

CANADIAN OCEAN SCIENCE NEWSLETTER
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Le bruit sous-marin et ses effets sur le béluga de l'estuaire du Saint-Laurent

Yvan Simard, Sciences, IML, Mont-Joli

de *Infocéans*, août-septembre 2018/volume 21/numéro 4

Le bruit dans les milieux marins provient d'un large éventail de sources, qu'elles soient d'origine naturelle ou liées à l'activité humaine. On pense, par exemple, aux activités industrielles situées à proximité ou directement dans l'eau, à la présence d'activités portuaires et à la navigation commerciale ou celle d'autres types d'embarcations (de plaisance, de croisière aux baleines, de pêche, de recherche, etc.). Les bruits d'origine naturelle sont aussi à considérer : bruits émis par les espèces marines elles-mêmes, craquement des glaces, vent, vagues, pluie, tonnerre, tremblement de terre et autres.

Pour évaluer correctement les impacts potentiels des bruits sous-marins sur le béluga de l'estuaire du Saint-Laurent, un programme quinquennal de recherche a été mis en place par une équipe scientifique de Pêches et Océans Canada, dans la foulée du Plan de protection des océans. Les résultats à venir serviront à :

- cartographier la qualité acoustique de l'environnement du béluga
- déterminer les zones et les périodes de plus grandes ou plus faibles probabilités d'impact pouvant affecter la survie du béluga et le rétablissement de cette population protégée en vertu de la *Loi sur les espèces en péril au Canada*
- appuyer la mise en œuvre de mesures pour réduire le bruit basées sur des connaissances scientifiques

D'importants moyens ont été mis en place pour ce programme, soit :

- le déploiement d'un observatoire acoustique comptant dix stations d'enregistrement pour cartographier le bruit sous-marin dans l'habitat du béluga entre l'île aux Coudres et l'île du Bic
- la modélisation du bruit propagé par les navires et ses impacts potentiels sur le béluga
- des recensements aériens des bélugas ainsi que des séries de détections et de localisations des vocalisations des animaux aux dix stations de l'observatoire acoustique
- le déploiement combiné de balises acoustiques placées sur les bélugas avec des ventouses et de bouées acoustiques dérivant sur l'eau, de manière à mieux comprendre la réaction des animaux à l'exposition au bruit



Déploiement d'une station acoustique dans l'habitat du béluga entre l'île aux Coudres et l'île du Bic.



Des balises acoustiques placées sur les bélugas à l'aide de ventouses, jumelées à des bouées acoustiques dérivantes, aident à mieux comprendre la réaction des animaux à l'exposition au bruit.

Grâce aux efforts importants déployés dans le cadre du Plan de protection des océans – plan doté d’une enveloppe de 1,5 milliard de dollars –, l’initiative de protection des baleines permettra la prise de mesures concrètes visant à améliorer la navigation responsable et la protection des eaux canadiennes, des écosystèmes et des habitats marins. Transports Canada, Pêches et Océans Canada, Environnement et Changement climatique Canada, de même que Ressources naturelles Canada travaillent en collaboration avec les peuples autochtones et les intervenants concernés pour protéger les mammifères marins en voie de disparition au Canada.

Gulf Stream Eddies are Fertilizing the Western Atlantic Ocean

From [GEOTRACES Science Highlights](#)

Tim Conway and co-authors (2018, see reference below) show that Gulf Stream eddies can provide an extra supply of iron, and nutrients such as phosphate and nitrate to the iron-starved Western Atlantic Ocean. Gulf Stream eddies form when the northward fast-flowing Gulf Stream meanders and pinches off coastal water, spinning these 'rings' out into the ocean. This coastal water is rich in iron. The authors used satellite and ocean datasets to show that these eddies may be just as important as dust in supplying iron to this area of the ocean!

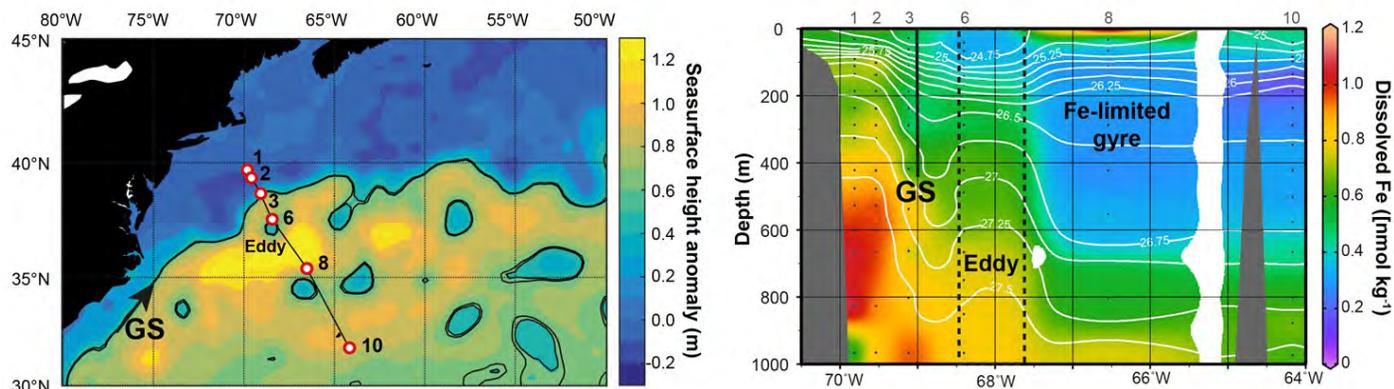


Figure: Cruise track (left) and dissolved iron (Fe) concentrations (right) from a North Atlantic GEOTRACES dataset ([GA03](#)). The northward flowing Gulf Stream (labelled GS) can be clearly picked out as the boundary between the coastal Slope Water which is enriched in Fe, and the open gyre which is Fe-depleted. A Gulf Stream eddy (labelled) was serendipitously sampled on the cruise, and can be seen as carrying a column of water enriched in Fe across the Gulf Stream and out into the gyre. The authors used this chemical dataset, together with satellite data to calculate how much iron eddies carry into the gyre each year. Click [here](#) to view the image larger.

Reference:

Conway, T. M., Palter, J. B., & de Souza, G. F. (2018). Gulf Stream rings as a source of iron to the North Atlantic subtropical gyre. *Nature Geoscience*, 1. <http://doi.org/10.1038/s41561-018-0162-0>

SCOR International Annual Meeting

The 44th Annual Meeting of the Scientific Committee on Ocean Research (SCOR) was held September 4-7, 2018 in Plymouth, United Kingdom. As in previous years, the meeting focused on the organization and running of SCOR, as well as receiving updates on related oceanographic and capacity building programs. Presentations of ongoing marine research in the Plymouth area was also presented, by both local faculty and graduate students.



A new SCOR executive for 2018-2020 was elected and constituted. Marie-Alexandrine Sicre of France will remain as president for the remaining 2 years of her 4 year term. David Halpern of the United States was re-elected as a Vice-President for a second two year term, while Sinjae Yoo of South Korea and Jing Zhang of Japan was elected for two year terms as the other two Vice-Presidents. Paul Myers, of Canada, was elected for a four year as Secretary. Paul is the 4th SCOR secretary elected from Canada. Previous Canadian holders of that position include Alan Longhurst (1980-1996), Robert Fournier (1986-1992) and Bjorn Sundby (1996-2000). Núria Casacuberta Arola of Switzerland was also co-opted as an early career member of the SCOR executive for a two year term.

Given that Working Groups are at the core of SCOR, serious and extensive discussion was held of the 9 new working group proposals for this year. In the end, two new Working Groups were approved this year: (1) WG 156 on Active Chlorophyll fluorescence for autonomous measurements of global marine primary productivity and (2) WG 157: MetaZooGene. Further details on the newly approved Working Groups will be provided in a future newsletter.

The 2019 SCOR Annual Meeting will be held September 23-25 in Toyama, Japan.

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,
david.greenberg@dfo-mpo.gc.ca*

Mettez en valeur vos programmes de recherche en publiant un article dans cette première section de votre bulletin.

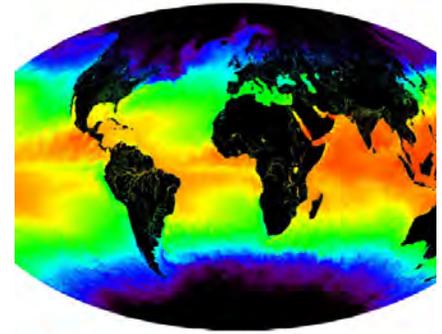
*Faites parvenir vos contributions à
David Greenberg,
david.greenberg@dfo-mpo.gc.ca*

MEETINGS

GODAE OceanView Symposium, OceanPredict '19

6-8 May 2019, Halifax, Nova Scotia

GODAE OceanView and [MEOPAR](#) invite you to experience three exciting days in the world of operational oceanography. You will learn about recent advances in the field, and how ocean prediction systems have evolved. This symposium will be an opportunity for you to interact with ocean prediction experts and users, and to learn about the potential that ocean forecasting has for use by private industry, government, and the general public.



**6-8 MAY 2019
OceanPredict '19**

Ocean scientists, ocean observation specialists, industry representatives, service providers and users of ocean data & products from across the local, national & international operational oceanography community will gather in Halifax for the GODAE OceanView Symposium, OceanPredict '19.

for the GODAE OceanView

The event will present high-level speakers providing expert insight into the latest ocean research & development efforts, products and services and applications, and offers participants to engage in special science splinter meetings, poster sessions, booth exhibitions and discussion rounds to explore and define the direction of future operational oceanography.

Abstract submission opens in October.

[Website](#)

7th Kaplan Symposium, Tracers in the Sea

11-13 February, 2019, Eilat, Israel

The Kaplan symposiums are medium sized, intimate conferences (50-80 participants), resembling the "Gordon Research Conferences" format including field trips, long poster sessions, overview talks by leading scientists from the international community and informal interactions. The past successful Kaplan symposiums hosted 7-14 distinguished international scientists, were well attended and had a great atmosphere. In addition to scientists and graduate students from the Hebrew University, we expect the participation of other scientists and graduate students from the Weizmann Institute of Sciences, Ben-Gurion University, Tel Aviv University, Bar-Ilan University, Haifa University, research institutes such as Israel Limnology and Oceanography Research and The Geological Survey of Israel, and others.



The upcoming Kaplan symposium is primarily directed towards the inorganic chemical oceanography community, and will also be of interest to both geochemically-oriented marine biologists, atmospheric dust scientists and the paleoceanography community. The meeting will also include a guided hike in the Eilat Mountains, group snorkeling in coral reefs (and diving for those interested) and additional activities. Following the symposium, the guests are invited to Jerusalem to visit the Hebrew University and tour the Earth Science Institute facilities, as well as the Old City of Jerusalem.

Abstract and registration deadline - November 30th, 2018

[Website](#)

OERA Webinar Series

Monthly

The OERA webinar series continues. It is designed to help disseminate information on the research activities and results of projects in geoscience and marine renewable energy. Webinars are designed to be a forum for industry, researchers, regulators and community stakeholders to share information, get informed, and discuss research results and implications.



The webinars are geared towards a broad audience with a balance between non-technical and scientific jargon, prioritizing research results and their implications for the development of the offshore energy sector.

Everyone is welcome to attend the live webinars and participate in the question and answer session with the presenters. Follow the links below to register for each webinar. For previously aired webinars, please [CLICK HERE](#) for full videos.

[Website](#) Future Webinars:

October 18, 2018 - 1:00 - 2:00 pm AST [Hansen Johnson, Dalhousie University](#)

"Measuring the Acoustic Detection Range of Large Whales from Autonomous Platforms to Improve an Acoustic Whale Alert System"

November 22, 2018 - 1:00 - 2:00 pm AST [Todd Ventura, Saint Mary's University](#)

"The Joggins Fossil locality - its importance for understanding oil and gas formation and what that means for Nova Scotia's geologic past"

December 6, 2018 - 1:00 - 2:00 pm AST [David Piper, Saint Mary's University](#)

"Modelling of Sandstone Reservoir Distribution and Quality in the Scotian Basin"

January 10, 2019 - 1:00 - 2:00 pm AST [Georgia Pe-Piper, Saint Mary's University](#)

"The Search for Sand: Mountains, Rivers and Deltas 150 Million Years Ago"

ASLO 2019 Aquatic Sciences Meeting

February 23- March 2 2019, San Juan, Puerto Rico

A wealth of topics will be discussed at the meeting, many stemming from key areas of importance to the area itself at this crucial time - the role of science at the center of all economic, societal and environmental recovery and development efforts, studies on renewable energy, environmental sustainability, clean water, and rebuilding and maintaining terrestrial ecosystems.

While ASLO's meeting in San Juan will benefit Puerto Rico for the short-term, the outcomes of the ASLO 2019 Aquatic Sciences Meeting can impact the island for the long-term. This presents an excellent opportunity for ASLO to showcase how they are doing their part to train



scientists in communication to the public and to teach effective research skills to future generations. As with all ASLO meetings, organized activities will be available that will allow participants to use culturally-relevant projects and strategies to make science more engaging.

Abstract deadline October 22

[Website](#)

Please send meeting announcements to
David Greenberg,
david.greenberg@dfm-mpo.gc.ca

SVP faites parvenir vos annonces de réunion à
David Greenberg,
david.greenberg@dfm-mpo.gc.ca

POSITIONS AVAILABLE

Tenure-track Associate Professor/Assistant Professor (up to 10 posts)

University of Hong Kong

The Faculty of Science will be 80 years old in 2019 and to celebrate this anniversary, we are recruiting a cohort of 80th Anniversary professors. This is an unprecedented expansion focused on realizing the Faculty's vision to be pre-eminent in Hong Kong, leading in Asia and highly competitive globally. We are aiming to expand by about 20% over the next year. The first round of hiring has been very successful and we are recruiting 10 more posts in this second round.



The Faculty of Science is one of the larger faculties in HKU with about 130 academic staff in five departments (Chemistry, Earth Sciences, Mathematics, Physics, and Statistics and Actuarial Science) and one school (Biological Sciences) as well as an off-site marine facility, The Swire Institute of Marine Science (SWIMS). The Faculty provides a supportive and friendly environment and is embarking on a programme of recruitment to invest in areas of acknowledged strength and to invest in areas of internationally competitive activity. Information about the Faculty can be obtained at scifac.hku.hk. In addition, the Faculty is committed to gender equality and positively welcomes applications from women as well as men. The Faculty will also be happy to consider applications from individuals with their own funding who wish to explore proleptic positions.

Deadline: November 15, 2018

[Website](#)

Coastal Modeler at Texas Water Development Board, Austin, TX

Zhuo Liu of the Texas Water Development Board (TWDB) is looking for a Coastal Modeler to join the Bays and Estuaries team. The job descriptions and requirements can be found at: <https://www.twdb.texas.gov/jobs/doc/18-75.pdf>.

This position will be mainly responsible for:

1. Applying existing hydrodynamic models to support the evaluation of freshwater inflow needs for Texas estuaries;
2. Assisting with the development of our agency's new 3-D coastal circulation models; He is currently leading the efforts of developing new 3-D hydrodynamic models of TX bays using SCHISM. So, the experience with SCHISM would be a plus.
3. Field work for about 20% of total work time.



Texas Water
Development Board

For more information about application instructions or employment benefits with the TWDB, please visit our career opportunities webpage: <http://www.twdb.texas.gov/jobs/index.asp>.

Applications will be accepted until the vacancy is filled.

Looking for work? Try the CMOS site ([click](#)).

Vous recherchez un emploi? Visitez le site SCMO ([click](#)).

GENERAL

CMOS 2018 in Pictures

CMOS has a [page dedicated to pictures](#) from the 2018 congress in Halifax.



[Programs](#) and [abstracts](#) are available as well.



They are still trying to [identify people](#) from the 2017 Congress group photo.



COSN September 2018

BCSO septembre 2018

Nova Scotia Student Research Travel Program

The objective of the OERA Student Research Travel program is to cultivate collaborations between Nova Scotia student researchers and international research facilities or laboratories that will contribute to advancing the offshore energy sector here in Nova Scotia and in building research capacity for the province.

The program is open to full-time senior honours and graduate students* attending a Nova Scotia university or the Nova Scotia Community College (NSCC), whom are conducting research in marine renewables, marine geosciences or seismic & marine sound.

* Funding for post-doctoral fellows may be considered on a case by case basis.

The program has been designed to support student travel to/from relevant field schools, relevant courses and other learning opportunities as approved by OERA management. Workshops, conferences and other types of meetings are not eligible under this program.

Deadline for Applications: October 31, 2018

[Website](#)



ACUNS-CNST Awards and Fellowships in Northern Studies

The Canadian Northern Studies Trust (CNST) is the awards program of the Association of Association of Canadian Universities for Northern Studies (ACUNS). It was established in 1982 to advance knowledge and understanding of Canada's North. The purpose of the CNST is to develop a cadre of scholars and scientists with northern experience and, at the same time, to enhance the educational opportunities available for northern residents.



There are many grants and scholarships available as well as operational research support for people working in the North, with awards varying from \$2,500 to \$50,000. A fieldwork component is part of many of the awards. The application has multiple components.

The CNST award cycle launches October 15 of each year and closes on January 31.

[FAQ](#)

ASLO Award Nominations

ASLO awards provide opportunities to recognize outstanding individual performance and to highlight accomplishments of the aquatic science research community. Please take the time to nominate your colleagues for these awards. ASLO also offers two awards to students: Student Travel Awards, and Student Poster Awards. All nominations must be submitted as a single Adobe PDF file.

Details can be found on the [ASLO awards web page](#).

The deadline for receipt of nominations is 15 October 2018.



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

Previous newsletters may be found on the [CNC/SCOR](#) web site.

Newsletter #103 will be distributed in **November 2018**.

Please send contributions to David Greenberg
david.greenberg@dfo-mpo.gc.ca

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Le Bulletin # 103 sera distribué en **novembre 2018**.

Veillez faire parvenir vos contributions à David Greenberg, david.greenberg@dfo-mpo.gc.ca

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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.

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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