

REPORT OF GOVERNING COUNCIL MEETING

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The Governing Council met from 9:00-13:00 on October 15, October 17 and October 18, under the chairmanship of Dr. Vera Alexander. Dr. Alexander S. Bychkov served as rapporteur. All Contracting Parties but the People's Republic of China were represented at the three sessions (*GC Endnote 1*). The Chairman of the Science Board, Dr. R. Ian Perry, was in attendance during the last session.

Agenda Item 1. Opening remarks

At the first session, the Chairman welcomed the delegates and noted that for this Annual Meeting, Mr. Robin Brown represented Dr. Joan Kean-Howie (Canada).

Agenda Item 2. Adoption of agenda

The Chairman welcomed members and called the meeting to order. The agenda was reviewed and adopted as presented, with the addition of several items under "Other business" (*GC Endnote 2*). This report summarizes the treatment of each agenda item during the course of the three sessions.

Agenda Item 3. Preliminary Report on Administration

The Executive Secretary summarized the activities of the Organization and the Secretariat since PICES XI (*GC Endnote 3*).

Agenda Item 4. Report of 2003 interim Science Board/Governing Council meeting

At PICES XI, Council strongly supported a proposal by Science Board to hold an interim Science Board meeting, with the participation of Governing Council, in spring 2003 (Decision 02/A/4(iv)). The two senior bodies of PICES met jointly, for the first time in the over 10-year history of the Organization, from April 7-9 (noon), 2003, in Victoria, Canada. The meeting was a success, and met its objectives of

engaging both groups in discussions of broad and long-term importance to PICES. It is hoped that the actions taken during this meeting will provide guidance to the many initiatives of PICES, and will result in new directions and further involvement in PICES activities of scientists from all our member countries.

An exclusive Council meeting was convened on the last day, in the afternoon of April 9, 2003, and all Contracting Parties were represented at this meeting. The Executive Secretary was instructed to include the report of this interim Council meeting as a part of the 2003 Annual Report (*GC Endnote 4*).

The reports of both meetings and summaries of recommended actions were circulated to the participants and Science Board and Council members in early May 2003. An article entitled "PICES Science Board and Governing Council hold their first joint meeting" was prepared by Dr. Ian Perry, and published in PICES Press in July 2003 (Vol. 11, No. 2).

Following the success of the 2003 interim Science Board/Governing Council meeting, a second inter-sessional Science Board meeting for 2004, with possible participation of Council members, was recommended and approved (Decision 03/A/5(iv)). The necessity of having an exclusive interim Council meeting at the same time will be decided at a later date by correspondence.

Agenda Item 5. Membership and observers from other countries

The Secretariat did not receive proposals from any country to accede to the PICES Convention in 2003.

Mexico

At the 2003 interim meeting, Council discussed future actions to accelerate the process in having

Mexico accede to the PICES Convention and approved the following actions:

- To continue contacts with the Mexican National Oceanographic Committee, including a meeting of PICES representatives with Ing. Marco Polo Bernal, Subsecretario de Educación e Investigación Tecnológicas and national Mexican representative on the Intergovernmental Oceanographic Commission (IOC), at the 22nd Session of the IOC Assembly;
- To encourage the Directors of Mexican marine research institutes represented at the joint meeting in La Paz, to send letters to the National Oceanographic Committee expressing their interest for Mexico to join PICES;
- To send a formal letter inviting Mexico to join PICES through the Embassy of Mexico in Canada;
- To explore the practical value of another visit of a PICES delegation to Mexico.

The Executive Secretary reported on the implementation of these recommendations. The PICES Chairman (Dr. Vera Alexander), the former PICES Chairman (Dr. Hyung-Tack Huh), representatives from the Canadian (Dr. Joan Kean-Howie) and US Governments (Ms. Elizabeth Tirpak), and the Executive Secretary (Dr. Alexander Bychkov) met with Ing. M.P. Bernal at the IOC Assembly in June 2003, to discuss mutual benefits of Mexico joining PICES. It was then agreed that formal letters be sent by PICES, Canada and the United States, to high-level Mexican government officials to start the procedures.

On July 24, the PICES Chairman wrote a letter to Ing. M.P. Bernal encouraging Mexico to join the Organization and inviting official observers to PICES XII. Supporting letters were also sent by Canada's delegate to PICES, Dr. Kean-Howie, to Ing. Bernal in late July, and by Ms. Margaret F. Hayes of the US State Department to Mr. Gerardo Lozano (Director of Mexican Institute for International Cooperation, Secretariat of Foreign Relations) in mid-August. Subsequent to these letters, the Secretariat sent a complete package with a copy of the PICES Handbook, which contains the PICES

Convention and other important official documents, to both Ing. Bernal and Mr. Lozano. No response was received and no official observers from Mexico came to PICES XII, even though several Mexican scientists attended the meeting.

Council members believe that the Mexican scientific community has a strong interest for Mexico to join PICES. The lack of official response from Mexico was not considered as a sign of failure, and it was suggested that efforts in bringing Mexico to PICES should continue. Council instructed the Chairman and the Executive Secretary to further pursue actions recommended at the 2003 interim meeting. National delegates were requested to facilitate the process in having Mexico accede to the PICES convention through bilateral discussions between Mexico and their countries.

Democratic People's Republic of Korea

At PICES XI, the Republic of Korea advocated that the Annual Meeting in Seoul is a perfect opportunity to involve scientists from the D.P.R. Korea in PICES activities. At the 2003 interim meeting, due to the current political tension in the region, Council agreed to defer sending invitation letters to the D.P.R. Korea until a more appropriate time.

Agenda Item 6. Relations with relevant international organizations

The Science Board Chairman and Executive Secretary reported on communication with the relevant organizations and programs since last year's meeting (details can be found in *GC Endnote 3*). Council noted a steady progress in the integration and coordination of activities with other international organizations and major international programs of regional and global scale, and commended Science Board and the Secretariat for their efforts.

Council reviewed and approved the revised Standing List of International Organizations and Programs as recommended by Science Board (*SB Endnote 10*), and agreed with the identified priorities for interaction in 2003-2004 (Decision 03/S/6).

Letters of invitation to attend the Twelfth Annual Meeting were sent to inter-governmental and non-governmental organizations/programs

on the agreed 2002 Standing List, and the following confirmed their intention to send observers:

Climate Variability and Predictability Program (CLIVAR)
Global Ocean Ecosystem Dynamics (GLOBEC)
Global Ocean Observing System (GOOS)
Gulf Ecosystem Monitoring Program (GEM)
International ARGO Science Team (IAST)
International Council for the Exploration of the Sea (ICES)
Intergovernmental Oceanographic Commission (IOC)
International Wailing Commission (IWC)
Northwest Pacific Action Plan (NOWPAP)
North Pacific Anadromous Fish Commission (NPAFC)
North East Asian Regional GOOS (NEAR-GOOS)
North Pacific Research Board (NPRB)
Sir Alister Hardy Foundation for Ocean Science (SAHFOS)
Scientific Committee on Oceanic Research (SCOR)
IOC Sub Commission for the Western Pacific (WESTPAC)

Dr. Kelvin Richards
Dr. Francisco Werner
Dr. Thomas Malone
Dr. Phillip Mundy
Dr. Kuh Kim
Dr. David Griffith
Dr. Henrik Enevoldsen
Dr. Hidehiro Kato
Dr. Keiko Ide
Dr. Richard Beamish
Dr. Vyacheslav Lobanov
Dr. Phillip Mundy
Dr. Sonia Batten
Dr. Akira Taniguchi
Dr. Hyung-Tack Huh

Time was reserved at the Governing Council meeting for representatives of ICES, NPAFC and SCOR, to express their views on potential areas of collaboration with PICES.

ICES

At the recommendation of Council (Decision 01/S/6(ii)), Science Board developed potential areas of cooperation between the two organizations, and at the 2002 ICES Annual Conference, Dr. R. Ian Perry presented a PICES proposal that included four “themes” (teleconnections, ecosystem reporting, ecosystem-based approaches to the management of marine resources, and harmful algal blooms) which might be of interest for enhanced interactions between ICES and PICES. These themes were further discussed by the Scientific Committees and the CCCC Program at PICES XI (October 2002), and throughout the entire year, and specific recommendations were summarized in the attached document submitted to ICES in June 2003 (see *GC Endnote 3* for details).

In his presentation, Dr. David Griffith, General Secretary of ICES, informed Council that the suggested “themes” and specific proposals are seen by ICES as excellent opportunities for fruitful cooperation. He provided additional information on ICES’ activities related to the

“themes”, and extended an invitation for PICES to (1) co-sponsor a symposium on “Marine bioinvasions” in spring 2006; (2) co-convene theme sessions on “Fishery, ecology, and life history of small pelagic fish” and “Comparing and contrasting the scientific strategies and output of regional ecosystem pilot projects” at the ICES Annual Science Conference in September 2005; (3) actively participate in a number of CCC workshops; and (4) jointly organize a Young Scientists Conference or Workshop that would bring together “early career” scientists from around the globe. All these proposals were directed to Science Board for discussion and recommendations.

Council noted the impressive progress in the integration and coordination of activities between PICES and ICES. To further facilitate this cooperation, it was suggested that the feasibility of having an interim meeting of PICES Science Board and ICES Consultative Committee be considered.

NPAFC

PICES and NPAFC signed a Memorandum of Understanding in 1998 that identified ways in which both organizations could work cooperatively to improve the understanding and stewardship of North Pacific marine ecosystems. Dr. Richard Beamish, Chairman of NPAFC’s

Committee on Scientific Research and Statistics, informed Council about on-going and planned joint activities (see *GC Endnote 3* for details). He also provided some insights of the BASIS (Bering-Aleutian Salmon International Survey) Program of NPAFC, which is a 5-year study of factors affecting Pacific salmon production in the Bering Sea. This program involves cooperative use of ships and timely exchange of data. PICES was invited to consider participating in BASIS discussions.

Council thanked NPAFC for their contribution to the North Pacific Ecosystem Status Report, and invited NPAFC to present a report on the status of North Pacific salmon at each PICES Annual Meeting. Council also agreed to co-sponsor a joint NPAFC-PICES Symposium on "State of Pacific salmon and their role as indicators of the health of North Pacific ecosystems" to be held in fall 2005, in conjunction with the NPAFC Annual Meeting in Korea (Decision 03/S/1).

SCOR

Dr. Akira Taniguchi (Vice-President of SCOR) reviewed and discussed existing and future cooperation between the two organizations. He informed Council that the report from PICES at the 36th SCOR Executive Committee meeting was well received and clearly indicated the important role of PICES in bringing a regional perspective to SCOR's global activities. He specifically mentioned PICES' contribution in GLOBEC and JGOFS projects, in organizing the Symposium on "Quantitative ecosystem indicators for fisheries management" to be held in spring 2004, and in improving the quality of oceanic CO₂ measurements and resolving CO₂ data synthesis issues (see *GC Endnote 3* for details). Dr. Taniguchi also advised that SCOR hoped that PICES will play an important role in the implementation of SOLAS, GEOHAB and IMBER.

Council thanked SCOR for their continuing support of PICES activities and providing travel grants for scientists from countries with "economies in transition" to attend annual and special meetings of PICES.

Agenda Item 7. Report of Study Group on PICES Strategic Issues

Last year, the PICES Review Committee identified the importance of developing a long-term "vision" or Strategic Plan for the Organization. At the 2003 interim meeting, Council and Science Board recognized the value of such a plan and agreed that a Study Group on *PICES Strategic Issues* should be formed under the direction of the Governing Council (Decision 03/S/5(iv)) to develop a Strategic Plan which has the following elements:

- A PICES vision statement;
- The purposes of PICES (including identifying the emerging issues in marine science of interest to PICES member countries);
- Long-term goals;
- Steps to implement the vision, purposes, and goals of PICES (which would consider regional as well as thematic approaches).

This task will be accomplished by:

- Reviewing Strategic Plans and Vision Statements of similar organizations;
- Examining the existing Strategic Plans of the Scientific and Technical Committees of PICES;
- Requesting input from Governing Council and Science Board members for regional issues.

The membership of this Study Group consists of Dr. Vera Alexander (Chairman), Dr. Ian Perry and Dr. Vladimir Radchenko representing Science Board, and Dr. Laura Richards (Canada), Mr. Qian-Fei Liu (China), Dr. Tokimasa Kobayashi (Japan), Dr. Hyung-Tack Huh (Korea) and Dr. George Boehlert (U.S.A.) representing Governing Council. It is expected that the Study Group will work primarily by correspondence.

Dr. Alexander reported on the status and activities of the Study Group. The first draft of the PICES Strategic Plan was distributed in September 2003. This document designates the PICES Mission with five central themes: (A) Building a foundation of science; (B) Producing the scientific basis for decision-making;

(C) Fostering partnerships; (D) The added value of PICES; and (E) Informing the public; and specific goals, identified within each of these themes. It also includes an implementation strategy with several next steps.

The draft PICES Strategic Plan was briefly discussed by the Standing Committees and the CCCC Program at PICES XII. Specific comments were requested by November 20. The next draft is anticipated by spring 2004, and will be reviewed at the interim Science Board/Governing Council meeting (if approved). The final product is expected by the next Annual Meeting.

It was noted that once the PICES Strategic Plan has been developed, the Scientific and Technical Committees of PICES will be asked to discuss and examine this plan to determine how it might be implemented by each Committee. The current Committee Strategic Plans will need to be revised. It was suggested that there should be an open discussion on the PICES Strategic Plan and its implementation in one of evenings at PICES XIII, and a Topic Session, perhaps at PICES XIV.

Agenda Item 8. Report of Study Group on PICES Capacity Building

At PICES XI, Council established a Study Group on *PICES Capacity Building* under the direction of the Science Board to develop a capacity building strategy and an implementation plan for the Organization (Decision 02/S/5 and 2002 GC Appendix B).

A draft report of the Study Group was presented and extensively discussed at the interim Science Board/Governing Council meeting in April 2003. The final draft was circulated to the Chairmen of the Standing Committees and the CCCC Program on August 21, 2003, with a request to have this item included in their agenda at PICES XII for discussion.

Council reviewed the document and comments from various PICES groups, and supported key elements that have been included in the PICES capacity building initiative. It was noted that

PICES is already involved in various capacity building activities, and that the current budget limits any additional demands placed on the Organization. The funding issue was widely recognized, and the discussion that followed focused on potential monetary sources for this initiative, such as (i) increasing the annual dues, with increases going directly towards PICES capacity building; (ii) special allocations from member countries, government agencies and private foundations; and (iii) partnering with some other entities (ICES, IOC, WESTPAC, etc.) to jointly support capacity building activities in the North Pacific, or jointly apply for funding for educational/training/outreach projects. It was unanimously agreed that Council and Science Board need to evaluate the priority of capacity building proposals, in relation to resources available. In addition, Council members were asked to provide information on funding opportunities for capacity building within their member countries.

At PICES XII, Science Board had only a brief discussion of the Study Group report, and further comments were requested by the end of November. Subsequently, Science Board approved the report (*SB Endnote 14*) by correspondence in November 2003. The Study Group members were commended for their work, and the Study Group was disbanded (Decision 03/S/4).

Agenda Item 9. PICES Intern Program

The PICES Intern Program was approved in 1999 (Decision 99/A/7) and commenced in 2000. In 2000-2003, young scientists from three countries worked as interns at the Secretariat: Mr. Gong-Ke Tan (First Institute of Oceanography, State Oceanic Administration, People's Republic of China), Dr. Jung Hwa Choi (Pukyong National University, Republic of Korea) and Ms. Natalya Bessmertnaya (TINRO-Center, Russian Federation). Mr. Chuanlin Huo (National Marine Environmental Monitoring Center, State Oceanic Administration, People's Republic of China) started his term in May 2003 and is expected to continue until April 2004. Council reviewed the results from the first four years of the Program and concluded that the

Organization and member countries are benefiting from the Program, and that it should be continued.

Guidelines for application/selection procedure

At the 2003 interim meeting, Council approved the following changes to the *Guidelines for application and selection procedure* section for the Intern Program (*GC Endnote 4*):

- To advertise the Intern Program on the PICES web site;
- To encourage national delegates to take additional measures to advertise the Intern Program within their countries;
- To require that applicants also send a copy of their application to the PICES Secretariat.

The revised document was posted on the PICES web site in early May 2003.

2004 PICES Internship

No nominations for the 2004 PICES Internship were received by the date of the first Governing Council meeting at PICES XII (October 15, 2003), but Korea indicated a desire to submit nominations. Council approved to have the deadline for applications extended to December 31, 2003 (Decision 03/A/8(i)).

Financing for the Intern Program

The Intern Program has not been budgeted for, and over the years has been financed solely by voluntary contributions. Council commended Canada and the United States for their contributions (\$10,000 and \$17,200, respectively) to the Trust Fund to support the 2003 Intern Program, and instructed the Executive Secretary to send letters inviting member countries to provide voluntary contributions to support the Program in 2004 and beyond (Decision 03/A/8(ii)).

At PICES X, Council approved the use of registration fees collected from the Annual Meetings to finance the Program (Decision 01/A/4(iv)), but noted that this will limit the ability of the Organization to support high priority projects identified by Science Board.

Council confirmed that this practice should continue, and supported the recommendation of transferring a part of the fees from PICES XII (\$11,600) to the Trust Fund to finance the 2004 Intern Program (Decision 03/A/3(iii)).

At PICES XII, F&A reviewed the level of stipends for the interns and discussed whether this stipend is sufficient to cover the cost of living in Canada. It was recommended that the stipend be kept at the current level of \$2,000 per month, and given the modest stipend, F&A advised Contracting Parties to consider whether personal circumstances of interns warrant supplementation. Council supported this recommendation (Decision 03/A/8(iii)).

The Study Group on *PICES Capacity Building* suggested extending the Intern Program. Reviewing this recommendation at the interim meeting, Council agreed that the extended Intern Program that includes scientific interns in addition to administrative interns might be valuable, and funding opportunities for such an extension have to be explored by national delegates and the Secretariat. In the mean time, it was recommended that Contracting Parties give equal consideration to both administrative and scientific staff when making nominations (Decision 03/A/8(iv)).

Agenda Item 10. PICES Visiting Scientist Program

The PICES Visiting Scientist Program was approved at PICES X (Decision 01/A/6), and was seen as an opportunity to improve the functioning of the Organization without increasing annual contributions. The Program was not budgeted for, and it was expected that national agencies from member countries and/or international science organizations will contribute human resources to support key projects of the Organization which are also of specific interest for that agency/organization. The secondment of experienced scientists was suggested as the most reliable approach. The anticipation was to commence the Visiting Scientist Program in 2002, and link it to the development of the North Pacific Ecosystem Status Report. While attractive to PICES, the

Visiting Scientist Program has not drawn interest elsewhere, and no national agency/organization has taken advantage of the Program to date.

Council requested Dr. Laura Richards and the Secretariat to work together to re-write the description of the Visiting Scientist Program using suggestions from the 2003 interim Council meeting (*GC Endnote 4*). National delegates were asked to watch out for possible candidates for the Program in their countries. Council also supported the F&A recommendation that Science Board develop specific project proposals for the Program that will not necessarily require the relocation of the “visiting scientist” to the PICES Secretariat.

Agenda Item 11. Improvement of participation and productivity of PICES committees and groups

In 1996, when PICES was approaching its Fifth Annual Meeting and the election of a new Chairman, Dr. Warren S. Wooster, the principal founder and the first Chairman of PICES, prepared a paper on “PICES perspective” (see pp. 21-23 in the 1996 PICES Annual Report) that, among other issues, outlined problems in the participation in PICES activities. Many of these problems still exist. The discussion of this item focused on two issues:

Agency participation

Within the member countries, different agencies have the principal responsibility for interaction with PICES. Often the lead agencies do not seem to represent the interests of others, or are not inclined to coordinate PICES-related activities with them. At PICES V, Council recommended that all Contracting Parties be encouraged to establish an inter-agency coordinating committee to facilitate the coordination of broad participation in PICES activities within each member country (Decision 96/S/6). Last year, the PICES Review Committee discussed this issue again and reiterated that Contracting Parties should consider the formation of national committees to enhance

and coordinate involvement of their scientists in PICES activities, and to promote activities within PICES that have high national interest and relevance. National delegates were requested to follow up on this recommendation (Decision 03/S/7(i)).

Appointed scientists

At the recommendation of Science Board, Council approved that all national membership lists be confirmed prior to each Annual Meeting and be included as Appendices in the Annual Report. This will help maintain a historical record of PICES membership, and may help to improve participation in activities of the Organization (Decision 03/S/7(ii)). It was noted that appointed members often tend to represent their agencies’ interests, and not national interests. Council suggested that national delegates clarify the responsibilities of members at the time of their appointment. Council also instructed the Executive Secretary to regularly prepare terms of reference and other relevant information for new members, and circulate these documents to national delegates (Decision 03/S/7(iii)).

Although some of the work of PICES Committees and other groups is conducted by correspondence, their main activities take place at meetings, and especially during the Annual Meetings. While it is obviously important for appointed scientists to attend, and it is even stated in Rule of Procedure 1(iii), that each Contracting Party shall pay the expenses of its own Delegation to all meetings held pursuant to the PICES Convention, there appears to be an increased frequency of PICES member countries failing to support attendance of their appointed experts at the Annual Meetings and in the work of various groups. The work of these groups is thereby seriously impaired. This is particularly a problem when the lead agency is reluctant to support other than its own people. A potential solution is that in budgeting for PICES, member countries should include the costs of participation of appointed scientists in PICES activities.

Agenda Item 12. Schedule and financing of future Annual Meetings of the Organization

At PICES XI (Qingdao, People's Republic of China), Council approved the proposal of the United States of America to hold the Thirteenth Annual Meeting in Honolulu, Hawaii, U.S.A., from October 15-23, 2004 (Decision 02/A/4(i)). In consideration of the Annual Meeting being held in Hawaii, the overall theme for PICES XIII is "*Beyond the continental slope – complexity and variability in the open North Pacific Ocean*". The US delegation and the Executive Secretary provided brief information on the current status of arrangements for PICES XIII. It was pointed out that the United States has no intention to ask PICES to transfer any funds from the Organization to partially cover costs. Dr. Marasco noted that at this year's meeting, F&A again discussed Canada's proposal to discontinue the practice of transferring funds from PICES to member countries to partially cover Annual Meeting costs, but no recommendation was made.

Council approved the proposal of the Russian Federation to host the Fourteenth Annual Meeting in Vladivostok, Russia, from September 30-October 5, 2005 (Decision 03/A/5(i)), and requested that sufficient budgetary information be provided as soon as possible, to facilitate *FY* 2005 budget planning.

In keeping with the six-year rotation cycle, Council invited Japan to explore the feasibility of hosting PICES XV in October 2006, and inform the Secretariat on this matter by May 31, 2004 (Decision 03/A/5(ii)).

Canada indicated an interest to hold the Annual Meeting in 2008, to link it to the celebration of the centennial anniversary of the Pacific Biological Station. This would mean an alteration to the existing rotation cycle. No action was taken, and it was agreed that this issue would be discussed at the 2004 interim Council meeting or at PICES XIII.

Council confirmed that the practice of charging a registration fee for future PICES Annual Meetings should continue, and adopted the

registration fee structure recommended by F&A (Decision 03/A/5(iii)).

Council approved holding a second interim Science Board meeting, again with possible participation of the Governing Council, in spring 2004 (Decision 03/A/5(iv)). The PICES Chairman, Vice-Chairman and F&A Chairman are required to attend the meeting. Even though discussions at Science Board and Council meetings clearly indicated the importance of rotating the venue for interim meetings, the Executive Secretary was instructed to select the meeting venue based on the recommendation of F&A to keep the costs for the Organization at the minimal possible level. The necessity of having a separate interim Council meeting, in conjunction with the Science Board meeting, will be decided at a later date by correspondence.

Agenda Item 13. North Pacific Ecosystem Status Report

Developing a North Pacific Ecosystem Status Report (NPESR) as a high-priority scientific project was first suggested by Science Board at PICES X in 2001. A conceptual model of the report was introduced a year later, at PICES XI. Following a discussion of this pilot report, Council established a Working Group under the direction of Science Board to oversee the development and completion of the NPESR (Decision 02/S/5 and 2002 *GC Appendix B*).

The major responsibilities of the Working Group included: (1) to prepare the final NPESR; (2) to prepare a report for the PICES - CoML project on "*Marine life in the North Pacific Ocean: The known, unknown and unknowable*"; (3) to recommend mechanisms to facilitate the data management requirements of the NPESR; and (4) to recommend on how to implement the production of the NPESR as a regular activity of PICES.

The Executive Secretary informed Council that the Alaska Fisheries Science Center (National Marine Fisheries Service/NOAA, U.S.A.) and Gulf of Alaska Ecosystem Monitoring and

Research Program (Exxon Valdez Oil Spill Trustee Council, U.S.A.) strongly supported this project, and allocated US \$36,700 (from US *FY* 2001-2003) and US \$42,600 (from US *FY* 2002-2004), respectively, for the development of the NPESR. PICES was also awarded a grant of US \$45,000 from the Alfred P. Sloan Foundation to produce a report for the Census of Marine Life. The work necessary to prepare the report is complementary to the material presented in the NPESR.

The Science Board Chairman provided an update on the current status of the report. Major activities to prepare the draft NPESR during 2003 included:

- Identifying and appointing Lead Authors for regional chapters;
- Convening a 3-day PICES/TINRO/CoML Workshop on “Okhotsk Sea and adjacent areas” (June 4-6, 2003, in Vladivostok, Russia). The workshop included 41 oral presentations and 54 posters on various aspects of the ecology of the Okhotsk Sea. A half-day was used to discuss the most important and relevant contributions to the NPESR;
- Producing (at the Secretariat) the near-complete first draft NPESR for distribution to the Working Group and Lead Authors in mid-August;
- Organizing a 3-day Workshop (Working Group meeting with Lead Authors) from August 25-27, 2003, in Victoria, Canada, to review and discuss the contents of the draft NPESR, to develop a synthesis/integration of the regional results, and to plan for the development of the final NPESR;
- Assigning of editing and writing tasks for developing the final NPESR – September 2003;
- Holding a 2-day workshop on “Status of Yellow Sea and East China Sea ecosystems” at PICES XII (October 9-10, 2003, Seoul, Korea) to develop the Yellow Sea/East China Sea chapter, and discuss the relationship between issues there and the rest of the North Pacific;
- Convening a 2-day workshop at PICES XII, organized by the MONITOR Task Team and co-sponsored by EVOS/GEM, to “Examine

and critique a North Pacific Ecosystem Status Report” (October 10-11, 2003). The report of this workshop is expected to recommend a process for future production of this report;

- Distribution of the draft NPESR to the Scientific Committees and the CCCC Program before PICES XII for information and comments.

The NPESR Workshop in August 2003 laid the foundation for completing the NPESR in a timely fashion. Upcoming activities related to this objective include:

- Implementing comments on the draft NPESR from the Scientific Committees and the CCCC Program (requested by the end of November 2003);
- Editing, designing and structuring of the final report for publication;
- Editing, designing and structuring of the final report for publication on the PICES Home Page;
- Developing a plan to produce timely updates of the NPESR;
- Convening a 3-day workshop to produce the PICES/CoML Report on “Marine life in the North Pacific: The known, unknown and unknowable”.

It is anticipated that the final NPESR will be presented at the interim Science Board meeting in spring 2004.

During the discussion Japan brought up the issue of the name for the body of water surrounded by the Japanese Archipelago and the Korean Peninsula, which is currently in dispute between the countries concerned. Japan’s position is that the only name “Sea of Japan” should be used in the international arena, as this name is historically and geographically established (*GC Endnote 5*). Korea responded that their position is that the names “East Sea” and “Japan Sea (Sea of Japan)” should be used simultaneously, until a final resolution is agreed upon between the relevant countries (*GC Endnote 5*).

The Chairman reminded Council about the discussion on this issue at last year’s Annual Meeting (see 2002 Annual Report, p. 20), and

advised that PICES, as a scientific organization, should not focus on diplomatic problems. No actions were taken.

Agenda Item 14. Report of Science Board

The Science Board met under the chairmanship of Dr. R. Ian Perry, who presented the report to the Governing Council (see Science Board Report for text). Council approved the Science Board Report. Details are given in *Appendix A* (Decisions 03/S/1 – 03/S/7).

Agenda Item 15. Proposed changes to PICES' Rules of Procedure and Financial Regulations

Vice-Chairman of Science Board

At the 2003 interim meeting, by the recommendation of the Science Board, Council established a position of the Vice-Chairman of Science Board, and approved the following rules for this position:

- (i) The Vice-Chairman of the Science Board shall be elected from the members of the Board;
- (ii) The Vice-Chairman will normally reside on the opposite side of the Pacific to the Science Board Chairman;
- (iii) Duration of the appointment shall be for 1 year (18 months for the first Vice-Chairman). Re-election for an additional term is permitted;
- (iv) When the position of Science Board Chairman becomes (or will become) vacant, the incumbent Vice-Chairman does not automatically succeed the Chairman, and elections will proceed according to regulations;
- (v) The Vice-Chairman will prepare meeting materials and chair the meetings of the Science Board in the absence of the Chairman, as required;
- (vi) The Vice-Chairman will assist the Science Board Chairman with the coordination of the scientific activities of PICES by: preparing material for meetings (Science Board, PICES Annual Meetings, etc.); representing PICES at meetings and

conferences of other organizations; consulting on Science Board Chairman's decisions that must be taken between normal meetings of PICES Standing Committees; and representing the interests of scientists in the countries on his continent.

To identify the new position, Council approved the following changes in the Rules of Procedure (Decision 03/A/6):

- add new Rule 14 (ii)
“The Vice-Chairman of the Science Board shall be elected from amongst the members of the Board for a term of one year and shall be eligible for re-election for a successive term. The Vice-Chairman will normally reside on the opposite side of the Pacific to the Science Board Chairman. The Vice-Chairman shall act as Chairman whenever the Chairman is unable to act, but in the event of the office of Chairman becoming vacant, the Vice-Chairman shall not automatically succeed the Chairman, and the Science Board shall elect a new Chairman at its next meeting”.
- re-numerate the current Rules 14 (ii) and 14 (iii) to 14 (iii) and 14 (iv) respectively.

In addition, the detailed responsibilities of the Vice-Chairman of Science Board will be identified in the PICES Chairmen's Handbook.

Proposed changes to PICES' Rules of Procedure (Rule 15) and Financial Regulations (Reg. 3(v))

At PICES XI, to ensure timely payment of annual contributions, F&A recommended, and Council approved, that *“starting from the next Annual Meeting, Council will consider and adopt the budget for the ensuing and subsequent financial years”* (Decision 02/A/2(iii)). This action requires changes to the Rules of Procedure (Rule 15(c)) and the Financial Regulations (Regulation 3(v)), and the Executive Secretary was requested to develop the appropriate wording changes for consideration at PICES XII.

Dr. Marasco reported that in the process of preparing budgets for consideration at PICES

XII, a serious problem was discovered as a result of the previous year's decision to have budgets for ensuing and subsequent financial years approved, and explained the infeasibility of the implementation of Decision 02/A/2(iii). F&A recommended, and Council agreed to re-consider this decision (Decision 03/A/2(ii)); see also F&A Report for details).

Agenda Item 16. Report of Finance and Administration Committee

The Finance and Administration Committee (F&A) met under the chairmanship of Dr. Richard J. Marasco, who presented the report to the Governing Council (see F&A Report for text). Council approved the report.

16.1 Audited accounts for fiscal year 2002

At the recommendation of F&A, Council accepted the audited accounts of *FY 2002* (Decision 03/A/1(i)). At the 2003 interim Council meeting, *Flader & Hale* was selected as the auditor for *FY 2003-2005* (*GC Endnote 4* and Decision 03/A/1(ii)).

16.2 Annual contributions

Council discussed the payment schedule of annual fees to the Organization (*F&A Endnote 4*), and following F&A, expressed serious concern over the increased frequency of partial payments of annual fees, especially if they are remitted without explanation or an indication of when the outstanding balance will be paid. Council instructed the Executive Secretary to send a letter commending some Contracting Parties for improved performance in submitting annual contributions in 2003, and describing the difficulties partial payment causes the Organization (Decision 03/A/2(i)).

Council also approved the recommendation that last year's Decision 02/A/2(iii) be re-considered, returning to the previous budget preparation practice, currently reflected in the Rules of Procedure (Rule 15) and Financial Regulations (Reg. 3(v)), when at each Annual Meeting, Council adopts its budget for the ensuing fiscal year, and considers, but not adopt, the forecast

budget for the subsequent fiscal year (Decision 03/A/2(ii)). Council confirmed that for planning purposes, Contracting Parties should continue to use the guideline generally accepted at the Eighth Annual Meeting (Decision 99/A/2(ii)), which states that the annual contributions will increase at the rate of inflation (about 3%) in Canada.

16.3 Fund-raising activities

Grants and voluntary contributions received this year for various activities initiated by PICES are reflected in *F&A Endnote 5*. Council noted the significant increase in the level of external funding, and thanked the Science Board Chairman and the Secretariat for their efforts. At the same time, Council is seriously concerned about the increased workload of the Secretariat related to the growing number of projects, as all external funding offers have specific product/service requirements. It was re-iterated that funding constraints resulting from the current practice of an increase in annual contributions only at the rate of inflation, can impede improvement and development of the Organization, and therefore, fund-raising continues to be an important component of PICES activities. Delegates were requested to determine the possibility of obtaining additional funding to support PICES (Decision 03/A/4(i)).

Council also directed Science Board to develop a prioritized list of PICES activities that are strong candidates for external funding (Decision 03/A/4(ii)). This list could be used by delegates and F&A members to raise funds.

16.4 Budget

16.4a Estimated accounts for fiscal year 2003

The estimated accounts for *FY 2003* were reviewed by F&A and approved by Council (Decision 03/A/3(i)).

16.4b Proposed budget for fiscal year 2004

Council approved the proposed *FY 2004* budget of \$679,000 (*F&A Endnote 7*). The amount of \$79,000 will be transferred from the Working

Capital Fund to the General Fund to reduce the total annual contribution to \$600,000, setting the 2003 fee at \$100,000 per Contracting Party (Decision 02/A/3(ii)).

16.4c Forecast budget for fiscal year 2005

The *FY* 2005 forecast budget of \$725,000 was examined by F&A and presented to Council for information only. It will be further discussed at PICES XIII. Per the guideline adopted in 1999 (Decision 99/A/2(ii)), the 2005 annual fee would be set at \$103,000 per Contracting Party. Then, a transfer of about \$107,000 from the Working Capital Fund would be required to balance funds. A transfer of this magnitude will only be possible if additional funds can be raised.

16.4d Working Capital Fund

The balance in the Working Capital Fund is forecast to be about \$218,600 at the end of 2003. Council approved a transfer of \$79,000 from the Working Capital Fund to the General Fund for 2004. This amount includes external funds, \$67,500, allocated for PICES projects that will be completed in 2004. Council also approved a transfer of \$11,600 from the Working Capital Fund to the Trust Fund to restore the Trust Fund to the level of \$110,000. After all inter-fund transfers (Decision 02/A/3(iii)), the Working Capital Fund will total approximately \$128,000.

16.4e Home Leave and Relocation Fund

The status of the Home Leave and Relocation Fund was reviewed. In *FY* 2003, expenditures were offset by interest earned by the Fund and, in part, by the foreign staff tax levies. The Fund will be at its required level of \$110,000 by the end of the fiscal year.

16.4f Trust Fund

In *FY* 2003, the Trust Fund was used to finance the Intern Program, and to bring young scientists from PICES member countries and scientists from countries with "economies in transition" to scientific meetings. These expenditures were compensated only partly by voluntary contributions from Canada and U.S.A. for the

Intern Program, and by travel grants from the Scientific Committee of Oceanic Research. As a result, the Trust Fund would be approximately \$98,400 at the end of 2003. Council approved a transfer of \$11,600 from the Working Capital Fund to the Trust Fund to recover all 2003 expenditures and restore the Trust Fund to the level of \$110,000.

Agenda Item 17. Appointment of F&A Committee Chairman

According to the Rules of Procedure (Rule 15), "*The Chairman of the Finance and Administration Committee shall be appointed by the Council from amongst the Committee's members for a term of two years and shall be eligible for re-appointment only once for a successive term.*" Dr. Richard J. Marasco of U.S.A. was appointed as the F&A Chairman at PICES VII in 1998 (Fairbanks, U.S.A.), and re-appointed at PICES IX in 2000 (Hakodate, Japan). At PICES XI, at the recommendation of the Finance and Administration Committee, Council extended his term for one year (Decision 02/A/7). This issue was discussed again by F&A, and it was highly recommended that the term of Dr. Richard J. Marasco (U.S.A.) be extended for one more year. The motion was supported by all Contracting Parties and approved by Council (Decision 03/A/7).

Agenda Item 18. Other business

Publication of PICES Review Committee Report

At PICES XI, Council endorsed the Review Committee Report and its recommendations (Decision 02/A/9). Pending full consideration of the Review Committee Report by the Science Board, action on its disposition was postponed until the 2003 interim Science Board/Governing Council meeting. At the recommendation of F&A, Council approved that the Review Committee Report be included in this year's PICES Annual Report (Decision 03/A/9).

Request for scientific advice

A letter was received from the United States requesting scientific advice on recent (1998-1999) climate-ocean changes in the North Pacific and their implications for fisheries (*SB*

Endnote 15). This is the first request ever for PICES to provide scientific advice to a member nation. In discussion, it was noted that the request is a clear recognition of PICES' expertise and scientific leadership on the topic of ecosystem regime shifts. It is also evidence that governments are open to strong (and independent) scientific input regarding ecosystem variability, and the development of robust management strategies. Council found this request as both timely and important, and agreed to accept.

At the recommendation of Science Board, Council approved the establishment of a Study Group under Science Board titled (tentatively) "Potential implications of recent regime shifts in

the North Pacific for fisheries", with a 1-year duration (Decision 03/S/5). The Study Group would assess the request, assemble the information and data relevant to responding to this request, and develop a draft document for discussion. It would also develop plans for a workshop to be held in late June 2004, to discuss this document and to gather broader input. Following the workshop, the Study Group would finalize the report, which would then be circulated within PICES for review. It would be completed and delivered to the United States by PICES XIII in October 2004.

The Terms of Reference for this Study Group are described in *GC Appendix B*.

GC Appendix A. Decisions

03/A/1: Auditor

- i. Council accepted the audited accounts for 2002
- ii. Council selected *Flader & Hale* as the auditor for *FY* 2003-2005.

03/A/2: Annual contributions

- i. Council instructed the Executive Secretary to send a letter commending some Contracting Parties for improved performance in submitting annual contributions in 2003, and describing the difficulties partial payment causes the Organization.
- ii. Council re-considered last year's Decision 02/A/2(iii), and agreed to return to the previous budget preparation practice, currently reflected in the Rules of Procedure (Rule 15) and Financial Regulations (Reg. 3(v)), when at each Annual Meeting, Council adopts its budget for the ensuing fiscal year, and considers, but not adopt, the forecast budget for the subsequent fiscal year. For planning of their funding requests for annual contributions, Contracting Parties should continue to use the guideline generally accepted at the Eighth Annual Meeting (Decision 99/A/2(ii)).

03/A/3: Budget

- i. Council accepted the estimated accounts for 2003.
- ii. Council approved the 2004 budget at the level of \$679,000. The amount of \$79,000 will be transferred from the Working Capital Fund to reduce the total annual contribution to \$600,000, setting the 2003 fee at \$100,000 per Contracting Party.
- iii. Council approved the following inter-fund transfers:
 - A transfer of \$79,000 from the Working Capital Fund to the General Fund for 2004. This amount includes external funds, \$67,500, allocated for PICES projects that will be completed in 2004;
 - A transfer of \$11,600 from the Working Capital Fund to the Trust Fund to recover all 2003 expenditures and to restore the Trust Fund to the level of \$110,000.

03/A/4: Fund-raising

- i. National delegates were requested to determine the possibility of obtaining additional funding to support PICES activities.

- ii. Council directed Science Board to develop a prioritised list of PICES activities that are strong candidates for external funding.

03/A/5: Schedule and financing future Annual Meetings

- i. Council approved the proposal of the Russian Federation to hold the Fourteenth Annual Meeting from September 30 - October 8, 2005, in Vladivostok, Russia.
- ii. Council requested Japan to explore the possibility of hosting the Fifteenth Annual Meeting in 2006, and inform the Secretariat on this matter by May 31, 2004.
- iii. Council accepted the following registration fee structure for 2004:

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

- iv. Council approved the holding of an interim Science Board meeting, with participation of the Governing Council, in spring 2004.

03/A/6: Changes to Rules of Procedure

Council approved the following changes in the Rules of Procedure:

- add new Rule 14 (ii)

“The Vice-Chairman of the Science Board shall be elected from amongst the members of the Board for a term of one year and shall be eligible for re-election for a successive term. The Vice-Chairman will normally reside on the opposite side of the Pacific to the Science Board Chairman. The Vice-Chairman shall act as Chairman whenever the Chairman is unable to act, but in the event of the office of Chairman becoming vacant, the Vice-Chairman shall not automatically succeed the Chairman, and the Science Board shall elect a new Chairman at its next meeting”.
- re-numerate the current Rules 14 (ii) and 14 (iii) to 14 (iii) and 14 (iv) respectively.

The detailed responsibilities of the Vice-Chairman of Science Board should be identified in the PICES Chairmen’s Handbook

03/A/7: Appointment of Finance and Administration Committee Chairman

Council extended the term of Dr. Richard J. Marasco (U.S.A.), the current Finance and Administration Committee Chairman, for one year.

03/A/8: Intern Program

- i. Council approved that the deadline for applications for the 2004 Intern Program be extended to December 31, 2003.
- ii. Council instructed the Executive Secretary to invite member countries to provide voluntary contributions to support the Program in 2004 and beyond.
- iii. Council confirmed that the stipend should be kept at the current level of \$2,000 per month, and given the modest stipend, advised Contracting Parties to consider whether personal circumstances of intern warrant supplementation.
- iv. Council recommended that Contracting Parties give equal consideration to both administrative and scientific interns when making nominations.

03/A/9: Review Committee Report

Council approved that the Review Committee Report be published in this year’s PICES Annual Report.

03/S/1: Inter-sessional meetings, Working Group and CCCC Program Workshops

The following inter-sessional meetings, Working Group and CCCC Program Workshops are to be convened/co-sponsored in 2003-2004 and beyond (see Acronym List at the end of the Annual Report):

- A PICES/CoML *Regional marine life expert* workshop, November 17-19, 2003, Victoria, Canada (approved in 2002);
- A PICES/PaCOS/AOOS/GEM workshop on “Development of pilot coastal monitoring

- program(s) in the NE Pacific”, November 20-22, 2003, Victoria, Canada;
- A MODEL workshop to further manuscript development for a special issue of *Ecological Modeling* devoted to NEMURO and NEMURO.FISH, December 2003, Yokohama, Japan (funded by the Fisheries Research Agency of Japan);
 - A IOCCP/PICES workshop on “Ocean surface p(CO₂), data integration and database development”, January 14-17, 2004, Tsukuba, Japan (approved in 2002, postponed from 2003);
 - A meeting of the PICES Study Group on *Potential implications of recent regime shifts in the North Pacific for fisheries*, January 2004, on the west coast of Canada or the United States;
 - A PICES-IFEP workshop on “*In situ* iron enrichment experiments in the eastern and western subarctic Pacific”, February 11-13, 2004, Victoria, Canada (approved in 2002, postponed from 2003);
 - A Canada-SOLAS/PICES-IFEP Session on “Response of the upper ocean to mesoscale iron enrichment” at the TOS/ASLO 2004 Ocean Research Conference, February 15-20, Honolulu, U.S.A.;
 - A SCOR/IOC/PICES/GLOBEC Symposium on “Quantitative ecosystem indicators for fisheries management”, March 31-April 3, 2004, Paris, France (approved in 2002);
 - A 3-day interim Science Board meeting, spring 2004, location TBD;
 - A NOAA/GCP/PICES workshop on “Understanding North Pacific carbon-cycle change: Data synthesis and modeling”, June 2004, Seattle, U.S.A.;
 - A MODEL workshop on “The development of a model on coupled responses of lower and higher trophic levels for climate variability in the North Pacific” (partial funding from Japan Fisheries Research Agency), August 2004, Seattle, U.S.A. Purpose is to document and distribute the NEMURO model code, and to edit *Ecological Modeling* manuscripts;
 - A PICES/NOAA workshop to discuss issues relating to the request for advice to PICES from the United States, June 2004, likely on the west coast of the United States;
 - A 1-day MEQ Workshop on “Developing a North Pacific HAB data resource - II”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 2-day PICES-CLIVAR Workshop on “Scale interactions of climate and marine ecosystems”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 1-day MBM-AP Workshop on “Combining data sets on diets of marine birds and mammals - Phase II”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 1-day MIE-AP Workshop to review preliminary results from the first inter-calibration cruise, and discuss the goals, objectives, and status of the experiment and the future field program, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 2-day CCCC Workshop on “Linking open ocean and coastal ecosystems II”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 1-day CCCC/REX Workshop on “Seasonal cycles of plankton and nutrients around the North Pacific Rim”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 4-day CCCC/MODEL Workshop on “Climate interactions and marine ecosystems: Effects of climate on the structure and function of marine food webs and implications for marine fish production in the North Pacific Ocean and marginal seas” (funded by APN, if approved), October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 1-day CCCC/MODEL Workshop to prepare a strategy and products for future NEMURO and NEMURO.FISH training sessions (if the APN proposal is successful, this workshop will not be necessary), October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A symposium, co-sponsored with GLOBEC, on “Climate variability and sub-Arctic marine ecosystem”, spring 2005, Victoria, Canada;
 - A CREAMS/PICES workshop (with training component) on “Japan/East Sea

circulation: What we know and how well can we forecast?”, summer 2005, near Vladivostok, Russia;

- A symposium, co-sponsored with NPAFC, on “State of Pacific salmon and their role as indicators of the health of North Pacific ecosystems”, fall 2005, Seoul, Korea;
- A joint theme session on “Fisheries, ecology and life history of small pelagic fish” at the ICES Annual Science Conference, September 2005, Aberdeen, Scotland;
- A symposium, co-sponsored with ICES, on “Marine bioinvasions”, spring 2006, likely on the east coast of the United States;
- A 3-day symposium on CCCC Synthesis, April 2006, Honolulu, U.S.A.;
- A 4th International Zooplankton Production Symposium (co-sponsors TBD), spring 2007, Hiroshima, Japan.

03/S/2: Travel support

PICES will provide travel support for:

PICES XIII

- Invited speakers for Topic Sessions at the PICES Thirteenth Annual Meeting (the normal allocation is \$5,000 per Scientific Committee, and additional requests are subject to fund availability);
- Two invited speakers to the CCCC Topic Session on “The impacts of large-scale climate change on North Pacific marine ecosystem”;
- Two invited speakers to the PICES/CLIVAR Workshop on “Scale interactions of climate and marine ecosystems”;
- Two invited speakers to the CCCC Workshop on “Linking open ocean and coastal ecosystems II”;
- Two Canadian scientists to attend the CCCC/MODEL APN Workshop (if APN grant approved).

Inter-sessional meetings

- PICES representative to attend the NPAFC Annual Meeting (October 2003, Honolulu, U.S.A.);
- MONITOR Co-Chairman to represent PICES at POGO-5 (November 2003, Tokyo,

Japan);

- One scientist to participate in the joint IOCCP/PICES workshop on “Ocean surface p(CO₂) data integration and database development” (January 2004, Tsukuba, Japan);
- PICES representative to attend the annual meetings of the ICES Working Group on *Introductions and transfers of marine organisms* and the ICES/IOC/IMO Working Group on *Ballast waters and other ship vectors* (March 2004, Italy);
- PICES invited speaker to the symposium on “Quantitative ecosystem indicators for fisheries management” (April 2004, Paris, France);
- MONITOR member to represent PICES at the meeting of ICES/IOC Steering Group for GOOS (April 2004, Tenerife, Spain);
- PICES representative to participate in NEAR-GOOS activities in conjunction with the 6th WESTPAC Symposium (April 2004, Hangzhou, People’s Republic of China);
- Co-Chairmen of CCCC-IP to attend the 2nd interim Science Board meeting (spring 2004);
- TCODE member from Russia to attend the meeting of the ICES Study Group on *Development of Marine Data Exchange Systems using XML* (May 2004, Oostende, Belgium);
- One scientist to participate in the joint NOAA/GCP/PICES workshop on “Understanding North Pacific carbon cycle change: Data synthesis and modeling” (June 2004, Seattle, U.S.A.);
- One scientist to attend the MODEL Workshop on “The development of a model on coupled responses of lower and higher trophic levels for climate variability in the North Pacific”, August 2004, Seattle, U.S.A.;
- PICES representative to participate in the SCOR General Meeting (September 2004, Venice, Italy);
- Two scientists to participate in the CREAMS/PICES workshop on “Japan/East Sea circulation: What we know and how well can we forecast?”, summer 2005, near Vladivostok, Russia.

Trust Fund

- One Russian scientist to participate in the MBM-AP Workshop on “Combining data sets on diets of marine birds and mammals II” at PICES XIII;
- One Russian and one Chinese scientist to attend the workshop on “Developing a North Pacific HAB data resource II” at PICES XIII;

Science Board Chairman

- Science Board Chairman to attend the Symposium on “Quantitative ecosystem indicators for fisheries management” (April 2004, Paris, France), 2nd interim Science Board Meeting (spring 2004), the ICES Annual Science Conference (September 2004, Vigo, Spain), and PICES Thirteenth Annual Meeting (October 2004, Honolulu, U.S.A.).

The Science Board Chairman and Executive Secretary are instructed to use the following criteria suggested by the Science Board in prioritising additional requests:

- Consider whether the proposed activity will contribute to the strategic plans of PICES;
- Balance travel support requests among PICES Committees and Programs; and
- Use PICES funds to bring people to PICES rather than for sending them to other meetings.

03/S/3: Publications

The following publications were approved:

PICES Scientific Report Series in 2004

- Report for the Census of Marine Life on “Marine life in the North Pacific Ocean: The known, unknown and unknowable”;
- Report from the MONITOR workshop on “Examine and critique a North Pacific Ecosystem Report”;
- Final report of WG 14 on *Effective sampling of micronekton*;
- Proceedings of the 3rd PICES workshop on “Okhotsk Sea and adjacent areas”;
- Guide of best practices for oceanic CO₂ measurements and data reporting (WG 17);
- Proceedings of the 2004 IFEP workshop.

PICES Scientific Report Series in 2005

- Final report of WG 16 on *Climate change and fisheries management*.

Special issues of primary journals in 2003

- *Marine Environmental Research* - papers resulting from the 1999 MEQ Practical Workshop (Guest editors: Richard F. Addison and John E. Stein);
- *Journal of Oceanography* - selected papers from the 2002 PICES Symposium on *North Pacific transitional areas* (Guest editors: Michio J. Kishi, Daniel Lluch-Belda, Stewart M. McKinnell, Arthur Miller and Yoshiro Watanabe);
- *Progress in Oceanography* - selected papers from the 2001 BIO Topic Session on *Plankton size classes, functional groups and ecosystem dynamics* (Guest editors: Alexander S. Bychkov and Angelica Peña);
- *Fisheries Oceanography* - selected contributions to the joint PICES/GLOBEC sessions at the GLOBEC Open Science Meeting.

Special issues of primary journals in 2004 and beyond

- *Journal of Oceanography* (2004)- invited papers on *Synthesis of JGOFS North Pacific Process Study* (jointly with JGOFS) (Guest editors: Toshiro Saino, Alexander Bychkov, Chen-Tung A. Chen and Paul J. Harrison);
- *Journal of Marine Systems* (2004) - selected papers from the 2002 BIO/POC/FIS Topic Session on “The importance of biophysical coupling in concentrating marine organisms around shallow topographies” (Guest editors: Richard D. Brodeur and John Dower);
- *Progress in Oceanography* (2004) - selected papers from the PICES/CREAMS workshop on *Recent progress in studies of physical processes and impact to the Japan/East Sea ecosystem* (Guest editors: Stewart M. McKinnell, Alexander Bychkov, Kyung-Ryul Kim and Makoto Terazaki);
- *ICES Journal of Marine Research* (2004) - selected papers from the 3rd Zooplankton Production Symposium on “Role of zooplankton in global ecosystem dynamics: Comparative studies from the world oceans”

(Guest editors: Roger Harris, Tsutomu Ikeda, William Peterson and Luis Valdez);

- *Ecological Modelling* (2005) – selected papers on NEMURO and NEMURO.FISH models (Guest editors: Shin-ichi Ito, Michio Kishi, Bernard Megrey and Francisco Werner).

Other

- North Pacific Ecosystem Status Report;
- Book on History of PICES.

03/S/4: Future of current Working Groups

- WG 14 on *Effective sampling of micronekton* will continue its activities and produce a final report in 2004;
- WG 15 on *Ecology of harmful algal blooms in the North Pacific* has completed its terms of reference and will be disbanded (see also Decision 03/A/5 below);
- WG 16 on *Climate change, shifts in fish production and fisheries management* will continue its activities and produce a final report in 2005;
- Study Group on *PICES Capacity Building* has completed its report (*SB Endnote 14*) and will be disbanded.

03/S/5: New PICES Groups

- A Section on *Harmful algal blooms and their impacts* will be formed under MEQ, with the Terms of Reference described in *SB Endnote 7*. This also implies that WG 15 on *Ecology of harmful algal blooms in the North Pacific* will be disbanded.
- A Working Group on *Mariculture in the 21st century – The intersection between ecology, socio-economics and production*, will be established under the direction of MEQ and FIS, with the Terms of Reference described in *SB Endnote 6*.
- A Study Group on *Ecosystem-based management science and its application to the North Pacific* will be formed under the direction of FIS and MEQ, with the Terms of Reference described in *SB Endnote 5*.

- A Study Group on *PICES Strategic Issues* was established (at the 2003 interim Science Board/Governing Council meeting) under the direction of the Governing Council to develop a Strategic Plan for the Organization.
- A Study Group on *Potential implications of recent regime shifts in the North Pacific for fisheries* will be established under the direction of Science Board to deal with the request for scientific advice received from the United States. The Terms of Reference are provided in *GC Appendix B*.

03/S/6: Relations with other organizations and programs

Council approved the revised Standing List of International Organizations and Programs, and agreed with the identified priorities for interaction in 2003 (*SB Endnote 10*).

03/S/7: Improvement of participation in PICES activities

- i. Council requested national delegates to follow up on Decision 96/S/6 and the recommendation of the PICES Review Committee, and consider the formation of national committees to enhance and coordinate involvement of their scientists in PICES activities, and to promote activities within PICES that have high national interest and relevance.
- ii. Council approved that national membership lists be confirmed prior to each Annual Meeting and be included as Appendices in the Annual Report. This will help maintain a historical record of PICES membership, and may help to improve participation in activities of the Organization.
- iii. Council instructed the Executive Secretary to regularly prepare terms of reference and other relevant information for new members, and circulate these documents to national delegates. National delegates are encouraged to clarify the responsibilities of members at the time of their appointment.

GC Appendix B

Terms of Reference for Study Group on *Potential implications of recent regime shifts in the North Pacific for fisheries*

1. Examine the request from the United States on the potential effects of recent climate-ocean changes in the North Pacific on fisheries, and clarify what can be delivered by PICES;
2. Gather appropriate information to respond to the request, develop a draft document for discussion, and develop plans for a workshop to be held in late June 2004 to discuss this document and to gather broader input;
3. Conduct the workshop and provide a final written report by summer 2004, for review by PICES.

GC Endnote 1

Participation List

Canada

Robin Brown (alternate delegate)
Laura Richards

Japan

Junzo Fujita (advisor, October 18 only)
Tatsu Kishida (advisor)
Tokimasa Kobayashi
Motobumi Manabe (advisor)
Tokio Wada (advisor)

People's Republic of China

Not presented

Republic of Korea

Keun-Oh Kim (advisor)
Yong-Ju Lee
Hyun-Churl Lim

Russia

Lev N. Bocharov
Igor I. Shevchenko (advisor)
Pavel Vorobyov (advisor)

U.S.A.

George Boehlert
Richard J. Marasco
Elizabeth J. Tirpak (advisor)

Other

Vera Alexander (Chairman, PICES)
Alexander S. Bychkov (Executive Secretary)
Hyung-Tack Huh (Past-Chairman, PICES)
R. Ian Perry (Science Board Chairman,
October 18 only)

GC Endnote 2

Governing Council Meeting Agenda

1. Opening remarks
2. Adoption of agenda and meeting procedures
3. Preliminary report on administration
4. Report of Science Board/Governing Council 2003 interim meeting
5. Membership and observers from other countries
6. Relations with relevant international and regional organizations/programs
7. Report of Study Group on *PICES Strategic Issues*
8. Report of Study Group on *PICES Capacity Building*
9. PICES Intern Program
10. PICES Visiting Scientist Program
11. Improvement of participation and productivity of PICES committees and groups
12. Schedule and financing of future Annual Meetings of the Organization
13. North Pacific Ecosystem Status Report
14. Report of Science Board
15. Proposed changes to PICES' Rules of Procedure and Financial Regulations

16. Report of Finance and Administration (F&A) Committee

17. Appointment of F&A Chairman
18. Other business

GC Endnote 3

Report on Administration for 2003

I. Annual contributions

According to Financial Regulations 5(ii), all national contributions to PICES are payable by

U.S.A.-----December 6, 2002
Japan -----December 11, 2002
Canada -----January 13, 2003
Russian Federation-----April 2, 2003 (96.5%) and July 18, 2003 (3.5%)
Republic of Korea-----May 5, 2003
People's Republic of China-----October 3, 2003 (78%)

the first day of the financial year (January 1) to which they relate. The initial request was sent on November 8, 2002, and a reminder on March 4, 2003. Dues for 2003 were paid as follows:

II. External and additional funding

Serious efforts were made this year to get external and additional funding for various activities initiated by PICES. The following reflects special contributions and grants received:

- The remainder of the Nakajima Foundation grant, approved in 2001, was used this year to finance a MODEL workshop to “Embed NEMURO and NEMURO.FISH into a 3-D circulation model” (March 3-6, 2003, Yokohama, Japan).
- A grant of \$69,480 (US \$45,000) from the Alfred P. Sloan Foundation, approved in 2002, will be used this year to produce a report entitled “Marine life in the North Pacific Ocean: The known, unknown and unknowable”.
- The North Pacific Research Board (NPRB, U.S.A.) agreed to fund the sample collection and analysis for the east-west transect the PICES Continuous Plankton Recorder (CPR) survey of the North Pacific and southern Bering Sea, at the level US \$185,000 for two years, from July 2003 to June 2005.
- The Gulf of Alaska Ecosystem Monitoring and Research Program (GEM) of EVOS (Exxon Valdez Oil Spill Trustee Council, U.S.A.) agreed to fund the sample collection

and analysis for the north-south transect of the PICES CPR survey from 2004 to 2006, at the level of US \$120,000 per year.

- Alaska Fisheries Science Center (National Marine Fisheries Service, NOAA, U.S.A.) contributed US \$12,450 to finance the development of the North Pacific Ecosystem Status Report.
- The EVOS/GEM Program contributed US \$16,000 to support the development of the North Pacific Ecosystem Status Report in US *FY 2003* (October 1, 2002 - September 30, 2003) and US \$16,600 for the continuation of this work in US *FY 2004* (October 1, 2003-September 30, 2004).
- Southwest Fisheries Science Center (National Marine Fisheries Service, NOAA, U.S.A.) offered US \$18,200 to facilitate the gathering and coordination of potential international PaCOS (Pacific Coastal Observing System) contributions and to design basic governance structure options for coordinating biological observations between the United States, Canada and Mexico.
- The Japan Fisheries Research Agency provided a grant of JPY 6,000,000 (from April 2003 to March 2006) to support international collaboration on the development of a model on coupled response of lower and higher trophic level ecosystems for climate variability in the

North Pacific. This grant will be used to convene 3 workshops – 2 in Japan (2003 and 2005) and 1 in the United States (2004).

- The Scientific Committee on Oceanic Research (SCOR) approved two grants to support travel of scientists from countries with “economies in transition” to scientific meetings organized by PICES: US \$7,000 for the joint PICES/GLOBEC/ICES Zooplankton Production Symposium (May 19-23, 2003, in Gijón, Spain) and US \$5,000 for PICES XII (October 10-18, 2003, in Seoul, Korea).
- IOC (Intergovernmental Oceanographic Commission) provided US \$6,000 to PICES for the publication of the “Guide of best practices for oceanic CO₂ measurements and data reporting” being prepared by the PICES WG 17 on *Biogeochemical data integration and synthesis*, to ensure a large print run. This publication is expected in 2004.
- GLOBEC contributed about \$4,630 to finance the production of a special joint PICES/GLOBEC issue of PICES Press that focused on results of the PICES Eleventh Annual Meeting and the Second GLOBEC Open Science Meeting, held sequentially in Qingdao, People’s Republic of China, in October 2002.
- In addition to their annual fees, Canada and U.S.A. contributed \$10,000 and \$17,200, respectively, to finance the 2003 PICES Intern Program.

III. Inter-sessional meetings

The following inter-sessional meetings were convened/co-sponsored, for which financial, travel and logistical arrangements were made:

- A 2-day Fifth Annual Workshop on *Coastal ocean ecosystem*, February 11-12, 2003, in Newport, U.S.A.;
- A 4-day MODEL Workshop to “Embed NEMURO and NEMURO.FISH into a 3-D circulation model” (co-sponsored by the Nakajima Foundation), March 3-6, 2003, in Yokohama, Japan;
- A 5-day international inter-comparison of underway and drifting/mooring-based pCO₂ measurement systems (co-sponsored by several Japanese agencies/institutes), March

10-14, 2003, in Hazaki, Japan;

- A 3-day interim meeting of Science Board/Governing Council, April 7-9, 2003, in Victoria, Canada;
- A 4-day PICES/GLOBEC/ICES Zooplankton Production Symposium on “The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Oceans” (co-sponsored by SCOR), May 20-23, 2003, in Gijón, Spain (the largest and most exciting zooplankton meeting that has ever been convened, with 333 participants from 38 countries from 6 continents);
- A 1-day Workshop on “Climate variability, zooplankton abundance and distribution – comparative opportunities from the world’s oceans” was held immediately prior to the Zooplankton Production Symposium to develop suggestions for follow-up collaborative projects with ICES and GLOBEC, May 19, 2003, in Gijón, Spain;
- A 3-day Third PICES Workshop on “Okhotsk Sea and adjacent areas” (co-sponsored by TINRO-Center and CoML), June 4-6, 2003, in Vladivostok, Russia;
- A 3-day “North Pacific Ecosystem Status Report” Workshop, August 25-27, 2003, in Victoria, Canada.

The following workshops are to be convened in conjunction with PICES XII in Seoul, Republic of Korea:

- A 2-day Workshop on “Status of Yellow Sea and East China Sea ecosystems” (co-sponsored by CoML), October 9-10, 2003;
- A 2-day MONITOR Workshop to “Examine and critique a North Pacific Ecosystem Status Report” (co-sponsored by EVOS/GEM), October 10-11, 2003;
- A 1½-day WG 15/TCODE Workshop on “Harmful algal blooms - harmonization data” (co-sponsored by IOC), October 10-11, 2003;
- A 1-day MBM-AP Workshop on “Combining data sets on distribution and diets of marine birds and mammals”, October 10, 2003;
- A 1-day BASS Workshop to “Examine linkages between open and coastal systems”, October 15, 2003;

Preparation and arrangements are in progress for:

- A 3-day PICES/CoML “Regional marine life expert” Workshop, November 17-19, 2003, in Victoria, Canada;
- A 3-day Workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific” (co-sponsored by EVOS/GEM, SWFSC/NMFS), November 20-22, 2003, in Victoria, Canada;
- A 4-day MODEL Workshop on “Summary and synthesis of contributions from NEMURO and NEMURO.FISH” (funded by a grant from Japan Fisheries Research Agency), December 14-18, 2003, in Yokohama, Japan;
- A 5-day IOCCP/PICES Workshop on “Ocean surface pCO₂, data integration and database development” (co-sponsored by several Japanese agencies), January 13-17, 2004, in Tsukuba, Japan;
- A 3-day IFEP Workshop on “*In situ* iron enrichment experiments in the eastern and western subarctic Pacific”, February 10-12, 2004, Victoria, Canada;
- A 1-day joint Canadian-SOLAS/PICES-IFEP session on “Response of the upper ocean to mesoscale iron enrichment” at the TOS/ASLO Ocean Research Conference, February 15-20, 2004, in Honolulu, U.S.A.;
- A 4-day International Symposium on “Quantitative ecosystem indicators in fisheries management”, March 31-April 3, 2004, in Paris, France.

IV. Publications

Publications produced after PICES XI or still in progress include:

PICES Reports:

- PICES 2002 Annual Report;
- PICES Scientific Report No. 24 (July 2003): *CO₂ in the North Pacific*; this report is the final effort of PICES WG 13 and summarizes the research and technical activities that have been conducted by member nations of PICES to synthesize CO₂ data in the North Pacific, and provides a comprehensive picture of the distribution of anthropogenic CO₂ in this region;

- PICES Scientific Report No. 25 (July 2003): *Climate Change and Carrying Capacity Program / Report of BASS/MODEL on Trophic models of the subarctic Pacific basin ecosystems*;
- PICES Scientific Report No. 26 (in progress): *Climate Change and Carrying Capacity Program / Report of the 2003 MODEL workshop to “Develop a marine ecosystem model of the North Pacific Ocean including pelagic fishes”*;
- PICES Scientific Report No. 27 (in progress): *Climate Change and Carrying Capacity Program / Report of the 2002 MONITOR Workshops on “Requirements and methods for early detection of ocean change and Monitoring from moored and drifting buoys”*;
- PICES Scientific Report No. 28 (in progress): *Marine life in the North Pacific Ocean: The known, unknown and unknowable* (report for the Census of Marine Life).

Special issues of primary journals:

- *Canadian Journal of Fisheries and Aquatic Sciences* (December 2002, section in Vol. 59, No. 12) - selected papers from the 2001 FIS Topic Session on “Migration of key ecological species in the North Pacific Ocean” (Guest editor: J. Irvine); the section includes 4 papers by authors from Canada, Japan and Mexico;
- *Deep-Sea Research Part II* (December 2002, Vol. 49, Nos. 24-25) on “North Pacific Biogeochemical Processes” - a collection of contributed papers from JGOFS-related field programs in the North Pacific (Guest editors: T. Saino, A. Bychkov, C.T.A. Chen and P. Harrison); the issue includes an overview and 27 papers by authors from Canada, Japan, Russia and China-Taipei, but majority of papers (21) are from Japan;
- *Journal of Oceanography* (August 2003, Vol. 59, No. 4) - selected papers from the 2002 PICES Symposium on “North Pacific transitional areas” (Guest editors: S. McKinnell, M. Kishi, D. Lluch-Belda, A. Miller and Y. Watanabe); the issue includes 10 papers by authors from Japan, Mexico, U.S.A.) and PICES;

- *Progress in Oceanography* (September 2003, Vol. 57, Nos. 3-4) - selected papers from the 2001 BIO Topic Session on “Plankton size classes, functional groups and ecosystem dynamics” dedicated to the memory of the late Prof. Michael M. Mullin (Guest editors: A. Peña and A. Bychkov); the issue includes 11 papers by authors from Canada, Chile, Japan, Korea and U.S.A.;
- *Marine Environmental Research* (September 2004, Vol. 57, Nos. 1-2) - papers resulting from the 1999 MEQ Practical Workshop (Guest editor: R. Addison); the issue includes 9 papers from all PICES member countries.

Peer-review process was initiated for four special issues to be published in 2004:

- *Progress in Oceanography* - selected papers from the 2002 PICES/CREAMS workshop on “Recent progress in studies of the Japan/East Sea ecosystem” (Guest editors: S. McKinnell, K.-R. Kim, M. Terazaki and A. Bychkov); 13 papers have been submitted by authors from Japan, Korea, Russia and U.S.A.;
- *Journal of Oceanography* – a collection of invited papers on *JGOFS North Pacific Synthesis* (Guest editors: T. Saino, A. Bychkov, C.T.A. Chen and P. Harrison);
- *Journal of Marine Systems* - selected papers from the 2002 BIO/POC/FIS Topic Session on “The importance of biophysical coupling in concentrating marine organisms around shallow topographies” (Guest editors: R. Brodeur and J. Dower); 5 papers have been submitted by authors from Israel, Japan, Mexico and U.S.A.;
- *ICES Journal of Marine Research* - selected papers from the PICES/GLOBEC/ICES Zooplankton Production Symposium on “Role of zooplankton in global ecosystem dynamics: Comparative studies from the world oceans” (Guest Editors: R. Harris, T. Ikeda, S. McKinnell, L. Valdes and W. Peterson); 42 papers have been submitted.

PICES Press - Newsletters

- Vol. 11 No. 1 - joint PICES/GLOBEC issue that focused on the results of PICES XI and the 2nd GLOBEC Open Science Meeting

held sequentially in Qingdao, People’s Republic of China, in October 2002;

- Vol. 11, No. 2 – regular issue.

Other publications

- CD-ROM with PICES Scientific. Report No. 23 on *Harmful algal blooms in the PICES region of the North Pacific* was published by IOC for UNESCO training courses for harmful algal bloom scientists and managers in developing countries.
- Final announcement for PICES XII was printed and distributed in April;
- A Book of Abstracts for the 3rd PICES/GLOBEC/ICES Zooplankton Production Symposium on *The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Oceans* was compiled and distributed at the meeting in May;
- A Book of Abstracts for PICES XII was compiled and distributed at the meeting in October.

Review of current publication practices of PICES

Publication activities of the Organization have expanded significantly in the last several years. The Review Committee recommended an external review of current publication practices of PICES. The review was conducted from September 16-19, 2003, by two experts from the National Marine Fisheries Service (U.S.A.). The results were presented at PICES XII and included elsewhere in the Annual Report.

V. Travel and representation at other organization meetings

- Drs. Ian Perry (Science Board Chairman), Makoto Kashiwai (CCCC Co-Chairman) and Alexander Bychkov (Executive Secretary) participated in the Open Science Meeting on “Ocean biogeochemistry and ecosystems”, in Paris, France, in January;
- Dr. Skip McKinnell (Deputy Executive Secretary), attended the Fifth Annual Workshop on “Coastal ocean ecosystem”, in Newport, U.S.A., in February;
- Dr. Alexander Bychkov participated in a conference on “Multilateralism and

international ocean-resources law”, in Berkeley, U.S.A., in February;

- Dr. Skip McKinnell attended a planning meeting for the U.S. CLIVAR-Pacific Decadal Variability project (paid by US CLIVAR) in Washington, DC, U.S.A., in February;
- Dr. F.J.R. “Max” Taylor (WG 15 Co-Chairman) represented PICES at the annual meeting of the ICES/IOC/IMO Study Group on *Ballast waters and other ship vectors*, in Vancouver, Canada, in March;
- Dr. John Stein (MEQ Chairman) represented PICES at the annual meeting of the ICES WG on *Introductions and transfers of marine organisms* in Vancouver, Canada, in March (paid by NMFS);
- Dr. Phillip Mundy (MONITOR member) represented PICES at three sequential ICES meetings (Regional Ecosystem Study Group for the North Sea, the ICES-EuroGOOS Planning Group on the North Sea Pilot Project, and the ICES/IOC Steering Group for GOOS) related to monitoring activities in Nantes, France, in April;
- Full travel support was provided to Dr. Vera Alexander (PICES Chairman), Dr. Ian Perry (Science Board Chairman) and two members of Science Board to attend the PICES interim Science Board / Governing Council Meeting, in Victoria, Canada, in April;
- Ms. Christina Chiu attended the International Fisheries Commission Pension Society Meeting in Halifax, Canada, in May;
- Dr. Alexander Bychkov participated in the Third JGOFS Open Science Conference and the JGOFS SSC meeting, in Washington, DC, U.S.A., in May (paid by JGOFS);
- Dr. Elizabeth Logerwell (FIS member) represented PICES at the NPAFC Research Planning and Coordinating Meeting, in Seattle, U.S.A., in May;
- Drs. Ian Perry, David Mackas and members of the Secretariat travelled to Gijón, Spain, in May, for the PICES/GLOBEC/ICES Zooplankton Production Symposium; Drs. Tsutomu Ikeda (Japan, PICES co-convenor for the Symposium), William Peterson (U.S.A., PICES co-coordinator for associated workshops and Poster Session),

Harold Batchelder (U.S.A., PICES co-convenor for a special workshop) attended the Symposium with their own funding;

- Partial travel support was provided to 27 scientists from countries with “economies in transition” (11 paid by the Trust Fund and 16 by a SCOR travel grant) to attend the Zooplankton Production Symposium;
- Drs. Skip McKinnell (PICES representative and discussion leader on the development of the Okhotsk Sea ecosystem status report) and Tokihiro Kono (Japan, invited speaker) attended the 3rd PICES Workshop on the “Okhotsk sea and adjacent areas”, in Vladivostok, Russia, in June;
- Drs. Michio Kishi (Japan), Bernard Megrey (U.S.A., PICES funding) and Francisco Werner participated in the first Workshop of the Study Group on *Extending ecosystem models to the basin scale*, in Cambridge, UK, in May. The second workshop was planned at the same venue in October 2003.
- Drs. Vera Alexander and Alexander Bychkov represented PICES at the 22nd session of the IOC (Intergovernmental Oceanographic Commission) Assembly, in Paris, France, in June;
- Dr. Alexander Bychkov traveled to Seoul, Republic of Korea, to participate in the CREAMS-III planning workshop and to discuss preparations for PICES XII with the Local Organizing Committee (partly paid by the Seoul National University);
- Full or partial travel support was provided to 11 participants (1 from Canada, 1 from China, 3 from Japan, 3 from Korea, 2 from U.S.A. and 1 from Mexico) to attend the “North Pacific Ecosystem Status Report” Workshop, in Victoria, Canada, in August;
- Dr. Skip McKinnell (invited participant) attended the U.S./NMFS PaCOS (Pacific Coastal Observing System) planning meeting, in Seattle, U.S.A., in September;
- Dr. Vladimir Radchenko (Science Board Vice-Chairman) represented PICES at the 36th SCOR Executive Committee, in Moscow, Russia, in September (paid by Russian government);
- Dr. Ian Perry represented PICES at the ICES Annual Conference, in Tallinn, Estonia, in September;

- Drs. Vera Alexander and Ian Perry and members of the Secretariat travelled to Seoul, Republic of Korea, in October, for PICES XII;
- Full or partial travel support (paid by PICES and co-sponsoring programs and organizations) was provided to 3 invited speakers for the Science Board Symposium, and 15 invited speakers for scientific sessions and workshops at PICES XII, in Seoul, Republic of Korea, in October;
- Partial travel support (paid by the Trust Fund and a SCOR travel grant) was provided to 33 scientists (1 Canadian, 11 Chinese, 1 Japanese, 4 Korean, 15 Russian and 1 U.S.A.) to attend PICES XII. The majority of these scientists are younger than 35 year of age;
- Dr. Skip McKinnell will represent PICES at the CoML Ocean Life Symposium and associated events, in Washington, DC, U.S.A., in October;
- Dr. Elizabeth Logerwell will represent PICES at the NPAFC Eleventh Annual Meeting, in Honolulu, U.S.A., in October;
- Dr. Sei-ichi Saitoh (MONITOR Co-Chairman) will represent PICES at the POGO Fifth Annual Meeting, in Tokyo, Japan, in November;
- Dr. Alexander Bychkov will travel to Japan in November, to participate in the final meeting of the JGOFS North Pacific Synthesis Group in Nagoya (paid by JGOFS), and represent PICES at the First Argo Science Symposium in Tokyo;
- Full or partial travel support will be provided to 2 scientists to attend the workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific”, in Victoria, Canada, in November;
- Full or partial travel support will be provided to 2-3 scientists to participate in the PICES/CoML “Regional marine life expert” Workshop, in Victoria, Canada, in November.

VI. Relations with international scientific organizations and programs

The following reflects expanding relationships with international scientific organizations and

programs that are considered to have the highest priority for PICES with respect to cooperation and facilitation of ecosystem research in the North Pacific during this year:

International Geosphere-Biosphere Program (IGBP)

- Discussion on the role PICES, as a regional organization, can play in implementing marine aspects of the IGBP Phase II continued at the IGBP Congress in June 2003 (Banff, Canada), where PICES was represented by the Science Board Chairman, Dr. Ian Perry.

IGBP 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.
- A joint PICES/GLOBEC issue of PICES Press (Vol. 11, No. 1) was published in February 2003. The issue is focused on the results from PICES XI and the 2nd GLOBEC Open Science Meeting held sequentially in Qingdao, People’s Republic of China, in October 2002.
- PICES and GLOBEC worked together to organize the 3rd Zooplankton Production Symposium on “The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Ocean” (May 20-23, 2003, Gijón, Spain).
- The GLOBEC Focus 3 Working Group on *Linking biophysical and upper trophic level models* and PICES MODEL Task Team are the key players in the Study Group on *Extending ecosystem models to the basin scale*. The first workshop of this Study Group was held May 28-June 2, 2003, in Cambridge, UK. The second workshop is planned at the same venue in October 2003. It is expected that this activity will result in publication of a background/review paper in *Science* in 2004.
- The objectives of the Science Board Symposium on “Human dimensions of ecosystem variability” at PICES XII

(October 10-18, 2003, Seoul, Republic of Korea) are highly relevant to activities of the GLOBEC Focus 4 Working Group on *Feedbacks from the changes in marine ecosystem structure*, and by the invitation from PICES, GLOBEC agreed to co-sponsor the Symposium by supporting a keynote speaker, Dr. Lawrence Hamilton (U.S.A.).

- PICES will co-sponsor a GLOBEC/SPACC Workshop to compare long-term data on small pelagic fishes from the Kuroshio/Oyashio system with those of other ecosystems in the Pacific and Atlantic Oceans to better understand mechanisms which govern regime shifts (December 8-10, 2003, Tokyo, Japan).
- PICES scientists were, and will continue to be, active participants of planning meetings for a new program on *Ecosystem Studies of Subarctic Seas* (ESSAS). The first meeting was held May 25-28, 2003, in Bergen, Norway; and the second meeting is planned for the coming November. ESSAS is being developed as an international comparative field program that may eventually become a regional GLOBEC program. Planning for ESSAS would benefit from efforts to synthesize current knowledge, and as a first step in this direction, PICES proposed that GLOBEC, PICES and ICES hold a joint workshop in 2004-05 on the comparison of factors controlling the biomass, species composition, and fate of zooplankton (including micro-zooplankton, gelatinous zooplankton, and micronekton such as euphausiids) in the Bering and Barents Seas.

IGBP Joint Global Ocean Flux Study (JGOFS)

- A collection of contributed papers from JGOFS-related field programs in the North Pacific was published as a special JGOFS/PICES issue of *Deep-Sea Research II on North Pacific Biogeochemical Processes* (Guest editors: T. Saino, A. Bychkov, C.-T. Chen and P. Harrison). The issue includes an overview and 27 papers by authors from Canada, Japan, China-Taipei and Russia.
- Selected papers from the PICES/JGOFS Topic Session on “Plankton size classes, functional groups and ecosystem dynamics:

Causes and consequences” at PICES X comprise a special issue of *Progress in Oceanography* (Guest editors: A. Peña and A. Bychkov) published in September 2003. The issue includes 11 papers by authors from Canada, Chile, Japan, Korea and U.S.A.

- A collection of invited papers on *JGOFS North Pacific Synthesis* will be published in a special issue of *Journal of Oceanography* (Guest Editors: T. Saino, A. Bychkov, C.T.A. Chen and P. Harrison) in spring 2004. A CD-ROM with data sets obtained during the *North Pacific Process Studies* will be prepared by the Japan Oceanographic Data Center (JODC) and circulated at the same time.
- Posters summarizing activities of the PICES WG 13 on *CO₂ in the North Pacific* and WG 17 on *Biogeochemical data integration and synthesis* were presented at the 3rd JGOFS Open Science Conference, held May 5-8, 2003, in Washington, DC, U.S.A.

IGBP Surface Ocean-Lower Atmosphere Study (SOLAS)

- Iron enhancement experiments are an important part in the agenda of both SOLAS and PICES. All initial planning for iron enhancement experiments in the subarctic Pacific was made under the PICES umbrella. Recommendations from the PICES Workshop on “Iron Fertilization Experiment in the Subarctic Pacific Ocean” (October 2000, Tsukuba, Japan) were used to design the Japanese Subarctic Pacific Iron Experiment for Ecosystem Dynamics Study (SEEDS) in the western North Pacific (summer 2001) and the Canadian Subarctic Ecosystem Response to Iron Enrichment Study (SERIES) in the eastern North Pacific (summer 2002). The results of these experiments will be published as special issues of primary journals in 2004.
- A PICES IFEP Workshop on “*In situ* iron enrichment experiments in the eastern and western subarctic Pacific” will be held February 10-12, 2004, in Victoria, Canada.
- A 1½-day joint Canadian-SOLAS/PICES session on “Response of the upper ocean to mesoscale iron enrichment” will be held at

the ASLO (American Society of Limnologists and Oceanographers) meeting, February 15-20, 2004, in Honolulu, U.S.A.

IGBP Ocean Biogeochemistry and Ecosystem Analysis Program (IMBER or OCEANS)

- PICES is interested in the development of a new project on ocean biogeochemistry and ecology, and sent representatives to the International Open Science Meeting on “Ocean Biogeochemistry and Ecosystems”, held in January 2003, in Paris, France.

WCRP Climate Variability and Predictability (CLIVAR) Programme

- A 1-day PICES/CLIVAR Workshop on “Climate variability in the Pacific and its impact on the marine ecosystem” was held October 20, 2002, in Qingdao, People’s Republic of China (in conjunction with PICES XI). A follow-up PICES/CLIVAR Workshop on “Scale interactions of climate and marine ecosystems” will be convened in October 2004, in conjunction with PICES XIII (Honolulu, U.S.A.). A planning meeting for the workshop was held in October 2003, at PICES XII.

Scientific Committee on Oceanic Research (SCOR)

- PICES and SCOR have many coinciding interests, and PICES scientists have been important contributors to certain SCOR activities. In 2002, presentations by Dr. Alexander Bychkov (PICES Executive Secretary) at the 26th SCOR General Meeting, and by Dr. Edward Urban (SCOR Executive Director) at PICES XI clearly demonstrated the positive benefits of interactions between SCOR and PICES. This year, Dr. Vladimir Radchenko (PICES Science Board Vice-Chairman) attended the 36th SCOR Executive Committee meeting, and Dr. Akira Taniguchi (SCOR Vice-President) participated in PICES XII, to review and discuss existing and future cooperation between the two organizations. Relationships with GLOBEC, JGOFS and SOLAS are reflected above. Other on-going collaborations between PICES and scientific projects and programs, working groups and

activities established/co-sponsored by SCOR are listed below.

- The overlapping scientific interests of PICES and SCOR-IOC WG 119 resulted in PICES’ involvement in planning and organizing the International Symposium on “Quantitative ecosystem indicators for fisheries management”, to be held March 31-April 3, 2003, in Paris, France. PICES is represented on the Scientific Steering and Organizing Committees for this symposium and provides the use of its web site for on-line registration and abstract submission.
- The SCOR-IOC Advisory Panel on Ocean CO₂ recognized activities of the PICES WG 17 on *Biogeochemical data integration and synthesis* (as well as its predecessor, PICES WG 13 on *CO₂ in the North Pacific*) as essential for improving the overall quality of oceanic CO₂ measurements and resolving data synthesis issues, and adopted PICES as a regional coordination group for Pacific carbon work.
 - To foster international cooperation towards the integration and synthesis of the global CO₂ survey data, IOCCP (International Ocean Carbon Coordinated Project) and PICES collaborate on developing the global database for CO₂ and CO₂-related data, and work on involving other regional groups such as CARINA and the CLIVAR Pacific Panel in this project.
 - A report on *CO₂ in the North Pacific* published in the *PICES Scientific Report Series* (No. 24) in June 2003, summarizes the research and technical activities that have been conducted by member nations of PICES, to synthesize CO₂ data in the North Pacific, and to provide a comprehensive picture of the anthropogenic CO₂ distribution in this region. The report was circulated using both PICES and the SCOR-IOC Advisory Panel mailing lists.
 - A joint IOCCP/PICES Workshop on “Ocean surface pCO₂ data integration and database development” will be held January 13-17, 2004, in Tsukuba, Japan.
 - IOCCP provided US \$6,000 to PICES for the publication of the “Guide of best

practices for oceanic CO₂ measurements and data reporting” being prepared by the PICES WG 17 on *Biogeochemical data integration and synthesis*, to ensure a large print run. Publication is expected in 2004 in the *PICES Scientific Report Series*.

- SCOR-IOC Advisory Panel Ocean CO₂ and IOCCP are invited to participate in the planning and co-sponsor a session on “The impacts of climate change on the carbon cycle in the North Pacific”, to be convened in conjunction with PICES XIII (October 2004, Honolulu, U.S.A.).
- Activities and products of the PICES WG 15 on *Ecology of Harmful Algal Blooms in the North Pacific* are complementary to the efforts of the SCOR-IOC GEOHAB Program. PICES is prepared to discuss involvement in the development/realization of the GEOHAB Implementation Plan by assisting with the coordination of national efforts in the North Pacific.
- SCOR provided two grants to support the travel of scientists from countries with “economies in transition” to scientific meetings organized by PICES: US \$7,000 for the 3rd Zooplankton Production Symposium (May 19-23, 2003, Gijón, Spain); and US \$5,000 for PICES XII (October 10-18, 2003, Seoul, Republic of Korea).

Intergovernmental Oceanographic Commission (IOC)

- IOC and PICES agreed to cooperate on four fronts: (i) ecosystem monitoring (see description under GOOS); (ii) ecosystem indicators (see description under SCOR); (iii) CO₂ data integration and synthesis (see description under SCOR); and (iv) harmful algal blooms (see below).
- A CD-ROM with the PICES Scientific Report No. 23 on *Harmful algal blooms in the PICES region of the North Pacific* was prepared for IOC/UNESCO training courses for harmful algal bloom scientists and managers in developing countries.
- The IOC HAB Programme has already invited PICES to become an equal partner in

HAE-DAT, a IOC/ICES Harmful Algal Event meta-Database which has already compiled 15 years of data from the Western Atlantic, with an idea to build one single global database on HAB occurrences and impacts. A PICES-IOC Workshop on “Harmful algal blooms - harmonization of data” at PICES XII was convened to explore and discuss the interest of PICES member countries in establishing a common database and integrating this database with HAE-DAT.

Global Ocean Observing System (GOOS)

- PICES and GOOS started a dialogue in order to explore the possibility of developing a joint GOOS and PICES approach to ocean observations in the North Pacific, and to define the direction that PICES should take in integrating its regional interests with GOOS.
- PICES has initiated several projects of direct relevance to GOOS: development of the North Pacific Ecosystem Status Report, North Pacific Continuous Plankton Recorder Program, inter-laboratory method comparisons of measurement technique for carbonate parameters in seawater, etc.
- A MONITOR Workshop to “Examine and critique a North Pacific Ecosystem Status Report” at PICES XII (October 10-11, 2003, in Seoul, Republic of Korea) and a joint PICES/PaCOS Workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific” (November 20-22, 2003, in Victoria, Canada) are of direct relevance to GOOS.

International Council for the Exploration of the Sea (ICES)

- PICES and ICES worked together to organize the 3rd Zooplankton Production Symposium on “The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Ocean” (May 20-23, 2003, Gijón, Spain).
- At the 2002 ICES Annual Conference, Dr. Ian Perry presented a PICES proposal that included four “themes” which might be of interest for enhanced interactions between ICES and PICES: (i) *teleconnections* -

investigations of whether there is a similarity of forcing and then comparisons of responses in the Atlantic and Pacific Oceans; (ii) *ecosystem reporting* - evaluating, summarizing and conveying the state of marine ecosystems; (iii) *ecosystem-based approaches to the management of marine resources*; and (iv) *harmful algal blooms*. These “themes” were recognized by ICES as affording opportunities for fruitful cooperation.

- To initiate co-operation in specific areas, PICES representatives attended annual meetings of the ICES *Cod and Climate Change* (CCC) Program (April 2002, Copenhagen, Denmark), the ICES/GOOS Steering Group (April 2003, Nantes, France), the ICES WG on *Introductions and transfers of marine organisms* and the ICES/IOC/IMO Study Group on *Ballast waters and other ship vectors* (March 2003, Vancouver, Canada).
- Teleconnections:
 - PICES proposed that PICES, ICES and GLOBEC co-convene a workshop (or series of workshops) in 2004/05, to develop comparisons of zooplankton population variability among the world’s oceans, in particular between the North Pacific and North Atlantic;
 - PICES proposed that PICES, ICES and GLOBEC co-convene a joint workshop that focuses on the comparison of the factors controlling the biomass, species composition, and fate of zooplankton (including microzooplankton, gelatinous zooplankton, and micro-nekton such as euphausiids) in the Bering and Barents Seas. The workshop could be the precursor of a larger, more comprehensive examination of the full ecosystems of all of the sub-arctic seas.
- Ecosystem reporting:
 - The ICES-GOOS Steering Group and PICES’ MONITOR Task Team should work together to identify opportunities for common sampling approaches and techniques (to facilitate North Pacific – North Atlantic comparisons), and in that context, collaborate on implementation of ferry box systems for continuous

underway observations, and the development of biophysical models of these marine systems;

- A 2-day MONITOR Workshop at PICES XII was intended to identify what should be addressed in the North Pacific Ecosystem Status Report, using relevance to management decisions and relation to other pieces in other areas of the North Pacific as selection criteria. Dr. Keith Brander (ICES) was invited to participate in this workshop at PICES’ expense.
- Ecosystem-based management science:
 - ICES accepted PICES’ invitation to co-sponsor a Topic Session on “Ecosystem-based management science and its application to the North Pacific” at PICES XII, by identifying and supporting the travel expenses of a keynote speaker, Dr. Chris Frid (Chairman of the ICES Working Group on *Ecosystem effects of fishing activities*);
 - A new Working Group on ecosystem-based management issues is expected to be established by PICES. Cooperation between this PICES Working Group and the ICES Working Group on *Ecosystem effects of fishing activities* should be advanced by exchanging representatives and organizing joint meetings and workshops;
 - The overlapping scientific interests of ICES and PICES in this area resulted in their involvement (jointly with SCOR, IOC, FAO, GLOBEC, etc.) in planning and organizing the International Symposium on “Quantitative ecosystem indicators for fisheries management”, to be held March 31-April 3, 2004, in Paris, France.
- Species introductions:

The following steps are suggested to further collaboration between the two organizations:

 - Participation of PICES representatives in the annual meetings of the ICES WG on *Introductions and transfers of marine organisms* (WGITMO) and ICES/IOC/IMO Study Group on *Ballast waters and other ship vectors*

- (SGBOSV) in March 2004, in Italy;
- Participation of representatives of WGITMO (and/or SGBOSV) in the meeting of PICES WG 15 (or HAB Section, if formed) and a Topic Session on “Natural and anthropogenic introductions of marine species” to be held during PICES XIII (October 15-23, 2004, Honolulu, U.S.A.);
- A joint ICES/PICES workshop on scientific issues related to *introductions and transfers of marine organisms* in 2005 (possibly in conjunction with the annual meetings of WGITMO and SGBOSV).

North Pacific Anadromous Fish Commission (NPAFC)

- In March 2002, NPAFC and PICES, along with NASCO (North Atlantic Salmon Conservation Organization), IBSFC (International Baltic Sea Fishery Organization) and ICES, co-sponsored an international symposium on “Causes of marine mortality of salmon in the North Pacific and North Atlantic Ocean and in the Baltic Sea”. A proposal was received to consider holding an international scientific symposium on “Factors affecting mortality of salmon at sea” in 2005 or 2006, in Europe, with the same group of sponsors.
- Dr. Douglas M. Eggers attended the PICES North Pacific Ecosystem Status Report Workshop in August 2003, and presented a report on the status of North Pacific salmon on behalf of NPAFC, as a contribution to the *North Pacific Ecosystem Status Report*.
- At a meeting between the Chairman of PICES Science Board and the Chairman of NPAFC CSRS Committee, it was recommended that (i) PICES issue a “formal invitation” to NPAFC to present a report on the status of North Pacific salmon at each PICES Annual Meeting (the most appropriate venue within PICES for presentation of this report was left for discussion in PICES); and (ii) NPAFC consider an invitation to PICES to present the North Pacific Ecosystem Status Report to NPAFC Annual Meetings.
- It is proposed that a 3-day joint NPAFC-

PICES Symposium with the working title “State of Pacific salmon and their role as indicators of the health of North Pacific ecosystems” be held in 2005, in conjunction with the NPAFC Annual Meeting in Korea, in part to celebrate Korea becoming a member of NPAFC.

Other regional International Fisheries Organizations

- The Inter-American Tropical Tuna Commission (IATTC) and the International Pacific Halibut Commission (IPHC) provided information on species of their concern for the first PICES *North Pacific Ecosystem Status Report*.

Census of Marine Life program (CoML)/Sloan Foundation

- In 2002, PICES was awarded a grant of US \$45,000 from the Alfred P. Sloan Foundation to produce (by December 31, 2003) a report for the Census of Marine Life entitled *Marine life in the North Pacific Ocean: The known, unknown and unknowable*.
- As a part of the process of developing this report, as well as for a PICES North Pacific Ecosystem Status Report, PICES and CoML held in 2003, two regional workshops: “Okhotsk Sea and adjacent areas” (June 4-6, Vladivostok, Russia) and “Status of the East China Sea and Yellow Sea ecosystems” (October 9-10, Seoul, Korea), to summarize and review available information in each region of interest.
- A PICES/CoML *Regional marine life expert Workshop* will be held in November 2003 (Sidney, Canada) to discuss the final draft of the report for CoML.

EVOS Gulf of Alaska Ecosystem Monitoring and Research Program (GEM)

- EVOS/GEM agreed to fund the sample collection and analysis for the north-south transect of the PICES Continuous Plankton Recorder (CPR) survey from 2004 to 2006, at the level of US \$120,000 per year.
- EVOS/GEM contributed US \$16,000 for the development of the *North Pacific Ecosystem Status Report* in US FY 2003 (October 1,

2002-September 30, 2003) and US \$16,600 for the continuation of this work in *US FY 2004* (October 1, 2003-September 30, 2004). These grants include support for the MONITOR Workshop to “Examine and critique a North Pacific Ecosystem Status Report” (October 10-11, 2003, Seoul, Korea), and the PICES/PaCOS Workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific” (November 20-22, 2003, Victoria, Canada).

North Pacific Research Board (NPRB)

- The North Pacific Research Board (U.S.A.) agreed to fund the sample collection and analysis for the east-west transect of the PICES Continuous Plankton Recorder survey of the North Pacific and southern Bering Sea at the level of US \$185,000 for two years, from July 2003 to June 2005.

Pacific Coastal Observing System (PaCOS)

- Southwest Fisheries Science Center (National Marine Fisheries Service/NOAA, U.S.A.) offered US \$18,200 to facilitate the gathering and coordination of potential international PaCOS (Pacific Coastal Observing System) contributions, and to design basic governance structure options for coordinating biological observations between the United States, Canada and Mexico.
- A joint PICES/PaCOS Workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific” will be held in November 20-22, 2003, in Victoria, Canada. The workshop will be co-sponsored by EVOS/GEM.

VII. PICES Intern Program

See GC Agenda item 9 for details.

VIII. PICES database

The general functions of the PICES database are to hold and update information of all the people who attended meetings, members of PICES groups, libraries and organizations, meetings, abstract submissions, meeting finances (the tracking of registration fee payments, financial

support grants, etc.), as well as to generate various printouts such as participation lists, lists of papers sorted by session/country/speakers, confirmation letters to meeting participants regarding their presentations, meeting schedules, registration fee payment summaries, mailing list labels, poster session labels, nametags etc.

The database was constructed after PICES X, and tested for the first time at PICES XI in October 2002 (Qingdao, People’s Republic of China). The database was subsequently updated, improved and cleaned from duplication and programming errors in 2003. Some tables and functions in the database were modified to improve on-line registration and abstract submission for various meetings. The improved database was tested at the PICES/GLOBEC/ICES Zooplankton Production Symposium in May 2003 (Gijón, Spain).

A new utility was written to create the “Index of Authors” table. This table is a part of every “Book of Abstracts” prepared for meetings organized or co-sponsored by PICES. Before this new function, the “Index of Authors” was created manually, which was tedious. Now it is generated automatically, and that assures accuracy and allows easy update due to last minute changes. This utility has been successfully tested during the preparation for PICES XII.

IX. PICES web site

This form of communication is extremely important, and should be a priority within PICES. Unfortunately, due to the lack of expertise at the Secretariat and the limited financial resources, the current PICES web site is badly out-dated and in need of a major overhaul. At the 2003 interim Science Board/Governing Council meeting, the Secretariat was requested to develop a plan to improve the web site for discussion at PICES XII. This plan includes three important aspects: (1) immediate updating of material and ongoing maintenance of the web site; (2) longer-term re-design of the web site; and (3) determining and providing information for the web site.

Immediate updating and ongoing maintenance of the web site

- Ms. Julia Yazvenko, PICES' Administrative Assistant, was tasked with the responsibility of maintaining the web site on a regular basis;
- Additional funds need to be allocated every year under "Contractual Services" to assist in maintaining the web site;
- All Annual Reports, Scientific Reports and Newsletters will be added to the web site immediately after its re-design.

Re-design of the web site

In July 2003, PICES signed a 6,000-dollar contract with *Sage Internet Solutions Ltd.* to re-design the PICES web site. The re-design will:

- Improve the web site esthetically
 - Templates, Style Sheets and/or server-side includes will be used to maintain a consistent look and feel throughout the entire site;
- Make the web site user-friendly
 - Local search engine will provide easy access to all of the key areas of the site, while not hiding or burying any important information;
 - When searching the site by designated fields, matching results will be listed on a smaller page, eliminating lengthy scrolling and making the pages more printer-friendly;
 - On-line meeting registration and abstract submission will be advanced by using a common registration area;
- Enhance communication within various groups

- Each Committee, Working Group, Project and the CCCC Program will have their Pages on the web site;
- The "*Discussion Club*" feature will allow members of the Committees, Working Groups and CCCC Program to edit their products on-line;
- The "*ListServ*" system will improve distribution of information within the group.

Determining and providing information for the web site

- The Secretariat cannot be responsible for determining what information goes onto the web site;
- Members of Science Board and Governing Council were requested to provide the Secretariat with suggestions of the information that is necessary on the uppermost levels of the website by June 10 (This Action item #16.4 of the 2003 interim Science Board/Governing Council meeting was not implemented);
- All Committees and the CCCC Program, including Working Groups, Task Teams and Advisory Panels, were requested to discuss and identify what information should be included in the PICES web site, in particular for their group page, and how this information should be provided to the website (i.e. the "flow" of information from Committee. Responses to the Secretariat and Science Board were expected by August 1, for circulation prior to PICES XII (This Action item #16.3 of the 2003 interim Science Board/Governing Council meeting was not implemented).

GC Endnote 4

Report of 2003 interim Governing Council meeting

The Governing Council met from 13:30-17:30 on April 9, 2003, immediately after the first joint interim Science Board/Governing Council meeting. All Contracting Parties were represented at the meeting. The Chairman, Dr. Vera Alexander, also invited Science Board members to attend. She welcomed the participants (*GC-IM Endnote 1*) and reviewed the provisional agenda. One addition – approval of the report of interim Science Board/Governing Council meeting - was made as Agenda Item 1. Canada proposed the adoption of the agenda (*GC-IM Endnote 2*), seconded by the Republic of Korea.

Agenda Item 1. Report of 2003 interim Science Board/Governing Council meeting

The Chairman noted that the first interim Science Board/Governing Council meeting (April 7-9, 2003) was very worthwhile, and that all member countries and Standing Committees and Scientific Programs profited from the experience of having Science Board meet with Governing Council. Council approved the report and complimented the Science Board Chairman, Dr. Ian Perry, on his excellent work in preparing for and convening the meeting.

Agenda Item 2. Preliminary Report on Administration for 2003

The Executive Secretary summarized the activities of the Organization and the Secretariat since PICES XI. The Chairman noted further improvements in the timeliness of payments of annual fees to the Organization from most member countries, and thanked the United States, Japan, Canada and Russia for their performance. The Republic of Korea reported that they will pay the 2003 annual fee within their second fiscal quarter. The People's Republic of China stated that they will attempt to pay the 2003 annual dues and the outstanding balance from 2002 by September 2003.

Council reviewed the external funding and voluntary contributions received since PICES

XI, and thanked Science Board and the Secretariat for their efforts. Dr. Richard Marasco noted that funding constraints can impede the improvement of the Organization, and therefore fund-raising is an essential function of the Finance and Administration Committee (F&A). However, various foundations in the United States are more inclined to fund specific projects, and for F&A to proceed effectively, proposals developed by the Science Board and/or Scientific Committees are needed.

The discussion that followed focused on potential funding sources for specific activities initiated by PICES. Dr. George Boehlert suggested that the expertise in micronekton in PICES could form the focus of a workshop followed by a pilot project for the Census of Marine Life. There are no pilot projects that target the mid-water regions of the world ocean, and PICES could organize this effort. He also recommended contacting NOAA Global Programs about helping to fund the publication of the "Guide of best practices for oceanic CO₂ measurements and data reporting". Dr. Alexander suggested the communication and cooperation with regional scientific research efforts in the North Pacific such as the North Pacific Research Board. She also indicated that PICES should consider pairing with some other entities to apply for funding for educational/training/outreach projects.

Agenda Item 3. Membership and observers from other countries

Mexico

At PICES VIII (October 1999, Vladivostok, Russia), Council adopted a resolution reflecting a strong interest in having Mexico accede to the PICES Convention (Decision 99/A/5). This interest was confirmed at PICES IX (October 2000, Hakodate, Japan), and during a visit of a PICES delegation to Mexico (La Paz) in May 2001 (Decision 00/A/6). Progress in developing PICES-Mexico relations since PICES X is reflected in the 2002 Annual Report.

At last year's Annual Meeting, Council discussed future actions to accelerate the process in having Mexico accede to the PICES Convention. It was noted that even though the Mexican scientific community has a strong interest for Mexico to join PICES, implementing recommendations from the 2001 joint PICES/Mexico meeting in La Paz is going slower than expected.

One of the recommendations at PICES XI was to send a formal invitation letter to the Mexican Ministry of Foreign Affairs, but another suggestion was that PICES should continue its effort through contacts with the Directors of Mexican marine research institutes and the Mexican National Oceanographic Committee. Council instructed the Chairman and Executive Secretary to explore both approaches.

The Executive Secretary reported on the correspondence with Dr. Patricio A. Bernal (IOC Executive Secretary and Assistant Director-General of UNESCO) and Dr. Daniel-Lluch-Belda (organizer of the 2001 joint meeting in La Paz). They both suggested that the National Oceanographic Committee is the right Mexican body to approach to coordinate Mexico's intention to join PICES. Dr. Bernal indicated that it is the only body that represents the Mexican Government above all institutions, agencies and universities in ocean research and related matters, and the coordination offered by the National Oceanographic Committee would be extended to other areas, including, especially, the environment and fisheries.

After a lengthy discussion, Council approved the following actions:

- To send a formal letter inviting Mexico to join PICES through the Embassy of Mexico in Canada;
- To continue contacts with the Mexican National Oceanographic Committee, including a meeting of PICES representatives with Ing. Marco Polo Bernal (Undersecretary of State on Education and Investigation Technologies and Mexican representative on IOC) at the 36th Session of the IOC Executive Council and/or the 22nd Session of the IOC Assembly, in June 2003;

- To encourage the Directors of Mexican marine research institutes represented at the joint meeting in La Paz to send letters to the National Oceanographic Committee expressing their interest for Mexico to join PICES;
- To explore the practical value of another visit of a PICES delegation to Mexico.

Democratic People's Republic of Korea

At PICES XI, the Republic of Korea advocated that the Twelfth Annual Meeting in Seoul is a good opportunity to involve scientists from the D.P.R. Korea in PICES activities. The Executive Secretary was requested to find an appropriate way of sending invitation letters and information about PICES XII.

A preliminary list of contacts was prepared with assistance from the Center for East Asian Studies (Monterey Institute of International Studies, U.S.A.). More information on potential contacts and appropriate contact procedures with the D.P.R. Korea is needed and will be requested from the Ministry of Maritime Affairs and Fisheries (Republic of Korea) and the State Oceanic Administration (People's Republic of China). Considering the current political situation in the region, Council agreed to defer sending invitation letters to the D.P.R. Korea until a more appropriate occasion arose.

Agenda Item 4. PICES Intern Program

The PICES Intern Program was approved in 1999 (Decision 99/A/7) and commenced in 2000. At PICES XI, Council examined the results from the first three years of the Intern Program, and concluded that the Organization and member countries are benefiting from the Program, and that it should be continued.

Ms. Natalya Bessmertnaya (TINRO-Center, Russian Federation) completed her term on March 21, 2003, and Mr. Chuanlin Huo (National Marine Environmental Monitoring Center, State Oceanic Administration, People's Republic of China) is expected to start his term in April 2003.

The Intern Program was not budgeted for in the years 2000-2002, and has been financed solely by voluntary contributions. At PICES X, Council approved the use of registration fees collected from the Annual Meetings to finance the Program (Decision 01/A/4(iv)), but noted that this will limit the ability of the Organization to support high priority projects identified by Science Board. The Executive Secretary reported that according to the instructions from Council, letters were sent (March 3, 2003) to invite voluntary contributions from member countries to support the Intern Program in 2003 and beyond. At the meeting, Mr. Douglas Bancroft confirmed that in addition to the annual fee, Canada agreed to provide \$10,000 in support of the 2003 Intern Program. Council commended Canada for its contribution and requested other member countries to examine the possibility of making voluntary contributions to the Intern Program, and inform the Secretariat on this matter by May 31, 2003.

At PICES XI, Council decided to re-visit the guidelines for recruiting and selecting interns, methods of advertising, as well as the level of stipend provided to the intern. Dr. Laura Richards worked with the Executive Secretary on these issues. The following recommended changes were accepted by Council:

- To advertise the Intern Program on the PICES web site;
- To encourage national delegates to take additional measures to advertise the Intern Program within their countries;
- To require that applicants send a copy of their application to the PICES Secretariat.

These changes are to be included in the *Guidelines for application and selection procedure* section for the Intern Program, and the revised document posted on the PICES web site by April 30, 2003.

The Executive Secretary presented (see table below) a comparison between the stipend (maximum 1-year term) for PICES interns and fellowships (2-3 year term) provided by the National Science and Engineering Research Council of Canada (NSERC). It was agreed that F&A will review this information and discuss

the level of stipend for the interns at PICES XII.

Stipend/Fellowship	Per year before tax	Per year after tax
PICES Internship	\$24,000	\$24,000
Postdoctoral Fellowship	\$35,000	\$27,838
NATO Science Fellowship	\$33,000	\$26,061
Visiting Fellowship for Canadian Government Labs	\$39,000	\$30,878

It was also suggested that an expanded Intern Program that includes scientific interns, in addition to administrative interns, might be valuable. Funding opportunities for such extension have to be explored by national delegates and the Secretariat.

Agenda Item 5. PICES Visiting Scientist Program

In the last 2-3 years, Science Board has recommended, subsequently approved by Governing Council, an increasing variety and number of activities for scientists working toward achieving PICES scientific goals. Evidence of rapid growth is apparent in the number of events in which the Organization is involved, and in the scope and variety of its publications. Increasing activity in PICES reflects a growing interest among scientists of member countries to look beyond their own national jurisdictions for solutions and answers to many of society's pressing questions about the health and functioning of marine ecosystems. Despite these growing societal pressures on marine ecosystems, there has been no consensus among member countries on the level of financial or human resources required to sustain the cooperative activities of their scientists. Council has endorsed increasing staffing levels at the PICES Secretariat, but only if it can be implemented within the inflation adjusted annual contribution.

At PICES X, Council approved the PICES Visiting Scientist Program (Decision 01/A/6) with two main objectives: (i) to provide professional development of marine scientists and managers from PICES member countries; and (ii) to strengthen the capacity of the Organization to develop and implement projects that have high priority for PICES and member countries. The Program is seen as an opportunity to improve the functioning of the Organization without increasing annual contributions. It provides an opportunity for member countries and/or national agencies to contribute human resources to support key projects of the Organization, which are also of specific interest for country/agency, e.g. such as the development of the North Pacific Ecosystem Status Report. The expectation was to commence the Visiting Scientist Program in 2002, but despite this opportunity, no member country or national agency has taken advantage of the Program.

At PICES XI, Council reviewed the Program and discussed ways for implementing it in 2003 and beyond. It was noted that the Program should be more widely advertised, the description re-formulated and alternative mechanisms to fund the Program be considered. Dr. Laura Richards worked with the Executive Secretary on these issues. A draft report was presented to Council for review:

Advertising

It was generally accepted that the Visiting Scientist Program should be advertised on the PICES web site, and that national Delegates should be encouraged to take additional measures to advertise the Program within their countries.

Funding

Council also agreed that the Visiting Scientist Program should be open for funding from various sources, such as:

- *Secondment of experts by national agencies or other international organizations:*
An example of an existing arrangement is the secondment of experts by the National Marine Fisheries Service (NMFS) of NOAA

to the Intergovernmental Oceanographic Commission (IOC). The secondment is governed by an MOU developed between IOC and NMFS/NOAA. The MOU spells out the terms of reference for the tasks, responsibilities, duration, as well as the legal terms. Dr. Hyung-Tack Huh also informed Council that KORDI is using the same approach to send their experts to IOC. The PICES Visiting Scientist Program was designed using the IOC Visiting Scientist Program as example, and currently includes the secondment from national agencies as the only mechanism to deploy a member of their staff to the Secretariat. Dr. George Boehlert noted that a variant of this is the NMFS/NOAA rotational assignment program (4-6 months) to advance agency and career, when home institute pays the salary and the NMFS Central Office pays living and travel expenses. Dr. Tokimasa Kobayashi reported that the Japanese Research Agency is establishing a program that will allow Japanese scientists to take such opportunities for overseas appointments, and he will provide Council with details.

- *Voluntary financial contributions from member countries and/or organizations (governmental or non-governmental) with interests in North Pacific marine ecosystem science:*

An example of an existing arrangement is the external funding provided to support the ICES/GLOBEC Coordinator position at the ICES Secretariat. According to the ICES Annual Report for 2001, this position was funded by voluntary contributions by 3 of 19 ICES member countries (Canada, Norway and the United States). The budget for FY 2003, based on current exchange rates, was at a level of CDN\$181,000, of which 94% was salary and benefits. The responsibilities of the office include maintaining information flow among scientists, pace and coordination of the Cod and Climate Change project within the ICES/GLOBEC context, enhancing collaboration between ICES and other organizations that contribute to the

ICES Vision, and attracting a broad range of scientists who might not otherwise participate in ICES workshops, working groups, and theme sessions. In the original prospectus for the ICES/GLOBEC Project Coordinator, regional project coordination, data management, and newsletter preparation were anticipated tasks as well.

- *Research grants from agencies for a specific task that require international cooperation to complete, and could not be done without the expertise and guidance of the scientist residing at PICES:*

For example, a visiting scientist from the western Pacific with knowledge of data sources would be invaluable for comparative studies with eastern data sources that might be more readily accessible, and conversely. The potential partners are: North Pacific Research Board, Exxon Valdez Trustee Council, etc.

Council requested Dr. Laura Richards and the Secretariat to work together to re-write the Visiting Scientist Program by the end of August. Council also asked member countries to keep track of opportunities for the Program that might be available.

Agenda Item 6. Improvement of participation and productivity of PICES committees and groups

The Executive Secretary noted that national delegates are responsible for appointing scientists with relevant expertise to various PICES subsidiary bodies, supporting attendance of these experts at the Annual Meetings and in the work of their groups, and monitoring their performance. He provided examples when member countries failed to nominate or replace their appointed experts, or support their participation at the Annual Meetings. He also reminded Council that the Review Committee discussed this issue and recommended that Contracting Parties should consider the formation of national committees to enhance and coordinate involvement of their scientists in PICES activities, and to promote activities

within PICES that have high national interest and relevance. The Chairman requested national delegates to follow up on this recommendation.

Responding to Dr. Igor Shevchenko's comment that Committee members often tend to represent their agencies' interests and not national interests, the Chairman suggested that the responsibilities of members have to be clarified at the time of their appointment. Council approved Dr. George Boehlert's recommendation that terms of reference and other relevant information for new members should be prepared by the Secretariat and circulated to national delegates.

Agenda Item 7. Audited accounts for fiscal year 2002

The Auditor's Report for *FY* 2002 was circulated by e-mail to all Contracting Parties on March 31, 2003. In the auditor's opinion, the financial statements are an accurate representation of the financial position of the Organization as of December 31, 2002. At the meeting, it was agreed that audited accounts for *FY* 2002 should be reviewed by F&A and presented to Council for approval at PICES XII.

According to the recommendation of F&A at PICES XI, bids were solicited from three auditing firms for PICES' annual external audit. One company did not respond and two bids for the annual audit fee were received: \$3,500 from *Flader & Hale*, and in the range of \$3,800-4,300 from *Moore, Roberts & Co.* Council selected *Flader & Hale* as the auditor for *FY* 2003-2005.

Agenda Item 8. Other business

Review of current publication practices

Publication activities of the Organization have expanded significantly in the last several years. The Review Committee recommended an external review of the current publication practices of PICES. At PICES XI, F&A supported this action and requested that the Executive Secretary explore the costs of having an external review of these activities, and report on the potential costs at the interim meeting of

Science Board/Governing Council. With assistance from Fisheries & Oceans Canada and the Alaska Fisheries Science Center (U.S.A.), two bids were received: at the level \$4,000-4,500 from the Canadian expert, and about \$3,500 from the US expert. Council decided to proceed with the review as soon as possible and instructed the F&A Chairman and the Executive Secretary to review the submitted proposals and select an expert for this activity.

Public outreach

Dr. Vladimir Radchenko noted that PICES has grown into a major international scientific forum in the North Pacific and now it must become more ambitious. PICES is doing a good job exploring new ideas, building cooperative approaches to key scientific questions, and communicating scientific information around the

North Pacific basin and globally. However, there is a perception that communication with the general public and decision makers is not adequate. He suggested that there is a need to do more advertising using various approaches: popular articles for newspapers and journals (University Presses, Fisheries Oceanography, EOS, Sea Grant publications were mentioned in the discussion), interview on radio and TV, news releases, distribution of PICES Press to Embassies of member countries, or even postage stamp series. Some funds are needed for this public outreach and perhaps a special budget should be set aside. Council supported his view but no decision was made. Dr. Laura Richards suggested that a set of recommendations may flow naturally from the work of the Study Group on *PICES Strategic Issues*.

GC-IM Endnote 1

Participation List

Canada

Laura Richards
Douglas Bancroft (advisor)

Japan

Tokimasa Kobayashi

People's Republic of China

Qian-Fei Liu (alternate Delegate)
Jin Ping Zhao (advisor)

Republic of Korea

Hyung-Tack Huh (alternate Delegate)

Russia

Igor Shevchenko (alternate Delegate)

U.S.A.

George Boehlert
Richard Marasco

Other

Vera Alexander (Chairman, PICES)
Harold P. Batchelder (Co-Chairman, CCCC-IP)
Alexander Bychkov (Executive Secretary)
Yukimasa Ishida (Chairman, FIS)
Stewart (Skip) M. McKinnell (Deputy Executive Secretary)
R. Ian Perry (Chairman, Science Board)
Vladimir I. Radchenko (Vice-Chairman, Science Board)

GC-IM Endnote 2

Governing Council Interim Meeting Agenda

1. Report of 2003 interim Science Board/Governing Council meeting
2. Preliminary Report on Administration for 2003
3. Membership and observers from other countries
4. PICES Intern Program
5. PICES Visiting Scientist Program
6. Improvement of participation and productivity of PICES committees and groups
7. Audited accounts for fiscal year 2002
8. Other business

GC Endnote 5

Statement on the naming of “the Sea in dispute” by Mr. Junzo Fujita (Japanese advisor)

We understand that this meeting is not a place to discuss about individual issues such as the naming of certain areas like the “Sea of Japan”. However, we have to claim our position every time we find the name “Sea of Japan” used in a document of PICES together with another name, such as “Japan/East Sea”. Our position on this issue is very simple. We are just asking the PICES Secretariat to change the incorrect name “Japan/East Sea” to the correct name “Sea of Japan”.

It is needless to say that the name “Sea of Japan” is geographically and historically, as well as internationally well established. Some countries argue that the name “Sea of Japan” became widely used from the beginning of the 20th century, as a result of Japan’s expansionism and

colonialism. But it is not true. Historically, the name “Sea of Japan” was first established in Europe from the late 18th century to the early 19th century, and has been used for more than 200 years. The results of our research undertaken last year at the British Library and at the University of Cambridge on this issue showed that 86% of the maps made in Europe since the 18th century use the name “Sea of Japan”.

If a firmly established sea name were to be changed for the political intentions of only a few countries without a valid reason, such an action would not only bring confusion in the world’s geographical orders, but also would leave a bad precedent for generations to come.

Statement on the naming of the Sea in dispute by Mr. Hyun-Churl Lim (Korean delegate)

Let me first express my gratitude to Dr. Vera Alexander and other Governing Council members for providing me with the opportunity to speak before such an esteemed group of scientists.

I would like to address the issue of naming the sea area between the Korean peninsula and the Japanese archipelago. In principle, my government holds the view that this meeting is not an appropriate forum to discuss geographical designations, even an issue of great importance to Korea such as this. However, since our Japanese colleague has presented the Japanese point of view on this, we feel it is necessary to provide you with the Korean position.

Korea is of the view that, considering the historical background to the naming of the sea area in question, as well as international practices for the designation of geographical names, it is the most reasonable solution at this stage to use both names, the East Sea and the Sea of Japan, while the countries concerned make efforts to reach an agreement on a common name. Indeed, this is in accordance with international standardization rules.

We, therefore, believe that the description of the sea area in question in the draft of the North Pacific Ecosystem Status Report appropriately reflects the current stage of development with respect to this issue, and is fully in line with the international norms and practices of cartography. The description is also in conformity with the long-standing practice of PICES when naming the sea area in question. As all of you are fully aware, PICES has been consistent in the use of both names since 1995 when describing the sea area between Korea and Japan.

PICES is an eminent scientific body, which has contributed greatly to the promotion of marine science research in the North Pacific region. We are afraid that a discussion on geographical names within PICES could adversely affect its original functions and activities. We sincerely hope that PICES will focus on its deliberations in marine scientific issues. Korea, therefore, calls upon PICES to maintain its position of using both names in its future publications, including the North Pacific Ecosystem Status Report, until such time as Korea and Japan agree on a common name. This, in turn, will help to

avoid unnecessary and time-consuming discussions on geographical names within PICES.

In closing, I wish all the participants a very productive and successful meeting, thus advancing the work of PICES as a whole.

GC Endnote 6

Tenth Anniversary PICES Organization Review

Preamble

After completing its task, the Review Committee concluded that PICES has grown into an internationally renowned Organization. It has become the major forum for advancing and coordinating marine sciences in the North Pacific, for communication among its scientists of the member countries, for exploration of new ideas and building cooperative approaches to key scientific questions. Scientists from all over the world attend its Annual Meetings, Symposia and Workshops. Publications produced by the Organization are considered to be of the highest quality. Therefore, recommendations contained in this document should be considered “course adjustments” that will hopefully lead to even greater recognition in the scientific community and the global community at large.

Introduction

In October 2001, the North Pacific Marine Scientific Organization (PICES) held its Tenth Anniversary Meeting. At the meeting, the Governing Council decided that it was time to perform an internal audit of the Organization. The view was that such an examination would determine if the original purpose of the Organization is being realized and if the structure is appropriate to achieve the defined objectives. The Governing Council approved the establishment of a Review Committee (Decision 01/A/7) that was charged with tasks specified in *Appendix A*. Review Committee membership is shown in *Appendix B*.

This report of the Review Committee contains a brief description of global scientific issues and how they have changed since the creation of PICES. This discussion is followed by a review of objectives, functions and roles of the Organization, a discussion of the integration of

multiple disciplines, a review of rules of procedure, and an identification of possible changes.

Background

Global scientific issues have changed and expanded during the first ten years of PICES. Principal issues of significance include:

- Broader recognition of the potential for multiple factors affecting ecosystem change:
 - Climate change has been a major focus of PICES, but there are other agents of ecosystem change, *e.g.* fishing, eutrophication, habitat destruction, exotic species introductions, and contaminants;
 - Better recognition of differences of “scale” - i) climate change and fishing are perceived to have basin/global scales, and ii) habitat destruction, eutrophication, species introductions, and contaminants are perceived to impact local or regional scales;
 - MacDonald *et al.* (PICES Scientific Report No. 22, 2002) suggest an integrated and systematic approach to studying these multiple factors of change, including box models, case studies, time series, and development of a “warning system” based on indicators.
- Ecosystems
 - Understanding of the present state of marine ecosystems, the factors causing changes in marine ecosystems, and attempts to manage or mitigate human-caused changes within the context of natural variation;
 - Understudied organisms - non-commercial species; hard-to-sample species; etc.

- Ocean observation networks / ocean operational modeling
 - Emphases are now placed on ocean observing systems, data distribution and integration, syntheses and forecasts – all in a timely manner.
- Ocean–atmosphere coupling
 - Understanding the interactions between atmosphere and ocean in climate variability and change – *e.g.* improved representations of oceans and ocean-atmosphere interactions in global climate models.
- Fisheries issues
 - Fluctuations of (commercial) fish stocks and their causes;
 - New trends, *e.g.*, aquaculture (coastal and offshore within exclusive economic zones);
 - Collection and exchange of fisheries data in a timely manner are problematic.
- Human dimensions
 - The human dimensions of global changes, both as causes and consequences, are becoming recognized and are being incorporated into large international programs.

Review of objectives, functions and roles of PICES

Objectives

The purpose of the Organization (Article III) is:

- (a) to promote and coordinate marine scientific research in order to advance scientific knowledge of the area concerned and of its living resources, including but not necessarily limited to research with respect to the ocean environment and its interactions with land and atmosphere, its role in and response to global weather and climate change, its flora, fauna and ecosystems, its uses and resources, and impacts upon it from human activities; and
- (b) to promote the collection and exchange of information and data related to marine

scientific research in the area concerned.

After examining these objectives, the Review Committee concluded that, while broad, they are still relevant.

The Review Committee also considered suggestions to expand the Area Concerned (Article II) to include possibly the entire Pacific Ocean. Scientific arguments in support of this suggestion include the importance of processes occurring in the tropics to conditions in the North Pacific, and comparisons between systems such as the California and Humboldt (Peru-Chile) Currents. The Review Committee does not support formal expansion at this time, as this would require opening the PICES Convention for negotiations and changes. The Review Committee noted that the scientific points in favor of expansion are valid, and that scientific initiatives, discussions, and studies between regions of the North, Tropical, and South Pacific can occur without formal changes to the PICES Convention.

Functions

Functions of the Organization are:

- (1) Identify and prioritize relevant scientific research;
- (2) Promote and coordinate scientific research that facilitates an integrated evaluation of the status of the North Pacific and its ecosystems;
- (3) Promote the collection and synthesis of data;
- (4) Promote the exchange of scientific information and data; and
- (5) Capacity building

The results of the review of how effectively these functions have been carried out by the Organization are reported below:

Function (1)

Each Scientific Committee is charged with the responsibility of developing and reviewing Strategic Plans. Existing documents have emphasized what has been done and have given little attention to the identification of future activities. Further, an explicit prioritization of

issues is currently lacking. The Science Board also has its own Strategic Plan that contains an identification of issues that require attention. However, little attention has been given to the prioritization of issues, identification of associated research activities, and coordination among scientific committees.

Function (2)

An integrated evaluation of the status of the North Pacific and its ecosystems requires the conduct of research activities in a variety of disciplines. The Standing Committees have been created to advance the understanding of critical issues in their associated disciplines and, therefore, their activities have been largely disciplinary in focus by design. While the Committees have promoted scientific research in their associated disciplines, minimal effort has been devoted to the formal identification of issues that would benefit from an integrated approach. In recent years, however, there has been an increase in the number of multi-disciplinary sessions at annual meetings co-sponsored by the Scientific Committees. In keeping with the point identified above under Function (1), co-sponsorship of these sessions has been rather *ad-hoc*, with little attempt to prioritize or follow a strategic direction. The CCCC Program is currently the main mechanism for the coordination of scientific activities that are holistic in character. The focus of this Program has been largely on climate change as a driver in marine ecosystem change. The Review Committee noted that in general there has been little effort devoted to discerning the impacts of human activities. This will change in the future as the overall theme for PICES XII (2003) is "*Human Dimensions of Ecosystem Variability*", and a 1-day Science Board Symposium will be convened on this theme to discuss the many ways that humans interact with marine ecosystems and the scientific efforts required to quantify and predict human impacts on such dynamic systems.

Function (3)

As the Organization progresses in the development of its North Pacific Ecosystem

Status Report, data collection and synthesis will become increasingly important. The collection and synthesis of data are considered broad charges and, therefore, the responsibility of all Committees and Working Groups. Little effort has been made to develop or maintain time series of critical data sets. This could possibly be due to the lack of effort on the part of Scientific Committees to identify relevant data sets and different data exchange policies. Further, limited effort has been made to follow up on findings and recommendations of most Working Groups.

Function (4)

The Technical Committee on Data Exchange (TCODE) is charged with identifying the data management requirements of PICES and developing a strategic plan to meet them. Responsibility for data exchange also rests with the Scientific Committees and programs. To date, there have been exchanges of physical and chemical data. While some biological data have been exchanged, there is a need to expand these activities, especially for fisheries data. Progress on this issue has been slow perhaps because of its complexity, standardization problems and different inter- and intra-data exchanges policies in member countries. PICES has supported Working Groups to foster these activities (*e.g.* WG 17 on *Biogeochemical data integration and synthesis*) and the creation of a Meta-database of marine data sources.

Function (5)

Capacity building is defined as the enhancement of the intellectual capital available to the Organization. To support its goals of promoting and coordinating marine scientific research, PICES must recognize the importance of capacity building. Scientific sessions convened by PICES and the work of its Scientific Committees and other groups, are important contributions to capacity building. PICES has also engaged in activities to support the transfer of knowledge to scientists new to PICES, *e.g.* the Intern Program and travel support for scientists new to PICES to attend Annual Meetings. There is a need to development an

Organizational strategy for capacity building and an Implementation Plan to facilitate this activity.

Integration of multiple disciplines

The discussion began by addressing the question, “Should there be disciplinary Committees?” Experience indicates that Committees work best when they have a disciplinary focus. Effective operation of these Committees is critical to viewing issues in a holistic manner. By providing information needed for analyses, disciplinary Committees facilitate the operations of groups that are charged with working on multi-disciplinary issues. Feedback from multi-disciplinary Working Groups and Scientific Programs to the Committees is considered to be critical to the successful operation of the Organization. The development of the North Pacific Ecosystem Status Report will necessitate input from each of the Committees.

Several Working Groups have been formed to address multi-disciplinary issues, in particular during the early years of PICES. The Bering Sea Working Group (WG 5) and Sub-Arctic Gyre Working Group (WG 6) are two examples. More recently, the Science Board has assigned multi-disciplinary issues to the CCCC Program. The success of the CCCC Program (*e.g.* Perry *et al.* PICES Scientific Report No. 22, 2002) indicates that progress is being made in addressing issues in a multi-disciplinary manner. The accomplishments of this program are considered to be due to the Program’s thematic focus (climate change as a driver in marine ecosystem change) and the development of Science and Implementation Plans. Currently, however, there is little feedback from the CCCC Program to the Committees. Several Annual Meetings have had symposia and sessions that were multi-disciplinary in character, but the follow-up or integration of the findings of these sessions into the further work of PICES has generally been lacking.

Review of existing structure

The current Organizational structure is depicted schematically in *Appendix C*. The Organization

consists of: (a) the Governing Council, (b) permanent or *ad hoc* scientific groups and committees as deemed necessary, and (c) a Secretariat.

Perceived problems

The following are some possible problems that have been identified:

Proliferation of “subsidiary bodies”

The number of “subsidiary” bodies recognized by the Organization has increased in recent years. BIO has an Advisory Panel on Marine Birds and Mammals (MBM); POC has an Advisory Panel on Data Buoys; BASS has an Advisory Panel on the Iron Fertilization Experiment (IFEP) and MONITOR has an Advisory Panel on the Continuous Plankton Recorder Survey (CPR). The duration of these Advisory Panels is frequently unclear. Further, there is no agreement on the number of such panels that should be in existence during any given period of time. “Study Groups” have also been formed to examine specific issues relating to the establishment of new activities or substructures, *e.g.*, the North Pacific Ecosystem Status Report.

Possible reasons for the proliferation of “subsidiary” bodies include:

- A need to facilitate PICES initiation, coordination, and support for specific field data collection and exchange programs (*e.g.* IFEP and CPR Advisory Panels), and
- A necessity to oversee specific activities that are perhaps too detailed for direct supervision by parent Committee, as the membership of the parent Committee is not the most appropriate for the specific task (*e.g.*, BIO and MBM Advisory Panel).

Working Groups

Scientific Committees would like to have more than one Working Group operating at the same time and/or extend the duration of Working Groups beyond three years. Three years is often considered too short if a Working Group gets a slow start or if not all members are able to attend

each meeting. Most Working Groups have indicated that they were just getting productive when their three-year term ended.

Scientific mandates

Some Committees are considered to have very broad mandates, while others believe that their mandate is too narrow. BIO's mandate, for example, spans from microbes to mammals and birds. It has dealt with this problem by establishing an Advisory Panel on Marine Birds and Mammals. FIS believes that, because of the scope of fishery issues and the stated goals of PICES, the profile of the Committee should be elevated. They would like to establish other bodies to deal with aquaculture and small pelagics issues, for example. MEQ has struggled with implementing its mandate because of the "scale" issue. Many human activities have direct effects at the local scale, whereas basin-wide effects may be non-existent or difficult to quantify.

Participation

There appears to be an increased frequency of PICES member countries failing to support attendance of their appointed experts at meetings and in the work of the Scientific Committees. Proliferation of subsidiary bodies and long duration of Working Groups implies greater costs, and perhaps even less willingness by member countries to support participation of appointed members. Lack of support by member countries may indicate marginal interest in particular activities. The Review Committee believes that Contracting Parties should consider the formation of national committees to enhance and coordinate involvement of their scientists in PICES activities, and to promote activities within PICES that have high national interest and relevance.

Some disciplines are under-represented at present, for example, meteorologists within POC, aquaculture scientists within FIS, and social scientists within the CCCC Program.

Although the intent was to nominate national GLOBEC representatives on the CCCC

Implementation Panel, recently this Panel has moved to being composed of predominantly Task Team Co-Chairmen who are not necessarily representatives of national GLOBEC Programs. This may have reduced the links of CCCC back to the national GLOBEC Programs and to the interests of member countries.

Communication

There is a general sense that PICES is doing a good job with communication, particularly with communicating science information among scientists around the North Pacific basin and globally (PICES publications have increased exponentially). A plan is in place to capture information presented at scientific sessions that is not published in the literature. However, there is a perception that PICES has not done as good a job in communicating with the general public and decision makers.

Discussion

Science Board and associated bodies

The Science Board is responsible for providing the Governing Council with recommendations on various issues of scientific interest and carrying out scientific work, including giving guidance to the Scientific Committees and Programs. It is critical that the members of the Science Board understand the goals of PICES to fulfill this charge. The Science Board should take an active role in ensuring that Scientific Committees and *ad hoc* groups are addressing issues of continued relevance to PICES. They should also take an active role in identifying opportunities to promote multi-disciplinary activities. The Science Board's Strategic Plan should provide a section on activities that facilitate addressing issues in a holistic fashion where appropriate.

Scientific Committees are responsible for keeping under review and coordinating scientific investigations in the subject or area defined by their assigned responsibilities. These groups are important because they provide PICES with an information base that is critical to the realization of its goals. Scientific Committees provide a

vehicle for national designees to bring to the attention of the Organization important issues and to mobilize expertise needed to address these issues. They also facilitate the dissemination of information to scientific counterparts in their respective member countries. This latter task and the bi-directional nature of these Scientific Committee responsibilities have perhaps not been adequately recognized.

The issue of the creation of additional disciplinary committees was also discussed, for example, Geosciences, and Social science. There is recognition that these disciplines are under-represented at present. PICES should be open to the formation of new Scientific Committees. However, the formation of additional committees should wait until the need is clearly demonstrated.

Scientific Committees should have the ability to form subsidiary bodies other than Working Groups, with the approval of the Science Board. These bodies should be formed only if the needed expertise is lacking on the parent committee. Work of these bodies should be periodically reviewed by the parent committee and recommendations made to the Science Board concerning their continued existence. Historically, two types of Advisory Panels have been formed. The first type is made up of experts that are not well-represented on the Scientific Committee (*e.g.* Marine Birds and Mammals Advisory Panel). The second type is a group of experts brought together to advise on a field study of limited duration (*e.g.* Advisory Panel on Iron Fertilization Experiment and Advisory Panel on Continuous Plankton Recorder Survey). It is suggested that the first type be renamed a "Section" of the parent committee. The duration of sections should be ongoing, with periodic review. The number of designated participants from member countries for the "Section" should not normally exceed three. The duration of Advisory Panels should be determined by the length of time required to complete the field study, and they may include as many members as is necessary to coordinate the field program and as nations are willing to support.

Working Groups are groups of experts that are established by the Governing Council with specific terms of reference based on the recommendations of the Science Board. They are expected normally to complete their work in three years. While it is believed that the existence time should be limited, it is important that the durations of these groups be flexible to facilitate their work. Further, past practice has limited the number of Working Groups in existence to one at anytime for each Scientific Committee. The Review Committee believes that there should be some flexibility in the number of Working Groups that a Scientific Committee is allowed at any one time. If there is a desire to have multiple Working Groups, the concerned Committee should make its request to the Science Board. Furthermore, there is a need for Scientific Committees to follow-up on the findings and recommendations of their Working Groups. Some of the concerns about additional costs of having more than one Working Group concurrently may be mitigated by using novel methods of operating, for example by electronic correspondence.

The Science Board has also facilitated the creation of Scientific Programs. Experience with the CCCC Program has indicated that this mechanism provides flexibility of addressing issues that are multi-disciplinary in character. Given the desire to address issues in a holistic manner, continued use of this mechanism appears appropriate. It is critical, when these programs are used, that feedback is given to the relevant Scientific Committees and that follow-up occurs on recommendations. In-addition, formation of such programs may be made clearer with the development of Science and Implementation Plans.

The Technical Committee on Data Exchange (TCODE) requires special treatment since it is a service committee. It is charged with: 1) identifying the data management requirements of PICES; 2) developing strategic plans to meet these requirements; 3) recommending establishment of *ad hoc* task groups to deal with specific functions of TCODE; 4) reviewing the progress of task groups and providing Annual Reports to the

Science Board on the work of TCODE; and 5) advising the PICES Secretariat on its data exchange activities. A review of these charges indicated that only item 5 has been adequately addressed. It was determined that the charges given to TCODE are still relevant and important to PICES especially given the desire to develop a North Pacific Ecosystems Status Report.

The Publication Committee was created in 1998. It was charged with reviewing: 1) questions of publication policy; 2) the question of translation policy; 3) the desirability of establishing a fully peer reviewed publication; 4) the desirability of establishing a PICES editorial board; and 5) other matters concerning PICES publications. At its Tenth Annual Meeting, the Committee was disbanded because it had not conducted substantive business in its last two years and because its terms of reference were viewed as outdated. The Science Board agreed to review the need for such a committee in two years. The Secretariat is tasked presently with implementing Council decisions on publication policy: e.g. utilizing peer-reviewed journals on an ongoing basis and maintaining publication of PICES Press and the Scientific Report Series. The creation and distribution of publications is critical to the success of the Organization. The view of PICES by the community at-large is heavily dependent upon the way products are made available. The PICES Scientific Report Series creates serious problems for the Secretariat, as in general: documents for publication in this series are received in poor shape, requiring staff to spend significant time editing and making revisions.

Finance and Administration Committee

At each ordinary meeting of the Governing Council, the Finance and Administration Committee (F&A) is charged with examining: 1) the audited accounts of the Council for the preceding financial year; 2) the preliminary accounts for the current financial year; 3) a budget for the ensuing financial year and a forecast budget for the following year; and 4) the administrative effectiveness of the Secretariat in particular, and the Organization in

general. While the Review Committee did not engage an in-depth examination of this Committee, it was concluded that F&A was operating satisfactorily. It was suggested that members of the Committee be requested to intensify their external fund raising activities to enhance the operations of the Organization. Lastly, it was pointed out that scheduling of meetings of the Governing Council and of the Finance and Administration Committee at the same time as scientific sessions makes it impossible for their members to attend these activities.

Secretariat

It is stated in Article VIII of the PICES Convention that, "The Council shall appoint an Executive Secretary on such terms and with such duties as it may determine." Further, it states that "the staff of the Secretariat shall be appointed by the Executive Secretary in accordance with such rules, procedures, and requirements as may be determined by the Council." At present, the staff includes the Executive Secretary, Assistant Executive Secretary, Administrative Assistant and Office Secretary.

Scientific activities sponsored and/or conducted by PICES have increased significantly since its inception in 1992 (for details see *Appendixes D and E*). PICES has grown into an internationally renowned organization and has to anticipate and plan for even further growth. The ability of the Organization to expand its activities and products is an indication of staff dedication. The size of the Secretariat has not expanded with the increased level of activity, and the structure of the Secretariat has remained unchanged since its inception. While annual contributions have increased, they have not increased at the same rate as the growth in workload (*Appendix F*). Further, the inflation-adjusted contributions have decreased for Canada, China, Japan, and the United States; remained about constant for Russia since making its initial contribution in 1995; and increased slightly for Korea since making its initial contribution in 1996 (see *Appendix G*).

The Review Committee believes that the increase in staff responsibilities warrants serious consideration of the addition of a new staff member, if it can be accommodated within the inflation adjusted annual contributions. The person occupying this position would serve as the Organization's Scientific Officer (or Science Coordinator) and be responsible for the coordination of scientific projects/programs identified by the Science Board (e.g., North Pacific Ecosystem Status Report) and capacity building. His/her specific tasks would include: (i) soliciting, compiling and editing scientific project/program reports; (ii) participation in workshop development of scientific projects/programs; and (iii) assisting in fund-raising and coordination for training and capacity building efforts. A scientist from one of the contracting parties would occupy the position. This action would allow the Assistant Executive Secretary to focus more on Secretariat operations, information management, data exchange, and web development.

The need for these actions is made apparent by the increased workload being experienced by Secretariat staff. During the past year alone, in addition to the Annual Meeting, eight inter-sessional symposia/workshops were held. Publications included three special issues of peer-reviewed journals, five PICES Scientific Reports and "A Historical Atlas of the North Pacific".

It is also recommended that some of the existing positions at the Secretariat be re-named as follows provided the act is budget-neutral:

- Assistant Executive Secretary - Deputy Executive Secretary
- Administrative Assistant - Deputy Executive Secretary on Administration
- Office Secretary - Administrative Assistant

Review of rules of procedure

The Review Committee identified three items that require change:

- Rule 1 (i) - A definition of "formal meeting" is required;
- Rule 1 (iii) - This rule should be clarified to indicate that it is the responsibility of the

contracting party to pay the expenses of its own Delegation. Delegation includes Delegates on the Council and Alternate Delegates, and experts, advisers and observers appointed to attend each formal meeting;

- Rule 18 (iii) - Meetings of the Science Board may be attended by persons other than the members only on the invitation of the Chairman of the Science Board.

The Review Committee recommends that the following wording changes be made:

- Rule 1 (i) - replace "formal meeting" with "meeting authorized by Council";
- Rule 1 (iii) - replace "its own Delegation" with "its Delegates and other nationally designated participants" or more simply "its nationally designated participants";
- Rule 18 (iii) - replace "Chairman of the Council" with "Chairman of the Science Board".

Identification of possible changes

Objectives and area of concern

No changes in the purpose of the Organization and no formal extension of the PICES area of concern are recommended at this time.

Functions

Strategic Plans

Strategic Plans of Scientific Committees and the Science Board need to be more forward-looking. The Science Board's Strategic Plan should incorporate a vision statement and objectives that include looking at issues in a holistic fashion. The document also should include the identification of issues that will become important in the next five to ten years. Prioritization of important issues should be done in these plans. More Science Board feedback to Scientific Committees is needed and this should be highlighted in the Strategic Plan. A mid-session Science Board meeting, with participation of members of the Governing Council, is needed to provide time for the Science Board to discuss direction and

prioritization of issues to stimulate the work of the Scientific Committees and Working Groups and, in general, to maintain momentum between Annual Meetings.

Collection and synthesis of data

Working Groups are the primary collectors and synthesizers of data. Each Working Group should include in its Terms of Reference a data collection/archival element and coordinate with TCODE as necessary. The Scientific Committees also have an important role to play in synthesizing and summarizing data relevant to their expertise and reporting to the Science Board or to activities such as the North Pacific Ecosystem Status Report.

Data exchange

It appears TCODE has not met its objectives as outlined in its Terms of Reference. The Science Board needs to review TCODE Terms of Reference and activities. Development of a Strategic Plan for TCODE during this year needs to be ensured. Differences in data exchange policies should be addressed in the development of the plan. Membership in TCODE should be examined to guarantee that there are strong links to national/regional data centers. A position in the Secretariat that would oversee data exchange efforts is recommended to keep this activity on track. The Ecosystem Status Report development and CCCC Program data archival will require the assistance of TCODE.

Data exchange is also the responsibility of Scientific Committees and more of this activity needs to occur on an annual basis. Strategic Plans of the Scientific Committees should address data exchange, management, and archival.

Capacity building

PICES needs a more pro-active approach for capacity building. The development of an Organizational strategy for capacity building and an Implementation Plan to facilitate this activity should be undertaken.

Integration of multiple disciplines

Integration of multiple disciplines would be facilitated by: (i) the Science Board taking an active role in the guidance of Committees and Program activities, (ii) increased feedback among multi-disciplinary groups and disciplinary Committees and vice-versa, and (iii) annually scheduled mid-session meetings of the Science Board.

Structure

Science Board

As mentioned earlier, the Science Board needs to revise its Strategic Plan. It should play a more active role in getting committees to specify and prioritize important issues, and in identifying how PICES should deal with multi-disciplinary issues. A mid-session Science Board meeting is recommended to facilitate progress in this area.

Scientific Committees

As with the Science Board, Scientific Committees also need to revise their Strategic Plans to be more forward-looking and to provide a prioritization of issues to be addressed. It is recognized that the formation of disciplinary Sections within a committee (*e.g.*, Marine Birds and Mammals within BIO) may be needed to ensure adequate representation of these disciplinary areas in PICES. After formation, the committee to guarantee an ongoing need for its existence should subject activities of the Section to periodic review.

Committees should also improve communication with their scientific counterparts elsewhere/outside of PICES through periodic reports in the PICES Press. Committees could better facilitate communication by having their own web page on the PICES web site.

There is recognition that some disciplines, such as geosciences, are not represented in PICES at present. It is suggested that PICES should be open to the formation of new Scientific Committees. However, such action should wait

until a clear interest on the part of these disciplines to be represented is expressed.

Working Groups

The Review Committee re-emphasized the need for an initial workshop or session to clearly define the issues before a Working Group is formed. Scientific Committees should have flexibility in the number of active Working Groups maintained at a particular time. Scientific Committees need to follow-up more on the findings and final recommendations of Working Groups and should consider novel ways for working groups to operate (*e.g.*, through correspondence).

Advisory Panels

It is recommended that the present definition of Advisory Panel be revised to emphasize their role in providing the scientific advice and coordination needed for specific field programs. Duration of advisory panels should be determined by the parent committee based on the duration of the field study that is under consideration.

Secretariat

The Review Committee believes that the increase in staff responsibilities warrants serious consideration of the addition of a new staff member, if it can be accommodated within the inflation adjusted annual contributions. The person occupying this position would serve as the Organization's Scientific Officer (or Science Coordinator) and be responsible for the coordination of scientific projects/programs identified by the Science Board and capacity building. A scientist from one of the contracting parties would be occupy the position. This action would allow the Assistant Executive Secretary to focus more on Secretariat operations, information management, data exchange, and web development.

It is also recommended that some of the existing Secretariat positions be re-named as follows:

- Assistant Executive Secretary - Deputy Executive Secretary,

- Administrative Assistant - Deputy Executive Secretary on Administration, and
- Office Secretary - Administrative Assistant.

Publications

Scientific Committees and the CCCC Program should assume more responsibility for editing and finalizing Working Group and CCCC Program annual reports, and their publications that appear in the PICES Scientific Report Series. Publication guidelines need to be communicated to these groups to ensure the documents meet specified standards. It is suggested strongly that an outside expert examine how the Organization currently handles the publication and distribution of scientific information, and make recommendations on how to improve the process.

Rules/Procedures

The following changes to the PICES Rules of Procedure are recommended:

- Rule 1 (i) - replace "formal meeting" with "meeting authorized by Council";
- Rule 1 (iii) - replace "its own Delegation" with "its Delegates and other nationally designated participants" or more simply "its nationally designated participants";
- Rule 18 (iii) - replace "Chairman of the Council" with "Chairman of the Science Board".

Awards

PICES has been a success because of tremendous efforts on the part of participants. Currently, there is no mechanism to recognize individuals who have contributed significantly to PICES. The Review Committee, therefore, suggests the creation of the following awards:

PICES Builder's Award

- to be awarded to those individuals who have made substantial contributions to the organization and/or the science of PICES, *e.g.*, who changed the direction of PICES, that contributed substantially to increasing its scientific reputation and/or public awareness of PICES;

- would be distinct from the Wooster Award, which is targeted more generally to individuals making significant contributions to North Pacific marine science (not necessarily to PICES);
- the award would be expected to be normally, but not exclusively, given to someone who is or has been active within PICES;
- the award is not expected to be awarded every year;
- the award would consist of a small plaque to be kept by the recipient and a large plaque with names added to be kept by the Secretariat;
- nominations would be forwarded to the Secretariat by May 15 outlining clearly the nominee's substantive contributions made to PICES;
- the Governing Council would be responsible for selecting the recipient upon recommendation of the Science Board

PICES Service Awards

- Outgoing Chairmen of Scientific and Technical Committees, Scientific Programs, and of Working Groups be recognized with a "Certificate of Service to PICES" upon completion of their term.

APPENDICES

Appendix A

Terms of Reference for Review Committee

- a. Review the objectives, functions and role of PICES in the context of changing requirements for scientific information;
- b. Consider how to integrate the multiple disciplines that make up PICES;
- c. Analyze and review the existing structure of PICES and the nature of change required to meet the needs identified in a) and b);
- d. Develop specific proposals for change, as necessary, and a plan for implementation;
- e. Review the Rules of Procedure.

Appendix B

Membership of the Review Committee

The membership of the Review Committee includes: the Chairman of the Finance and Administration Committee (Dr. Richard J. Marasco), the Chairman of the Science Board (Dr. R. Ian Perry), most recent outgoing Chairman of the Science Board (Ms. Patricia Livingston), Dr. Warren Wooster (founder and first Chairman of PICES) and one member each

from the People's Republic of China, Japan, Republic of Korea, and Russian Federation. Countries not specifically mentioned are represented by the Science Board Chairman (Canada) and the F&A Chairman (U.S.A.). Contact information for all members (alphabetical order) is listed below:

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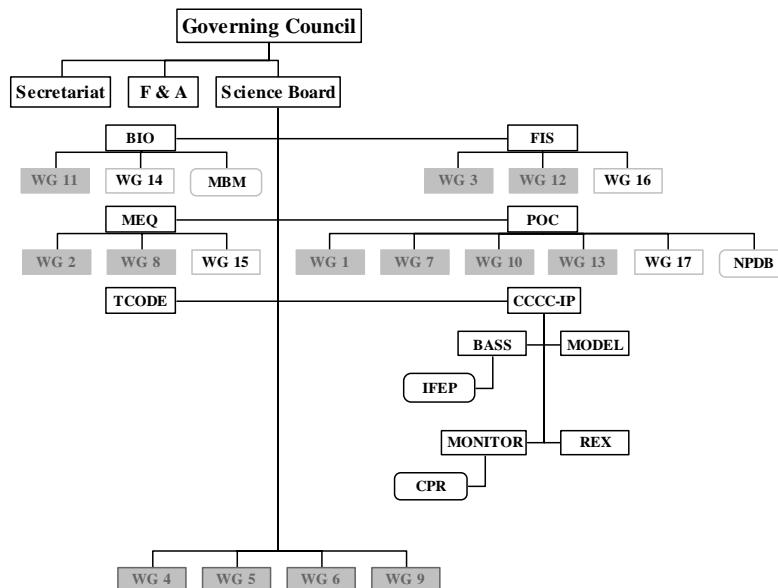
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Appendix C

North Pacific Marine Science Organization (PICES) - Organization Chart



Appendix D

PICES-sponsored inter-sessional symposia/workshops and workshops held in conjunction with Annual Meetings (excludes Working Group meetings), 1992-2002

Inter-sessional symposia/workshops

Year	Dates	Meeting	Co-Sponsors	Location
1993	September 19-23	Workshop on <i>Western subarctic circulation</i>	STA, JFA, Nemuro-city	Nemuro, Japan
1995	June 19-24	1 st Workshop on <i>The Okhotsk Sea and adjacent areas</i>	RAS, TINRO, FESU,	Vladivostok, Russia
1996	June 23-28	Workshop on <i>Conceptual/theoretical studies and model development</i>	Nemuro-city	Nemuro, Japan
1998	November 9-12	2 nd Workshop on <i>The Okhotsk Sea and adjacent areas</i>	Nemuro-city	Nemuro, Japan
1999	April 20-22	1 st Technical Workshop on <i>CO₂ method inter-comparison</i>	NIES, KEEC, JAMSTEC	Tsukuba, Japan
	May 24 – June 7	MEQ Practical Workshop on <i>Environmental assessment of Vancouver Harbour</i>		Vancouver, Canada
	August 10-14	WG 12 (Crabs and shrimps) Workshop	NMFS	Qingdao, China
2000	Jan. 31 – Feb. 3	CCCC/MODEL Workshop on <i>Lower trophic level modeling</i>	Nemuro-city	Nemuro, Japan
	March 23-26	<i>Beyond El Niño: A conference on Pacific climate variability and marine ecosystem impacts, from the Tropics to the Arctic</i>	IATTC, IPHC, ISC, NPAFC and SCOR	La Jolla, U.S.A.
	April 17-19	ICES/PICES Workshop on <i>Zooplankton ecology of the North Atlantic and North Pacific</i>	ICES	Honolulu, U.S.A.
	May 15-16	CREAMS 2000 International symposium on <i>Oceanography of the Japan/East Sea</i>	CREAMS, ONR	Vladivostok, Russia
	October 18-21	Symposium/Workshop on <i>North Pacific CO₂ data synthesis</i> (incl. 2 nd Technical Workshop on <i>CO₂ method inter-comparison</i>)	CREST/JST, MIRC and JGOFS	Tsukuba, Japan
	October 29	Workshop on <i>Factors affecting production of juvenile salmon: Comparative studies on juvenile salmon ecology between east and west North Pacific Ocean</i>	NPAFC	Tokyo, Japan
2001	January 22-24	Test Workshop on <i>CO₂ data integration</i>		Sidney, Canada
	Jan. 31 – Feb. 1	Third Annual Workshop on <i>Salmon ecology in coastal ecosystem</i>		Nanaimo, Canada
	March 5-6	BASS/MODEL Workshop on <i>Quantification of a food web model for the subarctic gyre systems</i>		Honolulu, U.S.A.
	March 7-9	Workshop on <i>Impact of climate variability on observation and prediction of ecosystem and biodiversity changes in the N. Pacific</i>	Census of Marine Life and IPRC	Honolulu, U.S.A.
	March 20-22	International Argo Science Team Meeting	Argo	Sidney, Canada
	July 30 – Aug. 1	Implementation Workshop on <i>CO₂ data integration</i>	NIRE and MIRC	Tokyo, Japan
	August 27-30	<i>NEAR-GOOS Forecasting Workshop</i>	IOC, WESTPAC	Seoul, Korea

Year	Dates	Meeting	Co-Sponsors	Location
2001	November 14-17	<i>Pacific climate – fisheries</i> Workshop	IRI, IOC, GLOBEC, and IPRC	Honolulu, U.S.A.
2002	January 24-27	MODEL/REX Workshop to <i>build a “nutrient-phytoplankton-zooplankton-fish” version of the PICES NEMURO model</i>	Nakajima Foundation and Nemuro-city	Nemuro/Yokohama, Japan
	March 13-14	Symposium on <i>Causes of marine mortality of salmon in the North Pacific and North Atlantic Oceans and in the Baltic Sea</i>	NPAFC, NASCO, IRSFC, ICES	Vancouver, Canada
	April 5-6	MONITOR Workshop on <i>Voluntary observing systems</i>	EVOS	Seattle, U.S.A.
	April 21-22	BASS/MODEL Workshop on <i>Using models to test hypothesis on effects of climate change on the North Pacific subarctic gyre system</i>		La Paz, México
	April 23-25	Symposium on <i>North Pacific transitional areas</i>	CIBNOR, CICIMAR	La Paz, México
	June 5-7	Advisory Panel on North Pacific Data Buoys	WMO/IOC/PICES	Victoria, Canada
	August 22-24	Symposium/Workshop on <i>Recent progress in studies of physical processes and their impact to the Japan/East Sea ecosystem</i>	CREAMS	Seoul, Korea
	October 1-2	JGOFS/PICES Session on <i>Carbon cycle in the North Pacific (in conjunction with the 2002 SCOR General)</i>	JOS	Sapporo, Japan

Workshops held in conjunction with PICES Annual Meetings

Year	Dates	Meeting	Co-Sponsors	Location
1993				
1994	October 15-17	PICES-GLOBEC Workshop on <i>Climate Change and Carrying Capacity</i>	Fisheries Agency of Japan (JFA)	Nemuro, Japan
	October 22-23	PICES-STA Workshop on <i>Monitoring Pacific subarctic variability</i>	STA	Nemuro, Japan
1995				
1996				
1997	October 17-18	CCCC Workshop on <i>Development of cooperative research in coastal regions of the North Pacific</i>		Pusan, Korea
1998	October 14-15	MODEL Workshop on <i>Lower trophic level modeling and nutrient data bases</i>		Fairbanks, U.S.A.
	October 16-17	REX Workshop on <i>Small pelagic species and climate change in the North Pacific Ocean</i>		Fairbanks, U.S.A.
1998	October 16-17	MONITOR Workshop on <i>Monitoring activities in the North Pacific</i>		Fairbanks, U.S.A.
	October 18	PICES-CREAMS Workshop on <i>Recent progress in studies of the Japan/East Sea</i>		Fairbanks, U.S.A.
1999	October 8-10	REX Workshop on <i>Herring and euphausiids population dynamics</i>		Vladivostok, Russia
	October 8-9	MONITOR-GOOS Workshop on <i>Monitoring efforts in the North Pacific</i>		Vladivostok, Russia
	October 12 & 14	TCODE Workshop on <i>Application of scientific visualization to marine ecosystem analysis</i>		Vladivostok, Russia

Year	Dates	Meeting	Co-Sponsors	Location
2000	October 19-20	Planning Workshop on <i>Designing the iron fertilization experiment in the subarctic Pacific</i>	CRIEPI and MIRC	Tsukuba, Japan
	October 20	Workshop on <i>Basis for estimating the abundance of marine birds and mammals, and the impact of their predation on other organisms</i>	Fisheries Agency of Japan (JFA)	Hakodate, Japan
	October 20-21	BASS Workshop on <i>Development of a conceptual model of the subarctic Pacific basin ecosystem(s)</i>	Ministry of Education of Japan	Hakodate, Japan
	October 20-21	MODEL Workshop on <i>Strategies for coupling higher and lower trophic level models</i>	Ministry of Education of Japan	Hakodate, Japan
	October 20-21	MONITOR Workshop on <i>Progress in monitoring the North Pacific</i>	Ministry of Education of Japan	Hakodate, Japan
	October 20-21	REX Workshop on <i>Trends in herring population dynamics and trophodynamics</i>	Ministry of Education of Japan	Hakodate, Japan
2001	October 5-6	WG 15 Workshop on Taxonomy and identification of HAB species		Vancouver, Canada
	October 5	BASS/MODEL Workshop on <i>Ecosystem models for the Subarctic Pacific Gyres</i>		Victoria, Canada
	October 5	REX Workshop on <i>Temporal variations in size-at-age for fish species in coastal areas around the Pacific Rim</i>		Victoria, Canada
	October 6	MONITOR Workshop on <i>Progress in monitoring the North Pacific</i>		Victoria, Canada
	October 6	REX/MODEL Workshop on <i>Higher trophic levels in the PICES NEMURO Model</i>		Victoria, Canada
2002	October 19	MONITOR Workshop on <i>Requirements and methods for early detection of ocean change</i>		Qingdao, China
	October 19	PICES/GLOBEC Data Management Workshop on <i>Exchange, inventory and archival of GLOBEC data</i>	GLOBEC	Qingdao, China
	October 20	CCCC Integration Workshop		Qingdao, China
	October 20	PICES/CLIVAR Workshop on <i>Implementation of CLIVAR in the North Pacific</i>	WCRP, NASA, NOAA and NSF	Qingdao, China
	October 23	MONITOR Workshop on <i>Monitoring from moored and drifting buoys</i>		Qingdao, China
	October 25	PICES/CKJORC Workshop on <i>Regional cooperation and management of the marine environment and resources in the Yellow Sea</i>		Qingdao, China

Appendix E

PICES publications in 1992-2003

Year	Publication
1992	1992 Annual Report
	Proceedings of PICES Scientific Workshop
1993	1993 Annual Report
	PICES Press Vol. 1 No. 1
	PICES Scientific Report No.1 Part 1: Coastal Pelagic Fishes Part 2: Subarctic Gyre
1994	1994 Annual Report
	PICES Press Vol. 2 No. 1
	PICES Press Vol. 2 No. 2
	The PICES Papers: Reports of Meetings Leading to the Establishment of the North Pacific Marine Science Organization (PICES), 1978-1992
	Proceedings of Nemuro Workshop on "Western subarctic circulation"
1995	1995 Annual Report
	PICES Press Vol. 3 No. 1
	PICES Press Vol. 3 No. 2
	PICES Scientific Report No. 2 The Okhotsk Sea and the Oyashio Region
	PICES Scientific Report No. 3 Monitoring Subarctic North Pacific Variability
1996	1996 Annual Report
	PICES Press Vol. 4 No. 1
	PICES Press Vol. 4 No. 2
	PICES Scientific Report No. 4 Science Plan, Implementation Plan, Report of the PICES-GLOBEC International Program on Climate Change and Carrying Capacity
	PICES Scientific Report No. 5 Modelling of the Subarctic North Pacific Circulation
	PICES Scientific Report No. 6 Proceedings of the Workshop on the Okhotsk Sea and Adjacent Areas
1997	1997 Annual Report
	PICES Press Vol. 5 No. 1
	PICES Press Vol. 5 No. 2
	PICES Scientific Report No. 7 Summary of the Workshop Conceptual/Theoretical Studies and Model Development and the 1996 MODEL, BASS and REX Task Team Reports. PICES-GLOBEC International Program on Climate Change and Carrying Capacity
1998	1998 Annual Report
	PICES Press Vol. 6 No. 1
	PICES Press Vol. 6 No. 2
	PICES Scientific Report No. 8 Multilingual Nomenclature of Place and Oceanographic Names in the Region of the Okhotsk Sea
	PICES Scientific Report No. 9 PICES Climate Change and Carrying Capacity Workshop on the Development of Cooperative Research in Coastal Regions of the North Pacific
1999	1999 Annual Report
	PICES Press Vol. 7 No. 1
	PICES Press Vol. 7 No. 2

Year	Publication
1999	PICES Scientific Report No. 10 Proceedings of the 1998 Science Board Symposium on the Impacts of the 1997/98 El Niño Event on the North Pacific Ocean and its Marginal Seas
	PICES Scientific Report No. 11 PICES-GLOBEC International Program on Climate Change and Carrying Capacity. Summary of the 1998 MODEL, MONITOR and REX Task Team Workshops and Task Team Reports
	PICES Scientific Report No. 12 Proceedings of the Second PICES Workshop on the Okhotsk Sea and Adjacent Areas
	Progress In Oceanography Vol. 43 Nos. 2-4 1999 (special issue) Ecosystem Dynamics in the Eastern and Western Gyres of the Subarctic Pacific
	Dynamics of the Bering Sea
	2000 Annual Report
	PICES Press Vol. 8 No. 1
2000	PICES Press Vol. 8 No. 2
	PICES Scientific Report No. 13 Bibliography of the Oceanography of the Japan/East Sea
	PICES Scientific Report No. 14 Predation by Marine Birds and Mammals in the Subarctic North Pacific Ocean
	PICES Scientific Report No. 15 PICES-GLOBEC International Program on Climate Change and Carrying Capacity. Report on the 1999 MONITOR and REX Workshops, and the 2000 MODEL Workshop on Lower Trophic Level Modelling
	Progress in Oceanography Vol. 47 Nos. 2-4 2000 (special issue) North Pacific Climate Regime Shifts
	2001 Annual Report
	PICES Press Vol. 9 No. 1
	PICES Press Vol. 9 No. 2
2001	PICES Scientific Report No. 16 Environmental Assessment of Vancouver Harbour. Data Report for the PICES Practical Workshop
	PICES Scientific Report No. 17 PICES-GLOBEC International Program on Climate Change and Carrying Capacity Report of the 2000 BASS, MODEL, MONITOR, and REX Workshops, and the 2001 BASS/MODEL Workshop
	PICES Scientific Report No. 18 Proceedings of the PICES/CoML/IPRC Workshop on "Impact of Climate Variability on Observation and Prediction of Ecosystem and Biodiversity Changes in the North Pacific"
	PICES Scientific Report No. 19 Commercially Imported Crabs, Shrimps and Lobsters of the North Pacific Ocean
	Progress in Oceanography Vol. 49 Nos. 1-4 2001 (special issue) Pacific Climate Variability and Marine Ecosystem Impacts
	Historical Atlas of the North Pacific Ocean (Anniversary Book)
	2002 Annual Report
	PICES Press Vol. 10 No. 1
	PICES Press Vol. 10 No. 2
	2002
PICES Scientific Report No. 21 PICES-GLOBEC International Program on Climate Change and Carrying Capacity Report of the PICES 2002 <i>Volunteer Observing Ship</i> Workshop	
PICES Scientific Report No. 22 PICES Science: The first ten years and a look to the future	

Year	Publication
2002	PICES Scientific Report No. 23 Harmful algal blooms in the PICES region of the North Pacific (national reports)
	Journal of Oceanography, Vol. 58, No. 5 (special issue) Physics and biology of eddies, meanders and rings in the PICES region
	Progress in Oceanography, Vol. 55, Nos. 1-2 (special issue) Variability in the Bering Sea ecosystem
	Canadian Journal of Fisheries and Aquatic Sciences, Vol. 59, No. 12 (special issue) Migration of key ecological species in the North Pacific Ocean
	Oceanographic Atlas of the Okhotsk Sea, Bering Sea and Japan/East Sea (CD ROM version)
	2003 Annual Report
	PICES Press Vol. 11 No. 1 (jointly with GLOBEC)
2003	PICES Press Vol. 11 No. 2
	PICES Scientific Report No. 24 CO ₂ in the North Pacific Ocean (Working Group 13 Final Report)
	PICES Scientific Report No. 25 PICES-GLOBEC International Program on Climate Change and Carrying Capacity The BASS/MODEL Report on Trophic Models of the Subarctic Pacific Basin Ecosystems.
	Journal of Oceanography, Vol. 59, No. 4 (special issue) Transitional areas in the North Pacific
	Progress in Oceanography, Vol. 57, Nos. 3-4 (special issue) Plankton size classes, functional groups, and ecosystem dynamic
	North Pacific Ecosystem Status Report

Appendix F

History of national contributions¹

Year	Annual fee per country	WCF transfer	Total budget	Notes
1992 ²	88,000		352,000	4 member countries
1993	88,000 ³	24,000	376,000	
1994	90,000 ³	80,000	440,000	
1995	88,000		440,000	5 member countries
1996	84,800		509,000 ⁴	6 member countries
1997	84,800		509,000	
1998	84,800 ³	12,000	521,000	
1999	86,000 ³	58,000	574,000	
2000	88,600 ³	58,400	590,000	
2001	91,300 ³	58,200	606,000	
2002	94,000 ³	59,000	623,000	

¹ all amounts are in Canadian dollars

² partial year from March 23- December 31, 1992

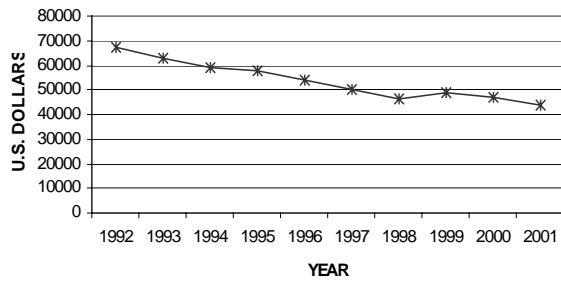
³ after transfer from the Working Capital Fund

Appendix G

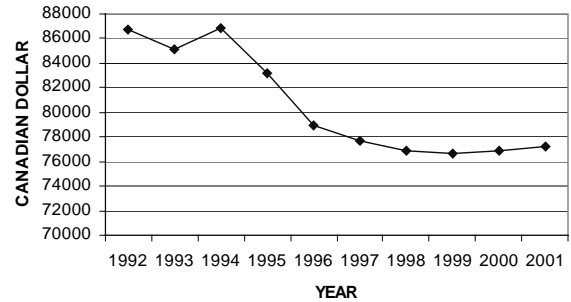
Inflation-adjusted annual contributions were calculated by converting the annual contributions listed in Appendix F to each contracting parties contribution. The inflation-adjusted contributions that appear in the figures

were calculated by dividing annual contributions by the Consumers Price Index. Data were obtained from the IMF International Financial Data Base (<http://ifs.apdi.net/imf>).

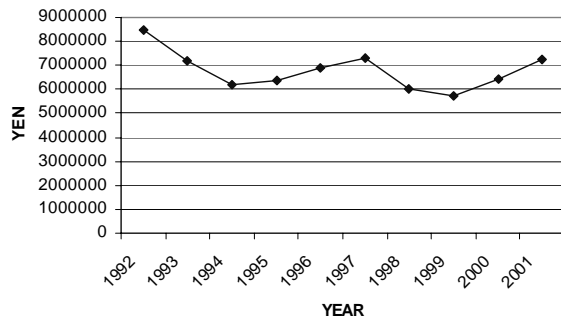
UNITED STATES CONTRIBUTIONS IN REAL U.S. DOLLARS



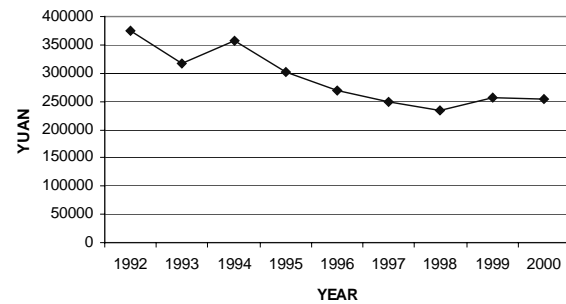
CANADA CONTRIBUTIONS IN REAL CANADIAN DOLLARS



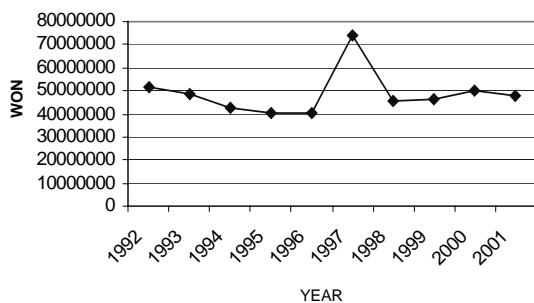
JAPAN CONTRIBUTIONS IN REAL YEN



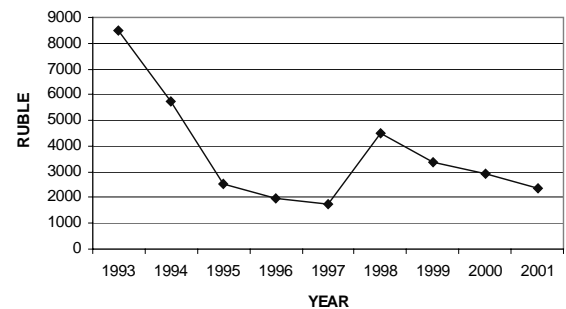
CHINA CONTRIBUTIONS IN REAL YUAN



KOREA CONTRIBUTIONS IN REAL WON



RUSSIA CONTRIBUTIONS IN REAL RUBLES



*Korea's first contribution was made in 1996

*Russia's first contribution was made in 1995