

REPORT OF GOVERNING COUNCIL MEETING

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The Governing Council met from 13:30-17:30 on October 20 and October 25, and from 9:00-12:00 on October 26, under the chairmanship of Dr. Hyung-Tack Huh. Dr. Alexander S. Bychkov served as rapporteur.

All Contracting Parties were represented at the three sessions (*GC Endnote 1*). Mr. Hai-Qing Li attended only the first session. The Chairman of the Science Board, Dr. R. Ian Perry, was in attendance during part of the first session and 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. Qian-Fei Liu represented Mr. Zheng-Ping Tang (China); Dr. Hee-Dong Jeong represented Mr. Young-Suk Kim (Korea); and Dr. Won-Seok Yang represented Mr. Jin Hak Noh (Korea).

Agenda Item 2. Adoption of agenda

The Chairman reviewed the agenda (*GC Endnote 2*) and suggested the order in which to take up the various items. Canada proposed the adoption of the agenda without changes, seconded by the Russian Federation. 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 X (*GC Endnote 3*).

Agenda Item 4. Report of PICES Review Committee

PICES X provided an opportunity to review progress made by PICES from its inception in

1992, and to discuss the future development of the Organization. To ensure that PICES can take on new activities and continue to serve as a major international forum for marine science in the North Pacific, Council decided to perform an internal evaluation of the Organization (Decision 01/A/7).

Inter-sessionally, Council approved the membership for the Review Committee that includes: the Chairman of the Finance and Administration Committee (Richard J. Marasco), the Chairman of the Science Board (R. Ian Perry), most recent outgoing Chairman of the Science Board (Patricia Livingston), Warren S. Wooster (founder and first Chairman of PICES) and one member each from the People's Republic of China (Zhi-Xin Chen), Japan (Tokimasa Kobayashi), Republic of Korea (Young-Suk Kim), and Russian Federation (Lev N. Bocharov). Countries not specifically mentioned (Canada and U.S.A.) are represented by the Science Board Chairman and the F&A Chairman, respectively.

The Review Committee was charged with the following tasks:

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

A draft report was circulated to all Review Committee members in mid-August 2002, and a second draft was sent to Contracting Parties on September 13, 2002. The Review Committee also met twice during PICES XI.

The Chairman of the Review Committee, Dr. Marasco, presented a draft report at the second session on October 25. Council endorsed the Review Committee Report and its recommendations (Decision 02/A/9).

Council noted and supported actions suggested by the Finance and Administration Committee on items that might potentially have budgetary implications. The Executive Secretary was requested to (1) explore the costs of having an external review of current publication practices of the Organization; and (2) jointly with Dr. Laura Richards examine action on the re-naming of positions in the Secretariat to ensure that the act is budget-neutral.

Council also agreed with the recommendation from the Science Board to discuss implementation of the various aspects of the Review Committee Report at the interim Science Board/Governing Council meeting in spring 2003.

Agenda Item 5. Membership and observers from other countries

The Secretariat did not receive proposals from non-member countries to accede to the PICES Convention in 2002.

At PICES X, Council noted a steady progress in developing PICES-Mexico relations, and agreed that the next step should be an international scientific symposium organized by PICES and hosted by Mexico (Decision 01/S/1). A 3-day international Symposium on *North Pacific transitional areas* (April 2002, La Paz) was the first scientific meeting convened by PICES in collaboration with Mexican scientists from CIBNOR and CICIMAR, on Mexican soil. This symposium was a great success, with 92 participants from Canada, Japan, Mexico and U.S.A. Selected papers from the symposium will comprise a special issue of *Journal of Oceanography* to be published in 2003.

In June 2002, Drs. Hyung-Tack Huh and Alexander Bychkov met with Ing. Marco Polo Bernal Yarahuan, Subsecretario de Educación e Investigación Tecnológicas and national

Mexican representative on the Intergovernmental Oceanographic Commission (IOC), to further explore the interest of Mexican government agencies involved, and the formal procedures to be followed to have Mexico accede to the PICES Convention. It was agreed that the Mexican IOC National Committee could be instrumental in convincing Mexico to join PICES in the near future. Active regional organizations can greatly strengthen the implementation of IOC programs, and thus by joining PICES, Mexico would not only benefit its own scientific programs but also contribute to those of IOC in which Mexico has already played an important part. To follow this development, Ing. Bernal has been invited to participate in PICES XI as an observer from Mexico. Unfortunately he was unable to attend due to other commitments.

The Executive Secretary reported that 24 scientists from all major Mexican marine research institutes presented papers at the last two Annual Meetings: 18 at PICES X (Victoria, Canada) and 6 at PICES XI (Qingdao, China). 11 of them received travel grants from PICES.

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 meeting in La Paz is going slower than expected, and the current status of the "presentation" document is still unknown. This document indicating the importance and relevance of PICES for Mexican scientists, and the suggestion of the accession of Mexico to the Organization, was prepared on behalf of major Mexican marine research institutes and circulated to relevant government agencies.

Canada, Japan and the United States suggested that PICES should continue its effort to encourage Mexico to join the Organization through contacts with the directors of major Mexican marine research institutes and the Mexican national IOC Committee. China recommended sending a formal invitation letter

to the Mexican Ministry of Foreign Affairs. Council instructed the Chairman and Executive Secretary to explore both approaches.

The Republic of Korea advocated that the Twelfth Annual Meeting in Seoul is a perfect 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. China noted that the State Oceanic Administration has relations with some government agencies in the D.P.R. Korea, and offered to provide a list of contacts.

Agenda Item 6. Relations with relevant international organizations

At the Tenth Annual Meeting, Council approved some additions to the Standing List of International Organizations and Programs, and agreed with priorities for interaction in 2002 (Decision 01/S/6(i)). The Science Board Chairman and Executive Secretary reported on

Census of Marine Life Program (CoML)
Climate Variability and Predictability Program (CLIVAR)
Coastal Alaskan Observing System (CAOS)
Global Ocean Data Assimilation Experiment (GODAE)
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)
International Geosphere-Biosphere Program (IGBP)
Intergovernmental Oceanographic Commission (IOC)

International Whaling Commission (IWC)
Joint Global Ocean Flux Study (JGOFS)
North East Asian Regional GOOS (NEAR-GOOS)
North Pacific Anadromous Fish Commission (NPAFC)

North Pacific Research Board
Sir Alister Hardy Foundation for Ocean Science (SAHFOS)
Scientific Committee on Oceanic Research (SCOR)
IOC Sub Committee for the Western Pacific (WESTPAC)

Time was reserved at the first session of the Governing Council (October 20, 2002) for some of these organizations (IOC, GOOS, SCOR, ICES and IGBP) to express their views on

communication with the relevant organizations and programs since last year's meeting (details are reflected in the Report on Administration (*GC Endnote 3*) and in the Science Board Report). Council noted impressive progress in integration and coordination with other international organizations and major international programs of regional and global scale, and thanked the Science Board and the Secretariat for their efforts.

Council reviewed and approved the revised Standing List of International Organizations and Programs as recommended by the Science Board (*SB Endnote 8*) and agreed with identified priorities for interaction in 2003 (Decision 02/S/6).

Letters of invitation to attend the Eleventh Annual Meeting were sent to inter-governmental and non-governmental organizations/programs on the agreed Standing List, and the following sent observers:

Dr. Jesse Ausubel
Dr. Kelvin Richards
Dr. David L. Musgrave
Dr. Neville R. Smith
Dr. Manuel Barange
Dr. Neville R. Smith
Dr. Phillip Mundy
Dr. Stephen C. Riser
Dr. Keith Brander
Dr. Roger Harris
Dr. Jilan Su
Dr. Umit Unluata
Dr. Hidehiro Kato
Dr. Toshiro Saino
Dr. Dong-Young Lee
Mr. Vladimir Fedorenko
Dr. Vladimir I. Karpenko
Dr. Phillip R. Mundy
Dr. Sonia D. Batten
Dr. Edward Urban
Mr. Hai-Qing Li

potential areas of collaboration with PICES. Remarks of their representatives are appended to the report as *GC Endnotes 4-8*.

At PICES X, Council specifically discussed cooperation with ICES, and recommended that the Science Board develop potential areas of cooperation between the two Organizations (Decision 01/S/6(ii)). At the 2002 ICES Annual Conference, Dr. R. 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 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*. At PICES XI, these themes were further discussed by the Scientific Committees and the CCCC Program, and specific recommendations were made on communication between various PICES and ICES groups.

Agenda Item 7. PICES Intern Program

The Executive Secretary reviewed the status of the PICES Intern Program approved in 1999 (Decision 99/A/7) and commenced in 2000 (see *GC Endnote 3* for details). Council examined the results from the first three years of the Intern Program, and concluded that PICES and member countries benefit from the Program, and that it should be continued.

The following discussion focused on various approaches for financing the Intern Program in the future. It was pointed out that the Intern Program was not budgeted for in the years 2000-2002, and was financed solely by voluntary contributions. Council commended the United States, Canada and the Russian Federation for their contributions to the Trust Fund to support the Program, and instructed the Executive Secretary to send letters inviting member countries to provide voluntary contributions to support the Intern Program in 2003 and beyond.

Council confirmed that the practice of using registration fees collected from the Annual Meeting to finance the Program (Decision 01/A/4(iv)) will continue, and approved a transfer of fees collected from PICES XI to the

Trust Fund to finance the 2003 Intern Program at the projected level of \$27,500.

According to the Guidelines for application and selection procedure, national Delegates should invite and review applications for the 2003 PICES Internship from their home country and submit their nominations to the Executive Secretary by the date of the first Governing Council meeting at PICES XI (October 20, 2002). One nomination was received prior to the deadline. The Chairman of PICES, in consultation with the Executive Secretary and the Chairman of Science Board reviewed this application and approved Mr. Chuanlin Huo (National Marine Environmental Monitoring Center, State Oceanic Administration, People’s Republic of China) as the Intern for the year 2003.

Council agreed to re-visit the Guidelines for application and selection procedure, methods for advertising the Intern Program, as well as financial aspects at the next Annual Meeting.

Agenda Item 8. PICES Visiting Scientist Program

At the Tenth Annual Meeting, 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 provides an opportunity for national agencies and/or other international science organizations to contribute “in kind” toward achieving PICES goals, and improve the way the Organization functions, and it was seen as an alternative way to enhance the ability of the Organization and the Secretariat to support the high priority projects and increasing work demand. The expectation was that the Program will commence in 2002, and will be closely linked to the development of the PICES North Pacific Ecosystem Status Report.

The Executive Secretary reported that PICES did not receive proposals on secondment from

national agencies and/or other international science organizations this year. Council reviewed the Visiting Scientists Program and discussed ways for implementing the Program in *FY 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 agreed to work with the Executive Secretary to implement these suggestions.

Agenda Item 9 PICES capacity building

Cooperative marine research depends on the combined efforts and continuous involvement of all member countries. This requires sharing of basic and specialized skills as well as of “vision”, experience and infrastructure. Council agreed that to support its goals of promoting and coordinating marine scientific research, PICES must recognize the importance of capacity building. Discussion took place on principles and key elements of capacity building, potential partners and sources of funding to support these activities. Dr. Ian Perry reported that each Scientific Committee was requested to include this issue in its agenda at PICES XI, and that the recommendation is to establish a Study Group on *PICES capacity building* under the direction of the Science Board to develop a capacity building strategy and implementation plan for the Organization. Council approved this proposal (Decision 02/S/5) and recommended membership and terms of reference (*GC Appendix B*).

Agenda Item 10. Schedule and financing of future Annual Meetings of the Organization

At PICES X, Council endorsed the proposal by the Republic of Korea to host the Twelfth Annual Meeting in 2002 (Decision 01/A/4(ii)). By the recommendation of the Finance and Administration Committee, Council approved a transfer of \$40,000 (from \$50,000 in the proposed *FY 2003* budget) to Korea to partially cover costs of PICES XII.

Council approved the proposal of the United States of America to hold the Thirteenth Annual

Meeting from October 15-23, 2004, in Honolulu, Hawaii (Decision 02/A/4(i)), and requested that sufficient budgetary information be provided as soon as possible, to facilitate *FY 2004* budget planning.

In keeping with the six-year rotation cycle, Council invited the Russian Federation to explore the feasibility of hosting PICES XIV in October 2005, and inform the Secretariat on this matter by May 31, 2003 (Decision 01/A/4(ii)).

Council confirmed that the practice of charging a registration fee for future PICES Annual Meetings will continue, and adopted the registration fee structure. Council also agreed that national representatives at the Council and F&A meetings are exempted from registration fees (Decision 02/A/4(iii)).

Council discussed but did not approve the proposal by Canada, supported by the Finance and Administration Committee, to discontinue the practice of transferring funds from PICES to member countries to partially cover Annual Meeting costs. It was agreed that members would be prepared to discuss this issue again at the next Annual Meeting.

Council strongly supported holding an interim Science Board meeting, with participation of the Governing Council, in spring 2003, in Sidney, Canada (Decision 02/A/4(iv)). This meeting is needed to provide time for the Science Board and Council 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.

Agenda Item 11. Election of Chairman and Vice-Chairman

According to the Rules of Procedure (Rule 7), “*The Chairman and the Vice-Chairman shall be elected from amongst the Delegates for a term of two years and each shall be eligible for re-election only once for a successive term. They shall take office at the conclusion of the Annual Meeting at which elected.*” Dr. Hyung-Tack

Huh of the Republic of Korea and Dr. Vera Alexander of U.S.A. were elected the Chairman and Vice-Chairman, respectively, at PICES VII in 1998 (Fairbanks, U.S.A.), and both were re-elected at PICES IX in 2000 (Hakodate, Japan), with their second terms ending at the conclusion of this year's meeting.

Dr. Huh called for nominations for the Chairman of Council in accordance with the Rules of Procedure. Dr. Vera Alexander was nominated by the Russian Federation and seconded by the Republic of Korea. She was unanimously elected as Chairman for a first term (Decision 02/A/5).

Dr. Huh called for nominations for the Vice-Chairman of Council in accordance with the Rules of Procedure. Dr. Tokimasa Kobayashi of Japan was nominated by Canada and seconded by the U.S.A. He was unanimously declared as Vice-Chairman for a first term (Decision 02/A/5).

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

The Executive Secretary noted that at the PICES Fifth Annual Meeting in 1996 (Nanaimo, Canada), Council approved that the immediate past Chairman shall be invited to serve in an ex-officio advisory capacity, and to attend the Annual Meetings of Council for the period during which the incumbent is Chairman of Council. Council agreed that a Rule change was not required for this purpose (Decision 96/A/5).

The U.S.A. made a motion that Council invite Dr. Huh to serve as an advisor and, in this capacity, to attend the meetings of Council for the period during which Dr. Alexander is Chairman. This proposal was unanimously accepted by Council (Decision 02/A/6).

Agenda Item 12. Appointment of F&A Committee Chairman

According to the Rules of Procedure (Rule 15), *"The Chairman of the Finance and Administration Committee (F&A) 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. He/she shall take office at the conclusion of the Annual Meeting at which elected". 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), with his second term ending at the conclusion of this year's meeting.

Canada noted that Dr. Marasco is doing an excellent job as the F&A Chairman and, with a reference to a precedent, suggested that Council extended his term for one year. This motion was supported by all other member countries and approved by Council (Decision 02/A/7).

Agenda Item 13. Executive Secretary position

The term of office for the Executive Secretary is five years and may be renewed/extended at the discretion of Council. Dr. Alexander Bychkov accepted the Executive Secretary position on June 1, 1999, and his first term will come to an end on May 31, 2004, between the Twelfth (Seoul, October 2003) and Thirteenth (Honolulu, October 2004) Annual Meetings.

The United States recommended that Council offer Dr. Bychkov a second term. This proposal was seconded by the People's Republic of China and unanimously accepted by Council (Decision 02/A/8). Dr. Bychkov confirmed he would be prepared to serve a second term.

Agenda Item 14. Report of Finance and Administration Committee

The Finance and Administration Committee 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.

14.1 Audited accounts for fiscal year 2001

At the recommendation of the F&A Committee, Council accepted the audited accounts of *FY*

2001, and agreed to retain the existing auditor *Flader & Greene* for another year (Decision 02/A/1).

14.2 Annual contributions

Council discussed the payment schedule of annual fees to the Organization (*F&A Endnote 4*), and directed the Executive Secretary to send a letter to member countries commending them for improved performance in submitting annual contributions in 2000-2002, and advising on the benefits of paying contributions by the first day of the PICES fiscal year (January 1), as required by Financial Regulation 5(ii) (Decision 02/A/2(i)). Council approved the other actions recommended by the F&A Committee to ensure timely payment of annual contributions (Decisions 02/A/2(ii) and 02/A/2(iii)).

14.3 Fund-raising activities

PICES has grown into an internationally renowned organization and has to anticipate and plan for even further growth. The current practice of a 3% increase in annual contributions covers only the rise in operating costs. Council agreed that funding constraints can impede improvement of the Organization, and therefore fund-raising is an essential function of the F&A Committee. The responsibility of the Science Board is to provide fully developed project proposals to facilitate these activities.

Council noted a higher level of external funding and significant voluntary contributions for various activities initiated by PICES (see *GC Endnote 3* for details), and thanked the Science Board Chairman and the Secretariat for their effective fund-raising efforts.

14.4 Budget

14.4a Estimated accounts for fiscal year 2002

The estimated accounts for *FY 2002* were reviewed by the Finance and Administration Committee and approved by Council (Decision 02/A/3(i)).

14.4b Proposed budget for fiscal year 2003

Council approved the proposed *FY 2003* budget of \$692,500. The amount of \$110,500 will be transferred from the Working Capital Fund to the General Fund to reduce the total required contribution to \$582,000, setting the 2003 contributions at \$97,000 per Contracting Party (Decision 02/A/3(ii)).

14.4c Forecast budget for fiscal year 2004

The *FY 2004* forecast budget of \$660,000 was prepared under the guideline adopted by Council in 1999 (Decision 99/A/2(ii)), examined by the Finance and Administration Committee, and presented as an information item for Contracting Parties. It will be further discussed at PICES XII.

Starting from the next Annual Meeting, Council will consider and adopt the budget for the ensuing and subsequent financial years. This action will require changes in the Rules of Procedure (Rule 15) and the Financial Regulations (Regulation 3(v)). The Executive Secretary was requested to develop the appropriate wording changes for consideration at PICES XII.

14.4d Working Capital Fund

The balance in the Working Capital Fund is forecast to be about \$271,500 at the end of 2002. Council approved two transfers from the Working Capital Fund: \$110,500 to the General Fund, and \$47,400 to the Trust Fund. Council also approved a transfer of \$1,730 from the Home Leave and Relocation Fund to the Working Capital Fund. After all inter-fund transfers (Decision 02/A/3(iii)), the Working Capital Fund will total approximately \$113,600.

14.4e Home Leave and Relocation Fund

The status of the Home Leave Relocation Fund was reviewed. There were no expenditures in *FY 2002*, and the Fund will total about \$111,730 by the end of the fiscal year. This amount

exceeds the required balance of \$110,000, and the extra of \$1,730 will be transferred to the Working Capital Fund.

14.4f Trust Fund

In *FY 2002*, the Trust Fund was used to bring young scientists from all PICES member countries, and scientists from countries with “economies in transition” to the PICES Eleventh Annual Meeting, finance the Intern Program, and support activities of Working Groups and Task Teams. These expenditures were compensated only partly by voluntary contributions from Canada, Russia and U.S.A. for the Intern Program, a travel grant from the Scientific Committee of Oceanic Research (SCOR), and bank interest (for details see *GC Endnote 3*). As a result, the Trust Fund would be approximately \$80,100 at the end of 2002.

Council approved a transfer of \$19,900 from the Working Capital Fund to the Trust Fund to recover all 2002 expenditures and restore the Trust Fund to the level of \$100,000. Council confirmed that this practice of transferring residual surpluses from the Working Capital Fund should continue, but recommended that the Finance and Administration Committee explore other options for the Trust Fund replenishment, as it is unlikely that surpluses of this magnitude will remain in the future.

Council approved an additional transfer of \$27,500 from the Working Capital Fund to the Trust Fund to finance the 2003 Intern Program.

Agenda Item 15. Report and recommendations 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 *Appendices A and B*.

Agenda Item 16. Other business

Dr. Kobayashi brought up the issue of the naming for the body of water surrounded by the Japanese Archipelago and the Korean Peninsula, which is currently in dispute between the countries concerned. He noted that the FIS Topic Session convened at PICES XII was entitled “*Comparison of the productivity of marginal sea with emphasis on the western Pacific (Japan/East Sea, Yellow Sea and East China Sea) with a focus on small pelagics*”, and stated Japan’s position that the only name “Sea of Japan” should be used in the international arena, as this name is geographically and historically established and is suggested in the recent edition of the International Hydrographic Organization’s “Limits of Oceans and Seas 1953” (*GC Endnote 9*). Dr. Jeong responded that Korea’s position is that the names “East Sea” and “Japan Sea (Sea of Japan)” should be used simultaneously in the classification of the Sea area concerned, until a final resolution is agreed upon between the relevant countries, as recommended in the Resolution No. III/20 of the United Nation Conference on *the Standardization of Geographical Names* in 1997 (see *GC Endnote 9*).

The Chairman advised that PICES is a scientific organization and should not focus on diplomatic problems. At the same time, the Organization needs consistent terminology for its operations. He reminded Council that it was earlier verbally agreed to use the name “Japan/East Sea” for all official documents and materials prepared by the Scientific Committees, Working Groups and the Secretariat, and that PICES has been using this approach since 1995 when the Working Group on *Circulation and ventilation in the Japan/East Sea* was established.

The following discussion indicated that each federal government has a strict single name policy for high seas features, but there is no clear international standard for them. No decision was made at that time, and it was agreed to re-visit this matter at the inter-sessional Council meeting in spring 2003.

GC Appendix A. Decisions

02/A/1: Auditor

Council accepted the audited accounts for 2001 and agreed to retain *Flader and Greene* as auditor for another year.

02/A/2: Annual contributions

- i. Council instructed the Executive Secretary to send a letter to member countries commending them for improved performance in submitting annual contributions in 2002, and advising on the benefits of paying contributions by the first day of the PICES financial year (January 1), as required by Financial Regulation 5(ii).
- ii. 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)), which states that the annual contributions will increase at the rate of inflation in Canada (currently about 3%).
- iii. Starting from the next Annual Meeting, Council will consider and adopt the budget for the ensuing and subsequent financial years. This action will require changes in the Rules of Procedure (Rule 15) and the Financial Regulations (Regulation 3(v)). The Executive Secretary will develop the appropriate wording changes for consideration at the Twelfth Annual Meeting.

02/A/3: Budget

- i. Council accepted the estimated accounts for 2002.
- ii. Council approved the 2003 budget at a level of \$692,500. The amount of \$110,500 will be transferred from the Working Capital Fund to reduce the total required contribution to \$582,000, setting the 2003 contributions at \$97,000 per Contracting Party.

iii. Council approved the following inter-fund transfers:

- A transfer of \$110,500 from the Working Capital Fund to the General Fund for 2003. This amount includes a grant of \$69,500 from the Sloan Foundation for the preparation of the report for the Census of Marine Life, and \$41,000 to support high priority PICES projects;
- A transfer of \$19,900 from the Working Capital Fund to the Trust Fund to recover all 2002 expenditures and to restore the Trust Fund to the level of \$100,000;
- An additional transfer of \$27,500 from the Working Capital Fund to the Trust Fund to finance the 2003 Intern Program;
- A transfer of \$1,730 from the Home Leave Relocation Fund to the Working Capital Fund.

02/A/4: Schedule and financing future Annual Meetings

- i. Council approved the proposal of the United States of America to hold the Thirteenth Annual Meeting, October 15-23, 2004, in Honolulu, Hawaii.
- ii. Council requested the Russian Federation to explore the possibility of hosting the Fourteenth Annual Meeting, and inform the Secretariat on this matter by May 31, 2003.
- iii. Council agreed that national representatives at the Council and F&A meetings are exempted from registration fees for the PICES Annual Meetings and approved the following registration fee structure for 2003:

Type	CDN \$
Registration fee	150
Early registration fee	100
Students	40

- iv. Council agreed to hold an interim meeting in spring 2003 (Sidney, Canada), in conjunction with the Science Board meeting.

02/A/5: Election of Chairman and Vice Chairman

Council unanimously elected Dr. Vera Alexander (U.S.A.) and Dr. Tokimasa Kobayashi (Japan) as Chairman and Vice-Chairman, respectively, for a first term.

02/A/6: Past Chairman

Council invited Dr. Hyung-Tack Huh (Republic of Korea), the immediate past Chairman, to serve in an advisory capacity, and to attend the meetings of Council for the period during which the current incumbent is Chairman of Council.

02/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.

02/A/8: Appointment of Executive Secretary

Council offered Dr. Alexander Bychkov, the current Executive Secretary, a second 5-year term starting June 1, 2004.

02/A/9: Review Committee Report

Council endorsed the Review Committee Report and its recommendations.

02/A/10: Intern Program

- i. Council confirmed that the practice of transferring the registration fees collected from the Annual Meetings from the Working Capital Fund to the Trust Fund should continue to support the Intern Program.
- ii. Council directed the Executive Secretary to invite member countries to provide

voluntary contributions to support the Intern Program in 2003 and beyond.

02/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 (see Acronym List at the end of the Annual Report):

- A 2-day Fifth Annual Workshop on *Salmon ecology in coastal ecosystem*, February 11-12, 2003, Newport, U.S.A.;
- A MODEL workshop to *Embed NEMURO and NEMURO.FISH into a 3-D circulation model*, March 2003, Yokohama, Japan;
- An Inter-comparison on *Underway and drifting/mooring $p(\text{CO}_2)$ measurement systems*, March 10-14, 2003, Tsukuba, Japan;
- A PICES/CoML *Regional marine life expert Workshop I*, March 2003, venue TBD;
- A 3-day interim Science Board/Governing Council meeting, March-April 2003, Sidney, Canada;
- A Workshop on *Variability and status of the East China Sea and Yellow Sea ecosystems*, in conjunction with the PAMS/JECSS Workshop, April 14-16, 2003, Hangzhou, People's Republic of China;
- A 4-day ICES/PICES/GLOBEC Symposium on *Role of zooplankton in global ecosystem dynamics: Comparative studies from the world oceans*, May 19-23, 2003, Gijón, Spain;
- The Third PICES Workshop on *Okhotsk Sea and adjacent areas*, June 4-6, 2003, Vladivostok, Russia;
- A 3-day *North Pacific Ecosystem Status Report Workshop*, August 2003, Sidney, Canada;
- A 2-day WG 15/TCODE Workshop on *Harmonization of HAB data*, October 2003, Seoul, Republic of Korea (in conjunction with PICES XII);
- A 1-day MONITOR Workshop to *Examine and critique a North Pacific Ecosystem Status Report*, October 2003, Seoul, Republic of Korea (in conjunction with PICES XII);

- A 1-day BASS Workshop to *Examine linkages between open and coastal systems*, October 2003, Seoul, Republic of Korea (in conjunction with PICES XII);
 - A 1-day MBMAP Workshop on *Distribution and diets of marine birds and mammals: Patterns produced by biophysical coupling and lower trophic level dynamics*, October 2003, Seoul, Republic of Korea (in conjunction with PICES XII);
 - A PICES/CoML *Regional marine life expert Workshop II*, November 2003, Sidney, Canada;
 - A 3-day IFEP Workshop on *In situ iron enrichment experiments in the eastern and western subarctic Pacific*, December 4-6, 2003, Sidney, Canada;
 - A 4-day SCOR/IOC/PICES/GLOBEC *Indicator Conference*, March 31-April 3, 2004, Paris, France;
 - A BASS/NPAFC Workshop on *Open Ocean and Coastal Systems*, October 2004 Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A PICES/CLIVAR Workshop to further develop interaction with CLIVAR, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A REX Workshop on *The climate shifts of 1977, 1989 and 1999: Differential physical forcing and ecosystem response in the PICES region*, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A major inter-sessional symposium to synthesize the CCCC questions and results, in 2005/6.
- IFEP (1) Workshops; BASS (1) and MONITOR (1) Workshops in conjunction with the PICES Twelfth Annual Meeting; MODEL (1) and REX (1) Topic Sessions at the Twelfth Annual Meeting, and ICES/IOC Steering Group for GOOS meeting (1);
 - PICES Convenor and selected speakers to attend the PICES/ICES/GLOBEC Zooplankton Production Symposium (May 2003, Gijón, Spain);
 - One scientist to attend the PAMS/JECSS Workshop and associated PICES Workshop on *Variability and status of the East China Sea and Yellow Sea ecosystems*; (April 2003, Hangzhou, People's Republic of China);
 - Two scientists to attend the Third PICES Workshop on *Okhotsk Sea and adjacent areas* (June 2003, Vladivostok, Russia);
 - Two to three scientists to attend the *North Pacific Ecosystem Status Report* Workshop (August 2003, Sidney, Canada);
 - One Russian scientist to attend the meeting of the Advisory Panel on *Marine Birds and Mammals* (October 2002, Seoul, Republic of Korea), and two young Chinese scientists to attend FIS Topic Sessions at PICES XII (support will be provided from the Trust Fund);
 - Science Board Chairman to attend the IGBP OCEANS Open Science Meeting (January 2003, Paris, France), the PICES/ICES/GLOBEC Zooplankton Production Symposium (May 2003, Gijón, Spain), and the ICES Annual Conference (September 2003, Tallinn, Estonia);

02/S/2: Travel support

PICES will provide travel support for:

- One invited speaker per Scientific Committee for Topic Sessions at the PICES Twelfth Annual Meeting (additional requests by the Scientific Committees are subject to fund availability; the Science Board Chairman and Executive Secretary are instructed to use criteria suggested by the Science Board in prioritising these requests);
- Seven scientists to attend CCCC-related meetings: inter-sessional MODEL (1) and

02/S/3: Publications

The following publications were approved:

PICES Scientific Report Series in 2003

- Final report of WG 13 on *CO₂ in the North Pacific*;
- Proceedings of the 2002 CCCC Integration Workshop;
- Report of the 2002 MONITOR Workshops on *Requirements and methods for early detection of ocean change* and *Monitoring from moored and drifting buoys*;

- Report of BASS and MODEL Task Teams on *Ecosystem models for the subarctic Pacific gyres*;
- Report for the Census of Marine Life on *Marine life in the North Pacific Ocean: The known, unknown and unknowable*.

PICES Scientific Report Series in 2004

- Final report of WG 14 on *Effective sampling of micronekton*;
- Final report of WG 16 on *Climate change and fisheries management*;
- Report of the 2003 IFEP Workshops;
- Proceedings of the Third PICES Workshop on *Okhotsk Sea and adjacent areas*;
- Guide of best practices for oceanic CO₂ measurements and data reporting (WG 17);
- North Pacific Ecosystem Status Report.

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

- *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 topographic* (Guest editors: Richard D. Brodeur, John Dower, Stewart M. McKinnell and Orio Yamamura);
- *Journal of Marine Systems* - selected papers from the 2002 POC/FIS Topic Session on *Detection of regime shifts in physics and*

biology (Guest editors: Jacquelynne R. King and James E. Overland);

- *Progress in Oceanography* - 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: Kuh Kim, Makoto Terazaki and Stewart M. McKinnell);
- *Journal of Oceanography* - invited papers on *Synthesis of JGOFS North Pacific Process Study* (jointly with JGOFS) (Guest editors: Alexander S. Bychkov, Chen-Tung A. Chen, Paul J. Harrison, Toshiro Saino);
- *ICES Journal of Marine Research* - selected papers from the ICES/PICES/GLOBEC Symposium on *Role of zooplankton in global ecosystem dynamics: Comparative studies from the world oceans*.

02/S/4: Future of current Working Groups

- WG 14 on *Effective sampling of micronekton* to continue its activities and produce a final report in 2003;
- WG 15 on *Ecology of harmful algal blooms in the North Pacific* to continue for an additional year to clearly define the terms of reference and items to be addressed in an on-going manner for potential development as an Advisory Panel or “Section” under MEQ;
- WG 16 on *Climate change, shifts in fish production and fisheries management* to continue its activities and produce a final report in 2003.

02/S/5: New PICES Groups

- A Working Group on the *North Pacific Ecosystem Status Report* will be organized under the direction of the Science Board (see *GC Appendix B* for terms of reference);
- A Study Group on *PICES Capacity Building* will be established under the direction of the Science Board to develop a capacity building strategy and an implementation plan for the Organization (see *GC Appendix B* for terms of reference);
- An *ad hoc* NEMURO Experimental Planning Team (NEXT) will be organized

under the CCCC Implementation Panel to develop the scientific strategy to use ecosystem models to examine the central CCCC hypotheses. This team would work by electronic communication (see *GC Appendix B* for terms of reference);

- An Advisory Panel on *Micronekton sampling inter-calibration experiment* will be formed under BIO to develop and oversee the implementation of a project to compare different micronekton sampling

devices at sea (see *GC Appendix B* for terms of reference).

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

Council approved the revised Standing List of International Organizations and Programs and agreed with identified priorities for interaction in 2003 (*SB Endnote 8*).

***GC Appendix B* Terms of reference for new PICES groups**

Working Group on North Pacific Ecosystem Status Report

1. Prepare the full North Pacific Ecosystem Status Report for review at PICES XII in October 2003, and for completion in December 2003.
2. Prepare the report for the PICES - CoML project on “*Marine life in the North Pacific Ocean: The known, unknown and unknowable*”.
3. Recommend mechanisms to facilitate the data management requirements of the North Pacific Ecosystem Status Report.
4. Recommend how to implement production of the North Pacific Ecosystem Status Report as a regular activity of PICES.

Study Group on PICES Capacity Building

1. Identify the capacity building needs of PICES.
2. Develop a proposal to address the capacity building needs of PICES, including consideration of possible collaborations with other organizations.
3. Draft report is due to Science Board at their next meeting (tentatively the inter-sessional meeting in April 2003).

Ad hoc NEMURO Experimental Planning Team (NEXT)

1. To help guide and prioritize requests for modifications, future advancements, extensions, validations and calibrations of the NEMURO model and its successors.
2. To develop a scientific strategy, based on requirements of ecosystem models to be developed, for a series of workshops for testing hypotheses on the following topics of CCCC Integration:
 - a. Comparison of coastal ecosystems around the North Pacific Rim (and North Atlantic), using zooplankton and small fish as focal species;
 - b. Latitudinal comparison of North Pacific ecosystems, using multiple focal species;
 - c. Link basin-scale ecosystem models to coastal ecosystem models in the North Pacific, using salmon and associated species linked trophically to salmon as focal species.
3. To direct the development of advances in NEMURO by considering the scientific importance of the suggestion, the time and resources required to complete the task, and proposed suggestion’s relevance to the goals of PICES and the CCCC Program.

4. To develop an outline of hypotheses-testing model experiments during the early half of 2003, mainly through “virtual meetings”

such as e-mail and other forms of long distance communication, and report to CCCC-IP/EC for consideration.

Advisory Panel on *Micronekton sampling inter-calibration experiment*

1. Develop a proposal for a micronekton sampling inter-calibration experiment, arising from the work of PICES WG 14 on *Effective sampling of micronekton*. Advise on appropriate locations as well as identify micronekton sampling gears and other quantifying technologies for inclusion in the inter-calibration experiment.
2. Facilitate the experiment by identifying and securing commitments for resources (personnel and ships) to ensure success of the experiment; provide technical advice in development of sampling protocols and experimental design.
3. Oversee post-survey analysis of samples and data; provide guidance in preparation of results for final report and publication(s).

GC Endnote 1

Participation List

Canada

Denis D’Amours (alternate Delegate)
Laura Richards

Japan

Tokimasa Kobayashi
Tokio Wada (advisor)

People’s Republic of China

Hai-Qing Li
Qian-Fei Liu (alternate Delegate)

Republic of Korea

Hee-Dong Jeong (alternate Delegate)
Won-Seok Yang (alternate Delegate)

Russia

Lev N. Bocharov
Vladimir A. Belyaev (advisor)
Alexander A. Kurmazov (advisor)
Igor I. Shevchenko (advisor)

U.S.A.

Vera Alexander
Richard J. Marasco
Elizabeth J. Tirpak (advisor)

Other

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

GC Endnote 2

Governing Council Meeting Agenda

1. Opening remarks
2. Adoption of agenda
3. Preliminary report on administration
4. Report of PICES Review Committee
5. Membership and observers from other countries
6. Relations with relevant international and regional organizations/programs
7. PICES Intern Program
8. PICES Visiting Scientist Program
9. PICES capacity building
10. Schedule and financing of future Annual Meetings of the Organization
11. Election of Chairman and Vice-Chairman
12. Appointment of Finance and Administration Committee Chairman
13. Executive Secretary position
14. Report and recommendations of Finance and Administration Committee
 - 14.1 Audited accounts for financial year 2001
 - 14.2 Annual contributions

- 14.3 Fund-raising activities
- 14.4 Budget
 - a. Estimated accounts for fiscal year 2002
 - b. Proposed budget for fiscal year 2003
 - c. Forecast budget for fiscal year 2004
 - d. Working Capital Fund
- e. Home Leave and Relocation Fund
- f. Trust Fund
- 15. Report and recommendations of Science Board
- 16. Other business

GC Endnote 3

Report on Administration for 2002

I. National contributions

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

are payable by the first day of the financial year (January 1) to which they relate. Dues for 2002 were paid as follows:

Japan -----	November 27, 2001
U.S.A.-----	December 24, 2001
Canada -----	January 21, 2002
Russian Federation-----	June 10, 2002 (72%) and October 10, 2002 (28%)
Republic of Korea-----	August 26, 2002
People’s Republic of China-----	October 8, 2002 (95.7%)

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:

- A grant from the Nakajima Foundation, approved in 2001, was used this year to finance a MODEL/REX Workshop on *Improvements to the PICES NEMURO Model*, held January 24-27, 2002, in Nemuro/Yokohama, Japan.
- A grant of \$5,000, provided by Fisheries and Oceans Canada in 2001, was used this year to support the participation of two Canadian academics in PICES XI.
- National Marine Fisheries Service (NMFS, U.S.A.) and Gulf of Alaska Ecosystem Monitoring and Research Program (GEM) of EVOS (Exxon Valdez Oil Spill Trustee Council, U.S.A.) contributed \$37,500 (US \$24,260) and \$15,300 (US \$10,000), respectively, to finance the production of a pilot *North Pacific Ecosystem Status Report*. A part of the NMFS contribution (US \$9,260) was received in 2001.
- A grant of \$69,480 (US \$45,000) from the

Alfred P. Sloan Foundation was received to produce a report entitled “*Marine life in the North Pacific Ocean: The known, unknown and unknowable*” by December 31, 2003.

- GEM allocated a total of \$185,300 (US \$121,000) to support the PICES Continuous Plankton Recorder (CPR) survey in 2002, and to install a thermosalinograph and fluorometer system on the tankers that are towing the CPR.
- GEM also contributed \$6,000 (US \$3,860) to support a MONITOR Workshop on *Voluntary observing systems*, held April 4-6, 2002, in Seattle, U.S.A.
- In addition to their annual fees, Canada, Russia and U.S.A. contributed \$10,000, \$2,300 (US \$1,500) and \$15,200 (US \$9,900), respectively, to finance the 2002 PICES Intern Program.
- SCOR provided a grant of \$7,600 (US \$5,000) to support travel of scientists from countries with “economies in transition” to PICES XI.

III. Inter-sessional meetings

The following inter-sessional meetings were convened/co-sponsored, for which financial,

travel and logistical arrangements were made:

- A 4-day MODEL/REX Workshop on *Improvements to the PICES NEMURO Model: To build a nutrient-phytoplankton-zooplankton-fish version of the model* (co-sponsored by Nakajima Foundation and Nemuro-city), January 24-27, 2002, Nemuro/Yokohama, Japan;
- A 2-day Fourth Annual Workshop on *Salmon ecology in coastal ecosystem*, January 2002, in Santa-Cruz, U.S.A.;
- A 2-day meeting of WG 14 on *Effective sampling of micronekton*, February 16-17, 2002, Honolulu, U.S.A. (in conjunction with the Ocean Sciences Meeting);
- A 2-day NPAFC/NASCO/IBSFC/PICES/ICES Symposium on *Causes of marine mortality of salmon in the North Pacific and North Atlantic Oceans and in the Baltic Sea*, March 14-15, 2002, Vancouver, Canada;
- A 3-day MONITOR Workshop on *Voluntary observing systems* (co-sponsored by EVOS), April 5-7, 2002, Seattle, U.S.A.;
- A 2-day BASS/MODEL Workshop on *Using models to test hypothesis on effects of climate change on the North Pacific subarctic gyre system*, April 21-22, 2002, La Paz, Mexico;
- A 3-day International Symposium on *North Pacific transitional areas* (co-sponsored by CIBNOR and CICIMAR), April 23-25, 2002, La Paz, Mexico;
- A 3-day meeting of the North Pacific Data Buoys Advisory Panel (co-sponsored by WMO and IOC), June 4-6, 2002, Victoria, Canada;
- A 3-day CREAMS/PICES Symposium on *Recent progress in studies of physical processes and their impact to the Japan/East Sea ecosystem*, August 22-24, 2002, Seoul, Republic of Korea;
- A 2-day JGOFS/PICES Workshop on *Synthesis of JGOFS North Pacific Process Study* (co-sponsored by the Japan Oceanographic Society and Hydrospheric Atmospheric Research Centre of Nagoya University), October 1-2, 2002, Sapporo, Japan (during the JOS meeting organized in conjunction with the 26th SCOR General Meeting);
- A joint meeting of CCCC MODEL Task Team and GLOBEC Focus 3 Working Group on *Linking biophysical and upper trophic level models*, October 18, Qingdao, People's Republic of China (in conjunction with PICES XI and 2nd GLOBEC OSM);
- A ½-day Workshop of CCCC MONITOR Task Team and GLOBEC Focus 1 Working Group on *Requirements and methods for early detection of ocean change*, October 19, 2002, Qingdao, People's Republic of China (during PICES XI);
- A 1-day PICES/GLOBEC Data Management Workshop on *Exchange, inventory and archival of GLOBEC data*, October 19, 2002, Qingdao, People's Republic of China (during PICES XI);
- A 1-day CCCC Integration Workshop, October 20, 2002, Qingdao, People's Republic of China (during PICES XI);
- A 1-day PICES/CLIVAR Workshop on *Climate variability in the Pacific and its impact on the marine ecosystem*, October 20, 2002, Qingdao, People's Republic of China (during PICES XI);
- A ½-day Workshop on *Monitoring from moored and drifting buoys*, October 23, 2002, Qingdao, People's Republic of China (during PICES XI);
- A 1-day PICES/CKJORC Workshop on *Regional cooperation and management of the marine environment and resources in the Yellow Sea*, October 25, 2002, Qingdao, People's Republic of China (during PICES XI).

Preparation and arrangements are in progress for the 3rd Zooplankton Production Symposium on *The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Oceans* (co-sponsored by ICES, PICES and GLOBEC) to be held May 20-23, 2003, in Gijón, Spain.

Planning has been initiated (i) to convene the 3rd PICES Workshop on *Okhotsk Sea and adjacent areas*, in June 2003, in Vladivostok, Russia; (ii) to organize a PICES/SOLAS session on *Iron enhancement experiment in the North Pacific* during the IGBP Congress in June 2003, in Banff, Canada (or a separate workshop in late

2003; and (iii) to co-sponsor an IOC/SCOR Conference on *Quantitative ecosystem indicators for fisheries management*, to be held March 31-April 3, 2003, in Paris, France.

IV. Publications

List of publications produced this year includes:

- PICES 2001 Annual Report was circulated in February;
- Vol. 10 nos. 1 and 2 of PICES Press were circulated in February and July;
- Final Announcement for PICES XI was distributed in April;
- Final Announcement for the 3rd Zooplankton Production Symposium on *The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Oceans*, was distributed in April;
- PICES Scientific Report No. 20: *Climate Change and Carrying Capacity Program / Report of the 2001 BASS/MODEL, MONITOR and REX Workshops, and the 2002 MODEL Workshop*, was published and distributed in August;
- PICES Scientific Report No. 21: *Climate Change and Carrying Capacity Program / Report of the PICES 2002 Voluntary Observing Systems Workshop*, was published and distributed in August;
- PICES Scientific Report No. 22: *PICES Science: The first ten years and a look to the future* (Proceedings of the PICES X Anniversary Symposium), was published in August and distributed in September;
- PICES Scientific Report No. 23: *Harmful algal blooms in the PICES region of the North Pacific*, was published and distributed in September;
- Special issue of *Journal of Oceanography* (Vol. 58, No. 5) on *Physics and biology of eddies, meanders and rings in the PICES region* (selected papers from the 2001 CCCC Topic Session; Guest Editors: William B. Crawford, Alexander S. Bychkov, Stewart M. (Skip) McKinnell and Takashige Sugimoto), was published in September and will be distributed after PICES XI;
- Special issue of *Progress in Oceanography* (Vol. 55, No. 1-2) on *Variability in the*

Bering Sea ecosystem (selected papers from the 2001 CCCC Topic Session; Guest Editors: Allen Macklin, Jeffrey M. Napp, Vladimir I. Radchenko, Sei-ichi Saitoh, Phyllis J. Stabeno and Stewart M. McKinnell) was published in September and will be distributed after PICES XI;

- A Book of Abstracts for the Eleventh Annual Meeting was prepared for circulation at PICES XI in October;
- Poster for the PICES Twelfth Annual Meeting was printed in October and distributed at and after PICES XI;
- Special issue of *Deep-Sea Research Part II* (Vol. 49, Nos. 24-25) on *North Pacific Biogeochemical Processes* (Guest Editors: Toshiro Saino, Alexander S. Bychkov, Chen-Tung A. Chen and Paul J. Harrison) will be published in December;
- Special section of *Canadian Journal of Fisheries and Aquatic Sciences* on *Migration of key ecological species* (Selected papers from the 2001 FIS Topic Session; Guest Editor: James Irvine) will be published in December;
- The electronic (CD-ROM and web-based) version of the Oceanographic Atlas of the Okhotsk Sea, Bering Sea and Japan/East Sea prepared by the Pacific Oceanological Institute.

Papers resulting from the 1999 MEQ Practical Workshop on *Environmental assessment of Vancouver Harbour* will constitute a special issue of *Marine Environmental Research* (Guest Editors: Richard F. Addison and John E. Stein). Selected papers from the 2001 PICES/JGOFS Topic Session on *Plankton size classes, functional groups, and ecosystem dynamics: Causes and consequences* will comprise a special issue of *Progress in Oceanography* (Guest editors: Alexander S. Bychkov and Angelica Peña). These special issues are in progress (review stage) and will be published in 2003.

V. Travel and representation at other organization meetings

- Dr. Skip McKinnell (Assistant Executive Secretary), attended the Fourth Annual

- Workshop on *Salmon ecology in coastal ecosystem*, in Santa Cruz, U.S.A., in January;
- Travel support was provided to Drs. Richard D. Brodeur (U.S.A.) and Kouichi Kawaguchi (Japan) to attend the workshop of WG 14 on *Effective sampling of micronekton*, in Honolulu, U.S.A., in February;
 - Dr. Alexander Bychkov (Executive Secretary) and Ms. Christina Chiu (Administrative Assistant) travelled to China and Japan, in February-March, to discuss preparations for PICES XI with the Local Organizing Committee (Qingdao), and PICES activities and initiatives with Chinese and Japanese Government representatives (Beijing and Tokyo). Dr. Hyung-Tack Huh (PICES Chairman) joined the visit in Beijing, and Dr. Vera Alexander (PICES Vice-Chairman) joined the visit in Tokyo (paid by U.S. Government);
 - Dr. Skip McKinnell attended the informational ACCEO (Alliance for California Current Ecosystem Observation) meeting, in Seattle, U.S.A., in March;
 - Drs. Douglas E. Hay (FIS Chairman), R. Ian Perry (Science Board Chairman), Skip McKinnell (co-convenor) and Alexander Bychkov attended the Symposium on *Causes of marine mortality of salmon in the North Pacific and North Atlantic Oceans and in the Baltic Sea* (co-sponsored by NPAFC, PICES, NASCO, IBSFC and ICES) and the NPAFC RPCM, in Vancouver, Canada, in March;
 - Full or partial travel support was provided to 6 scientists (from Japan, U.K. and U.S.A.) to attend the MONITOR Workshop on *Voluntary observing systems*, in Seattle, U.S.A., in April;
 - Dr. Harold P. Batchelder (CCCC Co-Chairman) participated in the meeting of the *ICES Cod and Climate Change Program*, in Copenhagen, Denmark, in April;
 - Dr. Gordon A. McFarlane (Canada) attended the BASS/MODEL Workshop on *Using models to test hypothesis on effects of climate change on the North Pacific subarctic gyre system*, in La Paz, Mexico, in April;
 - Full or partial travel support was provided to 6 invited speakers (from Canada, Japan and U.S.A.), Science Board Chairman and staff of the Secretariat to participate in / organize the International Symposium on *North Pacific transitional areas*, in La Paz, Mexico, in April;
 - Dr. Alexander Bychkov and Ms. Christina Chiu, attended the International Fisheries Commission Pension Society Meeting in Chicago, U.S.A., in May;
 - Dr. Alexander Bychkov participated in the meeting of the Executive Council of the Inter-governmental Oceanographic Commission, in Paris, France, in June;
 - Drs. R. Ian Perry and Alexander Bychkov participated in the meeting of the Review Committee, in Seattle, U.S.A., in June;
 - Ms. Christina Chiu travelled to San Diego and Honolulu (paid by NMFS, U.S.A.) to assist in site inspections for PICES XIII;
 - Full or partial travel support was provided to 7 invited speakers (from Japan, Korea and Russia) to attend the CREAMS/PICES Symposium on *Recent progress in studies of physical processes and their impact to the Japan/East Sea ecosystem* (August 2002, Seoul, Republic of Korea). In addition, by request of PICES, the University of Washington provided partial travel support for 4 Russian scientists to attend the meeting. Dr. McKinnell participated in this meeting as a PICES representative and discussion leader on the development of a chapter on the Japan/East Sea for the North Pacific Ecosystem Status Report;
 - Travel support was provided to Drs. Kenneth Denman (Canada) and Nian-Zhi Jiao (China) to attend a JGOFS/PICES Workshop on *Synthesis of JGOFS North Pacific Process Study* (during the Japan Oceanography Society meeting organized in conjunction with the 26th SCOR General Meeting), in Sapporo, Japan, in October; Dr. Alexander Bychkov participated in the 26th SCOR General Meeting and convened the JGOFS North Pacific Synthesis Group meeting held in conjunction with the JGOFS/PICES Workshop;
 - Drs. Hyung-Tack Huh and R. Ian Perry represented PICES at the 2002 ICES Annual

Conference and Centenary, in Copenhagen, Denmark, in October;

- Dr. Alexander Bychkov represented PICES at the NPAFC Tenth Annual Meeting, in Vladivostok, Russia, in October;
- Drs. Hyung-Tack Huh and R. Ian Perry traveled to Qingdao, People's Republic of China, in October, for PICES XI;
- Full or partial travel support (paid by PICES and co-sponsoring programs and organizations) was provided to 5 invited speakers for the Science Board Symposium, and 17 invited speakers for scientific sessions at PICES XI, in Qingdao, People's Republic of China, in October;
- Travel support (paid by PICES, WCRP and U.S. CLIVAR) was provided to 7 scientists (invited speakers and co-convenors) to attend the PICES/CLIVAR Workshop on *Climate variability in the Pacific and its impact on the marine ecosystem*, October 20, 2002, Qingdao, People's Republic of China (during PICES XI);
- Partial travel support (paid by the Trust Fund and a SCOR grant) was provided to 1 Canadian, 50 Chinese (mostly in the form of registration fees), 2 Japanese, 5 Korean, 4 Mexican and 14 Russian scientists to attend PICES XI. The majority of these scientists are younger than 35 year of age;
- Dr. Alexander Bychkov and Ms. Christina Chiu visited Seoul, Korea, in late October, to discuss preparations for PICES XII with the Local Organizing Committee;
- Dr. Skip McKinnell attended the meeting of the SCOR-IOC WG 119 on *Quantitative ecosystem indicators for fisheries management*, in Cape Town, South Africa, in December.

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 was initiated on improving IGBP-PICES connections and the role PICES, as a regional organization, can play in implementing marine aspects of the IGBP Phase II.
- GLOBEC and JGOFS are two major IGBP projects working closely with PICES (see below).
- PICES is interested in strengthening interactions with SOLAS (see below), and in the development of OCEANS, a new project on ocean biogeochemistry and ecology, and will send representatives to the OCEANS Open Science Conference (January 2003) where the Science and Implementation Plans for the program will be discussed.

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 CCCC Integration Workshop was held at PICES XI to (i) review and evaluate the progress that was made in the first decade of the CCCC Program, and (ii) provide a framework for future synthesis and integration of CCCC activities. GLOBEC was invited and participated in this discussion at the GLOBEC SSC level.
- The 2nd GLOBEC Open Science Meeting (OSM) and PICES XI were held sequentially in Qingdao, People's Republic of China, on October 15-18 and October 18-26, 2002, respectively. Jointly organized events/actions include:
 - CCCC/GLOBEC session on *ENSO and decadal scale variability in North Pacific ecosystems*;
 - CCCC/GLOBEC session on *Coupled biophysical processes, fisheries and climate variability in coastal and oceanic ecosystems of the North Pacific*;

- Meeting of CCC MODEL Task Team and GLOBEC Focus 3 Working Group on *Linking biophysical and upper trophic level models*;
 - Workshop of CCC MONITOR Task Team and GLOBEC Focus 1 Working Group on *Requirements and methods for early detection of ocean changes*;
 - PICES/GLOBEC Data Management Workshop on *Exchange, inventory and archival of GLOBEC data*;
 - PICES/GLOBEC joint newsletter to be printed in January 2003.
 - Preparation and arrangements are in progress for the ICES/PICES/GLOBEC Zooplankton Production Symposium on *The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Ocean* to be held May 20-23, 2003, in Gijón, Spain. PICES and GLOBEC encouraged SCOR (letter of June 27, 2002) to make a financial contribution that will be used to support scientists from developing countries and countries with “economies in transition” to attend the Symposium.
 - The overall theme for PICES XII (October 10-18, 2003, Seoul, Republic of Korea) is “*Human dimensions of ecosystem variability*”, and a 1-day Science Board Symposium will be convened using this theme. Activities of GLOBEC Focus 4 Working Group on *Feedbacks from the changes in marine ecosystem structure* are highly relevant to the objectives of the Science Board Symposium, and PICES invited GLOBEC to co-sponsor this Symposium and participate in the planning.
- A 2-day JGOFS/PICES Workshop on *Synthesis of JGOFS North Pacific Process Study* (co-sponsored by the Japan Oceanographic Society and Hydrospheric Atmospheric Research Centre of Nagoya University) was held October 1-2, 2002, in Sapporo, Japan (during the Japan Oceanography Society meeting organized in conjunction with the 26th SCOR General Meeting).
 - A collection of contributed papers from JGOFS-related field programs in the North Pacific will be published as a special JGOFS/PICES issue of *Deep-Sea Research II on North Pacific Biogeochemical Processes* (Guest Editors: Toshiro Saino, Alexander Bychkov, Chen-Tung A. Chen and Paul J. Harrison) in 2002 (Vol. 49, Nos. 24-25, pp. 5297-5808).
 - Plans are in progress for a special issue of *Journal of Oceanography* on *JGOFS North Pacific synthesis* to be published in early 2004.

IGBP Surface Ocean-Lower Atmosphere Study (SOLAS)

IGBP Joint Global Ocean Flux Study (JGOFS)

- JGOFS participated in the planning and co-sponsored a topic session on *Plankton size classes, functional groups and ecosystem dynamics: Causes and consequences* at PICES X, in October 2001. Selected papers from this session comprise a special issue of *Progress in Oceanography* (Guest editors: Alexander S. Bychkov and Angelica Peña) that is at the review stage now and will be published in 2003.
- 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. In 2000, the Advisory Panel on *Iron Fertilization Experiment in the Subarctic Pacific Ocean* convened a planning workshop on *Designing the iron fertilization experiment in the subarctic Pacific* in Tsukuba, Japan, in conjunction with PICES IX. Recommendations from this workshop have been 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). Preliminary results from SEEDS were reported at PICES X (Victoria, Canada, 2001) and results from SERIES were presented at PICES XI (Qingdao, China, 2002). Reports on both experiments

are recommended for publication in the PICES Scientific Report Series and/or as a special issue in a primary journal.

- Planning has been initiated to convene a joint SOLAS-PICES workshop on *Implementation of SOLAS in the North Pacific Ocean* and a joint PICES-SOLAS session or workshop on *Iron enhancement experiment in the eastern and western subarctic Pacific*. Potentially these events could be organized either during the IGBP Congress in June 2003 (Banff, Canada), or in conjunction with PICES XII in October 2003 (Seoul, Korea), or as a separate meeting in late 2003.

Scientific Committee on Oceanic Research (SCOR)

The Executive Secretary attended the 26th SCOR General Meeting in October 2002, 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/programs, working groups and activities established/co-sponsored by SCOR are listed below:

- By invitation from PICES, SCOR WG 118 on *New technologies for observing marine life* WG nominated and co-sponsored Dr. Gabriel Gorsky (France) to give an invited talk at the PICES XI Science Board Symposium on *Technological advances in marine scientific research*, and to demonstrate new methods for treatment of net samples and underwater imaging of zooplankton at the TCODE Electronic Poster Session on *Data systems to support technological advances in observing systems* held in conjunction with the Symposium.
- The overlapping scientific interests of PICES and SCOR-IOC WG 119 on *Quantitative ecosystem indicators for fisheries management* resulted in (i) an invitation for PICES representatives to attend the next WG 119 meetings (December 4-6, 2002, in Cape Town, South Africa), and (ii) an offer from PICES to be a co-sponsor for an IOC-SCOR *Indicator Conference* to be held March 31-April 3,

2003, in Paris, France. PICES could potentially contribute “in-kind” support, e.g., publishing of an announcement/poster, providing its website for registration and abstract submission, etc. PICES will be represented on the Scientific Steering/Organizing Committee for this conference.

- Activities of PICES WG 13 on *CO₂ in the North Pacific* were recognized by the SCOR-IOC Ocean Carbon Advisory Panel as essential for improving the overall quality of oceanic CO₂ measurements, and developing strong collaborations for the integration and synthesis of the large CO₂ data set in the North Pacific. The Panel emphasized the importance of international participation in the design of Ocean Carbon Observation System and supported PICES as an excellent forum for the Pacific region. A new PICES WG 17 on *Biogeochemical data integration and synthesis* will continue to retain a scientific focus on the carbon cycle within PICES, and PICES proposes that WG 17 be established as a joint PICES-SCOR-IOC Working Group.
- SCOR provided a grant of \$7,600 to support travel of scientists from countries with “economies in transition” to PICES XI.
- PICES and GLOBEC requested SCOR to make a financial contribution that will be used to support participation of scientists from developing countries and countries with “economies in transition” in the 3rd Zooplankton Production Symposium to be held May 20-23, 2003, in Gijón, Spain.

WCRP International Research Programme on Climate Variability and Predictability (CLIVAR)

- A 1-day PICES/CLIVAR Workshop on *Climate variability in the Pacific and its impact on the marine ecosystem* was convened on October 20, 2002, in Qingdao, People’s Republic of China (in conjunction with PICES XI). The purpose was to foster collaboration on implementation of CLIVAR in the North Pacific. Travel support (paid by PICES, WCRP and U.S. CLIVAR) was provided to 7 scientists

(invited speakers and co-convenors) to attend the workshop.

Global Ocean Observing System (GOOS)

- PICES' relations with GOOS are highlighted as particularly important by all Scientific Committees and the CCCC Program. Several PICES *ad hoc* groups, such as MONITOR Task Team, CPR Advisory Panel, North Pacific Data Buoy Advisory Panel and WG 17 on *Biogeochemical data integration and synthesis* focus on activities relevant to GOOS.
- PICES has also initiated a few projects of direct relevance to GOOS: North Pacific Ecosystem Status Report, North Pacific Continuous Plankton Recorder Program, inter-laboratory method comparisons of measurement technique for carbonate parameters in seawater, etc.
- 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 is actively communicating with scientists in the North-East Asian Regional Global Ocean Observing System (NEAR-GOOS) effort and participating in NEAR-GOOS meetings, with the idea of broadening the program to an ecosystem-based effort.

Intergovernmental Oceanographic Commission (IOC)

- PICES has led the way in revealing the linkages between North Pacific climate variations and changes in marine ecosystems. To make further progress in this direction, and ensure that the Organization will continue to serve as a regional focal point for integrating North Pacific climate research, PICES is strengthening ties with the IOC subsidiary body (WESTPAC), and the research programs/projects (CLIVAR, GLOBEC,

GOOS, GEOHAB) and groups (Ocean Carbon Advisory Panel, SCOR-IOC WG 119 on *Quantitative ecosystem indicators for fisheries management*) supported by IOC.

- Discussion was initiated on the joint support of capacity building activities in the North Pacific.

International Council for the Exploration of the Sea (ICES)

- Preparation and arrangements are in progress for the ICES/PICES/GLOBEC Zooplankton Production Symposium to be held May 20-23, 2003, in Gijón, Spain;
- In response to an invitation from the ICES *Cod and Climate Change Program* (CCC), Dr. Harold P. Batchelder (CCCC Co-Chairman) participated in the meeting of the Program in Copenhagen, Denmark (April 19-20, 2002). The purpose was to discuss possible formal collaboration between the ICES CCC and PICES CCCC, and begin consultations towards putting together a joint workshop focused on a subject of mutual interest, in 2004 or 2005;
- In accordance with Decision 01/S/6(ii), PICES Science Board has developed proposals on potential areas for cooperation between the two organizations. Four "themes" that might be of interest for enhanced interactions were presented at the 2002 ICES Annual Conference: (i) *teleconnections* - investigations whether there is 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 further discussed at PICES XI.

North Pacific Anadromous Fish Commission (NPAFC)

- 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* (March 14-15, 2002, Vancouver, Canada).

- NPAFC and PICES agreed that co-sponsorship of scientific meetings should be used as a way to strengthen interactions between the two organizations. Future plans include: (i) NPAFC co-sponsorship of the 3rd PICES Workshop on *Okhotsk Sea and adjacent areas* in June 2003; (ii) PICES co-sponsorship of a possible NPAFC symposium in 2004; (iii) joint workshops to consider the response of Pacific salmon to climate change in 2004 and 2005.
- NPAFC did not provide information on salmon stock status for the pilot PICES *North Pacific Ecosystem Status Report*, as it was agreed at the NPAFC Ninth Annual Meeting in October 2001, and at the NPAFC Research Planning and Coordinating Meeting in March 2002. At the NPAFC Tenth Annual Meeting, it was confirmed that NPAFC is still interested in participating in developing the *North Pacific Ecosystem Status Report*, and the Working Group on *Stock Assessment* will prepare and provide a summary on North Pacific salmon stock status before August 2003.

Other international fisheries organizations

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

Census of Marine Life program (CoML)

- A proposal from PICES to produce (by December 31, 2003) a report entitled *Marine life in the North Pacific Ocean: The known, unknown and unknowable* was approved by the CoML Scientific Steering Committee, and awarded a grant of \$68,480 (US \$45,000) from the Alfred P. Sloan Foundation.

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

- Gulf of Alaska Ecosystem Monitoring and Research Program (GEM) of EVOS (Exxon Valdez Oil Spill Trustee Council, U.S.A.) contributed \$15,300 (US \$10,000) to finance the production of the pilot PICES *North Pacific Ecosystem Status Report*, and \$6,000 (US \$3,900) to support a PICES MONITOR Workshop on *Voluntary observing systems*, held April 4-6, 2002, in Seattle, U.S.A.
- GEM allocated a total of \$185,000 (US \$121,000) to support the PICES Continuous Plankton Recorder (CPR) survey in 2002, and to install a thermosalinograph and fluorometer system on the tankers that are towing the CPR.

Alliance for California Current Ecosystem Observation (ACCEO)

- Activities and potential products of ACCEO (a new partnership to build an integrated monitoring program for observing the entire California Current pelagic ecosystem, from Mexico to Canada) are very relevant to the ecosystem status initiative of PICES. To facilitate collaboration between the two organizations, Dr. Skip McKinnell attended the ACCEO informational meeting in Seattle on March 1, 2002, and Drs. David Mackas (Co-Chairman of CCCC MONITOR TT) and Ian Perry (Science Board Chairman) participated by teleconference. Dr. Mackas also attended the first ACCEO Annual Meeting held September 23-24, 2002, in Portland, U.S.A.

VII. PICES Intern Program

The PICES Intern Program was approved in 1999 (Decision 99/A/7) and commenced in 2000. In 2000-2002, young scientists from three different countries worked as interns at the Secretariat: Mr. Gong-Ke Tan of the People's Republic of China (May-December 2000), Dr. Jung-Hwa Choi of the Republic of Korea (May 2001-February 2002) and Ms. Natalya Bessmertnaya of Russia (April 2002 – March 2003). At the Ninth and Tenth Annual

Meetings, Council discussed the results from the first two years of the Intern Program, and concluded that PICES and member countries benefit from the Program, and that it should be continued.

The Intern Program was not budgeted for 2000-2002, and was financed solely by voluntary contributions. Following Decision 00/A/8(iii), the Executive Secretary sent letters inviting member countries to make voluntary contributions, but only Canada (\$7,500 in 2000, \$10,000 in 2001, and \$10,000 in 2002), the United States (\$7,000 in 2000, \$12,000 in 2001, and \$15,000 in 2002), and the Russian Federation (\$2,300 in 2002) contributed to support the Program. These contributions alone allowed the implementation of the Program.

At last year's meeting, again Council did not reach a consensus on Canada's proposal to gradually build the Intern Program into the annual budget, and decided to use registration fees collected from the Annual Meeting to finance the Program (Decision 01/A/4(iv)). As a result, there is no special allocation for the Intern Program in the proposed *FY 2003* and forecast *FY 2004* budgets. The 2003 expenses for the Intern Program are projected at a level of \$27,500. Only by transferring almost all the fees collected for PICES XI (estimated at about \$30,000) will this amount be offset, otherwise the continuation of the Program would require new voluntary contributions, or will reduce the Trust Fund support for other activities.

A dialogue with Canadian authorities (Human Resources Development Canada, Citizenship and Immigration Canada, and the Department of Foreign Affairs and International Trade) on proper arrangements for the Program is complete, with kind assistance of Fisheries and Oceans Canada, and now the actual duration of the Intern's term is only limited by the existing funding and not by Canadian visa regulations.

VII. PICES database

The PICES database was constructed after the Tenth Annual Meeting, where several inefficiencies were noted in how the Secretariat

managed its contacts and meetings. Prior to the database being built, several smaller, in-house databases were maintained to hold information for individual meetings or for certain member groups; however, data transfer among the smaller databases was difficult and duplication occurred frequently. Construction of the new database began in January 2002 using the existing structure of the older databases, and it is currently in trial use by the Secretariat.

The PICES database holds information of all contacts (people who attended meetings, members of PICES groups, libraries and organizations), and this information can easily be updated via the web site interface or by the Secretariat. People may now register for meetings and submit their abstracts on-line, and this data is transferred directly into the database after verification by the Secretariat. Management of meetings is now easier and more accurate since confirmation letters are sent directly from the database to presenters; potential paper lists are generated in the same manner and forwarded to the session convenors; and scheduling of sessions is done within the database and schedules may be modified on site if a last minute change occurs. Meeting finances (the tracking of registration fee payments, financial support grants, etc.) are also handled through the database. Other useful functions are lists of papers sorted by session, country or speakers, participation list, the generation of financial reports, mailing list labels, poster session labels, and nametags, etc.

The PICES database has dramatically improved how the Secretariat deals with both contacts and meetings, as previously tedious tasks can now be done efficiently and quickly. New meetings and contacts are all managed through the one central database that may be accessed simultaneously by several Secretariat users at once, along with users on the PICES web site. The real test for the PICES database was PICES XI. By using the database on site, processing of information and updates to contacts or paper presentations was greatly improved and helped to provide a more professional and efficient level of event organization to the Secretariat and participants.

GC Endnote 4

Remarks by Prof. Ji-Lan Su (Chairman of the Intergovernmental Oceanographic Commission)

Dr. Hyung-Tack Huh, the Chairman of PICES, honorable members of the Governing Council, distinguished guests and colleagues:

On behalf of the Intergovernmental Oceanographic Commission of UNESCO (IOC), it is a great honor for me to address you at your Council meeting prior to the PICES Eleventh Annual Meeting. I would like to thank Dr. Hyung-Tack Huh, the Chairman of PICES, for his kind invitation. I would also like to convey the warmest regards of Dr. Patricio Bernal, Assistant Director-General of UNESCO and the Executive Secretary of IOC, who could not be here because of the ongoing UNESCO Executive Board meeting.

At the outset, I would like to re-affirm the importance that IOC places on the role of PICES in scientific research, observations and services related to the preservation and sustainable utilization of marine resources and ecosystems of the North Pacific. It is our firm belief that the cooperation between IOC and active and competent regional organizations will greatly benefit programmes on both sides. This is why we are eager to cooperate with PICES, and to urge our own regional subsidiary body, WESTPAC (IOC Sub-Committee for the Western Pacific) among others, to interact strongly with your Organization. In this respect, we are in fact much pleased that the Chairman of PICES, Dr. Huh, is now also the Chairman of WESTPAC.

Having said this, let me point out that IOC is much interested in enhancing its cooperation with PICES on several fronts. I am happy to note that recently there has been significant interaction between the Secretariats of PICES and IOC for this purpose. Notably, at its last session, the Steering Committee of Global Ocean Observing System (GOOS) considered

the potential for joint scientific and technical developments. Given our mutual interests in ocean monitoring, we are confident that the efforts of the GOOS and PICES communities can be brought together in a constructive way to the mutual benefit of both. IOC is keen to see this development continued. I understand that the representatives from the Steering Committee of both GOOS and NEAR-GOOS intend to pursue this issue during the present meeting.

I also understand that, at this meeting, PICES and IOC will further discuss cooperation on four other fronts, namely, the *North Pacific Ecosystem Status Report*; and activities related to the *ecosystem indicators*; *biogeochemical data integration and synthesis, with focus on carbon cycle*; and *harmful algal blooms*.

As an example, one priority of the IOC Harmful Algal Bloom Programme is the compilation of data documenting trends in the occurrence and impact of harmful algal events. To that end, IOC and ICES have established a Harmful Algal Event Data Base (HAE-DAT), which has already compiled 15 years of data from the Western Atlantic. They are meta-data information on harmful events, not the primary monitoring data. Such meta-data are often not released by the authorities. However, these meta-data allow for recording of events and their impacts, and are important in our ability to follow trends in HAB occurrences and species distribution. IOC and ICES have already invited PICES, through its Working Group on *Ecology of harmful algal blooms in the North Pacific*, to become an equal partner in HAE-DAT. We hope very much that it will be possible to build one single global database on HAB occurrences and impacts.

Finally, I wish you a most successful meeting.

GC Endnote 5

Remarks by Dr. Neville R. Smith, on behalf of Dr. James Baker (Chairman of the Steering Committee for the Global Ocean Observing System)

Dr. Hyung-Tack Huh, Chairman of PICES, members of the Governing Council:

On behalf of Dr James Baker, Chairman of the GOOS (Global Ocean Observing System) Steering Committee, I would like to endorse the remarks of Professor Ji-Lan Su, and to thank PICES for the opportunity to address your Governing Council on issues of common interest. Dr. Baker sends his apologies and wishes PICES well with its Eleventh Annual Meeting. I am no longer directly involved with the work of the GOOS Steering Committee, but I will do my best to represent what I believe are the common interests and opportunities.

In general terms, there are very obvious reasons for PICES and GOOS to examine opportunities for collaboration. The North Pacific represents a significant part of the world's oceans, and GOOS observing networks are already operating in the region. PICES and GOOS share a common need for ocean data and information, though clearly with rather different perspectives and objectives. GOOS places high priority on its systematic approach and Principles, and I believe this approach has several aspects in common with the approach of PICES.

This emphasis on sustained and systematic observations within GOOS means that not all activities of PICES will be of direct relevance, but that is a circumstance PICES shares with other scientific bodies, and is appropriate. The strongest links will come through initiatives of PICES that are seeking to sustain, or contribute to, long-term observational and processing and application facilities.

Within GOOS, there are various levels of action (or implementation), some of them with direct oversight from the GOOS SC, and others with either shared or reduced direct involvement. These include:

1. The creation of a Joint WMO/IOC Technical Commission for Oceanography and Marine

Meteorology (JCOMM) allows GOOS to implement *global observing networks* in an efficient and effective way, with appropriate intergovernmental links and oversight.

2. Other *global implementation mechanisms*, for example through the Oceans Theme for the Integrated Global Observing Strategy and CEOS.
3. *Regional alliances such as NEAR-GOOS*. Such alliances are effective when regional cooperation or regionally specific issues are the prominent characteristics. The approaches still follow the Principles, but the "global" relevance to GOOS shifts more to cross-cutting issues and to things like standards. The role of PICES in fisheries observations and regional seas research makes it an ideal conduit for establishing regional implementation mechanisms for GOOS in the North Pacific, either for the region as a whole or for specific issues.
4. *Pilot projects*. Pilot projects like GODAE and Argo have proved very effective for raising the profile of GOOS and attracting fresh investment in the general area of ocean observation and related applications. PICES has strong links to the Census of Marine Life initiative which is also a "flagship" style effort.

With respect to specific activities of PICES, the MONITOR Task Team and TCODE activities perhaps have the strongest direct relevance to GOOS. I would note that GOOS has developed deep experience in monitoring strategies, with particular emphasis on integration and efficiency and effectiveness. We would be glad to provide input to the MONITOR initiative.

As with ICES, perhaps an area ripe for collaboration is data management. GOOS has promoted a paradigm of broad sharing and distribution of data, as epitomized by the Argo initiative. PICES too is seeking efficient and effective data management strategy, as evidenced by the strong links to the OBIS of CoML.

There would appear to be several areas that offer prospects for immediate collaboration:

- Regular exchange of information on observational campaigns, projects, etc., and the sharing of advocacy for common initiatives. It would seem that communication between the Executives and attendance of GOOS at PICES meetings, and vice versa, is an effective approach.
- GOOS recognizes the considerable strength of PICES as a regional ocean organization, and would welcome its assistance and leadership for regional observational network contributions to GOOS. Open ocean non-physical observations, the CPR program, and carbon measurements seem to be good areas for such cooperation.
- Data management as mentioned above, and as will be highlighted in my presentation at the Science Board Symposium tomorrow, offers an obvious opportunity.

As you are aware, GOOS and ICES have established a Steering Group to examine areas of collaboration, and through a EuroGOOS-ICES Working Group, have recently developed a North Sea Pilot Project. It may be appropriate for PICES to consider a similar joint activity, perhaps through a joint Steering Group with NEAR-GOOS, in part taking the regional leadership role. I would note, however, that neither GOOS nor PICES would want such a Group if it was not clear that it would provide real incremental and mutual benefits to both.

In closing, and given our joint interests in ocean monitoring, we should be confident that the efforts of the GOOS and PICES communities can be brought closer together in a constructive way for the mutual benefit of both. IOC and GOOS are keen to explore opportunities.

GC Endnote 6

Remarks by Dr. Edward Urban (Executive Director of the Scientific Committee for Oceanic Research)

Mr. Chairman of PICES, distinguished members of the Governing Council:

The Scientific Committee on Oceanic Research (SCOR) is an international non-profit organization that promotes international cooperation in ocean sciences. SCOR was formed in 1957, as the first interdisciplinary committee of the International Council for Science (ICSU). Currently, 38 nations provide Nominated Members to SCOR. All nations that are members of PICES contribute Nominated Members to SCOR also. (Unlike PICES, individuals, not governments, are members of SCOR; national academies or government agencies pay SCOR dues.)

PICES has many interests coinciding with SCOR interests, and PICES scientists have been important contributors to certain SCOR activities. The PICES Executive Secretary, Dr. Alexander Bychkov, reported at the recent SCOR General Meeting on existing and potential cooperation between PICES and SCOR

in major research projects (*e.g.*, GLOBEC, JGOFS and GEOHAB) and working groups (*e.g.*, WG 118 on *New Technologies for Observing Marine Life* and WG 119 on *Quantitative Ecosystem Indicators for Fisheries Management*). Dr. Bychkov made a compelling case for the positive benefits of interactions between SCOR and PICES.

SCOR asked PICES to recommend a new member from the North Pacific region for the Working Group 115 on *Standards for the Survey and Analysis of Plankton*, preferably with links to the North Pacific Continuous Plankton Recorder activity.

The major limitation of PICES involvement in SCOR activities is the need for SCOR to avoid the appearance of favoritism to the North Pacific region. (SCOR has traditionally not conducted joint activities with regional organizations, including PICES and ICES.) Other limitations are related to the general need to keep the number of cooperating organizations to the

minimum necessary, to minimize the bureaucracy of cooperative activities.

The greatest potential role for PICES is to help contribute a regional perspective to SCOR's global activities. Dr. Bychkov and I will discuss

specific means of cooperation between SCOR and PICES, starting with exchanges of relevant reports of our groups and invitations to each other's meetings. We will discuss other PICES proposals on a project-by-project basis and in consultation with the Chairmen of the activities.

GC Endnote 7

Remarks by Dr. Keith Brander, on behalf of Dr. David Griffith (General Secretary of the International Council for the Exploration of the Sea)

Dr. Hyung-Tack Huh, the Chairman of PICES, honorable members of the Governing Council:

The International Council for the Exploration of the Sea (ICES) extends its warmest greetings to you on the Eleventh Annual Meeting of the North Pacific Marine Science Organization, but we prefer to use the short form of your title in recognition of the close connections between us.

We also extend personal greetings to your Chairman, Dr. Hyung-Tack Huh, and the Chairman of your Science Board, Dr. Ian Perry, who addressed the ICES Council during the course of our Centenary Meeting earlier this month. The contributions of Drs. Huh and Perry were welcomed by the ICES Delegates, who recognised the importance of the matters of common scientific interest between ICES and PICES.

The importance to ICES of continuing and extending cooperation with PICES is explicitly recognised in the Action Plan that was adopted by ICES this year (following the establishment of our Strategic Plan in 2001). Under Goal 5, *Enhance collaboration with organisations, scientific programmes, and stakeholders (including the fishing industry) that are relevant to the ICES goals*, the Action Plan includes the commitment to "further develop joint activities with PICES in support of the ICES/PICES Memorandum of Understanding, including co-sponsorship of symposia, joint working groups, and collaboration on projects with marine ecology and environmental processes, and on advancing our capacity to understand marine ecosystem, climate variability and marine ecosystem impacts".

The ICES/PICES/GLOBEC Symposium on *The Role of Zooplankton in Global Ecosystem Dynamics: Comparative studies from World Oceans* will be a major event for the marine ecologist in general, and planktologists in particular, in 2003. Among other things, it will obviously afford an opportunity for ICES and PICES to draw up clear proposals for implementing further joint actions. We therefore look forward to the outcome of the Symposium. The Workshop on "Ways to increase interactions between ICES and PICES" (in conjunction with the Symposium) is particularly relevant in the context of this presentation.

During the interventions by ICES Delegates in Copenhagen three weeks ago, following the presentations by Drs. Huh and Perry, three subject areas were specifically mentioned as affording opportunities for fruitful cooperation:

- Reports on state of the ocean ecosystem, and the development of ecosystem indicators;
- The development of an ecosystem approach to fisheries assessment; and
- The investigation of harmful algal blooms.

These and other related topics have been taken into the 2003 ICES Science Programme, specifically in the tasks given to the Working Group on *Zooplankton Ecology*, the Working Group on *Ecosystem Effects of Fishing Activities*, the ICES/GLOBEC Working Group on *Cod and Climate Change*, the ICES-IOC Steering Group on *Global Ocean Observing System*, the Study Group on *Modelling of Physical/Biological Interactions* and the ICES/IOC Working Group on *Harmful Algal Bloom Dynamics*. The Working Group on

Introductions and Transfers of Marine Organisms, and the ICES/IMO/IOC Study Group on *Ballast and Other Ship Vectors*, will also be of interest to PICES.

These inter-session activities are summarised below (the details are provided in the following

Annex to remarks by Dr. Keith Brander (ICES)

The **Working Group on Zooplankton Ecology**, which will meet in Gijón, Spain, from February 24-26, 2003, will address a number of scientific tasks (in addition to assisting the finalisation of the arrangements for the major ICES/PICES/GLOBEC Symposium to be held there in May). The Working Group's terms of reference include "evaluate possible biological indices of ecological significance for the fisheries and environmental assessment groups, taking into account the evaluation framework adopted by the Advisory Committee on *Ecosystems* in 2000 and described by the Working Group on *Ecosystem Effects of Fishing Activities* in 2000 and 2001". Incorporating environmental information for the fisheries and environmental assessment groups is an important task that the Working Group on *Zooplankton Ecology* initiated in 1999. In 2003, the group will continue its discussion on the selection, interpretation and validation of the list of indices. The list of indices produced during 2001 and 2002 will be reviewed, refined and supported with scientific literature.

The **Working Group on Ecosystem Effects of Fishing Activities** will meet at the ICES headquarters in Copenhagen, Denmark, from April 1-8, 2003, with a long list of tasks, mainly in response to requests from the ICES Client Commissions for Scientific Advice. The terms of reference include two more general items, however, which are intended to further develop the ecosystem approach in an ICES context:

- continue development of a framework for the provision of integrated ecosystem advice within ICES and consider how this could be operationalised in the near future;
- continue the exploration of the effects of fishing activities on fish assemblages and marine ecosystems with particular focus on

Annex). ICES invites and encourages PICES to take part in all of them, either by representation through existing ICES members of the groups, or directly by arrangement with the ICES General Secretary, David Griffith.

- (i) the exploration of spatial analysis methods for assessing ecosystem properties, and
- (ii) further investigation of the suitability of the metrics examined in 2002 for use in the support of scientific advice in the context of an ecosystem approach to management.

The **ICES/GLOBEC Working Group on Cod and Climate Change** will meet in New Bedford, U.S.A., from May 7-9, 2003, preceded by the Workshop on *Synthesis of Cod and Climate Change*. The Working Group's terms of reference are to:

- review and evaluate the outcome of the Workshop on *Synthesis of Cod and Climate Change* and determine follow-up activities;
- update data and information on the life history of the various North Atlantic cod stocks as part of the synthesis work of the *Cod and Climate Change* Programme;
- review plans for the theme session on *Transport of Eggs and Larvae to Cod Stocks of the North Atlantic*, for the 2003 ICES Annual Science Conference; and for the 2004 ICES Symposium on *Influence of Climate Change on North Atlantic Fish Stocks*;
- discuss the future directions of the *Cod and Climate Change* Programme.

The **ICES-IOC Steering Group on Global Ocean Observing System**, which will meet in Nantes, France, from April 9-10, 2003, concerns another area where closer collaboration with PICES should be productive. It should be particularly beneficial if we could discuss how ICES and PICES might move towards a common approach on two particular products, our North Atlantic Climate Status Report and your North Pacific Ecosystem Status Report.

The **Study Group on Modelling of Physical/Biological Interactions** will meet in Chapel Hill, U.S.A., from March 10–12, 2003. The group is concerned with the evaluation and development of tools, methods and models required to increase the understanding of the interaction between the living resources of the sea and the physical environment, and thus directly addresses two of the three subjects highlighted above as affording special opportunities for fruitful cooperation between ICES and PICES.

The **ICES/IOC Working Group on Harmful Algal Bloom Dynamics**, which will meet in Aberdeen, Scotland, from March 17-20, 2003, will address a number of important issues. These include the consideration of the analysis of shellfish toxicity, and the significance of eutrophication, in regard to harmful algal bloom (HAB) dynamics. The question of resolving problems in the use of molecular probe technology, and information about emerging new methods, will also be discussed, as will new techniques for estimating abundance and biovolume of HAB species. Information

concerning fish kills by HABs will be examined in order to study the effect on fish fecundity and egg survival. The Working Group will also explore the possible role of phycotoxins in HAB dynamics and food chain effects. The group is also interested in the potential for joint research which should be afforded by the joint EU-US programme, which will come from an ECOHAB-EUROHAB Workshop on *Harmful Algal Blooms*. This information will be brought to the Working Group by our IOC partners, as the Workshop is being organised under the aegis of the IOC Intergovernmental Panel on *Harmful Algal Blooms* (IPHAB).

The **Working Group on Introductions and Transfers of Marine Organisms**, which will meet in Vancouver, Canada, from March 26-28, 2003, would like to avail of the opportunity to hold discussions with PICES on this globally important topic. The meeting will be held immediately after the meeting of the **ICES/IMO/IOC Study Group on Ballast and Other Ship Vectors**, also in Vancouver, on March 24-25, 2003.

GC Endnote 8

Remarks by Dr. Roger Harris, on behalf of Dr. Will Steffen (Executive Director of the International Geosphere-Biosphere Program)

Dr. Hyung-Tack Huh, the Chairman of PICES, honorable members of the Governing Council:

Today, I would like to review various IGBP projects where collaboration with PICES is ongoing and invited. Most of IGBP's projects are currently undergoing synthesis. In addition, an overall IGBP synthesis is underway and is progressing rapidly. A final draft was sent out for external review in October 2002. As the synthesis moved towards completion, more attention within IGBP has been focused on the new questions arising from the synthesis and other global change work, and on the integration with the three other global change research programmes - IHDP (International Human Dimensions Programme on Global Environmental Change), WCRP (World Climate Research Programme) and DIVERSITAS (an

international programme of biodiversity science). IGBP is planning for a second decade of international global change research, building on the successes of the first decade, and IGBP Phase II is due to be launched in early 2003.

IGBP is now evolving towards a new structure: from the current suite of eight core projects (BAHC, GCTE, GLOBEC, IGAC, JGOFS, LOICZ, LUCC, PAGES) and three framework activities (DIS, GAIM, START) to a more Earth System-oriented structure built around three large domains - *land, atmosphere, ocean* - and the three interfaces between them. GAIM and PAGES will continue as Earth System-level integrative activities. Given the various timeframes of the current suite of IGBP elements, the move to a new structure will be an evolutionary one over a period of years.

PICES is mostly concerned about one domain (*ocean*) and two interfaces (*ocean-atmosphere* and *land-ocean*). The basic research themes of the new elements of IGBP related to PICES activities are as follows:

Ocean-atmosphere

An important feature of planetary functioning is the movement of materials and energy between the oceans and the atmosphere. However, these processes are still relatively poorly understood or quantified. IGBP, SCOR, CACGP and WCRP are initiating the new project SOLAS (Surface Ocean - Lower Atmosphere Study) which aims to quantify the key chemical and physical interactions and feedbacks between the ocean and the atmosphere, and how this interaction affects, and is affected by, global change. How do ocean and atmosphere mutually influence each other? How do physical, chemical and biological processes in the upper ocean affect the ocean-atmosphere fluxes of important trace gases such as carbon dioxide? SOLAS was approved by the SC-IGBP in February 2001, as the first new project in IGBP II. A Scientific Steering Committee has been appointed and the first phase of implementation is now under intensive planning.

Ocean

The ocean constitutes the largest portion of the Earth's surface and is inextricably involved in the physical, chemical, and biological processes that regulate the Earth System. What are the feedbacks from changes in the ocean to the global environment? What are the implications for fisheries? How are materials, especially carbon compounds, transported to and stored in the deep ocean? What are the key physical, chemical and biological processes that link the oceans to the continental margins? A new oceans effort in IGBP will consist of two elements, GLOBEC and OCEANS. The GLOBEC project continues in its implementation phase. GLOBEC has excellent links with PICES, particularly through the CCC Program. JGOFS has now moved into its synthesis and integration phase and will complete its work by the end of 2003. Planning

for a new Ocean Biogeochemistry and Ecosystems Analysis activity (OCEANS), in collaboration with SCOR, is actively underway and a project based on this process will work very closely with GLOBEC to form the ocean compartment of the IGBP II structure.

Land-ocean

A rapidly growing proportion of the world's population lives in the coastal zone, with enormous impacts on this narrow but valuable strip. What do the accelerating changes to the coastal zone mean for its ability to transmit, filter and store materials from land areas upstream? How will systemic changes in the Earth System impact the coastal zone, especially the most vulnerable areas? What are the implications of a changing Earth for management strategies in the coastal zone? To tackle these questions, the LOICZ core project will continue into Phase II. LOICZ is currently embarking on a synthesis project to pull together what it has learned from its first phase and to provide a sound scientific basis on which to develop approaches to the questions of the next decade.

PAGES (Past Global Changes)

Many features of the Earth tell a story of past environmental changes. By studying gas trapped in ancient ice, the layers in marine sediments, annual growth bands in trees and long-lived corals, it is possible to see what the Earth was like in the past and how it has changed over time. The PAGES research community works toward improving our understanding of current and future global change by placing it within a long-term perspective. Knowing how the environment fluctuated in the past before humans were a significant force helps us to distinguish natural from human-induced change. The PAGES-CLIVAR intersection is a model for the increasing collaborative nature of PAGES research. The project has broadened from focusing primarily on paleo-climate in its early stages to becoming a paleo-environmental effort that is reaching out to other parts of IGBP as well as to IHDP.

GAIM (Global Analysis, Interpretation and Modelling)

It is important, but not enough, to understand parts of the Earth System and how they are changing over time. This information must be integrated in order to build a more complete understanding of our planet as a whole, and to project the evolution of global conditions into the future. Analytical tools such as numerical models provide the best approach for understanding the many interactions that make up the whole Earth System. The role of the GAIM Task Force is to integrate the “pieces of the puzzle”, often using global models, to achieve a better understanding of the planet’s metabolism and an increased capacity to describe and predict human influences on it. Thus, GAIM’s focus has now turned to Earth System Science more broadly, and is developing new approaches to integrate research across the programme. GAIM has drafted a set of overarching Earth System questions that will guide its work over the coming years and is promoting a suite of modelling techniques to explore Earth System dynamics. Collaboration with WCRP and IHDP on Earth System analysis and modelling is a key feature of the new GAIM.

Earth System Science Partnership

The three Global Environmental Change (GEC) research programmes, IGBP, IHDP and WCRP, decided at their 2000 Scientific Committee meetings to initiate an integrated study of the Earth System as a whole, in its full functional and geographical complexity over time, while at the same time pursuing the more applied scientific understanding required to help human societies develop in ways that sustain the global life support system. The challenge to the Earth System Science Partnership is to build on their existing foundation an international programme of Earth System Science, driven by a common mission and common questions, employing visionary and creative scientific approaches, and based on an ever closer collaboration across disciplines, research themes, programmes, nations and regions. More recently, with the re-

launch of DIVERSITAS, the Earth System Science Partnership has been expanded to include this programme as the fourth member.

Driving the work of the ESS Partnership are two critical messages that have arisen out of the past decade of global change research. First, the Earth functions as a system, with properties and behaviour that are characteristic of the system as a whole. These include critical thresholds, “switch” or “control” points, strong nonlinearities, teleconnections, and unresolvable uncertainties. Understanding components of the Earth System is critically important, but is insufficient on its own to understand the functioning of the Earth System as a whole. Second, humans are now a significant force in the Earth System, altering key process rates and absorbing the impacts of global environmental changes. In fact, the environmental significance of human activities is now so profound that the current geological era can be called the “Anthropocene”.

Objectives of the Earth System Science Partnership research effort include:

- Answers to fundamental questions about the Earth System (*e.g.*, how stable is the coupled system in the face of major perturbations?);
- New approaches to designing research that integrate paradigms and questions from the beginning;
- Innovative and integrative simulation tools of varying complexity that can tackle systemic questions;
- Harmonisation of social and biophysical information and data, where appropriate;
- Vigorous effort to communicate Earth System Science to a number of target audiences: broader scientific community, policymakers, resource/environment managers, public;
- Proactive measures to make scientifically-based contributions to governance for the ‘sustainable management’ of our global environment.

In addition to core research on Earth System Science, the ESS Partnership is launching new joint projects on critical issues of global sustainability - the *Global Carbon Project*,

Global Environmental Change and Food Systems and the *Joint Water Project*. The joint projects are cross-cutting in nature in that much of the required research is already being undertaken or is planned in IGBP, IHDP, WCRP and DIVERSITAS core projects. Considerable coordination is needed, however, to bring these elements into a more integrated framework, and some new work will need to be initiated where gaps are identified. Strategic partnerships are being developed with other research institutions outside the three programmes, and with policy and management institutions, to ensure that the work is designed and implemented in ways that facilitate its application.

The *Global Carbon Project* is of particular interest to PICES. The reality of climate change has focused attention on greenhouse gases in the atmosphere, especially carbon dioxide. Carbon does not stay in the atmosphere, however, but

cycles through numerous forms in the oceans and on land, in some cases remaining in storage for many years or decades. Thus, effective policy debate and action must be built on a scientific understanding of the entire carbon cycle. Officially launched in July 2001, the *Global Carbon Project* provides an integrated framework across disciplines as well as national boundaries. The framework (see http://gaim.sr.unh.edu/cjp/GCP_FRAMEWORK.html) is organised around three overarching questions:

- What are the current geographical and temporal patterns of carbon sources and sinks?
- What are the controls and feedbacks that determine the dynamics of the carbon cycle on scales of years to millennia?
- What are the likely dynamics of the global carbon cycle into the future?

GC Endnote 9

Statement on the naming of the Sea in dispute by Dr. Tokimasa Kobayashi (Japanese delegate)

I would like to talk about the name of the Sea of Japan. In this Annual Meeting, for example, in the title of the FIS Topic Session (S5), the name “Japan/East Sea” was used.

I know well that PICES is a purely scientific organization, and diplomatic issues should not be discussed by Council. However, according to the instructions of my government, as a Japanese delegate, I would like to state Japan’s position on the name of this Sea.

In the international arena, only the name “Sea of Japan” was used in the recent edition of the International Hydrographic Organization’s “Limits of Oceans and Seas 1953”.

Furthermore, at the 8th United Nations Conference on the *Standardization of Geographical Names*, held in the late summer of 2002, the countries concerned about this issue were encouraged to continue their efforts to find a solution acceptable to all of them. Also at the Conference, the Chairman stated in his summary that individual countries cannot impose specific names on the international community, and standardization can only be promoted when a consensus exists.

So, this is Japan’s stance that the name of the Sea in the international arena is “Sea of Japan” because this name has been used to date.

Statement on the naming of the Sea in dispute by Dr. Hee-Dong Jeong (Korean alternate delegate)

I would like to request representatives of member countries and the PICES Secretariat to pay special attention to the name of the Sea between the Korean Peninsula and the Japanese Archipelago, which is currently in dispute between the countries concerned.

Korea’s basic position on this issue is that the names “East Sea” and “Japan Sea (Sea of Japan)” should be used simultaneously in the classification of the Sea area concerned, until a final resolution is agreed upon by the relevant countries, as recommended in the Resolution

No. III/20 of the United Nation Conference on *the Standardization of Geographical Names*, in 1997.

I would like to add that any document or material from PICES should not use just the one

name “Sea of Japan (Japan Sea)”, and that the Republic of Korea will not accept or approve such a document or material in any event. I request that my comments be put on record in the report of this Council meeting.