

REPORT OF PHYSICAL OCEANOGRAPHY AND CLIMATE COMMITTEE

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The meeting of the Physical Oceanography and Climate Committee (POC) was held from 13:30-17:00 hours on October 17, 2004. The Chairman, Dr. Kuh Kim, called the meeting to order and welcomed members and observers (*POC Endnote 1*). Dr. Michael G. Foreman served as rapporteur. The Chairman informed the Committee that Dr. Steven J. Bograd has replaced Dr. David L. Musgrave as a U.S. member, and Drs. Young-Gyu Park and Hee-Dong Jeong have replaced Drs. Sang-Kyung Byun and Jae-Yul Yun as Korean members. The Committee reviewed and adopted the draft agenda (*POC Endnote 2*).

Election of POC Chairman (Agenda Item 3)

Dr. Alexander Bychkov, PICES Executive Secretary, reviewed the PICES Rules of Procedure on elections and informed Committee members on nominations received prior to the meeting. Dr. Michael G. Foreman (Canada) was unanimously elected for a 3-year term as the new Chairman of POC. The term of Dr. Foreman's appointment was to begin immediately after the closing of the PICES Thirteenth Annual Meeting. The Committee expressed its gratitude to Dr. Kim for his leadership and valuable contribution to POC activities over the years.

Completion of PICES XII decisions (Agenda Item 4)

- A *Progress in Oceanography* special issue on "Physical and chemical processes in the Japan/East Sea and their influence on its ecosystem", resulting from the 2002 CREAMS/PICES workshop, was published in August 2004 (Vol. 61, Nos. 2-4). Guest editors for this issue, Drs. Stewart M. McKinnell, Alexander Bychkov, Makoto Terazaki and Kyung-Ryul Kim, were congratulated on publishing the volume

prior to PICES XIII. The issue includes 9 papers by authors from Japan, Korea, Russia and the United States.

- A joint IOCCP/NIES/PICES workshop on "Ocean surface $p(\text{CO}_2)$, data integration and database development" was held January 14-17, 2004, in Tsukuba, Japan, and brought together 44 scientists from 12 countries. A brief report of the workshop was published in PICES Press (July 2004, Vol. 12, No. 2).
- A joint NOAA/GCP/PICES workshop on "Understanding North Pacific carbon cycle change: Data synthesis and modeling" was held June 2-4, 2004, in Seattle, U.S.A., and was attended by about 60 scientists from 5 countries. A brief report of the workshop will appear in the next issue of PICES Press (January 2005, Vol. 13, No. 1). The synthesis manuscripts generated from the workshop are expected to be published as a *Journal of Geophysical Research* special issue in 2005 on in early 2006.
- The following two POC Topic Sessions and workshop were convened at PICES XIII:
 - a 1-day POC/MONITOR Topic Session (co-sponsored by Argo) on "Application of Global Observing Systems to physics, fisheries, and ecosystems";
 - a 1-day POC Topic Session (co-sponsored by IOCCP) on "The impacts of climate change on the carbon cycle in the North Pacific";
 - a 2-day PICES/CLIVAR workshop on "Scale interactions of climate and marine ecosystems".

Summaries of both sessions and the workshop are included elsewhere in this Annual Report.

Report of WG 17 on Biogeochemical data integration and synthesis (Agenda Item 5a)

The Co-Chairman of WG 17, Dr. Andrew G. Dickson, reviewed Working Group activities

since PICES XII, specifically with respect to their terms of reference, and plans for the one year remaining in its tenure. The report of the WG 17 meeting at PICES XIII is included elsewhere in the Annual Report.

With respect to the first term of reference, *developing a North Pacific database for ocean CO₂ and related parameters in association with existing data centres*:

- A new North Pacific database/inventory for oceanic CO₂ and CO₂-related data (PICNIC – PICES CO₂ Related Data Integration for the North Pacific) was created by the joint efforts of two data centres (CDIAC, U.S.A. and MIRC, Japan). Web access to the PICNIC inventory has been established and the usage of LAS (Live Access Server) as a data viewer is being implemented. A brief article on this activity will be published in the next issue of PICES Press (January 2005, Vol. 13, No. 1);
- A workshop entitled “Understanding North Pacific carbon-cycle change: Data synthesis and modeling” was held June 2–4, 2004, in Seattle, U.S.A.

With regard to the second term of reference, *preparing a written guide of best practices for oceanic CO₂ measurements and data reporting, and carrying out, as needed, inter-laboratory method comparisons to assure future measurement quality*:

- A draft of a “Guide to best practices for oceanic CO₂ measurements and data reporting” was completed and was presented at the WG 17 meeting on October 22, 2004. The publication of the guide is expected in 2005;
- A workshop entitled “Ocean surface *p*(CO₂), data integration and database development” was held January 14–17, 2004, in Tsukuba, Japan.

With respect to the third term of reference, *developing a strategy to co-ordinate the planning of future North Pacific measurement programs and to encourage the timely release of new data*, discussions have begun, but no strategy has yet been developed. Although the United States is adopting a policy which will

make data available more quickly, there is reticence to adopt this policy on a broader scale.

Finally, with regard to the fourth term of reference, *organizing a symposium or annual meeting session on the impacts of climate change on the carbon cycle in the North Pacific*, a 1-day session on this topic was held at PICES XIII in October 2004, in Honolulu, U.S.A. Convenors for the topic session were Drs. Kitack Lee (Korea) and Christopher L. Sabine (U.S.A.)

Progress report of North Pacific Data Buoy Advisory Panel (Agenda Item 5b)

A report was prepared by the Panel Technical Coordinator, Mr. Ron McLaren, and presented to POC by Dr. Kim (*POC Endnote 3*). The same outstanding issues from the previous year remain, namely, difficulty in getting Panel members together for meetings, the need for an Asian Co-Chairman for the Panel, and with more pending retirements, the necessity to nominate new Panel members.

Proposals for new subsidiary bodies (Agenda Item 5c)

1. Dr. Dickson informed the Committee that the agenda for the upcoming WG 17 meeting includes an item to discuss the need for a permanent group to co-ordinate North Pacific CO₂ issues in international projects such as CLIVAR, IMBER and SOLAS. A recommendation has been made to form a section under POC for this purpose. Permission was requested to return to POC with a proposal to this effect after the WG 17 meeting was held on October 22, 2004. POC agreed to consider the proposal and suggested that the details be discussed at the next inter-sessional Science Board meeting in April 2005.
2. Dr. James E. Overland presented information about the new Climate Forcing and Marine Ecosystems (CFAME) Task Team formed under the CCC Program (a report from the inaugural meeting of CFAME is included elsewhere in the Annual Report). POC discussed how to establish a

closer relationship with this Task Team and proposed that Dr. Overland, who is already serving as a POC member, be appointed as a “physical–climate” Co-Chairman for CFAME, so that the underlying reasons and causality of climate change can be better investigated and understood.

Science Board issues (Agenda Item 6)

The Chairman briefly reviewed the PICES Strategic Plan and pointed out the necessity for POC to discuss development of its own Action Plan for current and future activities that fit within the Strategic Plan. This Action Plan should identify how to implement the ideas in the Strategic Plan on the short (annual) to medium (~5 years) time scale. POC members agreed to work by correspondence to prepare a draft Action Plan by the inter-sessional Science Board/Governing Council meeting where all Committee Action Plans will be discussed and merged into one PICES Action Plan.

A Science Board proposal to organize a joint PICES/ICES Young Scientists Conference in 2007 was presented. POC agreed to support the conference.

The need of a Vice-Chairman for POC was discussed and approved. Dr. Foreman suggested that the Chairman and Vice-Chairman should be from the opposite sides of the North Pacific.

PICES scientific program (Agenda Item 7)

Dr. Kim presented a proposal for the CREAMS/PICES Program on *East Asian Marginal Seas* (POC Endnote 4), as agreed at the second inter-sessional Science Board/Governing Council meeting (May 7–9, 2004, Jeju, Korea). Funding for specific investigations would come from individual countries, and PICES would provide infrastructure support to host workshops and publish reports. POC strongly endorsed the proposal and requested Science Board to establish an Advisory Panel to oversee the CREAMS/PICES Program.

An international CREAMS/PICES workshop on “East Asian Seas Time Series” (co-sponsored by

RIO/SNU) was proposed for 2005, and PICES support was requested.

Two other workshops planned under the CREAMS/PICES program are:

- A workshop on “East Asian Marginal Seas circulation: What we know and how well can we forecast?”, to be held in the summer of 2006 in Vladivostok, or at PICES XV;
- A workshop on “Progress in studies of physical processes and their impacts to the Japan/East Sea ecosystem” to be held in conjunction with the PICES Fifteenth Annual Meeting in 2007.

Planning PICES XIV (Agenda Item 8)

No topic session was proposed in order to encourage contributions to a 1-day POC Paper Session at PICES XIV (October 2005, Vladivostok, Russia). POC is also willing to co-sponsor a joint session that will include POC issues with another committee.

PICES XV theme (Agenda Item 9)

PICES XV will be convened in either Japan or Canada in 2006. POC recommended that the theme for PICES XV be “Boundary Currents” or “Boundary Current Ecosystems”, which would be an appropriate theme for either country.

Relations with international organizations and programs (Agenda Item 10)

Dr. Vyacheslav B. Lobanov presented a report on NEAR–GOOS and the GOOS Regional Alliances Networking Development (GRAND) project. The current strategy of NEAR–GOOS is to shift toward a more durable alliance of the four member countries (China, Japan, Korea and Russia) in order to develop a sustained regional monitoring system, strengthen the databases, and expand the project outreach.

Proposals with financial implications (Agenda Item 11)

Inter-sessional meetings

- To co-sponsor jointly with RIO/SNU an international CREAMS/PICES workshop on

“East Asian Seas Time Series”, to be held in spring of 2005, in Seoul, Korea;

- To co-sponsor, under the CREAMS/PICES Program, a workshop (with training component) on “East Asian Marginal Seas circulation: What we know and how well can we forecast?”, to be held in the summer of 2006 in Vladivostok (postponed from 2005), or at PICES XV.

Publications

- To publish a “Guide to best practices for oceanic CO₂ measurements and data reporting”, prepared by WG 17, in the PICES Scientific Report Series (partial support for this publication is provided by IOCCP (International Ocean Carbon Coordinated Project) via IOC (Intergovernmental Oceanographic Commission).

Requests for travel support

- 3–4 invited speakers for the POC Paper Session at PICES XIV;
- a PICES representative (from POC or MONITOR) to attend the NEAR-GOOS meeting in fall of 2005.

POC Best Presentation Award (Agenda Item 12)

Following practices of previous years, the convenors of the POC-sponsored sessions were asked to make a selection. Drs. Foreman,

POC Endnote 1

Lobanov and Dickson made their decisions based on presentations given in Topic Sessions on “Application of Global Observing Systems to physics, fisheries, and ecosystems” and on “The impacts of climate change on the carbon cycle in the North Pacific”. The 2004 POC Best Presentation award went to Sabine Mecking (Woods Hole Oceanographic Institution, Woods Hole, U.S.) for her paper “Age and AOU increases at the North Pacific subtropical–subpolar gyre boundary”, co-authored with Mark Warner and John Bullister.

POC members thanked Dr. Yury I. Zuenko, who volunteered to serve on the Best Poster Award Committee.

Other business (Agenda Item 13)

On behalf of Dr. Howard J. Freeland and Mr. Frank A. Whitney (Institute of Ocean Sciences, Fisheries and Oceans Canada), Dr. Foreman presented a proposal for a 3-day symposium to be held in 2006 to celebrate the 50th anniversary of sampling along Line-P and at Station Papa. PICES is requested to co-sponsor the symposium by providing logistical and minor travel support. Participants from other long time series would be invited and a more detailed proposal will be presented at the 2005 inter-session Science Board/Governing Council meeting next spring.

Participation List

Members

Steven J. Bograd (U.S.A.)
Michael G. Foreman (Canada, rapporteur)
Hee-Dong Jeong (Korea)
Kuh Kim (Korea, Chairman)
Vyacheslav B. Lobanov (Russia)
James E. Overland (U.S.A.)
Stephen C. Riser (U.S.A.)
Ichiro Yasuda (Japan)
Jin-Ping Zhao (China)
Yury I. Zuenko (Russia)

Observers

Jack A. Barth (U.S.A.)
Alexander Bychkov (PICES Executive Secretary)
Andrew G. Dickson (WG 17 Co-Chairman, U.S.A.)
W. John Gould (U.S.A.)
Dong-Chull Jeon (Korea)

POC Endnote 2

POC Meeting Agenda

1. Welcome and opening remarks
2. Adoption of agenda
3. Election of new POC Chairman
4. Completion of PICES XII decisions
5. Reports of existing subsidiary bodies and proposals for new subsidiary bodies
 - a. Progress report of WG 17 on *Biogeochemical data integration and synthesis*
 - b. Progress report of North Pacific Data Buoy Advisory Panel
 - c. Proposal for new subsidiary bodies
6. Discussion of Science Board issues including developing a Vice-Chairman position for POC
7. Discussion of next major PICES scientific programs including CREAMS-III as a pilot project under PICES
8. Planning PICES XIV
9. PICES XV theme
10. Relation with other international programs and organizations
11. Items with financial implication
 - a. Proposed inter-sessional meetings for 2005 and beyond
 - b. Proposed publication for 2005 and beyond
 - c. Travel support requests
 - d. Other items
12. 2004 POC Best Presentation Award
13. Other business
14. Adoption of POC report to Science Board

POC Endnote 3

Report of the North Pacific Data Buoy Advisory Panel for 2003/2004

The NPDBAP was officially accepted as an entity reporting to the Data Buoy Co-operation Panel (DBCP) and PICES at the DBCP XVIII meeting held October 2002. This is the second Annual Report as an official body of the DBCP.

During the period September 1, 2003, to August 31, 2004, an average of 66 drifting buoys reporting to the Marine Environmental Data Centre (MEDS) were active in the North Pacific Ocean (30.00°N to 65.00°N and 110.00°E to 110.00°W). A total of 268,374 messages were received during the period. As of August 2004, 68 buoys were reporting to MEDS, 28 with barometric pressure. Please refer to the complete Annual Report for details, tables and figures showing the number of buoys in operation and the number of buoy messages received during the period.

A web page (<http://npdbap.noaa.gov>) hosted by NOAA/ NBBC is operational with a portal to MEDS to get the data. The MEDS site also has an animation showing recent buoy tracks.

Planned buoy deployments for the next year include: 156 for Japan (in various oceans, not just the North Pacific), 40 for the United States, and 6–12 for Canada. In addition, several buoys will be upgraded to include barometers.

Meetings

October 11, 2003

A meeting of the Panel was scheduled during the PICES Twelfth Annual Meeting held October 10–18, 2003, in Seoul, Korea. Unfortunately, an insufficient number of Panel members were present to have a meeting. An information session was held instead to review the 2003 NPDBAP Annual Report. Ron McLaren presented the complete 2003 Annual Report to the Physical Oceanography and Climate Committee (POC) session.

October 21, 2003

A meeting was held during the DBCP XIX meeting in Angra dos Reis, October 21, 2003. Panel and DBCP representatives from Canada, Japan, Korea and the United States, the WMO were in attendance.

October 17, 2004

The Third Annual Meeting of the NPDBAP was held October 17, 2004, prior to the twentieth session of the Data Buoy Co-operation Panel (DBCP XX). The meetings took place in Chennai, India, at the kind invitation of the National Institute of Ocean Technology (NIOT), Department of Ocean Development. Representatives from Canada, United States and the WMO (DBCP) were in attendance. Al Wallace (Meteorological Service of Canada) was elected as the North American Co-chair and Craig Engler (Global Drifter Program) was

elected as Technical Coordinator. The position of Asian Co-chair has not been filled.

Time and place of next meeting

The NPDBAP meeting will be held prior to DBCP XXI, in Cape Town, South Africa, October 17–21, 2005. The date for the NPDBAP will be determined in consultation with other action groups holding meetings prior to the DBCP. It was felt that this would permit maximum attendance of active Panel members while minimizing travel costs to attend a meeting in a different location.

POC Endnote 4

CREAMS/PICES Program on *East Asian Marginal Seas*

Program objectives

1. To understand the hydrography and circulation and their variability in the East Asian marginal seas;
2. To understand the effect of climate and long-term changes in physical and chemical environments on the East Asian marginal seas ecosystems;
3. To establish permanent observation stations and a data exchange network in East Asian marginal seas.

The initial focus of the Program will be on the Japan/East Sea. The schedule and observational plan for the program is given in the following.

Time Table

Dec. 2004: Establish CREAMS/PICES Advisory Panel
Mar. 2005: 132°E cruise
Spring 2005: Open CREAMS/PICES Office and hold 1st workshop on East Asian Seas Time-series, co-

sponsored by PICES and RIO/SNU

Spring 2006: 132°E cruise; start of permanent stations

June 2006: Hold 2nd workshop on “East Asian Marginal Seas circulation: What we know and how well can we forecast?”

Spring 2007: 132°E cruise

Oct. 2007: Hold 3rd workshop on “Progress in studies of physical processes their impacts to the Japan/East Sea ecosystem” at PICES XVI.

Observation Plan

1. Hydrography baseline: 132°E;
2. Permanent stations: EAST-I (Ulleung Basin) and EAST-II (Western Japan Basin);
3. Mooring stations: Western Japan Basin and Ulleung Basin;
4. Profiling floats, surface drifters, SST and satellite data.