



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

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OCEAN SCIENCE NEWS

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*

News from SCOR Annual Meeting

The following three proposals were accepted to start in 2016, after a few modifications requested by SCOR in the group's membership and/or terms of reference. Information will be posted on the working group page (see http://www.scor-int.org/SCOR_WGs.htm) when the memberships and terms of reference have been finalized.

WG 148 on International Quality Controlled Ocean Database: Subsurface temperature profiles (IQuOD)

— Ocean temperature observations are critical for a range of ocean and climate research activities, providing initial conditions for seasonal-to-decadal prediction systems, evaluating past variations in sea level and Earth's energy balance, ocean state estimation for studying variability and change, and climate model evaluation and development. The IQuOD initiative is a community effort to create the most globally complete temperature profile dataset, with comprehensive metadata and uncertainty information, to advance the above research avenues. In particular, IQuOD will facilitate improvements in bias corrections for XBT-based measurements by providing more complete metadata and uncertainty information.

The SCOR IQuOD working group will be co-chaired by Catia Domingues of the University of Tasmania and Matt Palmer of the UK Met Office. The group will develop, implement and document algorithms for assignment of "intelligent" metadata for temperature profiles where crucial metadata are missing. The group will evaluate and document the most effective combination of automated quality control procedures for temperature profile observations.

CNC-SCOR

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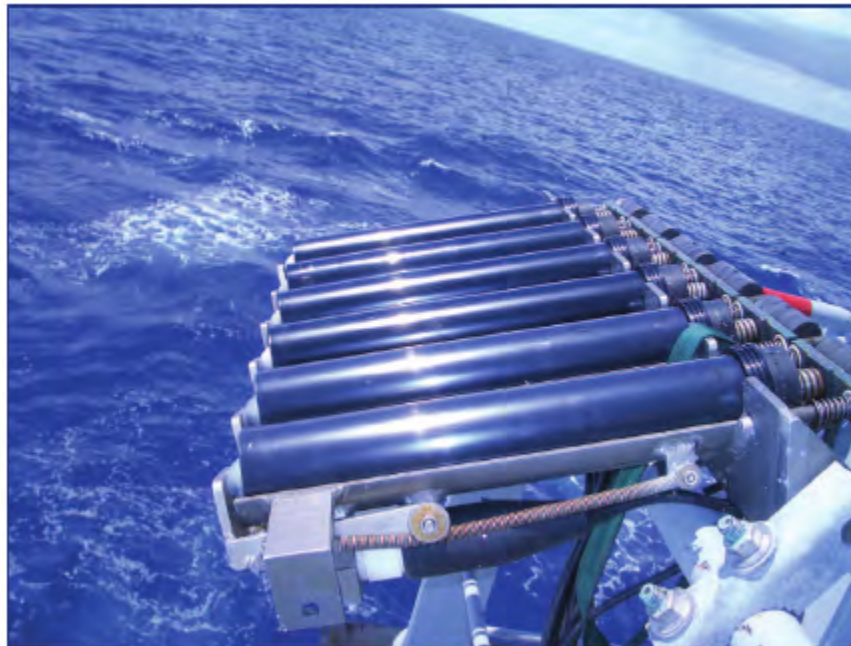
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The Canadian National Committee of the Scientific Committee for Oceanic Research (CNC-SCOR) fosters and facilitates international cooperation. It is a non-governmental body that reflects the multi-disciplinary nature of ocean science and marine technology.

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.

International collaboration will be required for the design and coordination of benchmarking experiments using high-quality reference datasets. The group will establish and implement a set of optimal automated quality control procedures, by developing international community consensus and using the knowledge gained in its benchmarking tests. A reference guide for best practices in automated quality control of ocean temperature profiles will be produced, as well as an open-source quality control software toolkit, to promote wide and rapid adoption of best practices by the oceanographic community. The group will examine and document the feasibility of machine learning and other novel computational methods for enhanced quality control, to potentially reduce labor costs associated with human expert quality control procedures. The IQuOD global temperature profile database and added-value products will be freely disseminated as they evolve over the next three years. The work of this group will complement the activities of the IQuOD group sponsored by the International Oceanographic Data and Information Exchange (IODE) of IOC/UNESCO.



XBT autolauncher

(from <http://www-hrx.ucsd.edu/pics/Autolauncher.jpg>)

WG 149 on Changing Ocean Biological Systems (COBS): How will biota respond to a changing ocean?—Climate models all predict concurrent alterations to multiple oceanic properties, due to the effects of anthropogenic climate change. These projections are supported by a growing body of ocean observations that demonstrate simultaneous shifts in properties such as temperature, CO₂, O₂, and nutrients. A major challenge is to determine the cumulative effects of such interactive and widespread alterations of oceanic conditions on organisms, communities, and ecosystems. Research must advance in parallel to tackle three major themes: (1) effects of multiple environmental drivers on the performance of individual organisms; (2) community and foodweb responses to complex ocean change; and (3) time scales of biological responses to climate change.

This working group, chaired by Philip Boyd of the University of Tasmania, will assess how well research is moving from the effects of single drivers to multiple interacting drivers, from effects on single organisms to effects on ecosystems, and from studies of acclimation to studies of

adaptation. The group will identify gaps in research that need to be addressed and will develop a multi-driver “Best Practice Guide” to help this research field move forward in a coordinated manner. The group will mentor early-career scientists in the design process for complex multiple-driver manipulation experiments, familiarize them with the Best Practice Guide, and teach them practical methodologies for the analysis of their experimental findings. The group will build an interactive Web site on multiple drivers and marine biota to increase cooperation within this international research community, and to provide educational information at a variety of levels.



GEOMAR Mesocosms in Spitzbergen (Photo: Maike Nicolai, GEOMAR;

http://www.bioacid.de/upload/images/2010-06-02_Mesokosmen-Spitzbergen-1k_MaikeNicolai.jpg

WG 150 on Translation of Optical Measurements into particle Content, Aggregation & Transfer (TOMCAT)—Sinking particles transport organic carbon to the deep sea. The magnitude of particle export and the rate at which particles are consumed determine carbon sequestration in the ocean, and directly influence atmospheric carbon dioxide concentrations and global climate. While technologies to image particles have advanced greatly during the past two decades, techniques to analyze the immense datasets have not. One short-coming is the

translation of optical particle properties (e.g., the image) into particle characteristics such as carbon content and sinking speed.

This working group will be chaired by Sarah Giering of the UK National Oceanography Centre. The group will compare devices that optically measure particles and will document the advantages and disadvantages of each device and any issues related to intercalibration, define key parameters to use for interpretation of the optical information, and decide which measurements are most important for characterizing particle export. The group will improve techniques and algorithms for the conversion of optical observations into fluxes. It will recommend how to best analyze increasingly larger data sets and develop software examples and codes, placed on a public repository. The group will deposit optical particle data in an internationally recognized database to which new data can be added as they become available, and will advise on future methods to maximize data collection and interpretation.

MEETINGS

CMOS registration and hotel deadlines

The Canadian Meteorological and Oceanographic Society and Canadian Geophysical Union joint-congress will be held from 29 May to 2 June, 2016 at the Fredericton Convention Centre, Fredericton, NB, Canada. The theme of the congress is "Monitoring of and Adapting to Extreme Events and Long-Term Variations". The congress will bring together a wide range of scientists and other professionals from across Canada and other countries with a focus on topics in atmospheric, ocean and earth sciences. [Early Bird Registration - Until April 15, 2016](#)
[Accommodation](#)

Coastlab16

Coastlab16, the 6th edition of the CoastLab international conference series, will take place at the University of Ottawa in Ottawa from the 10-13th of May 2016. The conference will build on the successes of previous conferences held in Porto (2006), Bari (2008), Barcelona (2010), Ghent (2012) and Varna (2014). Coastlab16 is organised under the auspices of the International Association of Hydro-Environment Engineering and Research (IAHR) and will be co-hosted by the University of Ottawa and the National Research Council of Canada. The conference is co-sponsored by the Canadian Society of Civil Engineering (CSCE) and the Coasts, Oceans, Ports and Rivers Institute of the American Society of Civil Engineers (ASCE-COPRI). Coastlab16 will provide a stimulating and enriching forum to discuss the latest developments in physical modelling applied to coastal and port engineering and coastal science. Keep up to date on the conference news at the [Latest News](#) page.

Gordon Research Conference on Ocean Biogeochemistry

Registration for the 1st Gordon Research Conference (GRC) on Ocean Biogeochemistry is now open. The conference will be held at the Chinese University of Hong Kong on 12-17 June 2016. The topic will be The Biologically-Driven Ocean Carbon Pumps. To attend you need to fill in an

application form to obtain an invitation to register. The application can be found at <http://www.grc.org/programs.aspx?id=17297> (**Online Application** under **Meeting Links**) as well as a meeting description and the detailed program. The total number of participants is limited to less than 200. Potential participants are invited to apply as soon as possible.

Future SCOR Annual Meetings

2016—SCOR will hold its 2016 General Meeting in [Sopot, Poland on 5-7 September](#), at the Institute of Oceanology of the Polish Academy of Sciences. The SCOR meeting will include a session on ocean science in Poland. National SCOR Committees and other international organizations are invited to be represented at the General Meeting. Please [register](#) for the meeting by 1 July. Meeting details will be seen at:

http://www.scor-int.org/Annual%20Meetings/2016GM/SCOR_GM_2016.html.

The SCOR Executive Committee is accepting invitations from national SCOR committees to host the 2017 SCOR Annual Meeting.

For additional information about SCOR activities, please see the SCOR Web site: <http://www.scor-int.org>. To reach Secretariat staff, please send an email to Ed Urban (Ed.Urban@scor-int.org)

ICES/PICES Symposium on Drivers of Dynamics of Small Pelagic Fish Resources

6-11 March 2017, Victoria, BC, Canada

The symposium's goal is to revitalize international cooperation on investigations of small pelagic fishes, and to develop a framework to address unresolved questions such as the impact of climate and fishing pressure on the resilience of small pelagic populations.

The symposium will build on the results of 'the Effects of Climate Change on the World's Oceans' symposium in Santos, Brazil (2015) as well as regional meetings on forage fish in Nantes (2012) and the American Fisheries Society (AFS) in Quebec (2014). Early registration and abstract submission are open now. For critical dates see the website:

<http://meetings.pices.int/meetings/international/2017/pelagic/scope>

*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*

CANADIAN JOBS and TRAINING

POGO-SCOR Visiting Fellowship

The Partnership for Observation of the Global Oceans (POGO) and Scientific Committee on Oceanic Research (SCOR) are pleased to announce that the POGO-SCOR Visiting Fellowship programme for 2016 is now open for applications. The deadline for applications is 15 April 2016. The scheme is designed to promote training and capacity building leading towards a global observation scheme for the oceans, and is aimed at scientists, technicians, graduate students

(preferably PhD) and post-doctoral fellows involved in oceanographic work at centres in developing countries and countries with economies in transition.

Priority is given to applicants in the early stages of their career development. The fellowship offers the opportunity to visit other oceanographic centres for a short period (1 to 3 months) for training on aspects of oceanographic observations, analyses, and interpretation. It provides financial support to cover the return airfare from the fellow's home country to the host institution, and a contribution towards accommodation and subsistence for the period of the visit.

For more information and details on how to apply please see:

<http://ocean-partners.org/pogo-scor-fellowship>

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

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

GENERAL

SCOR 2016 Call for Working Group Proposals

SCOR approves new working groups each year at its annual meeting. The number of proposals funded each year depends on both the results of the proposal review process and the availability of funding. In recent years, 1-3 proposals have been funded in any given year. SCOR is an organization that promotes science that comes from the “bottom up” from the ocean science community and working groups are an important vehicle to bring attention to the important ocean science issues identified by the global community of ocean scientists.

The SCOR Secretariat will **accept proposals** for new working groups from **now until 17 April 2016**. The guidelines, a template, and word limits are available at

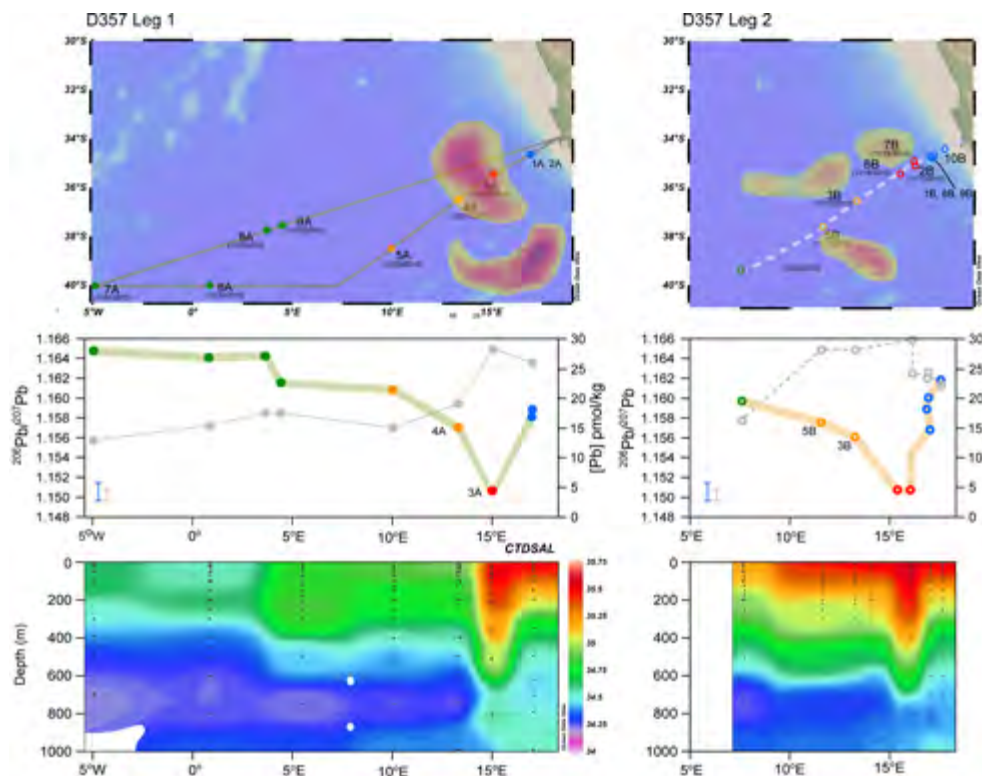
http://www.scor-int.org/WG_Proposal_Instructions.docx.

Lead isotopes track leakage of Indian Ocean seawater into the Atlantic Ocean

From [GEOTRACES eNEWSLETTER n°18 January 2016](#)

Stable lead isotopes have been measured by Maxence Paul and co-workers along 40°S during the first and second legs of the UK GEOTRACES cruise (GA10) in the Atlantic Ocean. They clearly help to identify three different end-members and mixing between them: open ocean South Atlantic seawater, Indian Ocean seawater, and coastal inputs from South Africa. Lead isotopes and concentrations are excellent fingerprints of the occurrence of Agulhas rings, as confirmed by satellite observations and in situ hydrographic data. This study reveals that the Agulhas Leakage is not only a key pathway for heat but also impacts biogeochemical cycles.

Reference: Paul, M., van de Flierdt, T., Rehkämper, M., Khondoker, R., Weiss, D., Lohan, M. C., & Homoky, W. B. (2015). Tracing the Agulhas leakage with lead isotopes. *Geophysical Research Letters*, 42(20), 8515–8521. doi:[10.1002/2015GL065625](https://doi.org/10.1002/2015GL065625)



Maps showing the location of surface seawater samples collected during Leg A (left) and Leg B (right) of UK GEOTRACES GA10 cruise D357. Shaded areas highlight the position of Agulhas rings on 19 October 2010 (left) and 17 November 2010 (right), as suggested by sea surface height (SSH) anomalies obtained from satellite data (AVISO, <http://www.aviso.oceanobs.com/duacs/>). Middle panels: Variations of Pb isotope compositions (colored circles) and Pb concentrations (grey circles) reflect the different sources present in the Cape Basin. Sample denoted as coastal, Agulhas, transitional, and open ocean are represented in blue, red, yellow and green, respectively. The Agulhas samples are marked by low $^{206}\text{Pb}/^{207}\text{Pb}$ and their locations are in accord with the position of the Agulhas rings, as identified by satellite observations and salinity anomalies (bottom panels). [Click here to view the figure larger.](#)

Ocean Yearbook Student Prize

The Ocean Yearbook Student Prize is an annual competition open to students writing research papers on marine affairs subjects at any university or other tertiary education institution. The 2015 Ocean Yearbook Student Prize winners are Shane Belbin with his paper, *Atlantic Coral Conservation: Skeleton of International Protection, but no Muscle* and Peter L'Esperance with his paper, *In the wake of the Erika: Flag State Responsibility for the International Obligations under the Law of the Sea*, both will be offered publication acceptance in Volume 30, to be published in 2016. [The 2016 Ocean Yearbook Student Prize \[PDF - 468 kB\] document](#)

Canadian Science Advisory Secretariat (CSAS) 2016 Proceedings

The Canadian Science Advisory Secretariat (CSAS) coordinates the production of peer reviewed science advice for Fisheries and Oceans Canada (DFO). DFO's six Regions conduct their science advisory processes independently, tailored to regional requirements. The [Proceedings Series](#) contains publications which record the activities at meetings or workshops of which DFO is a sponsor. The Proceedings generally record decisions, recommendations, and major points of discussion at these meetings and workshops. [These proceedings have been released in 2016.](#)

Call for Nominations - 2016 A. G. Huntsman Award for Excellence in the Marine Sciences

The A.G. Huntsman Award for Excellence in the Marine Sciences is an international award presented annually by the Royal Society of Canada to recognize excellence of research and outstanding contributions to marine sciences. Nominees may be of any nationality and must meet the essential criteria of outstanding scholarship and excellence of contributions to marine science. The A.G. Huntsman Award targets marine scientists around the midpoint of their careers and whose reputation and outstanding contributions place them in the forefront of their field.

The deadline for receipt of nominations is April 15, 2016. Nominations should be submitted by mail or e-mail to the Chair of the Selection Committee, as indicated on the nomination form available on the foundation website: www.HuntsmanAward.org. For more information please contact Bill Li at: Bill.Li@dfo-mpo.gc.ca



Student Research Video Competition

The Offshore Energy Research Association of Nova Scotia (OERA) is pleased to announce a new segment of the Nova Scotia Energy R&D Conference as one of the highlights of this two day international event. OERA in partnership with the Nova Scotia Department of Energy will be hosting the 7th bi-annual Nova Scotia R&D Conference on May 25 & 26, 2016 at St. Francis Xavier University in beautiful Antigonish, Nova Scotia.

This call for research video presentations is open to students conducting studies in offshore/onshore oil & gas, marine renewable energy, environment or alternative energy & sustainability. The audience for the Conference is expected to be a mix of academic, government and industry energy researchers. Videos will be on display for all Conference delegates to view over the full two days of the Conference.

The deadline for submission is Friday, April 15th, 2016 at 5:00 p.m. ADT.

Details at: <http://www.oera.ca/meetingsevents/nova-scotia-energy-rd-conference-2016/student-research-video-competition/>

The Human Fingerprints on Coastal Floods

From *Unnatural Coastal Floods: Sea level rise and the human fingerprint on U.S. floods since 1950*:

Human-caused climate change is contributing to global sea level rise and consequently aggravating coastal floods. This analysis removes the assessed human-caused component in global sea level from hourly water level records since 1950 at 27 U.S. tide gauges, creating alternative histories simulating the absence of anthropogenic climate change. Out of 8,726 days when unaltered water level observations exceeded National Weather Service local “nuisance” flood thresholds for minor impacts, 5,809 days (3,517-7,332 days, >90% confidence interval) did not exceed thresholds in the alternative histories. In other words, human-caused global sea level rise effectively tipped the balance, pushing high water events over the threshold, for about two-thirds of the observed flood days. The fraction has increased from less than half in the 1950s, to more than three-quarters within the last decade (2005-2014), as global sea level has continued to rise.

The effects are illustrated in the interactive website:

<http://www.climatecentral.org/news/the-human-fingerprints-on-coastal-floods-20050>.

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

Previous newsletters may be found on the CNC/SCOR web site.

Newsletter #86 will be distributed in January 2016. Please send contributions to David Greenberg david.greenberg@dfo-mpo.gc.ca

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