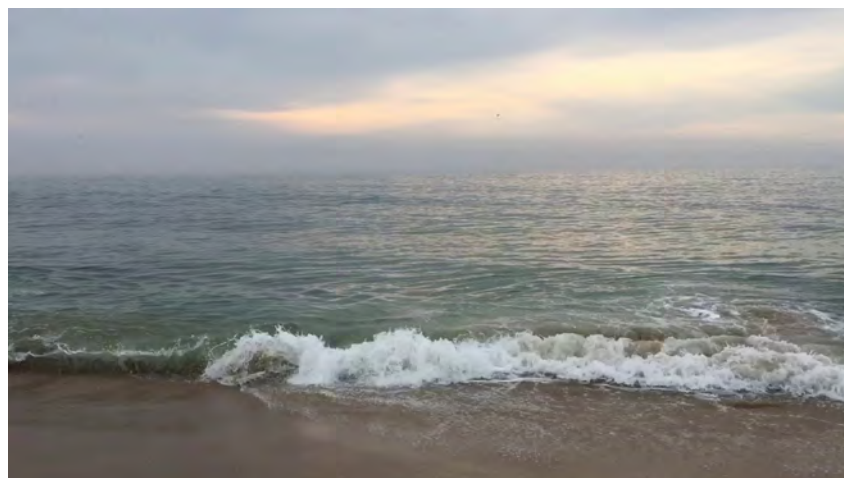


CANADIAN OCEAN SCIENCE NEWSLETTER
LE BULLETIN CANADIEN DES SCIENCES DE L'OcéAN

Newsletter Number 131, July 2023
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Où trouve-t-on les baleines noires?







De L'Observatoire global du Saint-Laurent (OGSL)

Durant l'hiver 2019, certaines bouées OOS Viking de Pêches et Océans Canada dans l'estuaire et le golfe du Saint-Laurent ont été équipées de senseurs et de systèmes de détection de mammifères marins. Les données de détection ont été ajoutées au flux de données déjà utilisé par l'OGSL. Ainsi, les détections sont automatiquement intégrées dans les applications Conditions maritimes et Biodiversité de l'OGSL. L'intégration dans Conditions maritimes vise à optimiser l'aide à la navigation tandis que l'intégration dans Biodiversité vient compléter le portrait des espèces présentes dans l'écosystème du Saint-Laurent.

Les détections sont validées par Pêches et Océans Canada et seule une détection ayant été identifiée comme valide est affichée.

Carte des détections

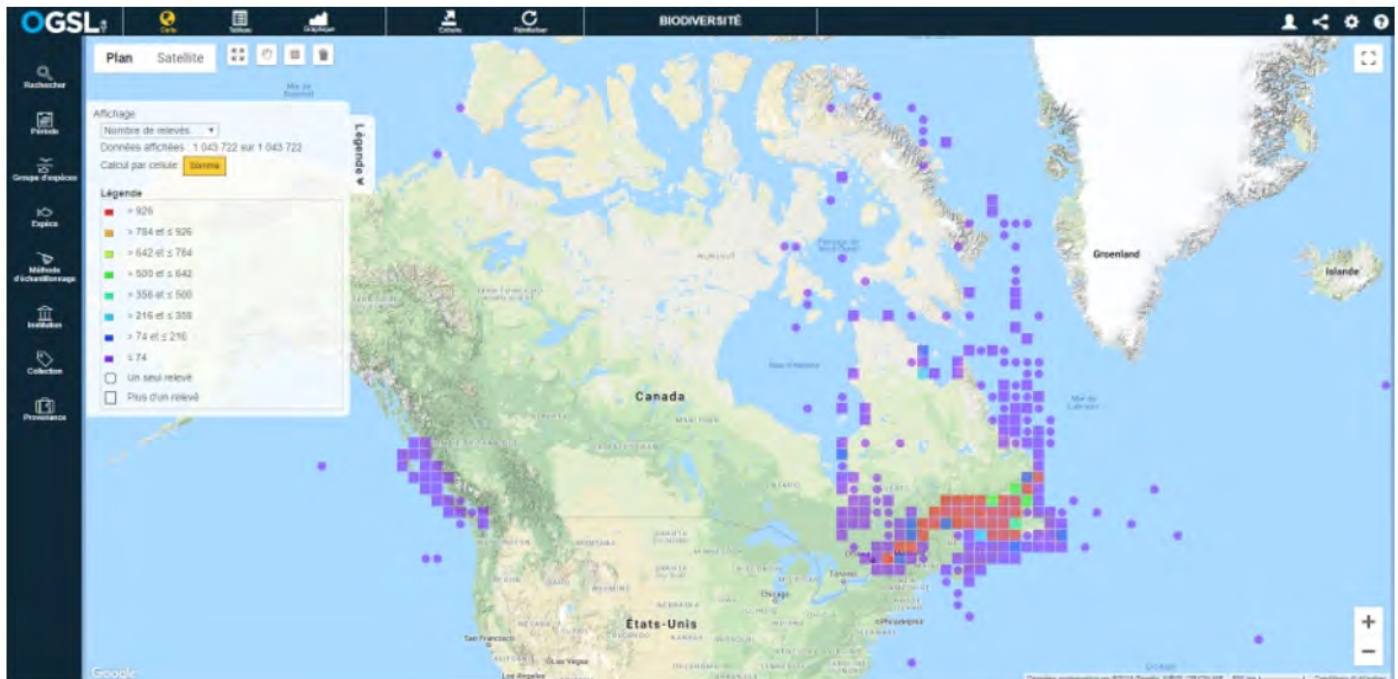


-  Aucune détection depuis la mise à l'eau
-  Détections validées datant de plus de 30 jours
-  Détections validées datant moins de 30 jours
-  Détections validées datant moins de 7 jours
-  Détections validées datant moins de 48 heures
-  Détections non validées datant moins de 48 heures

Accès aux données Biologie

Rassemblant des observations de plus de 300 espèces (poissons, oiseaux, mammifères, algues), l'application Biodiversité dresse un portrait de la vie aquatique et marine du Saint-Laurent.

1. Visiter ogsl.ca/bio
2. Menu latéral de gauche, ouvrir le filtre "Collection"
3. Sélectionner la collection "Détection baleines noires via bouées Viking - MPO"
4. Par défaut, le nombre de relevé est affiché. Le menu de gauche permet de changer l'affichage par exemple par "Présence/Absence".



Rassemblant des observations de plus de 300 espèces (poissons, oiseaux, mammifères, algues), l'application Biodiversité dresse un portrait de la vie aquatique et marine du Saint-Laurent.

Volcanism 56 million years ago released more methane than thought

From the website of the [GEOMAR](#) Helmholtz Centre for Ocean Research in Kiel



An international drilling expedition off the Norwegian coast led by Christian Berndt, Professor of Marine Geophysics at GEOMAR Helmholtz Centre for Ocean Research in Kiel, and Sverre Planke, Professor of Marine Geophysics at the University of Oslo, confirms the theory that methane emissions from hydrothermal vents were responsible for global warming about 55 million years ago. The study, published in the journal *Nature Geoscience*, shows that the vents were active in very shallow water depth or even above sea level, which would have allowed much larger amounts of methane to enter the atmosphere.

About 55 million years ago, the Atlantic Ocean was born. Until then, Europe and America were connected. As the continents began to move apart, the Earth's crust between them ruptured, releasing large volumes of magma. This rift volcanism has led to the formation of large igneous provinces (LIPs) in several places around the world. One such LIP was formed between Greenland and Europe and now lies several kilometres below the ocean surface. An international drilling campaign led by Christian Berndt, Professor of Marine Geophysics at GEOMAR Helmholtz Centre for Ocean Research in Kiel, Germany, and Sverre Planke, Professor of Marine Geophysics at the University of Oslo, Norway, has collected extensive sample material from the LIP, which has now been evaluated.



The drilling vessel "[JOIDES Resolution](#)" off the Norwegian coast. Photo: Peter Betlam (IODP)

...

"At the Paleocene-Eocene boundary, some of the most powerful volcanic eruptions in Earth's history took place over a period of more than a million years," says Christian Berndt. According to current knowledge, this volcanism warmed the world's climate by at least five degrees Celsius and caused a mass extinction - the last dramatic global warming before our time, known as the Paleocene-Eocene Thermal Maximum (PETM). Geologists have not yet been able to explain why, as most modern volcanic eruptions cause cooling by releasing aerosols into the stratosphere.

...

Around 30 scientists from 12 nations took part in the [IODP](#) (now the International Ocean Discovery Program) research cruise to the Vøring Plateau off the Norwegian coast on board the scientific drilling ship "JOIDES Resolution". Five of the 20 boreholes were drilled directly into one of the thousands of hydrothermal vents. The cores obtained can be read by scientists like a diary of the Earth's history. The results were compelling.

The authors show that the vent was active just before the Paleocene Eocene Thermal Maximum and that the resulting crater was filled in a very short time, just as the global warming began. Quite unexpectedly, their data also show that the vent was active in a very shallow water depth of probably less than 100 metres. This has far-reaching consequences for the potential impact on the climate. Christian Berndt: "Most of the methane that enters the water column from active deep-sea hydrothermal vents today is quickly converted into carbon dioxide, a much less potent greenhouse gas. Since the vent we studied is located in the middle of the rift valley, where the water depth should be greatest, we assume that other vents were also in shallow water or even above sea level, which would have allowed much larger amounts of greenhouse gases to enter the atmosphere".



A drill core is brought on board the Joides Resolution for scientific analysis. Photo: Sandra Herrmann (IODP/JRSO)



Each section of the cores looks different and contains information that experts can read like a diary of the Earth's history. Photo: Sandra Herrmann (IODP/JRSO)

As far as today's climate warming is concerned, there are some interesting conclusions to be drawn from the cores. On the one hand, they do not confirm that the global warming at that time was caused by the dissolution of gas hydrates - a danger that has been much discussed in recent years. On the other hand, they show that it took many millennia for the climate to cool down again. So the Earth system was thus able to regulate itself, but not on time scales relevant to today's climate crisis.

[Full story](#) at GEOMAR

Original publication: Berndt, C., Planke, S., Alvarez Zarikian, C.A. *et al.* Shallow-water hydrothermal venting linked to the Palaeocene-Eocene Thermal Maximum. *Nat. Geosci.* (2023). <https://doi.org/10.1038/s41561-023-01246-8>

About IODP: The International Ocean Discovery Program (IODP), which funded the research expedition, is an international marine research collaboration that provides scientific drillships to enable scientists to explore the history and dynamics of the Earth by recovering data recorded in seafloor sediments and rocks. IODP depends on facilities funded by three platform providers with financial contributions from five other partner organisations. Together, these organisations represent 21 nations. The long-standing international collaboration began in 1940 and has continued through various phases under different names (the Deep Sea Drilling Project, DSDP, 1968-1983, the Ocean Drilling Program, ODP, 1983-2003, and the Integrated Ocean Drilling Program, IODP, 2003-2013). Today, the IODP partners continue their collaboration under the name International Ocean Discovery Program.

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

The 22nd Symposium on the Coastal Environment

Jan 28 - Feb 1, 2024, Baltimore, MD

The 22nd Symposium on the Coastal Environment is sponsored by the American Meteorological Society (AMS) and organized by the AMS Committee on Coastal Environment. The symposium will be held as part of the 104th AMS Annual Meeting in Baltimore, Maryland, from January 28 to February 1, 2024.



AMERICAN METEOROLOGICAL SOCIETY
104TH ANNUAL MEETING
28 JANUARY-1 FEBRUARY 2024
BALTIMORE, MD & ONLINE

The overarching theme of the 22nd symposium is "Living in a Changing Coastal Environment". We cordially invite abstracts for oral or poster presentations on the following engaging topics:

- Coastal Meteorological Processes
- Weather and Climate Predictions for Coastal Regions
- Impacts of Climate Change on the Coastal Environment
- Coastal Modeling and Evaluation for the Unified Forecast System (UFS) and Other Applications
- Coastal coupled modeling for compound flooding
- Analysis and Modeling of Coastal Urban Environments
- Machine Learning Applications in the Coastal Environment
- The New Blue Economy and the Coastal Zone
- Other Topics Related to the Coastal Environment

Student Award Opportunities

The 22nd Symposium on the Coastal Environment will host a student paper competition with award certificates and cash prizes for exemplary undergraduate and graduate student oral presentations. Students must be the first author and presenting their own, original work. Students who wish to be considered for this prize must indicate their eligibility when submitting their abstract.

Conference Contacts For additional information, please contact the program chair: Yun Qian (yun.qian@pnnl.gov).

[Details](#)

Abstract Deadline: 24 August 2023 at 11:59 PM EDT

Remote Sensing of the Water Cycle: Sensors to Science to Society

13-16 February 2024, Honolulu, HI

[AGU Chapman Conferences](#) are small, topical meetings designed to permit in-depth exploration of specialized subjects.



In the past decade, there have been unprecedented changes in the fields of sensor technology, satellite missions, modeling and applications to benefit society. Small satellite systems are shifting observational paradigms to more rapid revisits, higher resolutions and ever-increasing volumes of data. The commercial sector has launched hundreds of satellites and companies are now in the business of understanding the water cycle. Massive amounts of data are available and can be ingested into data assimilation models to better understand the influence any particular part of the water cycle. Machine Learning and Artificial Intelligence has broadened our capability to exploit multiple types of Earth observation data within complex modeling systems. With the exponential growth of cell phones, there are potentially billions of people everywhere who can use their smartphones to access water information.

[Details](#)

Deadlines: [Abstract Submissions](#) and [Travel Grant Applications](#) **September 20**

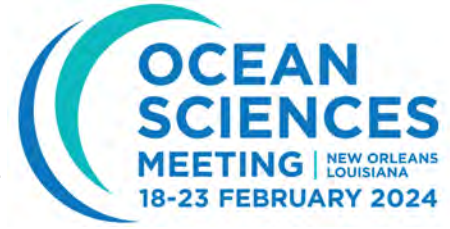
[Registration](#) **January 13**

Ocean Sciences Meeting

New Orleans LA and online, 18-23 February 2024

The Ocean Sciences Meeting (OSM) is the flagship conference for the ocean sciences and the larger ocean-connected community. Every two years, the Ocean Sciences Meeting unifies the oceans community to share findings, connect scientists from around the world, and advance the impact of science.

The Ocean Sciences Meeting 2024 (#OSM24) is co-sponsored by the American Geophysical Union (AGU), the Association for the Sciences of Limnology and Oceanography (ASLO), and The Oceanography Society (TOS). Through the combined power of these three organizations, affiliated partners, and working with the broader conservation-focused community, this meeting provides attendees the opportunity to bridge disciplines, connect communities, and make lasting partnerships.



The Ocean Sciences Meeting is an Endorsed Decade Action program with the United Nations Decade of Ocean Science for Sustainable Development.

The first Ocean Sciences Meeting was in February 1982 in San Antonio, Texas with 700 attendees. It has been held biennially for 40 years, growing to over 6,000 attendees.

[Details](#)

Deadlines: [Abstract submissions](#) **September 13**

[Early bird registration](#) **January 10 2024**

7th Zooplankton Production Symposium

Hobart, Australia, 17-21 March 2024

We are living in the Anthropocene. Our oceans are warmer, more acidic, have widespread plastic and other pollution, and are subjected to increasing exploitation including overfishing. Zooplankton play a pivotal role in our oceans, as grazers of primary production, as drivers of carbon and nutrient cycles, and as prey for higher trophic level consumers including both harvested fish species and iconic marine mammals and seabirds. How zooplankton will respond to the dramatic changes in our marine ecosystems will impact the health and productivity of our oceans and our planet.



To better understand zooplankton in a changing world, ICES and PICES are holding the 7th International Zooplankton Production Symposium as a forum to discuss the latest zooplankton research. The ICES/PICES Zooplankton Production Symposium will bring together the top zooplankton researchers globally, showcasing recent advances. Understanding the current and evolving role of zooplankton will require new insights.

[Details](#)

Deadlines: [Discounted Registration Fee](#), [Abstract submission](#), [CV and Financial support application](#) - **September 30, 2023**

*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

Tenure-track faculty positions in oceanography

Institute of Oceanography, National Taiwan University

The Institute of Oceanography at National Taiwan University (NTU) invites applications for up to two tenure-track faculty positions in oceanography. These positions are open at all levels (assistant, associate, or full professor), depending on the candidate's qualifications and experience. The expected earliest starting time for the appointment is August 1, 2024.



vessel (the New Ocean Researcher 1) and the Taiwan Ocean Data Bank. Faculty members and staffs are committed to academic excellence and social responsibility by studying and protecting the marine environment and promoting sustainable utilization of marine resources. For more information about the Institute of Oceanography, please visit <http://www.oc.ntu.edu.tw>.

[Details](#)

Deadline: October 31, 2023

Full Professor of Marine Biology

University of Vienna

At the Faculty of Life Sciences, the University of Vienna seeks to appoint a Full Professor of Marine Biology. The successful candidate qualifies by an outstanding and internationally recognized research portfolio in marine biology (marine ecology) at the population, community or ecosystem level with a focus on, or including higher organisms (animals, multicellular plants). Scientists whose research programs complement existing areas and allow interaction with established groups at the Faculty of Life Sciences are encouraged to apply. Strong commitment to the further development of the discipline especially with regard to environmental change is expected. The professorship represents the discipline marine biology (marine ecology) in teaching at all levels of study (BA, MA, PhD).



The University of Vienna expects the successful candidate to acquire, within three years, proficiency in German sufficient for teaching in bachelor's programmes and for participation in university committees.

[Details](#)

Deadline: 18 October 2023

Ingénieur en modélisation - couplage et valorisation

Laboratoire Biologie Halieutique, Plouzané, Bretagne, FR

Durée du contrat : 11 mois

L'unité HALGO de l'UMR DECOD développe des modèles HTL de différents types et complémentaires : un modèle de population des petits pélagiques anchois et sardine de type DEB-IBM, représentant la croissance et la reproduction individuelle grâce au module bioénergétique DEB, et la dynamique de population grâce au module individu-centré. Un autre modèle, OSMOSE, représente l'ensemble des espèces importantes d'un écosystème et leurs interactions. Ces deux modèles peuvent être forcés ou couplés avec des modèles physique-biogéochimie fournissant les variables d'intérêt pour les hauts niveaux trophiques. L'objectif général sera de contribuer à l'intégration des modèles HTL de l'unité dans des systèmes de modélisation hydrodynamiques et biogéochimiques, via du forçage et/ou du couplage.



Vous serez accueilli au sein du laboratoire Brestois LBH de l'unité HALGO de l'IFREMER, et vous contribuerez aux projets NECCTON.

Missions principales

- Développement de codes numériques couplés dans le cadre du projet NECCTON
- Réalisation de simulations couplées bas-hauts niveaux trophiques pour analyser le transfert des signaux climatiques de la physique jusqu'aux poissons
- Participation aux réunions de projets
- Valorisation scientifique

[Détails](#)

Date de clôture de réception de candidatures : 27/08/2023

Doctoral researcher metal transport in submarine hydrothermal systems

GEOMAR Helmholtz Centre for Ocean Research, Kiel Germany

For the implementation of the DFG-funded research project "The hydrogeological regime of the TAG sulfide mound on the Mid-Atlantic Ridge - Insights into metal fluxes from reaction-transport modelling" in the Priority Programme "Dynamics of Ore Metals Enrichment - DOME (SPP 2238)", the research group "seafloor modelling" is seeking a doctoral researcher starting on October 1st 2023. The position offers the possibility to attain a doctoral degree in natural sciences.



Prerequisites for a successful application are a scientific university education (diploma or master) in the field of natural sciences (geosciences, applied mathematics, physics or alike). Numerical modeling skills in relevant fields along with programming (mainly C++, Python) and English communication skills are required.

[Details](#)

Deadline: 31 August 2023

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

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

GENERAL

Vanier Graduate Scholarships

Named after Major-General Georges P. Vanier, the first francophone Governor General of Canada, the Vanier Canada Graduate Scholarships (Vanier CGS) program helps [Canadian institutions](#) attract highly qualified doctoral students.

- Valued at **\$50,000 per year for three years** during doctoral studies
- Considers three equally weighted [selection criteria](#): [Academic Excellence](#), [Research Potential](#), and [Leadership \(potential and demonstrated ability\)](#)

Nomination process

Candidates must be nominated by a Canadian institution with a [quota](#)* to host Vanier scholars. Candidates should only seek a nomination from the institution at which they want to study.

*The term “quota” refers to the maximum number of nominations an institution can forward to the national competition.

Eligibility

Citizenship:

- Canadian citizens
- Permanent residents of Canada
- Foreign citizens

Areas of research:

- Health research
- [Natural sciences and/or engineering](#)
- Social sciences and humanities

Important dates

For students: [Consult nominating institution for submission deadline.](#)

For nominating institutions: Deadline: **November 1, 2023 (20:00 EDT).**

[Details](#)



GEOTRACES Intermediate Data Products

Timeline for next GEOTRACES Intermediate Data Product

The [GEOTRACES](#) Data Management Committee is pleased to announce the planned release of the fourth Intermediate Data Product (IDP) in November 2025.

Because of the very large number of datasets that are being submitted for the IDP, we encourage submission of your datasets as soon as possible to improve the chances that they are included in the IDP. This requires:

1. Registration of the dataset(s) via the Data for Oceanic Research (DOoR) portal (<https://geotraces-portal.sedoo.fr/pi>).
2. Submission of your data using the data and metadata templates downloaded from DOoR to the GEOTRACES Data Assembly Center (GDAC: <https://www.bodc.ac.uk/geotraces/>) or your national data centre for Chinese, Dutch, French and USA scientists.
3. Submission of a complete intercalibration report to the S&I Committee via the DOoR portal. An example of a complete report is available at: <https://www.geotraces.org/wp->



content/uploads/2023/02/Report_Example_Shiller.pdf (please note that if the report is not fully completed will not fulfil the requirement).

4. Give permission for your data to be included in IDP via the DOoR Portal (<https://geotraces-portal.sedoo.fr/pi>). If permission is not given your data will not be included in the IDP.

For further information please see the flowchart "[How to ensure that your data is included in IDP](#)".

Deadlines for inclusion in next IDP are as follows:

15th May 2024 - First deadline for the submission of datasets to GDAC (or national data centres for US, Dutch and French PIs) using DOoR templates and completed intercalibration reports via DOoR to guarantee inclusion in IDP2025. After this date we cannot guarantee your data will be included.

15th of December 2024 - Final deadline for submission of datasets to GDAC (or national data centres for US, Dutch, French and Chinese PIs) using DOoR templates and the complete intercalibration reports via DOoR.

Processing of data for inclusion in next IDP will prioritise those submitted before the May 15, 2024 deadline and then will prioritise section cruises over process studies over compliant data. Because of the very large number of datasets that are being submitted for IDP, we encourage timely submission ahead of the December 15, 2024 deadline wherever possible.

Version 2 of the GEOTRACES Intermediate Data Product 2021 released!

An updated and corrected version of the [GEOTRACES Intermediate Data Product](#) 2021 is now available to download!

It contains hydrographic and biogeochemical data from 86 cruises.

The data covers the global ocean.

Please see [IDP2021 version 2 changes](#) document for further details on the revisions made.

The digital data is available at:

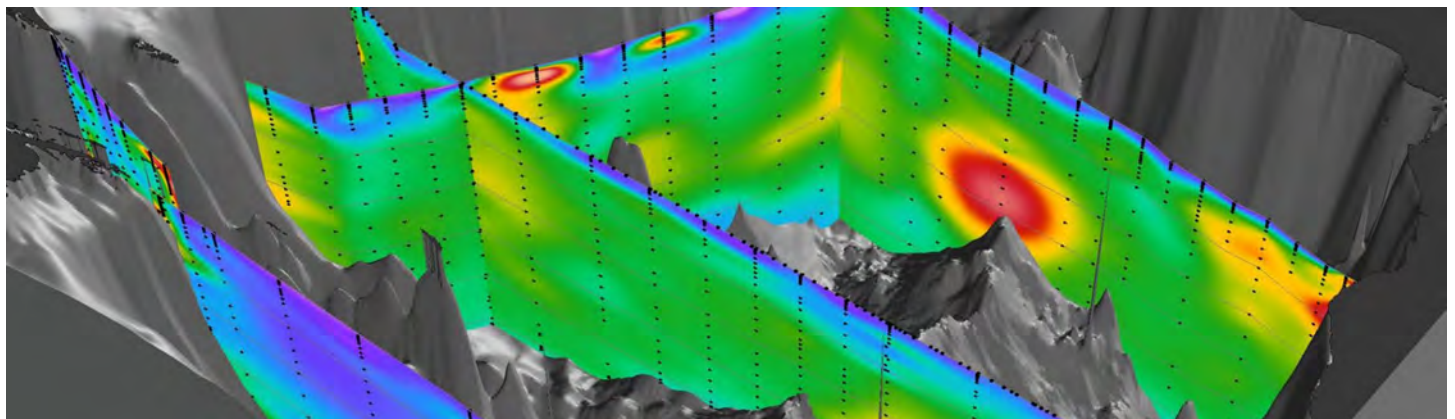
*Bulk download:

<https://www.bodc.ac.uk/geotraces/data/dp/>

*WebODV online for data subsetting, extraction and visualisation:

<https://geotraces.webodv.awi.de/>

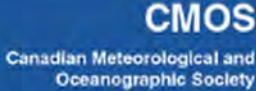

*WebODV online for data analysis, exploration and visualisation: <https://explore.webodv.awi.de/>



The eGEOTRACES Electronic Atlas (available at www.egeotraces.org) is based on the digital data package and provides section plots and animated 3D scenes for many of the parameters, allowing quick overviews of the occurrence of geochemically relevant tracers.

Maritime Climate Summary

The [Halifax CMOS Centre's](#) Maritime Climate Summary does a good job of quantifying the new extremes that the Maritime provinces experienced in June.

MARITIME CANADA CLIMATE SUMMARY

June 2023

From Drought to Deluge – New Record Rainfall Totals Set in Nova Scotia

After 4 months of well-below normal precipitation across the Region which had led to near drought conditions and record-setting forest fires in NS, June produced record rainfall totals for Kentville and Kejimikujik where records began in 1888 and 1942 respectively. Several other stations reported near record amounts - it was the 3rd wettest June on record at Halifax Airport. In addition, many stations recorded significantly more days with reported rainfall – St John, NB had 21 days with rain compared to the normal 12.9, Halifax Airport 18 days compared to 12.9 and Charlottetown 19 compared to 13.7. Mean temperatures for the month were within 1 C of normal at almost all stations, however, a cool northeasterly airflow early in the month resulted in many low maximum temperature records - several in the single digits - more than 10 C below normal. Coastal sea surface temperatures remained around 5 C above normal in most locations.

The Warmest (°C)

New Brunswick	
Miramichi	35.5
Nova Scotia	
Bedford Range	34.5
Prince Edward Island	
Maple Plains	32.9

The Coldest (°C)

New Brunswick	
Mactaquac Prov Park	0.0
Nova Scotia	
Collegeville	1.0
Prince Edward Island	
Maple Plains	3.5

The Wettest (Total mm)

New Brunswick	
St John A	226.4
Nova Scotia	
Kejimikujik	329.2
Prince Edward Island	
Harrington	136.5

The Capital Stats

Station Name	Mean Temperature (°C)			Extremes	
	Monthly Mean	Normal Mean	Diff from Normal	Max (Date)	Min (Date)
Charlottetown	15.1	14.5	0.6	30.7 (1)	4.2 (20)
Halifax	15.4	15.1	0.3	33.1 (1)	7.2 (4)
Fredericton	15.4	16.4	-1.0	34.8 (1)	4.3 (3)

Station Name	Total Precipitation			Snowfall	
	Monthly Total (mm)	Normal Total (mm)	Percent Normal	Total (cm)	SOG End of Month
Charlottetown	128.4	98.8	130	NA	NA
Halifax	213.7	96.2	222	NA	NA
Fredericton	133.5	86.3	155	NA	NA

Daily Temperature Records

The heat event which had already set several new daily record high temperatures across the region on May 31st continued through June 1st with 19 new records in NB, the highest 35.5 in Miramichi. Of the 21 new daily maximums in NS, 8 were set on the 1st as were 3 of the 7 new maximums in PEI. The heat event was followed abruptly by an abnormally cool period 3rd to 5th – when 47 new low daily maximum records were set - nearly all were the single digits.

We think the July summary will be just as interesting. Past editions can be found on [CMOS's Halifax page](#).

News from SCOR International

The June 2023 SCOR [Newsletter #51](#) gives updates on many of its activities

SCOR has a new Executive Director! SCOR is delighted to announce that Emily Twigg has been appointed as the next SCOR Executive Director starting in June 2023. Emily replaces Patricia Miloslavich who will continue to serve SCOR until the end of June before starting her new position at the Australian Antarctic Division. Read more about Emily [HERE](#). Outgoing executive director, Patricia Miloslavich, has passed on a fond farewell.



The SCOR 2023 Annual Meeting will take place 17-19 October 2023 at Guayaquil, Ecuador with option for virtual participation. The meeting is open to all. The [website for the meeting](#) contains a [link](#) for registering, and will continue to be updated with information related to the event including reports of activities from the SCOR Working Groups and Projects as well as logistical information for those traveling to the meeting. Those planning to attend in person are asked to register by Friday, September 1.

President and member of the SCOR Executive Committee, Marie Alexandrine Sicre, was appointed a 2022 Fellow of the International Science Council (ISC).

SCOR people have been active in Summer Schools and Training Activities:

- Training material from the international training course on Mesopelagic Respiration organized by SCOR WG #161 Respiration in the Mesopelagic Ocean is available online. Recordings of the lectures and course material is open access and available [HERE](#).



- Former SCOR WG #145 MARCHEMSPEC [Software Demonstration](#) - 15-16 June 2023 (will be recorded)
- Global Harmful Algal Blooms (GlobalHAB) - 2nd qPCR workshop, 3-5 November 2023, Hiroshima, Japan.

- Please check the recent videos from the GEOTRACES Educational channel [HERE](#)

There are updates on SCOR Travel Grants, SCOR Visiting Scholars, and the projects and Working Groups. As well as a list of some of the most recent contributions from the SCOR community.

Call for Expressions of Interest to Host International Project Office of the Integrated Marine Biosphere Research (IMBeR) Project

Integrated Marine Biosphere Research (IMBeR; www.imber.info) is soliciting offers to host one of its International Project Offices from March 2024 onwards, to continue the role fulfilled by IPO-Canada where the Executive Director is based.

IMBeR welcomes expressions of interest to host the new IPO from 1 March 2024. Co-financing or partnerships between institutions are permissible. To send an expression of interest, please complete the table at the end of the Call for Expressions of Interest document together with a brief letter of intent to John Claydon, IMBeR Executive Director, John.Claydon@dal.ca. Deadline to submit an expression of interest is **11 August 2023**.



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 #132 will be distributed in **September 2023**.

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 #132 sera distribué en **septembre 2023**.

Veillez 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>

CNC-SCOR

Members/ Membres

Paul Myers - Chair (U Alberta)
David Greenberg - Secretary (DFO-BIO)
Markus Kienast (Dalhousie)
Michael Scarratt (DFO-IML)
Paul Snelgrove (Memorial)
Stephanie Waterman (UBC)
David Fissel (ASL)
Lisa Miller (DFO)
Maya Bhatia (U Alberta)
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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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