Canadian National Committee for SCOR
Comité national canadien pour SCOR

Scientific Committee on Oceanic Research

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OCEAN SCIENCE NEWS

CCGS Hudson

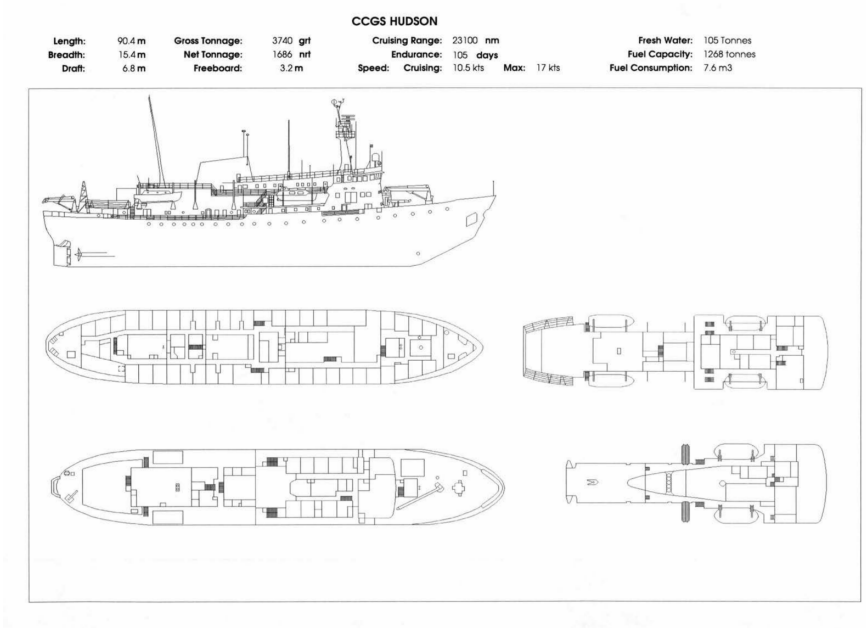
Text from Wikipedia, the free encyclopedia.

CCGS Hudson[a] was an offshore oceanographic and hydrographic survey vessel operated by the Canadian Coast Guard. The ship entered service in 1963 with the Canadian Oceanographic Service, stationed at the Bedford Institute of Oceanography, called CSS Hudson. The ship made several significant scientific voyages, among them the first circumnavigation of the Americas in 1970. The ship was transferred to the Canadian Coast Guard in 1996 and decommissioned in 2022 due to non feasible upgrades and issues. A replacement is not scheduled for delivery until 2024–2025.

From DFO's twitter

Description

The first Canadian ship built specifically for hydrographic and oceanographic survey work, Hudson was designed by the Montreal firm of Gilmore, German and Milne. Hudson is 90.4 metres (296 ft 7 in) long overall and 80.8 m (265 ft 1 in) between perpendiculars with a beam of 15.4 metres (50 ft 6 in) and a draught of 6.8 metres (22 ft 4 in) The ship has a tonnage of 3,444 gross tonnage (GT), 1,150 tons deadweight (DWT) and a 1,033 net tonnage (NT). Hudson is certified as Arctic class 2. The ship is powered by a diesel electric DC/DC system composed of four Alco 251D diesel engines and two Caterpillar 398 generators. The system, rated at 6,469 kilowatts (8,675 hp), drives two fixed pitch propellers and bow thrusters, giving the ship a maximum speed of 17 knots (31 km/h; 20 mph). The ship is also equipped with one Caterpillar 398 emergency generator. The ship has a fuel capacity of 1,268.00



From Ship of the Canadian Coast Guard, 1998

m3 (278,920 imp gal) of diesel fuel, giving the ship a range of 23,100 nautical miles (42,800 km; 26,600 mi) at 10.5 knots (19.4 km/h; 12.1 mph) and an endurance of 105 days.

The ship is outfitted with a 138 m2 (1,490 sq ft) flight deck and a 28 m2 (300 sq ft) hangar and is capable of operating one light helicopter of either the MBB Bo 105 or Bell 206L types. Hudson is equipped with one RHIB and has four laboratories. There is one 40 m2 (430 sq ft) geo-chem lab, two 20 m2 (220 sq ft) labs, one hydrographic and one oceanographic and one 18 m2 (190 sq ft) general purpose lab. The ship has a complement of 31, comprising 11 officers and 20 crew, with 23 additional berths available.

Service history

Hudson was constructed and funded by the Canadian Department of Energy, Mines and Resources on behalf of the Canadian Oceanographic Service. The ship was built by Saint John Shipbuilding and Drydock Ltd at their shipyard in Saint John, New Brunswick with the yard number 1046. The vessel was launched on 28 March 1963 and completed in December later that year. Named for the explorer Henry Hudson the ship entered service as CSS Hudson, in February 1964. The ship is based at Dartmouth, Nova Scotia at the Bedford Institute of Oceanography.

From Halifax Shipping News

During the 1960s, Hudson performed five surveys of the Mid-Atlantic Ridge as part of the world-wide study of continental drift. The ship took part in Expo '67 and had satellite navigation installed, becoming the first ship outside the United States Navy to have the technology. In 1969, Hudson circumnavigated North America. From November 1969 to October 1970, the vessel circumnavigated North and South America, starting in Nova Scotia, travelling south to Antarctic waters, around the southern tip of South America, north through the mid-Pacific and back to

Nova Scotia through the Northwest Passage. Hudson was the first vessel to circumnavigate both continents. While transiting, the ship carried out several experiments, among them studies of marine life along the east coast of the Americas, tidal current surveys of Chilean fjords and geographic discoveries in the Pacific Ocean. This voyage, in which over 100 scientists participated during various stages, was documented in the 1973 book "Voyage to the Edge of the World" by Alan Edmonds (ISBN 0771030673).

During surveys of Canada's Arctic, Hudson employed a helicopter for the first time. During the early 1970s, Hudson performed surveys of the Bay of Fundy and Gulf of Maine. In March 1976, Hudson rescued the entire crew of the fishery patrol vessel Cape Freels, which had been abandoned on the Grand Banks of Newfoundland after catching fire. In the late 1970s, Hudson carried out the first survey of Baffin Bay.

In St. John's. From shipshots.blogspot.com

In the 1980s and 1990s, Hudson took part in large surveys that were part of international programs such as the Joint Global Ocean Fluxes Study and World Ocean Circulation Experiment. In 1980, Hudson circumnavigated North America. Hudson contributed significantly during recovery operations during the aftermath of the semi-submersible mobile offshore drilling unit Ocean Ranger that sank in Eastern Canadian waters on 15 February 1982. Hudson saved all 24 crew members of MV Skipper 1 in the North Atlantic on 29 April 1987. On 28 April 1988, an explosion was spotted by the crew over the horizon. When Hudson arrived on scene, they found the tanker Athenian Venture on fire and in two pieces. Hudson recovered only one body from among the wreckage.

In the 1990s, Hudson performed surveys in Greenland waters, Rankin Inlet and Chesterfield Inlet. During operations in Greenland waters, ice tore a 15-foot (4.6 m) gash in the hull of the ship. Hudson was forced to return to Canada for repairs. In 1996, Hudson joined the fleet of the Canadian Coast Guard. Hudson contributed to the recovery operations during the recovery operations of Swissair Flight 111 in the waters off of Peggy's Cove, Nova Scotia, Canada during the autumn months of 1998. From 1999 to 2001, Hudson performed surveys in the Sable Island region.

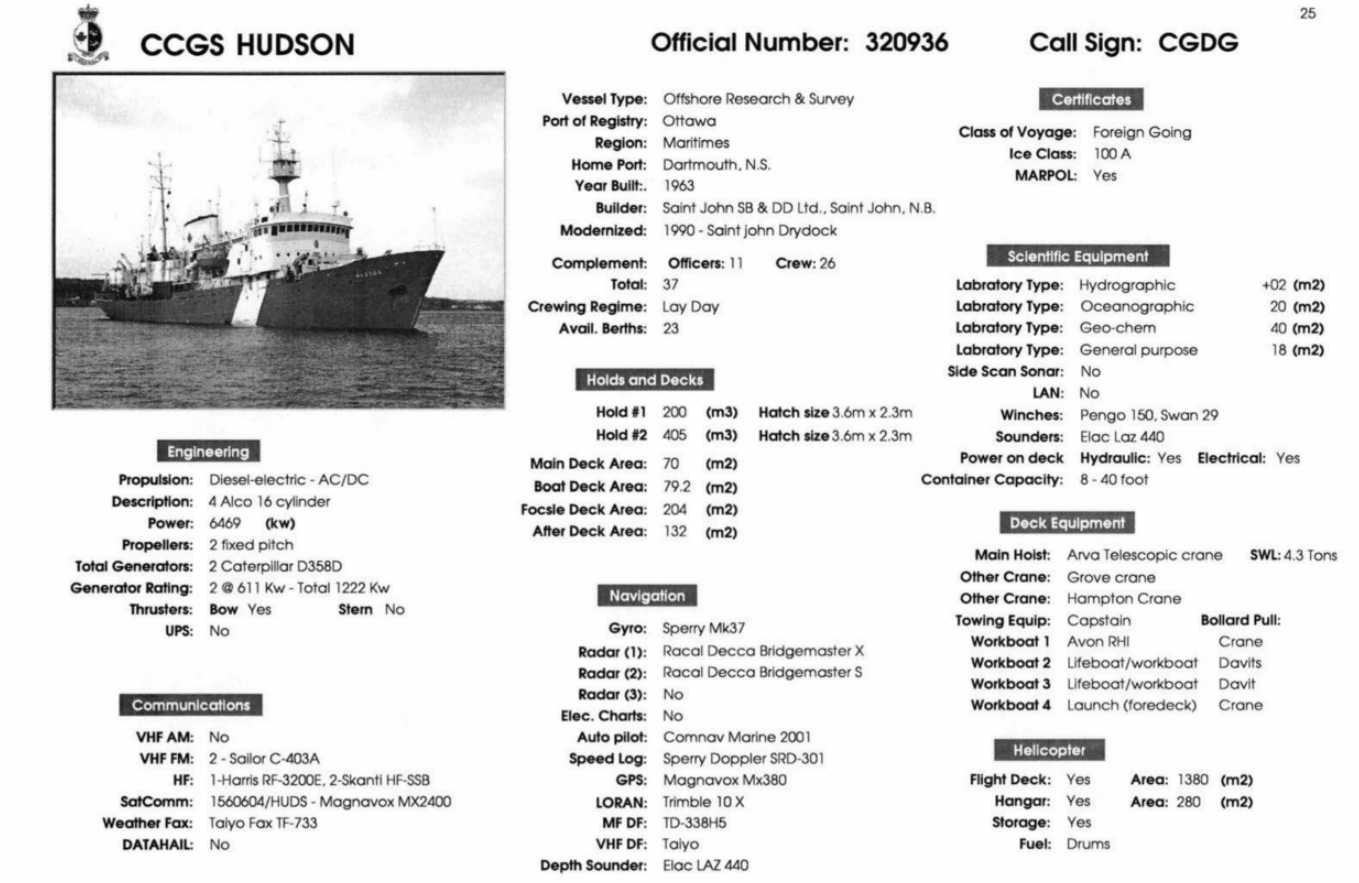
In Southwind Fjord. Photo courtesy of Captain Fergus Francey. From ResearchGate

Replacement and retirement

In 2007 the Government of Canada announced several new shipbuilding projects for the Canadian Coast Guard, including a replacement for Hudson, expected to be in service by 2012. The ship rescued the seven-man crew of the fishing vessel Ocean Commander which burned and sank on 6 July 2009. The construction of the replacement for Hudson was delayed, forcing the Canadian Coast Guard to replace rusting plates aboard Hudson in 2012. The repairs were completed in September 2015. Hudson underwent a $4 million CAD refit beginning on 19 December 2016. The refit was performed by Heddle Marine at their shipyard in Hamilton, Ontario. Hudson was towed out of Heddle Marine's shipyard to the Canada Centre for Inland Waters in Burlington, Ontario, a Government of Canada facility. The vessel's refit, scheduled to be finished in May 2017 was unfinished at the time of the ship's removal. Hudson returned to the East Coast on 14 November 2017 to ensure that the ship was out of the Saint Lawrence Seaway before it closed. The ship underwent further refit at Halifax, which included modification to the cabins and laboratories. The ship is scheduled to return to service in April 2018. On 12 February 2019, St. John's Dockyard Ltd. of St. John's, Newfoundland and Labrador was awarded the contract to extend Hudson's service life by another five to ten years. Hudson began the six-

month refit on 25 February. On completion of her refit in mid-2020, the ship's retirement date was estimated as 2024. In 2021, further mechanical problems forced the curtailment of one mission and the cancellation of another.

Due to non feasible upgrades and issues, the retirement of Hudson was announced on 19 January 2022. A replacement is not scheduled for delivery until 2024–2025.



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CCGS HUDSON

Official Number: 320936 **Call Sign: CGDG**

Vessel Type: Offshore Research & Survey
Port of Registry: Ottawa
Region: Maritimes
Home Port: Dartmouth, N.S.
Year Built: 1963
Builder: Saint John SB & DD Ltd., Saint John, N.B.
Modernized: 1990 - Saint john Drydock

Complement: **Officers:** 11 **Crew:** 26
Total: 37
Crewing Regime: Lay Day
Avail. Berths: 23

Certificates

Class of Voyage: Foreign Going
Ice Class: 100 A
MARPOL: Yes

Engineering

Propulsion: Diesel-electric - AC/DC
Description: 4 Alco 16 cylinder
Power: 6469 **(kw)**
Propellers: 2 fixed pitch
Total Generators: 2 Caterpillar D358D
Generator Rating: 2 @ 611 Kw - Total 1222 Kw
Thrusters: **Bow** Yes **Stern** No
UPS: No

Holds and Decks

Hold #1 200 **(m3)** **Hatch size** 3.6m x 2.3m
Hold #2 405 **(m3)** **Hatch size** 3.6m x 2.3m
Main Deck Area: 70 **(m2)**
Boat Deck Area: 79.2 **(m2)**
Focsle Deck Area: 204 **(m2)**
After Deck Area: 132 **(m2)**

Scientific Equipment

Labratory Type: Hydrographic +02 **(m2)**
Labratory Type: Oceanographic 20 **(m2)**
Labratory Type: Geo-chem 40 **(m2)**
Labratory Type: General purpose 18 **(m2)**
Side Scan Sonar: No
LAN: No
Winches: Pengo 150, Swan 29
Sounders: Elac Laz 440
Power on deck **Hydraulic:** Yes **Electrical:** Yes
Container Capacity: 8 - 40 foot

Communications

VHF AM: No
VHF FM: 2 - Sailor C-403A
HF: 1-Harris RF-3200E, 2-Skanti HF-SSB
SatComm: 1560604/HUDS - Magnavox MX2400
Weather Fax: Taiyo Fax TF-733
DATAHAIL: No

Navigation

Gyro: Sperry Mk37
Radar (1): Racal Decca Bridgemaster X
Radar (2): Racal Decca Bridgemaster S
Radar (3): No
Elec. Charts: No
Auto pilot: Comnav Marine 2001
Speed Log: Sperry Doppler SRD-301
GPS: Magnavox Mx380
LORAN: Trimble 10 X
MF DF: TD-338H5
VHF DF: Taiyo
Depth Sounder: Elac LAZ 440

Deck Equipment

Main Hoist: Arva Telescopic crane **SWL:** 4.3 Tons
Other Crane: Grove crane
Other Crane: Hampton Crane
Towing Equip: Capstain **Bollard Pull:**
Workboat 1 Avon RHI Crane
Workboat 2 Lifeboat/workboat Davits
Workboat 3 Lifeboat/workboat Davit
Workboat 4 Launch (foredeck) Crane

Helicopter

Flight Deck: Yes **Area:** 1380 **(m2)**
Hangar: Yes **Area:** 280 **(m2)**
Storage: Yes
Fuel: Drums

From Ships of the Canadian Coast Guard, 1998

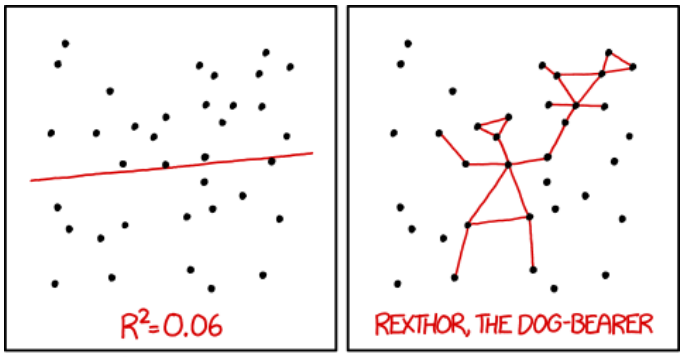
Nonlinear measurements might be expected to confound, but do they belong in a statistical model hierarchy?

Rick Danielson Jr. (rickedanielson@gmail.com), Halifax, Nova Scotia, Canada

This article is co-published with the CMOS Bulletin and SSC Liaison newsletter.

A statistician and physicist were discussing an experiment over a pot of tea, when this hypothetical exchange occurred: “I know we are working in the right units, but do you think that some of our measurements are nonlinear?” Puzzled, the physicist took a sip before responding, “Are you saying that individual measurements could be nonlinear? Is that a thing?” The statistician also paused to take a sip, “Well, Kruskal (1988) wrote about Mahalanobis (1947) using rulers with nonlinear increments. They were worried about people making correlated errors, but I guess that doesn't apply to our instruments.” “No,” the physicist agreed, “not if we're talking about repeated errors,” and the statistician added, “We do check our instruments.” Then the two finished each other’s thoughts again, “But if we were completely familiar with this experiment...” “...we wouldn't be doing it!”

One purpose of this hypothetical exchange is to acknowledge that nonlinear measurements are unfamiliar. However, this exchange also illustrates a kind of model hierarchy. First, there is confirmation that a new idea exists (“Is that a thing?”), then a decision about whether the idea is relevant (“No”), and finally, an allowance of the unknown. In a sense, measures and models of the experiment are provided, respectively, by the statistician and physicist in different parts of the exchange. Together, they infer what actions to take, if any. Perhaps the only notable thing is that this happens in just a few words.



From xkcd. Creative Commons Attribution-NonCommercial License.

Our other purpose is to question whether an admittedly ill-defined notion of nonlinear measurement might fit within a statistical model hierarchy. In addressing a wide audience, Salsburg (2017) emphasizes that the central tenant of statistical inquiry is that measurements = truth + error. In other words, measurements are linearly related to truth. Does this imply that our ruler has linear increments, or that we are using the most appropriate unit already? Instead, measurements that are taken to be equal to linear + nonlinear + unassociated, would seem to confound the central tenant, at least if truth = linear and error = unassociated. This is because the nonlinear part fits in neither category. While that might sound critical, what about our hypothetical exchange, which results in a conditional agreement to modify the experiment, but no action based on what is unknown or unfamiliar?

Perhaps we need to consider the central tenant as part of a hierarchy of models of varying complexity and familiarity. Such an idea is not exactly novel in biology and geophysics (Held 2005). Our hypothetical exchange can be offered as another accessible analogy. In other words, the decision to act is based the central tenant (a truth + error model), but the conversation certainly doesn't end there. And nor should it end here. For instance, Mahalanobis (1947) predicts that as measurements become more precise, systematic bias should be easier to detect. It would be interesting to see if this prediction has held over the years since it was made, with ongoing advances in metrology, climate measurements, and their units (Feistel et al. 2016).

ECOP Canada is Empowering the Next Generation of Ocean Leaders

It's year two of the UN Ocean Decade. The next nine years will provide lasting changes and effects beyond 2030 in the way we interact with the ocean. Early career ocean professionals (ECOPs) and the next generation are the ones who will see the Ocean Decade through to 2030.

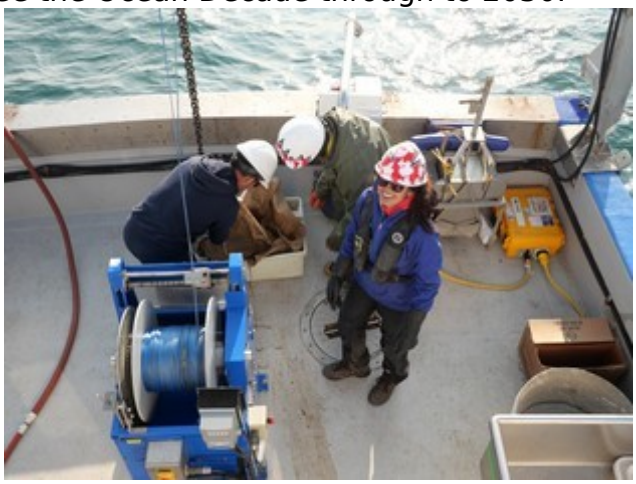


Photo credit: Neha Acharya-Patel

An early career ocean professional (ECOP) is anyone who makes their living from a healthy ocean. They self-identify as being early in their career (10 years or less of professional experience) within any occupation related to the ocean (not only employed/paid positions). ECOPs will be the ones to inherit the decisions made about the ocean today as well as leadership roles in the blue economy.

Early Career Ocean Professionals (ECOP) is an international organization that emerged out of the UN Ocean Decade. ECOP Canada is the Canadian network for the ECOP Programme, which aims to achieve intergenerational equity by strengthening the diverse voices of early career ocean professionals. Through ECOP Canada's network of ocean partners and ECOPs, they aim to address the following needs outlined in Canada's Blue Economy Strategy:

1. Adapt to generational values, innovation, and interests.
2. [Re]build early career professionals' connections to the ocean.
3. Develop and communicate clear career pathways.
4. Support experiential learning opportunities.
5. Support and create sector strategies to introduce ECOPs to career opportunities.

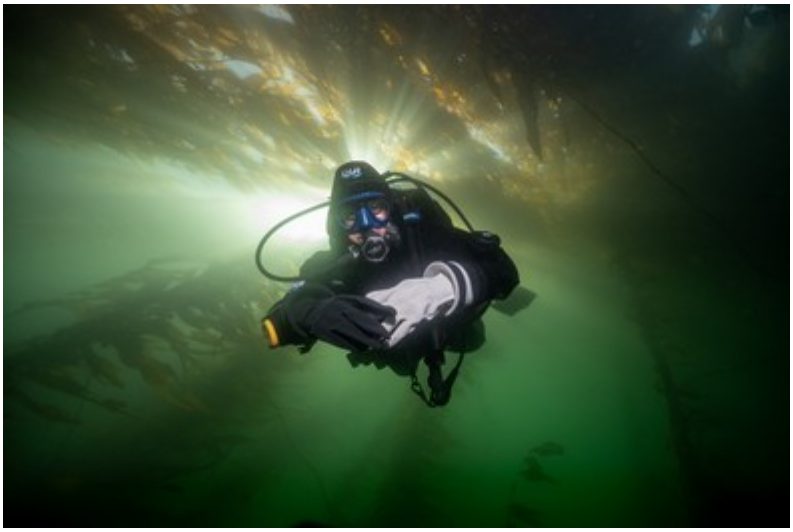


Photo credit: Andrew McCurdy

We are at a pivotal time in which leadership, innovation, and emerging technologies could help us deal with and solve environmental challenges, while introducing new ocean sectors. Supporting ECOPs from coast to coast to coast in Canada will help achieve international leadership and a Blue Economy that is environmentally sustainable, socially equitable, and economically viable.

Learn more about ECOP Canada here: https://www.ecopdecade.org/canada

Robie Macdonald 1948 – 2022

With text from AMAP and Paul Myers

Our much valued colleague, Robie W. Macdonald passed away peacefully on February 13, 2022, at the age of 74 years.

Robie was a Senior Research Scientist with Fisheries and Oceans Canada, Institute of Ocean Science and adjunct professor at the University of Manitoba's Centre for Earth Observation Science. His great intellect, multidisciplinary expertise and ability to make connections and see the 'big picture' meant that over his long career Robie conducted, spearheaded, and published ground-breaking research in areas such as marine geochemistry, oceanography, and contaminant sciences. But beyond that, it was his ability to communicate his science that made him such an inspiration to others.

His contributions to the work of the Arctic Monitoring and Assessment Programme (AMAP) covered a range of issues: contaminants including mercury and POPs, climate change, Arctic Ocean acidification and the melting of the Arctic cryosphere. He conceived and led the first AMAP assessment addressing the impacts of Arctic climate change on contaminant pathways. He was tireless in reviewing drafts, and providing advice and suggestions, often with a humorous element that was an essential part of his personality.

Robie was actively involved in CNC-SCOR for over a decade, beginning in 2002. He was the Canadian Chair from 2009-2012. Rob also played a significant role in shaping the present form of the Canadian National Committee, broadening its membership across the country and including more university academics on the committee.

Robie authored or co-authored over 450 articles in peer-reviewed journals, reports and book chapters. He was the recipient of many prestigious awards and recognitions: These include: The Presidents Prize of the Canadian Meteorological Society (2000), Head of the Public Service Award (2002), the Miroslaw Romanowski Medal of the Royal Society of Canada (2005), the Gold Medal of the Royal Canadian Geographical Society (2010), the Northern Science Award and Centenary Medal (2014), and the Governor General of Canada Polar Medal (2016). Robie was a Fellow of the Chemical Institute of Canada (1989), the Royal Canadian Geographical Society (2004), International Explorers Club (2007), and the American Geophysical Union (2010). Robie was appointed an Officer of the Order of Canada in 2019. He never sought such recognition; one of Robie's guiding principles was to focus on his passions; in doing so, these awards and acknowledgements came unbidden.

As well as being an inspirational colleague, many of us who have worked with Robie over the past 3 decades have had the honor and pleasure of calling Robie a friend. Robie will be greatly missed by so many. Our condolences go to his family.

David Barber 1960 – 2022

From colleagues at the University of Manitoba

It is with profound sadness that we announce the passing of Dr. David Barber on Friday, April 15, 2022, following complications from a cardiac arrest.

David was one of Canada's most influential Arctic researchers. He was a Distinguished Professor at the University of Manitoba, Founding Director of the Centre for Earth Observation Science, and Associate Dean Research of the Clayton H. Riddell Faculty of Environment, Earth, and Resources. David also held a Canada Research Chair in Arctic System Science and Climate Change. Through his vision, leadership and endless efforts, David established the University of Manitoba as a global leader in Arctic research.

Professionally, David is best known for his pioneering work on snow over sea ice and application of satellite technologies for their characterization. Most notably David had a talented ability to see links between the ocean, ice and atmosphere across scales, and connections with people and habitat. Coupled with his incredible dedication, drive and perseverance, David was instrumental in the development of many large international multidisciplinary networks for Arctic research. These include the Network of Centres of Excellence *ArcticNet*, the Canadian Arctic Shelf Exchange Study (*CASES*), the International Polar Year - Circumpolar Flaw-Lead study (*IPY-CFL*), and more recently the Hudson Bay System Study (*BaySys*). His dedication also helped secure major Arctic research infrastructure, such as the Canadian research icebreaker CCGS *Amundsen*, and the Churchill Marine Observatory (*CMO*). His tireless work has helped to place Canada at the forefront of Arctic research, and created opportunity for innumerable students, professors and research staff collectively working to better understand the rapidly changing Arctic, and its impacts on people, diverse habitats in the Arctic and beyond.

David was a gifted speaker who could express complex scientific ideas into terms that policy-makers, media and the public could easily understand. It was this ability that not only led to signature outreach programs, including 'Schools on Board' and 'Expedition Churchill: Gateway to Arctic Research', but also to fostering strong university-industry research partnerships, most notably with Manitoba Hydro.

David's extraordinary ability and contributions have been recognized with the highest awards and distinctions, including Officer of the Order of Canada, Fellow of both the Royal Society of Canada and the Royal Canadian Geographical Society, and the Northern Science Award for exemplary achievement in the field of northern research (Polar Knowledge Canada). He was also recognized through an honorary doctorate from the Université Laval.

David was a visionary researcher with a passion for the Arctic, a scholar with an entrepreneurial spirit, and a generous mentor and friend. Despite his numerous professional accomplishments, David was first and foremost a family man. He is survived by his wife (Lucette) and three kids: Jeremy (Jodi), Julien, and Jamie (Luke), his step-grandson (Ryden), and grandson (Luca).

He has touched the lives of countless people, and will be missed greatly. Our thoughts and condolences are with his family, and with all who knew him.

With heavy hearts,

His close colleagues and friends.

Davids work has been featured on the ideas.ted.com web site:

Are the Arctic ice caps rotting away?

Link to ideas.ted.com feature

This section of your newsletter provides an opportunity to highlight your research programs to the Ocean Science Community. *Your are invited to send contributions to David Greenberg, davidgreenberg@alumni.uwaterloo.ca*	*Mettez en valeur vos programmes de recherche en publiant un article dans cette première section de votre bulletin.* *Faites parvenir vos contributions à David Greenberg, davidgreenberg@alumni.uwaterloo.ca*

MEETINGS

Congrès SCMO 2022 CMOS Congress

Juin 1-3, 6-8, 2022 – virtuel

Le Congrès SCMO atteint sa vitesse de croisière. Sessions scientifiques 8:10-16:35 HNC. Événements sociaux, conférence publique, 1 Session Affiches-Expositions 17:00-18:30 HNC. Congrès, Programme, Meeting at a Glance, Horaire des sessions, Guide de présentation, Conférenciers pléniers, Conférence publique, **Inscription**.

L'assemblée générale annuelle de la SCMO aura lieu le **22 juin 2022**. Les détails suivront sous peu.

June 1-3, 6-8, 2022 – online

The CMOS congress is in high gear. Science sessions 8:10-16:35 CST. Social events, Public Lecture, 1 Posters-Exhibits session 17:00-18:30 CST. Congress, Scientific Sessions , Congress Program, Meeting at a Glance, Session Schedule, Presentation Guidelines, Plenary Speakers, Public Lecture, **Registration**.

The CMOS Annual General Meeting is scheduled for **June 22, 2022**. Details to follow.

Shipping Risk Mitigation Research and Practice in Canada: Considering Area-Based Management Approaches

August 30-31 2022, Dalhousie University Halifax NS

The purpose of this workshop is to consider current and emerging practices of area-based management to mitigate the risks and impacts of shipping in Canada and in a comparative manner. The workshop will consider research on the subject and moving from theory to applications, and hopefully to best practices. The hope is that we can learn from theory, research and the experiences of practitioners.

At this time the workshop is planned as an in-person and webcast event and with the possibility of some remote presentations. The workshop has two parts, each lasting a day. The first part will examine the big picture of area-based management tools in response to particular risks posed by shipping. The second part will focus on Indigenous perspectives and concerns over the interface between shipping and their rights and interests. The outcomes will consist of a policy brief on the interface between Indigenous rights and shipping in Canadian waters for communication to decision-makers and workshop proceedings published in open access.

Registration is **FREE**.

Website

Seabed Seismic, Hybrid Surveys and their Opportunities and Challenges

November 1–3 2022, Kuala Lumpur, Malaysia

The workshop aims to cover all aspects of ocean bottom seismic and applications that highlight geological challenges, such as shallow gas and carbonates, and their solutions. The presentations will include case studies, shallow and deep water seismic, and the combination of ocean bottom with other methods such as streamer seismic. These topics will be covered from the perspective of survey design, acquisition, processing, imaging and reservoir characterization. In addition, the workshop will look to the future with updates from research and how seabed seismic fits in with the emerging markets such as carbon capture and storage.

Topics covered: Sources, Seafloor acquisition & permanent monitoring systems, 4D (Time Lapse) surveys, Advances in survey design, Surveys for new markets and geohazards, Processing, Imaging and Reservoir characterization, structural interpretation, and inversion.

Abstract deadline **19 August 2022**

Website

14th Buoy Workshop

September 19-22 2022, Wilmington NC USA

You are cordially invited to join us for the 14th MTS Buoy Workshop sponsored by the Marine Technology Society (MTS) to present and share your buoy-related work and projects to all attendees. This event is endorsed by the UN Decade for Ocean Science.

This year's Workshop will be hosted by The University of North Carolina Wilmington's Coastal Ocean Research and Monitoring Program (CORMP), in Wilmington, North Carolina. We will open with an Ice-Breaker on Monday night, September 19. The Speaker Program begins at 8 am on Tuesday, September 20, and ends Thursday afternoon (5ish), September 22. Wednesday afternoon will be dedicated for site tours of our host facilities that are engaged in active buoy work. Following the tours, the Attendee's Gala dinner will be held starting at 6:30 pm.

Abstract Deadline **July 29, 2022**

Website

7th Argo Science Workshop

October 11-13 2022, Brussels Belgium, Hybrid

The workshop aims to bring together ocean science research that has employed Argo data and products to further improve our knowledge of the changing oceans and highlight the applications that the new OneArgo array is opening. Through this event, the organisers want to stimulate research activities that use Argo data, especially in combination with data from satellites and other in situ ocean observing networks, and underline the importance of Argo data for operational services, and for model and satellite validation.

The workshop is also meant as an opportunity to widen users' experience of the Argo community and to welcome new scientists into that community.

No fees will be charged for abstract submission or registration.

Abstract deadline **15 June 2022**

Website

Please send meeting announcements to David Greenberg, davidgreenberg@alumni.uwaterloo.ca	*SVP faites parvenir vos annonces de réunion à David Greenberg, davidgreenberg@alumni.uwaterloo.ca*

POSITIONS AVAILABLE

Postdoc: Arctic and Antarctic sea ice-ocean modelling

Université catholique de Louvain, Louvain-la-Neuve, Belgium

Global climate model simulations still have significant biases in the extent of summer Arctic and Antarctic sea ice. One of the reasons is the coarse resolution of the models, which forbids an adequate representation of the processes that control the evolution of the ice edge, such as the interactions between sea ice and oceanic eddies, the influence of landfast ice, the role of coastal currents, the complex bathymetry, ... In this context, the Georges Lemaître Centre for Earth and Climate Research (TECLIM) / Earth and Life Institute (ELI) of the Université catholique de Louvain (UCLouvain), Louvain-la-Neuve, Belgium is seeking a postdoctoral fellow for conducting and comparing thoroughly simulations with the global sea ice-ocean general circulation model NEMO4-SI3 driven by an atmospheric reanalysis at two different horizontal resolutions, namely 1° and 1/12°, in order to determine how resolution impacts the model mean state and the model ability to reproduce the summer sea ice extent record lows observed recently in both the Arctic and Antarctic.

The position is offered for 24 months, from September-October 2022 (the exact starting date can be negotiated). Note that it is only accessible to researchers who did not spend the last 2 years in a Belgian lab and who have less than 6-yr experience after their PhD thesis defense.

Review of the applications starts **June 15**. The call will remain open until filled.

Details

Assistant Professor- Chemical Oceanography / Marine Geochemistry

University of Hawai‘i at Mānoa, Hawaii, USA

The Department of Oceanography in the School of Ocean and Earth Science and Technology at the University of Hawai‘i at Mānoa (UH) invites applications for a full-time tenure-track faculty position in Marine Geology & Geochemistry at the rank of Assistant Professor, with 9 months of State funding annually.

The successful candidate will conduct research that addresses central problems in global ocean biogeochemistry, including, but not limited to, large-scale cycles of nutrients, organic matter or trace elements, organic and/or isotope geochemistry, paleoceanography, or biogeochemical modeling.

Position duties include: developing and sustaining a vigorous extramurally-supported, collaborative research program that complements existing expertise in the department and school; achieving excellence in the classroom, establishing learning objectives and using innovative methods to achieve them; mentoring students in both the graduate Oceanography and undergraduate Global Environmental Science programs; and, providing service to the public, department, school, university, and larger scientific community.

Deadline **30 June 2022**

Details

Postdoc: Molecular Biogeochemistry

CEA - French Alternative Energies and Atomic Energy Commission, Paris, France

Looking for a 3 year postdoctoral researcher with strong experience in mass spectrometry.

Project MOANA : « Role of dissolved and particulate natural organic matter on the sorption of metals in the Pacific Ocean.

Context : The proposed work deals with understanding the coupled cycles of organic matter and radionuclides (RNs) in the Pacific Ocean. Transport processes of RNs and other metallic pollutants is a major issue for the assessment of environmental risks in order to anticipate and manage a potential impact. The behaviour of RNs in the environment (from natural or anthropogenic sources) is governed by a set of complex physicochemical and microbiological reactions (redox, complexation, sorption, precipitation). For a certain number of RNs and trace metals, recent environmental speciation studies revealed the major role played by NOM on their environmental migration, through specific adsorption and chelation reactions. Indeed, the “hydroxamate” functional groups of some organic compounds (e.g. siderophores) produced in the water column and present on particles or in sediments can complex RNs and trace metals (via their oligodentate ligands) and thus play a role in their transport in the water column and their retention in marine sediments.

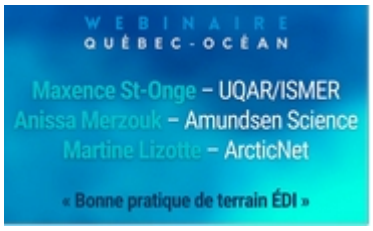
Posted April 7 2022. Open until filled.

Details

Looking for work? Try the CMOS site (click).	*Vous recherchez un emploi? Visitez le site SCMO (click).*

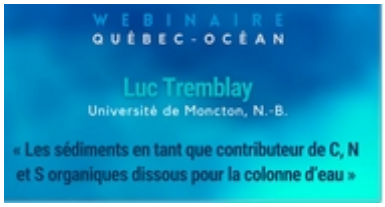
GENERAL
Conférences et webinaires de Québec-Océan

Québec-Océan a mis en ligne des Conférences et Webinaireses. Parmi ceux en français on peut trouver :

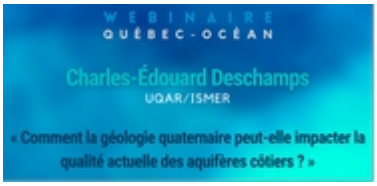


Maxence St-Onge; Anissa Merzouk; Martine Lizotte, UQAR-ISMER; Amundsen Science; ArcticNet « Bonne pratique de terrain ÉDI »

Raphaël Lavoie, Environnement et Changement Climatique Canada « Contaminants chez les oiseaux qui fréquentent le Saint-Laurent »



Luc Tremblay, Université de Moncton (NB) « Les sédiments en tant que contributeur de C, N et S organiques dissous pour la colonne d'eau »



Charles-Édouard Deschamps, UQAR-ISMER « Comment la géologie quaternaire peut-elle impacter la qualité actuelle des aquifères côtiers ? »

Alexandre Normandeau, Commission géologique du Canada - Institut océanographique de Bedford (NS) « Le rôle de la cryosphère dans la génération des géorisques marins arctiques »

SCOR Newsletter # 48

The SCOR International May Newsletter is now available.

There is news on capacity development, including visiting scholars and the African Research Graduate Network in Oceanography (A-RGNO).

There is an update from several working groups: Global Harmful Algal Blooms (GlobalHAB) and Surface Ocean - Lower Atmosphere (SOLAS) report on meetings. The International Quiet Ocean Experiment (IOQE) has produced a TED talk. Changing Ocean Biological Systems (COBS) have produced a report. Geotraces is moving ahead with its summer school. The Second International Indian Ocean Expedition (IIOE-2) reports on its conference.

There is much more.

Link to newsletter

Looking for past honourees

Bob Jones, *CMOS Archivist is trying to track down people honoured with major awards for the CMOS records. Bob's request:*

Some important new photos and recognitions have recently been added to our collections.

1. Order of Canada Recipients. Colleague Heather Mackey started this by sending in a photo of Don Archibald receiving his Order of Canada from GG Roméo LeBlanc in 1998 which has been added to: **https://cmosarchives.ca/Metphotos/T7/photoindex.html**

in the 1998 year box. So, later this spring thanks to interactions with Gordon McBean, David Grimes and Eddy Carmack (from the Ocean side) and others, we have compiled a list of 20 OC recipients - thirteen from the met side and seven from the ocean side. There are many links on our index pages to these, but please check now at:

https://cmosarchives.ca/Awards/Order_of_Canada/OC.html

Question always is : **have we missed anyone??** There is a link there to search the GG Web site to check names.

Every OC Awardee is linked to at least their citation which was taken from and credited to, the GG web site. All but a few on the met side show a blank space on the left where we would like to add a photo of each recipient getting the OC at Rideau Hall. When the photos are found they will also be added to Table 7. If you click now on Archibald, Desjardins, McBean or Grimes you will see a photo. The first three show the Governor General; David Grimes' presentation has not yet happened, so a personal photo is there temporarily. Such personal photos may become the norm as virtual presentations may be done more often in the future. No photos at all have yet been contributed from the Ocean side.

At this point we ask recipients without photos - or their families to contribute theirs so we can complete their recognitions. In order for families to contribute it will be necessary for regional recipients to find and contact them (example - Atlantic Region will need to search out Rube Hornstein's descendants)

2. The 2007 Nobel Peace Prize. Everyone will remember the Peace Prize won by Al Gore and the IPCC for their strong support for the science of proving climate change caused by humans. This prize was shared equally with Mr. Gore and all the IPCC contributing authors to any of the IPCC reports. In 2008 a ceremony was held on Parliament Hill which was photographed and showed a few of our Canadian winners who were IPCC authors. Please see:

https://cmosarchives.ca/Metphotos/T7/IPCC_Nobel_Authors2008.html

contributed by Gordon McBean. Gordon also generously sent a copy of his Nobel certificate, certainly a rare artifact in our humble collections. Finally, on this same page is a link to all the other Canadian authors (in alpha and searchable) who participated in the Nobel prize but were unable to be at the Ottawa event.

It will be easy to find links to these new awards by searching the Archives web site or going to any awards or photo index page. Photographs, if available, will be shown under "non-CMOS Awards" like Patterson, Parsons, MSC, WMO, etc.

Best regards,

Bob Jones email: jonesb@ncf.ca

Scholarships

The SCOR Committee on Capacity Development has approved an exceptional call offering five scholarships of up to $2,500 each to scientists associated with current SCOR projects or working groups (WGs). The scholarship is for scientists to support travel to conduct a collaborative scientific activity (such as instrument training, collaborative sample or data collection and/or analysis, etc.) at a host institution that will result in a specific product (such as a presentation, proposal, or peer reviewed article, etc.) within their WG or project's goals. The duration of the activity is envisioned to occur over a 1–2-week period and needs to be aligned with the Terms of Reference of the specific WG, or science plan of a project.

The application criteria, the selection criteria and the application form can be found here.
The deadline for applications is the 15 of July 2022.

JMSE 2022 Best Ph.D. Thesis Award

The journal JMSE is inviting applications for the JMSE 2022 Best Ph.D. Thesis Award. This prize will be awarded to a Ph.D. student who is about to graduate or participate in a graduation thesis defense. Applications will be assessed by an evaluation committee led by Editor-in-Chief, Prof. Dr. Tony Clare.

Eligibility Requirements:
– The candidate must be a Ph.D. student or a doctor who is going to graduate or participate in a graduation thesis defense;
– The Ph.D. thesis must be original work;
– The Ph.D. thesis must be defended between 1 October 2021 to 30 September 2022;
– ...
Details
Questions to jmse@mdpi.com

Call for Abstracts for Frontiers for Young Minds-The Ocean Collection

Frontiers for young minds provides a collection of freely available scientific articles by scientists that are shaped for younger audiences by the input of their own young peers. In the Ocean Collection scientists from various disciplines in oceanography share their knowledge and motivations, give insights in innovative tools and recent discoveries to better understand this ocean. The collection will target a large range of oceanic environments from the open ocean to the coast, the surface to the abysses also including specific areas like coral reefs or sea-ice environments.
Abstract Submission Deadline **31.07.2022**
Submission Deadline **30.09.2022**

World Ocean Day June 8

There are still some interesting Happenings associated with World Ocean Day 2022.

Giant Plastic Tap

Ripley's Aquarium Toronto

An iconic, three-story-tall Giant Plastic Tap art installation by celebrated Canadian artist and activist Benjamin Von Wong, spewing single-use plastic waste all over the entrance of Ripley's Aquarium of Canada. Come be a part of history to share this simple but urgent message: it's time to #TurnOffThePlasticTap. This striking symbol of the global plastic pollution crisis will be on display until World Oceans Day on June 8, 2022.

Mermaids Hope to Break Educational Records

The world's largest mermaid education event is back to stream live from around the world on June 8th to raise awareness of World Oceans Day (WOD).

The free programs reached over 35,000 streams to students and classrooms in 2021 through a partnership with CILC (Center for Interactive Learning and Collaboration) and are expected to reach even more this year.

Our 2022 live-streamed interviews will highlight several animals, including the American Eel at the Royal Botanical Gardens in Canada, Pufferfish at Silverton Aquarium in Las Vegas, NV, and Sharks at Seaquest Woodridge, NJ, Treasures at Abalone Cove with Banyan Global Learning, and Gharial Crocodilia at the Honolulu Zoo in Hawaii.

For information about CILC and Fins:- https://www.fins-magazine.com/wod

https://www.cilc.org/Interactive-Learning/World-Oceans-Day.aspx

Pacific Discovery Tank

Canadian Museum of Nature, Ottawa

Celebrate the United Nations Decade of Ocean Science for Sustainable Development with us and discover the wonder of tide pools. Tide pools are puddles of sea water along rocky shores. In the museum's Water Gallery, you can meet some of the fascinating creatures that live in this unique ecosystem. At our new tide-pool tank, you'll encounter live sea stars, sea cucumbers, tentacled anemones and spiky urchins.

Halifax CMOS Maritime Climate Summary

The Halifax chapter of CMOS continues to produce monthly climate summaries for the Atlantic region. Past versions are now available on their **website**.

CMOS
Canadian Meteorological and Oceanographic Society

SCMO
Société canadienne de météorologie et d'océanographie

MARITIME CANADA CLIMATE SUMMARY
April 2022

April Continues Above Normal Temperature Trend But Only Just...

Despite the perception that April was a cooler month, once again temperatures continued the above normal temperature trend for 2022, however, positive anomalies were mostly only in the 0 to 1 C range. Precipitation amounts were near normal across the region apart from an above normal band stretching from SW to NE NB. Snowfall amounts for April were generally 10-50 cm below normal across all three provinces. Exceptions to this were northern NB, areas of PEI, and NS, which saw onshore flow from the Gulf of St. Lawrence and Sydney – where twice the normal April snowfall was recorded. By the end of the month, apart from northern NB which still had around 20 cm and higher elevations of the Cape Breton Highlands - up to 80 cm, little snow remained on the ground. April continued the trend of below normal ice conditions in the Gulf of St. Lawrence with only 1.1% coverage at the end of the month. Sea surface temperatures continued to be 3-5 C above normal across most coastal areas of the region.

The Warmest (°C)

New Brunswick	
Sussex Four Corners	16.8
Nova Scotia	
NE Margaree	18.9
Prince Edward Island	
Maple Plains	16.9

The Coldest (°C)

New Brunswick	
Edmundston	-12.2
Nova Scotia	
Louisburg	-9.2
Prince Edward Island	
Stanhope	- 6.7

The Wettest (Total mm)

New Brunswick	
Mechanic Settlement	171.4
Nova Scotia	
Yarmouth	121.2
Prince Edward Island	
St Peters	107.1

The Capital Stats

	Mean Temperature (°C)			Extremes	
Station Name	Monthly Mean	Normal Mean	Diff from Normal	Max (Date)	Min (Date)
Charlottetown	4.1	3.1	1.0	16.0 (16)	-7.0 (5)
Halifax	6.0	4.3	1.7	16.1 (25)	-1.5 (6)
Fredericton	5.3	4.8	0.5	15.3 (9)	-7.4 (6)

	Total Precipitation			Snowfall	
Station Name	Monthly Total (mm)	Normal Total (mm)	Percent Normal	Total (cm)	SOG End of Month
Charlottetown	91.3	83.7	109	14.9	1.0
Halifax Shearwater	116.7	117.7	99	11 (YHZ)	0
Fredericton	135.4	81.6	166	Trace	0

Daily Temperature Records

Given that the April warmest temperatures for all three Provinces were lower than their March equivalents, not surprisingly, there were very few daily highs set this month. Only 4 new daily maximums were set, 2 in NS and 1 each in NB and PEI. The warmest of these was only 15 C at Maple Plains PEI on 14th. Continuing the trend for 2022, record low minimums were also sparse with just one new record low established, -1.3 C at Baccaro Point, NS on the 24th.

The summaries also include ECCC's significant weather events and links to weather news from different media.

Canadian Ocean Science Newsletter
Le Bulletin Canadien des Sciences de l'Océan

Previous newsletters may be found on the CNC-SCOR web site. The CNC-SCOR website is hosted by CMOS.

Newsletter #**125** will be distributed in **July 2022**.

Please send contributions to David Greenberg davidgreenberg@alumni.uwaterloo.ca

Subscribing and Unsubscribing

If you wish to subscribe to this newsletter or cancel your subscription, please visit the website:

http://www.mailman.srv.ualberta.ca/mailman/listinfo/cnc-scor

Les bulletins antérieurs se retrouvent sur le site web du CNC-SCOR. Le site du CNC-SCOR est hébergé par le SCMO.

Le Bulletin #**125** sera distribué en **juillet 2022**.

Veuillez faire parvenir vos contributions à David Greenberg, davidgreenberg@alumni.uwaterloo.ca

Abonnement et désabonnement

Si vous souhaitez vous abonner à cette newsletter ou annuler votre inscription, veuillez visiter le site web:

http://www.mailman.srv.ualberta.ca/mailman/listinfo/cnc-scor

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Le Comité national canadien du Comité scientifique de la recherche océanographique (SCOR) favorise et facilite la coopération internationale. Il reflète la nature multidisciplinaire de la science océanique et de la technologie marine.

The Canadian National Committee of the Scientific Committee for Oceanic Research (CNC-SCOR) fosters and facilitates international cooperation. It is a non-governmental body that reflects the multi-disciplinary nature of ocean science and marine technology.

WWW.CNCSCOR.CA