Canadian National Committee for SCOR
Comité national canadien pour SCOR

Scientific Committee on Oceanic Research

# CANADIAN OCEAN SCIENCE NEWSLETTER
# LE BULLETIN CANADIEN DES SCIENCES DE L'OCÉAN

## Newsletter Number 107, July 2019
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## CNC-SCOR Early Career Ocean Scientist Award

SCOR promotes international cooperation in planning and conduct of ocean research and in solving methodological problems that hinder progress. SCOR sponsors international working groups and large scale ocean research projects (eg SOLAS, GLOBEC, IMBER). SCOR is the leading non-governmental body associated with this activity. It has 32 member nations. CNC-SCOR is the Canadian member. Our activities include this newsletter, tour speakers and an early career ocean scientist award.

The Early Career Ocean Scientist Award is presented to an early career oceanographer/marine scientist for an outstanding contribution to marine sciences (in the broadest sense) within Canada. The award can be based on a single work/paper that provides a seminal contribution to the field, or ongoing work at a sufficiently high level of excellence that provides an outstanding overall contribution. The award was presented for the first time in 2016. A list of previous winners is available on our website at https://cncscor.ca/site/scor. The award is open to candidates (Canadians, working in Canada or overseas, or permanent residents) who are within 10 years of completion of their Ph.D.

For 2019, CNC-SCOR would like to announce that the winner is Cathryn Clarke Murray from the Department of Fisheries and Oceans Canada and the Institute of Ocean Sciences. Cathryn received her PhD in 2012 from the University of British Columbia, examining the role that recreational boating had in the introduction and spread of invasive species. She previously had received a BSc from the University of Calgary and an MSc from James Cook University in Australia.

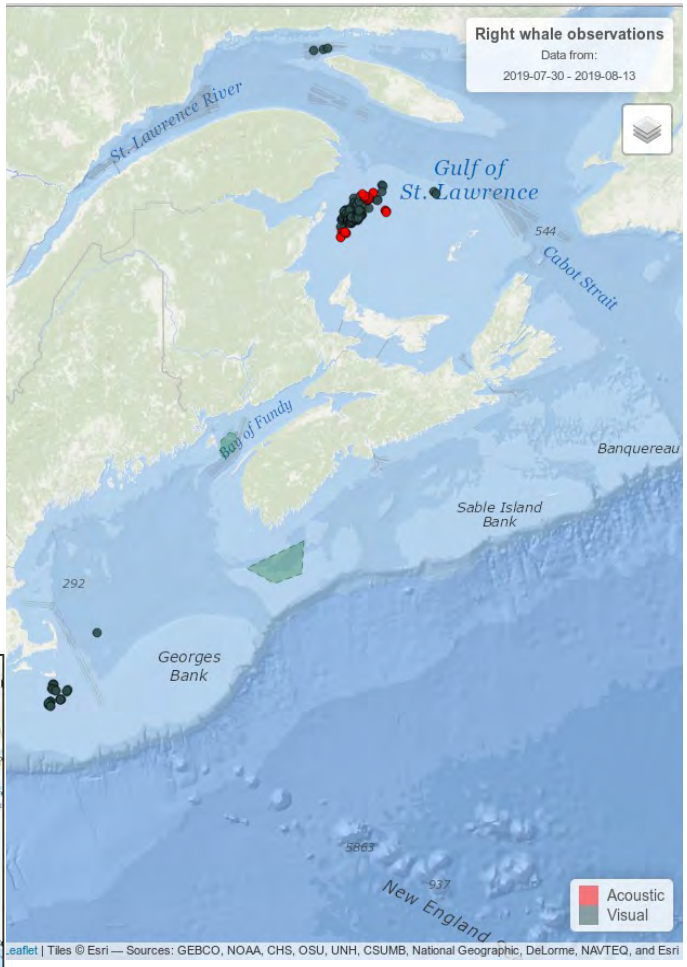
During and since her graduate work, Cathryn has developed a broad expertise in marine ecology and has taken on very difficult applied problems, including aquatic invasive species, cumulative effects and marine debris as a vector of invasion. She has worked successfully in academia, government and an international agency (PICES North Pacific Marine Science Organization). She has sustained a high rate of publication in solid peer reviewed journals. She has simultaneously maintained a high level of community service, both within the scientific community and through public outreach.

See Cathryn's UBC connections here and here.

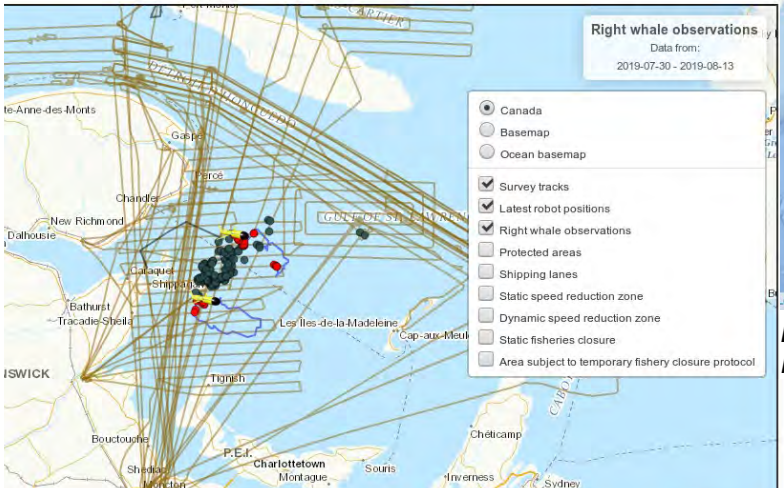
## Dalhousie/DFO WhaleMap: Latest Right Whale Observations

Dalhousie and DFO have a map with the positions of right whales. The map was designed to communicate the latest right whale observations and survey results to scientific, regulatory and industrial sectors to inform more effective, dynamic planning of research and conservation activities. It's synchronized with data repositories from a number of different survey groups in Atlantic Canada, so that shortly after their planes land, boats tie up, or autonomous vehicles call home, the survey results will be updated.

North Atlantic right whales are in peril. Ship strikes and entanglement in fishing gear have spurred a population decline that may lead to extinction in ~20 years. Successful conservation relies on finding these whales - an extraordinarily difficult task given limited resources and a vast ocean.




*Dalhousie/DFO Whale map showing whale locations.*




*Zoomed sighting, survey track and robot position layers.*

*Reference for WhaleMap should be: Johnson, HD (2018). WhaleMap. Available at: https://whalemap.ocean.dal.ca/. (Accessed: YYYY-MM-DD)*

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| *This section of your newsletter provides an opportunity to highlight your research programs to the Ocean Science Community.*<br><br>*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.*<br><br>*Faites parvenir vos contributions à David Greenberg, david.greenberg@dfo-mpo.gc.ca* |

## Rediscovering pelagic biodiversity: Progress, promise, and challenges of metabarcoding of microbes to mammals

**Gothenburg, Sweden, 13 September 2019**

Novel approaches are transforming our understanding and appreciation for pelagic biodiversity and the significance for ocean ecosystem function. Metabarcoding (high-throughput DNA sequencing of barcode gene regions from environmental samples) is being widely used for analysis of diversity, distribution, and abundance of marine organisms from microbes to mammals. Metabarcoding allows improved detection of rare, cryptic and novel taxa, resulting in new global estimates of marine biodiversity and new understanding of the dynamics of marine food webs and ecosystems. There remain many technical and conceptual challenges for analysis and interpretation of metabarcoding results. Research is needed to evaluate and compare results from different marker gene regions and bioinformatics approaches, and for validation and ground-truthing of metabarcoding results. Progress is being made in the use of metabarcoding for quantification of taxon abundance or biomass, examination of trophic interactions and food-web dynamics, remote detection of marine organisms based on eDNA (environmental DNA), and applications for time-series monitoring and ecosystem assessment.

SCOR WG157

MetaZooGene

Toward a new global view of marine zooplankton biodiversity based on DNA metabarcoding and reference DNA sequence databases.

This symposium is associated with the UNESCO - Intergovernmental Oceanographic Commission (IOC) and the International Council for the Exploration of the Sea (ICES) - 2019 Annual Science Conference

Details

Registration is free, but must be done on/before **September 6, 2019**.

The Presentation Abstracts deadline has passed but late submissions will be considered for poster presentation.

## Hydrothermalism in 4D: current challenges and emerging issues

**Banyuls-sur-mer, France, 18-22 November 2019**

InterRidge Theoretical Institute 2019: New research foci have emerged in the last decade regarding hydrothermal systems. Addressing links between tectonic complexities and magmatic-hydrothermal processes, characterizing hydrothermal contributions to global ocean budgets (e.g.


heat, carbon, iron) and associated ecosystem functions, stability and resilience in a wider deep-sea context have inspired a growing number of studies. Through its 4th Theoretical Institute, InterRidge aims at fostering this momentum, by identifying most critical fundamental research questions and by offering the opportunity to share knowledge on emerging issues, new technologies, interdisciplinary challenges including capacity building and methods/tools sharing across disciplines.

The event will start on Monday morning and end on Friday noon. Like previous Theoretical Institutes, the first 1.5 days will be devoted to a series of lectures, followed by four thematic workshop sessions, each of them being introduced by keynote talks (Tuesday afternoon to Wednesday morning). A poster session on Wednesday afternoon will offer young scientists the opportunity to present their work. The following 1.5 days will be dedicated to writing sessions in small groups and final synthesis.

Details

Deadline for registration: **8th September 2019**

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| *Please send meeting announcements to David Greenberg, david.greenberg@dfo-mpo.gc.ca* | *SVP faites parvenir vos annonces de réunion à David Greenberg, david.greenberg@dfo-mpo.gc.ca* |

# POSITIONS AVAILABLE

## Postdoc in Marine Trace Metal and Isotope Biogeochemistry

**Royal NIOZ Texel, The Netherlands**

The Department of Ocean System Research (OCS) is looking for a highly motivated post doc with a background in marine trace metal biogeochemistry and with an interest in the cycling of iron and iron isotopes as well as other bio-active metals (Principal investigator dr. Rob Middag). Researchers in the Department Ocean System Research (OCS) study open-ocean processes from a variety of disciplines, ranging from physical and chemical oceanography, marine geology, paleoceanography to deep-sea ecology. We investigate the oceans in the past and present, to assess their future role. We make use of experiments and data collection during sea-going oceanographic research, as well as laboratory experiments and analyses in our home base on Texel. The department works around the globe, from the Antarctic to the Arctic, from the Caribbean to the North Sea. One of the areas we work in is the North Atlantic Ocean. This project is part of the NWO Vidi grant recently awarded to Rob Middag, “Trace metals and the Arctic-Atlantic gateway in a changing world, local processes and global connections (MetalGate)”. In this project we will investigate the cycling of iron and its isotopes as well as other bio-active metals in the Greenland-Iceland-Norwegian-Sea region, the main gateway between the Arctic and Atlantic Ocean. We will combine trace metal and isotopic measurements with temperature controlled bio-assays at ecologically relevant conditions and develop sampling techniques to study the processes and interactions in the benthic boundary layer.

Details

**Deadline - 7th of September 2019**

## Postdoc in environmental DNA modeling

**DFO, Gulf Fisheries Center, Moncton, NB**

The Aquatic Animal Health section, molecular biology group is seeking to recruit a postdoc to join a research team in fish eDNA detection and integration of DNA signals for biomass estimates.
The position is full-time and available immediately. The pdf candidate will integrate an on-going project. The position is part of a multi-disciplinary eDNA project, with the goal of estimating the biomass of a fish (Striped bass). Data are already available to start modeling eDNA signal from the environment with various variables. The team is already active in eDNA and the candidate will have access to expertise, technical support, field biologists, etc.


Applications, including a letter of motivation, a curriculum vitae, a list of publications, and the contact information of two academic referees, must be submitted to the contact below. The position is open as long as this message is posted.

There is a new application process. Please consult: https://www.nrcan.gc.ca/careers/17880. It is advised that applicants contact Nellie Gagne Nellie.Gagne@dfo-mpo.gc.ca or Thomas Guyondet Thomas.Guyondet@dfo-mpo.gc.ca for more details on the position and particulars of the application process. Applications will be accepted until the position is filled.

Fisheries and Oceans Canada
Pêches et Océans Canada

## Physical Scientist II (Multiple positions)

**DFO, St. Andrews NB, Dartmouth NS**

The intention is to staff four PC-02 positions on a temporary basis for various durations. A pool will be established and may be used to staff similar positions on a temporary or permanent basis in Dartmouth, NS or St. Andrews, NB.

Fisheries and Oceans Canada
Pêches et Océans Canada

Integrated Response Planning (Term)

This position will require writing 'state-of-knowledge' reports on various coastal ports of Canada to support the development of petroleum spill response plans. This will require the employee to research, compile and review relevant information, data and other materials, as well as coordinate the editing, translation and publishing of these reports.

Gully Marine Protected Area Reporting (Term)

This position will compile and analyze physical, chemical and biological data collected by the Atlantic Zone Monitoring Program (AZMP) within the Gully MPA. A final report will be generated to describe environmental conditions in the Gully MPA and recommendations for an optimized monitoring model. Through consultation with key stake holders, the candidate will develop scripts and analytical products that will serve as the backbone for future Gully MPA environmental reporting.

Delayed Mode Quality Control Development (Term)

This position will develop quality control methods applicable to physical, chemical and biological oceanographic data for autonomous underwater instrumentation such as gliders and Argo floats. The position will interact closely with the national data management team for these platforms and advise on system development.

Dynamic Hydrographic Products (Term)

This position will support the Canadian Hydrographic Service's ongoing Dynamic Hydrographic Products initiative. The position will require the application of physical science experience, knowledge and abilities to the development of state of the art tools for emerging dynamic electronic navigational data production, management and delivery systems.

Details

Closing date: **28 August 2019 - 23:59, Pacific Time**

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

# GENERAL

## Marine Radioactivity Course

**18-29 November 2019, Edith Cowan University, Perth, Australia**

Edith Cowan University will be hosting a 2-week summer course on Marine Radioactivity from 18 to 29 November 2019 in Perth (Western Australia). The course will provide fundamental concepts of working with radioactive tracers in the ocean, including lectures, practical case studies and hands-on activities (field work, radiochemistry laboratory activities and the use of alpha, beta, gamma and solid scintillation detector). The program is suitable for university students, marine scientists, and others who are conducting research in the field.

Program content

- Basics of radioactivity, natural and artificial sources, radionuclide dispersion and deposition models, radioecology and detection of radiation at environmental levels.


- How to use radioisotopes to estimate atmospheric deposition fluxes, particle cycling and fluxes, submarine groundwater discharge, water circulation, paleoceanography and radiochronology.
- Hands-on activities with real samples, including field work, radiochemistry in the laboratory and measurements using alpha and gamma spectrometry, beta and solid scintillation counting.

Details

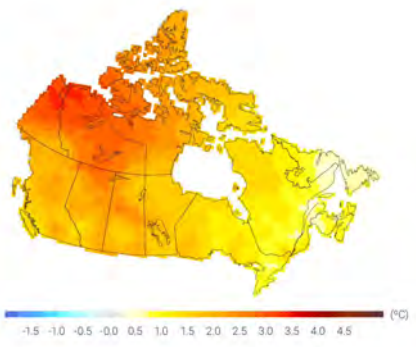
Early registration is encouraged.

## SCOR Newsletter #40

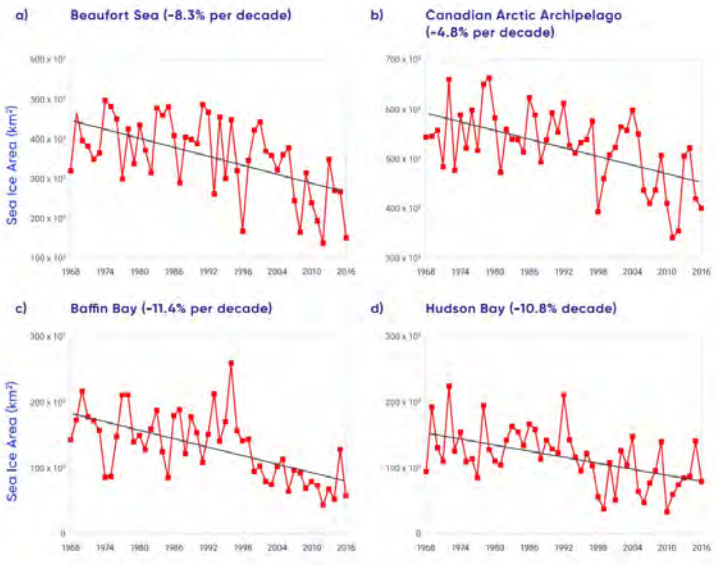
SCOR Newsletter August 2019 • #40

SCOR Newsletter #40 is now available. This issue lists the SCOR working group proposals available for review before the SCOR Annual Meeting in Toyama, Japan; gives a preview of SCOR involvement in the Ocean Sciences 2020 conference; presents updates about SCOR working groups, research projects, and capacity-development activities; and provides references for 7 papers published by SCOR working groups since *SCOR Newsletter* #39 was issued.

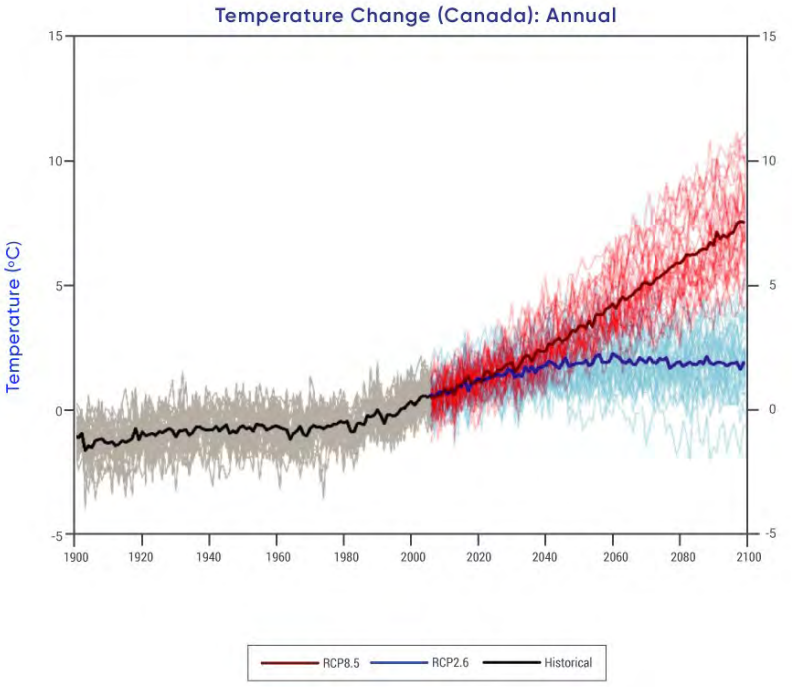
## Canada's Changing Climate Report




Released earlier this year, *Canada in a Changing Climate: Advancing our Knowledge for Action* is the national assessment of how Canada's climate is changing, the impacts of these changes and how we are adapting to reduce risk. Over the next four years, watch for a series of authoritative science and information products that will serve as a resource for Canadians, raising awareness of the key issues facing our country and providing information to support sound adaptation decisions and actions. This report is about how and why Canada's climate has changed and what changes are projected for the future. Led by Environment and Climate Change Canada, it is the first report to be released as part of *Canada in a Changing Climate: Advancing our Knowledge for Action*.




These headline statements tell a concise story about Canada's changing climate based on the findings of this report: *-Canada's climate has warmed and will warm further in the future, driven by human influence. -Both past and future warming in Canada is, on average, about double the magnitude of global warming. -Oceans surrounding Canada have warmed, become more acidic, and less oxygenated, consistent with observed global ocean changes over the past century. -The effects of widespread warming are evident in many parts of Canada and are projected to intensify in the future. -Precipitation is projected to increase for most of Canada, on average, although summer rainfall may decrease in some areas. -The seasonal availability of freshwater is changing, with an increased risk of water supply shortages in summer. -A warmer climate will intensify some weather extremes in the future. -Canadian areas of the Arctic and Atlantic Oceans have experienced longer and more widespread sea-ice-free conditions. -Coastal flooding is expected to increase in many areas of Canada due to local sea level rise. -The rate and magnitude of climate change under high versus low emission scenarios project two very different futures for Canada.*




The full report can be downloaded or these individual chapters: Headline Statements, Executive Summary, About this Report and Understanding Observed Global Climate Change.

## Ocean Best Practices Survey

The Ocean Best Practices System (OBPS) was created to improve access to best practices. We are looking for your thoughts on the use of these best practices in ocean observing and also guiding the evolution of the OBPS.

Best practices are a common approach to further consistency in ocean data and information. The definition for an Ocean Best Practice is – “a methodology that repeatedly produces superior results relative to other methodologies with the same objective; to be fully elevated to a best practice, a promising method will have been adopted and employed by multiple organizations”. Best practices may come in many forms such as “standard operating procedures,” manuals or guides.

The Ocean Best Practices System (OBPS) brings together documentation for technological solutions and community practices. (see Pearlman et al, 2019, https://doi.org/10.3389/fmars.2019.00277) The UNESCO International Data and Information Exchange (IODE) is now hosting the OBPS including its repository of best practices.

This survey is being done in preparation for the OceanObs19 meeting in September 2019,. The survey should take approximately 10-12 minutes to complete. Due to the ways this survey is being distributed, please excuse multiple requests.

*Please use the link*: https://www.surveymonkey.com/r/OBPS-Survey *to take the survey*

We thank you for your support.

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

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| Previous newsletters may be found on the CNC/SCOR web site.<br>Newsletter **#108** will be distributed in **September 2019**.<br>Please send contributions to David Greenberg david.greenberg@dfo-mpo.gc.ca<br>If you wish to subscribe to this newsletter, please send an email to listserv@lists.mcgill.ca with the following message:<br>**Subscription**<br>CNC-SCOR is changing the server that distributes the *Canadian Ocean Science Newsletter*. Until that is complete, please email david.greenberg@dfo-mpo.gc.ca if you want changes in your subscription status. | Les bulletins antérieurs se retrouvent sur le site web du CNC/SCOR.<br>Le Bulletin **#108** sera distribué en **septembre 2019**.<br>Veuillez faire parvenir vos contributions à David Greenberg, david.greenberg@dfo-mpo.gc.ca<br>Si vous désirez vous abonner à bulletin, veuillez envoyer un courriel à listserv@lists.mcgill.ca avec le message suivant:<br>**Abonnement**<br>CNC-SCOR est en train de changer le serveur qui distribue le *Bulletin Canadien des Sciences de l'Océan*. En attendant, veuillez envoyer un courrier électronique à david.greenberg@dfo-mpo.gc.ca si vous souhaitez modifier le statut de votre abonnement. |

## CNC-SCOR



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**