THE INTERNATIONAL OCEAN CARBON COORDINATION PROJECT (IOCCP)

A joint project of SCOR and IOC and an affiliate program of the Global Carbon Project.

Project Coordinator: Maria Hood, Intergovernmental Oceanographic Commission - UNESCO

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CARBOOCEAN Under Contract Negotiations - A Strong European Contribution to Worldwide Ocean Carbon Cycle Research

At present, the Integrated Project CARBOOCEAN is under contract negotiations with the European Commission within the 6th Framework Programme. The project includes around 40 research groups from Europe and several collaborating institutions from the United States. The project is planned over a total period of 5 years. Start date is expected for within 2005. The project will be coordinated by the Bjerknes Centre for Climate Research, University of Bergen, Norway. CARBOOCEAN aims at an accurate assessment of the marine carbon sources and sinks. The ambitious target is to reduce the present uncertainties in the quantification of net annual air-sea CO2 fluxes by a factor of 2 for the world ocean and by a factor of 4 for the Atlantic Ocean. The Integrated Project will deliver description, process oriented understanding and prediction of the marine carbon sources and sinks with special emphasis on the Atlantic and Southern Oceans on a time scale -200 to +200 years from now. The research will be carried out through a combination of 5 core themes and a series of cross cutting activities including a high quality data management. The integration of the project into the worldwide carbon cycle research community including the terrestrial CarboEurope IP will be ensured through an international advisory panel consisting of leading carbon cycle researchers.

Further Reading: See also http://www.pangaea.de/Projects/Carbo-Ocean/.
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North Pacific Regional Research Synthesis Group Approved as a GCP Project

Contributed by Arthur Chen and Pep Canadell

At the Global Carbon Project's 4th Scientific Steering Committee Meeting (Goa, India, July 12 - 15), Arthur Chen presented an update on the South China Sea Regional Carbon Project and a proposal to revitalize the former JGOFS North Pacific Regional Research Synthesis Group as a GCP project. This was approved by the SSC, and the group is preparing an extended project document to become an official activity of the GCP. This group may also be co-sponsored by PICES (the North Pacific Marine Science Organization).

From the pre-proposal of Chen et al.: "As the JGOFS project was coming to an end in 2003 there was a feeling among North Pacific Synthesis Group (NPSG) members that NPSG activities must go on. This is because the predecessor of NPSG, the North Pacific Task Team, was formed only when other JGOFS teams had already moved into the synthesis phase. Many ocean-going projects in the North Pacific, including the South China Sea Regional Carbon Project, and two time-series stations in the northwestern North Pacific and in the South China Sea, got started only after most JGOFS field work was winding down. Naturally, the North Pacific synthesis is incomplete when there are ongoing projects. A case in point is that the GCP Framework produced essentially a blank in the western Pacific marginal seas in the global figures showing the air-sea flux of CO2 and its inventory (Fig. 6 of ESSP Report No.1). To keep the momentum of NPSG it was decided at its last meeting in Nagoya in Nov. 2003 to approach GCP to consider the establishment of the Global Carbon Project North Pacific Regional Research Synthesis Group (tentative title) under GCP, perhaps under a new name with new initiatives. PICES has expressed its interest to co-sponsor such a project."

The Structure of the North Pacific Regional Research Team:
The JGOFS/ NPSG had been co-chaired by A. Bychkov and T. Saino and members came from Canada, Hong Kong, Japan, Korea, PRC, Russia, Taiwan and USA. As the South China Sea Regional Carbon Project also involves scientists from Viet Nam, Laos, Cambodia, Thailand, Singapore and Indonesia, more team members may be invited. The total members, however, probably should be limited to about 12. Saino and Bychkov have expressed their willingness to co-lead the team.

Functions:

- To help coordinate national and international efforts.
- To identify gaps in knowledge.
- To encourage exchange of data and to submit data to data centers such as NODC.
- To distribute data CDs.
- To publish synthesis volumes in refereed journals.
- (Examples: Deep-Sea Res. II special issue: The Joint Global Ocean Flux Study in the North Pacific, 2002; J. Oceanography special issue: North Pacific Synthesis of the Joint Global Ocean Flux Study, 2004. Both with Saino/ Bychkov/ Chen/ Harrison as guest editors)

Further Reading: South China Sea Regional Carbon Project - in IOCCP news, August 2003.
Contact Arthur Chen for more details.

Ocean Observations Panel for Climate Endorses IOCCP for Ocean Carbon Coordination

The GCOS-GOOS-WCRP Ocean Observations Panel for Climate is the advisory body to the global observing systems for ocean climate observations. Recognizing the importance of ocean carbon for climate research, the OOPC has always had close links with the SCOR-IOC Advisory Panel for Ocean CO2 ("the CO2 Panel"), and until 2002, the two Panels shared a joint member. With the development of the IOCCP in 2003 to manage the ocean carbon observation activities of the CO2 Panel, the OOPC began working closely with the IOCCP, relying on the IOCCP for input to the

global observing system plans for the Global Climate Observing System and the Global Earth Observation System of Systems (GEOSS).

At its 9th Session (Southampton, UK, June 7-10), the OOPC agreed that the IOCCP should be considered as a pilot effort of the OOPC for developing ocean carbon networks capable of providing climate-quality basin-scale and global data sets, and that ocean carbon issues for GOOS and GCOS should be coordinated through the IOCCP and OOPC. While the IOCCP has been serving as an advisor to OOPC since 2003, this link has never been formalized. This is the first step towards making clear linkages between the coordinated observation activities of the research community and the developing global ocean observing system for climate.

IOCCP Project Coordinator Maria Hood currently attends the OOPC meetings to ensure coordination between the activities of the two groups, and OOPC Member Tommy Dickey provides expertise on ocean instrumentation for biogeochemical variables.

Further Reading: Visit the OOPC Web Site.

Research Priorities Report Published from The Ocean in a High CO2 World Symposium

On July 16, SCOR and IOC finalized the Research Priorities Report developed at the International Science Symposium "The Ocean in a High CO2 World". The release of the report followed the July 15 NOAA Press Conference that highlighted two articles published in this month's Science by Chris Sabine and Dick Feely, who presented their work at the Symposium. UNESCO also developed a press release about the Symposium and the Report, and the news of the two events has been picked up by the world's news media.

The Research Priorities Report was developed based on the results of the three discussion groups held during the Symposium: 1. the High CO2 Group, which discussed biogeochemical and ecological impacts and research needs not related to mitigation; 2. the Mitigation Group, which discussed issues related to the effectiveness and environmental effects of mitigation approaches; and, 3. the Education and Communication Group, which discussed the development of a communications strategy about this potential new threat to the oceans.

This report is available on-line in electronic copy, and is currently being edited for publication in hard-copy in Oceanography Magazine.

Further Reading: Symposium Report and Abstract Book available on Web site.

Update on the Integrated Marine Biogeochemistry and Ecosystem Research Project
From the July 15 E-mail News Update from Julie Hall and Claire Hamilton.

1.The IMBER Science Plan and Implementation Strategy (SP/IS)
In January 2004 the draft IMBER SP/IS was completed and was submitted to IGBP and SCOR for their consideration. IGBP and SCOR had 9 Scientists in a variety of fields review the SP/IS and they have provided feedback to the IMBER SSC on the revision of the document. The SP/IS has been accepted in principle subject to revision of the draft in line with the reviews and the guidance IGBP and SCOR have provided.

2. Scientific Steering Committee (SSC)
The IMBER SSC was formed in April/May 2004 and the first Scientific Steering Committee Meeting will be held August 9-12 2004, at the Plymouth Marine Laboratory, UK. The main aims of the meeting are to :a) Review and revise the IMBER Science Plan and Implementation Strategy (SP/IS); b) Identify key national and regional IMBER Programmes and linkages with other research programmes; and c) Develop a Plan for Implementing IMBER. The members of the SSC are:

Julie Hall, New Zealand – IMBER Chair
Dennis Hansell, USA – Vice Chair
Patrick Monfray, France – Vice Chair
Ann Bucklin USA
Jay Cullen Canada
Wilco Hazeleger The Netherlands
David Hutchins USA
Arne Körtzinger Germany
Carina Lange Chile
Jack Middleburg The Netherlands
Coleen Moloney South Africa
S. Wajih A. Naqvi India
Raymond Pollard UK
Carol Turley UK
Jing Zhang China

If you have any issues you would like the SSC to discuss or information you feel would be useful to the SSC please contact Julie Hall at j.hall@niwa.co.nz

3. IMBER Website - www.imber.info
The new IMBER website went live, in June.

4. IMBER International Project Office
Since the November 2002 an Interim Executive Officer has been employed part time in the Interim International Project Office (IPO) for IMBER based at the National Institute of Water and Atmospheric Research Ltd (NIWA), Hamilton, New Zealand with funding from IGBP, SCOR and NIWA. In August 2004, the Interim IPO (employing one person part-time), will move to Plymouth Marine Laboratory, United Kingdom, and will be funded by Plymouth Marine Laboratory. Claire Hamilton who has been the Interim Executive Officer for IMBER since August 2003 has been appointed to this position at Plymouth Marine Laboratory, and will relocate with the IPO to Plymouth in early August.

Further Reading: Visit the IMBER Web-site

Citation Protocol for Publicly Available Ocean Carbon Data Sets

As highlighted in the August 2003 IOCCP News, a major issue facing international cooperation in global sciences is how to appropriately acknowledge the contributions of scientists who develop techniques, make the observations, and share their data with the wider community. At a time when so much of our field is limited by lack of high-quality observational data, we need to find a way to encourage scientists to pursue technology development and observations in a way that doesn't limit their careers because of lack of publications or lack of institutional support for these critical contributions.

With the recent move towards electronic publishing of scientific journals, it has become more common to cite data sets in journal articles and for these citations to be picked up by the ISI citations index. The publications of the American Geophysical Union have adopted a citation protocol for citing publicly available data sets in approved data centers, and the AGU Director of Publications has confirmed that CDIAC qualifies as an approved data center.

The format for referencing can be found in the AGU online styleguide at http://www.agu.org/pubs/AuthorRefSheet.pdf. Item 7, "Data Sets" provides specific examples.

The data sets should include the following information:
Author(s), Year, Title of Data Set, Access Number or Code, Data Center, Location, Date (optional).

Using a WOCE data set housed at CDIAC as an example, this would appropriately be cited in the following manner:

Wong, C.S., and J. Garrett (1994), WOCE Section P15Na,b Data and Documentation, http://cdiac.esd.ornl.gov/oceans/woce_p15n.html, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

The IOCCP would like to encourage the community to cite data sets when they are used in journal articles, even if this practice is not obligatory. In addition, the IOCCP Recommended Practices for Data Exchange and Integration developed at the Tsukuba 2003 Workshop states that "As a courtesy to the original data contributors, it should become common practice for individuals who prepare scientific products based (even in part) on a particular dataset to inform the contact person for that dataset of this use of the dataset."

Further Reading: AGU On-line Style Guide

The Impacts of Climate Change on the Carbon Cycle in the North Pacific: an IOCCP Session at the PICES 13th Annual Meeting

The North Pacific Marine Science Organization (PICES) will be holding a special science session on "The Impacts of Climate Change on the Carbon Cycle in the North Pacific", co-sponsored by the IOCCP, at its 13th Annual Meeting, October 14-24, in Honolulu, Hawaii. The co-convenors for this session are Paul J. Harrison (Canada), Kitack Lee (Korea) and Christopher L. Sabine (U.S.A.)

An important area of contemporary carbon cycle research is the linkage and response to climate change. Many recent studies have investigated carbon cycle variability in the Central and North Pacific. A significant number of these studies were related to the effects of El Niño-Southern Oscillation (ENSO) on upwelling regions of the Equatorial Pacific. Recently, there have been several studies indicating significant variability over other regions of the North Pacific and potential linkages to the Pacific Decadal Oscillation (PDO). Most of these studies covered a relatively short time frame, examined only a relatively small portion of the North Pacific, or considered only a limited number of parameters. What is often lacking is an overall picture of North Pacific carbon cycle that draws together all of these individual lines of investigation and looks for coherent patterns that may help us understand the regional significance of variability and the possible mechanisms controlling the observed spatial and temporal patterns. This session will provide a forum to present new insights into links between climate change and the carbon cycle in the North Pacific. It will showcase, in part, results from a synthesis and modeling workshop (co-sponsored jointly by NOAA, Global Carbon

Project and PICES) planned for June 2004, and will bring together many scientists focusing on such phenomena in the North Pacific region. We encourage contributed papers and posters that present recent research into the carbon cycle of the North Pacific with particular emphasis on the following: climate induced inter-annual and decadal variability in air-sea CO2 exchange; the role of the North Pacific in taking up anthropogenic carbon; changes in phytoplankton community structure and its consequences for the carbon cycle; and recent modeling and synthesis activities that aim to understand such linkages.

Invited speakers:
Nicholas Gruber (University of California Los Angeles, U.S.A.) - Carbon cycle changes in the North Pacific - results from the NOAA/GCP/PICES synthesis and modeling workshop
David Karl (University of Hawaii, U.S.A.) - Changing ecosystems and the North Pacific carbon cycle
TBD- Global carbon cycle and its links to climate change

Further Reading: Meeting Information on PICES Web-Site.