

REPORT OF GOVERNING COUNCIL

The Governing Council met from 9:00–18:00 hours on November 1, 2008, and from 9:00–14:30 hours on November 2, under the chairmanship of Dr. Tokio Wada. All Contracting Parties were represented at the two sessions (*GC Endnote 1*). At the first session, the Chairman welcomed attendees, introduced the provisional agenda circulated on September 17, and suggested the order in which to take up the various items. The agenda was adopted with the addition of the review of the procedure for preparing the Council report under Agenda Item 16 – Other Business (*GC Endnote 2*). The Executive Secretary requested each Contracting Party to examine its draft Delegation List and submit the final Delegation List prior to the second session. This report summarizes the treatment of each agenda item during the course of the two sessions.

AGENDA ITEM 3

Report on Administration

The Executive Secretary summarized the activities of the Organization and the Secretariat since the 2007 Annual Meeting. Council reviewed and adopted the report (*GC Endnote 3*).

AGENDA ITEM 4

Membership and observers from other countries

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

The Chairman re-iterated that scientific cooperation with non-member countries and other international organizations is crucial for extending the activity of PICES, and has been an important subject of discussion in Council, especially because many of the issues addressed by PICES are not unique to the North Pacific. At the 2006 PICES Annual Meeting, a Study Group on *Scientific Cooperation between PICES and Non-member Countries* (SG-SC) was formed, under the direction of Council, to explore options on how scientific cooperation with non-member countries could be best achieved (Decision 06/A/6). The SG-SC report was adopted at the 2007 PICES Annual Meeting (Decision 07/A/4) and included in the 2007 PICES Annual Report. The Study Group was unanimously negative to the idea of amending the PICES Convention to expand the “area concerned”. One of the options for scientific cooperation within the current Convention offered by SG-SC was to establish an affiliate status system in PICES, similar to the arrangement implemented some time ago by ICES.

Following a request by Council at the 2007 inter-sessional meeting, a draft *Affiliate Member Policy* was developed and presented by the SG-SC Chairman, Dr. Laura Richards, at last year’s Annual Meeting (see 2007 *GC Endnote 6*). Council reviewed this document, but was unable to reach consensus on its adoption and agreed to continue discussion at the 2008 Annual Meeting. All Contracting Parties were requested to provide their views on the affiliate status system and comments on the draft policy to the Chairman and Executive Secretary prior to the meeting. The comments from the Japanese and U.S. delegations are appended as *GC Endnote 4*. Editorial changes suggested by the US delegation were included in the 2008 Council Background Briefing Book.

In Dalian, Council extensively discussed the comments provided by Japan and the United States, but again was unable to reach consensus on the adoption of the affiliate status system. Dr. Richards reported that the F&A Committee reviewed the PICES Rules of Procedures, and suggested possible changes in order to accommodate experts from non-member countries or other organizations to subsidiary bodies of Standing Committees (*ex-officio* membership). These proposed changes are not expected to have financial implications, except costs related to the distribution of PICES publications to these experts. Council agreed that this is a viable

alternative approach to the affiliate status system, and requested Dr. Richards to work with the Secretariat to prepare actual amendments for consideration at the next meeting of Council. Some Contracting Parties recommended extending *ex-officio* membership to Technical Committees.

AGENDA ITEM 5

Relations with relevant international and regional organizations/programs

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). He also pointed out that more than 20 organizations and programs were present as observers at the PICES Annual Meeting this year (*GC Endnote 5*). In particular:

- Dr. Patricio Bernal (General Secretary of IOC) attended the Science Board meeting (October 26) and meetings of several expert groups, and shared his views on potential areas of collaboration between IOC and PICES. These areas, summarized in his letter sent to the PICES Secretariat on October 31, include: (1) joint efforts on developing understanding of the vulnerability of fisheries to climate variability and change as a potential input to the 5th IPCC Assessment Report; (2) cooperation in an information network on ocean acidification and a common database on natural iron; and (3) PICES involvement in the OceanObs'09 conference (<http://www.oceanobs09.net>).
- Dr. Adolf Kellermann (Head of ICES Science Programme) participated in the Science Board meeting (October 26) to present an update on the continuing science reform in ICES and to discuss joint activities of the two Organizations in 2009 and beyond.
- Dr. Manuel Barange (Executive Director of GLOBEC) attended the meeting of the Executive Committee of the CCCC Implementation Panel to (1) provide information on discussions within a GLOBEC-IMBER Transition Task Team on a way forward for international marine ecosystem science after the completion of GLOBEC, and (2) outline plans on the 3rd GLOBEC Open Science Meeting to be held in June 2009, in Victoria, Canada. He also liaised with the PICES Secretariat on logistics for this meeting.
- Representatives of several other programs and organizations (Argo, BEST, ESSAS, IMBER, IWC, NOWPAP, PAG, SOLAS, WCRP/CLIVAR) addressed PICES Standing Committees or their subsidiary bodies on potential areas of collaboration with PICES, and submitted specific proposals for joint activities (details can be found in the reports of Standing Committees).
- Some programs and organizations (Argo, BEST, ESSAS, IMBER, NOWPAP, PAG and SOLAS) had posters on display outlining their scientific objectives and highlighting recent activities.
- A brief presentation on the implementation of the Action Plan resulting from the 2007 PICES Publications Review was given by Mr. Brian Voss (IAMSLIC) at the meetings of the F&A Committee and Study Group on Communications (*F&A Endnote 6*). The plan, once completed, would allow a smooth transition to more on-line access for PICES publications.

Council reviewed the progress made in the integration and coordination of PICES activities with other international and regional scientific organizations and programs, and approved keeping the *Standing List of International and Regional Organizations and Programs*, and priorities for interaction in 2008–2009, as recommended by Science Board (Decision 08/S/8). This list is used, in part, to assist the Executive Secretary and Science Board in decisions regarding sending PICES representatives to meetings of other international organizations/programs.

AGENDA ITEM 6

Future integrative scientific program of PICES

The second integrative scientific program of PICES, FUTURE (Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems) will be the highest priority activity of the Organization for the next decade. At the 2007 PICES Annual Meeting, Council:

- approved in principle the Science Plan for FUTURE, subject to minor modifications to be completed by the end of 2007 (Decision 07/S/1);
- agreed that \$40,000 from the encumbered funds designated for high-priority projects be earmarked for the development of FUTURE (Decision 07/A/3(v));
- endorsed two activities proposed by Science Board for 2008: (1) a 2-day workshop to develop an Implementation Plan for FUTURE to be held in April 2008, in conjunction with an inter-sessional Science Board meeting (Decision 07/S/3), and (2) a 1-day Science Board Symposium on “*Beyond observations to achieving understanding and forecasting in a changing North Pacific: Forward to the FUTURE*”, to be convened at the 2008 PICES Annual Meeting (Decision 07/S/2).

At the second session of Council on November 2, Dr. John Stein (Science Board Chairman) reported on the progress made in the development of FUTURE. The following activities took place after the 2007 Annual Meeting:

- The FUTURE Science Plan was modified, taking into consideration comments from the 2007 Open Forum and recommendations by Science Board and Council, and its final version was posted on the PICES website in mid-February 2008.
- The FUTURE Implementation Plan workshop was held April 23–24, 2008, in Seattle, U.S.A. The goals of the workshop were to discuss: the organizing principles for implementing FUTURE, the framework for an organizational structure, potential membership and co-chairmanship for the Implementation Plan Writing Team (IP-WT), and a timeline for developing the Plan. Attendees of the workshop included practically all members of the Study Group on *Future Integrative Scientific Program(s)* (SG-FISP), Science Plan Writing Team (SP-WT) and Science Board, and several invitees. Some Council members participated in the workshop, which was valuable to the deliberations. A brief summary of the workshop was published in PICES Press in June 2008 (Vol. 16, No. 2).
- The IP-WT was established in May 2008, through the Council approval process, with the responsibility of drafting the Implementation Plan for FUTURE. This Team includes 21 scientists representing all Contracting Parties. Drs. James Overland (U.S.A.) and Hiroaki Saito (Japan) were appointed as IP-WT Co-Chairmen.
- The draft Implementation Plan was circulated to Council, Science Board and SG-FISP and posted on the PICES website on October 10, 2008.
- This draft was reviewed by Standing Committees and their subsidiary groups prior to, or at, the 2008 PICES Annual Meeting. An Open Forum was held at the Annual Meeting on October 30 to receive comments from the broader PICES community. A 1-day Science Board Symposium on “*Beyond observations to achieving understanding and forecasting in a changing North Pacific: Forward to the FUTURE*”, and several FUTURE-related Topic Sessions and workshop were also convened to assist in the development of the program.
- Science Board and some IP-WT members met to refine the scope and direction of the implementation of FUTURE. Discussions revolved around issues such as: (1) definition of clients; (2) the readiness to take on operational forecasts, and how to balance the work on developing forecasts; and (3) the need to improve our understanding of various issues from the physics to ecological interactions, and research to uncover the mechanisms in all of these areas which are essential for developing and improving forecasts that have reduced uncertainty. It was also pointed out that, compared with its predecessor, the CCCC Program, FUTURE has some new aspects which need to be explicitly reflected in the Implementation Plan: coastal processes and the associated anthropogenic forcings, the human dimension of ecosystem dynamics, and the communication of scientific results to policy makers and stakeholders.

Extensive discussion on the structure and implementation strategy for FUTURE took place after Dr. Stein’s presentation. While no formal decision was made by Council on the structure of FUTURE, some of the delegates suggested that a closer integration of FUTURE, Science Board, and Committees is desirable in the Implementation Plan. It was noted that this was also a major element of consideration when the Science Plan was being created, and that the intent was to facilitate better linkages between Standing Committees and the science program. Although the delegates had different ideas what a desirable degree of integration should be, they all agreed that the ownership of FUTURE belongs to Science Board, and that Science Board should serve as the Scientific Steering Committee for the Program. The Co-Chairmen of FUTURE must be on Science Board

to coordinate the implementation of the program with and among Standing Committees. It is important that these Committees be fully engaged with the program to ensure that all of the scientific capabilities within the Organization are contributing. Determining how the Committees and Science Board are to be involved in carrying out FUTURE should be a major consideration in developing the next draft of the Implementation Plan.

There were also comments on the scope of FUTURE, and that while this effort is only one segment of the science of PICES and should be focused, it is also our next major scientific program and should be structured to be appealing to all of the science elements within the Organization. Opinions were expressed that serious attention should be paid to connections between the FUTURE Science Plan and the Strategic Plan of the Organization, and to linkages between scientific outcomes of FUTURE and the ocean management policies of Contracting Parties.

Concerning the schedule, it was confirmed that the goal is to initiate the program in 2009. In the next draft(s) of the Implementation Plan to be developed by the spring of 2009, the focus should be on clearly defining the terms we are using, providing much more detail on the specific tasks, defining the structure of FUTURE and the responsibilities of the Standing Committees in delivering the tasks, and highlighting that there is a major component in FUTURE intended to improve our understanding of processes and mechanisms. There was a strong feeling that a phased approach in implementing FUTURE should be used, and that the Implementation Plan has to be re-visited in 3–5 years to review the progress and make needed adjustments.

Council approved a 2-day workshop to finalize the development of the Implementation Plan for FUTURE, to be convened in conjunction with inter-sessional meetings of Science Board and Council in April 2009, in Qingdao, China (Decision 08/S/2). A proposal to have an IP-WT meeting between November 2008 and April 2009 was considered, but consensus was not reached, and the decision was deferred to the IP-WT Co-Chairmen.

Dr. Richards suggested that sufficient funding is available in the budget for activities planned for 2009.

AGENDA ITEM 7

Capacity building activities and PICES Intern Program

Holding special conferences, schools on marine sciences and training courses for early career scientists, providing financial support for their participation in PICES Annual Meetings and symposia co-sponsored by the Organization, and the Intern Program are all essential components of PICES' strategy for capacity building (http://www.pices.int/about/capacity_strategy.pdf). The Executive Secretary reported on capacity building activities in 2008 and some plans for 2009.

Travel support for early career scientists

It is estimated that about \$38,000 from the Trust Fund will be spent in 2008 to support participation of early career scientists in the international symposium on "*Effects of climate change on the world's oceans*" (Gijón, Spain), and in the 2008 PICES Annual Meeting (Dalian, China). This amount includes about US\$12,500 provided by the Scientific Committee on Oceanic Research (SCOR) to cover travel of scientists from countries with "economies in transition" to these two meetings. Council expressed their thanks to SCOR for their continuing support. Following the revised guidelines for operating the Trust Fund adopted in 2006 (Decision 06/A/4(i)), the Executive Secretary provided a detailed report on applications received for support and their disposition at the F&A Committee meeting.

PICES schools on marine sciences

At the 2007 PICES Annual Meeting, Council supported a proposal to organize the second PICES Summer School on “*Ecosystem-based management and ecosystem approach*”. Fifty students and early career scientists from China, Japan, Korea, Russia and U.S.A. attended this school held August 23–26, 2008, at the Graduate School of Fisheries Sciences, Hokkaido University, Hakodate, Japan. The major funding for foreign participants was provided by several Japanese programs: Japan–China Students Exchange Program (support for 17 Chinese graduate and undergraduate students), Japan–Korea Core University Program (support for 6 Korean students), and Sustainability Governance Program of Hokkaido University (support for 3 Russian, 1 UK and 1 U.S. early career scientists and a foreign lecturer). Participation of Japanese students, early career scientists and lecturers was covered by scientific grants from the Japanese Society for the Promotion of Science. Funding from Japanese sources was coordinated by Dr. Yasunori Sakurai. PICES provided travel expenses for 1 foreign lecturer and 1 Russian early career scientist. The summary report of the school will be published in the next issue of PICES Press (January 2009, Vol. 17, No. 1).

The originally planned theme for the third PICES Summer School was “*Recent methods of investigating red-tide organisms and controlling red tides*”, but has been changed to “*Satellite oceanography*”. This school will be organized from August 25–28, 2009, in Seoul, Korea, and will coincide with the launch by Korea of the first geostationary ocean color satellite. In this course, principles and applications in three major areas (optical, infra-red and microwave) of satellite oceanography will be introduced to students and early career scientists who have little experience in the field (focus will be on Asian countries). In addition to lectures and seminars, hands-on training of image processing will be arranged. The major funding for the school will be provided by various Korean agencies. PICES is requested to support 1 foreign lecturer and 5 non-Korean students.

The first PICES Winter School on “*Field survey of sea ice area*” was being planned for late February or early March 2009, in Vladivostok, Russia. It is postponed and will proceed in 2010, if funding and logistical problems are resolved.

Workshops on ecological modeling

It was recommended that PICES partner with other organizations and programs to broaden applications of the NEMURO and NEMURO.FISH models developed by the CCCC MODEL Task Team. A 4-day training workshop on “*Simulation techniques for building multi-trophic level marine ecosystem models: Examples using NEMURO and NEMURO.FISH*” for Ph.D.-level Korean scientists was held January 29–February 1, 2008, at the National Fisheries Research and Development Institute (NFRDI) in Busan, Korea. Dr. Bernard A. Megrey (U.S.A.) delivered a series of lectures to 32 students from Pukyong National University, Seoul National University, NFRDI-Marine Environmental Lab-Pusan, NFRDI-South Sea Lab-Yeosu and NFRDI-Jeju Island. The workshop was co-sponsored by NFRDI, PICES and the U.S. National Marine Fisheries Service. Council commended these organizations and also Drs. Megrey and Jae Bong Lee (Korea), who coordinated the project, for their efforts.

Training HAB courses

A new area of capacity building for PICES is the enhancement of monitoring programs that may mitigate the expansion of harmful organisms and establish a free exchange of information on harmful algal blooms (HABs) in the Pacific Rim. Recent increases in HAB events have caused damage to fisheries and disturbance of ecosystems in the North Pacific and areas to the south. In order to minimize the impact and expansion of harmful organisms and lower their occurrence and damage to fisheries, a first step is building capacity in developing nations through focused training. In this effort, which is funded by the Ministry of Agriculture, Forestry and Fisheries of Japan, through the Fisheries Agency of Japan (see Agenda Item 10), PICES has partnered with the Intergovernmental Oceanographic Commission (IOC) to determine which countries have the greatest need and a strong interest in improving HAB monitoring and testing, and a commitment to sustainability. Site visits to labs in Vietnam and the Philippines, as well as participation in the 2nd Asian

GEOHAB (Global Ecology and Oceanography of Harmful Algal Blooms) conference in January 2008 (Nha Trang, Vietnam), and the 7th WESTPAC Scientific Symposium in May 2008 (Sabah, Malaysia), facilitated country selection. The initial training course will be from January 15–23, 2009, and will focus on assisting the Bureau of Fisheries and Aquatic Resources (BFAR), which is the agency that manages HAB events in the Philippines. The course will include: (1) training in methods for testing shellfish for paralytic shellfish poisoning (PSP) toxins; (2) review of phytoplankton identification, with specific focus on harmful species in the Philippines; and (3) introduction to on-line HAB databases. This project is being led by the Section on *Ecology of Harmful Algal Blooms in the North Pacific*.

PICES Intern Program

The PICES Intern Program, approved in 1999 (Decision 99/A/7) and commenced in 2000, aims at the professional development of marine scientists and managers from PICES Contracting Parties, and increasing the capacity of the PICES Secretariat to support the work of the Organization. From May 2000–October 2008, 9 scientists from three countries (3 from China, 4 from Korea and 2 from Russia) have worked as interns at the PICES Secretariat. The Executive Secretary reviewed the current positions of the former interns and their involvement in activities of the Organization. Two former PICES interns from the State Oceanic Administration, Gongke Tan (First Institute of Oceanography) and Chuanlin Huo (National Marine Environmental Monitoring Center), were the nucleus of the Local Organizing Committee for this year's Annual Meeting and contributed greatly to its success. Council noted that it is an indicator that the Intern Program is working effectively.

Council accepted changes in the background documentation for the Intern Program recommended by the F&A Committee to align the description of the program with current practice (Decision 08/A/6(i)). The changes are related to supervision (under the PICES Secretariat), start date of the internship (normally begins on or about February 1) and level of required education (university degree, with an M.Sc. or Ph.D. as an asset). The updated document can be found in this Annual Report (*F&A Endnote 7*) and on the PICES website (<http://www.pices.int/projects/intern.aspx>).

In July 2007, Mr. Key-Seok Choe (Project Management Team, Korea Ocean Research and Development Institute) was nominated and subsequently approved as the 2008 PICES intern. His originally-offered 8-month term started on February 1, 2008. At the 2007 PICES Annual Meeting, Korea announced a voluntary contribution of US\$10,000 to the Trust Fund in 2008, to allow this term to be extended to 12 months, assuming good performance by the intern. At the recommendation of the Executive Secretary, Mr. Choe's term will continue until January 31, 2009.

Earlier, Council agreed to postpone the deadline of nominations for the 2009 PICES internship until the beginning of the 2008 PICES Annual Meeting (Decision 07/A/6(ii)). In accordance with the guidelines for application and selection of interns, a member country that has had an intern in any year is eligible to have an intern in the following two years only if there are no applicants from other member countries. Therefore, it was expected that Russia will nominate an intern for the 2009 term. The Executive Secretary reported that in his letter of June 18, 2008, Dr. Lev Bocharov (Russian National Delegate) requested that Russia be allowed to nominate an intern for the 2010 term, and suggested that China nominate an intern for the 2009 term. This proposal was accepted by China. Council was informed that Mr. Yongling Zhu, Director of the Foreign Affairs Office, Second Institute of Oceanography, State Oceanic Administration) was nominated (September 8) and subsequently selected (October 28) as the 2009 PICES intern. At the recommendation of the F&A Committee, Mr. Zhu was offered a 12-month term to start as soon as possible after February 1, 2009.

Given that Mr. Zhu's term will continue until early 2010, Council extended the deadline of nominations for the 2010 PICES Internship until the Governing Council meeting at the 2009 PICES Annual Meeting (Decision 08/A/6(ii)).

Over the years, the Intern Program has been financed solely by voluntary contributions. The Executive Secretary reported that in 2008, the U.S. National Marine Fisheries Service (NMFS) and the Korea Ocean Research and Development Institute (KORDI) contributed US\$15,000 and US\$10,000, respectively, to the Trust Fund for the Program. It was also indicated that NMFS and Fisheries and Oceans Canada have been the most generous partners of this activity to date, providing from 2000–2008 approximately CDN\$150,000 and CDN\$71,500, respectively, for the Program. Council thanked both organizations and KORDI for their support of the Intern Program, and instructed the Executive Secretary to invite all Contracting Parties to make voluntary contributions to maintain the Program in 2009 and beyond (Decision 08/A/6(iii)).

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 (Decision 08/A/6(iv)).

It is estimated that at the end of *FY* 2008, the Organization will be holding about \$15,000 for the Intern Program. With the current stipend level, this amount is sufficient to maintain the Program for about 7 months in 2009. In the absence of voluntary contributions, the registration fee revenue from the Annual Meetings has to be used to finance the Program (Decisions 01/A/4(iv) and 04/A/5(iv)).

International scientist/student exchange

Even though there is a provision (clause 4(iii)) in the *PICES Trust Fund Guidelines* that allows usage of the resources in the Fund to support visits by scientists to laboratories for collaboration or training related to scientific projects sponsored by the Organization, the Secretariat did not receive any requests for support.

AGENDA ITEM 8

Schedule, structure and financing of future Annual Meetings

In 2007, Council accepted an invitation from Korea to host the 2009 PICES Annual Meeting from October 23–November 1, in Busan, with the National Fisheries Research and Development Institute (NFRDI) as the local organizer, and supported in principle the proposed theme of the meeting, “*Understanding ecosystem dynamics, pursuing ecosystem approaches to management*” (Decision 07/A/5(ii)). The theme description was finalized at the 2008 inter-sessional Science Board meeting (April 2008, Seattle, U.S.A.) and can be found in this Annual Report (*SB Endnote 4*). Brief information on the status of preparations for the meeting was provided by the Korean delegation. It was indicated that because of a restructuring within the Korean government, the local organizing committee will be now composed of the Ministry of Land, Transport and Maritime Affairs (MLTL), the Korea Ocean Research and Development Institute (KORDI) and NFRDI. The venue has also changed from Busan to Jeju. Council approved these changes and, at the recommendation of the F&A Committee, agreed to provide \$40,000 to Korea to partially cover costs for the meeting (Decision 08/A/5(i)).

Last year, the United States confirmed their willingness to host the PICES Annual Meeting in 2010, and this invitation was accepted by Council (Decision 07/A/5(iii)). Interest was indicated in exploring the opportunity of a joint ICES–PICES Annual Meeting, with shared science activities and separate business meetings (Decision 07/A/5(iii)). The U.S. delegation reported that though the idea of the joint meeting was supported by both organizations, it cannot be implemented this time. Council was also informed that dates and venue for the 2010 PICES Annual Meeting will be suggested by the end of 2008 (currently Portland, Honolulu and Seattle are under consideration). The proposed theme of the meeting, “*North Pacific ecosystems today, and challenges in understanding and forecasting change*” was supported in principle, and Science Board was instructed to finalize the theme description (see *SB Endnote 5* for the draft) by the 2009 inter-sessional Science Board meeting (Decision 08/A/5(ii)).

In keeping with the established 6-year rotation cycle (Decision 94/A/6), the Russian Federation was invited to explore the possibility of hosting the 2011 PICES Annual Meeting and inform the Secretariat on this matter by March 31, 2009 (Decision 08/A/5(iii)).

At the recommendation of Science Board (see *SB Agenda Item 14*), Council approved a new naming convention for future Annual Meetings that includes the name of the Organization and the year of the meeting (PICES-2009, PICES-2010, *etc.*). For consistency, a similar approach will be used for inter-sessional meetings of Science Board and Council (ISB-2009, IGC-2009).

Council confirmed that the practice of charging a registration fee for future PICES Annual Meetings should continue and, at the recommendation of the F&A Committee, accepted the same registration fee structure for 2009 as was maintained for 2004–2008 (Decision 08/A/5(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)).

At last year's Annual Meeting, Council agreed that serious thought should be given to the restructuring of the Annual Meeting of the Organization. Following this discussion, Dr. Wada introduced a proposal to form a Study Group on *Restructuring of the PICES Annual Meeting* (SG-RAM) under the direction of Council. After careful consideration, Council approved this proposal (Decision 08/A/5(vi)). The rationale for this decision can be found in *GC Endnote 6*. The terms of reference and membership for SG-RAM are described in *GC Appendix B*. It is expected that initial recommendations from SG-RAM will be discussed at the next meeting of Council.

The practice of holding inter-sessional meetings of Science Board and Governing Council is only 6 years old, but these meetings have already become an integral part of PICES management, providing an essential opportunity for mid-term reviews of scientific activities and in-depth discussions on administrative issues of the Organization. At the 2005 PICES Annual Meeting (Vladivostok, Russia), Council expressed its support for the concept of inter-sessional meetings, but stressed that given meeting costs (including time commitment of the members), the need for such meetings should be evaluated each year. This approach was confirmed in the following years.

Council supported the request by Science Board for their inter-sessional meeting in 2009 to be convened in conjunction with a workshop to finalize the development of an Implementation Plan for FUTURE. Dr. Wada indicated that several important and urgent issues justify the holding of an inter-sessional Governing Council meeting in 2009. These include: (1) review and possible approval of the FUTURE Implementation Plan; (2) consideration of changes in the Rules of Procedure required to accommodate experts from non-member countries to PICES expert groups; (3) report of the Study Group on *Restructuring of the PICES Annual Meeting*; and (4) discussion on future collaboration with a new North Pacific fisheries management organization currently under consideration. After extensive discussion Council found that the agenda is substantive and approved this proposal. Council accepted with gratitude an offer from the State Oceanic Administration of China to host the FUTURE workshop and both inter-sessional meetings in Qingdao in April 2009 (Decision 08/A/5(vii)).

AGENDA ITEM 9

Improvement of participation in PICES activities

The Executive Secretary reported on the implementation of Council's decisions to target the improvement of the participation of scientists from Contracting Parties in the activities of the Standing Committees and their subsidiary bodies, and in the Annual Meetings of the Organization. He presented background graphic material for the last six Annual Meetings (2003–2008) to better assess problems existing in various countries. Council requested that these files be electronically circulated to all Contracting Parties and updated prior to the 2009

PICES Annual Meeting. Canada suggested adding to the background material information on the number of presentations given by participating scientists from each country as a measure of quality of their involvement. China and Korea informed Council on some measures they are taking to improve the inter-agency coordination for PICES activities and to review their national membership and make changes as appropriate.

AGENDA ITEM 10

Report on the PICES project “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” supported by the Japanese Trust Fund

In 2007, the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan, through the Fisheries Agency of Japan (JFA), approved funding for a PICES project entitled “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” to develop international systems to collect, exchange and store relevant data, and to foster partnerships with non-PICES member countries and related international organizations. The anticipated duration of the project is 5 years (from April 1, 2007 to March 31, 2012).

The project has two distinct components, one on harmful algal blooms carried out by the Section on *Ecology of Harmful Algal Blooms in the North Pacific* (HAB-S), and the other on marine non-indigenous species conducted by the Working Group on *Non-indigenous Aquatic Species* (WG 21). Both these PICES expert groups are under the Marine Environmental Quality Committee (MEQ). The Chairman of MEQ, Dr. Glen Jamieson, serves as the Project Scientific Coordinator and has to report annually on the progress of the scientific implementation of the project. The Executive Secretary is responsible for the management of the fund and for reporting annually on its disposition to Governing Council and JFA, within 120 days after the close of each project year ending March 31.

The Japanese Trust Fund (voluntary contribution) was first announced at the April 2007 inter-sessional Governing Council meeting in Yokohama, Japan. The Executive Secretary informed Council that the required set of documents requesting funding for *Year 1* was sent to JFA on June 20, 2007, and funds (\$184,980) were transferred to a special (PICES/MAFF) bank account established by PICES on July 27, 2007. The progress report (summary of the activities carried out for the year, with an evaluation on the progress made, and a workplan for the following year) and the financial report for *Year 1* were submitted to JFA on July 19 and July 23, 2008, respectively. The notice on acceptance of both reports was received on July 30. The financial report is appended as *GC Endnote 7*. The scientific progress report prepared by Dr. Jamieson is included in the 2008 MEQ report.

The required set of documents requesting funding for *Year 2* was sent to JFA on April 3, 2008, and then again (following instructions from JFA) to the Consulate General of Japan in Vancouver (Canada) on June 2. Funds (\$161,466) were transferred to the PICES/MAFF bank account on July 17, 2008.

Japan stated that JFA is satisfied with the progress of the project. The United States suggested that some efforts will be made to involve U.S. government agencies in this activity. Council thanked Japan again for their generous contribution.

AGENDA ITEM 11

Report of Science Board

The Science Board met under the chairmanship of Dr. John E. Stein, who presented the report to Council on November 2. The full report can be found elsewhere in this Annual Report. Decisions on scientific issues (S-Decisions) are summarized in *GC Appendix A*, and terms of reference for new expert groups are included in *GC Appendix B*.

Several recommendations by Science Board were not supported:

- For the proposed Study Group on *Indicators of Human Well-Being*, it was suggested that the description and terms of reference should be better developed for consideration at the 2009 inter-sessional Council meeting. The important issue is to define the role of social science in PICES and how this expert group will fit into FUTURE.
- For the requested co-sponsorship of the ESSAS Open Science Meeting (OSM), the decision is deferred until the next Annual Meeting. Though close links and the importance of future collaboration with ESSAS were widely recognized, their OSM is not until 2011, and there may be more important issues to consider in the meantime.
- Travel support for a TCODE representative to attend the 2009 meeting of the ICES Working Group on Data and Information Management and the 2009 ICES Annual Science Conference was not approved.

In the presentation, special emphasis was placed on the workplan for the next version of the North Pacific Ecosystem Status Report (NPESR). After receiving the final report of the Study Group on *Ecosystem Status Reporting* (SG-ESR) at the 2007 PICES Annual Meeting, Science Board and Council approved the “incremental improvement” approach to the development of the next NPESR, which builds on the experiences of the 2004 pilot report on *Marine Ecosystems of the North Pacific*. This document reported on the status and trends in marine ecosystems of the North Pacific and its marginal seas, covering approximately the 5-year period from 1998–2002, and addressing system components from climate and hydrography to fish, birds and mammals. The new version will focus on the years from 2003–2008, and there will be modest revisions to the general organization of the report. To facilitate better comparisons among regions and a more comprehensive synthesis, greater top-down control of the report was suggested. Dr. Skip McKinnell (Deputy Executive Secretary) was endorsed as the Editor of NPESR, although it required some adjustment of his duties within the PICES Secretariat. At a later date, Dr. Michael Dagg (BIO Chairman) was added as a Co-Editor (his involvement in the project is supported by a separate grant of US\$15,700 from the North Pacific Research Board).

Currently three phases are envisioned in the preparation of the report:

- Phase 1 will consist of regional chapters, each written for a scientific audience. Lead Authors for each chapter have been identified and are in the process of putting their teams together. All regional chapters will follow a common framework provided by the Co-Editors and are planned to be completed by June 30, 2009. As the primary focus of the Lead Authors is regional/geographic, an Advisory Group has been established to provide disciplinary oversight of the report’s development. Some financial support for regional workshops or meetings is available.
- Phase 2 will be a synthesis and integration of all regions, also written for a scientific audience, to develop a status report on issues that cross the entire North Pacific basin, and to determine to what degree basin-wide climate and ocean indices are affecting all regions simultaneously. Regional chapters will provide important information for the synthesis and facilitate comparison among regions. The period from July 1–November 15, 2009, will allow Lead Authors and their teams to undertake regional inter-comparisons and synthesis studies in preparation for a synthesis workshop to be held in late 2009. Co-Editors, Lead Authors, members of the Advisory Group and additional scientific experts familiar with ocean-scale processes will participate in the synthesis workshop and prepare the synthesis chapter. The deadline for publishing the chapter is March 2010.
- Phase 3 will be a brochure summarizing the major findings of the regional chapters and the synthesis chapter. The target audience for this brochure is non-scientific and includes policy makers, managers, and other interested members of society.

Dr. McKinnell reported that Co-Editors, Lead Authors and Advisory Group members met in Dalian to discuss revisions to the structure of the report, the time period of interest for the new edition, tasks and responsibilities of Lead Authors and Advisors, and the timing and structure of the synthesis workshop. He also described discussions at the MONITOR meeting and revisions required in the terms of reference for this Committee to comply with the procedures accepted for the production of the NPESR.

The Executive Secretary indicated that after getting the remainder of the NPRB grant (\$53,100) and a voluntary contribution provided by Korea (\$40,500), PICES has sufficient funding (~\$212,000) designated for the preparation of the next NPESR.

AGENDA ITEM 12

Report and recommendations of the Finance and Administration Committee

The Finance and Administration (F&A) Committee met under the chairmanship of Dr. Laura Richards, who presented the report to Council on November 1. The full report is included elsewhere in this Annual Report. Some budgetary considerations can be found below. Decisions on financial and administrative issues (A-Decisions) are summarized in *GC Appendix A*.

12.1 Audited accounts for fiscal year 2007

At the recommendation of the F&A Committee, Council accepted the audited accounts of *FY 2007 (F&A Endnote 3, Decision 08/A/1(i))*.

Council retained *Flader & Hale* as the external auditor for *FYs 2009–2011 (Decision 08/A/1(ii))*.

12.2 Annual contributions

Council reviewed the payment schedule of annual fees to the Organization (*F&A Endnote 4*), and noted that all Contracting Parties met their financial obligations for *FY 2008*, except the United States. The United States indicated that the arrears payment of \$8,525 for 2008 would be made in conjunction with the 2009 annual contribution.

Even though only the Japanese contribution arrived prior to the due date (January 1, 2008), the timeliness of payment from other Contracting Parties is either stable or improved. China and Korea's progress is especially notable, with the time of the payment moving up one quarter in 2008.

Council instructed the Executive Secretary to send a letter to Contracting Parties commending them for their performance in submitting annual contributions for 2008, and describing the difficulties that late and partial payment causes the Organization (Decision 08/A/2(i)). China explained that due to the national budgetary process they are unable to meet the January 1 deadline and cannot pay the annual contribution earlier than in April, but all efforts will be made to facilitate the payment. Korea indicated that their situation is similar, and the annual contribution cannot be paid earlier than February.

Council re-iterated that for planning purposes, Contracting Parties should continue to use the guideline generally accepted at the 1999 PICES Annual Meeting (Decision 99/A/2(ii)), which states that "*the annual contributions will increase at the rate of inflation in Canada*" (Decision 08/A/2(ii)).

12.3 Fund-raising activities

As current funding constraints from an increase in annual contributions only at the rate of inflation in Canada can impede improvement and development of the Organization, fund-raising continues to be an important component of PICES activities. External funding and voluntary contributions received for the period since the 2007 PICES Annual Meeting for various activities of the Organization are reflected in *F&A Endnote 5*. The level of external funding has increased significantly over the last several years, and from 2004–2007, the amount of funds from voluntary contributions, grants and partnerships was about 30–50% of the total annual contribution by Contracting Parties. In 2008, fund-raising efforts by the PICES scientific community, national delegates, and the PICES Secretariat will result in even greater income. It was confirmed that despite the current global economic crisis, external funding committed for *FY 2009* appeared secure.

12.4 Budget

Estimated accounts for fiscal year 2008

At the recommendation of the F&A Committee, Council approved the estimated accounts for *FY* 2008 (Decision 08/A/3(i)). It was noted that the expenses for “foreign exchange loss” are unknown at this time.

Relocation and Home Leave Fund

The status of the Relocation and Home Leave Fund (RHLF) was reviewed. This Fund is allowed to fluctuate between \$90,000 and \$110,000 to minimize the need for small transfers between funds (Decision 07/A/3(iii)). Given the estimated fund balance of \$101,056 on January 1, 2009, no action was required.

Trust Fund

In *FY* 2008, the total expenses from the Trust Fund (TRF) to finance the Intern Program, and to support participation of early career scientists from all Contracting Parties and scientists from countries with “economies in transition” to scientific meetings organized and co-sponsored by PICES are estimated at \$68,450. These expenses were only partly compensated for by interest earned by the Fund, the voluntary contributions for the Intern Program, and travel grants from SCOR. The estimated total income is \$41,630. Council approved a transfer from the Working Capital Fund to the Trust Fund to recover the 2008 expenses, and to restore the Trust Fund to the level of \$110,000 by the end of the fiscal year (Decision 08/A/3(iii)).

Working Capital Fund

After all approved inter-fund transfers, the amount of funds available in the Working Capital Fund (WCF) on January 1, 2008, was \$354,519. This includes \$215,495 in encumbered funds and \$139,024 in “reserve operating” funds. In *FY* 2008, the total WCF income and expenses are estimated at a level of \$496,665 (\$173,975 are in voluntary contributions and grants) and \$268,504, respectively. After the recommended inter-fund transfers, the amount of funds available in WCF at the fiscal year end will be \$457,860. This includes \$299,431 in encumbered funds held for special and high-priority PICES projects with completion in 2009–2010, and \$158,429 in “reserve operating” funds.

Council reviewed the status of the encumbered funds designated for high-priority PICES projects and agreed that given current plans, sufficient funding is presently earmarked for the development of the new integrative scientific program, FUTURE, and for the preparation of the next North Pacific Ecosystem Status Report. At the recommendation of the F&A Committee, Council allocated unspent funds from the 2006 CCCC symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*” (\$3,593) to other high priority projects, including capacity building, which were not specified at the time of the meeting (Decision 08/A/3(iv)).

Budget for *FY* 2009 and forecast budget for *FY* 2010

Council approved the proposed *FY* 2009 budget of \$785,000 (*F&A Endnote 8*). The amount of \$98,000 will be transferred from the Working Capital Fund to balance the budget, setting the total annual contribution at \$687,000, and the 2009 fees at \$114,500 per Contracting Party (Decision 08/A/3(ii)).

The *FY* 2010 forecast budget of \$803,000 was examined by the F&A Committee and presented to Council for information only. It was noted though that if the inflation rate in Canada stays at the level of 2.5–3.0%, then the 2010 annual fee should be set at the level of \$117,500 per Contracting Party. The total annual contribution would be \$705,000, and a transfer of \$98,000 from the Working Capital Fund would be required to balance the budget. The *FY* 2010 budget will be further discussed at the 2009 PICES Annual Meeting.

Report on PICES Publication Program

Council accepted the recommendation of the F&A Committee to discontinue printing the Annual Report, and instead, distribute the report electronically and deposit it in the electronic commons (Decision 08/A/7).

AGENDA ITEM 13

Report of the Executive Committee for evaluating annual performance of the Executive Secretary

At the recommendation of the United States and in accordance with Financial Regulations 12(i), an Executive Committee of Council for evaluating the annual performance of the Executive Secretary was established at the 2007 PICES Annual Meeting (Decision 07/A/7(i)). Terms of reference and membership of the Committee are listed in *2007 GC Appendix B*. It was also decided that in 2008, the Executive Committee will review achievements of the current Executive Secretary for the previous 3 years, in preparation for his possible re-appointment (Decision 07/A/7(ii)). As decision on re-appointment shall be made at least 12 months prior to the end of the term, Council agreed, in compliance with *Article VII* of the Convention and *Rule 4* of the Rules of Procedure, to vote on the results of the evaluation by correspondence before April 30, 2008.

Dr. Wada informed Council that the Executive Committee evaluated the performance report for 2004–2007 submitted by the Executive Secretary, Dr. Alexander Bychkov, and strongly recommended his re-appointment for a new 5-year term. This recommendation was circulated by e-mail to all Contracting Parties on April 10, 2008. Responses were requested by April 30, 2008. The result of voting—5 endorsements (Canada, Japan, China, Russia and U.S.A.) and 1 abstention (Korea)—was announced on May 2, 2008. At that time, it was indicated that the abstention occurred by a failure to respond by the deadline rather than an explicit withdrawal from voting. In his e-mail of May 6, Mr. Doan Jeong (Korean National Delegate) indicated that Korea had also intended to support the re-appointment of Dr. Bychkov and sent an e-mail in this regard on April 26, but for some technical reasons the vote was not received. According to *Article VII* of the Convention, the result of voting constitutes consensus of the Contracting Parties required for the appointment of the Executive Secretary. Dr. Bychkov's 5-year term of office will begin at the completion of his current term, on June 1, 2009 (Decision 08/A/8).

The Executive Committee also reviewed the detailed report for 2007 submitted by Dr. Bychkov and evaluated his annual performance as “met all” expectations not only for his ongoing commitments but also for his key commitments specifically requested by the PICES Chairman. Following the general guidelines for executive positions in the Canadian public service, it was decided that a performance pay and bonus to total 8.3% of his salary would be appropriate for this period. The report on the performance evaluation for 2007, that also includes tasks for the Executive Secretary for 2008, was circulated to all Contracting Parties on April 10, 2008.

AGENDA ITEM 14

Election of Chairman and Vice-Chairman

According to Rule 6 of the PICES Rules of Procedure, “The Chairman and the Vice-Chairman shall be elected from amongst the Delegates for a term of two years and each shall be eligible for re-election only once for a successive term. They shall take office at the conclusion of the Annual Meeting at which elected.” In addition, Rule 5(ii) states that “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.” Drs. Tokio Wada (Japan) and Lev Bocharov (Russia) were elected as the Chairman and Vice-Chairman of Council, respectively, at the 2006 PICES Annual Meeting (Yokohama, Japan), and their terms will end at the conclusion of this year's Annual Meeting. The Executive Secretary reported that he did not receive any nominations for these positions.

GC-2008

Dr. Bocharov conducted the election of the Chairman of Council in accordance with the Rules of Procedure. Dr. Wada was nominated and unanimously elected as the Chairman for a second 2-year term (Decision 08/A/9(i)). Dr. Vera Alexander (U.S.A) remains past-Chairman, and will be able to attend the meetings of Council in an *ex-officio* advisory capacity.

Dr. Wada conducted the election of the Vice-Chairman of Council in accordance with the Rules of Procedure. Dr. Bocharov was nominated and unanimously elected as the Vice-Chairman for a second 2-year term (Decision 08/A/9(ii)).

The Delegates congratulated Drs. Wada and Bocharov on their election and expressed their gratitude for their valuable contribution to Council affairs over the years. Drs. Wada and Bocharov thanked Council for their support.

AGENDA ITEM 15

Appointment of F&A Committee Chairman

According to Rule 19(iii) of the PICES Rules of Procedure, “The Chairman of the Finance and Administration Committee shall be appointed by the Council from among the Committee’s members for a period of two years and if re-appointed, total consecutive service may not exceed four years”. Dr. Laura Richards (Canada) was appointed as the F&A Committee Chairman at the 2004 PICES Annual Meeting (Honolulu, U.S.A.) and re-appointed for the next 2-year period at the 2006 PICES Annual Meeting (Yokohama, Japan). Her second term will end at the conclusion of the 2008 Annual Meeting.

Council accepted the recommendation of the F&A Committee and appointed Ms. Patricia Livingston (U.S.A.) as the Chairman of this Committee for a 2-year term (Decision 08/A/10). Ms. Livingston thanked Council members for their support. Council also expressed its gratitude to Dr. Richards for her leadership of the F&A Committee over the past 4 years.

AGENDA ITEM 16

Other business – Procedure for preparing the Council report

The PICES Rules of Procedure contain the following two clauses dealing with the development and circulation of the Governing Council report and the Annual Report of the Organization:

- The Executive Secretary shall transmit to the Contracting Parties as soon as possible after each meeting of the Council a report of the proceedings (Rule 10(vi));
- The Executive Secretary shall prepare an annual report of the activities of the Organization and transmit it to the Contracting Parties (Rule 10(viii)).

The Executive Secretary noted that even though he is responsible for the development of the Council report and overseeing the preparation of the entire Annual Report of the Organization, it is the responsibility of the Co-Chairmen of temporary expert groups and the Chairmen of Standing and Executive Committees to prepare their annual reports to reflect the results achieved by their group or Committee and the proposed and planned activities. Without these reports all issues cannot be reflected accurately in the Council report, and any delays in getting group/Committee reports will inevitably cause delays in the development of the Council report.

Council set January 15, 2009, as the deadline for circulation of the final draft of the 2008 Council report.

Dr. Richards reminded Council that it was decided that the printing of the Annual Report be discontinued, and instead, the report will be distributed electronically (Decision 08/A/7), so the Council report will be placed on the PICES website as soon as it is approved by Contracting Parties.

GC Endnote 1**Participation list**Canada

Serge Labonté (delegate)
 Laura Richards (delegate)

Japan

Yukimasa Ishida (alternate delegate)
 Harumi Yamada (advisor)

People's Republic of China

Handi Guo (alternate delegate)
 Yingren Li (advisor)
 Gongke Tan (advisor)
 Dongmei Tang (advisor)
 Zhanhai Zhang (delegate)
 Baoying Zhu (advisor)

Republic of Korea

Sik Huh (advisor)
 Doan Jeong (delegate)
 Jeonghwa Kim (alternate delegate)

Russia

Lev N. Bocharov (delegate)
 Oleg Katugin (advisor)
 Igor Shevchenko (advisor)

U.S.A.

George Boehlert (delegate)
 Patricia Livingston (advisor)
 Samuel Pooley (delegate)
 Elizabeth Tirpak (advisor)

Other

Alexander Bychkov (Executive Secretary)
 Skip McKinnell (Deputy Executive Secretary,
 Nov. 2 only)
 John E. Stein (Science Board Chairman, Nov. 2)
 Tokio Wada (PICES Chairman)

GC Endnote 2**Governing Council meeting agenda**

1. Opening remarks
2. Adoption of agenda and meeting procedures
3. Report on administration
4. Membership and observers from other countries
5. Relations with relevant international and regional organizations/programs
6. Future integrative scientific program of PICES
7. Capacity building activities and PICES Intern Program
8. Schedule, structure and financing of future Annual Meetings
9. Improvement of participation in PICES activities
10. Report on the PICES project "*Development of the prevention systems for harmful organisms' expansion in the Pacific Rim*" supported by the Japanese Trust Fund
11. Report and recommendations of the Science Board
12. Report and recommendations of the Finance and Administration Committee
13. Report of the Executive Committee for evaluating annual performance of the Executive Secretary
14. Election of PICES Chairman and Vice-Chairman
15. Appointment of F&A Committee Chairman
16. Other business – Procedure for preparing the Council report

GC Endnote 3

Report on Administration for 2008

I. Annual contributions

According to *Regulation 5* 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 2008 were paid as follows:

Japan-----	December 20, 2007
U.S.A. -----	January 7, 2008
Canada -----	January 16, 2008
Russian Federation -----	February 13, 2008
Republic of Korea -----	February 15, 2008
People's Republic of China -----	May 15, 2008

All Contracting Parties met their financial obligations for *FY* 2008, except the United States. The amount in arrears is \$8,525. Even though only the Japanese contribution arrived prior to the due date, the timeliness of payment from other Contracting Parties is either stable or improved. China and Korea's progress is especially notable, with the time of the payment moving up one quarter in 2008.

II. External and additional funding

Details on external funding and voluntary contributions received for the period since the 2007 PICES Annual Meeting for various activities of the Organization are reflected in *F&A Endnote 5*.

III. Inter-sessional symposia/workshops/meetings and PICES Annual Meetings

Since the 2007 PICES Annual Meeting (October 2007), the following inter-sessional symposia, workshops and meetings were convened, for which financial, travel and logistical arrangements were made:

- inter-sessional meeting of WG 19 on *Ecosystem-based Management Science and its Application to the North Pacific*, February 21–22, 2008, Seattle, U.S.A.;
- inter-sessional meeting of WG 21 on *Non-indigenous Aquatic Species* to evaluate the protocols and reach final agreement on standards, data elements and data entry templates for the Marine/Estuarine Invasive Species Database for the PICES project on “*Development of the prevention systems for harmful organisms' expansion in the Pacific Rim*”, March 3–5, 2008, Busan, Korea;
- ICES/PICES Workshop on “*Environmental interactions of mariculture*”, April 14–15, 2008, Victoria, Canada;
- Workshop of the CFAME (*Climate Forcing and Marine Ecosystem Response*) Task Team on “*Linking and visualizing climate forcing and marine ecosystem changes: A comparative approach*”, April 15–17, 2008, Honolulu, U.S.A.;
- Workshop to develop an Implementation Plan for FUTURE in conjunction with a 1-day inter-sessional Science Board meeting, April 23–25, 2008, Seattle, U.S.A.;
- Workshop on “*Linking Global Climate Model output to (a) trends in commercial species productivity and (b) changes in broader biological communities in the world's oceans*”, May 18, 2008, Gijón, Spain;
- International Symposium on “*Effects of climate change on the world's oceans*” (co-organized by PICES, ICES and IOC, and co-sponsored by GLOBEC, SCOR and WCRP, with additional support from DFO, KORDI, NASA, NOAA and several Spanish sources), May 19–23, 2008, Gijón, Spain;
- International Symposium on “*Coping with global change in marine social-ecological systems*” (co-organized by GLOBEC, EUR-OCEANS and FAO, and co-sponsored by IFREMER, IRD, ICES, IMBER, PICES, SCOR and SSHRC), July 8–11, 2008, Rome, Italy;
- 2nd PICES Summer School on “*Ecosystem-based management and ecosystem approach*”, August 23–26, 2008, Hakodate, Japan;
- 4th PICES Workshop on “*The Okhotsk Sea and adjacent areas*”, August 27–29, 2008, Abashiri, Japan;

- International Symposium on “*Herring: Linking biology, ecology and status of populations in the context of changing environments*” (co-sponsored by ICES, PICES and GLOBEC), August 26–29, 2008, Galway, Ireland;
- ESSAS/PICES Workshops on “*Model comparisons of the ESSAS regions*” and “*IPCC modeling and downscaling atmosphere to advection*” at the ESSAS Annual Meeting, September 15–19, 2008, Halifax, Canada;
- ICES/PICES Theme Sessions on “*Coupled physical and biological models: Parameterization, validation, and applications*”, “*Marine spatial planning in support of integrated management – tools, methods, and approaches*”, and “*New methodology for tracking fish, mammal, and seabird behaviour and migrations*” at the ICES Annual Science Conference, September 22–26, 2008, Halifax, Canada;
- PICES/ICES Theme Session on “*The effects of ocean acidification on fisheries and ecosystems*” at the International Symposium on “*The ocean in a high CO₂ world – II*” (co-sponsored by SCOR, IOC, IAEA and IGBP), October 6–8, 2008, Monaco;
- ICES/PICES/GLOBEC workshop on “*Changes in distribution and abundance of clupeiform small pelagic fish in relation to climate variability and global change*”, November 3–7, 2008, Kiel, Germany.

The following workshops and scientific sessions were convened at the 2008 PICES Annual Meeting:

- 1-day BIO Workshop on “*Oceanic ecodynamics comparison of subarctic Pacific*”;
- 1-day MEQ Workshop on “*Review of selected harmful algae in the PICES Region: IV. Karenia and Prorocentrum*”, preceded by a ½-day laboratory demonstration;
- 1-day MONITOR/ESSAS Workshop on “*Status of marine ecosystems in the sub-arctic and arctic seas – Preliminary results of IPY field monitoring in 2007 and 2008*”;
- 1½-day CCCC/POC/FIS Workshop on “*Climate scenarios for ecosystem modeling (II)*”;
- 1-day CCCC/ESSAS Workshop on “*Marine ecosystem model inter-comparisons*”;
- ¾-day Science Board Symposium on “*Beyond observations to achieving understanding and forecasting in a changing North Pacific: Forward to the FUTURE*”;
- 1-day BIO Contributed Paper Session;
- 1½-day BIO Topic Session on “*End-to-end foodwebs: Impacts of a changing ocean*”;
- 1-day FIS Contributed Paper Session;
- ¾-day FIS Topic Session on “*Institutions and ecosystem-based approaches for sustainable fisheries under fluctuating marine resources*”;
- ½-day FIS Topic Session on “*Effects of fisheries bycatch and discards on marine ecosystems and methods to mitigate the effects*”;
- ¾-day MEQ/FIS Topic Session on “*Mariculture technology and husbandry for alternate and developing culture species*”;
- ½-day MEQ Topic Session on “*Connecting the human and natural dimensions of marine ecosystems and marine management in the PICES context*”;
- 1-day MEQ Topic Session on “*Consequences of non-indigenous species introductions*”;
- ½-day MEQ Topic Session on “*Species succession and long-term data set analysis pertaining to harmful algal blooms*”;
- 1-day MONITOR/TCODE/BIO Topic Session on “*Linking biology, chemistry, and physics in our observational systems – present status and FUTURE needs*”;
- 1-day POC Contributed Paper Session
- ¾-day POC Topic Session on “*Coastal upwelling processes and their ecological effects*”;
- 1-day CCCC/POC Topic Session on “*Marine system forecast models: Moving forward to the FUTURE*”.

Preparations, arrangements or planning are in progress for:

- ICES/PICES/GLOBEC workshop on “*Changes in distribution and abundance of clupeiform small pelagic fish in relation to climate variability and global change*”, November 3–7, 2008, Kiel, Germany;
- 3rd GLOBEC Open Science Meeting (co-sponsored by PICES) and associated workshops, June 22–26, 2009, Victoria, Canada;

- 3rd PICES Summer School on “*Satellite oceanography*” (co-sponsored by SCOR and several Korean agencies/organizations), August 25–28, 2009, Seoul, Korea;
- 6th International Conference on “*Marine bioinvasions*” (co-sponsored by ICES, PICES, U.S. National Sea Grant College Program, Pacific States Marine Fisheries Commission and Portland State University), August 24–27, 2009, Portland, U.S.A.;
- International Symposium on “*Rebuilding depleted fish stocks: Biology, ecology, social science and management strategies*” (primary sponsors: ICES, PICES and UNCOVER; co-sponsoring organizations: NAFO, DFO and IMR), November 3–6, 2009, Warnemünde, Germany;
- 5th International Zooplankton Production Symposium (co-sponsored by PICES and ICES), spring 2011, Pucon, Chile (not formally approved yet).

IV. Publications

Publications produced after the 2007 PICES Annual Meeting, in progress or just initiated include:

Primary journals

- Selected papers from the 2005 ESSAS Symposium on “*Climate variability and sub-arctic marine ecosystems*” in a special issue of *Deep-Sea Research II* (Guest Editors: G.L. Hunt, K. Drinkwater, S. McKinnell and D.L. Mackas) – published in December 2007, Vol. 54, Nos. 23–26;
- Selected papers from the 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*” (2007) in a special issue of *ICES Journal of Marine Science* (Guest Editors: M. Dagg, R. Harris, L. Valdés and S.-I. Uye) – published in April 2008, Vol. 65, No. 3;
- Selected papers from the PICES-2006 Topic Session on “*The human dimension of jellyfish blooms*” in *Plankton and Benthos Research* (Guest Editors: H. Iizumi and K. Ishii) – published in May 2008, Vol. 3 (supplement);
- Selected papers from the 2006 PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*” in a special issue of *Progress in Oceanography* (Guest Editors: H. Batchelder and S. Kim) – published in June 2008, Vol. 77, Nos. 2–3;
- Selected papers from the 5th International Conference on “*Marine bioinvasions*” (2007) in a special issue of *ICES Journal of Marine Science* (Guest Editors: J.A. Pederson and A.M.H. Blakeslee) – published in July 2008, Vol. 65, No. 5;
- Special issue of *Progress in Oceanography* on “*The Northern Humboldt Current System: Ocean dynamics, ecosystem processes, and fisheries*” (Guest Editors: A. Bertrand, R. Guevara-Carrasco, P. Soler, J. Csirke and F.P. Chavez) – published in December 2008, Vol. 79, Nos. 2–4;
- Selected papers from the 2007 NAFO/PICES/ICES Symposium on “*Reproductive and recruitment processes of exploited marine fish stocks*” in a special issue of on-line *Journal of Northwest Atlantic Fishery Science* (Guest Editors: R.D. Brodeur, M. Dickey-Collas and E. Trippel); a hard-copy run of this issue is expected in April 2009;
- Special issue of *Journal of Marine Systems* on “*Observation and modeling of the ocean circulation and marine ecosystem for CREAMS/PICES*” (Guest Editors: K.-I. Chang, S.-I. Ito, C. Mooers and J.-H. Yoon) – expected to be published in early 2009;
- Selected papers from the 2007 ICES/PICES Early Career Scientists Conference on “*New frontiers in marine science*” as a section in a regular issue of *ICES Journal of Marine Science* (Guest Editors: F. Mueter, E. North) – expected to be published in early 2009;
- Selected papers from the PICES-2007 Topic Session on “*Decadal changes in carbon biogeochemistry in the North Pacific*” as a section in a regular issue of *Journal of Oceanography* (Guest Editor: T. Saino) – expected to be published in August 2009;
- Selected papers on krill from the 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*” in a special volume of *Deep Sea Research II* (Guest Editors: S. Kawaguchi and W. Peterson) – expected to be published in 2009;
- Selected papers from the SEEDS-II experiment in a special issue of *Deep-Sea Research II* (Guest editors: A. Tsuda, M. Wells, M. Uematsu and H. Saito) – expected to be published in 2009;

- Selected papers from the ICES/PICES Theme Session on “*Comparative marine ecosystem structure and function: Descriptors and characteristics*” at the 2007 ICES Annual Science Conference in a special issue of *Progress in Oceanography* (Guest Editors: B.A. Megrey, J.S. Link and E. Moksness) – expected to be published in 2009;
- Selected papers from the 2007 Topic Session on “*Ecosystem approach to fisheries: Improvements on traditional management for declining and depleted stocks*” in a special issue of *Fisheries Research* (Guest Editors: G.H. Kruse, Y. Ishida, T. Perry, V.I. Radchenko and C.-I. Zhang) – expected to be published in 2009;
- Selected papers from the 2008 PICES/ICES/IOC International Symposium on “*Effects of climate change on the world’s oceans*” in a special issue of *ICES Journal of Marine Science* (Guest Editors: K. Brander, J. Church, M. Marcos, W. Peterson and L. Valdés) – expected to be published in 2009;
- Selected papers from the OECOS (Oceanic Ecosystem Comparison in the Subarctic Pacific) experiment in a special issue of *Deep-Sea Research II* (Guest Editors: C. Miller and A. Yamaguchi) – expected to be published in late 2009 or early 2010;
- Special issue on “*Tides in Marginal Seas*” dedicated to Prof. Alexei Nekrasov (Guest Editors: J. Cherniawsky, M. Foreman, B. Kagan and A. Rabinovich) – expected to be published in early 2010;
- Selected papers from the Topic Session on “*Phenology and climate change in the North Pacific: Implications of variability in timing of zooplankton production to fish, seabirds, marine mammals and fisheries (humans)*” at the 2007 PICES Annual Meeting in a special issue of *Deep-Sea Research II* (Guest Editors: W. Sydeman, S. McKinnell and S. Minobe) – cancelled.

PICES Special Publications

- Dickson, A.G., Sabine, C.L. and Christian, J.R. (Eds.). *Guide to Best Practices for Ocean CO₂ Measurements*. PICES Special Publication No. 3 (IOCCP Report No. 8), 191 pp. – published in October 2007.

PICES Scientific Report Series

- Hollowed, A.B., Beamish, R.J., Okey, T.A. and Schirripa, M.J. (Eds.). *Forecasting Climate Impacts on Future Production on Commercially Exploited Fish and Shellfish*. PICES Scientific Rep. No. 34, 101 pp. – published in August 2008;
- Beamish R.J. (Ed.). *Impacts of Climate and Climate Change on the Key species in the Fisheries in the North Pacific* (Final report of WG 16 on *Climate Change, Shifts in Fish Production, and Fisheries Management*). PICES Scientific Rep. No. 35, 217 pp. – published in December 2008;
- Kashiwai, M. and Kantakov, G.A. (Eds.). Proceedings of the 4th PICES Workshop on “*The Okhotsk Sea and adjacent areas*” (August 27–29, 2008, Abashiri, Japan) – expected to be published in 2009.

PICES Press – newsletter

- Two regular issues: Vol. 16, No. 1 (January 2008) and Vol. 16, No. 2 (July 2008).

Other publications

- PICES 2007 Annual Report;
- Book of Abstracts for the International Symposium on “*Effects of climate change on the world’s oceans*” (May 19–23, 2008, Gijón, Spain);
- Announcement and Book of Abstracts for the 2008 PICES Annual Meeting (October 24–November 2, 2008, Dalian, China).

Significant progress had been made in the implementation of the Action Plan resulting from the 2007 PICES Publications Review. Details can be found in *F&A Endnote 6*. The plan, once completed, will allow a smooth transition to more on-line access for PICES publications.

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

- Drs. Alexander Bychkov (Executive Secretary) and Skip McKinnell (Deputy Executive Secretary) travelled to Anchorage, U.S.A., to attend the 2008 Marine Science in Alaska Symposium and discuss joint activities with the North Pacific Research Board (January 2008);
- Dr. Sinjae Yoo (Science Board Vice-Chairman) represented PICES at the 1st NOWPAP CEARAC (Special Monitoring and Coastal Environment Assessment Regional Analysis Center) Coastal Environmental Assessment Workshops to develop common procedures for coastal environmental assessment in the region, including nutrient enrichment, eutrophication and HAB occurrence (March 2008, Toyama, Japan);
- Dr. McKinnell served as a PICES member on the Scientific Steering Committee for the Northeast Pacific Coastal Ecosystem Workshop and Forecasting Forum (April 2008, Nanaimo, Canada);
- Dr. Young-Jae Ro (MONITOR member) represented PICES at the 11th Session of the GOOS Scientific Steering Committee (April 2008, Paris, France);
- Dr. Tokio Wada (PICES Chairman), Dr. Vera Alexander (PICES Past-Chairman) and members of the Secretariat attended the workshop to develop an Implementation Plan for FUTURE and the inter-sessional Science Board meeting (April 2008, Seattle, U.S.A.);
- Dr. Fei Chai (WG 22 Co-Chairman) represented PICES at the 31st meeting of the Scientific Group under the London Convention, and the 2nd meeting of the Scientific Group under the London Protocol (May 2008, Guayaquil, Ecuador);
- Dr. Toru Suzuki (TCODE member) represented PICES at the 7th NOWPAP' DINRAC (Data and Information Network Regional Analysis Center) Focal Points Meeting to discuss approaches on exchange of marine environmental data and information in the region (May 2008, Beijing, China);
- Dr. Harold Batchelder (PICES affiliate member of SCOR Working Group 125 on *Global Zooplankton Comparisons*) attended the Working Group meeting and the associated workshop on “*Zooplankton and climate: Response modes and linkages among regions, regimes, and trophic levels*” (May 2008, Gijón, Spain);
- Dr. William Peterson (BIO member) served as the PICES convenor, and Drs. Richard Feely (CC-S member), Michael Foreman (POC Chairman) and Akihiko Yatsu (FIS member) represented PICES on the Scientific Steering Committee, for the PICES/ICES/IOC Symposium on “*Effects of climate change on the world's oceans*” (May 2008, Gijón, Spain);
- Members of the Secretariat served as organizers for the PICES/ICES/IOC Symposium on “*Effects of climate change on the world's oceans*” (May 2008, Gijón, Spain);
- Dr. Bychkov represented PICES at the 41st Session of the Executive Council of the Intergovernmental Oceanographic Commission (June 2008, Paris, France);
- Dr. Mitsutaku Makino (WG 19 member) attended the International Symposium on “*Coping with global change in marine social-ecological systems*” as a PICES member of the Symposium Discussion Panel (July 2008, Rome, Italy);
- Drs. Douglas Hay (Canada), Brenda Norcross and Yoshiro Watanabe (CFAME members) represented PICES on the Scientific Steering Committee for the International Symposium on “*Herring: Linking biology, ecology and status of populations in the context of changing environments*” (August 2008, Galway, Ireland);
- Dr. McKinnell travelled in August 2008 to Hakodate and Abashiri, Japan, to represent PICES at the 4th PICES Workshop on “*The Okhotsk Sea and adjacent areas*”, and the 2nd PICES Summer School on “*Ecosystem-based management and ecosystem approach*”;
- Drs. Angelica Peña (BIO member), Glen Jamieson (MEQ Chairman) and Kevin Weng (U.S.A.) served as PICES convenors for joint ICES/PICES Theme Sessions on “*Coupled physical and biological models: Parameterization, validation, and applications*”, “*Marine spatial planning in support of integrated management – tools, methods, and approaches*”, and “*New methodology for tracking fish, mammal, and seabird behaviour and migrations*”, respectively, and Dr. McKinnell represented PICES at the Standing Committee meetings held at the ICES Annual Science Conference (September 2008, Halifax, Canada);
- Dr. McKinnell attended the International Symposium on “*The ocean in a high CO₂ world – II*” as an organizer of the PICES/ICES Theme Session on “*The effects of ocean acidification on fisheries and*

ecosystems” and gave a talk on issues associated with ocean acidification and Pacific salmon (October 2008, Monaco);

- Drs. Bychkov and McKinnell represented PICES at the 5th World Fisheries Congress (October 2008, Yokohama, Japan);
- Drs. Wada, John Stein (Science Board Chairman) and members of the Secretariat travelled in October 2008, to Dalian, China, for the 2008 PICES Annual Meeting;
- Dr. Bychkov represented PICES at the NPAFC Sixteenth Annual Meeting, and Dr. McKinnell represented PICES at the NPAFC International Symposium on Bering-Aleutian Salmon International Survey (November 2008, Seattle, U.S.A.);
- Dr. Sinjae Yoo represented PICES at the 5th meeting of the Regional Scientific and Technical Panel of the UNDP/GEF Yellow Sea Large Marine Ecosystem (YSLME) project (November 2008, Shanghai, China);
- Dr. McKinnell attended the annual CalCOFI Conference as editor of the North Pacific Ecosystem Status Report (November 2008, La Jolla, U.S.A.);
- Dr. Jin-Yeong Kim (FIS member) served as a PICES convenor for the ICES/PICES workshop on “*Changes in distribution and abundance of clupeiform small pelagic fish in relation to climate variability and global change*” (November 2008, Kiel, Germany).

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:

International Program for Deployment of profiling floats (Argo)

- Dr. Dake Chen (Argo Science Team member) attended the 2008 PICES Annual Meeting as an observer, and addressed POC and MONITOR on potential areas for collaboration between Argo and PICES. Argo also had a poster at this meeting outlining general information and highlighting scientific objectives and recent activities of the project.
- PICES agreed to co-sponsor the Third Argo Science Workshop (March 25–27, 2009, Hangzhou, China) by taking responsibility for compiling and printing the Abstract Book for this meeting. PICES’ assistance will be given full exposure and credit in all advertisements for the workshop, at the workshop itself and on any subsequent reports that emerge.

International Research Programme on Climate Variability and Predictability (CLIVAR)

- PICES Working Group (WG 20) on *Evaluation of Climate Change Projections* is the appropriate avenue to enhance collaboration with CLIVAR through its Pacific Panel. Currently, Dr. William Crawford (Canada) serves as a liaison between the two groups.
- Dr. Dongxiao Wang (Pacific CLIVAR Panel member) attended the 2008 PICES Annual Meeting as an observer and updated POC on CLIVAR activities relevant to PICES.
- CLIVAR will be approached to co-sponsor the POC/FUTURE Topic Session on “*Outlooks and forecasts of marine ecosystems from an earth system science perspective: Challenges and opportunities*”, and the POC Workshop on “*Exploring the predictability and mechanisms of Pacific low frequency variability beyond inter-annual time scales*” to be convened at the 2009 PICES Annual Meeting.

Ecosystem Studies of Sub-Arctic Seas (ESSAS)

- PICES co-sponsored and served as the local organizer for the 2005 GLOBEC Symposium on “*Climate variability and sub-arctic marine ecosystems*” held in Victoria, Canada. Selected papers from the symposium were published in December 2007 as a special issue of *Deep-Sea Research II*, Vol. 54, Nos. 23–26 (Guest Editors: G.L. Hunt, K. Drinkwater, S. McKinnell and D.L. Mackas).
- PICES co-sponsored workshops on “*Model comparisons of the ESSAS regions*” and “*IPCC modeling and downscaling atmosphere to advection*” at the ESSAS Annual Meeting (September 15–19, 2008, Halifax, Canada).
- Two joint PICES/ESSAS workshops on “*Status of marine ecosystems in the sub-arctic and arctic seas – Preliminary results of IPY field monitoring in 2007 and 2008*” and “*Marine ecosystem model inter-comparisons*” were convened at the 2008 PICES Annual Meeting.

GC-2008

- Drs. Kenneth Drinkwater and George Hunt (ESSAS SSC Co-Chairmen) attended the 2008 PICES Annual Meeting as observers, and briefed PICES Standing Committees on ESSAS activities for the past year and those planned for 2009–2010. ESSAS and its U.S. component for the Bering Sea (BEST) also had posters at this meeting outlining general information and highlighting scientific objectives and recent activities of both projects.
- PICES agreed to send a member of Working Group (WG 20) on *Evaluation of Climate Change Projections* to attend the 2009 ESSAS Annual Meeting (June 15–21, 2009, Seattle, U.S.A.).

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. Selected papers from the symposium were published in June 2008, as a special issue of *Progress in Oceanography*, Vol. 77, Nos. 2–3 (Guest Editors H. Batchelder and S. Kim). This volume is considered as a part of GLOBEC synthesis efforts.
- Results from the CCCC Program will be included in several chapters of the GLOBEC Synthesis Book to be published in 2009 or 2010.
- PICES and GLOBEC worked with ICES to organize the 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*” held May 28–June 1, 2007, in Hiroshima, Japan. Selected papers from the symposium were published in April 2008, as a special issue of *ICES Journal of Marine Science*, Vol. 65, No. 3 (Guest Editors: M. Dagg, R. Harris, L. Valdés and S.-I. Uye).
- GLOBEC co-sponsored the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 19–23, 2008, in Gijón, Spain) by compiling the Book of Abstracts.
- PICES co-sponsored the International Symposium on “*Coping with global change in marine social-ecological systems*” led by GLOBEC (July 8–11, 2008, in Rome, Italy).
- PICES agreed to co-sponsor the 3rd GLOBEC Open Science Meeting (June 22–26, 2009, Victoria, Canada) by providing travel support for invited speakers from the Pacific (up to \$10,000) and early career scientists from PICES member countries (up to \$5,000), and by assisting with local arrangements.
- Dr. Manuel Barange (Executive Director of GLOBEC) attended the 2008 PICES Annual Meeting as an observer, and briefed the Executive Committee of the CCCC Implementation Panel on: (1) discussions within a GLOBEC-IMBER Transition Task Team on a way forward for international marine ecosystem science after the completion of GLOBEC, and (2) plans for the 3rd GLOBEC Open Science Meeting.

Global Ocean Observing System (GOOS)

- PICES was represented at the 11th Session of the GOOS Scientific Steering Committee (April 2008, Paris, France).
- The Topic Session on “*Linking biology, chemistry, and physics in our observational systems – present status and FUTURE needs*” and the workshop on “*Status of marine ecosystems in the sub-arctic and arctic seas – Preliminary results of IPY field monitoring in 2007 and 2008*”, both highly relevant to GOOS, were convened at the 2008 PICES Annual Meeting.

International Council for the Exploration of the Sea (ICES)

- Publication from the 4th International Zooplankton Production Symposium (see under GLOBEC).
- ICES and PICES worked with the U.S. National Sea Grant College Program and the MIT Sea Grant College Program to organize the 5th International Conference on “*Marine bioinvasions*” (May 21–24, 2007, in Cambridge, U.S.A.). Selected papers from the conference were published in July 2008, as a special issue of *ICES Journal of Marine Science*, Vol. 65, No. 5 (Guest Editors: J.A. Pederson and A.M.H. Blakeslee).
- PICES and ICES initiated the organization and took part as major international sponsors (with IOC) of the International Symposium on “*Effects of climate change on the world’s oceans*” (May 19–23, 2008, Gijón, Spain).

- PICES co-sponsored the International Symposium on “*Herring: Linking biology, ecology and status of populations in the context of changing environments*” led by ICES (August 26–29, 2008, Galway, Ireland).
- Three joint Theme Sessions on “*Coupled physical and biological models: Parameterization, validation, and applications*”, “*Marine spatial planning in support of integrated management – tools, methods, and approaches*”, and “*New methodology for tracking fish, mammal, and seabird behaviour and migrations*” were convened at the ICES Annual Science Conference (September 22–26, 2008, Halifax, Canada).
- The PICES/ICES Theme Session on “*The effects of ocean acidification on fisheries and ecosystems*” was held at the International Symposium on “*The Ocean in a high CO₂ world – II*” (October 6–8, 2008, Monaco).
- Dr. McKinnell (Deputy Executive Secretary) represented PICES at the Standing Committee meetings held at the ICES Annual Science Conference (September 2008, Halifax, Canada).
- Dr. Adolf Kellermann (Head of ICES Science Programme) attended the 2008 PICES Annual Meeting as an observer, and participated in the Science Board meeting to present an update on the continuing science reform in ICES and discuss joint activities of the two Organizations in 2009 and beyond.
- PICES and ICES are working together as major international sponsors for the 6th International Conference on “*Marine bioinvasions*” (August 24–27, 2009, Portland, U.S.A) and the International Symposium on “*Rebuilding depleted fish stocks: Biology, ecology, social science and management strategies*” (November 3–6, 2009, Warnemünde, Germany).
- PICES and ICES agreed to initiate planning and serve as major international sponsors of the 5th International Zooplankton Production Symposium (March 14–18, 2011, Pucon, Chile).
- At the invitation by ICES, PICES agreed to co-sponsor the International Symposia on “*The effects of environmental variability on cephalopod populations*” (September 3–11, 2009, Vigo, Spain), and “*Carrying capacity: What does it mean in a changing ocean?*” (2010, Lisbon, Portugal).
- ICES’ experts on marine bioinvasions are involved in the PICES project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” supported by the Japanese Ministry of Agriculture, Forestry and Fisheries (project duration is from April 1, 2007 to March 31, 2012).
- PICES and ICES established a joint Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* and agreed that this Working Group will convene the International Symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (April 26–29, 2010, Sendai, Japan).

Integrated Marine Biogeochemistry and Eco-system Research (IMBER)

- IMBER co-sponsored the Topic Session on “*End-to-end foodwebs: Impacts of a changing ocean*” at the 2008 PICES Annual Meeting.
- Dr. Hiroaki Saito (IMBER SSC member) represented IMBER at the 2008 PICES Annual Meeting. 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 integrative scientific program of PICES, FUTURE.
- IMBER will be approached to co-sponsor the POC/FUTURE Topic Session on “*Outlooks and forecasts of marine ecosystems from an earth system science perspective: Challenges and opportunities*” to be convened at the 2009 PICES Annual Meeting.

Intergovernmental Oceanographic Commission of UNESCO (IOC)

- IOC teamed with PICES and ICES in organizing the International Symposium on “*Effects of climate change on the world’s oceans*” (May 19–23, 2008, Gijón, Spain).
- PICES was represented at the 41st Session of the Executive Council of the Intergovernmental Oceanographic Commission (June 2008, Paris, France).
- Dr. Patricio Bernal (General Secretary of IOC) attended the 2008 PICES Annual Meeting as an observer, and shared his views on potential areas of collaboration between IOC and PICES at meetings of several expert groups.
- PICES and IOC agreed to cooperate on several fronts:
 - developing understanding of the vulnerability of fisheries to climate variability and change as a potential input to the 5th IPCC Assessment Report;

- monitoring, including PICES involvement at the level of the Scientific Program Committee in the OceanObs'09 Conference (September 21–25, 2009, Venice, Italy) led by IOC (see also under GOOS);
- data integration and synthesis, including an information network on ocean acidification and a common database on natural iron (see also under IOCCP);
- 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 are to be compiled and stored annually in the format specified in the HAE-DAT database. HAE-DAT is hosted by IOC, with equal credit to the partner organizations (PICES and ICES). Building a common data resource allows inter-comparison of HAB species composition and magnitude of environmental and economic impacts. Discussion on this joint work proceeds at each PICES Annual Meeting.
- IOC experts on harmful algal blooms are involved in the PICES project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” supported by the Japanese Ministry of Agriculture, Forestry and Fisheries (project duration is from April 1, 2007 to March 31, 2012).

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), and the Section on *Carbon and Climate* (2006–present), has been long acting as a regional coordinator for these activities. The 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 co-sponsored the publishing of the “*Guide to best practices for ocean CO₂ measurements*”, as PICES Special Publication No. 3 and IOCCP Report No. 8 (Eds. A.G. Dickson, C.L. Sabine and J.R. Christian), in December 2007. The guide is available on-line from the CDIAC (Carbon Dioxide Information Analysis Center) Ocean CO₂ Program website in individual chapters or as a whole electronic document, and hard copies are also available upon request from PICES and CDIAC. To increase the use of the Guide, volunteers are being sought to assist with translations of the Guide to languages other than English.
- IOCCP maintains the ocean acidification network website and assisted with the implementation of the SCOR/IOC/IAEA/IGBP International Symposium on “*The ocean in a high CO₂ world – IP*” (October 6–8, 2008, Monaco). By the invitation of the organizers, PICES agreed to convene, jointly with ICES, a Theme Session on “*The effects of ocean acidification on fisheries and ecosystems*” at this symposium.

North Atlantic Fisheries Organization (NAFO)

- NAFO and PICES (with ICES as the other sponsor) partnered to organize the International Symposium on “*Reproductive and recruitment processes in exploited marine fish stocks*” (October 1–3, 2007, Lisbon, Portugal). Selected papers from the symposium were published on-line as a special issue of *Journal of Northwest Atlantic Fishery Science* (Guest Editors: R.D. Brodeur, M. Dickey-Collas and E. Trippel). A hard-copy run of this issue is expected in April 2009.

North Pacific Anadromous Fish Commission (NPAFC)

- Dr. Yukimasa Ishida (CSRS Chairman) represented NPAFC at the 2008 PICES Annual Meeting.
- Dr. Alexander Bychkov (Executive Secretary) represented PICES at the NPAFC Sixteenth Annual Meeting (November 17–21, 2009, Seattle, U.S.A.) and Dr. Skip McKinnell (Deputy Executive Secretary) represented PICES at the NPAFC International Symposium on Bering–Aleutian Salmon International Survey (November 2008, Seattle, U.S.A.).
- NPAFC was invited to (1) participate in the development of the second PICES North Pacific Ecosystem Status Report; (2) co-sponsor the PICES/ICES Symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*”, and (3) contribution to the Implementation Plan for FUTURE.

North Pacific Research Board (NPRB)

- In 2007, NPRB and PICES co-sponsored a series of workshops on “*Forecasting climate impacts on future production of commercially exploited fish and shellfish*”. PICES Scientific Report No. 34 (August 2008) provides a summary of these workshops.
- In addition to the grant of \$90,000 for the development of the second PICES North Pacific Ecosystem Status Report, NPRB committed US\$15,700 to support the involvement of Dr. Michael Dagg (BIO Chairman) in this project as a Co-Editor (this grant will be handled through LUMCON–Louisiana Universities Marine Consortium).
- NPRB approved a contribution of US\$50,000 per year for the next 5 years of the North Pacific Continuous Plankton Recorder (CPR) project.

Northwest Pacific Action Plan (NOWPAP)

- PICES was involved in the 1st (March 7, 2008) and 2nd (September 11, 2008) NOWPAP/CEARAC Coastal Environmental Assessment Workshops held in Toyama (Japan), to develop common procedures for coastal environmental assessment in the NOWPAP region, including nutrient enrichment, eutrophication and HAB occurrence.
- PICES was present as an observer at the 7th NOWPAP/DINRAC Focal Points Meeting (May 13–14, 2008, Beijing, China) to discuss approaches on exchange of marine environmental data and information in the region.
- A statement on “NOWPAP and PICES: Potential areas for collaboration from PICES perspective” was sent to the 13th Intergovernmental Meeting of NOWPAP (October 20–21, 2008, Busan, Korea).
- Dr. Jeung Sook Park (NOWPAP Scientific Affairs Officer) attended the 2008 PICES Annual Meeting as an observer, and addressed MEQ on potential areas for collaboration between NOWPAP and PICES. NOWPAP also had a poster at this meeting outlining general information and highlighting scientific objectives and recent activities of the project.
- A presentation on HAB-related activities of NOWPAP was made by a representative of CEARAC at the 2008 meeting of PICES Section on *Ecology of Harmful Algal Blooms in the North Pacific*. An article on activities of this section was published in the NOWPAP/CEARAC newsletter.
- PICES was one of the supporters for the 2nd NOWPAP Training Course on “*Remote Sensing Data Analysis*” (November 1–5, 2008, Jeju, Korea).

Sir Alister Hardy Foundation for Ocean Science (SAHFOS)

- PICES Advisory Panel on *Continuous Plankton Recorder Survey in the North Pacific* (CRP-AP) review and advise on the most appropriate locations, timing and frequency of CPR routes for the North Pacific CPR project managed by SAHFOS and endorsed by PICES. The CPR is now recognized as the only long-term indicator of global change in the North Pacific providing biological information on this large geographic scale. This information is being widely used by the North Pacific scientific community as an indicator of biological responses to annual changes in climate.

Scientific Committee on Oceanic Research (SCOR)

Relationships with SCOR-sponsored large-scale ocean research programs such as GLOBEC, SOLAS and IMBER, and with IOCCP are reflected separately. Other collaborations are listed below.

- PICES strongly supported the formation of SCOR Working Group (WG 125) on *Global Comparisons of Zooplankton Time Series* and agreed to provide funding for an associate member from the North Pacific (Dr. Harold P. Batchelder, Oregon State University, U.S.A.) to participate in its activities. The most recent meeting of SCOR WG 125 and the associated workshop on “*Zooplankton and climate: Response modes and linkages among regions, regimes, and trophic levels*” were held in conjunction with the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 2008, Gijón, Spain).
- Activities of PICES Working Group (WG 22) on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* are closely linked to the mandate of SCOR Working Group (WG 131) on *The Legacy of in situ Iron Enrichment: Data Compilation and Modeling* to compile a database for open access of the completed iron-enrichment experiments. PICES is prepared to consider co-sponsoring a joint meeting of these groups to work out the details of bringing together the data sets in a way that will make preparation of the database possible.

- Since 2005, PICES Section on *Ecology of Harmful Algal Blooms in the North Pacific* has been convening an annual series of workshops, “*Review of selected harmful algae in the PICES region*”, to document the existing knowledge on the eco-physiology of HAB species that impact all, or most, countries in the North Pacific. The previous workshops, held in conjunction with PICES Annual Meetings, focused on *Pseudo-nitzschia* and *Alexandrium* (2005), *Dinophysis* and *Cochlodinium* (2006), *Heterosigma akashiwo* and other harmful raphidophytes (2007), and *Karenia* and *Prorocentrum* (2008). These workshops are normally preceded by a laboratory demonstration on cell and toxin identification and detection methods/technique. We intend to continue this series, and the SCOR Global Ecology and Oceanography of Harmful Algal Blooms Program (GEOHAB) was invited to play an active role in the future workshops.
- SCOR continues to provide travel support for scientists from countries with “economies in transition” to attend SCOR-relevant sessions/workshops at PICES Annual Meetings and international symposia co-organized by PICES. In 2008, SCOR allocated US\$7,500 for the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 19–23, 2008, Gijón, Spain) and US\$5,000 for the 2008 PICES Annual Meeting. SCOR also committed US\$5000 for the 3rd PICES Summer School on “*Satellite Oceanography*” (August 25–28, 2009, Seoul, Korea) and \$2500 for SCOR-relevant sessions at the 2009 PICES Annual Meeting.

Surface Ocean-Lower Atmosphere Study (SOLAS)

- The PICES Working Group (WG 22) on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* is the appropriate avenue to maintain and enhance collaboration with SOLAS. Currently, Dr. Shigenobu Takeda (WG 22 Co-Chairman and SOLAS SSC member) serves as a liaison between the two groups.
- SOLAS was represented as an observer at the 2008 PICES Annual Meeting and had a poster outlining general information and highlighting scientific objectives and recent activities of the project.
- SOLAS will be approached to co-sponsor the BIO Workshop on “*Natural supplies of iron to the North Pacific and linkages between iron supply and ecosystem responses*” to be convened at the 2009 PICES Annual Meeting.
- Selected papers from the SEEDS-II (Subarctic Pacific Iron Experiment for Ecosystem Dynamics Study II) experiment are expected to be published in 2009 as a special issue of *Progress in Oceanography* (Guest Editors: A. Tsuda, M. Wells, M. Uematsu and H. Saito).

GC Endnote 4

Comments on the affiliate status system and draft *Affiliate Member Policy*

(as received, with minor language editing)

Japanese comments (E-mail of September 29, 2008):

Dear Dr. Wada, PICES Chairman, and Dr. Bychkov, Executive Secretary,

We read the document of PICES AFFILIATE MEMBER POLICY. We understand that the scientific cooperation with scientists of non-member countries is very important for PICES activities. For example, the Ecosystem Based Management Working Group (WG 19) had a lot of input from not only scientists of member countries, but also from a scientist of non-member country such as Australia who was invited by PICES. Like this, the current PICES system can achieve the scientific cooperation between PICES and non-member countries. So, it is not necessary to introduce an additional system such as affiliate member policy for scientific cooperation with non-member countries. Also, even if non-member country contributes to approximately 10% of the current annual contribution per Contracting Party to PICES, we have concerns about a heavy burden in man power and financial aspect, if we introduce this system. Therefore, Japan makes an objection to introduce the affiliate member policy for scientific cooperation with non-member countries to PICES system.

Best regards,
Takaji Iida, Representative of Japanese delegates
Fisheries Agency of Japan

U.S. comments (E-mail of September 29, 2008):

Consistent with discussions in Victoria, the US delegation has the following comments on the affiliate status system:

(1) Policy and procedure for selecting an Affiliate Member: Since affiliates are to represent a non-member country, it would be preferable if the Secretariat undertook the consultation with the foreign ministry of the government in which the organization is located automatically, perhaps even requesting a letter to the effect that the government supports an organization as the affiliate. The concern is that some organization could apply for affiliate status and be granted that status without that government's support, possibly leading to later disagreements within the country.

(2) Influence of the Affiliate Status System on the current practices of PICES: Sufficient safeguards, such as inability to serve as committee chairs, have been instituted in the guidelines to avoid problems here. Furthermore, the rules of procedure will have to be reviewed carefully so as to define precisely what actions affiliates may or may not take, *e.g.*, affiliates cannot participate in decisions of the Contracting Parties under Article VII.

(3) We believe that appropriate revisions should be made to the PICES policy document to provide more clarity on the responsibilities and rights of affiliate members. The policy should avoid legally binding language in the context of a policy document like this. Some suggested editorial changes are provided on the attached file.*

George Boehlert, U.S. National Delegate
Hatfield Marine Science Center, Oregon State University

* Circulated to the delegates but not included in this report.

GC Endnote 5**List of organizations and programs present as observers at the 2008 PICES Annual Meeting**

Alaska Ocean Observing System (AOOS)	Dr. Phillip R. Mundy
APEC's Marine Resources Conservation WG (APEC-MRC)	Mr. Gongke Tan
International Program for deployment of profiling floats (Argo)	Dr. Dake Chen
Bering Sea Ecosystem Study (BEST)	Dr. George L. Hunt, Jr.
Climate Variability and Predictability Program (CLIVAR)	Dr. Dongxiao Wang
Ecosystem Study of Sub-Arctic Seas (ESSAS)	Dr. Kenneth Drinkwater
Global Ocean Ecosystem Dynamics (GLOBEC)	Dr. Manuel Barange
Group of Experts on Scientific Aspects of Marine Pollution (GESAMP)	Dr. Rudolf Wu
Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)	Dr. Hiroaki Saito
Intergovernmental Oceanographic Commission (IOC) of UNESCO	Dr. Patricio Bernal
International Association of Marine Science Libraries (IAMSLIC)	Mr. Brian Voss
International Council for the Exploration of the Sea (ICES)	Dr. Adolf Kellermann
International Whaling Commission (IWC)	Dr. Hidehiro Kato
North Pacific Anadromous Fish Commission (NPAFC)	Dr. Yukimasa Ishida
Northwest Association of Networked Ocean Observing Systems (NANOOS)	Dr. Jack Barth
Northwest Pacific Action Plan (NOWPAP)	Dr. Jeung Sook Park
Pacific Coast Observing System (PaCOOS)	Dr. John Stein
Pacific Arctic Group (PAG)	Dr. Jianfeng He
Sir Alister Hardy Foundation for Ocean Science (SAHFOS)	Mr. Sandy Shan
Surface Ocean Low Atmosphere Study (SOLAS)	Dr. Sonia Batten
World Climate Research Programme (WCRP)	Dr. Shigenobu Takeda
	Dr. Dongxiao Wang

GC Endnote 6

Study Group on *Restructuring the PICES Annual Meeting*

Background

With the expansion of activities of PICES, its Annual Meeting* has also expanded in scale and duration. This is evidence that PICES has become an internationally renowned scientific organization. The expansion of the Annual Meeting, however, compresses the time for deliberations by the Governing Council, Science Board, Finance and Administration Committee, and Scientific/Technical Committees, even though their responsibilities also increase. Such discussions are very important for planning and coordinating relevant activities among Contracting Parties to achieve the Organization's objectives and facilitate international cooperation in the North Pacific Ocean. The increasing scale and duration of the Annual Meeting is also a burden for the host countries, participants and the PICES Secretariat.

Therefore, a Study Group should be established, under the direction of Council, to review the present structure of the Annual Meeting, and to consider options to allocate time and order among various events in the Annual Meeting, while also shortening the meeting duration. Clarifying the responsibilities of the Science Board, Financial and Administration Committee, and Scientific/Technical Committees in the PICES decision-making process should also be considered as part of the restructuring of the Annual Meeting, as a secondary task of the Study Group.

* Annual Meeting means not only the plenary and subsequent scientific sessions, but also the meetings of the Governing Council, Science Board, Financial and Administration Committee, Scientific and Technical Committees and their subsidiary bodies, as well as workshops and other pre-annual meeting obligations.

Terms of Reference

1. To review the current practice and structure of the PICES Annual Meeting to (a) consider ways of improving the time balance and order among various events of the Annual Meeting, (b) shorten the duration of the Annual Meeting, and (c) assess other issues related to the Annual Meeting.
2. To develop recommendations on the Annual Meeting and report to the Governing Council by March 31, 2009.

Membership

The Study Group will include one representative from each Contracting Party, as well as the Chairman and Vice-Chairman of PICES, the Chairmen of Science Board and Finance and Administration Committee, and the Executive Secretary and Deputy Executive Secretary. The Study Group will be led by the Chairman of PICES.

GC Endnote 7

PICES project
on “Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim” Financial
report for Year 1 (April 1, 2007 – March 31, 2008)

Background

In April 2007, the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan, through the Fisheries Agency (JFA) of Japan, provided a voluntary contribution to PICES for a project entitled “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*”. The anticipated duration of the project is 5 years (from April 1, 2007 to March 31, 2012), and its goals are to develop international systems to collect, exchange and store relevant data, and to foster partnerships with non-PICES member countries and related international organizations. The contribution is from the Official Development Assistance (ODA) fund and thus, involvement of developing Pacific Rim countries is required in activities under this project.

The project has two distinct components, one on harmful algal blooms (HABs) and the other on marine non-indigenous species (MNIS), and is conducted by two PICES expert groups under the Marine Environmental Quality Committee (MEQ), Section on *Ecology of Harmful Algal Blooms in the North Pacific* (HAB Section) and Working Group on *Non-indigenous Aquatic Species* (WG 21). Each group oversees a specific sub-project. The HAB sub-project, with Dr. Vera L. Trainer (Northwest Fisheries Science Center, Seattle, WA, U.S.A., E-mail: Vera.L.Trainer@noaa.gov) as the principle investigator (PI), focuses on preparing and teaching country-specific training courses most needed to ensure seafood safety in developing countries. Within the MNIS sub-project, two specific initiatives have been identified. The first is the development of a comprehensive MNIS database, with Dr. Henry Lee II (U.S. Environment and Protection Agency, Newport, OR, U.S.A., E-mail: lee.henry@epa.gov) as the PI. The second is a taxonomy initiative that includes rapid assessment surveys and associated collector surveys in PICES member countries, with Dr. Thomas Therriault (Fisheries and Oceans Canada, Nanaimo, BC, Canada, E-mail: thomas.therriault@dfo-mpo.gc.ca) as the PI. The Chairman of MEQ, Dr. Glen Jamieson (Fisheries and Oceans Canada, Nanaimo, BC, Canada, E-mail: glen.jamieson@dfo-mpo.gc.ca) serves as the Project Scientific Coordinator and is responsible for reporting annually on the progress of the scientific implementation of the project. This scientific report, to be submitted as a separate document simultaneously with the financial report, will include a summary of the activities carried out for the year, with an evaluation on the progress made, and a workplan for the following year.

Financial principles and budget categories

The following financial principles, agreed to by JFA and PICES, apply to the project:

- A separate bank account shall be established to deposit the remitted funds;
- The interest earned by the fund shall be credited to the project and used in consultation with JFA;
- Any funds remaining after the completion of every fiscal year of the project shall be reported and disposed of in consultation with JFA;
- Transfers of up to 10% of allocations between the budget categories are allowed, based solely on the decision by the PICES Executive Secretary. In special cases, transfers up to 20% between the budget categories can be authorized by JFA. All transfers shall be reported at the end of the fiscal year;
- A 10% overhead on the annual budget shall be retained by PICES to offset expenses related to the Secretariat’s involvement in the project;
- The PICES Executive Secretary is responsible for the management of the fund and for reporting annually on its disposition to PICES Governing Council and JFA, within 120 days after the close of each project year ending March 31.

The main elements of the budget are organized into the following categories:

- Travel and meetings
This category covers travel costs associated with project activities (organizational trips, field studies, etc.) and organization of project workshops and meetings.

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- Contracts
This category covers fees to be paid to consultants and experts employed to implement the project. Tasks and deliverables for contractors have to be determined by the Scientific Coordinator (Chairman of PICES MEQ), based on recommendations from a PI of a specific sub-project or initiative. The Executive Secretary, in consultation with the Scientific Coordinator, is responsible for selecting contractors. To support the objectives of the project and to ensure that its activities have a minimal impact on the workload of the existing staff of the PICES Secretariat, the Executive Secretary can employ additional staff (*e.g.*, Project Assistant) as required.
- Equipment
This category covers purchases of equipment for laboratory/field sampling/data processing/analysis, computer hardware and software for development of database(s) and the project website.
- Miscellaneous
This category covers minor expenses associated with the project (mail and phone charges, bank charges, *etc.*) and includes contingencies such as fluctuations in currency exchange rates.

Project bank account

The following special account for the project was established at the bank used by PICES:

Bank name: TD Canada Trust

Bank number: 004

SWIFT Code: TDOMCATTTOR

Branch name: Sidney

Branch number: 00721

Bank Address: 2406 Beacon Avenue, Sidney, BC, Canada V8L 1X4

Account number: 07210 004 8479 5209963

Account holder: North Pacific Marine Science Organization (PICES)

Funds for the first year of the project (April 1, 2007 to March 31, 2008) were transferred to this account on July 27, 2007.

BUDGET EXECUTION FOR FISCAL YEAR 1

The budget allocated for *Year 1* was \$184,980. The initially proposed budget breakdown is shown in Table 1. Work plans for both sub-projects were discussed and revised at the PICES Sixteenth Annual Meeting held from October 26 to November 5, 2007, in Victoria, BC, Canada. Consequently, allocations between the budget categories were adjusted: \$5,800 (10%) from the travel and meetings category and \$7,200 (8%) from the contracts were moved to the equipment category as indicated in Table 1. This table also includes actual expenses and remaining funds for each of the budget categories, and the project account balance as of March 31, 2008. There is a surplus of \$10,668 at the fiscal year end. Table 2 provides more details on actual expenses for the major categories.

Table 1 Allocations and expenses for *Year 1* of the PICES MAFF project.

Category	Initial Allocations	Final Allocations	Actual Expenses	Remainder
Travel & meetings	58,000	52,200	48,652	3,548
Contracts	90,000	82,800	81,822	978
Equipment	16,500	29,500	29,162	338
Miscellaneous	1,980	1,980	223	1,757
Overhead	18,500	18,500	18,500	–
Total	184,980	184,980	178,359	6,621
Interest earned				4,047
Account Balance				10,668

Table 2 Breakdown of expenses for various budget categories for *Year 1* of the PICES MAFF project.

Category/Activity	Expenses
Travel & meetings	48,652
Joint meeting of PICES and ICES experts on MNIS (May 25–26, 2007, Cambridge, U.S.A.) in conjunction with the 5 th International Conference on “ <i>Marine bioinvasions</i> ” (May 21–24) to discuss possible directions for the MNIS sub-project and potential for collaboration between the two organizations to better implement this sub-project	8,304
Travel of MNIS experts to PICES XVI to test the first version of the database and to discuss the proposed taxonomy initiative, including the rapid assessment surveys and associated collector surveys, under the MNIS sub-project	4,673
Meetings of PICES and IOC/WESTPAC HAB experts (Oct. 24–25, 2007, Seattle, U.S.A. and Nov. 25–27, 2007, Tokyo, Japan) to discuss possible directions for the HAB sub-project, what might be learned from past IOC/WESTPAC training classes, and potential for collaboration with these organizations to enhance the effectiveness of a HAB training program	6,718
Participation of PICES and WESTPAC experts in the 2 nd Asian GEOHAB meeting (Jan. 28–Feb. 1, 2008, Nha Trang, Vietnam) to introduce activities of the PICES HAB Section and the MAFF project, and to obtain information about research and monitoring needs pertaining to HABs and seafood safety in southeast Asian countries in order to determine an immediate and long-term Action Plan for a HAB training program	9,532
Inter-sessional WG 21 meeting (March 3–5, 2008, Busan, Korea) to evaluate the protocols and reach final agreement on standards, data elements and data entry templates for the MNIS database	19,425

Contracts	81,822
To develop a prototype MNIS database to support the scientific information to be provided by participating scientists (Ms. Deborah Reusser, U.S. Geological Survey)	40,730
To select, order and test equipment/materials to be used for a HAB training program in developing countries (Mr. Julian Herndon, San Francisco State University)	20,012
To provide assistance to project Coordinators and sub-project Principle Investigators (Ms. Rosalie Rutka, Stranby Technical Services)	21,080
Equipment	29,162
Equipment and materials for a HAB training program in developing countries	28,000
Access database software for China, Japan, Korea and Russia	1,162
Miscellaneous	223
Cheque and bank charges	194
Mail charges	29

Recommendation on the use of *Year 1* surplus

As indicated above, the first year of the project ended with a surplus of \$10,668, generated partly by the unused funds and partly by bank interest.

One of the tasks under the MNIS sub-project is entering species distributions at the eco-regional scale for all taxa, to the extent practical, into a MNIS database. It is recommended that an equivalent of \$6,000 US be used from the surplus to support data entry of species distribution in Japanese waters. This task is expected to be completed by August 31, 2008, through the contract with Marine Ecological Institute Inc., supervised by the member of WG 21, Dr. Hisashi Yokoyama (National Research Institute of Aquaculture).

It is also recommended that the remaining funds (approximately \$4,000) be used to support participation of scientists from Pacific Rim countries in a rapid assessment survey at two port locations in China (one on the Yellow Sea and one on the Bohai Sea) immediately prior to PICES XVII to be held in October 2008, in Dalian, China. This rapid assessment survey and an associated collector survey are being planned under a taxonomy initiative of the MNIS sub-project.

Audit of the account

According to the PICES Financial Regulations (http://www.pices.int/about/financial_regulations.aspx; *Regulations 11 and 13*), all our accounts and financial statements are subject of an external audit. The auditing firm, *Flader & Hale*, was selected as the PICES external auditor for *FYs* 2003–2005 at the 2003 inter-sessional Governing Council meeting in Victoria, Canada (Decision 03/A/1(ii)), and retained as the auditor for *FYs* 2006–2008 at the 2005 Annual Meeting in Vladivostok, Russia (Decision 05/A/1(ii)).

The status of the PICES/MAFF account, for the period from April 1 to December 31, 2007, was assessed during the regular PICES audit for *FY 2007*. The financial statements were submitted to *Flader & Hale* on March 21, 2008, and the audit was completed on April 21, 2007. In the auditor's opinion, the financial statements are an accurate representation of the MAFF account as of December 31, 2008, and changes in the fund balance are in accordance with Canadian generally accepted accounting principles. The financial statements for the rest of *Year 1* of the MAFF project (January 1 to March 31, 2008) will be evaluated during the regular PICES audit for *FY 2008*.

GC Appendix A

2008 Governing Council decisions

08/A/1: Auditor

- i. Council accepted the audited accounts of *FY* 2007.
- ii. Council retained *Flader & Hale* as the external auditor for *FYs* 2009-2011.

08/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* 2008, 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.

08/A/3: Budget

- i. Council accepted the estimated accounts for *FY* 2008.
- ii. Council approved the 2009 budget of \$785,000. The amount of \$98,000 will be transferred from the Working Capital Fund to balance the budget, setting the total annual contribution at \$687,000, and the 2009 annual fee at \$114,500 per Contracting Party.
- iii. Council approved a transfer from the Working Capital Fund to the Trust Fund to recover the 2008 expenses, and to restore the Trust Fund to the level of \$110,000 by the end of the fiscal year.
- iv. Council approved that the amount of \$3,593 in unspent funds from the 2006 CCCC symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*” be earmarked for high-priority projects other than the development of the new integrative scientific program, FUTURE, and the preparation of the next North Pacific Ecosystem Status Report.

08/A/4: Scientific cooperation with non-member countries

Council agreed that changing the PICES Rules of Procedures in order to accommodate scientists from non-member countries or other organizations to PICES’ expert groups (*ex-officio* membership) is a viable alternative approach to the affiliate status system, and requested Dr. Laura Richards, former Chairman of the Study Group on *Scientific Cooperation between PICES and Non-member Countries*, to work with the Secretariat to prepare actual amendments for consideration at the next meeting of Council.

08/A/5: Future PICES Annual Meetings and inter-sessional Science Board and Governing Council meetings

- i. Council agreed to provide \$40,000 to Korea to partially cover costs for the 2009 PICES Annual Meeting to be held October 23–November 1, in Jeju, with the Ministry of Land, Transport and Maritime Affairs (MLTL), the Korea Ocean Research and Development Institute (KORDI) and the National Fisheries Research and Development Institute (NFRDI) as the local organizers.
- ii. Council approved in principle the theme of the 2010 PICES Annual Meeting, “*North Pacific ecosystems today, and challenges in understanding and forecasting change*”, and instructed Science Board to finalize the theme description by the 2009 inter-sessional Science Board meeting.
- iii. Following the established 6-year rotation cycle, Council requested the Russia Federation to explore the feasibility of hosting the 2011 PICES Annual Meeting, and inform the Secretariat on this matter by March 31, 2009.

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- iv. Council approved a new naming convention for future Annual Meetings that includes the name of the Organization and the year of the meeting (PICES-2009, PICES-2010, *etc.*). For consistency, a similar approach will be used for inter-sessional meetings of Science Board and Council (ISB-2009, IGC-2009).
- v. Council accepted the same registration fee structure for 2009 as was maintained for 2004–2008:

Type of registration fee	CDN \$
Regular	225
Early	150
Student	50
Spousal/guest	50

- vi. A Study Group on *Restructuring the PICES Annual Meeting* has been established under the direction of Council, to review the current practice and structure of the PICES Annual Meeting. The terms of reference and membership of the Study Group are listed in *GC Appendix B*.
- vii. Council approved inter-sessional Science Board and Council meetings to be held in conjunction with a workshop to finalize the development of an Implementation Plan for FUTURE, and accepted an offer from the State Oceanic Administration of China to host these events in Qingdao, in April 2009.

08/A/6: Intern Program

- i. Council accepted changes in the background documentation for the Intern Program (*F&A Endnote 7*).
- ii. Council extended the deadline of nominations for the 2010 PICES Internship until the Governing Council meeting at the 2009 PICES Annual Meeting.
- iii. Council instructed the Executive Secretary to invite Contracting Parties to provide voluntary contributions to support the Intern Program in 2009 and beyond.
- 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.

08/A/7: PICES Annual Report

Council decided to discontinue printing the Annual Report, and instead, distribute it electronically and deposit it in the electronic commons.

08/A/8: Executive Secretary position

Council approved the re-appointment of Dr. Alexander Bychkov, Executive Secretary, for a new 5-year term to start June 1, 2009.

08/A/9: Election of Chairman and Vice-Chairman

- i. Council unanimously elected Dr. Tokio Wada (Japan) as the Chairman of PICES for a second 2-year term (2008–2010). Accordingly, Dr. Vera Alexander (U.S.A.) remains the Past-Chairman.
- ii. Council unanimously elected Dr. Lev N. Bocharov (Russia) as the Vice-Chairman of PICES for a second 2-year term (2008–2010).

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

Council appointed Ms. Patricia Livingston (U.S.A.) as the Chairman of the Finance and Administration Committee for a 2-year term (2008–2010).

08/S/1: 2009 PICES Annual Meeting

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

- ¾-day Science Board Symposium on “*Understanding ecosystem dynamics and pursuing ecosystem approaches to management*”;
- 1-day BIO Contributed Paper Session;
- 1-day FIS Topic Session on “*Ecosystem-based approaches for the assessment of fisheries under data-limited situations*”;
- 1-day FIS Contributed Paper Session;
- ½-day FIS/BIO Topic Session on “*Early life stages of marine resources as indicators of climate variability and ecosystem resilience*”;
- ½-day MEQ Topic Session on “*Mitigation of harmful algal blooms*”;
- ½-day MEQ Topic Session on “*The role of submerged aquatic vegetation in the context of climate change*”;
- 1-day MEQ/FIS Topic Session on “*Marine spatial planning in support of integrated management – tools, methods, and approaches*”;
- 1-day MONITOR Topic Session on “*State of the art of real-time monitoring and its implication for the FUTURE oceanographic study*”;
- 1-day POC Contributed Paper Session;
- 1-day POC/BIO Topic Session on “*Anthropogenic perturbations of the carbon cycle and their impacts in the North Pacific*”;
- 1½-day POC/FUTURE Topic Session on “*Outlooks and forecasts of marine ecosystems from an earth system science perspective: Challenges and opportunities*”.

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

- ¾-day BIO Workshop on “*Natural supplies of iron to the North Pacific and linkages between iron supply and ecosystem responses*”;
- ½-day BIO Workshop on “*Standardizing methods for estimating jellyfish concentration and development of an international monitoring network*”;
- ½-day BIO Workshop on “*Integrating marine mammal populations and rates of prey consumption in models of climate change-ecosystem change in the North Pacific*”;
[After ICES agreed to co-sponsor this workshop, its title was changed to “*Integrating marine mammal populations and rates of prey consumption in models and forecasts of climate change-ecosystem change in the North Pacific and North Atlantic Oceans*”.]
- 2-day BIO Workshop on “*Marine ecosystem model inter-comparisons (II)*”;
- 1-day FIS Workshop on “*Understanding the links between fishing technology, bycatch, marine ecosystems and ecosystem-based management*”;
- 1½-day MEQ Workshop on “*Review of selected harmful algae in the PICES region: V. Cyst forming HAB species*” (includes 1-day laboratory demonstration);
- 1½-day MEQ/FIS Workshop on “*Interactions between aquaculture activity and environment*” (includes ½-day field trip);
- 1-day POC Workshop on “*Exploring the predictability and mechanisms of Pacific low frequency variability beyond inter-annual time scales*”;
- 1-day POC/BIO Workshop on “*Mesoscale eddies and their roles in North Pacific ecosystems*”;
- 1½-day POC/BIO Workshop on “*Carbon data synthesis*”.

The following business meetings are to be held (a List of Acronyms can be found at the end of the Annual Report):

- 1-day Science Board meeting;
- ½-day meetings of Scientific (BIO, FIS, MEQ and POC) and Technical (MONITOR and TCODE) Committees to be run concurrently;

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- ½-day meetings of the POC/BIO Section on *Carbon and Climate*, immediately after the POC/BIO Workshop on “*Carbon data synthesis*”;
- 1-day meeting of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific*;
- 1-day meeting of the POC Working Group 20 on *Evaluations of Climate Change Projections*;
- 2-day meeting of the MEQ Working Group 21 on *Non-indigenous Aquatic Species*;
- ⅓-day meeting of the BIO Working Group 22 on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean*, immediately after the BIO Workshop on “*Natural supplies of iron to the North Pacific and linkages between iron supply and ecosystem responses*”;
- 1-day meeting of the BIO Working Group 23 on *Comparative Ecology of Krill in Coastal and Oceanic Waters around the Pacific Rim*;
- ½-day meetings of the MEQ/FIS Working Group 24 on *Environmental Interactions of Marine Aquaculture*, immediately after the MEQ/FIS Workshop on “*Interactions between aquaculture activity and environment*”;
- 1-day meeting of the Study Group on *Communications*.

08/S/2: Inter-sessional symposia/workshops/meetings

The following inter-sessional meetings and workshops are to be convened/co-sponsored in 2009 and beyond (a List of Acronyms can be found at the end of the Annual Report):

- PICES Harmful Algal Bloom training course, January 15–23, 2009, Manila, Philippines;
- Third Argo Science Workshop: The future of Argo (co-sponsored by PICES and several Chinese agencies/organizations), March 25–27, 2009, Hangzhou, China;
- 11th Salmon Ecology Workshop (related to the development of the North Pacific Ecosystem Status Report for the Alaska Current, California Current and the Bering Sea), April 7–8, 2009, Juneau, U.S.A.;
- North Pacific Ecosystem Status Report Workshop on “*Status and trends in East Asian marginal seas*”, April 21–22, 2009, Busan, Korea, in conjunction with the 15th Pacific–Asian Marginal Seas (PAMS) meeting on “*Observations, understanding, and prediction of climate variability in PAMS*”, April 23–25;
- Workshop to develop an Implementation Plan for the new PICES integrative scientific program, FUTURE (April 26–27, 2009), in conjunction with inter-sessional Science Board (April 28) and Governing Council (April 29) meetings, Qingdao, China;
- Meeting of the PICES-ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish*, June 21, 2009, Victoria, Canada;
- 3rd GLOBEC Open Science Meeting (co-sponsored by PICES), June 22–26, 2009, Victoria, Canada;
- 3rd PICES Summer School on “*Satellite oceanography*” (co-sponsored by SCOR and several Korean agencies/organizations), August 25–28, 2009, Seoul, Korea;
- 6th International Conference on “*Marine Bioinvasions*” (co-sponsored by ICES, PICES, U.S. National Sea Grant College Program, Pacific States Marine Fisheries Commission and Portland State University), August 24–27, 2009, Portland, U.S.A.;
- CIAC’09 Symposium on “*The effects of environmental variability on cephalopod populations*” (co-sponsored by ICES and PICES), September 3–11, 2009, Vigo, Spain;
- OceanObs’09 Conference—*Ocean information for society: Sustaining benefits, realizing the potential* (PICES is endorsing organization and is present on the Program Committee), September 21–25, 2009, Venice, Italy;
- ICES/PICES Theme Sessions on “*Climate impacts on marine fishes: Discovering centennial patterns and disentangling current processes*” and “*Global Ocean Observing Systems*” at the ICES Annual Science Conference, September 21–25, 2009, Berlin, Germany (the second session was postponed until 2010);
- PICES Rapid Assessment Survey (RAS-2009) for *non-indigenous aquatic species*, October 19–22, 2009, several ports in Korea
- International Symposium on “*Rebuilding depleted fish stocks: Biology, ecology, social science and management strategies*” (primary sponsors: ICES, PICES and UNCOVER; co-sponsoring organizations: NAFO, DFO and IMR), November 3–6, 2009, Warnemünde, Germany;

- North Pacific Ecosystem Status Report Synthesis Workshop, December 1–3, 2009, Honolulu, U.S.A. (by invitation);
- PICES/ICES Symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*”, April 26–29, 2010, Sendai, Japan;
- 26th Lowell Wakefield Symposium on “*Ecosystems 2010: Global progress on ecosystem-based fisheries management*” (primary sponsor: Alaska Sea Grant; co-sponsored by PICES), spring or fall 2010, Anchorage, U.S.A.;
- ICES/PICES Symposium on “*Carrying capacity: What does it mean in a changing ocean?*”, 2010, Lisbon, Portugal;
- 5th International Zooplankton Production Symposium (primary sponsors: PICES and ICES), March 14–18, 2011, Pucon, Chile.

08/S/3: Travel support

PICES will provide travel support for:

2009 PICES Annual Meeting

- Invited speakers for Science Board Symposium and Topic Sessions, with the normal allocation of approximately \$5,000 per Committee; additional requests are subject to fund availability;
- Two invited speakers for each of the following BIO Workshops: “*Natural supplies of iron to the North Pacific and linkages between iron supply and ecosystem responses*” and “*Marine ecosystem model inter-comparisons (II)*”; and 1 invited speaker for each of the following BIO Workshops: “*Standardizing methods for estimating jellyfish concentration and development of an international monitoring network*” and “*Integrating marine mammal populations and rates of prey consumption in models of climate change-ecosystem change in the North Pacific*”;
- One invited speaker for the FIS Workshop on “*Understanding the links between fishing technology, bycatch, marine ecosystems and ecosystem-based management*”;
- One invited speaker for the MEQ Workshop on “*Review of selected harmful algae in the PICES region: V. Cyst forming HAB species*”;
- One invited speaker for the MEQ/FIS Workshop on “*Interactions between aquaculture activity and environment*”;
- Two invited speakers for the POC Workshop on “*Exploring the predictability and mechanisms of Pacific low frequency variability beyond inter-annual time scales*”;
- One invited speaker for each of the following POC/BIO Workshops: “*Mesoscale eddies and their roles in North Pacific ecosystems*” and “*Carbon data synthesis*”.

Inter-sessional meetings

- Dr. Sonia Batten, Principle Investigator of the PICES North Pacific Continuous Plankton Recorder (CPR) project, to visit Japan to introduce CPR activities to the Asian scientific community and develop joint scientific projects, spring 2009, Yokohama, Japan;
- A representative of MONITOR to attend the 9th Session of the IOC-WMO-UNEP Intergovernmental Committee for GOOS (I-GOOS-IX), June 10–12, 2009, Paris, France;
- A PICES representative to attend the 25th Session of the IOC Assembly, June 16–25, 2009, Paris, France;
- A member of WG 20 to attend the 2009 ESSAS Annual Meeting, June 15–21, 2009, Seattle, U.S.A.;
- Two PICES scientists to attend the workshop on “*Krill biology and ecology in the world’s oceans*”, June 22–23, 2009, Victoria, Canada (in conjunction with the Third GLOBEC Open Science Meeting);
- Invited speakers from the Pacific (up to \$10,000) and early career scientists from PICES member countries (up to \$5,000) to attend the Third GLOBEC Open Science Meeting, June 22–26, 2009, Victoria, Canada;
- Invited speakers from the Pacific (up to \$10,000) and early career scientists from PICES member countries (up to \$5,000) to attend the 6th International Conference on “*Marine Bioinvasions*”, August 24–27, 2009, Portland, U.S.A.;
- A guest lecturer and 5 non-Korean early career scientists to attend the Third PICES Summer School on “*Satellite oceanography*”, August 25–28, 2009, Seoul, Korea;

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- A PICES convenor for the CIAC'09 Symposium on “*The effects of environmental variability on cephalopod populations*”, September 3–11, 2009, Vigo, Spain;
- A PICES convenor for the joint ICES/PICES Theme Session on “*Climate impacts on marine fishes: Discovering centennial patterns and disentangling current processes*” at the ICES Annual Science Conference, September 21–25, 2009, Berlin, Germany;
- A PICES member of the Program Committee for the OceanObs'09 Conference, September 21–25, 2009, Venice, Italy;
- A PICES representative to attend the SCOR Executive Committee Meeting, October 20–22, 2009, Beijing, China;
- A PICES representative to attend the NPAFC Seventeenth Annual Meeting, November 2–6, 2009, Niigata, Japan;
- A Pacific plenary speaker, PICES convenor and PICES SSC member for the symposium on “*Rebuilding depleted fish stocks: Biology, ecology, social science and management strategies*”, November 3–6, 2009, Warnemünde, Germany;
- Two non-American invited speakers from the Pacific for the 26th Lowell Wakefield Symposium on “*Ecosystems 2010: Global progress on ecosystem-based fisheries management*”, spring or fall 2010, Anchorage, U.S.A.;
- A Pacific invited speaker for the ICES/PICES Symposium on “*Carrying capacity: What does it mean in a changing ocean?*”, 2010, Lisbon, Portugal.

08/S/4: Publications

The following publications are to be produced:

Primary journals (2009–2010)

- *Journal of Marine Systems* (2009) – special issue on “*Observation and modeling of the ocean circulation and marine ecosystem for CREAMS/PICES*” (Guest Editors: K.-I. Chang, S.-I. Ito, C. Mooers and J.-H. Yoon);
- *ICES Journal of Marine Science* (2009) – special section in a regular issue based on selected papers from the ICES/PICES Early Career Scientists Conference on “*New frontiers in marine science*” (Guest Editors: F. Mueter and E. North);
- *Journal of Northwest Atlantic Fishery Science* (2009) – special issue based on selected papers from the NAFO/PICES/ICES Symposium on “*Reproductive and recruitment processes of exploited marine fish stocks*” (Guest Editors: R. Brodeur, M. Dickey-Collas and E. Trippel). JNAFS is primarily an electronic journal, but a hard-copy run of this issue is expected in April 2009;
- *Journal of Oceanography* (2009) – special section in a regular issue based on selected papers from the PICES-2007 Topic Session on “*Decadal changes in carbon biogeochemistry in the North Pacific*” (Guest Editor: T. Saino);
- *Deep-Sea Research II* (2009) – special issue based on selected papers on krill from the 4th International Zooplankton Production Symposium on “*Human and climate forcing of zooplankton populations*” (Guest Editors: W. Peterson and S. Kawaguchi);
- *Deep-Sea Research II* (2009) – special issue based on papers from the SEEDS-II experiment (Guest Editors: A. Tsuda, M. Wells, M. Uematsu and H. Saito);
- *Progress in Oceanography* (2009) – special issue based on selected papers from the ICES/PICES Theme Session on “*Comparative marine ecosystem structure and function: Descriptors and characteristics*” at the 2007 ICES Annual Science Conference (Guest Editors: B.A. Megrey, J.S. Link and E. Moksness);
- *Fisheries Research* (2009) – special issue based on selected papers from the PICES-2007 Topic Session on “*Ecosystem approach to fisheries: Improvements on traditional management for declining and depleted stocks*” (Guest Editors: G.H. Kruse, Y. Ishida, T. Perry, V.I. Radchenko and C.-I. Zhang);
- *Deep-Sea Research II* (2009 or early 2010) – special issue based on selected papers from the OECOS (Oceanic Ecosystem Comparison in the Subarctic Pacific) experiment (Guest Editors: C. Miller and A. Yamaguchi);

- *Progress in Oceanography* (2010) – special issue based on selected papers from SCOR Working Group on *Zooplankton Time Series*. (Guest Editors: P. Pepin, D. Mackas and H. Verheye)
- *Continental Shelf Research* (early 2010) – special issue on “*Tides in Marginal Seas*” dedicated to Prof. Alexei Nekrasov (Guest Editors: J. Cherniawsky, M. Foreman, B. Kagan and A. Rabinovich);
- *Marine Ecology Progress Series* (2010) special issue on “*Phenology and climate change in the North Pacific*” (Guest Editor: W. Sydeman).

PICES Scientific Report series (2009)

- Proceedings of the Fourth PICES Workshop on “*The Okhotsk Sea and adjacent areas*” (Editors: M. Kashiwai and G. Kantakov);
- Final report of WG19 on *Ecosystem-based Management Science and its Application to the North Pacific* (Editors: G. Jamieson, P. Livingston and C.-I. Zhang);
- Final report for the Climate Change and Carrying Capacity Program (Editor: M. Kishi);
- Final report of the Advisory Panel on *Micronekton Sampling Inter-calibration Experiment* (Editors: E. Pakhomov and O. Yamamura).

PICES Special Publications (2010)

- Second North Pacific Ecosystem Status Report.

Other publications (2009–2010)

- Brochure on “*Ecosystem-based management science and its application to the North Pacific*” (2009);
- Brochure on “*The status and trends of the North Pacific Ocean*” – summary of the Second North Pacific Ecosystem Status Report for policy makers, managers, commercial stakeholders and other interested members of society (2010).

08/S/5: Future of current groups

- i. To comply with procedures accepted for the production of the next North Pacific Ecosystem Status Report, the revised term of reference (3) for MONITOR was approved to read “Contribute to the development of the North Pacific Ecosystem Status Report, advising editors and lead authors on monitoring issues, identifying the need for particular time series and their continuities, the period on which they need to be updated for the FUTURE forecast products, and recommend to Science Board that they endorse the need to establish or maintain a particular time series.”
- ii. The lifespan of the POC Working Group (WG 20) on *Evaluations of Climate Change Projections* was extended until October 2010, so it can provide the new PICES-ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* with the climate projection information they requested to complete the majority of their analysis during 2009–2010.
- iii. The lifespan of the MEQ Working Group (WG 21) on *Non-indigenous Aquatic Species* was extended until October 2012, and its revised terms of reference were approved (*GC Appendix B*). These changes reflect involvement of WG 21 in a project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” supported by the Ministry of Agriculture, Forestry and Fisheries of Japan.
- iv. Responsibility for the project on “*Marine ecosystem model inter-comparisons*” (approved in 2007) was moved from the CCCC Program to BIO. The goal of this project is quantitative comparison of different structures and parameterizations of ecosystem models using identical physical forcing (2007 *MODEL Endnote 4*), and the work will be integrated into FUTURE when the program is operational.

08/S/6: New PICES groups

- i. A Working Group (WG 24) on *Environmental Interactions of Marine Aquaculture* (WG-EIMA) was established under the direction of FIS and MEQ, with terms of reference as described in *GC Appendix B*.
- ii. A joint PICES-ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WG-FCCIFS) received approval-in-principle for its formation, under condition that the proposed terms of reference are revised to the satisfaction of Science Board. The revised terms of reference approved by the PICES Science Board (in December 2008) and the ICES Scientific Committee (January 2009) are

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included in *GC Appendix B*. Parent committees for WG-FCCIFS are FIS and POC in PICES, and OOC (Oceanography Committee) in ICES.

08/S/7: Chairmen and Vice-Chairmen for permanent Committees and expert groups

The following reflects changes and continuations in Chairmanship/Vice-Chairmanship for Scientific and Technical Committees and expert groups:

- Dr. Mikhail Stepanenko (Russia) to replace Dr. Gordon H. Kruse as FIS Chairman;
- Dr. Phillip R. Mundy (U.S.A.) to replace Dr. Charles B. Miller as CPR-AP Chairman.

08/S/8: Relations with other organizations and programs

Council confirmed keeping the 2007 *Standing List of International and Regional Organizations and Programs* (*SB Endnote 3*) and agreed with the identified priorities for interaction in 2008–2009.

*GC Appendix B***Study Group on Restructuring the PICES Annual Meeting**Terms of Reference

1. To review the current practice and structure of the PICES Annual Meeting to:
 - consider ways of improving the time balance and order among various events of the Annual Meeting;
 - shorten the duration of the Annual Meeting; and
 - assess other issues related to the Annual Meeting.
2. To develop recommendations on the Annual Meeting and report to the Governing Council by March 31, 2009.

Membership

The Study Group will include one representative from each Contracting Party, as well as the Chairman and Vice-Chairman of PICES, the Chairmen of Science Board and Finance and Administration Committee, and the Executive Secretary and Deputy Executive Secretary. The Study Group will be led by the Chairman of PICES.

MEQ Working Group (WG 21) on *Non-indigenous Aquatic Species* (WG-NIAS)Terms of Reference (revised)

1. Assesses the status of non-indigenous aquatic species in the PICES area by:
 - completing an inventory of currently reported estuarine and marine aquatic non-indigenous species in PICES member countries;
 - compiling definitions of terms and making recommendations on use of terms;
 - summarizing the situation on bioinvasions in the North Pacific; and
 - comparing and contrasting this situation to other regions.
2. Assemble an inventory of expertise and programs related to non-indigenous aquatic species in PICES member countries by:
 - compiling a list of existing databases of non-indigenous aquatic species experts; and
 - compiling sources of information on relevant national research and monitoring programs in PICES member countries.
3. Summarize initiatives on prevention and mitigation measures (*e.g.*, ICES Code of Practice for the Introduction and Transfer of Marine Organisms; IMO Ballast Water Management Convention and national policies of PICES member countries), and develop recommendations for best practices for prevention and mitigation.
4. Promote collaboration between ICES and PICES Working Groups on non-indigenous species by:
 - holding joint meetings of the related ICES Working Groups and PICES WG-21 as conveniently and as practical; and
 - developing and recommending an approach for enhanced linkages between ICES and PICES on non-indigenous aquatic species.
5. Develop a comprehensive Non-Indigenous Aquatic Database.
6. Establish a North Pacific Marine Non-Indigenous Aquatic Species taxonomy initiative.
7. Publish an interim report in 2010 and a final report in 2012, summarizing results and recommendations.

MEQ/FIS Working Group (WG 24) on *Environmental Interactions of Marine Aquaculture* (WG-EIMA)

Mission Statement

Develop standard methods and tools to assess and compare the environmental interactions and characteristics of existing and planned marine aquaculture activities in PICES member countries.

Strategy Statement

The Working Group should contain expertise corresponding to the three terms of reference (TORs) outlined below. Working sessions on environmental interaction models of marine aquaculture, risk assessment case studies and infectious diseases will be held at PICES Annual Meetings (AMs) and when possible, at other times as needed. A symposium (likely in the third year) will highlight models and information generated by all three TORs to evaluate environmental interactions associated with aquaculture. Final results will be reported as a PICES publication and, hopefully, also in the peer-reviewed literature. The Working Group will maintain contacts and linkages with PICES Working Groups on *Ecosystem-based Management Science and its Application to the North Pacific* (WG 19) and on *Non-indigenous Aquatic Species* (WG 21), and two ICES Working Groups on *Environmental Interactions of Marine Aquaculture* and on *Pathology and Diseases of Marine Organisms*.

Goals and Actions (Terms of Reference)

1. Evaluate approaches currently being used in the different PICES countries to assess and model the interactions of aquaculture operations with surrounding environments. This will involve conducting a comparative assessment of the methodologies, applications, and outputs of different approaches to assess finfish, shellfish, seaweed, and/or integrated multi-trophic aquaculture. Assessments of the approaches will include case studies of their application. As the possibilities for different types of aquaculture and their interactions to be assessed are so vast, it is suggested that a process be developed that prioritize and limits the options. A possible process would:
 - (a) List types of aquaculture and identify major culture technologies and related species of highest interest to member states. Select three or four important culture technologies and associated species and assess their environmental effects and associated interactions;
 - (b) Review the scientific literature to ascertain if these possible interactions have been determined to be significant;
 - (c) Identify methodologies used to predict the effects of these interactions and the history/uncertainty associated with these predictions;
 - (d) Examine a variety of institutional decision-making models that are used to limit the effects and associated monitoring and mitigation protocols.
2. Review and assess current risk assessment methods used to assess environmental interactions of aquaculture and determine what, if anything, should be changed for application in PICES countries to reflect ecosystem-specific aspects. Following the review and assessment, identify appropriate case studies to compare results among countries in the PICES region. This will be achieved by holding a workshop in the second year to compare and discuss possible standardization of methodologies and the selection of potential case studies for assessment with a standardized approach. Much of the information for this exercise can be derived from “item c” in TOR 1 above. Case studies may then be developed. Responsibilities and functions will be similar to the ICES Working Group on *Environmental Interactions of Mariculture* (WGEIM), so the feasibility of holding a joint meeting with this group will be explored.
3. Assess methods to detect, identify, evaluate and report on infectious disease events and potential interactions between wild and farmed marine animals. If appropriate, develop a recommended standardized approach for detection/evaluation/reporting from wild and cultured populations. The focus of this activity will be on OIE-notifiable diseases and other infectious diseases of regional/economic importance. Discuss and document new and emerging infectious diseases in the PICES region, methods for their detection, and develop models to conduct risk assessments of their potential impacts on both

endemic wild and farmed species. If resources are available it would be advisable to test these models by conducting risk assessments on a few (2–3) emerging pathogens. Responsibilities and functions will be similar to the ICES Working Group on *Pathology and Diseases of Marine Organisms* (WGPDMO), so the possibility of a joint meeting will be explored.

4. As a conclusion to all the above, we propose to hold a PICES session or separate symposium in the third year to present case studies and results, and submit for publication as a PICES document, in an appropriate scientific journal, a summary paper that examines development and application of aquaculture–environment interaction models.

PICES-ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WG-FCCIFS)

Terms of Reference

1. Promote research on climate change impacts on marine ecosystems by scientists in ICES and PICES member nations through coordinated communication, exchange of methodology, and organization of meetings to discuss and publish results;
2. In collaboration with relevant expert groups in PICES and ICES, develop frameworks and methodologies for forecasting the impacts of climate change on marine ecosystems, with particular emphasis on the distribution, abundance and production of commercial fish and shellfish;
3. Review the results of designated case studies to test methods;
4. Explore techniques for estimating and communicating uncertainty in forecasts;
5. Explore strategies for research and management under climate change scenarios, given the limitations of our forecasts;
6. Plan for a science symposium in early 2010 to present, discuss and publish forecasts of climate change impacts on the world's marine ecosystems, with particular emphasis on commercial fish and shellfish resources;
7. Produce publications that are relevant to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change;
8. Publish report(s) summarizing work.

