expertise in surveying, photogrammetry, remote sensing, geodesy, hydrography and land information systems.

The ACLS is committed to raising awareness of the responsibilities and concerns of respective stakeholders in offshore Canada lands, and to find a common strategy to move this industry sector forward for the betterment of all. The following is a short list of the current main thrusts:

- Promotion of a Marine Cadastre for Canada
- Promotion of the ACLS national certification program for hydrographers
- Publication and promotion of the new book entitled "Canada's Offshore: Jurisdiction, Rights, and Management". Copies can be purchased from: [www.acls-aatc.ca](http://www.acls-aatc.ca) or [www.trafford.com](http://www.trafford.com)

L'A.A.T.C. est une association professionnelle de juridiction fédérale. Elle est composée de 560 membres répartis aux quatre coins du Canada (et du monde) qui ont une expertise en arpentage, en photogrammétrie, en télédétection, en géodésie, en hydrographie et en systèmes d'information foncière à référence spatiale.

L'A.A.T.C. est engagée à l'amélioration de la sensibilisation aux responsabilités et aux préoccupations des intervenants respectifs des terres extracôtières du Canada et de l'adoption d'une stratégie commune pour faire progresser ce secteur de l'industrie en vue de la plus-value pour tous. Voici la liste des activités principales en cours :

- Promotion d'un cadastre marin pour le Canada.
- Promotion du programme national de certification des hydrographes de l'AATC.
- La publication et la promotion du nouveau livre : *Zone extracôtière canadienne : juridiction, droits et gestion*. La version française sera disponible en novembre 2007. Vous pouvez faire l'acquisition de copies en visitant : [www.acls-aatc.ca](http://www.acls-aatc.ca) ou [www.trafford.com](http://www.trafford.com)

For further information please contact:

Association of Canada Lands Surveyors  
Tel: (613) 723-9200 FAX: (613) 723-5558 E-mail: [admin@acls-aatc.ca](mailto:admin@acls-aatc.ca)  
Website: [www.acls-aatc.ca](http://www.acls-aatc.ca)

### Blodgett-Hall Polar Presence LLC

The Blodgett-Hall Polar Presence LLC is a US registered non-profit non-commercial entity set up to promote geomarine research in the Arctic Ocean by combining modern technology with the advantages of working on the drifting sea ice cover. It has built and tested a research hovercraft, the R/H *SABVABAA*, which is based at UNIS, the University in Longyearbyen, Svalbard. The hovercraft, whose Inuit name means "flows swiftly over it", is equipped for work in marine geophysics, marine geology, and oceanography in the most inaccessible parts of the high Arctic. The program intends to put "boots on the ice" for extended periods, using a relatively inexpensive, very habitable platform with a minimum crew of two or three. Whether in motion along leads, or drifting on floes, it can carry out deep and shallow reflection and wide angle

seismics, and home in on geological targets for direct coring, dredging, and bottom photography. Oceanographic instrumentation consists of electromagnetic ice thickness measurements every 2sec, CTD casts to 500m, and Acoustic Doppler Current Profiling. The hovercraft was especially designed to investigate the Alpha Ridge, in areas of thick multiyear ice presently inaccessible to icebreakers north of Ellesmere Island and Greenland. In preparation for this the hovercraft has undergone three summers of testing over the Yermak Plateau. More than 10,000nm of travel have been recorded, while dredging, making CTD casts, seismic profiles, and testing autonomous drifting buoys for unattended seismic profiling, echo-sounding, and shallow CHIRP.

For further information please contact:

Website at [www.polarhovercraft.no](http://www.polarhovercraft.no)



# Corporate Members

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## Membres corporatifs

### C & C Technologies

C & C Technologies, Inc. is a privately-owned international surveying and mapping company specializing in deepwater services. Our cutting-edge technologies, inspiring workplace and "can do" attitude endear our clients and attract the industry's leading innovators. C & C services

include autonomous underwater vehicle surveys, C-Nav® globally corrected GNSS, marine construction surveys, geophysical surveys, geosciences services, government services, land and coastal surveys, a free GoM GIS viewer, and geotechnical services.

For more information regarding C & C Technologies services please contact:

Thomas Chance, CEO  
at (337) 261-0000 email to [marketing@cctech.us](mailto:marketing@cctech.us) or  
visit C & C's Website at [www.cctech.us](http://www.cctech.us)

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### CARIS

Established in 1979, CARIS is a leading developer of geospatial software designed for the hydrographic and marine industries. Developed in cooperation with hydrographic clients and universities worldwide, CARIS software is designed to cater specifically for the marine GIS community, and is built on decades of hydrographic experience.

No other single company can supply a software solution for your entire offline workflow. The CARIS Ping-to-Chart solution is designed to deliver an integrated and seamless solution for the entire workflow of hydrographic information from processing the echo-sounder ping to the production and distribution of the chart. This integrated software solution provides our clients with resource optimization and a true operational advantage.

The CARIS Ping-to-Chart solution includes products that address the need to manage bathymetric data

sets containing billions of soundings, to support the development of multiple chart types from a single source and to be able to distribute and interrogate high density bathymetry over the internet.

CARIS software also offers peace of mind backed by a comprehensive level of industry leading support. CARIS offers training sessions, consulting and technical support services, as well as an extensive series of courses to make sure that its clients fully utilize the software's capabilities. Users can also gain swift access to qualified technical experts via on-line services, multilingual telephone support and email.

Find out why CARIS software is selected by national mapping and charting agencies, survey companies, port and waterway authorities, oil and gas companies and academic institutions around the world by visiting [www.caris.com](http://www.caris.com).

For more information regarding CARIS services please contact:

Sheri Flanagan  
at (506) 458-8533 email to [info@caris.com](mailto:info@caris.com)  
visit CARIS's Website at [www.caris.com](http://www.caris.com)

### CIDCO

Le Centre Interdisciplinaire de Développement en Cartographie des Océans (CIDCO) est un organisme de R&D en géomatique marine. Dédié à la mise en valeur des technologies de pointe pour l'acquisition, la gestion et la représentation graphique de données spatiales marines, le CIDCO est un organisme sans but lucratif qui répond aux besoins en R&D de l'industrie et de la communauté scientifique.

#### Cartographie haute résolution

Les équipements du CIDCO permettent un niveau de précision allant du mètre à quelques centimètres selon le contexte. Cette précision permet d'identifier les objets se trouvant sur le fond marin, sous des couches sédimentaires ou flottant dans la colonne d'eau. De plus, les données acquises permettent la production d'images bathymétriques et d'images de réflectivité du fond marin.

Le CIDCO possède l'expertise en traitement de données (bathymétrie et imagerie) issues de sonars monofaisceau, multifaisceaux et interférométriques. De plus, il améliore continuellement le flux de travail du traitement de données afin de réduire le temps nécessaire à la réalisation de produits de géomatique marine.

Le CIDCO est continuellement en évolution par l'apprentissage de nouvelles méthodes et l'utilisation de nouveaux outils. L'organisme est au cœur du milieu de la géomatique marine par sa veille technologique et son positionnement stratégique ainsi que par l'organisation de formations et d'ateliers avec des scientifiques du milieu et les professionnels du CIDCO.

The Interdisciplinary Centre for the Development of Ocean Mapping (CIDCO) is a marine geomatics R&D organization. Dedicated to the enhancement of state-of-the-art technology for marine geospatial data acquisition, management and graphic representation, the CIDCO is a not for profit organization answering the R&D needs of the industry and the scientific community.

#### High-resolution Mapping

CIDCO's equipments allow for precision levels varying from meter to centimetre-level precision depending on the survey context. This precision enables identification of objects on the seabed, buried under sedimentary layers or suspended in the water column. Moreover, the survey data is used to produce both bathymetric and backscatter imagery of the seabed.

CIDCO possesses the expertise in data processing (bathymetry and imagery) acquired from singlebeam, multibeam and interferometric echo sounders. Moreover, it continuously strives to improve the data processing workflow in order to reduce the time required for production of marine geomatics products.

CIDCO is continually evolving through learning of new methods and uses of new tools. The organization is at the heart of the marine environment of the marine geomatics sector by its organization of courses, training and workshops with the scientific community and CIDCO employees.

For more information regarding CIDCO services please contact:

Jean Laflamme  
at (418) 725-1732 email to [Jean.Laflamme@cidco.ca](mailto:Jean.Laflamme@cidco.ca)  
visit CIDCO's Website at [www.cidco.ca](http://www.cidco.ca)



## Corporate Members

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## Membres corporatifs

### Fugro GeoSurveys Inc.

Fugro GeoSurveys Inc. (FGI) is Canadian-based and staffed, with offices in St. John's, NL and in Dartmouth, NS and has a large, locally based, inventory of hydrographic, geophysical, geotechnical and positioning equipment. With approximately 75 employees, FGI has established an impressive track record in Canada and on the international stage.

FGI has provided seabed mapping and construction support services for all of Eastern Canada's offshore oil and gas developments and is also actively involved in marine based non-oil and gas projects such as Canada's UNCLOS mapping, hydrographic charting in Canada's North, large area habitat mapping, pipeline and cable route surveys, ice scour studies, wharf investigations and a broad range of engineering and construction support surveys.

FGI's Hydrographic Group operates a wide range of multibeam equipment including Reson 8101, 8111 and 8125 systems. These systems are routinely mobilized by FGI on ocean going vessels, as well as our customized

26 foot inshore survey launch. Systems have also been mobilized on ROVs for detailed oil and gas related infield mapping projects.

Multibeam data are processed in the field and at bases in St. John's and Dartmouth using CARIS HIPS/SIPS, IVS' Fledermaus visualization tools, and Fugro's own Starfix software suite. The resultant multibeam data are commonly integrated with seabed sampling, underwater imagery, geotechnical, seismic, sidescan and sub-bottom profiler data to deliver superior data products for use in seafloor and sub-seafloor assessments.

Throughout each project, FGI is committed to the health and safety of its employees, partners and clients, and to the protection of the environment. This is accomplished through the company's comprehensive HSE policy and Safety Management System which is OHSAS 18001 certified.

If you would like to receive further information about Fugro GeoSurveys Inc. please contact:

Fugro GeoSurveys Inc.  
Tel: (709) 726-4252 FAX: (709) 726-5007 E-mail: [todd.ralph@fugro.com](mailto:todd.ralph@fugro.com)  
Website: [www.fugro.com](http://www.fugro.com)

### HYPACK, Inc.

HYPACK, Inc develops Windows-based software for the hydrographic and dredging industry. Founded in 1984, HYPACK, inc. (formerly Coastal Oceanographics, inc.) has evolved from a small hydrographic consultancy to one of the most successful worldwide providers of hydrographic and navigation software. HYPACK® is one of the most widely used hydrographic surveying packages in the world, with over 4,000 users. It provides the surveyor with all of the tools needed to design their survey, collect data, process it, reduce it, and generate final products.

Whether you are collecting hydrographic survey data or environmental data or just positioning your vessel in an engineering project, HYPACK® provides the tools needed to complete your job. With users spanning the range from small vessel surveys with just a GPS and single beam echosounder to large survey ships with networked sensors and systems, HYPACK® gives you the power needed to complete your task in a system your surveyors can master.

For more information regarding HYPACK, Inc. please contact:

HYPACK, Inc.  
Tel: 1-860-635-1500 FAX: 1-860-635-1522 E-mail: [sales@hypack.com](mailto:sales@hypack.com)  
Website: [www.hypack.com](http://www.hypack.com)

## Corporate Members

### Membres corporatifs

#### L'Institut maritime du Québec

Fondé à Rimouski en 1944, l'Institut maritime du Québec (I.M.Q.) est le plus important centre de formation maritime au Canada et le seul francophone. Faisant partie des cinq écoles nationales du Québec, il offre des formations collégiales techniques de haut niveau comme Techniques de la logistique du transport et des spécialités qui lui sont exclusives : Technologie de l'architecture navale, Navigation, Techniques de génie mécanique de marine et Plongée professionnelle.

L'I.M.Q. jouit d'une réputation d'excellence à l'échelle internationale pour la qualité de la formation qu'il offre, pour son expertise très vaste dans les domaines maritimes et de la logistique du transport et pour la compétence reconnue de ses élèves diplômés. D'ailleurs, plusieurs d'entre eux occupent aujourd'hui des positions-clés dans l'industrie en Amérique et en Europe.

Afin de maximiser les apprentissages, l'I.M.Q. met à la disposition des élèves des équipements de pointe comprenant des laboratoires informatiques, des ateliers bien aménagés, un bassin de plongée, ainsi que des simulateurs de navigation, de salle des machines et de communication maritime. Son personnel hautement qualifié participe également à sa réputation et à son rayonnement au Canada et ailleurs dans le monde.

Bien branché sur les besoins du marché du travail, l'I.M.Q. propose des formations incluant des stages. Orchestrée en partenariat entre l'Institut maritime du Québec et l'industrie, la formule est gagnante pour tous les intervenants — entreprises, élèves et maison d'enseignement — car elle contribue à l'amélioration de la qualité des apprentissages tout en permettant à l'élève d'évoluer dans son futur milieu de travail.

Pour plus d'informations à propos de L'Institut maritime du Québec s'il vous plaît contactez :

L'Institut maritime du Québec  
Tel: (418) 724-2822 FAX: (418) 724-0606 E-mail: [infoscol@imq.qc.ca](mailto:infoscol@imq.qc.ca)  
Website: [www.imq.qc.ca](http://www.imq.qc.ca)

#### Jeppesen Norway AS

Jeppesen is a leading provider of solutions that support decision-making in commercial maritime operations. Today we contribute to the smooth operation of thousands of commercial ships and shipping companies around the world.

As a natural extension of our commercial products, we have supported production of charts and publications at national hydrographic offices worldwide for over a decade. Jeppesen dKart Office technology organizes the production and maintenance of traditional paper charts and survey sheets, electronic charts such as ENC's, lists of lights, Notices to Mariners, sailing directions and print-on-demand products.

Our commercial clients rely on us for electronic charts, weather and met-ocean data, weather routing and voyage optimization. We were one of the first companies in the world to offer digital chart data to commercial shipping,

and we are fast becoming one of the world's leading suppliers of official chart data (ENC's). In addition, we have developed a vast array of solutions that meet the operational needs of the shipping industry.

Both our national and commercial customers recognize our ability to meet their business needs, for quality assurance, rapid updating, user-friendly operation, flexible procurement, business integration and compatibility.

Recent major projects for national hydrographic offices include one recently concluded with Croatia, and another just underway for the Sultanate of Oman. For each, Jeppesen has been commissioned to supply the countries with its dKart Office suites, including tools, processes and training services. Production and maintenance of ENC's and paper charts and NtM processing have been key. Finally, Jeppesen is finalizing a print-on-demand extension for the Norwegian Hydrographic Service.

For further information please contact:

Egil O. Aarstad  
Tel: +47 51 464960 FAX: +47 51 464701 E-mail: [dkart@jeppesen.com](mailto:dkart@jeppesen.com)  
Website: [www.jeppesenmarine.com/National-Hydrographic-Services/](http://www.jeppesenmarine.com/National-Hydrographic-Services/)

## Corporate Members

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## Membres corporatifs

### Knudsen Engineering Limited (KEL)

Knudsen, a long-standing corporate member and familiar face to the Canadian hydrographic world, is recognized worldwide for its innovative high performance singlebeam echosounders used in numerous commercial/defence applications including survey, navigation, dredging, sub bottom profiling, and ocean research.

Known for advanced underwater acoustics technology, Knudsen introduced the first 'all-digital' echosounder with its 320M echosounder and followed with the industry's first "blackbox" echosounder, the 320BP. Product innovation has continued and today, a common set of technology components - embedded Digital Signal Processing firmware, Windows application software, and modular hardware design - are bases of the Sounder and Chirp Series of Echosounders that provide leading edge solutions for the world of today and into the future. Digital signal

processing is again the key to the performance of these new product lines. Both Sounder and Chirp series systems digitize the entire incoming signal over an exceptionally wide bandwidth and extract the frequency of interest entirely with digital signal processing software. Knudsen Sounder and Chirp echosounders provide stability and selectivity simply not achievable with analog components and offer sufficient processing power to recover the signal from even the noisiest environments.

Knudsen, an ISO certified manufacturer, located in Perth, Ontario Canada, has a current customer base that spans more than 60 countries. Knudsen cornerstones - 'Meeting customer needs through ongoing product innovation and unparalleled customer support' - continue to identify Knudsen products as the established benchmark for performance and accuracy.

For additional information please contact:

Judith Knudsen

Tel: (613) 267-1165 FAX: (613) 267-7085 E-mail: [judith@knudsenengineering.com](mailto:judith@knudsenengineering.com)  
Website: [www.knudsenengineering.com](http://www.knudsenengineering.com)

### Kongsberg Maritime

Kongsberg Maritime, a company in the Kongsberg Group, is a leading supplier of advanced multibeam and single beam echosounders and instrumentation systems.

With its strong application knowledge and trend-setting quality products, Kongsberg Maritime is able to offer unique and complete solutions for ROVs, AUVs, positioning systems and sea bed surveying and mapping.

Kongsberg Maritime has about 980 employees with subsidiaries world wide. Canadian operations include a sales office in Halifax and a factory in Port Coquitlam, British Columbia. The headquarters are located in Kongsberg, Norway. Kongsberg Maritime exports its products to all of the world's major markets.

For more information regarding Kongsberg Maritime please contact:

Mr. John Gillis

Survey & Underwater Vehicle Instrumentation

Tel: (902) 468-2268 FAX: (902) 468-2217 E-mail: [john.gillis@kongsberg.com](mailto:john.gillis@kongsberg.com)  
or visit Offshore: [www.km.kongsberg.com](http://www.km.kongsberg.com) and Marine: [www.simrad.no](http://www.simrad.no)



## Corporate Members

### Membres corporatifs

#### Réformar

Reformar a pour principale mission de soutenir les chercheurs, les institutions de recherche et de formation et les organisations gouvernementales et privées, lors de la réalisation de leurs projets scientifiques en sciences et technologies de la mer, par le biais de ses infrastructures, dont le navire de recherche le Coriolis II. Par le biais de son réseau de partenaires publics et privés, Reformar a ainsi accès à un parc d'équipements d'une valeur d'une dizaine de millions de dollars, ce qui permet d'équiper le Coriolis II pour tous ses différents travaux de recherche.

Véritable laboratoire flottant, le Coriolis II dispose d'espaces dédiés exclusivement aux travaux de recherche. Ses laboratoires, dont l'espace totalise plus de 55 mètres

carrés, permettent de former des équipes de recherche multidisciplinaires pouvant accueillir 14 personnes, en plus de l'équipage régulier du navire.

Le Coriolis II répond aux plus hautes normes de certification maritime internationale, dont la certification ISM et ISPS. Il est classé auprès de la société ABS et est conforme à la convention SOLAS. Il peut naviguer non seulement au Canada, mais partout dans le monde et ce, dans un cadre opérationnel des plus sécuritaire. Doté d'équipements de pointe, Le Coriolis II est maintenant équipé de deux systèmes de multifaisceaux dont un pouvant aller jusqu'à une profondeur de 7000 mètres, ce qui en fait un des 20 navires au monde équipé d'une telle technologie.

For more information regarding Réformar please contact:

Martial Savard  
Réformar

Tel: (418) 723-1986 FAX: (418) 724-1842 E-mail: [msavard@reformar.ca](mailto:msavard@reformar.ca)  
or visit [www.reformar.ca](http://www.reformar.ca)

#### Rolls-Royce Naval Undersea Systems (ODIM Brooke Ocean)

ODIM Brooke Ocean, Dartmouth, Nova Scotia, is a world leader in the development and supply of sensor platforms for moored and underway use. The company provides hardware, engineering, repair and overhaul, life cycle support and R&D services to the hydrographic and oceanographic communities as well as to the naval and oil & gas sectors. Products include advanced data collection platforms, instrumentation, cable-handling hardware and launch/recovery systems.

ODIM Brooke Ocean's Moving Vessel Profiler™ (MVP) collects real-time free fall data profiles from ships underway at speeds of up to 12 knots. In addition, the ODIM Free Fall Cone Penetrometer (FFCPT) was developed to collect geotechnical and geophysical data during route location surveys for seabed cable and pipeline installations, bottom classification and acoustic groundtruthing, mine countermeasures and geo-environmental studies.

The ODIM FFCPT can be used either on-station or from a vessel underway at speeds up to 6 knots, using an ODIM MVP. Deployment of the ODIM FFCPT from an ODIM MVP offers a rapid and reliable method for characterizing the seafloor sediment, as well as the sound velocity of the water column.

Another of ODIM Brooke Ocean's primary areas of specialization is in the development of shipboard Launch And Recovery Systems (LARS) to deploy and recover various payloads from a ship at sea. These payloads include Autonomous Underwater Vehicles (AUVs), Unmanned Surface Vehicles (USVs), offboard sensors, oceanographic equipment, and manned submersibles.

If you would like to receive further information about ODIM Brooke Ocean and its services please contact:

Arnold Furlong  
Tel: (902) 468-2928 FAX: (902) 468-1388 E-mail: [sales@brooke-ocean.com](mailto:sales@brooke-ocean.com)  
Website: [www.brooke-ocean.com](http://www.brooke-ocean.com)

## Corporate Members

### Membres corporatifs

#### **SANI-INTERNATIONAL TECHNOLOGY ADVISORS INC. (SANI-ITA)**

SANI-INTERNATIONAL TECHNOLOGY ADVISORS INC. (SANI-ITA), an Ontario Corporation, provides services and consulting in geographic information systems, remote sensing, softcopy photogrammetry and hydrography. The Corporation is a Distributor for GeoEye (50 centimetre imagery) LizardTech (MrSID and LiDAR data compressors), Nuvision and TRUE3Di (softcopy photogrammetry hardware) and is also the Authorised Training Centre for the complete suite of ERDAS IMAGINE software products. SANI-ITA is a sister company to Spatial Geo-Link Limited, the sole distributor in for ERDAS softcopy photogrammetry, geographic imaging and enterprise solutions in Canada.

SANI-ITA committed to providing services that meet or exceed approved designs, specifications and accepted industry practices. Our Corporation is technology driven and provides innovative solutions, high quality services and timely deliveries in the field of geomatics. The Corporation is ISO 9001:2008 registered.

Services offered by SANI-ITA include:

- Project Consulting
- Project Management
- Management of airborne and spaceborne data acquisitions missions
- Control surveys in support of geodetic or photogrammetric projects
- Hydrographic surveys
- Aerial triangulation of airborne and satellite data
- Digital Elevation/Terrain collection – automatic or static mode
- Orthoimagery
- Digital topographic mapping
- Digital map revision
- GIS data structuring
- Map conversion and data translation services
- Image compression services - MrSID, ECW and JPEG2000
- Quality assurance services
- Third party audits of mapping and imagery
- 3D Visualisations

For additional information on the Corporation, please visit our website at:

[www.sani-ita.com](http://www.sani-ita.com)

or contact us at

Tel: (905) 943-7774 FAX: (905) 943-7775

#### **Shark Marine Technologies Inc.**

Shark Marine Technologies Inc. was founded in 1984 with a mandate to offer products and services that are innovative, high quality, dependable and cost effective.

Over the years, we have gained global respect for our developments in undersea technology, and the expertise we bring to on-site operations. As a manufacturer we have made significant advancements in underwater imaging equipment, remotely operated vehicles and other survey systems. In our services we have provided consultation, software development, custom manufacture, hydrostatic testing, equipment rentals and location operations.

Shark Marine Technologies Inc. is also a world leader in the development and manufacture of new technologies for maritime security and SAR organizations. Products such as diver detection and deterrent systems, remotely operated inspection and intercept vehicles; diver-held imaging sonar units and ship hull inspection devices, highlight our focus on security. Along with our own manufactured products we are also proud to be the North American representatives for Systems Engineering

and Assessment (SEA) Ltd. of the U.K., for their line of SWATHplus bathymetric survey systems.

Our customer base has grown over the years to include gas and oil exploration, commercial diving, various governments, fisheries and undersea research facilities, search and rescue organizations, and survey firms. Our location services have taken us from warm waters to the frozen Arctic, where we have gained international recognition. These include pipeline surveys, locating of sunken vessels and other objects, search and recovery, as well as magnetic and sonar mapping.

Our manufacturing and global sales facilities are located in St. Catharines, Ontario, Canada, with associated sales offices in North Liberty, Iowa, USA and Grenoble, France as well as various sales representatives throughout the world.

Our experience in the diverse aspects of this field allows us the ability to create innovative solutions to often difficult or costly tasks.

For further information about please contact Shark Marine Technologies Inc.:

Jim Garrington

Tel: (905) 687-6672 FAX: (905) 687-9742 E-mail: [jim@sharkmarine.com](mailto:jim@sharkmarine.com)

Website: [www.sharkmarine.com](http://www.sharkmarine.com)

### Technopole maritime du Québec

La mission de Technopole Maritime du Québec est de promouvoir et accélérer le développement du créneau des sciences, technologies et biotechnologies marines du Québec en assurant son rayonnement sur les scènes nationale et internationale, en offrant des services à valeur ajoutée aux membres du créneau et en soutenant l'avancement des projets prioritaires à long terme. De plus, Technopole Maritime du Québec a pour objectif de positionner son réseau comme leader au niveau québécois et canadien dans les secteurs d'excellence des sciences marines, des biotechnologies marines et des technologies maritimes afin d'y accélérer la création de richesse par la croissance et les nouveaux investissements dans les entreprises, institutions et organismes. Les actions de Technopole maritime s'inscrivent dans une volonté de mobiliser les forces vives du créneau des sciences et technologies marines, à savoir les institutions d'enseignement, les organismes de transfert, les installations et les laboratoires de recherche et, surtout, bon nombre d'entreprises qui vivent à l'heure de l'innovation technologique.

- Par ses actions de maillage et de réseautage, TMQ est l'animateur par excellence du domaine des sciences de la mer dans la région;
- Par ses actions de représentation, TMQ contribue au développement de liens d'affaires solides entre les acteurs de l'industrie des sciences de la mer au Québec et au Canada;
- Par ses actions de communication et de promotion, TMQ contribue au rayonnement et à la reconnaissance du domaine des sciences de la mer dans la région et à l'extérieur de celle-ci;
- Par son leadership, TMQ est à même d'identifier et de piloter des projets d'envergure qui sont rassembleurs pour la communauté des sciences de la mer de la région.

The mission of the Technopole Maritime du Québec (TMQ) is to promote and advance the development of marine sciences, technology and biotechnology in Quebec by increasing their visibility on both the Canadian and international stages, providing value-added services to the members of this niche sector, and supporting the progress of priority projects over the long term. Furthermore, the goal of the Technopole Maritime du Québec is to position its member network as the provincial and national leader in the marine sciences, biotechnology and technology sectors. Doing so will enhance wealth creation and attract new investments to the sector's industries, institutions and organizations. The Technopole's actions are driven by the will to mobilise the dynamic strength of the marine sciences and technology sector, namely the educational institutions, technology transfer organizations, research laboratories and facilities, and the numerous companies that are currently thriving through technological innovation.

- Through its communication and promotional strategies, TMQ contributes to the reach and recognition of marine sciences in the region, in Canada and around the world ;
- Through its representation work, TMQ contributes to the development of successful business relationships between actors in the marine science industry in Quebec and Canada ;
- Through its networking strategies, TMQ is an outstanding coordinator for the marine sciences sector in the region ;
- Through its leadership, TMQ is well-placed to identify and spearhead major projects that promote joint action in the regional marine sciences community.

For more information regarding technopol maritime du Québec please contact:

Laurent Bellavance  
Tel: (418) 724-9616 / FAX: (418) 721-6127 E-mail: [lbellavance@tmq.ca](mailto:lbellavance@tmq.ca)  
Website: [www.tmq.ca](http://www.tmq.ca)



## Corporate Members

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### Membres corporatifs

#### **Terra Remote Sensing Inc. (TRSI)**

Terra Remote Sensing Inc. (TRSI) is a spatial data organization offering world-class expertise and technology for clients requiring fast, accurate, detailed and cost effective surveys. Our teams specialize in the acquisition and positioning of remotely sensed data in terrestrial and marine environments, and in the transformation of that data into a wide array of products to meet our client's needs.

TRSI was established in 1983 in Sidney, British Columbia as the West Coast subsidiary of Terra Surveys Ltd, based in Ottawa Canada. The company began by providing consulting, engineering, training and technical services in coastal and land-based resource studies, hydrography, marine geophysics and remote sensing. TRSI, a 100% employee-owned venture, was launched in 1999 to allow the company to further develop its technology and processes. Our new sensor technologies and associated applications are testaments to our innovation approach.

TRSI has over 50 dedicated full-time professionals that work on both national and international projects. Senior management is comprised of a core group of professional engineers and business specialists.

A highly qualified permanent staff of Geomatic Engineers, GIS Specialists, Mapping Technicians, Computer Programmers, Electronic Engineers, Hydrographers, Geophysicists and Surveyors comprise TRSI's multi-disciplinary team.

TRSI established a wholly owned subsidiary in Chile in late 2008. The Chile operation maintains a commercial office in Santiago and an operational office located in Carauma near Valpariso, in order to provide access to qualified staff.

Our wholly-owned US entity was established in 2009 as a sales office to provide a US base for our clients. Their focus is the Pacific Northwest region, which is a natural extension from our Sidney head office.

For more information regarding Terra Remote Sensing please contact:

Rick Quinn

Tel: (250) 656-0931 / (800) 814-4212 FAX: (250) 656-4604 E-mail: [rick.quinn@terraremove.com](mailto:rick.quinn@terraremove.com)

Website: [www.terraremove.com](http://www.terraremove.com)



**[www.hydrography.ca](http://www.hydrography.ca)**

# News From Corporate Members

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## Nouvelles de Membres corporatifs

### Fugro Awarded 2012 LCDR Peter Johnson Best Practices Award

San Diego, California, 9 July 2012

Fugro was awarded the "LCDR Peter Johnson Best Practice Award" at the 13<sup>th</sup> Annual Joint Airborne LIDAR Bathymetry Technical Center of Expertise (JALBTCX) Airborne Coastal Mapping and Charting Workshop held recently in Chicago.

The LCDR Peter Johnson Best Practices Award exemplifies Peter's dedication, professionalism, initiative, and high level of commitment and performance. The recipient will have accomplished a complicated, demanding airborne LIDAR survey within the past 2 years. Through this project or field operations a clearly defined challenge will have been overcome leading to a notable success or advancement in best practices. The accomplishment will be undisputed by the community.

This year's award was presented to "Mark MacDonald and the Fugro Pelagos US West Coast Survey Team" for the successful execution of a large and challenging survey of the entire U.S. West Coast. The survey, contracted by

the United States Army Corps of Engineers under their National Coastal Mapping Program, involved the tide-coordinated acquisition and processing of bathymetric LiDAR, topographic LiDAR, aerial photography and hyperspectral imagery of a 1.5km wide coastal strip from the Mexican to the Canadian border. The project, which also involved Fugro EarthData, covered an area known for its complex environmental conditions (consistent marine layer and variable water clarity) and spanned three years.

This is the second time in the four year history of the award that Fugro Pelagos was the recipient and the third time in the same period that Fugro has won the award, with Fugro LADS winning the award in 2011.

For further information:

Fugro Pelagos, Inc.  
Kas Ebrahim, Commercial Manager  
kebrahim@fugro.com  
Telephone + 858-427-2001

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### Fugro is Participating in the Search for the Lost Franklin Ships in the Canadian Arctic

St. John's, Canada, 27 August 2012

Fugro, under contract with the Canadian Hydrographic Service (CHS), has been awarded a new task order to conduct hydrographic surveys utilizing Airborne LiDAR Bathymetry (ALB) as part of the Canadian government's Arctic Charting and Mapping Pilot Project. The project includes seabed mapping to aid in the search for Franklin Ships *Erebus* and *Terror*. The ALB surveys are being conducted in conjunction and coordination with CHS' vessel based surveys from CCGS *Sir Wilfrid Laurier*. The task order, which has been issued under a 3-year contract that Fugro holds with CHS, also supports their charting programs in the Canadian Arctic.

Fugro's ALB system is capable of efficiently collecting data from various airborne platforms over a variety of marine and land environments such as inter-tidal zones and coastal regions. In addition to collecting simultaneous elevation/depth information over land and water, it is also capable of acquiring aerial imagery using its integrated, high-resolution digital camera for both quality control and the production of orthorectified photo mosaic products.

The ALB system achieves a highly efficient coverage rate of up to 70km<sup>2</sup> per hour at IHO Order 1 positioning and depth accuracies. In addition to traditional bathymetry information it also derives seafloor reflectance information from the LiDAR return signals, which can be used to produce high quality seabed imagery that shows changes in homogeneous bottom type and can be used to accurately classify the seafloor environment for activities such as geologic and habitat mapping.

Fugro provides ALB products and services worldwide to public and private sector clientele as a rapid and cost-effective solution to near shore hydrographic survey needs where scale of the project, time constraints and user safety are of primary concern.

For further information:

Fugro GeoSurveys a division of Fugro Canada Corp.  
Barry Ryan, Regional Manager  
barry.ryan@fugro.com  
Telephone +1 902 468 1130

### NATIONAL

#### Call For Nominations - National President

CHA National at this time is calling for nominations - National President - Canadian Hydrographic Association. Please see page 7 for more information.

#### GGE Grad Alumnus Wins the Prince Albert I Medal for Hydrography

LtCdr. Aluizio Macel de Oliveira Jr. of the Brazilian Navy Hydrographic Centre and a graduate of UNB's Dept. of Geodesy and Geomatics Engineering, has won the Prince Albert I Medal for Hydrography - 2012.

The medal, which is awarded every five years, is named after Prince Albert I of Monaco (1848-1922), one of the great navigators and explorers of his time and the founder of the famous Oceanographic Museum.

Together with his co-author, Cdr. Izabel King Jeck, de Oliveira received the honour for the paper "*Multibeam Processing for Nautical Charts*," which appeared in the International Hydrographic Review (IHR) in November 2009. The paper was selected by the member countries of the International Hydrographic Organization as the best paper published in the IHR between 2007 and 2011.

The medal was presented by His Serene Highness Prince Albert II in Monte Carlo on April 23, 2012 during the opening ceremony of the 18<sup>th</sup> International Hydrographic Conference.

LtCdr. Aluizio Macel de Oliveira Jr. is a CHA International member - Central Branch.

### PACIFIC BRANCH

This has been a busy year for CHA members – what with both Field Survey operations and chart/ENC in full production mode.

The branch sponsored a World Hydrography Day celebration with a cake and coffee.

During the 2012 year two of our long time CHA members retired; Rob Hare with the CHS Data Acquisition and Technical Services group, and a member since 1982 and Michel Ward with CHS Navigational Products and Services group and a member since 1977.

During the year Rob Hare was honored with the Queen Elizabeth II Diamond Jubilee Medal. This medal is given to honour significant contributions and achievements by Canadians.

The final tally for membership in the branch was nine corporate, two life and twenty regular members. There was a slight drop in regular members which we will have to try harder in the coming year to remedy.



**Michael Tarbotton** - It is with great sadness that we announce the passing of Michael Tarbotton. Mike is survived by his loving wife Mary, daughter Becky and sons Jesse and Cameron. He died on April 8<sup>th</sup> with his family by his side, after a struggle with cancer. Mike was a passionate engineer who founded and ran the Vancouver-based coastal engineering firm Triton Consultants Ltd. for 25 years. He was happiest in the outdoors, a devoted member of the St. Philips Choir and always ready for a spirited debate. Mike will be greatly missed by his family and community and always be remembered as a dear friend, respected mentor and generous soul. Michael was a former member of CHA Captain Vancouver Branch.



### OTTAWA BRANCH

#### Seminars and Events

##### Speaker's Luncheons

Since the Spring, CHA Ottawa hosted two Pizza and Presentation Luncheons:

##### 1) Friday, June 8, 2012

A presentation was given by Dr. Robin Brown, titled "*Transportation of Debris from Japan to the Pacific Coast of Canada – what do we know and what don't we know?*"

In March, 2011 a very large tsunami off the coast of Japan caused the deposition of large amounts of debris into the waters east of the main island of Honshu. As ocean currents generally carry material eastward across the North Pacific, there has been significant public concern about the timing, magnitude and composition of debris that might make its way to Canadian shores and the danger it might cause to navigation along the way.

DFO Pacific Region developed a CSAS Special Science Response (SSR) to attempt to answer some of these questions. In addition, a Federal-Provincial Interagency Tsunami Debris Coordinating Committee has been developed in the Pacific Region to coordinate a response. Dr. Brown presented the highlights of the SSR and current tsunami debris activities on the Left Coast. This session was particularly timely, given that a Japanese dock set adrift by the tsunami had washed ashore in Oregon earlier in the month.

##### 2) Thursday, June 14, 2012

Eighteen CHA members and colleagues attended the presentation titled: "*Celebrating the Canadian Coast Guard's 50<sup>th</sup> anniversary - An honoured past, a committed future.*" Mary-Ann Trick and Randall Russell of the Canadian Coast Guard briefed us on the CCG's commemorative program in recognition of their anniversary.

#### World Hydrography Day Celebrations

The WHD BBQ, a highly successful event co-sponsored by the CHA and CHS was held on the lawn at 615 Booth St. on June 21. The seventy five participants included CHA members, and colleagues from CHS, other branches of DFO, other departments and our retired friends. We were especially pleased that Dr. Siddika Mithani, the ADM of Ecosystems and Oceans Sciences, was able to join us. The Branch was able to recruit three new members as a result of the BBQ.

A special thank you to our willing team of chefs who worked so long over the BBQs on the hottest day of the year.



CHA Ottawa Branch and friends celebrate World Hydrography Day with CHS friends.



Two of our hard-working chefs at the World Hydrography Day BBQ, Dr. Kian Fadaie and Sylvain de Margerie, (Photo by Denis Pigeon)

#### World Maritime Day

The Canadian Hydrographic Association and the Canadian Hydrographic Service joined to mark World Maritime Day on Monday, September 24, 2012. We celebrated the launching of DFO's Hydrography Web Site by the ADM, Dr. Siddika Mithani, with cake and coffee.



### CENTRAL BRANCH

V.P. Roger Cameron Chaired the 2012 Canadian Hydrographic Conference (CHC 2012) held in Niagara Falls, Canada May 15-17.

Andrew Leyzack Chaired the Technical Program Committee and was assisted by Christine Delbridge and Jeff Walker.

Ken McMillan Chaired the Sponsorship Committee.

It was with great sadness that Central Branch notes the passing of Rear Admiral Steve Ritchie, International Life Member on May 10, 2012. A moment of silence was observed during the CHC 2012 opening ceremonies.

Central Branch offers its condolences to Life Member Sam Weller whose wife Beth passed away in August.

From July 28 to September 19, hydrographer-in-charge (H.I.C.) Andrew Leyzack was on assignment aboard the CCGS *Sir Wilfrid Laurier* in the Western Arctic. The survey was a joint effort with Parks Canada to search for the lost ships of the 1845 Expedition led by Sir John Franklin and was a continuation of similar efforts in 2008 and 2010. Partners included the Canadian Space Agency, the Government of Nunavut and the University of Victoria. The research vessel *Martin Bergmann* also assisted in the search. This search attracted National media attention and a team from the Canadian Broadcasting Service (CBC) spent several days with the CHS and Parks Canada team. Further information on the search and the team can be found on the following websites.

<http://www.pc.gc.ca/eng/culture/franklin/index.aspx>

<http://www.marketwire.com/press-release/government-canadas-search-lost-franklin-ships-delivers-numerous-collateral-results-1704071.htm>

Tim Janzen, H.I.C. led two surveys in the Eastern Arctic. His first survey was based from the Canadian Forces Auxiliary Vessel (CFAV) *Quest* from July 29 to August 21. The vessel conducted survey work in Lancaster Sound and Gascoyne Inlet. The survey visited the wreck *HMS Breadalbane*, the most northerly known shipwreck which was lost in 1853 during the search for the Franklin Expedition. Tim's second survey was based from the CCGS *Radisson* and ran from August 30 to September 26. Survey operations were conducted in Hudson Bay and Hudson Strait.

### CHC 2012

The highlight of the year was the 2012 Canadian Hydrographic Conference (CHC 2012), held in



CHC 2012 Conference Chair and Central Branch VP Roger Cameron presents Keynote Speaker Dr. Steve MacLean with his gift of a limited edition sextant.

Niagara Falls from May 15-17. Central Branch V.P. Roger Cameron Chaired the conference. Several Central Branch members including some corporate members attended and exhibited at this successful conference. Earl Brown and Brian Power, two longtime CHA members from Central Branch were sponsored by CHA National to attend CHC 2012. Further information on the conference is available in the CHC 2012 Conference Review in this issue.

During CHC 2012, the CHA held its Annual General Meeting. The meeting was chaired by CHA National President George McFarlane and was very well attended. Attendees included International and Corporate members as well as several Regional Directors from the Canadian Hydrographic Service including CHS Dominion Hydrographer and Director General Dr. Savithri (Savi) Narayanan.



Andrew Leyzack presents his Paper on the Arctic Charting and Mapping Pilot Project at CHC 2012.

### World Hydrography Day

On June 21, World Hydrography Day was celebrated at the Canada Centre for Inland Waters with the unveiling of a bronze plaque commemorating the *CSS Hudson*, an offshore oceanographic and hydrographic survey vessel that once served the Canadian Hydrographic Service (CHS). Accompanying the plaque was the CHS Crest that adorned the ship's bridge. Dignitaries attending the event included CHS Dominion Hydrographer and Director General Dr. Savithri (Savi) Narayanan, Canadian Coast Guard Regional Director of Fleet Brian LeBlanc, CHS Central and Arctic (C&A) Director Mike Hecimovich, and CHS staff. Of note, several former CHS C&A Directors and retirees were also in attendance. The plaque was made possible by contributions from CHA National and CHA Central Branch.



The crowd applauds the unveiling



The CHS Crest and the Commemorative Plaque

At a CHS All-Staff meeting that afternoon Jeff Walker, on behalf of CHA National, presented an annuity to Jim Weedon in appreciation for his efforts in putting out two issues of *Lighthouse* in a very short timeframe.

### Seminars

Since the last issue of *Lighthouse*, Central Branch has held one Executive Meeting. No meetings were held in June, July and August or September as the branch was on hiatus for the summer.

- General Meeting scheduled for October 17
- General Meeting scheduled for November 14

The Annual General Meeting is scheduled for November 29<sup>th</sup> at the Mimico Cruising Club.

### Membership

#### Branch

The Central Branch membership stands at 67. The branch is pleased to welcome new members Adam Mera, John Gerhard, Cathy Eden, Megan Las, Stephanie Lynn Harvey and Peter Knight. Central Branch welcomes Corporate Members Reson Inc. and The Naval Meteorological and Oceanographic Office (NMOO) of the Taiwanese Navy.

Corporate members are listed in each edition of *Lighthouse*.

Central Branch is honoured to include several special people in its membership: Life Members Earl Brown, Tom McCulloch, Ab Rogers and Sam Weller and Honorary Member George Macdonald.

The membership committee would like to thank all of its members for their continued support.

#### International

Central Branch of the CHA administers the International Members on behalf of the National Office. This committee helps to maintain contact with the CHA's 13 International members and ensures they have an opportunity to voice opinions and take part in CHA activities.

We encourage communication between our members abroad and are delighted when we receive news from them.

### Admiralty Launch Surveyor

The CHA's replica 18<sup>th</sup> century British Admiralty Launch *Surveyor* attended several events this summer.

*Surveyor's* activities are outlined below. Thanks to Brian Power of the Launch Committee for providing this report.



# Canadian Hydrographic Association NEWS

## NOUVELLES Association canadienne d'hydrographie



CHC 2012 delegates talk with *Surveyor's* crew



Encampment at Fort George in Niagara-on-the-Lake

### CHC 2012

May 15, 2012

The first event for *Surveyor* and crew took place in Niagara Falls where *Surveyor* was set up at the entrance to the Scotiabank Conference Centre, venue for CHC 2012. Crewmembers in period dress greeted delegates on the opening day of the conference and were on hand to answer questions and pose for photos.

### World Hydrography Day

June 21

*Surveyor* was on display at the main entrance to the Canada Centre for Inland Waters to promote World Hydrography Day.

### War of 1812 Events

July 13, 14, 15

This is the first year of a three year celebration of the 200<sup>th</sup> Anniversary of the War Of 1812 and *Surveyor* was under contract to the Department of National Defence, Royal Canadian Navy to participate in their event "The

Navy of 1812: Sailors On The Lakes". The event took place at Navy Hall, Fort George in Niagara-On-The Lake. *Surveyor's* nine crew members camped in period tents along the Niagara River and participated in the weekend War of 1812 battle scenario, which involved the transport and landing of assault forces at the Queen Royal Park in full view of the public.

June 29, 30, July 1,2

*Surveyor* participated in the St. Lawrence War of 1812 bicentennial Signature Event "Flight of the Royal George" in Bath Ontario. The launch committee agreed to send *Surveyor* to this event when approached by Dave Smith from the Fairfield-Gutzeit Society. The Fairfield-Gutzeit Society operates and maintains three historical properties in the Bath area and officially opened their new War of 1812 Discovery Centre during this event. John Dixon a long time crewmember of *Surveyor* and retired Hydrographer attended this event to instruct new sailors and oversee the safe operation of *Surveyor*. (No Photo)

September 19, 20

Once again the Department of National Defence, Royal Canadian Navy put out the call for longboats and re-enactors to participate in the promotion of The War of 1812 anniversary celebrations. The two-day event took place in Hamilton Harbour next to *HMCS Haida*, where two visiting war ships, *HMCS Ville De Quebec* and *USS Hurricane* were docked and open to the public. Displayed along with *Surveyor* was the Hamilton Ships Company's launch, a replica of the War of 1812 US ship *Hamilton's* longboat. On Thursday evening a memorial service was held along side *HMCS Ville De Quebec* for the 53 crewmembers of the *Hamilton* and *Scourge*, who died when their ships capsized during a fierce storm in Lake Ontario on August 8, 1813.



*Surveyor* and crew on the Niagara River



*Surveyor on left and another longboats alongside HMCS Ville De Quebec*



*Surveyor crew in period dress*

### HMCS Haida Ceremony

September 29

*Surveyor* and crew took part in a ceremonial event at HMCS Star a Naval Reserve Unit based in Hamilton Ontario, home of the HMCS Haida a World War II Destroyer of the Royal Canadian Navy, now a National Historic Site. The ceremony involved rowing the new Commanding Officer of HMCS Haida ashore. Maritime tradition dictated that a new commanding officer be rowed by his officers in front of his new command. *Surveyor* being a historical wooden launch best fit their requirements.

### Website

The CHA maintains a website that covers National and Branch information. The site is updated throughout the year for Branch activities as information becomes available. CHC 2012 Proceedings are now available on the CHA website. Please direct your browser to <http://www.hydrography.ca>.

## ATLANTIC BRANCH

2012 Quarterly Vice-President's Report  
September, 2012

### 2012 CHA Atlantic Branch Executive:

Vice-President	Bruce Anderson
Treasurer	Andrew Smith
Membership	Mark McCracken
Director	Sarah Rahr

### National Meetings:

April 18, 2012	Teleconference – Directors
June 28, 2012	Teleconference – Directors
Aug 23, 2012	Teleconference – Directors

### Membership to Date:

21	Regular
1	Honourary
5	Corporate
27	Total members to date

### Seminars and Social Events

Generally a quiet season, as summer vacations, and field work take many members out of the loop. A decent contingent of CHA Atlantic members attended the CHC 2012 in Niagara Falls, Ontario, in May 2012.

World Hydrography Day was celebrated on June 22<sup>nd</sup> with a keynote speech from Dr. Craig Brown, who delivered an excellent technical presentation. The celebration continued with a BBQ and social event at the Dartmouth Owls Club.

### News

- Sarah Rahr has continued as Technical Councillor for Hydrography on CIG
- Wendy Woodford has continued Chair the CHA/CIG Hydrography Committee
- Andrew Smith continuing to serve as CHA web support capacity, recent work includes the posting/hosting of CHC 2012 content

# Rates / Tarifs

## POSITIONING / EMPLACEMENTS

The acceptance and positioning of advertising material is under the sole jurisdiction of the publisher.

*L'approbation et l'emplacement de l'annonce sont à la discrétion de l'éditeur.*

## DIGITAL REQUIREMENTS EXIGENCES NUMÉRIQUES

Advertising material must be supplied by the closing dates as digital Tiff 600dpi files. Proofs should be furnished with all ads.

Single-page inserts will be charged at a full-page body rate. Material must be supplied by the client. Page size must conform to the single page insert trim size (below).

*L'annonce publicitaire doit être fournie aux dates de tombée. Les épreuves devraient être fournies avec tous les suppléments.*

*Les insertions d'une page seront chargées au tarif d'une pleine page. Le matériel devra être fourni par le client.*

## PUBLICATION SIZE DIMENSIONS DE LA PUBLICITÉ

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Bleed Size/ Publicité à fond perdu:	8.75" x 11.5"
Single Page Insert Trim Size/ Insertion d'une page	8.25" x 10.75"
Standard Ad Sizes/ Grandeurs standards des suppléments:	
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1/2 Page/ Demie-page:	6.875" x 4.75"
or/ ou:	3.375" x 9.75"

## PRINTING / IMPRESSION

Offset screened at 133 lines per inch.

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## CLOSING DATES / DATES DE TOMBÉE

LIGHTHOUSE is published twice yearly, in Spring and Fall. The closing dates are March 15th and September 15th respectively.

*LIGHTHOUSE est publiée deux fois par année, au printemps et à l'automne. Les dates de tombée sont le 15 mars et le 15 septembre respectivement.*

## RATES / TARIFS

All rates are quoted in Canadian Funds. Corporate Members receive a 10% discount.

*Tous les tarifs sont en devises canadiennes. Les membres corporatifs ont droit à un rabais de 10%.*

	B & W/ N & B	Colour/Couleur Four/Quatre
Outside Back Cover <i>Couverture arrière</i>	NA/SO	\$1,025
Inside Cover <i>Couverture intérieure</i>	NA/SO	\$825
Body, Full Page <i>Pleine page</i>	\$475	\$675
Half Page <i>Demie-page</i>	\$300	\$475
Single-page Insert <i>Insertion d'une page</i>	\$475	\$675
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Fax/Télécopieur: (905) 319-6916  
E-mail: layoutlighthouse@hydrography.ca

## SUGGESTIONS TO AUTHORS

LIGHTHOUSE publishes material covering all aspects of hydrography.

*Authors submitting manuscripts should bear the following points in mind:*

1. Submit a hardcopy complete with graphics including tables, figures, graphs and photos.
2. Submit digital files, one with text only and a separate file for each graphic (tables, figures, photos, graphs) in its original form or in .tif format (600 DPI). Photos may be submitted separately to be scanned. These may be submitted via E-mail or on CD ROM to the Editor.
3. Papers should be in either English or French and will be published without translation.





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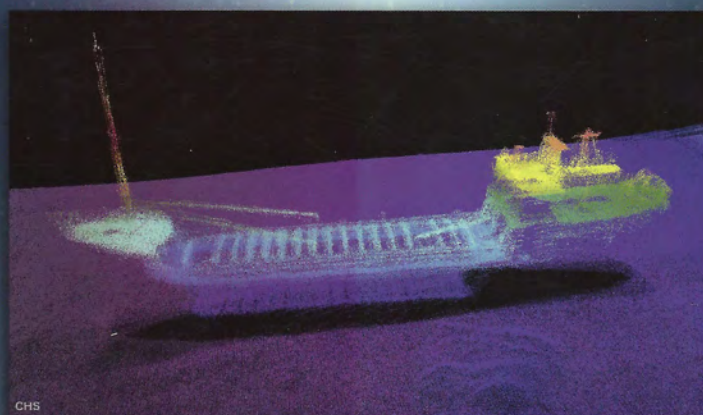
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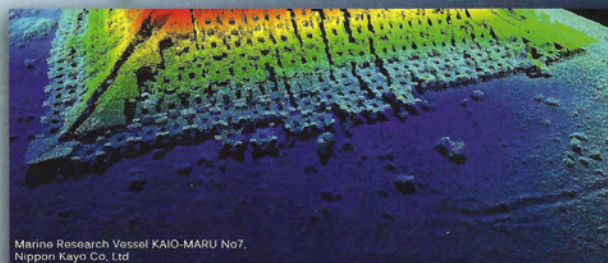
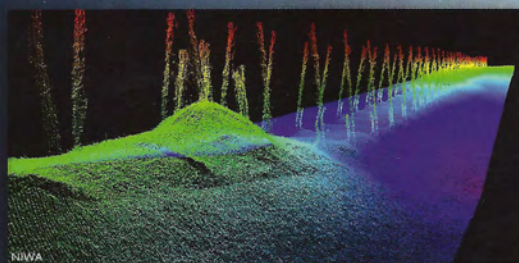


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