

# Minutes

## 2010 CNC/SCOR AGM

### Ottawa, May 31 2010

#### **1. Welcome and Introductions**

**Attending:** Rob Macdonald, Bjorn Sundby, Dick Stoddart, Alfonso Mucci, Dave Fissell, Len Zedel, Helen Joseph, Bob Jones (part time), Ian Paul Myers, Markus Kienast, Catherine Johnson, Gary Stern, Bob Wilson, Paul Lyon

**Regrets:** Gordon MacBean, Jay Cullen, Yves Gratton, Ian Perry, Bill Crawford, Philippe Tortell, Ian Rutherford

#### **2. Approval of 2010 Agenda**

The draft agenda was sent to members on March 15, 2010. As a result, a few additional agenda items were added, including Project Maury, a possible State of Oceanography in Canada paper, oceanographic articles in the CMOS Bulletin, and the SCOPE Zhongyu Awards.

No additions to the agenda were made during the meeting.

#### **3. Approval of May 31, 2009 Draft Minutes**

The last CNC/SCOR AGM was held on May 31, 2009 in Halifax, NS. The minutes of that meeting were distributed to members on June 3, 2009.

**Moved the minutes be adopted as final:** Bjorn Sundby, Seconded Len Zedel; carried.

Bjorn Sundby complimented Dick Stoddart on his efficiency in distributing the draft minutes.

#### **4. Review of 2009/2010 Actions**

Most action items from the May 31, 2009 meeting (see Appendix 1) were covered under subsequent agenda items. The Chair went through the list, commenting that several items had not been completed and that the usefulness of the Committee depended on contributions from all.

#### **5. CNC SCOR Finances**

- (i) **CNC/SCOR revenues and expenses.** The CNC/SCOR carry over funds stand at \$48.5K (includes funds transferred from the defunct CNC/ECOR). Income for CNC/SCOR in 2009/2010 was \$20K. Expenses for CNC/SCOR for 2009/2010 were:
- |   |          |
|---|----------|
| - Travel                                    |          |
| CNC/SCOR AGM                                | \$ 2.7K  |
| CNC/SCOR Tour Speakers                      | \$ 8.6K  |
| - Scholarships                              | \$ 10.0K |
| - Secretariat Services, web services, misc. | \$ 1.8K  |
| Total                                       | \$ 23.1K |

CNC/SCOR works on a calendar year basis, while CMOS works on a fiscal year basis. The main difference in expenditures for the similar time period for last year is that expenses for the tour speakers for both 2009 and 2010 all happened in the same 12-month period. We expect that our carry over funds will continue to be drawn down somewhat in the coming years.

NRC's practice is to reimburse travel by the chief (voting) delegate to the annual SCOR meeting, provided that person does not work for government. Government representatives are expected to pay their own costs. The agency's procedures provide varying amounts of reimbursement depending on where the meeting is being held.

- (ii) **Agreement with DFO.** The agreement between DFO and CMOS for continuing funding support through 2010/2011 has yet to be finalized, but no difficulties are foreseen.
- (iii) **Agreement with NRC.** The agreement between NRC and DFO, for NRC to pay the international SCOR fees (currently at \$US 20.6K for 2009), was renewed by NRC on September 19, 2005 and signed by Wendy Watson-Wright on October 12, 2005. It is valid for 5 years, ending in 2010. NRC introduced a new "Annual Performance Review of International Affiliations" requirement at the end of 2007. The 2009 Review was submitted to NRC on December 8, 2009. Subsequent feedback from NRC on April 28, 2010 indicated that CNC/SCOR received a score of 45 out of 45 from 2 reviewers and a score of 19 out of 45 from the 3<sup>rd</sup> reviewer, for an average score of 37 (a pass is 27). Informally we have been told by NRC officials not to worry about the marks of the 3<sup>rd</sup> reviewer as he/she was a definite anomaly in the review process, not just for CNC/SCOR, and those scores have been discounted, and that SCOR is still seen as a flagship program within NRC. Informal meetings by DFO with NRC officials took place to discuss avoiding a recurrence of anomalous marks in the future.

Information from the reviews is not specific enough to let the Committee see where work could be done to strengthen the work by addressing perceived deficiencies. Rob Macdonald agreed to write a letter to Denis Pinard to request better feedback, working with Paul Lyon on the draft.

## 6. CNC/SCOR Issues and Activities

- (i) **Remarks from CNC/SCOR Chair.** Rob Macdonald spoke about his past year as Chair of CNC/SCOR. He reiterated that the Committee's success depends on contributions from all of its members. Through Canada's vested interest in the oceans, this Committee has the opportunity to be important and visible. Contributions from all will enable a mechanism for integrating work across the three oceans.
- (ii) **Web site.** The CNC/SCOR web site ([www.cncscor.ca](http://www.cncscor.ca)) has been updated and checked periodically for dead links. Major items added since last year include: all CNC/SCOR Canadian Ocean Science Newsletters, international news, summaries of all SCOR related programs, some new photos for the Canadian oceanographic photo archive, and ocean science theses titles/authors from various Canadian universities. Any suggested changes to the web site from members would be welcome.

Bob Jones, the webmaster for the CNC/SCOR site, reports that SCOR views are

about 70,000 in 2009, down slightly from 79,000 page views for SCOR in 2008. On the CMOS site SCOR remains in the number six position by areas viewed. The CMOS site visitor information is summarized below:

"Our numbers of visitors increased about 10% from previous years, averaging over 90 per day. These visitors viewed a lot of pages. In 2008 there were 2.3 million pages viewed, in 2009 this number was similar at 2.4 million. The top six areas viewed were the same as last year, but in slightly different order (2008 numbers are in brackets): ATMOSPHERE-OCEAN, 391,000 (346,000); Meteorological Photos, 373,000 (368,000); Guidelines on Presentations by David Jones, 116,000 (138,000); Private Sector 107,000, (137,500); Congress Abstracts in pdf form, 85,000 (104,000) and SCOR 70,000, (79,000)."

The website does advertise jobs but has not served in the past to publicize people looking for work. The Secretary received a request from one individual looking for work to include his job search data and did not publish it. There is a section on the CMOS website for this material. Bob Wilson will add a link in the newsletter to remind readers that this material was available.

Bob Jones joined the meeting for a discussion of the website. We discussed changing the appearance of the SCOR website, which looks outdated. SCOR International's approach was to build a basic website that provides access to information. A redesign could be considered but any changes must leave the site easy to update.

Bob Wilson will create a list of the kinds of improvement that could be addressed to improve appearance and functionality without incurring significant maintenance costs, and circulate for comment.

- (iii) **Newsletter.** The electronic Canadian Ocean Science Newsletter was implemented on July 20, 2003, with approximately 7 issues published each year since then. Number 50 is scheduled to be distributed on May 14, 2010. Currently there are 439 subscribers. Mainly, the Newsletter has sufficient coverage and content, with:
- publication approximately every 6-8 weeks,
  - approximately 10 pages in length,
  - about 10-12 articles per issue,
  - contributors from DFO, universities and occasionally the private sector, and
  - feedback from subscribers that the Newsletter was welcome and interesting.

Every issue seems to be a challenge to have sufficient content to warrant maintaining the Newsletter. The previous suggestion to remind CNC/SCOR members of the date of the next issue has provided some relief in that the reminder has often generated a few last minute articles. assuming there is acceptance that the Newsletter should continue, on how the Newsletter might change, and how to diversify and maintain/increase the flow of content.

Members reinforced the importance of continuing with the newsletter. Each newsletter needs something distinct and concise, not too long, perhaps one feature per newsletter. The Chair reiterated that committee members should remain involved in activities throughout the year. Members were asked to provide ideas for articles and to volunteer to see them through. The list assembled can be seen in Appendix III.

- (iv) **Ocean Science Theses.** Dick Stoddart provided Bob Wilson with the list of contacts used to update the thesis list. Messages were sent out early in the year asking for information about ocean science theses completed in 2009. The listings are imprecise because we compile this information by calendar year, whereas some university departments compile it on the basis of an academic year. The web site has been updated through the 2010 canvas.

A discussion of communications skills ensued, focused around writing skills for early-career scientists. The observation was made that the current scientific literature does not, in general, offer a good model for clear writing, especially to those for whom English is not the first language. Bjorn Sundby agreed to develop an agenda item for the next meeting about the role of the Committee in improving communication skills, especially among young scientists.

- (v) **Lecture Tour.** The May 30, 2004 CNC/SCOR AGM gave formal approval for the CNC/SCOR sponsored lecture tour with emphasis in the selection process being on: (i) interesting and topical issues, (ii) dynamic speakers able to provide clear messages understandable to a multidisciplinary audience, and (iii) topics sufficiently different from the national CMOS tour in the present year.

|             | <b>Tour speakers going west</b> | <b>Tour speakers going east</b> |
|-------------|---------------------------------|---------------------------------|
| <b>2005</b> | Marlon Lewis                    | Philippe Tortell                |
| <b>2006</b> | Kevin Lamb                      | Andy Bush                       |
| <b>2007</b> | Erica Head                      | Rob Macdonald                   |
| <b>2008</b> | Alain Vezenia                   | Eric Kunze                      |
| <b>2009</b> | Bernie Boudreau                 | Kim Juniper                     |
| <b>2010</b> | Jean-Éric Tremblay              | Gary Borstad                    |

An *ad hoc* committee (Dick Stoddart, Al Muncci, Bjorn Sundby, Rob Macdonald) selected the tour speakers for 2010.

In February 2010, Gary A. Borstad, Vice President, ASL Environmental Sciences Inc., located in Sidney, British Columbia, undertook the east coast swing of the CNC/SCOR lecture tour series. His trip included stops at DFO in St. John's, Memorial, Bedford Institute, Dalhousie, the Space Agency in Montreal, McGill, DFO Ottawa, EC/MSC in Downsview, and the University of Manitoba. The title of his talk was: "Rhinos and green seas - satellite observations of ocean colour predict inter-annual changes in marine life at a Canadian seabird colony." Dr. Borstad was very pleased with the reception everywhere, especially in DFO HQ, except at MSC in Downsview where the topic was probably peripheral to work underway. The tour logistics were handled by Dave Greenberg at BIO and Dick Stoddart.

In March 2010, Jean-Éric Tremblay of Laval University undertook the west coast lecture tour, with stops at the Pacific Biological Station, Institute of Ocean Sciences, and UBC. The title of his talk was the Marine Productivity in the Changing Arctic: Basin-Scale and Regional Dimensions. Attendance at all the talks was good. A planned visit to the University of Alberta was cancelled due to Dr. Tremblay's need to return home for surgery.

In 2008 CNC/SCOR contacted DFO to see if they would be able to assume logistical support for the Lecture Tour program; Marty Taillefer subsequently assumed

responsibility for the program. Marty provided feedback on the 2009 lecture tour series but was unable to continue for the 2010 series since he was undertaking a leave of absence. For the 2010 tour, DFO replaced Marty's support efforts by those of Dave Greenberg (east coast) and Robin Brown (west coast), their efforts being augmented by Dick Stoddart and others.

For the 2011 tour, Helen Joseph indicated that DFO Ottawa is again in a position to provide support. The 2011 tour should stop at U Manitoba, where Gary Stern will assist with the arrangements. Names put forward as potential speakers in 2011 included Roger Francois and Sally Leys to go east, and Harry Boulanger and Ken Lee to go west. Rob Macdonald will approach potential speakers to make the final selection.

- (vi) **Oceanographic Photos.** The 2005 CNC/SCOR AGM agreed to initiate a project aimed at establishing an on-line archive of Canadian oceanographic photographs. The intent was to create a library of historical photos that would parallel those of the Canadian meteorological community. The emphasis in the early days of this project was aimed at obtaining "group" photos; photos which were reasonably clear so as to be able to identify individuals in the photo, and have a caption that would explain the event (a cruise, conference, university faculty, etc.), a date (year) of the event, and an organized list of (many) of those in the photo. Obviously we were looking for Canadian content, but international events held in Canada were also welcome if there were several notable Canadian oceanographers in attendance. Realizing the significance of "ships" to oceanographic effort we encouraged submission of photos of all the Canadian oceanographic vessels as well as photos of people. JPEG was the preferred format. To see the latest additions visit [www.cncscor.ca](http://www.cncscor.ca) and look at the entry listed as "Historical Oceanographic Photos". The site has a dedicated search engine to better help find individuals. There have been very few additions to the archive over the past year. They remain much less active than the Meteorological ones, but an interesting slide show about *MV Salvelinus* was added recently by Jean Boulva from Rimouski, at:

[http://www.cmos.ca/Oceanphotos/MVSalvelinusSlideshow1964\\_68.pdf](http://www.cmos.ca/Oceanphotos/MVSalvelinusSlideshow1964_68.pdf)

- (vii) **Scholarship Supplement.** In 2006 CNC/SCOR, in partnership with DFO and CMOS, established a new NSERC Scholarship Supplement for Ocean Sciences in the amount of \$5,000/year to a deserving student for a period of two years. Only those students who have succeeded in winning an NSERC Postgraduate Scholarship or a Canada Graduate Scholarship are eligible. The initial award of \$5,000 is renewable for the second year provided that the student continues to hold the NSERC postgraduate scholarship. The application deadline for the award is April 15 of the current year. Information on the Supplement and how to apply may be found on the NSERC web site: [http://www.nserc-crsng.gc.ca/Students-Etudiants/PG-CS/Supplements-Supplements/Oceanography-Oceanographie\\_eng.asp](http://www.nserc-crsng.gc.ca/Students-Etudiants/PG-CS/Supplements-Supplements/Oceanography-Oceanographie_eng.asp). In establishing the Scholarship Supplement, CNC/SCOR agreed to use already established mechanisms to solicit applications through NSERC and use adjudication procedures established through CMOS. The winning student is selected by the CMOS Scientific Committee. The Supplement is awarded at the annual banquet of the CMOS Congress. By using the well established NSERC and CMOS solicitation and adjudication procedures, CNC/SCOR ensures that administrative overhead will on the one hand remain within the overall comfort level of the academic community, and on the other, will be fair, rigorous and transparent.

The CNC/SCOR scholarship supplement for Kristina Brown (UBC) was renewed for a second year (2010). She will be asked to provide a short article on her work for the newsletter.

There was only one application for the new 2010 supplement, though there were 13 applications for the meteorological supplement. The award for 2010 was made to Agathe, Lisé-Pronovost, a Ph.D. candidate at UQAR. *Note added after meeting: Her research objectives are to reconstitute the paleomagnetic vector from lake sediments in Patagonia and develop high resolution paleo tracers of changes in environmental conditions in order to better understand the relation of local to global climate changes.*

Members discussed reasons for the lack of response to this year's applications, agreeing that a better job could be done of communicating the opportunity to potential candidates. Bob Wilson will obtain the list of students holding an NSERC scholarship in ocean sciences and to prepare a letter inviting each to submit an application for 2011.

- (viii) **Membership.** The 3-year terms of three members of CNC/SCOR were completed at the end of 2009. One member was extended for an additional 3-year term (Paul Myers, University of Alberta), and two new members were selected for the next three years, namely Catherine Johnson of the Bedford Institute of Oceanography in Dartmouth and Gary Stern of the Freshwater Institute in Winnipeg. CNC/SCOR membership is currently as follows:

Rob Macdonald, Chair, DFO/IOS, 2009, 2010, 2011  
Gordon McBean, Past-Chair, UWO, 2006, 2007, 2008, 2009, 2010, 2011  
Paul Myers, UofA, 2007, 2008, 2009, 2010, 2011, 2012  
Alfonso Mucci, McGill, 2008, 2009, 2010  
Philippe Tortell, UBC, 2008, 2009, 2010  
Len Zedel, MUN, 2009, 2010, 2011  
Markus Kienast, Dalhousie, 2009, 2010, 2011  
Gary Stern, DFO/FWI, 2010, 2011, 2012  
Catherine Johnson, DFO/BIO, 2010, 2011, 2012  
Dick Stoddart, Secretary, since late 2001, until May 31, 2010  
Bob Wilson, Secretary after May 31, 2010, 2011, 2012  
Ian Rutherford, *ex-officio*, (CMOS)  
Ian Perry, *ex-officio*, DFO/PBS, (GLOBEC)  
Bill Crawford, *ex-officio*, DFO/IOS (IAPSO)  
Helen Joseph, *ex-officio*, DFO/HQ  
Yves Gratton, *ex-officio*, INRS (CMOS Scientific Committee)  
Bjorn Sundby, *ex-officio*, UQAR and Past-President of international SCOR

"Nominated Members" to international SCOR from Canada are Bjorn Sundby, Rob Macdonald and Gordon McBean.

The CNC/SCOR Executive Committee is Gordon McBean, Bjorn Sundby, and Bob Wilson.

CNC/SCOR membership is essentially at full capacity, but some changes are necessary. Alfonso Mucci agreed to a three-year extension, starting in 2011.

The list of ex-officio members was examined to see if additions or changes are needed, to include such programs as GEOTRACES and SOLAS. Jay Cullen's membership, as the representative for IMBER, has ended; a letter of thanks and acknowledgement will be sent. Ian Perry's capacity as ex-officio member expired with completion of the GLOBEC program. The Committee agreed that he would be an excellent candidate for regular membership; Rob Macdonald will approach him as the replacement for Phillippe Tortell, whose membership term will be completed at the end of 2010. Rob Macdonald will also approach Roger Francois to be the ex-officio member for GEOTRACES and will identify a representative for SOLAS, perhaps from Laval. *Note added after the meeting: Yves Gratton has completed his term on the CMOS Scientific Committee; his replacement will be invited to sit as an ex-officio member.*

(ix) **The Maury Project: Summer Workshop for Pre-college Teachers**

CNC/SCOR was approached to participate, in partnership with CMOS, in Project Maury. This is a summer workshop for pre-college teachers of Oceanographic topics sponsored by the American Meteorological Society (AMS) and the US Naval Academy. This year's workshop is on 12-23 July 2010 at the US Naval Academy, Annapolis, Maryland. The essential expenses for the participating teacher are paid by the AMS, with a contribution from CMOS and CNC/SCOR. This does not include the travel to and from Annapolis for which CMOS and CNC/SCOR provide \$300 (Canadian) each (total \$600) to the selected Canadian participant. Presentations are made at the Workshop by some of the most respected American Scientists in the field of oceanographic sciences. The successful candidate will provide a short report on his/her experience which may be published in the CMOS Bulletin and the CNC/SCOR Newsletter. Further details about the Workshop may be found at  
<http://www.ametsoc.org/amsedu/MAURY/summer.html>

Involvement in Project Maury for 2010 was undertaken as an opportunistic initiative through a last minute invitation. There were four strong applications from Canadian teachers to participate in Project Maury this year. The successful candidate was from the Kalamalka Secondary School, Coldstream, BC.

Members agreed that this project could be pursued next year but discussed whether the overall balance of expenditures was appropriate for the long term. This topic will be revisited in the six-month conference call, after the trip report has been received.

(ix) **State of Oceanography in Canada.** The Chair suggested that CNC/SCOR might undertake the preparation of a paper on the State of Oceanography in Canada for publication, perhaps in CJFAS. He suggested an overview of what Canadian oceanographers have been doing in Canada in the recent past, what had been accomplished, where programs are headed and where the gaps might be. The Committee is a logical group to undertake this work because it brings together a wide range of people from across Canada and with different perspectives (academic, industry, government).

The review would be visible, valuable and a great service to the community. It should look at the work of government, industry and academia and should include technology if influencing government policy is to be a target. The CMOS Science Committee would have an interest in this work and should be contacted. Bjorn Sundby will circulate the review NSERC produced a decade ago. That review is still timely but the problem at the time was lack of a locus for action in government.

The proposed review could be targeted for presentation at the SCOR International meeting in 2012. While it could be the basis for a shorter piece aimed at informing policy, the whole document should be accessible to interested people, not just to ocean scientists. The target audience might be the oceanographic community in Canada and those people working in policy who have a role and interest in ocean issues.

The Chair agreed to supervise the project and to start by preparing a draft outline for comment by the Committee.

## 7. SCOR International

- (i) **Remarks from SCOR Past-President.** Bjorn Sundby was elected international SCOR President in September 2004 and became Past-President in October 2008. His remarks on the 2009 Annual Meeting are included below under item 7(v).
- (ii) **Existing SCOR Working Groups.** Working groups are the mainstay of the international SCOR program. The current international Working Groups are:

*WG 111 on Coupling Winds, Waves and Currents in Coastal Models.* The group is developing a book tentatively entitled Coupled Coastal Wind-Wave-Current Dynamics, which will be published by Cambridge University Press. Peter Craig (Australia) is leading the editorial work for the book.

*WG 124 on Analyzing the Links Between Present Oceanic Processes and Paleo-records (LINKS).* The WG met for the final time in 2006 and is preparing a series of 5 manuscripts that mainly target understanding of the changes in ocean productivity and the connection to the recorded signal at the seafloor. Roger François (UBC) is a member.

*WG 125 on Global Comparisons of Zooplankton Time Series.* The work is expected to be complete by autumn, 2010. Papers are in preparation, most at the stage of second revision. The WG plans to have them published in a special issue of Progress in Oceanography. A progress summary was published in the May, 2010 issue of the CNC/SCOR newsletter. The WG web site is: <http://wg125.net/>

*WG 126 to Investigate the Role of Viruses in Marine Ecosystems* Four meetings have been held. WG 126 has been focusing on the production of an online, freely available publication currently entitled *Methods in Aquatic Virus Ecology*. The special volume (funded by the Gordon and Betty Moore Foundation) will be assembled and published by ASLO (*Advancing the Science of Limnology and Oceanography*, formerly known as the American

*Society for Limnology and Oceanography*). Currently all authors for chapters have been identified and writing is in progress. Curtis Suttle (UBC) is a member.

*WG 127 on Thermodynamics and Equation of State of Seawater.* Work has led to the publication of a new standard for salinity, TEOS-10, that has been approved by the IOC. A software library for salinity calculations has been published at <http://www.teos-10.org>. A progress report was published in the March 30, 2010 issue of the CNC/SCOR Newsletter. Dan Wright (DFO/BIO) has been a member and Peter Tremaine (Guelph) and Rich Pawlowicz (UBC) were associate members.

*WG 128 on Natural and Human-Induced Hypoxia and Consequences for Coastal Areas.* This WG met for the second time on 20-23 September, 2007 in Shanghai, China, in conjunction with the IMBER/LOICZ Continental Margins Open Science Meeting. Papers are intended for a special publication issue and the work is expected to complete by summer, 2010. Denis Gilbert (DFO/IML) is the Co-Chair and Angelica Peña (DFO/IOS) is an associate member.

*WG 129 on Deep Ocean Exchanges with the Shelf.* Work is planned for completion by the end of 2010. A bibliography has been published on the web and a collection of peer-reviewed articles was published in the online journal *Ocean Science*. A progress report on the WG was published in the March 30, 2010 issue of the CNC/SCOR Newsletter. Gordon Swaters (UofA) is a member.

*WG 130 on Automatic Visual Plankton Identification.* Three meetings have been held, the latest in May 2009. The WG is close to being able to demonstrate how automatic image classification can provide ecologically meaningful data that could not otherwise be obtained in a reasonable timeframe. Discussions are underway to publish the work in a special journal issue, possibly in *J. Plankton Res.* The WG web site is <http://www.scor-wg130.net/index.cfm>

*WG 131 on The Legacy of in situ Iron Enrichment: Data Compilation and Modeling.* The WG is assembling a common, open-access database of data and metadata from a series of *in-situ* ocean iron fertilization experiments conducted between 1993 and 2005. A data portal is available at <http://cis.whoi.edu/science/bcodmo/program.cfm?id=10&flag=view>. A meeting is planned for 2011 to bring modelers together to discuss uses of the data. The list of WG members includes several from Canada: Maurice Levasseur, Laval (full member), Ken Denman, DFO/IOS (associate member), Adrian Marchetti, UBC (associate member), and liaison scientists, Yvonnick Le Clainche, UQAR, Richard Rivkin, MUN, and Alain Vezina, DFO/BIO.

*WG 132 on Land-based Nutrient Pollution and the Relationship to Harmful Algal Blooms in Coastal Marine Systems.* The first meeting of WG 132 was on 28-31 July 2008, in Geesthacht, Germany. The second WG meeting was held on 13-16 October 2009 in Beijing, in conjunction with the 2<sup>nd</sup> Open

GEOHAB Meeting on HABs and Eutrophication. The third and final meeting, in the Fall of 2010 in conjunction with the 14<sup>th</sup> International HAB meeting in Greece, will assess the scenarios developed from applying the Millennium Ecosystem Assessment projections; critique, interpret and discuss all the findings of the working group; and prepare the final manuscripts and report.

*WG 133: OceanScope* This WG deals with a new paradigm for the systematic and sustained observation of the ocean by working in close collaboration with the merchant marine industry. The overall objective will be to establish a global network of ocean observation platforms on selected commercial ships. The aim is to encourage the maintenance, expansion and integration of existing volunteer observing ship (VOS) programs (e.g. CPR, pCO<sub>2</sub>, ADCP, and XBT) while developing in parallel VOS initiatives that use sophisticated new technology, with real time data streams and data analysis facilities. The first meeting took place in Montreal on July 17-19, 2009. Arnold Furlong (Brooke Ocean Technology) is an associate member.

*WG 134 on The Microbial Carbon Pump in the Ocean.* The goal of the WG is to identify priority scientific questions and the corresponding technical needs, and establish or standardize protocols for the observations of key microbial and DOM parameters, to advance interdisciplinary research on the microbial carbon pump in the ocean. Susan Ziegler (MUN) is an associate member. The first meeting took place in Xiamen, China on October 27-30, 2009.

*WG 135 on Hydrothermal Energy Transfer and its Impact on the Ocean Carbon Cycles (with InterRidge).* The objectives are: (i) to synthesize current knowledge of chemical substrates, mechanisms and rates of chemosynthetic carbon fixation at hydrothermal systems as well as the transfer of phytoplankton-limiting micronutrients from these systems to the open ocean, (ii) to integrate these findings into conceptual models of energy transfer and carbon cycling through hydrothermal systems which would lead to quantification of primary production in view of a future assessment of the contribution of these systems to the global-ocean carbon cycle, (iii) to identify critical gaps in current knowledge and proposing a strategy for future field, laboratory, experimental and/or theoretical studies to bridge these gaps and better constrain the impact of deep-sea hydrothermal systems on ocean carbon cycles. The first meeting took place on November 23-24, 2009 at Woods Hole, Massachusetts.

*WG 136 on Climatic Importance of the Greater Agulhas System.* The terms of reference for this WG include: (i) Facilitate collaboration between existing and planned (observational and modeling) studies in the greater Agulhas Current system, such that we minimize the gaps in the research, maximize the scientific outcome, and encourage estimates on the robustness of key findings (e.g. multiple model ensembles). (ii) Write a review paper (for publication in a peer-reviewed journal) that highlights the importance of the greater Agulhas system in terms of global climate, reviewing the current levels of both understanding and uncertainty as to how changes in the

system come about, how they effect climate, and vice versa. (iii) Identify key components of the circulation which deserve further study through physical/palaeo observations and/or models, some of which may act as indices/proxies (through sustained observation) that can help describe the state of the Agulhas system on decadal to climate time scales. Communicate these findings to regional and international strategic planning committees, such as CLIVAR, GOOS, GEOSS, GO-SHIP etc. (iv) Write a proposal for, and organize, a Chapman Conference on the “Climatic Importance of the Greater Agulhas System”, to be held in 2012. The first WG meeting was held in Portland Oregon on February 20-21, 2010.

*WG 137 on Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time Series Observation.* This WG will focus on coastal ecosystems (estuaries, fjords, bays, sounds, open waters of the continental shelf, etc.) where perturbations from terrestrial, atmospheric, oceanic sources and human activities converge to cause changes that ramify across local and global scales. Canadians included within the proposal were: WKW Li (DFO/BIO), Jennifer Martin (DFO/St. Andrews) and Trevor Platt (DFO/BIO) but the committee membership hasn't been published.

Membership lists and terms of reference for the SCOR Working Groups may be found at: <http://www.jhu.edu/~scor/wkgroups.htm>

- (iii) **SCOR Scientific Committees; e.g. GLOBEC, GEOHAB, etc.** SCOR has been instrumental in the planning and coordination of large-scale ocean research projects for long-term, complex activities. SCOR provides a mechanism to bring together international scientists for this purpose. Details on each of these programs (GEOHAB, GEOTRACES, GLOBEC, IMBER, SOLAS) may be found at <http://www.scor-int.org/lgscale.htm> including details on membership, sponsors and terms of reference.
- **GEOTRACES** is an international research project to study the global marine biogeochemical cycles of trace elements and their isotopes. GEOTRACES is designed to study the concentrations and distributions of trace elements and isotopes (TEIs) in the ocean, in order to study how the global cycles of TEIs operate and what controls the cycles. The project will involve close linkages with several other major international oceanographic research initiatives, such as IMBER, SOLAS, CLIVAR, and LOICZ. Kristin Orians (UBC) is a member of the GEOTRACES Scientific Steering Committee. The GEOTRACES web site is <http://www.geotrades.org>
  - Global Ocean Ecosystem Dynamics (**GLOBEC**). International GLOBEC was initiated by SCOR and IOC in 1991 in response to the recommendations of a joint workshop that identified a need to understand how global change will affect the abundance, diversity, and productivity of marine organisms, particularly zooplankton and fish. Ian Perry (DFO/PBS) was the Chair of the Scientific Steering Committee, and Brad de Young (MUN) was a member of the SSC. The GLOBEC web site is <http://www.globec.org>.

The program ran to an end in 2009 but not all the tasks were completed. The fate of the pieces left over is under consideration and the SSC has been asked

to set priorities on what needs to be done.

- Integrated Marine Biogeochemistry and Ecosystem Research (**IMBER**). The IMBER Science Plan and Implementation Strategy was published in August 2005 and is available through the IMBER International Project Office. IMBER and the Global Ocean Ecosystem Dynamics (GLOBEC) project planned joint work on end-to-end food webs and other topics relevant to both projects. Alida Bundy (DFO/BIO) is a member (2010) of the IMBER Scientific Steering Committee. The IMBER web site is [www.imber.info](http://www.imber.info)
- Global Ecology and Oceanography of Harmful Algal Blooms (**GEOHAB**). GEOHAB became a SCOR Program in 1998. It is co-sponsored by IOC, SCOR and several national agencies. Susanne Roy (ISMER/UQAR) is a member of the Scientific Steering Committee. NOAA provides funding for this CRP through IOC. A publication on seafloor mapping for habitat characterization is available from the GEOHAB website at <http://geohab.org/>.
- Surface Ocean - Lower Atmosphere Study (**SOLAS**). The primary goal of SOLAS is to address key interactions between the marine biogeochemical system and atmospheric chemistry and climate. The last International SOLAS Open Science Conference was held in Barcelona, Spain, from 16<sup>th</sup> - 19<sup>th</sup> November 2009 (see <http://www.solas-int.org/>). SOLAS and IMBER have created a cooperative research activity related to ocean carbon and have formed a working group to guide the activity and to interact with IOCCP. The Canadian program was the first national SOLAS program to be created; it is led by Maurice Levasseur (Laval) and its web site is <http://csolas.dal.ca>

- (iv) **SCOR Affiliated Programs; e.g. IMAGES, IOCCG, etc.** SCOR has developed a process for affiliation of research programs and long-term study committees with SCOR. SCOR does not provide financial support to these programs, but affiliation may increase a program's international visibility and access to scientists in SCOR member nations, as well as providing the benefit of SCOR advice on program committees and activities. Each affiliated program is reviewed for continued affiliation at each SCOR General Meeting and affiliation is terminated at the end of 10 years. Details on the current affiliated programs, Census of Marine Life (CoML), International Antarctic Zone Program (iAnZone), International Marine Global Change Study (IMAGES), International Ocean Colour Co-ordinating Group (IOCCG), International RIDGE Studies (InterRidge), and the Ocean Mixing Group may be found at <http://www.scor-int.org/coop.htm>

The CoML intends to release a comprehensive report about marine species, abundance and distributions in 2010. Mike Sinclair (DFO/BIO) is a member of the CoML SSC. Paul Snelgrove (MUN) is the Chair of the Canadian CoML Steering Committee. The Canadian web site is [http://www.marinebiodiversity.ca/coml/en/index\\_3oceans.html](http://www.marinebiodiversity.ca/coml/en/index_3oceans.html)

Markus Kienast (Dalhousie) ([Markus.Kienast@dal.ca](mailto:Markus.Kienast@dal.ca)) is the Canadian contact for IMAGES. The present program is winding down and a follow-on has yet to emerge.

The IOCCG Project Office is located at the Bedford Institute of Oceanography, Dartmouth, Nova Scotia, Canada, and is staffed by Executive Scientist, Dr. Venetia Stuart. Canadian members of the IOCCG Committee are Yves Crevier (CSA) and James Helbig (DFO/NAFC).

The IGBP-II program is nearing its end and doesn't know if its mandate will be extended. A process is underway to write policy-focused summaries, but the overall program has put a strain on organizations and resources. The program does not have a Canadian committee and Canada does not pay fees.

Steve Scott (UofT) is the present InterRidge point of contact for Canada.

- (v) **2009 SCOR Executive Meeting, Beijing, China.** The 39<sup>th</sup> SCOR Executive Committee Meeting took place in Beijing, China from Tuesday, 20 October through Thursday, 22 October 2009.

Bjorn Sundby reported on the 2009 meeting, which he attended in his capacity as Past President. China is interested in becoming a more serious player in ocean science activity and their representatives paid close attention at SCOR XXIX. Korea also plans to become a bigger player in ocean science and is increasing its spending on international activities. These interests will act to shift the makeup of SCOR and expose the committee to new ideas and activities.

- (vi) **2010 SCOR Annual Meeting, Toulouse, France.** The SCOR XXX General Meeting will take place in Toulouse, France on 13-16 September 2010. Details about the meeting will be posted at <http://www.scor-int.org/2010GM/2010GM.htm> as they become available. The French SCOR Committee will convene a one-day symposium on 15 September to highlight French ocean science and their contributions to SCOR. CNC/SCOR will be represented at the meeting by its Chair, Rob Macdonald. Bjorn Sundby will also attend from Canada in his capacity as Past-President of international SCOR (his travel expenses will be paid by international SCOR). A major agenda item of the meeting will be to consider the proposals for new Working Groups (see below).

- (vii) **2012 SCOR Annual Meeting, Halifax Canada.** At the 2009 SCOR Executive Meeting in Beijing, Canada offered, and SCOR accepted, to host the 2012 SCOR Annual General Meeting in Halifax. Since that time there have been exchanges on behalf of CNC/SCOR between Helen Joseph and BIO Senior Management that: (i) planning should be for the SCOR meeting of some 50-60 participants, (ii) the meeting should be scheduled for the 1<sup>st</sup> week of October in 2012 at BIO, (iii) both a general and executive session will be held, (iv) planning should take into account other activities around the same time, such as BIO's 50th anniversary, CCG's anniversary, the ICES meeting in September and PICES meeting in mid-October, and (iv) Sherry Niven will be the BIO contact for this meeting.

A co-located meeting with SCOR-international has been traditional in the past. Members discussed the possibility of arranging the 2012 SCOR meeting around another event. Catherine Johnson and Len Zedel agreed to investigate the possibility of arranging something suitable at BIO.

- (viii) **New SCOR Working Groups.** Six new proposals have been submitted for consideration; these will be evaluated internationally at the 2010 SCOR Annual Meeting. It is likely that 2 of the 6 proposals will be able to be supported. The proposals, along with (i) Canadians mentioned in each proposal, and (ii) Canadians who reviewed the new proposals, are:
1. [Global Analysis of coldwater Coral Ecosystems GLACES](#)  
Canadians reviewer(s): David Scott (Dal), Jacques Roy (HEC), Kumiko Azetsu-Scott (BIO)
  2. [Beyond the Conveyor: Advancing Training and Research in 'Palaeo Physical Oceanography'](#)  
- Canadians mentioned in proposal: Eric Galbraith, Jody Klymak and Chris Garrett  
- Canadian reviewers: Claude Hillaire-Marcel (UQAM), Chris Garrett (UVic)
  3. [Organic Ligands – The Key Control on Trace Metal Biogeochemistry in the Ocean](#)  
- Canadians reviewers: Kristen Orians (UBC), Maite Maldonado (UBC)
  4. [Modern Planktic Foraminifera and Ocean Changes](#)  
- Canadian reviewer: Andre Rochon (UQAR)
  5. [Biodiversity Patterns of the South Atlantic Mid-Ocean Ridge](#)  
- Canadian reviewer: Kim Juniper (UVic)
  6. [Research Vessel Cruise Information Coordination](#)  
Canadian mentioned in proposal: Bob Keeley

Canadian review comments were circulated to CNC/SCOR before the meeting. Members discussed the proposals, as shown in Appendix II.

SCOR pays for attendance at WG meetings by full (voting) members, who are limited to 10. Associate members pay their own way and very often attend by correspondence.

## 8. Inter-Relationships Between SCOR and CMOS

- (i) **Accounting, Secretariat, Web Site, Annual Report**
- The CMOS office looks after revenues and expenses for CNC/SCOR. While this is not too onerous a task, a dozen or so transactions per year, the service is very much appreciated, particularly since the CNC/SCOR accounts are included in the formal annual audit of CMOS.
  - While most secretariat functions are handled by the CNC/SCOR Secretary, the CMOS office helps significantly in several areas, such as the handing of invoices, arrangements for conference calls, and liaison with DFO and NRC on the renegotiation of formal agreements.
  - CMOS, through the very reliable and proactive efforts of Bob Jones, hosts the CNC/SCOR web site.
  - CMOS, through their Annual Review, publishes the annual CNC/SCOR report.
  - CNC/SCOR attracts members to CMOS and Congresses through co-location of meetings, publication of CMOS activities events through its electronic Newsletter, and promotion of ocean science nationally and internationally through channels not normally within the CMOS mainstream.

- (ii) **CMOS Awards.** In some previous years, CMOS awards for eligible Canadian oceanographers have gone un-awarded due to lack of nominations. CNC/SCOR members have been encouraged to ensure that one or more names were put forward in categories for eligible oceanographers. CNC/SCOR members should continue to ensure that nominations are put forward to ensure recognition of deserving oceanographers.

This year (2010) has seen the continuation of a CNC/SCOR-sponsored scholarship supplement award valued at \$5K/year (see item 6(vii) above). The selection process for this award has been integrated into the CMOS awards process, with the CMOS Scientific Committee overseeing the adjudication process and selecting a successful candidate. The award will be presented at the CMOS banquet, integrated with awards presented to other CMOS award winners. CNC/SCOR members agreed to help publicize the 2011 award, particularly in their own departments.

The Chair wrote to DFO suggesting that the Committee would step in to help with nominations for the Tully medal if that appeared to be necessary.

- (iii) **Congresses.** CNC/SCOR participated on the Scientific Planning Committee for the 2003 Ottawa Congress and the 2004 Congress in Edmonton, primarily in an effort to ensure an enhanced oceanographic presence in these land-locked locations. The Secretary of CNC/SCOR is the Chair of the Scientific Program Committee for the 2010 Ottawa Congress; this Congress is held jointly with CGU. CNC/SCOR should consider any appropriate means to assist future Congress Scientific Committees to ensure interesting and comprehensive oceanographic coverage in the program. With both the CNC/SCOR Chair and Secretary located in close proximity to the next CMOS Congress in Victoria in 2011 there is a potential role for SCOR to continue maintaining an influence on the Congress agenda.
- (iv) **Oceanographic content in the CMOS Bulletin.** The CMOS Bulletin is the major hard copy vehicle reaching the general meteorological and oceanographic communities in Canada. The Bulletin often uses material from the CNC/SCOR electronic Newsletter to disseminate ocean science news. The Bulletin is a good mechanism to publish longer articles of interest while the CNC/SCOR Newsletter publishes shorter articles. The Bulletin tends to be dominated by atmospheric science articles. The Bulletin Editor has requested CNC/SCOR to consider ways to increase the oceanographic content of this important hard copy publication. The Committee agreed that longer articles submitted to the newsletter will be passed over to CMOS after making an extract for the newsletter.

## 9. Timing and Location of Future Meetings of CNC/SCOR

CNC/SCOR meetings have in the recent past been held in conjunction with CMOS Congresses, Winnipeg (2001), Rimouski (2002), Ottawa (2003), Edmonton (2004), Vancouver (2005), Toronto (2006), St. John's (2007), Kelowna (2008), Halifax (2009) and Ottawa (2010). The 2011 Congress is scheduled for Victoria, June 5-9, 2011, and the 2012 Congress is being planned for Montreal. A major consideration has been to try and co-locate meetings with Congress to reduce travel expenses; e.g. several members would likely be attending Congress in any case.

A conference call of CNC/SCOR has been held occasionally in the past at the mid way point between congresses, but none in the past several years as there were no pressing issues. Members agreed to a conference call around the end of November, 2010.

## **10. Other Business**

- (i) **SCOPE-Zhongyu Environmental Awards.** Starting in 2010, environmental achievement awards will be presented on a biennial basis to two scientists or experts who have made significant contributions to environmental sciences and technological advances or to the environmental technical innovation, on energy saving and emission reduction during their careers. Each year, three young researchers who have made outstanding achievements in the field of 1) environmental sciences, 2) environmental technology, and 3) environmental management will be recognized. SCOPE Member and Partner organizations may nominate candidates for the Awards (self nomination is not possible). Additional information may be found at: <http://www.icsu-scope.org/>

SCOR is eligible to nominate candidates. Nominations must be submitted by email before 30 April each year. Members decided not to participate in this process.

## **11. Adjournment**

The meeting adjourned about 1:15 PM.

## Appendix 1

**Progress Report, to May 8, 2010,  
on CNC/SCOR Action Items  
from the May 31, 2009 CNC/SCOR AGM**

|   | <b>May 31st agenda item</b> | <b>Topic</b>   | <b>Member Responsible</b>  | <b>Status</b>  |
|---|-----------------------------|--|--|--|
| 1 | 5(iii)                      | Investigate possibilities of sponsoring (SCOR, NRC, host agency) an international science meeting in Canada which would be the vehicle have a Canada-hosted international SCOR Annual Meeting around the same time as the international ocean science meeting.   | <b>Rob Macdonald</b><br><b>Al Mucci</b><br><b>Dick Stoddart</b>  | Completed, not feasible; timing is an issue because SCOR wants Sep/Oct |
| 2 | 5(iii)                      | Members review possibilities, from their own experiences, of hosting an international conference in the next 3-5 year time frame, and pass any such suggestions to the above noted <i>ad hoc</i> committee.  | <b>All Members</b>   | Completed  |
| 3 | 6(iii)                      | Seek Newsletter articles:<br>Topic Potential Author<br><br>- WG 124 Roger Francois<br><br>- WG 126 Curtis Suttle<br>- WG 129 Gordon Swaters<br><br>- WG 131 Richard Rivkin<br>- Carbon Ken Denman<br>- WG 133 Arnold Furlong<br>- WG 134 Susan Ziegler<br>- GEOHAB Susanne Roy<br>- SOLAS Maurice Levasseur<br>- Hydroacoustics Svein Vagle<br>- CoML Ron O'Dor, Paul Snelgrove<br>- IMAGES Markus Kienast<br>- Ocean Mixing Chris Garrett, Barry Ruddick<br>- State of the Ocean Bill Crawford<br>- IRPP web site for their magazine containing science articles of interest on policy options<br>- policy implications for sea level rise, using Bangkok cities at risk, with reference to Richmond, BC – why it matters | <b>Al Mucci</b><br><b>Rob Macdonald</b><br><b>Rob Macdonald</b><br><b>Bill Crawford</b><br><b>Yves Gratton</b><br><b>Len Zedel</b><br><b>Rob Macdonald</b><br><b>Allyn Clarke</b><br><b>Len Zedel</b><br><b>Bjorn Sundby</b><br><b>Bjorn Sundby</b><br><b>Bill Crawford</b><br><b>Bjorn Sundby</b><br><b>Markus Kienast</b><br><b>Bjorn Sundby</b><br><b>Bill Crawford</b><br><b>Gordon McBean</b><br><br><b>Gordon McBean</b> | Completed<br>Completed<br>Contacted<br><br>Completed                   |
| 4 | 6(iv)                       | - obtain access to abstracts be obtained Canadian ocean science theses<br><br>- publish theses titles in the Newsletter with a   | <b>CNC/SCOR liaison contacts for theses</b><br><b>Dick Stoddart</b>  | None received<br><br>Not pursued                                       |

|    |         |  |  |   |
|----|---------|--|--|---|
|    |         | hyperlink to its abstract  |  |   |
| 5  | 6(v)    | Canvas members for the names of possible new lecture tour speakers and convene the <i>ad hoc</i> committee to discuss and select the 2010 speakers.  | <b>Dick Stoddart</b><br><br><b>Ad hoc lecture tour committee.</b>      | Completed<br><br>Completed                          |
| 6  | 6(v)    | Assess DFO's ability to continue lecture tour support.   | <b>Helen Joseph</b>  | Completed,<br>DFO/HQ unable,<br>DFO Regions to help |
| 7  | 6(vi)   | - search collections, and contact colleagues, to augment the existing archive of ocean science group photos.<br>- search their collections for possible contributions on early ocean science group photos. | <b>All Members</b><br><br><b>Gordon McBean</b><br><b>Neil Campbell</b> | Ongoing<br><br>Completed                            |
| 8  | 6(viii) | Suggest candidates for CNC/SCOR membership for consideration of the Executive Committee.   | <b>All Members</b><br><br><b>Executive Committee</b>                   | Completed<br><br>Completed                          |
| 9  | 7(vi)   | Attend the 39 <sup>th</sup> SCOR Executive Committee Meeting in Beijing, China from Tuesday, 20 October through Thursday, 22 October 2009.   | <b>Rob Macdonald</b>   | Not feasible  |
| 10 | 7(vii)  | Alert all CNC/SCOR members of the web-location of new SCOR Working Group proposals and solicit members to identify and contact additional Canadian reviewers.  | <b>Dick Stoddart</b>   | Completed   |