

REPORT OF THE SECTION ON *CARBON AND CLIMATE*

The meeting of the Section on *Carbon and Climate* (CC-S) was held from 14:00–18:00 on October 24, 2007 during PICES-2009 in Jeju, Korea. The meeting was chaired by Drs. James Christian (Canada) and Toshiro Saino (Japan) (*CC-S Endnote 1*). The agenda was adopted unanimously (*CC-S Endnote 2*).

AGENDA ITEM 2

Membership

In early 2009, Dr. Xiuren Ning, CC-S member from China, tragically passed away as a result of a traffic accident. Possible appointment of new members from China was discussed, and it was recommended to invite Dr. Minhan Dai of Xiamen University. Dr. Dai subsequently accepted the invitation and his formal appointment is in process.

The appointment of Dr. C.T. Arthur Chen as an *ex-officio* member representing IGBP was also proposed. Dr. Chen has since agreed and his appointment was approved by PICES and IGBP. Dr. Chen is a member as of December 2009.

AGENDA ITEM 3

CC-S achievements in the past 12 months

Pacific Carbon Data Synthesis

Substantial progress was made on the data synthesis in 2009. A subset of CC-S members met in Tokyo in March, and made several important decisions regarding the data synthesis process. It was decided that CARINA methodologies and software would be largely adopted, and that Dr. Toru Suzuki (JODC) would be principally responsible for implementing the algorithms and developing a web-base interactive database. The main deviation from CARINA methods is that pH would be expressed on the total scale rather than the seawater scale.

Subsequent developments prior to PICES-2009 are the completion and unveiling by Dr. Suzuki of his web database, and the completion of the CARINA database (published at CDIAC as NDP-091). Papers describing the CARINA data synthesis process are now in review at Earth System Science Data.

At PICES-2009, a carbon data synthesis workshop (W10), which was chaired by Dr. Masao Ishii (Japan) and Dr. Robert Key (U.S.A.), was held in the 1½ days prior to the CC-S meeting. A detailed summary of this workshop is included in the Session Summaries section of the Annual Report.

Topic Session in Jeju and future publication

A POC/BIO Topic Session (S6) was held on October 26 on the “*Anthropogenic perturbations of the carbon cycle and their impacts in the North Pacific*” chaired by Drs. Christian and Saino. The invited speaker was Dr. Richard Zeebe (U.S.A.). The session was well attended (80 recorded attendees) and inspired significant discussion. Plans for publication of the proceedings in the *Journal of Oceanography* were announced; guest editors will be Drs. Kitack Lee, Tsuneo Ono, and Chris Sabine, with Dr. Saino overseeing the process as Editor-in-Chief.

Publication of Journal of Oceanography Special Section

Publication of the proceedings of the previous BIO/POC-sponsored Topic Session on “*Decadal changes in carbon biogeochemistry in the North Pacific*” (S2) convened by CC-S at PICES-2007 in Victoria, Canada, was completed with the release of the special section in the *Journal of Oceanography* in 2009.

AGENDA ITEM 4

Reports of collaborating organizations and agencies

Reports were given on several national and international programs relevant to the mandate of CC-S, including IOCCP (Sabine), SOCAT (Nojiri), and CarboOcean (Key, Kozyr). Drs. Saino and Ishii reported on recent activities at JAMSTEC and JMA, respectively. Dr. Yukihiro Nojiri also reported on a $p\text{CO}_2$ system intercomparison held February 2009 at the National Research Institute of Fisheries Engineering, Japan; a poster presentation on this experiment was submitted to the Topic Session on “*Anthropogenic perturbations of the carbon cycle and their impacts in the North Pacific*” at PICES-2009 October 27.

AGENDA ITEM 5

Data synthesis

The data synthesis effort was the topic of a 1½-day workshop prior to the CC-S meeting (see Agenda Item 3), so little additional discussion was required. The full report of the workshop is described in the Session Summaries section of the Annual Report.

Requests to the BIO and POC parent committees were formalized, including an additional 2-day workshop at PICES-2010 and a request for travel expenses for two scientists. The workshop to be held at PICES-2010 is intended to be the final stage in the process, and will require multiple breakout groups working in parallel on different subsets of the data.

At the data synthesis workshop it was decided that the project and the dataset must have a name, and that the decision should be made soon so that interim *ad hoc* names do not get onto many files and documents. Subsequent to the meeting a vote of the membership was held via email and the name PACIFICA (“PACIFIC CARbon”) was chosen.

AGENDA ITEM 6

Future meetings and activities

At PICES-2010, CC-S will have existed for 5 years and will present an interim report to its parent committees detailing its accomplishments and providing justification for reauthorization. Activities over the next 5 years will likely center around analysis of surface $p\text{CO}_2$ datasets and examination of ocean acidification impacts on biota.

CC-S Endnote 1**CC-S meeting participation list**Members

James Christian (Canada, Co-Chairman)
Richard Feely (U.S.A.)
Masao Ishii (Japan)
Alex Kozyr (U.S.A.)
Kitack Lee (Korea)
Tongsup Lee (Korea)
Akihiko Murata (Japan)
Tsuneo Ono (Japan)
Chris Sabine (U.S.A.)
Toshiro Saino (Japan, Co-Chairman)
Toru Suzuki (Japan)

Observers

Robert Key (U.S.A.)
Chihiro Miyazaki (Japan)
Toshiya Nakano (Japan)
Yukihiro Nojiri (Japan)
Ken'ichi Sasaki (Japan)
Masahide Wakita (Japan)

CC-S Endnote 2**CC-S meeting agenda**

1. Review and adopt agenda, aims of the workshop
2. Discussion of CC-S membership
3. CC-S activity report: integrated dataset, topic session, JO special volume
4. Information exchange: IOCCP/GCP, SOLAS, JP-GEOTRACES, CarboOcean, JMA repeat hydrography activities, new JAMSTEC activities
5. Further activities relating to Data Synthesis
6. Discussion of future meetings and activities