

REPORT OF GOVERNING COUNCIL



The Governing Council met from 9:00-12:30 on October 17, from 9:00–17:00 on October 21, and from 9:00–12:30 on October 22, under the chairmanship of Dr. Vera Alexander. All Contracting Parties were represented at the three sessions (*GC Endnote 1*). At the first session, the Chairman welcomed attendees, introduced the agenda and suggested the order in which to take up the various items. The agenda was adopted as presented (*GC Endnote 2*). This report summarizes the treatment of each agenda item during the course of the three sessions.

Report on Administration (Agenda Item 3)

The Executive Secretary summarized the activities of the Organization and the Secretariat since PICES XIV. Council reviewed and adopted the report. (*GC Endnote 3*).

Report of 2006 Governing Council inter-sessional meeting (GC Agenda Item 4)

The tradition of holding inter-sessional meetings of Science Board and Governing Council is fairly new, but has become an integral part of PICES management. As PICES is involved in a daunting array of activities, it is not practical for the governing entities to meet only once each year at the Annual Meeting, and the plan is to continue these inter-sessional meetings as needed.

At the invitation of Dr. Samuel Pooley, the U.S. National Delegate, the 4th inter-sessional Science Board meeting, with the participation of Council members, was convened on April 17–18, 2006, at the Ala Moana Hotel in Honolulu (U.S.A.). It was followed by the meeting of Council on the afternoon of April 18. The Pacific Island Fisheries Science Center of the National Marine Fisheries Service provided \$3,000 to partially offset PICES expenses for these events. The dates and location of the meetings were chosen to allow participants the option to attend the PICES/GLOBEC Symposium on “*Climate*

variability and ecosystem impacts on the North Pacific”, also held at the Ala Moana Hotel on April 19–21. The report of the inter-sessional Science Board meeting can be found elsewhere in this Annual Report. A summary report of the inter-sessional Council meeting is appended as *GC Endnote 4*. An article that briefly reviews the results from both meetings was published by Dr. Vera Alexander in PICES Press (Vol. 14, No. 2).

Membership and observers from other countries (Agenda Item 5)

The Secretariat did not receive proposals from any country to accede to the PICES Convention in 2006.

The Chairman pointed out that expansion of involvement with PICES among Pacific Rim countries has been the subject of discussion in Council. Earlier, Council expressed a strong interest in encouraging Mexico to accede to the PICES Convention (an initial resolution was adopted at PICES VIII, Decision 99/A/5), and spent significant efforts in doing so. Details can be found in the 1999–2005 PICES Annual Reports. Mexican scientists have been enthusiastic about their involvement in PICES activities. The formal response acknowledged the interest on the part of Mexico as well as the potential importance of membership. However, economic considerations precluded their joining at this time.

At PICES XIV, Council agreed that there is merit for the Organization to consider the Pacific Ocean in its entirety, and decided that it is time to explore interest from other Pacific Ocean countries in joining PICES activities, or even membership if the Organization were, at some point, to expand its geographic scope (Decision 05/A/6). The issue was further discussed at the 2006 inter-sessional Council meeting (see *GC Endnote 4* for details).

The Chairman informed Council on her contacts with 4 Pacific Rim countries that are currently affiliated members of ICES (Australia, Chile, New Zealand and Peru). Her letters of March 2, 2006, were intended to initiate a dialog that will allow Council to determine whether scientists from these countries might be interested in having a greater role in the activities of our Organization. PICES XV was suggested as the appropriate venue to continue this dialog, and invitations were extended to their representatives to attend this Annual Meeting as observers.

Responses indicating an interest in taking up the dialogue were received from 3 leading scientific organizations: CSIRO Marine and Atmospheric Research (CSIRO, Australia), National Institute of Water and Atmospheric Research (NIWA, New Zealand) and Instituto del Mar del Perú (IMARPE, Peru). Two organizations sent their representatives, Drs. John Gunn (Deputy Chief, CSIRO) and Julie Hall (Biological Oceanography Program Leader, NIWA), to participate in PICES XV. IMARPE was unable to send an observer to PICES XV, but an invitation was extended to PICES to visit IMARPE to inform scientists and authorities about activities of the Organization, and to discuss how PICES and IMARPE can work together in the future. The suggested time for this visit is in conjunction with the international conference on “*The Humboldt Current system*”, to be held November 27–December 1, 2006, in Lima. PICES is one of the co-sponsors of this conference hosted by IMARPE.

Argo International Program
Asia-Pacific Network for Global Change Research (APN)
Bering Ecosystem Study (BEST)
Census of Marine Life (CoML)
Climate Variability and Predictability Program (CLIVAR)
Ecosystem Study of Sub-Arctic Seas (ESSAS)
Food and Agriculture Organization (FAO)
Global Ocean Ecosystem Dynamics (GLOBEC)
International Council for the Exploration of the Sea (ICES)
International Geosphere-Biosphere Program (IGBP)
Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)
Northwest Association of Networked Ocean Observing Systems (NANOOS)
North East Asian Regional GOOS (NEAR-GOOS)
Northwest Pacific Action Plan (NOWPAP)

At the first session of Council on October 17, Drs. Gunn and Hall gave presentations on the structure and activities of their respective organizations and potential areas for their cooperation with PICES. They kindly allowed us to make their presentations accessible for Council, Science Board and F&A Committee members for future references. The Chairman thanked both guests for addressing the Council, and confirmed that they will be informed on actions decided by PICES.

After long discussion Council approved the recommendation of the F&A Committee that a Study Group be established to explore options on how scientific cooperation with other (non-member) countries could be best achieved (Decision 06/A/6). Terms of Reference and membership of the Study Group are listed in *GC Appendix B*. Council also agreed that Dr. R. Ian Perry, PICES member of the Scientific Steering Committee for the Humboldt Current system conference, will visit IMARPE on behalf of PICES to discuss potential areas and means for collaboration.

Relations with relevant organizations and programs (Agenda Item 6)

Letters of invitation to attend PICES XV were sent to organizations and programs on the agreed 2005–2006 *Standing List* (with some additions), and the following sent observers:

Dr. Nobuyuki Shikama
Mr. Hiroki Hashizume
Dr. George L. Hunt, Jr.
Dr. Ron O’Dor
Dr. William R. Crawford
Dr. Kenneth F. Drinkwater
Mr. Ichiro Nomura
Dr. Manuel Barange
Dr. Adolf Kellermann
Dr. Manuel Barange
Dr. Julie Hall
Dr. Jack Barth
Dr. Takashi Yoshida
Dr. Norio Baba
Dr. Jeung Sook Park

North Pacific Anadromous Fish Commission (NPAFC)
 North Pacific Fishery Management Council (NPFMC)
 Pacific Coast Ocean Observing System (PaCOOS)
 Scientific Committee on Oceanic Research (SCOR)
 Surface Ocean Low Atmosphere Study (SOLAS)
 IOC Sub-Commission for the Western Pacific (WESTPAC)
 Yellow Sea Large Marine Ecosystem project (YSLME)

Dr. Richard J. Beamish
 Dr. Diana Evans
 Dr. Jonathan T Phinney
 Dr. Julie Hall
 Dr. Shigenobu Takeda
 Dr. Hyung-Tack Huh
 Dr. Yihang Jiang

The Executive Secretary provided a report on communication with the relevant international and national organizations and programs since last year's Annual Meeting (see *GC Endnote 3* for details). At the first session of Council (October 17, a.m.), invited representatives of several organizations and programs (APN, BEST, CoML, ESSAS, FAO, IMBER, NOWPAP, NPAFC, PaCOOS, SCOR, SOLAS, YSLME) expressed their views on potential areas of collaboration with PICES. The Chairman thanked all guests for attending and presenting their thoughts, and assured them that PICES will continue expanding its relationships with organizations and programs aligned with the PICES ecosystem research focus, and that their proposals will be carefully considered by relevant Committees and Science Board. All available presentations will be posted on the PICES website.

Some programs and organizations (AOOS, Argo, APN, BEST, ESSAS, IMBER, NANOOS, NOWPAP, NPRB, PaCOOS) had posters on display outlining general information and highlighting their scientific objectives and recent activities. Representatives of GLOBEC and ICES were invited to discuss on-going or proposed joint activities with PICES at the Science Board meeting.

Council reviewed the progress made in the integration and coordination of PICES activities with other international and national scientific organizations and programs, and discussed the *Standing List of International and Regional Organizations and Programs* and priorities for interaction in 2006–2007. It was noted that no changes or additions were recommended by Science Board to the *Standing List* approved for 2005–2006 (Decision 05/S/7, *SB Endnote 7* in the 2005 PICES Annual Report).

At PICES XIV, Council pointed out the importance of establishing relations with the Asia Pacific Economic Cooperation (APEC), and suggested that Science Board develop potential areas of cooperation with APEC Working Groups on *Fisheries* (APEC-FWG) and *Marine Resources Conservation* (APEC-MRC). Unfortunately, no progress was made on this issue.

**Progress report of the Study Group on
Future Integrative Scientific Program(s)
 (Agenda Item 7)**

At the 2005 inter-sessional meeting, Council established a Study Group (SG-FISP) to develop ideas for one or more new integrative scientific program(s) to be undertaken by scientists in PICES member countries (Decision 05/S/6). A presentation on the progress made by SG-FISP in 2006 was given by Dr. John E. Stein (Science Board Chairman-elect) on October 21.

After PICES XIV, the themes proposed for the next PICES integrative scientific program, **FUTURE – Forecasting and Understanding Trends, Uncertainty and Responses of the North Pacific Marine Ecosystem**, and their short descriptions, as well as a 2005 SG-FISP progress report were posted on the PICES website for comments and advice from the scientific community. Feedback from PICES colleagues and SG-FISP members stimulated an in-depth discussion of FUTURE at the 2006 inter-sessional Science Board/Governing Council meeting. This meeting, reviewed actions taken by SG-FISP since PICES XIV, and developed a list of central scientific issues and key words, and what was considered to be the ultimate goal for the Program: *To understand and forecast responses of North Pacific marine ecosystems to climate change and human activities at basin-wide and regional scales, and*

to broadly communicate this scientific information to governments, resource managers and the general public.

A sub-group composed of Drs. Stein, Michael J. Dagg and Michael G. Foreman was formed and requested to prepare a draft outline of central scientific issues and key research activities for FUTURE. The draft outline was sent to Council, Science Board and SG-FISP members for review on May 26, 2006. Responses were collated by the Secretariat and provided to the sub-group on June 15. The revised FISP outline was widely circulated within the PICES community on September 1, and posted on the PICES website for comments. The document pointed out that FUTURE is motivated by three important societal issues in the North Pacific: *(1) the loss of resilience and productivity of natural environmental capital, such as renewable resources and habitat, and irreparable damage to non-renewable resources; (2) the loss of socioeconomic opportunities due to natural and anthropogenic change in marine ecosystems; and (3) increased uncertainty and risk in decision making faced by managers and policy makers due to climate change and irreversible ecosystem change.*

The FUTURE outline was assessed at the FISP Open Forum held on October 19 at PICES XV. The Forum included the review of the outline by Dr. Stein, presentations by all Scientific and Technical Committees to suggest the priorities within FUTURE from the perspective of each Committee, and comments from PICES scientists and guests. Subsequent discussion at the Science Board meeting resulted in the draft workplan and timelines for the development of FUTURE, which were presented to Council.

Proposed workplan and timelines were reviewed at the Council meeting on October 22. The U.S. delegation indicated that they had some comments on the development of FISP they wished to share with other Contracting Parties and Science Board. Some of their questions and comments were raised on October 21 during Dr. Stein's presentation, and then on October 22 with Dr. Kuh Kim during his presentation of the Science Board report. A written record of their

comments was provided on October 25 and is appended as *GC Endnote 5*.

Council instructed the PICES Secretariat to circulate the U.S. write-up and ask for additional comments and recommendations from the other Contracting Parties. Then all materials had to be directed to Science Board. Council also suggested that input from Science Board by mid-November 2006 would be important to prevent delays. [A revised work plan with associated timelines was prepared, taking into consideration the U.S. comments on FISP planning, and approved by Council in December 2006. Simultaneously, as a part of this work plan, a FISP Writing Team, that includes 14 scientists representing all PICES member countries, was established to develop a Science Plan for FUTURE.]

High priority projects (Agenda Item 8)

Council reviewed the current status of the high priority initiatives identified at the 2005 inter-
sessional Science Board/Governing Council meeting:

- the development of PICES future integrative scientific program(FISP);
- the preparation of the next North Pacific Ecosystem Status Report (NPESR);
- capacity building; and
- GOOS integration.

Details on the development of FISP can be found under Agenda Item 7.

North Pacific Ecosystem Status Report

The responsibility for the development of the next NPESR was assigned to the MONITOR Technical Committee. It was expected that, in consultation with the Secretariat and other appropriate PICES entities, MONITOR will establish procedures, and schedule for the report production. The first step in this direction was made at PICES XIV (October 2005, Vladivostok, Russia) when a workshop on "Filling the gaps in the PICES North Pacific Ecosystem Status Report" was convened to review the successes and shortcomings of the pilot NPESR (published in December 2004), and

to decide how future reports should look. At PICES XV, MONITOR recommended that the following NPESR-related products be developed: (1) a website reporting seminal time series from Large Marine Ecosystems in the PICES region, (2) a paper (and PDF) version of the full report, and (3) brochure-like Outlooks or Advisories to PICES member countries on emerging ecosystem issues, and that a Section within MONITOR be formed to deliver all 3 products (*MONITOR Endnote 3*).

These recommendations were not supported by Council. Instead, it was agreed to establish a Study Group on *Ecosystem status reporting* under the direction of Science Board, with terms of reference and membership as described in *GC Appendix B* (Decision 06/S/6(ii)).

Capacity building

PICES' strategy for capacity building was approved in 2003, and is available on the PICES website at http://www.pices.int/about/capacity_strategy.pdf. At the 2005 inter-sessional Science Board/Governing Council meeting, several capacity building initiatives were identified as the most important: (1) 2007 ICES/PICES Early Career Scientists Conference (ECS Conference); (2) PICES summer schools on marine sciences; (3) travel support for early career scientists to attend PICES Annual Meetings and symposia; (4) PICES Intern Program; (5) workshops on ecological modeling; and (6) international student exchange.

ICES/PICES ECS Conference

It has taken three years for PICES and ICES to prepare an Early Career Scientists Conference on "*New frontiers in marine science*" to be hosted by the University of Maryland Center for Environmental Science from June 26–29, 2007, in Baltimore, U.S.A. The goal of the conference is to foster the development of contacts, collaborations, and associations among early career scientists that will persist for decades, and to establish personal and institutional networks that will help to advance our understanding of the marine environment. Participation is by

invitation only, and approximately 100 scientists from around the world will be invited by the Conference Scientific Steering Committee to share their interests in marine sciences. Detailed information about the conference can be found on the PICES website. Lodging and meals will be provided by organizers at no cost to all participants. Limited funds will be also available to cover the cost of travel for selected scientists. Major funding for the conference comes from ICES and PICES. ICES' contribution is US \$90,000. At PICES XIV, Council approved \$25,000 from the encumbered funds designated for high-priority PICES projects to be earmarked for the ECS Conference (Decision 05/A/8). Our fund-raising resulted in additional support for this event from the North Pacific Research Board (NPRB, US \$15,000) and the Korean Ocean Research and Development Institute (KORDI, US \$3,000). Council also agreed to use part of the surplus (\$20,000) generated by the successful fund-raising for the 2006 CCCC Symposium on "*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*" to finance the ECS Conference.

PICES summer schools on marine sciences

The first PICES summer school on "*Ocean circulation and ecosystem modeling*" was held on August 23–25, 2006, in Busan, Korea. Seven lecturers from Japan and the U.S. taught a total of 37 participants from all 6 PICES member countries plus Chile and Indonesia (14 Ph.D. and 11 M.Sc. students, 7 early-career scientists, 4 undergraduate students, and 1 from a private company). The major part of the funding for the project was provided by the Seoul National University (SNU), the Korean Ocean and Research Development Institute (KORDI), the Korean Ministry of Maritime Affairs and Fisheries (MOMAF), the National Fisheries Research and Development Institute (NFRDI), and the Brain Korea 21 (BK 21) Program of the Korean Ministry of Education and Human Resources.

A proposal has been received from Japan to host the second PICES summer school on "*Ecosystem-based management*" in September

2008, at Hokkaido University, in Hakodate. Possibilities for co-funding include: the Hokkaido University Sustainable Government Project (HU-SGP), the Japanese Society for Promotion of Science (JSPS) and the Asia Pacific Network (APN).

Travel support for early career scientists

Travel support for early career scientists to attend PICES XV was provided from the Trust Fund. Applications received for this support and their dispositions were reported at the F&A meeting. Total expenses are close to \$35,000, but ~28% of this amount was granted by the Scientific Committee on Oceanic Research (SCOR). SCOR also allocated funds for scientists from countries with “economies in transition” to participate in the 2006 CCCC Symposium (US \$6,800), the 2007 Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*” (US \$6,000) and the 2008 Symposium on “*Effects of climate change on the world’s oceans*” (US \$7,500). The University of Hawaii Pelagic Fisheries Research Program (UH PFRP, U.S.A.) provided travel support for 7 students and post-docs from the Pacific Rim countries to attend the 2006 CCCC Symposium.

PICES Intern Program

Details can be found under Agenda Item 9.

Workshops on ecological modeling

It was recommended that PICES partner with other organizations/programs to broaden applications of the NEMURO.FISH model developed by our MODEL Task Team. The first in the series was a workshop on “*Climate interactions and marine ecosystems*” (co-sponsored by the Asia Pacific Network and PICES) convened October 10–13, 2004, in conjunction with PICES XIII (Honolulu, U.S.A.). A workshop on “*Global comparison of sardine, anchovy and other small pelagics: Building towards a multi-species model*” was held November 14–17, 2005, in Tokyo, Japan. Support for the workshop was provided by the Japanese Fisheries Research Agency, PICES, GLOBEC, the Asia Pacific Network for Global

Change Research (APN), Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries Program (CAPaBLE) and the Inter American Institute for Global Change Research (IAI), enabling participation by 22 attendees from Chile, China, India, France, Japan, Mexico, Pakistan, the Philippines, South Africa, the United Kingdom, and the United States of America. Lectures and practical exercises on ecosystem modeling using NEMURO and NEMURO.FISH were also included in the first PICES summer school.

International student exchanges

At PICES XIV, it was recommended that for international student exchange PICES should explore a possibility to match funds with the Office of International Science and Engineering at the National Science Foundation. No action has been taken so far.

GOOS integration

At PICES XIV, a Study Group to develop a strategy for GOOS was established under the direction of the MONITOR Technical Committee (Decision 05/S/6(v)). This Study Group will meet at PICES XV to complete its report. The preliminary recommendation, yet to be considered by MONITOR and Science Board, is that PICES should not propose a North Pacific GOOS pilot project to I-GOOS and should focus its efforts to facilitate the cooperation and coordination among the existing North Pacific observing systems and GOOS Regional Alliances (GRAs) in developing cross-GRA observing projects and technologies, and common communication protocols for sharing of data and information. Council agreed that this approach is an effective way to implement one of PICES’ major objectives – to coordinate and facilitate observations on the status of the North Pacific ecosystems.

The F&A Chairman, Dr. Laura Richards, reminded Council that the amount of the encumbered funds kept in the Working Capital Fund under the general “high priority projects” category is about \$110,500. She pointed out that the F&A Committee was unable to earmark a

level of expenditures for any individual high priority project as specific activities under these projects are not sufficiently well defined at this point to make meaningful recommendations.

PICES Intern Program (Agenda Item 9)

The PICES Intern Program was approved in 1999 (Decision 99/A/7) and commenced in 2000. Council reviewed the current status of the Intern Program and confirmed that PICES and member countries are benefiting from the Program, and that it should be continued.

The Executive Secretary reminded Council that Mr. Xuewu Guo (Yellow Sea Fisheries Research Institute, China) was selected as the next PICES intern, and his term is expected to start on February 1, 2007. This term could be from 8 to a maximum of 12 months, depending on the intern's performance, the workload in the Secretariat and availability of funds. At the recommendation of the F&A Committee, Council extended the deadline of nominations for the 2008 PICES Internship until the 2007 inter-sessional meeting (Decision 06/A/8(iii)). Japan and Korea in particular, were encouraged to nominate candidates for this term.

The Intern Program has not been budgeted for, and over the years has been financed solely by voluntary contributions. Following Decision 05/A/7(ii), Contracting Parties were invited to provide voluntary contributions to support the Program. In response to this request, the Pacific Islands Fisheries Science Center and the Alaska Fisheries Science Center (NMFS, U.S.A.) contributed US \$15,000 and US \$10,000, respectively, to the Trust Fund for the Program. Council requested the Executive Secretary to send a letter to the National Marine Fisheries Service (U.S.A.) to thank them for their continuing support of the Intern Program (Decision 06/A/8(i)).

Council instructed the Executive Secretary to invite Contracting Parties to provide voluntary contributions to support the Program in 2006

and beyond (Decision 06/A/8(ii)). These contributions are crucial, as expenses for the

Intern Program in *FY* 2007 are estimated at the level of \$28,000, whereas the amount of funds held for the Program is about \$22,000.

Council also confirmed that the stipend should be kept at the current level of \$2,000 per month, and given the modest stipend, advised Contracting Parties to consider whether the personal circumstances of the intern warrant supplementation (Decision 06/A/8(iv)).

Improvement of participation in PICES activities (Agenda Item 10)

At the last three Annual Meetings, Council extensively discussed ways of improving the participation of scientists from PICES Contracting Parties in the activities of the PICES Standing Committees and their subsidiary bodies, and made several recommendations targeting at resolving existing problems. The Executive Secretary reported on the implementation of these decisions.

Guidelines for Chairmen and Convenors

Council requested that relevant information be provided to national delegates by the Secretariat to be used when selecting members for PICES permanent committees and temporary expert groups, and clarifying their responsibilities at the time of their appointment (Decision 03/S/7(iii)).

The second edition of the PICES Handbook was published prior to PICES XV, as the first PICES Handbook, compiled in 1998 and re-printed in 1999, is outdated and out of stock. The goal of this publication is to have in one place all basic documents regulating the functioning of the Organization. The format of the new Handbook allows the replacement of a revised clause or an outdated document, and the addition of a document at low costs. The Handbook will be sent to all committee and expert group members immediately after the Annual Meeting. National delegates are encouraged to use materials from the Handbook when appointing new members for these committees and groups.

Guidelines for temporary expert groups

Important lessons can be learned from the performance and experience of past temporary expert groups (Working Groups, Study Groups, Task Teams, Advisory Panels). At the request of Council (Decision 04/S/7(i)), Science Board performed a review of the temporary expert groups established since the inception of the Organization. The purpose of the review was not to evaluate the performance of any single group, but to get an idea of whether the current approach of the formation and financing of these groups is working. After presenting an assessment report at PICES XIV, Dr. Michael G. Foreman (POC Chairman) was asked to use the results of his analysis to prepare a set of guidelines for future PICES temporary expert groups. The draft document was reviewed by the F&A Committee at PICES XV. Given the extensive overlap between this document and the existing PICES Handbook for Chairmen and Convenors (prepared in 1999 and amended in 2001), it was recommended that the documents be merged, and the final document be presented for approval at the next Annual Meeting.

National membership review

National delegates were requested (Decisions 03/S/7(ii) and 04/S/7(ii)) to regularly review their national membership and make changes as appropriate. Nevertheless, all Contracting Parties have committee or expert group members who never or rarely attend PICES Annual Meetings. The problem is most serious with the People's Republic of China.

National membership lists

The Secretariat is updating membership lists on the PICES website as frequently as new information is provided (<http://www.pices.int/members/default.aspx>). In accordance with Decisions 03/S/7(ii) and 04/S/7(ii), national membership lists have also been included as Appendices in the Annual Reports since 2003. This practice will continue to maintain a historical record of PICES membership, and to assist in improving participation in activities of the Organization.

In the following discussion, the importance of inter-agency coordination was re-iterated. Within Contracting Parties, different agencies have the principal responsibility for interaction with PICES. The lead agencies often do not represent the interest of other agencies or coordinate PICES interactions with them. In fact, few countries have an effective inter-agency coordination mechanism. The problem of inter-agency cooperation and coordination is one that must be faced at the national level, and PICES can only urge that it be recognized and solved at that level. The formation of national committees to enhance and coordinate involvement of scientists in PICES activities, as recommended by the PICES Review Committee, might be the appropriate solution.

The main activities of permanent committees and temporary expert groups take place at meetings, especially during PICES Annual Meetings. While it is obviously important for appointed scientists to attend such meetings, and Rule 1(iii) of the PICES Rules of Procedure explicitly states that "*each Contracting Party shall bear the expenses of its own Delegation to all meetings authorized by the Council, held pursuant to this Convention*", Contracting Parties often fail to support attendance of their appointed experts at Annual Meetings. The work of committees and expert groups is thereby seriously impaired. The funding problem is not disconnected from the inter-agency problem, as the costs of participation can be shared among interested agencies.

Schedule and financing of future Annual Meetings (Agenda Item 11)

At the 2005 inter-sessional meeting, Council approved the proposal of Canada to host the Sixteenth Annual Meeting in Victoria, in 2007 (Decision 05/A/5(i)). At the 2006 inter-sessional meeting, Council accepted the new dates, October 26–November 4, 2007, for PICES XVI (Decision 06/A/7(i)). These dates are later than usual, but will avoid the overlap with the extended national holidays in China in early October, and with several international scientific meetings at the end of September or early October (including the 2007 ICES Annual

Science Conference in Helsinki, and the 2007 NPAFC Annual Meeting in Vladivostok). The theme of PICES XVI will be “*The changing North Pacific: Previous patterns, future projections, and ecosystem impacts*”, and the list of various scientific sessions and workshops to be convened at the meeting can be found in Decision 06/S/1. Dr. Laura Richards confirmed that Canada is not planning to request any funds from PICES to cover Annual Meeting costs.

At the 2006 inter-sessional meeting, Council approved the proposal of China to host the PICES Seventeenth Annual Meeting in Dalian, with the National Marine Environmental Monitoring Centre of the State Oceanic Administration as the local organizer (Decision 06/A/7(ii)). China was requested to inform the Secretariat by November 15, 2006, if changing the initially agreed dates of October 16–26, 2008, to October 23–November 2, 2008, is acceptable. The new dates are now confirmed by the State Oceanic Administration. The theme of PICES XVII will be “*Beyond observations to achieving understanding and forecasting in a changing North Pacific: Forward to the future*”.

Following the established 6-year rotation cycle, Council invited Korea to explore the feasibility of hosting the PICES Eighteenth Annual Meeting in 2009, and inform the Secretariat on this matter by March 31, 2007 (Decision 06/A/7(iii)).

Council confirmed that the practice of charging a registration fee for future PICES Annual Meetings should continue, and accepted the same registration fee structure for 2007 as was decided for the previous three Annual Meetings (Decision 06/A/7(iv)). Fees will be collected by the Secretariat and credited to the Working Capital Fund to support high priority projects and the Intern Program, and to cover costs associated with Annual Meetings. The allocation among these three purposes should be flexible and decided by the Executive Secretary (Decision 04/A/5(iv)).

Council re-iterated its strong support for the concept of inter-sessional Science Board meetings with the participation of Council

members, but confirmed that the need for such a meeting should be evaluated each year and, given meeting costs and time commitment of the members, an inter-sessional meeting should be held only if the agenda is substantive. Council thanked the Pacific Islands Fisheries Science Center (NMFS, U.S.A.) for co-sponsoring the 2006 inter-sessional meeting.

Council approved an inter-sessional Science Board/Governing Council meeting in conjunction with a workshop to develop a Science Plan for the new integrative scientific program of PICES, provided that costs are carefully controlled. Council accepted Japan’s offer to host both events in Yokohama in April 2007 (Decision 06/A/7(v)).

Report of Science Board (Agenda Item 12)

The Science Board met under the chairmanship of Dr. Kuh Kim, who presented the report to Council on October 22. The report was approved by Council, and is included elsewhere in this Annual Report. Details are given in *GC Appendix A* (Decisions 06/S/1–06/S/7).

Report of F&A Committee (Agenda Item 13)

The Finance and Administration Committee (F&A) met under the chairmanship of Dr. Laura Richards, who presented the report to Council on October 21. The report was approved by Council, and is included elsewhere in this Annual Report. Details are given in *GC Appendix A* (Decisions 06/A/1–06/A/11).

13.1 Audited accounts for fiscal year 2005

At the recommendation of the F&A Committee, Council accepted the audited accounts of *FY 2005* (*F&A Endnote 3*, Decision 06/A/1).

13.2 Annual contributions

Council reviewed the payment schedule of annual fees to the Organization (*F&A Endnote 4*), and noted that even though only two (Japan and Canada) of the six annual contributions for *FY 2006* arrived prior to the due date (January 1, 2006), there has been an overall improvement in

the timeliness of payment, and the annual contributions have been received within the first two months of the PICES fiscal year from all Contracting Parties except China. Korea and Russia have made especially impressive progress, moving the time of their payments from the third/forth quarters in 2000-2001 to February in 2006.

Council instructed the Executive Secretary to send a letter to Contracting Parties commending them for improved performance in submitting annual contributions for *FY* 2006, and describing the difficulties that late and/or partial payment cause the Organization (Decision 06/A/2(i)).

Council re-iterated that for the planning of their funding requests for annual contributions, Contracting Parties should continue to use the guideline generally accepted at PICES VIII (Decision 99/A/2(ii)), which states that the annual contributions will increase at the rate of inflation in Canada (Decision 06/A/2(ii)).

13.3 Fund-raising activities

External funding and voluntary contributions received for the period since PICES XIV for various activities of the Organization are reflected in *GC Endnote 3* and *F&A Endnote 5*.

It was pointed out that due to efforts from the PICES scientific community, national delegates, F&A Committee members, and the Secretariat, the level of external funding for various activities initiated by PICES has increased significantly over the last several years, and about a third of the current operational budget is now supported by voluntary contributions and partnerships. Fund-raising continues to be an important component of PICES activities, but most of the funding offers have specific product and service requirements. Therefore, it is becoming critical to develop a strategy to manage the workload of the Secretariat, the size and structure of which have remained unchanged for the last 12 years.

13.4 Budget

Estimated accounts for fiscal year 2006

The estimated accounts for *FY* 2006 were reviewed by the F&A Committee and approved by Council (Decision 06/A/3(i)).

Relocation and Home Leave Fund

The status of the Relocation and Home Leave Fund (RHLF) was reviewed. At the end of the fiscal year, RHLF will be approximately \$5,300 below the currently required amount of \$110,000. No relocation or home-leave expenses are expected in *FY* 2007, and interest earned during that year will bring RHLF close to the required amount. Therefore, the F&A Committee does not foresee a need to transfer funds to maintain RHLF at \$110,000 at the end of *FY* 2006. Council supported this suggestion.

Trust Fund

In *FY* 2006, more than \$65,000 from the Trust Fund was used to finance the Intern Program, and to support participation of young scientists from all Contracting Parties and scientists from countries with “economies in transition” to scientific meetings organized and co-sponsored by PICES. These expenditures were only partly compensated for by interest earned by the Fund, the voluntary contributions for the Intern Program, and a travel grant from SCOR. Council approved a transfer from the Working Capital Fund to the Trust Fund to recover the 2006 expenses, and to restore the Trust Fund to the level of \$110,000 by the end of the fiscal year (Decision 06/A/4(ii)).

At the 2006 inter-sessional meeting, Council adopted the revised guidelines for operating the Trust Fund (Decision 06/A/4(i)). The guidelines are posted on the PICES website and included in the new PICES Handbook.

Working Capital Fund

After inter-fund transfers approved by Council (Decisions 06/A/3(ii) and 06/A/4(ii)), the amount of funds available in the Working Capital Fund

is estimated at about \$276,308. This includes \$175,054 in encumbered funds held for special and high-priority PICES projects with completion in 2007-2008, leaving a balance in operating funds slightly above the required level of \$100,000. The F&A Committee was unable to earmark a level of expenditures for specific high priority projects as these activities are not sufficiently well defined at this point to make meaningful recommendations.

Proposed budget for fiscal year 2006

Council approved the proposed FY 2007 budget of \$745,000 (*F&A Endnote 6*). The amount of \$94,000 will be transferred from the Working Capital Fund to balance the budget, setting the total annual contribution at \$651,000, and the 2007 annual fee at \$108,500 per Contracting Party (Decision 06/A/3(ii)).

Forecast budget for fiscal year 2007

The FY 2007 forecast budget of \$760,000 was examined by the F&A Committee and presented to Council for information only. It will be further discussed at PICES XVI.

Election of Chairman and Vice Chairman (Agenda Item 14)

In accordance with Rule 6 of the PICES Rules of Procedure, *“The Chairman and the Vice-Chairman shall each be elected from among the Delegates for a term of two years and each shall be eligible for re-election only once for a successive term”*.

Dr. Vera Alexander (U.S.A.) was elected as the Chairman of Council in 2002 at PICES XI (Qingdao, People’s Republic of China). She was re-elected in 2004 at PICES XIII (Honolulu, U.S.A.), with her second term ending at the completion of this year’s Annual Meeting.

Following Rule 5(ii) of the Rules of Procedure, *“Nominations of candidates for elections in the Council shall be sent in writing to the Executive Secretary at least 60 days prior to the start of the Annual Meeting at which the election will occur”*. Prior to the deadline (August 16, 2006),

Mr. Akira Nakamae (Deputy Director General, Fisheries Agency of Japan) nominated Dr. Tokio Wada (National Delegate of Japan) to be considered for the next PICES Chairmanship. At the meeting, Council unanimously elected Dr. Wada as the Chairman of PICES for a 2-year term (Decision 06/A/9(i)).

Delegates expressed their gratitude to Dr. Alexander for her strong leadership and efforts over the past years. She will continue serving PICES as the Past-Chairman (Decision 96/A/5) and, in this capacity, will attend the meetings of Council for the period of Dr. Wada’s Chairmanship.

Dr. Wada was elected the Vice-Chairman in October 2004 at PICES XIII, and his term will end at the conclusion of this year’s Annual Meeting. Prior to the deadline, Dr. Lev N. Bocharov (National Delegate of Russia) was nominated for this position by Mr. Vladimir Izmaylov (Deputy Minister, Russian Ministry of Agriculture), Mr. Stanislav II’yasov (Head, Russian Federal Agency for Fisheries), and Dr. Samuel Pooley (National Delegate of U.S.A.). At the meeting, Council unanimously elected Dr. Bocharov as the Vice-Chairman of PICES for a 2-year term (Decision 06/A/9(ii)).

Delegates congratulated Drs. Wada and Bocharov on their election, who expressed their thanks for the support given by Council.

Appointment of F&A Chairman (Agenda Item 15)

Dr. Laura Richards (Canada) was appointed as the Chairman of the Finance and Administration Committee in 2004 at PICES XIII, and her first term of office will end at the completion of this year’s Annual Meeting. At the recommendation of the F&A Committee, and in accordance with Rule 19(iii) of the PICES Rules of Procedure, Council re-appointed Dr. Richards as the F&A Chairman for another 2-year term (Decision 06/A/10).

Other business (Agenda Item 16)

No other business was identified by members.

*GC Appendix A***2006 Governing Council decisions****06/A/1: Auditor**

Council accepted the audited accounts for *FY* 2005.

06/A/2: Annual contributions

- i. Council instructed the Executive Secretary to send a letter to Contracting Parties commending them for improved performance in submitting annual contributions for *FY* 2006, and describing the difficulties that late and/or partial payment causes the Organization.
- ii. For planning of their funding requests for annual contributions, Contracting Parties should continue to use the guideline generally accepted at the PICES Eighth Annual Meeting (Decision 99/A/2(ii)), which states that the annual contributions will increase at the rate of inflation in Canada.

06/A/3: Budget

- i. Council accepted the estimated accounts for *FY* 2006.
- ii. Council approved the 2007 budget of \$745,000. The amount of \$94,000 will be transferred from the Working Capital Fund to balance the budget, setting the total annual contribution at \$651,000, and the 2007 annual fee at \$108,500 per Contracting Party.

06/A/4: Trust Fund

- i. Council adopted the new guidelines for operating the Trust Fund (at the 2006 inter-sessional meeting).
- ii. Council approved a transfer from the Working Capital Fund to the Trust Fund to recover the 2006 expenses, and to restore the Trust Fund to the level of \$110,000 by the end of the fiscal year.

06/A/5: Rules of Procedure and Financial Regulations

Council adopted the new Rules of Procedure and Financial Regulations (at the 2006 inter-sessional meeting).

06/A/6: Scientific cooperation with non-member countries

A Study Group has been established under the direction of Council, to explore options on how scientific cooperation with other (non-member) countries could be best achieved. Terms of Reference and membership of the Study Group are listed in *GC Appendix B*.

06/A/7: Schedule and financing of future Annual Meetings and inter-sessional Science Board/Governing Council meetings

- i. Council accepted the new dates, October 26–November 4, 2007, for the PICES Sixteenth Annual Meeting to be held in Victoria, Canada (at the 2006 inter-sessional meeting). The theme of PICES XVI will be “*The changing North Pacific: Previous patterns, future projections, and ecosystem impacts*”.
- ii. Council approved the proposal of China to host the PICES Seventeenth Annual Meeting in Dalian with the National Marine Environmental Monitoring Centre of the State Oceanic Administration as the local organizer (at the 2006 inter-sessional meeting). China was requested to inform the Secretariat by November 15, 2006, if changing the initially agreed dates of October 16–26, 2008, to October 23–November 2, 2008, is acceptable (the new dates are now confirmed). The theme of PICES XVII will be “*Beyond observations to achieving understanding and forecasting in a changing North Pacific: Forward to the future*”.
- iii. Following the established 6-year rotation cycle, Council requested Korea to explore

the feasibility of hosting the PICES Eighteenth Annual Meeting in 2009, and inform the Secretariat on this matter by March 31, 2007.

- iv. Council accepted the same registration fee structure for 2007 as was maintained for 2004-2006:

Type	CDN \$
Registration fee	225
Early registration fee	150
Students registration fee	50
Spousal registration fee	50

- v. Council approved an inter-sessional Science Board/Governing Council meeting, in conjunction with a workshop to develop a Science Plan for the new integrative scientific program of PICES, provided that costs are carefully controlled. Council accepted Japan's offer to host both events in Yokohama in April 2007.

06/A/8: Intern Program

- i. Council requested the Executive Secretary to send a letter to the National Marine Fisheries Service (U.S.A.) to thank them for their continuing support of the Intern Program.
- ii. Council instructed the Executive Secretary to invite Contracting Parties to provide voluntary contributions to support the Intern Program in 2007 and beyond.
- iii. Council extended the deadline of nominations for the 2008 PICES Internship until the 2007 inter-sessional Science Board/Governing Council meeting.
- iv. Council confirmed that the stipend should be kept at the current level of \$2,000 per month. The nominating Contracting Party could consider supplementing this modest stipend, depending on the intern's personal circumstances.

06/A/9: Election of Chairman and Vice Chairman

- i. Council unanimously elected Dr. Tokio Wada (Japan) as the Chairman of PICES for a 2-year term (2006-2008). Accordingly

Dr. Vera Alexander (U.S.A.) will serve as the Past-Chairman.

- ii. Council unanimously elected Dr. Lev N. Bocharov (Russia) as the Vice-Chairman of PICES for a 2-year term (2006-2008).

06/A/10: Appointment of F&A Committee Chairman

Council re-appointed Dr. Laura Richards (Canada) as the Chairman of the Finance and Administration Committee for a 2-year term (2006-2008).

06/A/11: Science Board Chairman-elect

To facilitate the continuity of Science Board affairs, Council established a Science Board Chairman-elect position to allow the election of the Science Board Chairman 1 year before the official change of the chairmanship (at the 2006 inter-sessional meeting). Dr. John E. Stein (U.S.A.) was unanimously elected for this position at PICES XV.

06/S/1: PICES Sixteenth Annual Meeting

The following workshops are to be convened (a List of Acronyms can be found at the end of the Annual Report):

- A ½-day BIO (MIE-AP) workshop on "*Lessons learned during MIE-1 and MIE-2: Reconciling acoustics and trawl data*";
- A 1-day FIS workshop on "*Methods for standardizing trawl surveys to ensure constant catchability*";
- A 1-day FIS/MEQ (WG 19) workshop on "*Comparative analysis of frameworks to develop ecosystem-based approach to management and research needed for implementation*";
- A 1-day MEQ (HAB-S) workshop on "*Review of selected harmful algae in the PICES region: III. Heterosigma akashiwo and other harmful raphidophytes*" preceded by a ½-day laboratory demonstration on *Heterosigma* cell and toxin detection;
- A ½-day MONITOR/BIO workshop on "*Monitoring primary productivity in the North Pacific*";

- A 1½-day POC/CCCC (WG 20/CFAME) workshop on “*Climate scenarios for ecosystem modeling*”.

The following scientific sessions are to be convened (a List of Acronyms can be found at the end of the Annual Report):

- A ¾-day Science Board Symposium on “*The changing North Pacific: Previous patterns, future projections, and ecosystem impacts*”;
- A 1-day BIO Contributed Paper Session;
- A 1-day BIO/POC Topic Session on “*Decadal changes in carbon biogeochemistry in the North Pacific*”;
- A ½-day BIO/FIS/POC Topic Session on “*Phenology and climate change in the North Pacific: Implications of variability in the timing of zooplankton production to fish, seabirds, marine mammals and fisheries (humans)*”;
- A 1-day CCCC Contributed Paper Session;
- A 1-day CCCC/FIS Topic Session on “*Towards ecosystem-based management: Recent developments and successes in multi-species modeling*”;
- A 1-day FIS Contributed Paper Session;
- A 1-day FIS Topic Session on “*Ecosystem approach to fisheries: Improvements on traditional management for declining and depleted stocks*”;
- A ½-day FIS/CCCC/BIO Topic Session on “*Fisheries interactions and local ecology*”;
- A 1-day MEQ Topic Session on “*The relative contributions of off-shore and in-shore sources to harmful algal bloom development and persistence in the PICES region*”;
- A ½-day MEQ/FIS Topic Session on “*Coldwater biogenic habitat in the North Pacific*”;
- A 1-day MONITOR Topic Session on “*Recent advancements in ocean observation systems: Scientific discoveries and technical aspects*”;
- A 1-day POC Contributed Paper Session;
- A 1-day POC/CCCC/MONITOR Topic Session on “*Operational forecasts of oceans and ecosystems*”;

- A ½-day TCODE Topic Session on “*Data management, data analysis and data delivery systems to support detection and prediction of North Pacific ecosystem changes*”.

06/S/2: Inter-sessional meetings/workshops

The following inter-sessional meetings and workshops are to be convened/co-sponsored in 2007 and beyond (a List of Acronyms can be found at the end of the Annual Report):

- A 2-day meeting of the FISP Writing Team, February 16–17, 2007, Seattle, U.S.A.;
- A 2-day meeting of CREAMS-AP, March 2007, Qingdao, China;
- A 3-day workshop to develop a Science Plan for future integrative scientific program of PICES and an inter-sessional Science Board/Governing Council meeting, April 16–19, 2007, Yokohama, Japan;
- A display of PICES publications at the joint meeting of the Mexican Fisheries Society and the Mexican Chapter of the American Fisheries Society, May 2–4, 2007, La Paz, Mexico;
- A 5th International Conference on “*Marine bioinvasions*” (co-sponsored by ICES, PICES and the U.S. National Sea Grant College Program), May 21–24, 2007, Cambridge, U.S.A. (approved in 2003);
- A 2-day joint meeting of PICES WG 21 on *Non-indigenous aquatic species*, ICES WG on *Introductions and Transfers of Marine Organisms* and ICES/IOC/IMO WG on *Ballast Waters and Other Ship Vectors*, May 25–26, 2007, in Cambridge, U.S.A.;
- A 3-day FIS workshop on “*Forecasting climate impacts on fish production*”, May 2007, Seattle, U.S.A., or June 2007, Hakodate, Japan;
- A 3-day CFAME workshop on “*Linking climate-forcing mechanisms to indicators of species ecosystem-level changes: A comparative approach*”, May 2007, Seattle, U.S.A., or June 2007, Hakodate, Japan;
- A 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*” (co-sponsored by PICES, ICES and GLOBEC), May 28–

- June 1, 2007, Hiroshima, Japan (approved in 2003);
- ESSAS/PICES Workshops on “*Evaluation of climate scenarios for subarctic regions*” (1 day) and “*The role of seasonal sea ice cover in marine ecosystems*” (2 days), June 4–6, 2007, Hakodate, Japan;
- An ICES/PICES Conference for Early Career Scientists on “*New frontiers in marine science*”, June 26–29, 2007, Baltimore, U.S.A. (approved in 2003);
- ICES/PICES Theme Sessions on “*Integrating observations and models to improve predictions of ecosystem response to physical variability*”, on “*Comparative marine ecosystem structure and function: Descriptors and characteristics*” and on “*The ecosystem approach: What’s the impact on marine science, science based advice and management of marine ecosystems*” at the ICES Annual Science Conference, September 17–21, 2007, Helsinki, Finland;
- An International Symposium on “*Reproductive and recruitment processes in exploited marine fish stocks*” (co-sponsored by NAFO, PICES and ICES), October 1–3, 2007, in Lisbon, Portugal;
- An International Symposium on “*Effects of climate change on the world’s oceans*” (co-sponsored by ICES, PICES, IOC, GLOBEC, SCOR and WCRP), May 19–23, 2008, Gijón, Spain (approved in 2005).

06/S/3: Travel support

PICES will provide travel support for:

PICES XVI

- Invited speakers for Topic Sessions at the Annual Meeting with the normal allocation of approximately \$5,000 per Committee (including Science Board) and CCCC Program; additional requests are subject to fund availability;
- 1 invited speaker for the BIO workshop on “*Lessons learned during MIE-1 and MIE-2: Reconciling acoustics and trawl data*”;
- 1 invited speaker for the FIS workshop on “*Methods for standardizing trawl surveys to ensure constant catchability*”;

- 1 invited speaker for the FIS/MEQ workshop on “*Comparative analysis of frameworks to develop ecosystem-based approach to management and research needed for implementation*”;
- 2 invited speakers for the MEQ workshop on “*Review of selected harmful algae in the PICES region: III. Heterosigma akashiwo and other harmful raphidophytes*”;
- 1 invited speaker for the POC/CCCC workshop on “*Climate scenarios for ecosystem modeling*”.

Inter-sessional meetings

- PICES representative to participate in the 3rd Forum of GOOS Regional Alliances (November 14–17, 2006, Cape Town, South Africa);
- PICES representative to attend the GOOS Scientific Steering Committee meeting (March 13–17, 2007, Seoul, Korea);
- PICES representative to present information on activities of the Organization at the joint meeting of the Mexican Fisheries Society and the Mexican Chapter of the American Fisheries Society;
- 2 invited speakers for the FIS workshop on “*Forecasting climate impacts on fish production*”;
- 2 invited speakers for the CFAME workshop on “*Linking climate-forcing mechanisms to indicators of species ecosystem-level changes: A comparative approach*”;
- 2–3 Asian scientists to attend the 5th International Conference on “*Marine bioinvasions*” and the joint meeting of PICES WG 21, ICES WGITMO and ICES/IOC/IMO WGBOSV;
- PICES SSC members for the 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*”;
- 1 member of WG 20 to attend ESSAS/PICES workshops on “*Evaluation of climate scenarios for subarctic regions*” and “*The role of seasonal sea ice cover in marine ecosystems*”;
- PICES representative to attend the IOC General Assembly (June 2007, Paris, France);
- PICES convenors to the joint ICES/PICES

Theme Sessions at the ICES Annual Science Conference;

- PICES representative to attend the SCOR Executive Committee meeting (August 2007, Bergen, Norway);
- PICES representative to attend the NPAFC Fifteenth Annual Meeting (September 2007, Vladivostok, Russia);
- PICES convenor and SSC member to attend the Symposium on “*Reproductive and recruitment processes in exploited marine fish stocks*”.

Science Board Chairman to attend:

- The workshop to develop a Science Plan for future integrative scientific program of PICES and an inter-sessional Science Board Meeting (April 2007, Yokohama, Japan);
- PICES Sixteenth Annual Meeting (October 2007, Victoria, Canada).

06/S/4: Publications

i. Council approved the following publications:

PICES Scientific Report Series, 2007–2008

- Final report of WG 16 on “*Climate change, shifts in fish production, and fisheries management*” (approved in 2002 for publication in 2004; delayed till 2007, pending review by FIS);
- Guide to best practices for oceanic CO₂ measurements and data reporting (approved in 2002 for publication in 2004; delayed till 2007, pending review by CC-S);
- Report of FIS workshop on “*Forecasting climate impacts on fish production*” (2007);
- Final report of WG 19 on “*Ecosystem-based management science and its application to the North Pacific*” (planned for 2008).

Special issues of primary journals, 2007–2008

- *Ecological Modelling* (February 2007; Guest Editors: M.J. Kishi, S.-I. Ito, B.A. Megrey and F.E. Werner) – selected papers on NEMURO and NEMURO.FISH models (approved in 2004);
- *Deep-Sea Research II* (2007; Guest Editors: K. Drinkwater, G.L. Hunt, D.L. Mackas and S. McKinnell) – selected papers from the ESSAS Symposium on “*Climate variability*

and sub-arctic marine ecosystems” (approved in 2005);

- *Progress in Oceanography* (2007; Guest Editors: H. Batchelder and S. Kim) – selected papers from the PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*” (approved in 2005);
- *Progress in Oceanography* (2007; Guest Editors: A. Peña, S. Bograd and A. Bychkov) – selected papers from the symposium on “*Time series of the Northeast Pacific: A symposium to mark the 50th anniversary of Line-P*” (approved in 2005);
- *Plankton and Benthos Research* (2007–2008; Guest Editors: H. Iizumi and TBD) – selected papers from the PICES XV Topic Session on “*The human dimension of jellyfish blooms*”;
- *Journal of Marine Systems* (2007-2008; Guest Editors: K.-I. Chang, S. McKinnell, C. Mooers and TBD) – selected papers from the 2006 CREAMS/PICES workshop on “*Model-data inter-comparison for the Japan/East Sea*”;
- *ICES Journal of Marine Science* (2008; Guest Editors: J. Carlton, J. Pederson and TBD) – selected papers from the 5th International Conference on “*Marine bioinvasions*”;
- *ICES Journal of Marine Science* (2008; Guest Editors: M. Dagg, R. Harris, L. Valdez and S.-I. Uye) – selected papers from the 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*”;
- *Journal of Northwest Atlantic Fishery Science* (2008; Guest Editors: R.D. Brodeur, M. Dickey-Collas and E. Trippel) – selected papers from the International Symposium on “*Reproductive and recruitment processes of exploited marine fish stocks*”.

Other publications, 2007–2008

- American Fisheries Society book on “*The ecology of juvenile salmon in the Northeast Pacific Ocean: Regional comparisons*” (approved in 2005 for publication in 2006; delayed till 2007; Guest editors: R.D. Brodeur, C. Grimes, L. Haldorson and S. McKinnell);

- Brochure on “*Ecosystem-based management science and its application to the North Pacific*” (planned for 2008).
- ii. Council established a new electronic PICES Technical Report series. The TCODE report on “*Metadata federation of PICES member countries*” will be the first report published in this series in 2007.

06/S/5: Future of current groups

- Study Group (under the direction of Council) on *Rules of Procedure and Financial Regulations* should be disbanded after completing its task (Council adopted the new Rules of Procedure and Financial Regulations at the 2006 inter-sessional meeting);
- Working Group 18 (under the direction of FIS and MEQ) on *Mariculture in the 21st century – The interaction between ecology, socio-economics and production* should be disbanded for inadequate progress in achieving its tasks;
- POC should withdraw as a co-sponsor of the North Pacific Data Buoy Advisory Panel, and this Advisory Panel should report only to the Data Buoy Cooperation Panel

GC Appendix B

Study Group on *Scientific cooperation between PICES and non-member countries*

Terms of Reference:

1. Identify options and propose mechanisms for scientific cooperation between PICES and non-member countries within the current Convention. The options considered will include a review of the ICES “Affiliate Status” arrangement and how it could be adapted to the needs of PICES. Benefits and drawbacks should be identified for each option in terms of (a) scientific objectives of PICES, (b) financial and human resources implications, and (c) needed changes to the Rules of Procedure and Financial Regulations.
2. Assess the benefits and challenges in terms of the scientific objectives of PICES of

(DBCP). The Executive Secretary was requested to send a letter informing DBCP on this decision.

06/S/6: New PICES groups

- A Study Group on *Scientific cooperation between PICES and non-member countries* has been established under the direction of Council, with terms of references and membership as described in *GC Appendix B*;
- A Study Group on *Ecosystem status reporting* has been established under the direction of Science Board, with terms of reference and membership as described in *GC Appendix B*;
- A Study Group on *Marine aquaculture and ranching in the PICES region* has been established under the direction of Science Board, with terms of reference as described in *GC Appendix B*.

06/S/7: Relations with other organizations and programs

Council approved the revised Standing List of International Organizations and Programs, and agreed with the identified priorities for interaction in 2006–2007.

expanding the “area concerned”, as specified under Article II of the Convention, to the Southern Pacific, and provide a compilation of all Contracting Parties’ views on such a change to the Convention.

3. Provide its report by August 15, 2007, for consideration at PICES XVI (October 2007, Victoria, Canada).

Membership:

The Study Group will be chaired by the Chairman of the F&A Committee, and its membership will include one representative from each Contracting Party, plus a representative from Science Board and a representative from the Secretariat.

Study Group on *Ecosystem status reporting*

Terms of Reference:

1. Develop options and budgets for paper and electronic versions of the North Pacific Ecosystem Status Report;
2. Provide its report by April 15, 2007, for consideration at the 2007 inter-sessional Science Board/Governing Council meeting.

Membership:

The Study Group membership will include one representative from each Contracting Party and a representative from the Secretariat.

Study Group on *Marine aquaculture and ranching in the PICES region*

Terms of Reference:

1. Review and assess why PICES WG 18 on *Mariculture in the 21st century – The interaction between ecology, socio-economics and production* had limited success in achieving its terms of reference;
2. Determine the highest priority marine aquaculture and/or ocean ranching science

needs (< 10) for the next 5–10 years in each PICES member country;

3. Develop recommendations for joint activities in marine aquaculture and/or ocean ranching using the PICES Action Plan format;
4. Provide its report by September 2007, for consideration at PICES XVI.

GC Endnote 1

Participation list

Canada

Serge Labonté
Laura Richards

Japan

Tokimasa Kobayashi (advisor, October 21 only)
Hideki Nakano (advisor)
Yoshihide Tsuda (alternate delegate)
Tokio Wada

People's Republic of China

Zhi-Xin Chen (alternate delegate, October 17 only)
Fengkui Liang (alternate delegate, October 17 only)
Fangli Qiao (advisor, October 17 and 22 only)
Gongke Tan (advisor)
Dongmei Tang (advisor, October 17 only)

Republic of Korea

Seok Jin Kang (alternate delegate)
Ig-Chan Pang

Russia

Lev N. Bocharov
Oleg Katugin (advisor)
Igor Shevchenko (advisor, October 17 only)

U.S.A.

George W. Boehlert
K. Alexandra Curtis (advisor)
Patricia Livingston (advisor, October 17 only)
Samuel Pooley

Other

Vera Alexander (Chairman, PICES)
Alexander Bychkov (Executive Secretary)
Hyung-Tack Huh (Past-Chairman, PICES)
Kuh Kim (Chairman, Science Board, October 22 only)
John E. Stein (Chairman-elect, Science Board, October 21 and 22 only)

GC Endnote 2**Governing Council meeting agenda**

1. Opening remarks
2. Adoption of agenda and meeting procedures
3. Report on administration
4. Report of 2006 inter-sessional Governing Council meeting
5. Membership and observers from other countries
6. Relations with relevant international and regional organizations
7. Progress report of the Study Group on *Future Integrative Scientific Program(s)*
8. High priority projects:
 - a. Development of the next PICES integrative scientific program
 - b. Preparation of the next North Pacific Ecosystem Status Report
 - c. Capacity building
 - d. GOOS integration
9. PICES Intern Program
10. Improvement of participation in PICES activities
11. Schedule and financing of future Annual Meetings
12. Report and recommendations of Science Board
13. Report and recommendations of F&A Committee
14. Election of Chairman and Vice-Chairman
15. Appointment of F&A Committee Chairman
16. Other business

GC Endnote 3**Preliminary Report on Administration for 2006****I. Annual contributions**

According to Regulation 5(ii) of the PICES Financial Regulations, all national contributions

to PICES are payable by the first day of the financial year (January 1) to which they relate. Dues for 2006 were paid as follows:

Japan -----	December 15, 2005
Canada-----	December 28, 2005
U.S.A.-----	January 30, 2006
Republic of Korea-----	February 8, 2006
Russian Federation-----	February 28, 2006
People's Republic of China-----	August 1, 2006

II. External and additional funding

Details on external funding and voluntary contributions received since PICES XIV are included in *F&A Endnote 5*.

second *in situ* iron enrichment experiments in the western subarctic North Pacific (SEEDS II), and to discuss differences in magnitude, biology and export between SEEDS I and SEEDS II, October 17–18, 2005, Tokyo, Japan;

III. Inter-sessional meetings

Since PICES XIV (October 2005), the following inter-sessional meetings were convened/co-sponsored, for which financial, travel and logistical arrangements were made:

- a SEEDS-II Experiment Workshop (co-sponsored by the Ocean Research Institute and PICES) to synthesize results from the

- an NPAFC/PICES Symposium on “*The status of Pacific salmon and their role in North Pacific marine ecosystems*”, October 30–November 1, 2005 (in conjunction with the NPAFC Annual Meeting), Jeju, Korea;
- an International Workshop on “*Global comparison of sardine, anchovy and other small pelagics – building towards a multi-species model*” (co-sponsored by FRA,

- APN, IAI, PICES and GLOBEC), November 14–17, 2005, Tokyo, Japan;
- an International Repeat Hydrography Workshop (co-sponsored by JAMSTEC, CLIVAR, IOCCP and PICES) and a meeting of the PICES Section on *Carbon and climate*, November 14–17, 2005, Shonan Village, Japan;
 - a CFAME Workshop on “*A comparison of regional mechanisms for fish production: Ecosystem perspectives*”, January 12–13, 2006, Tokyo, Japan;
 - Panel discussions at the “*Marine Science in Alaska*” Symposium (January 25, 2006, Anchorage, U.S.A.) and at the meeting of the North Pacific Fisheries Management Council (February 8, Seattle, U.S.A.), to involve the Bering Sea and international communities in the development of a set of operational objectives;
 - an inter-sessional Science Board/Governing Council meeting, April 17–18, 2006, Honolulu, U.S.A.;
 - a PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*”, April 19–21, 2006, Honolulu, U.S.A.;
 - a PICES/NPRB Workshop on “*Integration of ecological indicators for the North Pacific with emphasis on the Bering Sea*”, June 1–3, 2006, Seattle, U.S.A.;
 - a Workshop to develop comparative studies of the sub-Arctic seas (co-sponsored by ESSAS/GLOBEC, PICES and TINRO-Center), June 12–14, 2006, St. Petersburg, Russia;
 - a Symposium on “*Time series of the Northeast Pacific Ocean: A symposium to mark the 50th anniversary of Line-P*” (co-sponsored by DFO and PICES), July 5–8, 2006, Victoria, Canada;
 - an International Symposium on “*Bio-invasion of non-indigenous species*” and a workshop on “*Remote sensing of marine environment in the in the Northwest Pacific region*” (co-sponsored by KIOS, PKNU, NPEC, NFRDI, MOMAF, NOWPAP, IOC/WESTPAC and PICES), July 30–August 2, 2006, Busan, Korea;
 - a CREAMS/PICES Workshop on “*Model-data inter-comparison for the Japan/East Sea*” (co-sponsored by SNU, KORDI, PKNU and PICES), August 21–22, 2006; Busan, Korea;
 - a PICES Summer School on “*Circulation and ecosystem modeling*” (co-sponsored by SNU, KORDI, MOMAF, NFRDI and PICES), August 23–25, 2006, Busan, Korea;
 - ICES/PICES Theme Sessions on “*Large-scale changes in the migration of small pelagic fish and the factors modulating such changes*” (September 23, 2006) and on *Operational Oceanography* (September 19, 2006) at the ICES Annual Science Conference, Maastricht, Netherlands.
- The following workshops were convened in conjunction with PICES XV in Yokohama, Japan:
- a BIO/POC Workshop on “*Responses of marine mammals and seabirds to large-scale and long-term climate change: Mechanisms of environmental forcing*”, October 12, 2006;
 - an IFEP/MODEL Workshop (co-sponsored by SOLAS) on “*Modeling iron biogeochemistry and ocean ecosystems*”, October 13, 2006;
 - an MIE Workshop on “*Micronekton sampling gear inter-calibration experiment*”, October 13, 2006;
 - a CFAME Workshop on “*Climate forcing and marine ecosystems*”, October 13, 2006;
 - a FIS Workshop on “*Linking climate to trends in productivity of key commercial species in the subarctic Pacific*”, October 13–14, 2006;
 - an MEQ Workshop on “*Review of selected harmful algae in the PICES region: II. Dinophysis & Cochlodinium*”, October 14, 2006;
 - a POC workshop on “*Evaluation of climate change projections*”, October 14, 2006;
 - an MEQ/FIS Workshop on “*Criteria relevant for the determination of unit eco-regions for EBM in the PICES area*”, October 15, 2006;
 - a MONITOR/TCODE Workshop on “*Data management, delivery and visualization of high-volume data products*”, October 15, 2006;

Preparations, arrangements or planning are in progress for:

- an International Conference on “*The Humboldt Current system: Climate, ocean dynamics, ecosystem processes and fisheries*” (co-sponsored by IMARPE, IRD, NASA, FAO, GLOBEC, ICES, PICES and IMBER), November 27–December 1, 2006, Lima, Peru;
- a 5th International Conference on “*Marine bioinvasions*”, (co-sponsored by ICES, PICES and the U.S. National Sea Grant College Program), May 21–24, 2007, Cambridge, U.S.A.;
- a 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*” (co-sponsored by PICES, ICES and GLOBEC), May 28–June 1, 2007, Hiroshima, Japan;
- an ICES/PICES Conference for Early Career Scientists on “*New frontiers in marine science*”, June 26–29, 2007, Baltimore, U.S.A.;
- an International Symposium on “*Reproductive and recruitment processes in exploited marine fish stocks*” (co-sponsored by NAFO, PICES and ICES), October 1-3, 2007, Lisbon, Portugal;
- an International Symposium on “*Effects of climate change on the world’s oceans*” (co-sponsored by ICES, PICES, IOC, GLOBEC, SCOR and WCRP), May 19–23, 2008, Gijón, Spain.

IV. Publications

Publications produced after PICES XIV or still in progress include:

Primary journals

- “*Marine ecosystem structure and dynamics*” (Guest Editors: G. Hunt and S. McKinnell) – *Progress in Oceanography*, Vol. 68(2-4), 2006 (special issue from the PICES XIII Topic Session on “*Mechanisms that regulate North Pacific ecosystems: Bottom up, top down, or something else?*”);
- “*Top predator hot spots in the North Pacific*” (Guest Editors: W. Sydeman, R. Brodeur, A. Bychkov, C. Grimes and S. McKinnell) – *Deep-Sea Research II*, Vol.

53(3-4), 2006 (special issue from the PICES XIII Topic Session on “*Hot spots and their use by migratory species and top predators in the North Pacific*”);

- “*Modeling of North Pacific marine ecosystems*” (Guest editors: M. Kishi, B. Megrey, S.-I. Ito and F. Werner) – *Ecological Modeling*, 2006 (special issue on NEMURO and NEMURO.FISH models);
- “*Canadian SOLAS: Subarctic Ecosystem Response to Iron Enrichment (SERIES)*” (Guest Editors: P.J. Harrison, P.W. Boyd, M. Levasseur, A. Tsuda, R.B. Rivkin, S.O. Roy and W.L. Miller) – *Deep-Sea Research II*, Vol. 53 (20-22), 2006 (papers from the IFEP-AP SERIES experiment).

Peer-review process is in progress for three special issues with expected publication in 2007:

- *Deep-Sea Research II* (Guest Editors: K. Drinkwater, G. Hunt, D. Mackas and S. McKinnell) – selected papers from the ESSAS Symposium on “*Climate variability and sub-arctic marine ecosystems*”;
- *Progress in Oceanography* (Guest Editors: H. Batchelder and S. Kim) – selected papers from the PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*”;
- *Progress in Oceanography* (Guest Editors: A. Peña, A. Bychkov and TBD) – selected papers from the symposium on “*Time series of the Northeast Pacific: A symposium to mark the 50th anniversary of Line-P*”.

PICES Scientific Report Series

- Takeda, S. and Wong, C.S. (Eds.) 2006. Report of the 2004 Workshop on “*In situ iron enrichment experiments in the eastern and western subarctic Pacific*”. PICES Sci. Rep. No. 31, 207 pp.
- Miller, C.B. and Ikeda, T. (Eds.) 2006. Report of the 2005 Workshop on “*Oceanic ecodynamics comparison in the subarctic Pacific*”. PICES Sci. Rep. No. 32, 105 pp.

The following reports are to be published by the end of this year:

- Kruse, G.H., Livingston, P., Overland, J.E., Jamieson, G.S., McKinnell, S. and Perry,

R.I. (Eds.) 2006. Report of the PICES/NPRB Workshop on Integration of Ecological Indicators of the North Pacific with Emphasis on the Bering Sea;

- Megrey, B.A., Macklin, S.A, Bahl, K. and Klawitter, P.D. (Eds.) 2006. Metadata federation of PICES member countries.

Other publications

- PICES 2005 Annual Report;
- PICES Handbook;
- Announcement, poster and book of abstracts for PICES XV;
- Announcement and poster for the 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*”;
- Announcement (flyer) for the ICES/PICES Conference for Early Career Scientists “*New frontiers in marine science*”.

PICES Press - Newsletters

- Two regular issues: Vol. 14, No. 1 (January 2006) and Vol. 14, No. 2 (July 2006).

V. Representation at other organization meetings and travel by PICES officers

- Dr. Skip McKinnell (Deputy Executive Secretary) represented PICES at the 2005 CalCOFI Conference and the PaCOOS Board meeting (December 2005, La Jolla, U.S.A.);
- Ms. Darlene Smith (WG 21 Co-Chairman) represented PICES at the meetings of the ICES/IOC/IMO Working Group on *Ballast Waters and Other Ship Vectors* and the ICES Working Group on *Introductions and Transfers of Marine Organisms* (March 2006, Oostende, Belgium);
- Dr. Suam Kim (CCCC Co-Chairman) represented PICES at the 2006 Pacific-Rim Fisheries Congress (March 2006, Hanoi, Vietnam);
- Dr. Alexander Bychkov (Executive Secretary) represented PICES at the 2006 EGU General Assembly (April 2006, Vienna, Austria);
- Ms. Christina Chiu (Deputy on Administration) represented PICES at the

International Fisheries Commissions Pension Society meeting (April 2006, La Jolla, U.S.A.);

- Drs. Vera Alexander (PICES Chairman) and Kuh Kim (Science Board Chairman) and members of the Secretariat travelled in April 2006, to Honolulu, U.S.A., for the 2006 Science Board/Governing Council Meeting; and in October 2006 to Yokohama, Japan, for PICES XV;
- Dr. Harold P. Batchelder (CCCC Co-Chairman) represented PICES at the GLOBEC SSC meeting (April 2006, Honolulu, U.S.A.);
- Dr. Masahide Kaeriyama (FIS member) represented PICES at the 2006 NPAFC CSRS meeting (April 2006, Sapporo, Japan);
- Dr. Skip McKinnell represented PICES at the IOC Executive Committee meeting (June 2005, Paris, France);
- Dr. Yoshiro Watanabe (CFAME member) and Dr. Bernard A. Megrey (TCODE member) served as PICES convenors to the joint ICES/PICES theme sessions on “*Large-scale changes in the migration of small pelagic fish and the factors modulating such changes*” and on “*Operational Oceanography*”, respectively, at the ICES Annual Science Conference (September 2006, Maastricht, Netherlands);
- Dr. Alexander Bychkov will represent PICES at the NPAFC Fourteenth Annual Meeting (October 2006, Vancouver, Canada);
- Dr. R. Ian Perry will represent PICES (as a member of the SSC) at the International Conference on “*The Humboldt Current system: Climate, ocean dynamics, ecosystem processes and fisheries*” (November 2006, Lima, Peru).

VI. Relations with international scientific organizations and programs

The following reflects relationships with international scientific organizations and programs of regional and global scale, and with regional scientific and monitoring efforts in the North Pacific:

Asia-Pacific Network for Global Change Research (APN)

- APN and APN CAPaBLE (the APN Capacity Building/Enhancement for Sustainable Development in Developing Countries Program) co-sponsored the MODEL Workshop on “*Global comparison of sardine, anchovy and other small pelagics – building towards a multi-species model*”, held November 14–17, 2005, in Tokyo, Japan (other co-sponsors were FRA, PICES and GLOBEC);
- Mr. Hiroki Hashizume (Director, APN Secretariat) attended PICES XV as an observer and addressed Council on potential areas of cooperation between APN and PICES. APN also had several posters at this meeting outlining general information and highlighting scientific objectives and recent activities of the project.

International Argo Program

- Dr. Nobuyuki Shikama (Argo Science Team) attended PICES XV as an observer. Argo also had a poster at this meeting outlining general information and highlighting scientific objectives and recent activities of the project.

International Research Programme on Climate Variability and Predictability (CLIVAR)

- PICES co-sponsored, with CLIVAR, JAMSTEC and IOCCP, an International Repeat Hydrography Workshop held November 14–16, 2005, at the Shonan Village, Japan, and convened a meeting of its Section on *Carbon and climate* in conjunction with this workshop;
- PICES Working Group 20 on *Evaluation of Climate Change Projections* (established in 2005) is the appropriate avenue to enhance collaboration with CLIVAR through its Pacific Panel. Currently Dr. William Crawford serves as a liaison between the two groups.

Census of Marine Life program (CoML)

- Dr. Ron O’Dor (CoML Chief Scientist) attended PICES XV as an observer and addressed Council on potential areas of cooperation between CoML and PICES. It

was suggested that CoML is interested in updating, prior to 2009, a report entitled “*Marine life in the North Pacific Ocean: The known, unknown and unknowable*” developed by PICES in 2005. This report was published as PICES Special Publication No. 2, and an interactive fully searchable version of the report was posted on the PICES website.

Ecosystem Studies of Subarctic Seas (ESSAS)

- In May 2005, PICES co-sponsored and served as the local organizer for the GLOBEC Symposium on “*Climate variability and sub-arctic marine ecosystems*” held in Victoria, Canada. The symposium brought together 230 scientists from 16 countries (including all six PICES member countries) to present current knowledge of the structure and function of sub-arctic marine ecosystems and to discuss, at two special workshops, the Science and Implementation Plans of ESSAS, a new GLOBEC regional program. A special issue of *Deep-Sea Research II* to be published in 2007 includes over 40 papers from the Symposium;
- PICES assisted in organizing the first ESSAS Workshop to develop comparative studies of the sub-Arctic seas (June 12-14, 2006, St. Petersburg, Russia), including the logistical arrangements and providing travel funds for scientists to attend;
- Drs. Kenneth Drinkwater and George Hunt (ESSAS SSC Co-Chairmen) attended PICES XV as observers and addressed Council on potential areas of cooperation between ESSAS and its U.S. component for the Bering Sea (BEST) and PICES. ESSAS and BEST also had posters at this meeting outlining general information and highlighting scientific objectives and recent activities of both projects.
- A series of ESSAS-related events, including workshops on “*Evaluation of climate scenarios for subarctic regions*” and “*The role of seasonal sea ice cover in marine ecosystems*”, is planned for June 2007, in Hakodate, Japan, and PICES agreed to co-sponsor these workshops.

Exxon Valdez Oil Spill Trustee Council (EVOS)

- The sample collection and analysis for the north-south transect of the PICES Continuous Plankton Recorder (CPR) survey of the North Pacific has been financially supported for the period from 2000 to 2006 by EVOS. In November 2006, this grant was extended to 2007.

Global Ocean Ecosystem Dynamics project (GLOBEC)

- The PICES Climate Change and Carrying Capacity (CCCC) Program provides a mechanism for integrating national GLOBEC research programs in the North Pacific and is a regional component of the international GLOBEC effort;
- The PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*” was held April 19–21, 2006, in Honolulu, U.S.A. This symposium and a special issue of *Progress in Oceanography* to be published in late 2007 or early 2008 are considered as a part of GLOBEC synthesis efforts;
- PICES and GLOBEC are working together to organize the 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*” to be held May 28–June 1, 2007, in Hiroshima, Japan;
- Dr. Manuel Barange (GLOBEC Executive Director) and Dr. Francisco Werner (GLOBEC SSC Chairman) attended PICES XV as observers and briefed Science Board on GLOBEC’s synthesis and integration efforts and invited PICES’ involvement in these activities.

Global Ocean Observing System (GOOS)

- At the 2005 inter-sessional Science Board/Governing Council meeting, GOOS integration was identified as a high priority PICES activity. At PICES XIV, a Study Group (SG-GOOS) to develop a strategy for GOOS was established under the direction of the MONITOR Technical Committee;
- In its 2006 report, SG-GOOS suggested that PICES should direct its efforts to facilitate the cooperation and coordination among

North Pacific GOOS Regional Alliances (GRAs) in developing cross-GRA observing projects, observing technologies, and common communication protocols for sharing of data and information;

- A 1-day MONITOR/TCODE workshop on “*Data management, delivery and visualization of high-volume data products*”, highly-relevant to GOOS was convened at PICES XV;
- Dr. Takashi Yoshida (NEAR-GOOS Chairman) and representatives of several regional monitoring efforts (AOOS, NANOOS, PaCOOS) attended PICES XV and addressed MONITOR and SG-GOOS on potential areas of collaboration with PICES.

International Council for the Exploration of the Sea (ICES)

- PICES co-sponsored two Theme Sessions on “*Large-scale changes in the migration of small pelagic fish and the factors modulating such changes*” and on *Operational Oceanography* at the 2006 ICES Annual Science Conference. Drs. Yoshiro Watanabe and Bernard A. Megrey/Jeffrey Napp served as PICES convenors for these sessions;
- ICES accepted PICES’ invitation to support an invited speaker (Dr. Kenneth Drinkwater) for the Science Board Symposium on “*Boundary currents ecosystems*” convened at PICES XV;
- Dr. Adolf Kellermann (ICES Head of Science Program) attended PICES XV as an observer and addressed Science Board on potential future joint ICES/PICES activities;
- To discuss/initiate possible co-operation on marine bioinvasions, Ms. Darlene Smith (WG 21 Co-Chairman) attended the annual meetings of the ICES/IOC/IMO Working Group on *Ballast Waters and Other Ship Vectors* (WGBOSV) and the ICES Working Group on *Introductions and Transfers of Marine Organisms* (WGITMO) in March 2006, in Oostende, Belgium. Dr. Judith Pederson (Chairman of WGITMO) and Dr. Anders Jelmert (Chairman of WGBOSV) participated in the annual meeting of WG 21 at PICES XV;

- ICES and PICES are working with the U.S. National Sea Grant College Program to organize the 5th International Conference on “*Marine bioinvasions*” to be convened May 21–24, 2007, in Cambridge, U.S.A. A 2-day joint meeting of WG 21, WGBOSV and WGITMO will be held immediately after the conference;
- ICES is one of the co-sponsors for the 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*”, to be held May 28–June 1, 2007, in Hiroshima, Japan;
- The ICES/PICES Conference for Early Career Scientists on “*New frontiers in marine science*” will be held June 26–29, 2007, in Baltimore, U.S.A. The goal of the conference is to foster the development of contacts, collaborations and associations among early career scientists with similar interests from around the globe, that will persist for decades;
- ICES and PICES joined NAFO in organizing an International Symposium on “*Reproductive and recruitment processes in exploited marine fish stocks*” to be held October 1–3, 2007, in Lisbon, Portugal;
- ICES and PICES initiated the organization of the International Symposium on “*Effects of climate change on the world’s oceans*” (other sponsors are IOC, GLOBEC, SCOR and WCRP) to be held May 19–23, 2008, Gijón, Spain.

Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)

- The joint PICES/IMBER Topic Session on “*Interactions between biogeochemical cycles and marine foodwebs in the North Pacific*” was convened at PICES XV;
- Dr. Julie Hall (IMBER SSC Chairman) attended PICES XV as an observer and addressed Council on potential areas of cooperation between IMBER and PICES. IMBER also had a poster at this meeting outlining general information and highlighting scientific objectives and recent activities of the project;
- There is a strong interest in including issues of marine biogeochemistry and food webs

that would link PICES with IMBER in a new PICES integrative scientific program.

Intergovernmental Oceanographic Commission (IOC)

In 2002, IOC and PICES agreed to cooperate on four fronts: (i) monitoring (see under GOOS); (ii) ecosystem indicators (see under SCOR); (iii) CO₂ data integration and synthesis (see under IOCCP); and (iv) harmful algal blooms (see below).

- In June 2005, IOC and PICES signed a formal agreement to establish a partnership in systematically compiling, storing and presenting on-line, records on harmful algal events. Event records will be compiled and stored annually in the format specified in the HAE-DAT database. HAE-DAT is hosted at the IOC server in Paris and presented with equal credit to the partner organizations (PICES and ICES). The HAE-DAT partnership is open to other appropriate and complementary regional organizations as to achieve global coverage of HAE-DAT. Building a common data resource will allow inter-comparison of HAB species composition and the magnitude of environmental and economic impacts;
- IOC supported an initiative by ICES and PICES to organize the International Symposium on “*Effects of climate change on the world’s oceans*” to be held May 19–23, 2008, Gijón, Spain.

International Ocean Carbon Coordinated Project (IOCCP)

- IOCCP is working on establishing international agreements on observation methods, best practices, data management, and data sharing that will lead to the joint development of global data products and synthesis activities documenting the ocean carbon cycle. PICES, through its Working Groups on CO₂ in the North Pacific (WG 13, 1998–2001) and *Biogeochemical data integration and synthesis* (WG 17, 2002–2005), has been long acting as a regional coordinator for these activities. The PICES Section on *Carbon and Climate* provides clear channels of communication to IOCCP,

and to large-scale IGBP programs such as SOLAS and IMBER;

- IOCCP and PICES are co-sponsoring the preparation of the “*Guide to best practices for oceanic CO₂ measurements and data reporting*” to be published in the *PICES Scientific Report Series* in 2007.

North Atlantic Fisheries Organization (NAFO)

- NAFO and PICES (with ICES as another co-sponsor) partner to organize the International Symposium on “*Reproductive and recruitment processes in exploited marine fish stocks*” to be held October 1-3, 2007, Lisbon, Portugal.

North Pacific Anadromous Fish Commission (NPAFC)

- NPAFC accepted PICES’ invitation for the Chairman of NPAFC’s Committee on Scientific Research and Statistics (CSRS) to present annual updates on the status of Pacific salmon in the North Pacific to the MONITOR Technical Committee. Every third year, the CSRS Chairman will make a more complete presentation on the status of Pacific salmon in the North Pacific as input to update the North Pacific Ecosystem Status Report. A representative of PICES will present the North Pacific Ecosystem Status Report to NPAFC Annual Meetings;
- Dr. Richard Beamish (NPAFC CSRS Chairman) attended PICES XV as an observer and addressed Council on potential areas for cooperation between NPAFC and PICES.

North Pacific Research Board (NPRB)

- NPRB approved a grant of \$90,000 for the production of the next North Pacific Ecosystem Status Report;
- NPRB provided US \$20,000 for the 2006 PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*” (April 19–21, 2006, Honolulu, U.S.A.), and US \$15,000 for the ICES/PICES Conference for Early Career Scientists on “*New frontiers in marine science*” to be held June 26–29, 2007, in Baltimore, U.S.A.;

- A PICES proposal entitled “*Integration of ecological indicators for the North Pacific with emphasis on the Bering Sea*” was funded by NPRB (a grant of US \$99,957). The project goal is to provide a report on the merits and recommendations for use of various classes of ecosystem indicators, through the application of selection criteria and their correspondence to operational objectives. The project was successfully completed by convening a 3-day PICES/NPRB workshop on “*Integration of ecological indicators of the North Pacific with emphasis on the Bering Sea*” in June 2006, Seattle, U.S.A., and publishing proceedings of the workshop as PICES Scientific Report No. 33 in December 2006.

Scientific Committee on Oceanic Research (SCOR)

Relationships with GLOBEC, SOLAS, IMBER and IOCCP are reflected separately. Other collaborations between PICES and scientific projects and groups established/co-sponsored by SCOR are listed below.

- In October 2004, PICES established a new Working Group on *Ecosystem-based management science and its application to the North Pacific*. This Working Group will definitely benefit from activities of SCOR-IOC WG 119 on *Quantitative ecosystem indicators for fisheries management*. The Co-Chairman of SCOR WG 119, Dr. Villy Christensen, was one of invited speakers at the PICES/NPRB Workshop on “*Integration of ecological indicators for the North Pacific with emphasis on the Bering Sea*”;
- PICES strongly supported the formation of the SCOR WG 125 on *Global Comparisons of Zooplankton Time Series* and agreed to provide funding for one additional member from the North Pacific (Dr. Harold P. Batchelder, Oregon State University, U.S.A.) to participate in its activities. Some future meetings of this SCOR WG 125 are planned to be held in conjunction with symposia organized/co-sponsored by PICES;
- Since 2005, the PICES HAB Section has been convening an annual series of workshops to document the existing knowledge on the eco-physiology of HAB

species that impact all, or most, countries in the North Pacific. The SCOR GEOHAB Program is invited to play an active role in future workshops of this series;

- SCOR provided a total of US \$15,000 for scientists from countries with “economies in transition” to attend the 2006 PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*” and PICES XV;
- SCOR has approved US \$6,000 for scientists from countries with “economies in transition” to attend the Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*” (May 28–June 1, 2007, Hiroshima, Japan) and US \$5,000 to travel to PICES XVI for SCOR-relevant sessions.

Surface Ocean-Lower Atmosphere Study (SOLAS)

- Meso-scale iron enhancement experiments are an important part in the agenda of both SOLAS and PICES. Three international collaborative field projects were developed under the umbrella of PICES, through its Advisory Panel on the *Iron Fertilization Experiment in the Subarctic Pacific Ocean* (IFEP) established in 2000. SERIES (Subarctic Ecosystem Response to Iron Enrichment Study) was performed in the eastern subarctic Pacific in summer of 2002, and SEEDS-I and SEEDS-II (Subarctic Pacific Iron Experiment for Ecosystem Dynamics Study) were conducted in the western subarctic Pacific in the summers of 2001 and 2004, respectively. Important new findings from the first two experiments were

published recently in *Science* (SEEDS-I: Tsuda *et al.* 2003, 300: 958–961) and *Nature* (SERIES: Boyd *et al.* 2004, 428: 549–553). More detailed results from these experiments can be found in special issues of *Prog. Oceanogr.* 2005. Vol. 64, Nos. 2–4, pp. 91–324 (SEEDS-I) and *Deep-Sea Research II*. 2006. Vol. 53, Nos. 20–22, pp. 2005–2454 (SERIES);

- The joint PICES/SOLAS workshop on “*Modeling iron biogeochemistry and ocean ecosystems*” was convened at PICES XV;
- Dr. Shigenobu Takeda (SOLAS SSC member) attended PICES XV as an observer and addressed Council on potential areas of cooperation between SOLAS and PICES. SOLAS also had a poster at this meeting outlining general information and highlighting scientific objectives and recent activities of the project;
- PICES agreed to provide travel support for young Asian scientists to attend the SOLAS Open Science Meeting to be held in March 2007, in Xiamen, People’s Republic of China.

U.S. Fishery Management Councils

- The North Pacific Fishery Management Council (NPFMC) and Western Pacific Fishery Management Council (WPFMC) provided US \$5,000 and \$15,000, respectively, for the 2006 PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*”.

VII. PICES Intern Program

See GC Agenda Item 9 for details.

GC Endnote 4

Summary report of the 2006 inter-sessional Governing Council meeting

The 2006 inter-sessional Governing Council was held on April 18, under the chairmanship of Dr. Vera Alexander. The list of participants and agenda for the meeting are included at the end of this section. All Contracting Parties were represented at the meeting.

The main order of business was the adoption of the updated Rules of Procedure and Financial Regulations (RPFR). A Study Group on RPFR was established at PICES XIII (Decision 04/A/7). The intent was to ensure that the Rules of Procedure and Financial Regulations agreed with the current practice of the Organization,

and to eliminate problematic areas of ambiguity. A SG-RPFR report was presented by its Chairman, Dr. Laura Richards. She pointed out that discussion of the proposed amendments began at the 2005 inter-sessional Council meeting and continued at PICES XIV. After PICES XIV, all comments were collated by the Secretariat and used for preparation of the final drafts circulated on February 14, 2006, to ensure the 2-month period required for Council to consider the adoption of both documents.

Additional changes in *Rules 3-5, 11 and 20* of the Rules of Procedure were implemented during the meeting. It was also agreed that *Regulation 12(v)* of the Financial Regulations be revised at a later date (after consulting with a Canadian tax specialist on wording for this clause), to allow the extension of the tax levy practice to the Canadian staff members of the PICES Secretariat. The revised documents were approved by consensus (Decision 06/A/5).

The other matter discussed was the guidelines for operating the PICES Trust Fund. This fund, established in 1994 (Decision 94/A/4) and supported primarily by voluntary contributions from the Contracting Parties, has been a useful mechanism for facilitating involvement in PICES activities by young scientists, and for providing funds for the PICES Intern Program as needed. Since the guidelines had not been updated in more than a decade, the F&A Committee determined at PICES XIV that a review was warranted to bring the current practice and the guidelines into accord, and to improve transparency of the decisions. Canadian Delegate, Mr. Serge Labonté, worked with the Secretariat in updating the procedures. The proposed document was discussed at length, and after further revisions made in clauses 4(iv) and 7(i), it was adopted by consensus (Decision 06/A/4(i)).

Dr. Vera Alexander provided an update on her contacts with 4 Pacific Rim countries that are currently affiliated members of ICES (Australia, Chile, New Zealand and Peru). Her letters of March 2, 2006, were intended to initiate a dialogue that will allow Council to determine whether marine scientists from these four

countries might be interested in having a greater role in the activities of our organization. PICES XV was suggested as the appropriate venue to continue this dialogue, and invitations were extended to their representatives to attend this Annual Meeting. By the time of the 2006 inter-sessional Council meeting, the only response received was from Dr. Renato Guevara Carrasco (IMARPE, Peru), who indicated the enthusiasm of the IMARPE staff with respect to PICES' proposal. Mr. Serge Labonté pointed out the importance to understand why there are no other responses, and Dr. Laura Richards suggested that the start of a new PICES scientific program may encourage more interest. Dr. Tokio Wada indicated that Japan recognizes the importance and merit of cooperation beyond the North Pacific with the current expansion of PICES scientific activities, but it is the Japanese government's understanding that the expansion of the geographic scope and the introduction of an affiliated member system like ICES will require an amendment of the present PICES Convention. Japan believes that the expansion of research cooperation can be achieved through collaboration with other international organizations or countries under the present Convention, and this expansion alone is not a substantial reason that calls for an amendment of the Convention.

Council reviewed several recommendations from the 2006 inter-sessional Science Board meeting, and the following decisions were made:

- To facilitate the continuity of Science Board affairs, a Science Board Chairman-elect position was established to allow the election of the Science Board Chairman 1 year before the official change of the chairmanship (Decision 06/A/11).
- Dr. Phillip R. Mundy (U.S.A.) was appointed as the Chairman of the Study Group to develop a strategy for GOOS. This Study Group was formed at PICES XIV, under the direction of MONITOR (Decision 05/S/6).
- An amount of \$10,000 from the encumbered funds designated for high-priority projects was earmarked to support the preparation of a HUFO-DAT Vol. 2 CD-ROM with a 50-year gill net data collected by T/S *Oshoro-*

maru and T/S *Hokusei-maru* in the western and eastern North Pacific and the Bering Sea.

Other decisions/recommendations were:

- The new dates (October 26–November 4, 2007) for PICES XVI in Victoria, Canada, were supported by all Contracting Parties and permanent Committees, and accepted by Council (Decision 06/A/7(i)).
- Council approved the proposal of China to host PICES XVII (2008) in Dalian, with the National Marine Environmental Monitoring Centre of SOA as the local organizer. China was requested to inform the Secretariat by the end of April if the tentative dates of October 16–26, 2008, are acceptable (Decision 06/A/7(ii)).
- The United States urged that PICES consider charging overhead for running

various events. The Secretariat should contact the PICES auditor to determine the amount of overhead.

- China nominated Mr. Xuewu Guo from the Yellow Sea Fisheries Research Institute (Chinese Academy of Fishery Sciences, Qingdao) as the intern for the 2007 term of the PICES Intern Program.
- Canada suggested that the Secretariat should contact local universities that deal with training students for international relations to examine the possibility of broadening the Intern Program without budgetary implications.
- Council supported a recommendation of Japan to establish a new PICES award for monitoring and data management activities and requested Dr. Tokio Wada to prepare a proposal for consideration at PICES XV.

Participation list of the 2006 inter-sessional Governing Council meeting

Canada

Serge Labonté
Laura Richards

Japan

Tokio Wada
Yukimasa Ishida (advisor)

People's Republic of China

Fengkui Liang (alternate delegate)

Republic of Korea

Ig-Chan Pang

Russia

Lev N. Bocharov
Igor Shevchenko (advisor)

U.S.A.

George Boehlert
Patricia Livingston (advisor)
Samuel Pooley

Other

Vera Alexander (Chairman, PICES)
Alexander Bychkov (Executive Secretary)
Skip McKinnell (Deputy Executive Secretary)
Kuh Kim (Chairman, Science Board)
John E. Stein (Vice-Chairman, Science Board)

2006 inter-sessional Governing Council meeting agenda

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. PICES Rules of Procedure & Financial Regulations 2. PICES Trust Fund guidelines 3. Potential PICES membership 4. Recommendations from the 2006 inter-sessional Science Board meeting 5. Financial and administrative matters <ol style="list-style-type: none"> 5.1 Auditor's report for FY 2005 | <ol style="list-style-type: none"> 5.2 Status of annual contributions 5.3 Status of voluntary contributions 5.4 Administrative matters 6. Schedule and financing of future Annual Meetings of the Organization 7. PICES Intern Program 8. Other business |
|---|--|

GC Endnote 5

U.S. comments on planning for the PICES Future Integrative Science Program as presented at the Governing Council meeting on October 22, 2006, in Yokohama, Japan

We very much appreciate the hard work that has been put into FISP. There was an excellent discussion at the Open Forum on FUTURE, and both the drafters of the Prospectus and the Committee Chairmen deserve congratulations for making this progress. We realize this is not an easy task, and it is a task that has substantial implications for PICES. So you will understand if the Governing Council is taking a careful look at the program's proposed Content as well the Process by which FISP moves forward.

Our questions on process focus on the Science Board's presentation to Governing Council on October 21. We realize that this is a work in progress, but we are also concerned that the time is shrinking in which to implement this program. We raised some of these concerns during the oral presentation on the Science Board's plan and discussed them further with the Science Board Chairman the following day.

Without benefit of a write-up on the process, our understanding of the FISP planning process is somewhat sketchy, but we believe we have the gist of it. Our understanding of the process is that the Committees will provide input to FISP by the beginning of December, and the FISP team will compile this information plus that provided from this year's Open Forum for a meeting of the Writing Team in February 2006. We also think we heard that between December and February team members in the Seattle (U.S.A.) area would get together to get a "head start." The Writing Team would generate a draft plan that would be further developed in a wider workshop including all of the Science Board and a number of scientists from within PICES, to be held in April 2007, in Yokohama. The structure of the workshop was not well defined, but the objective, as we understood it, was to finalize the FUTURE science plan. The product from that meeting would receive external review comments from individuals largely outside PICES. The final draft would be posted for external review and PICES comments in August, with the final version available for Governing Council review and approval at PICES XVI in Victoria (Canada), in October 2007. In the following year, an implementation plan for FUTURE would also be developed.

The Governing Council did support the spring 2007 workshop in Yokohama, Japan, and authorized work to proceed on that workshop, subject to some constraints.

1. Overall process

Collaborative research is both exciting and frustrating, the latter from the difficulties of coordinating researchers in different institutions. There are several approaches to cooperative research planning, including use of planning consultants, expert researchers, inter-active research teams, and planning workshops, to name several. The FISP process seems to promise all of these approaches except the use of planning consultants. But the exact constellation of these approaches is not at all clear. We believe SB/FISP should provide a much more detailed write-up of each step of the planning process. For example, for the workshop, we would like to see the objectives, proposed agenda, planning activities, and deliverables. We would like to see this kind of detail about each step in the process.

2. Geographical balance, including vetting by the Contracting Parties

The Science Board understands, as well as any of us, the importance of involving all components of PICES in its activities, and we recognize there has been an attempt to do so in the Writing Team and the workshop. However, this appears to have been incomplete and participation was not been vetted by the national delegates and Governing Council. We believe that the SB/FISP should provide its nominations for participation in the Writing Team and the workshop to the Contracting Parties, who will affirm these nominations to the Secretariat or suggest alternatives. The SB/FISP should also

identify methods for involving scientists from the western side of the Pacific in any informal meetings – using techniques such as teleconferencing or direct contacts.

3. Methodological balance

We may be treading on the terrain of Science Board to suggest that the gist of FISP is the kind of integrative modeling that ties together the components of PICES into a coherent perspective on the dynamics of the North Pacific ecosystem. It is this, plus the advice to management and communication of results, that differentiate FUTURE from the CCCC Program. Thus, expertise in these areas is crucial. We suggest that more attention be focused on the modeling aspect of the project, with top level modelers included in the process. We are pleased to see that several policy advisors have been suggested for the planning process, but we would suggest that the Communication theme is really quite different and needs a specialist on that topic. We would also like to see a more complete strategy for involving both the human dimensions of the research component and the communications strategy from the beginning, particularly as pertains to different approaches across the member countries.

4. New ideas

The Science Board and FISP team have dedicated a substantial amount of their professional time toward this project which we appreciate. Yet we have some concern that the project seems more like a roll-over of the CCCC Program rather than a new project. We would suggest some explicit reaching out to people in this region who either have not been involved in PICES, such as coastal scientists, or who have been involved and are faded away, as well as to young scientists.

5. Timeline

We all appreciate that pulling this together by next fall will be a major accomplishment, but we are concerned that the schedule is compressed toward the decision-making end of the timeline. We would like to see a schedule that accelerates the drafting process from the point of Committee input in December 2006 through the provision of the draft plan. If this schedule cannot be accelerated with the activities currently planned, then a re-evaluation of the process would be warranted.

6. Cost

Frankly we were worried that the cost of the FISP planning process may absorb all of the flexibility in the PICES budget. We agree this is the highest priority for PICES, but we would like to see an explicit budget. The United States suggests that the total cost of FISP science plan development in 2007 should not exceed one half of the PICES discretionary budget, *i.e.*, less than \$55,000. [The Chairman of F&A, Dr. Laura Richards, subsequently suggested a budget not to exceed \$40,000 would be appropriate.] We would like to see an explicit budget for the entire planning process, including best estimates for the implementation planning stage.

