



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

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Biological and Chemical Data (BioChem)

The creation of a national Department of Fisheries and Oceans (DFO) archive of marine biological and chemical data, BioChem (http://www.meds-sdmm.dfo-mpo.gc.ca/biochem/Biochem_e.htm), is a reality. The database development began in 1997 at BIO and in 2003, the database and developments migrated to the Integrated Science Data Management (ISDM) group (formerly the Marine Environmental Data Service) in Ottawa.

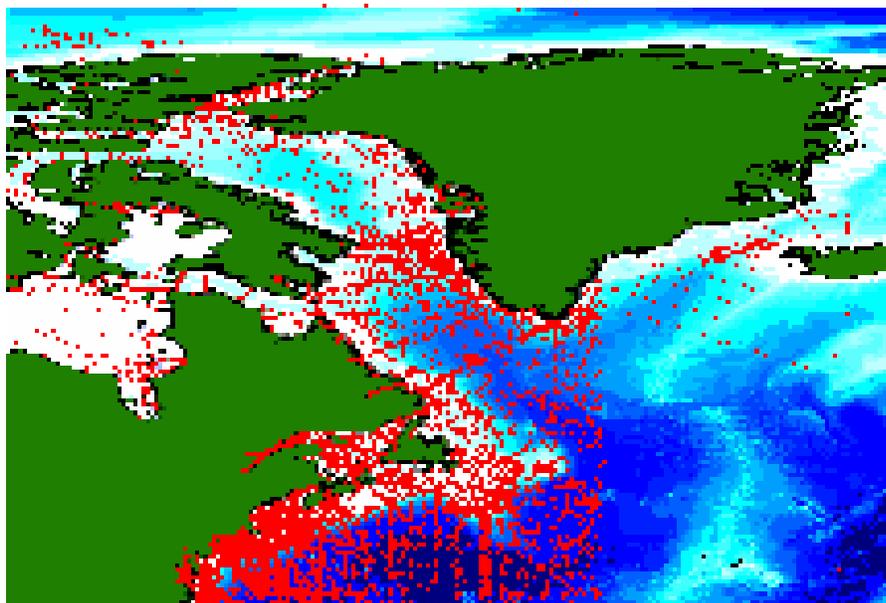
BioChem is built to hold plankton and discrete (water samples) data but its design permits extension to other types of data and information. It is built on a mission/event/measurement detail skeleton reflecting the sources of the information and is web-based to permit broad access.

The present database holds information from more than 1500 scientific missions originating from DFO research institutions, observations from the ISDM archives, the World Ocean Database archives, and continuous plankton recorder data from the Sir Alister Hardy Foundation for Ocean Science.

There is also a wealth of information in this database for anyone who wishes to access it. DFO calls on researchers in academic institutions to use BioChem as the means of ensuring their data are secured for future researchers.

For more information see

http://www.meds-sdmm.dfo-mpo.gc.ca/zmp/Documents/AZMP_bulletin_3.pdf
or contact Claude Guay (guay@meds-sdmm.dfo-mpo.gc.ca)



Locations of observations from 1921-1975

DFO Science Renewal and Centres Of Expertise

Report by Leah Braithwaite, Senior Science Advisor, Ocean Sciences – Canadian Hydrographic Service, Fisheries and Oceans Canada, BraithwaiteL@DFO-MPO.GC.CA

Fisheries and Oceans Canada (DFO) has prepared a new framework for its Science Sector that will result in a vibrant and sustainable aquatic research program. The DFO Science Renewal initiative is under the leadership of Serge Labonte, Senior Director General, Science Renewal. Its overriding premise is to foster science excellence and is designed to meet DFO and government-wide needs by enhancing research strengths through a wide range of collaborations. A variety of initiatives are being undertaken as part of the Science Renewal framework, including:

- aligning DFO Science with the Departmental strategic outcomes of Safe and Accessible Waterways, Healthy and Productive Aquatic Ecosystems and Sustainable Fisheries and Aquaculture,
- ensuring Departmental research is responsive to priorities,
- creating an integrated research program that supports an Ecosystem-Based approach to resource management,
- developing strategies to encourage an affordable program, and
- delivering a modern science program that makes effective use of partnering and collaboration with academia, industry and other government departments both domestically and internationally.

A key part of the DFO Science Renewal Partnering and Collaboration Strategy is the development of Centres of Expertise (COEs). The COEs will provide the capacity to address long-term research challenges that cannot be met by a single DFO Region or Institute. Two types of COEs are envisioned: Virtual Centres of Expertise (VCEs) which network dispersed expertise and have a central office located at the Institute where the Director resides; and Geographic Centres of Expertise (GCEs) which will concentrate the human, financial and infrastructure resources in specific locations to deliver specialised programs/services such as laboratory analysis.

Four COEs are fully operational:

1. **COOGER** – Centre for Offshore Oil and Gas Environmental Research –. Kenneth Lee, Bedford Institute of Oceanography, Halifax (VCE)
2. **CEMAM** – Centre of Expertise on Marine Mammalogy –Michael Hammill, Maurice-Lamontagne Institute, Mont-Joli (VCE)
3. **N-CAARE** – National Centre for Arctic Aquatic Research Excellence –Martin Bergmann, Freshwater Institute, Winnipeg (VCE)
4. **Pesticides** –Vince Palace, Freshwater Institute, Winnipeg (GCE)

Six COEs are in the implementation phase:

1. **CHIF** – Centre for research on Hydropower Impact on Fish and their habitat –Jean-Denis Dutil, Maurice-Lamontagne Institute, Mont-Joli (VCE)

2. **COMDA** – Centre for Ocean Model Development and Application – John Loder, Bedford Institute of Oceanography, Halifax (VCE)
3. **CAAHRD** – Centre for Aquatic Animal Health Research and Diagnostics – Gilles Olivier, Gulf Fisheries Centre, Moncton (VCE)
4. **CEARA** – Centre for Expertise for Aquatic Risk Assessment – Nick Mandrak, Canada Centre for Inland Waters, Burlington (VCE)
5. **Aquaculture Centre of Expertise** - Robert Stephenson, St. Andrew's Biological Research Station, St. Andrew's (VCE)
6. **Toxic Chemical Analyses** – Serge Gosselin, Maurice-Lamontagne Institute, Mont-Joli (GCE)

COEs will foster collaboration both within DFO and with partners in academia, industry and other government departments. Additional COEs will be considered over the coming months to respond to specific needs. Detailed descriptions of COEs relevant to the Ocean Science community will be provided in future Newsletters, however, if you have questions please contact Kim Darling (DarlingK@dfo-mpo.gc.ca, (613) 998-4361) for further information.

Ocean Innovation 2006 Conference & Exhibition

St. John's, Newfoundland, October 25-27, 2006.

Ocean Innovation 2006 focuses on *Managing Maritime Emergencies*. *Managing Maritime Emergencies* will feature four plenary sessions in single-stream format covering the following topics: (1) Understanding Maritime Emergencies, (2) Technologies for Collecting and Presenting Decision-Critical Information, (3) Evacuation, Rescue and Recovery, and (4) Emergency Management Systems and Support Tools. *Ocean Innovation 2006* will be of interest to owners and operators of marine passenger vessels, offshore oil production facilities and support vessels, supporting equipment and service suppliers, as well as regulatory and government departments with responsibility for maritime emergency management. This event will also be of interest to naval architects, ocean engineers and others involved in offshore design, emergency management training and the study of human performance in the maritime setting. *OI-06* will look at some of the most common maritime emergencies, how they develop, best practices for mitigation, and examine some of the latest innovations for effectively managing them. For more information and online registration please visit www.oceaninnovation.ca.

CNC-SCOR and DFO

Report by Gordon McBean, Chair - CNC SCOR, gmcbean@uwo.ca

1. SCOR presentation to the DFO Scientific Advisory Committee

The Canadian Department of Fisheries and Oceans (DFO) Science Advisory Council meets usually twice a year, once in Ottawa and the other time at a regional laboratory. The last meeting was held April 20 - 21, 2006 at DFO Headquarters in Ottawa. The Committee is chaired by Dr. A. E. Collin and has 18 members including 4 ex-officio scientists from within DFO. Dr. Wendy Watson-Wright, Assistant Deputy Minister Science in DFO and some of her staff also attend.

Drs. Gordon McBean, (UWO) and Susan Allen (UBC), both members of CNC-SCOR, are among the members of the DFO-SAC. The SAC provides recommendation to DFO on science issues within the Department's mandate. At this meeting, the range of topics included: communications and science; emerging issues impacting DFO Science; Interdepartmental S&T initiatives, such as the International Polar Year; and science renewal. For this meeting, there was a working lunch with Larry Murray, the DFO Deputy Minister and an after lunch meeting with Dr. Arthur Carty, National Science Advisor to the Prime Minister who spoke about key Federal S&T Initiatives. As a member of the Committee and as Chair of the Canadian National Committee for the Scientific Committee of Ocean Research (SCOR), I presented a an overview of the role, structure, associated working groups, and involvement of SCOR in large scale ocean research programs. As SCOR and the Canadian National Committee are non-governmental organizations for the promotion and coordination of international oceanographic activities, it was important to bring the members up-to-date on the activities. The members expressed appreciation for the briefing and also some noted that they had not previously been aware of SCOR and its international activities. This was identified as an area where we should take extra steps to increase the visibility of these activities.

2. Canadian Delegation to Intergovernmental Oceanographic Commission, Paris

At the invitation of Dr. Wendy Watson-Wright, DFO ADM Science, Head of Delegation, I was a member of the Canadian delegation to IOC for the Thirty-ninth Session of the Executive Council which was held in Paris, 21–28 June 2006. Although there were many things discussed at the Council, I will only discuss the sessions related to natural hazards, which were of special interest to me due to my work with ICSU on natural hazards (see other report in this newsletter). The complete set of the IOC 39th Executive Council Resolutions are available at: <http://ioc.unesco.org/iocweb/docs/EC39-resolutions.pdf>

As a follow-up to the Report of the ad hoc Working Group on the framework for a global tsunami and other ocean-related hazards early warning system, an intra-sessional Working Group on Global Ocean-related Hazards Early Warning and Mitigation System (GOHWMS) was established. A meeting on 24 June was attended by over sixty persons. The scope of global early warning and mitigation systems for ocean related hazards was defined and it was agreed that it was necessary to define the reach of the different elements of the observing / monitoring and warning/ mitigation/ dissemination Systems. There are now regional systems for the Pacific (the oldest – which emphasized the importance of the International Tsunami Warning Information Centre), Mediterranean and North East Atlantic (established in 2005), Indian Ocean (which is working to develop national warning capacity) and the Caribbean (which has established a Multi-Hazard Warning Centre in Puerto Rico with 17 countries are participating). WMO and GEO made intervention. The proposed SCOR WG on tsunamis was discussed and I made a presentation on the ICSU Planning Group on Natural and Human-Induced Environmental Hazards and Disasters. It was very useful to have this participation in the IOC session to gain a better appreciation of the issues being discussed and the actions taken.

ICSU and Natural Hazards

Report by Gordon McBean, Chair - CNC SCOR, gmcbean@uwo.ca

Following a review of all International Council for Science (ICSU) programs on the environment and sustainable development, it was recommended that ICSU consider establishing a research programs in Natural and Human- induced Environmental Hazards. The ICSU Scoping Group on Natural and Human-induced Environmental Hazards, chaired by Professor Gordon McBean, reported to the ICSU 28th General Assembly (October 2005) and recommended “*a programme of research aimed at strengthening international science to provide a firmer basis for policies to prevent natural hazards from becoming disasters. Such an objective will need:*

- *an international collaborative research programme lasting a decade or more*
- *the combined insights of the natural, health, social and engineering sciences.”*

The ICSU General Assembly endorsed the recommendations and an International Planning Group was created under the chair of Professor McBean. The Group met for the first time in Paris on June 20-21, 2006 and it to report to the Executive Board by July 2007. A draft science plan is being developed and will be discussed with the ICSU family and many other organizations as part of its further development.

The initial outline thinking, as a basis for consultation and development follows. The focus is on natural and human-induced environmental hazards, including hazards triggered by hydrometeorological and geophysical events. Technical and industrial hazards and warfare and associated activities are not to be included although there is aspects to the learned about. The Group has identified as most significant research gaps: interdisciplinary cohesion - intersection of natural-social and political issues; how knowledge about hazards is put to use; public perception-decision making - natural hazards, risks, uncertainty; and human behaviour, cultural contexts – vulnerability and consequences. The programme would take an all-hazard approach with the research focus on mitigation-prevention and preparedness. The Research Themes would include: Improved understanding, monitoring and prediction of natural hazards; Integrated risk analysis incorporating socio-economic factors; Societal resilience to hazards; Interplay of risks across different temporal and spatial scales; and Understanding effective science-policy interactions and the role of scientific assessments.

Among the Planning Group members are: Gordon McBean (*Chairman*); Tom Beer CSIRO Environmental Risk Network; Ian Burton, Professor Emeritus, University of Toronto; Filipe Lúcio, National Institute of Meteorology of Mozambique; Harsh Gupta, National Geophysical Research Institute of India; William Hooke, American Meteorological Society; Victor Osipov, Institute of Environmental Geosciences, Russian Academy of Sciences; and Stephen Sparks, Department of Earth Sciences, University of Bristol.

ESSP Open Science Conference, Beijing, 9-12 November 2006.

Report by Gordon McBean, Chair - CNC SCOR, gmcbean@uwo.ca

The Earth System Science Partnership on Global Environmental Change will hold a major Open Science Conference on the topic of Global Environmental Change: Regional Challenges during 9-12 November 2006, at the Beijing International Convention Center

The ESSP is a partnership of the World Climate Research Programme, the International Geosphere-Biosphere Programme; the International Human Dimensions Programme on Global Environmental Change; and Diversitas, an international programme of biodiversity science. Full information on the conference is available at <http://www.essp.org/ESSP2006/index.html> The deadline for submission of papers has passed but the deadline for reduced registration is fast approaching (1 September).

The conference themes are: Earth System Science Approach; Science for Sustainability; Integrated Regional Studies; and Global Change in Monsoon Asia. Prior to the main Conference, the 2nd International Young Scientists' Global Change Conference (7-8 November 2006), will be held by the ESSP SysTem for Analysis Research and Training (START). Examples of the 44 parallel sessions are: Arctic Environmental Change; From Climate Research to Risk Management; Are Extreme Climate Events Changing? ; Modelling Coupled Dynamics and their Uncertainties in the Earth System; Sea-level Rise; Future Directions in Earth System Modelling; How Are Satellites Changing Our View of the Earth?; Ocean and Terrestrial Carbon Cycle; and Seasonal and Decadal Climate Prediction: From Basic Science to Societal Benefits.

ArcticNet; December 12 - 15, 2006, Victoria, BC.

Abstracts for oral and poster presentations are now being accepted for the 2006 ArcticNet Annual Scientific Meeting (ASM2006). The deadline for abstract submission is September 29, 2006.

ASM2006 programme is designed with the intent to inform participants of innovative arctic research essential to the understanding and management of the natural and built environments of the Canadian Arctic impacted by climate change and globalization.

The ASM2006 will begin on the morning of Tuesday, December 12 with Student Day, organized by the ArcticNet Student Association. The official ASM2006 registration reception will follow that evening, providing the opportunity to register and meet fellow participants. Invited speakers, contributed talks and posters will be presented on Wednesday, December 13 and Thursday, December 14. A banquet dinner will be held in the Crystal Ballroom of the Fairmont Empress on Thursday evening. The full day of December 15 is reserved for ArcticNet workshops, the purpose of which is to facilitate cross-disciplinary research and refine ArcticNet's Integrated Regional Impact Studies.

The final programme will be posted in October following the selection and confirmation of invited and contributed presentations.

The meeting is open to anyone with an interest in the impacts of climate change in the Canadian Arctic and the work of ArcticNet and its partners. We welcome the participation of scientists, policy and decision makers, representatives of government and non-government organizations, and media. For more information please visit:

<http://www.arcticnet-ulaval.ca/index.php?fa=ASM.2006conference&page=1>

Ocean Studies at Dalhousie University

Report by Jinyu Sheng, Jinyu.Sheng@phys.ocean.dal.ca

Dalhousie University (<http://www.dal.ca>) in Halifax of Nova Scotia is recognized as one of the leading Canadian Universities for high-quality teaching and research. Ocean studies are designated as an area of special emphasis at this University. Together with the Bedford Institute of Oceanography, Dalhousie University constitutes Canada's prime locus for research in this field.

The Department of Oceanography (<http://oceanography.dal.ca>) at Dalhousie University pursues specialized and interdisciplinary research in the disciplines of biological, chemical, geological and physical oceanography and atmospheric science. The department consists of 19 faculty members, 21 Adjunct professors, 47 graduate students, and 70 research staff. Research grants and contracts exceed \$6 Million per year.

The department offers undergraduate training in Oceanography as part of Combined Honours degrees with the Departments of Biology and Marine Biology, Chemistry, Earth Science, Physics and Atmospheric Science, and Mathematics and Statistics. Honours students in these Combined Honours Programs have an opportunity to complement their training in their chosen scientific field with a background in Oceanography, thus enhancing their career and employment opportunities.

The Department does not offer first year (freshman) level courses, but offers several introductory courses at the second and third-year levels. These introductory courses include ``The Blue Planet'', ``The Moving Ocean'', ``The Salty Sea'', ``Dynamics of Biological Oceanography'', and ``The Last Billion Years'', and ``Geochemistry of Aquatic Environments''.

Further training in Oceanography occurs at the graduate level, and the department offers programs leading to MSc and PhD degrees. Students with a BSc (Honours) in the basic sciences- Atmospheric Science, Meteorology, Mathematics, Engineering, Biology, Geology/Earth sciences, Chemistry or Physics are encouraged to apply.

In addition, the Marine Biology division (<http://marine.biology.dal.ca>) in the Department of Biology and Marine Biology offers a number of graduate and undergraduate programs that also have an excellent reputation, both nationally and internationally. The undergraduate marine biology program offers Honours and Major degrees in regular and co-operative education format where students integrate work experience into their academic programs.

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Previous newsletters may be found on the CNC/SCOR web site.
Les bulletins antérieurs se retrouvent sur le site web du CNC/SCOR.

Newsletter #25 will be distributed on October 19, 2006. Please send contributions to dick.stoddart@sympatico.ca
Bulletin #25 sera distribué le 19 octobre 2006. Veuillez faire parvenir vos contributions à dick.stoddart@sympatico.ca

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