

Report of Governing Council

The Governing Council (GC) met from 9:00–18:00 hours on October 22, 2011, and from 13:00–19:15 hours on October 23, under the chairmanship of Dr. Lev Bocharov. All Contracting Parties were represented at the two sessions (*GC Endnote 1*).

AGENDA ITEM 1

Welcome and opening remarks

The Chairman called the meeting to order, welcomed the participants and requested an introduction of members for each national delegation and representatives of PICES. Dr. Bocharov noted changes in the GC membership after the 2010 PICES Annual Meeting (PICES-2010) and welcomed new national delegates, Dr. David Gillis (Canada), Dr. Ichiro Nakayama (Japan) and Mr. Hyun Taek Lim (Korea), to the Organization.

The Contracting Parties were invited to make their opening remarks, and all statements are appended as *GC Endnote 2*.

In accordance with *Rule 1(ii)* of the PICES Rules of Procedure (http://www.pices.int/about/rules_procedure.aspx), all Contracting Parties were requested to notify the Executive Secretary, three weeks in advance (by September 26), of the names of delegates, advisors, members and alternates, attending each meeting of the Organization. The Executive Secretary briefly reviewed the draft Delegation List included in the GC Briefing Book and asked each Contracting Party to submit corrections to the PICES Secretariat so that Council can examine the final Delegation List at its second session.

AGENDA ITEM 2

Adoption of agenda and meeting procedures

Council reviewed and approved, without modifications, the provisional agenda circulated on August 25, 2011 (*GC Endnote 3*). At the first session, the Chairman suggested the order in which to take up the various agenda items. This report summarizes the treatment of each agenda item during the course of the two sessions.

AGENDA ITEM 3

Membership and observers from other countries

In 2011, the Secretariat did not receive proposals from any country to accede to the PICES Convention.

The Executive Secretary reminded Council that after the Rules of Procedure were amended to allow experts from outside of PICES to serve as *ex-officio* members on PICES Technical Committees and subsidiary bodies of PICES Scientific Committees (Decision 2009/A/5(i)), four organizations requested this status: representatives of SAHFOS (Sir Alister Hardy Foundation for Ocean Science; <http://www.sahfos.ac.uk/>), NOWPAP (Northwest Pacific Action Plan; <http://www.nowpap.org/>), IGBP (International Geosphere-Biosphere Programme; <http://www.igbp.kva.se/>) and SAON (Sustaining Arctic Observing Networks; <http://www.arcticobserving.org/>) have joined as *ex-officio* members of the Advisory Panel on *Continuous Plankton Recorder Survey in the North Pacific* (AP-CPR), Section on *Ecology of Harmful Algal Blooms in the North Pacific* (S-HAB), Section on *Carbon and Climate* (S-CC) and Technical Committee on Monitoring (MONITOR), respectively. It was pointed out that so far no interest in *ex-officio* membership was expressed by non-Contracting Parties. Council re-iterated its view expressed at PICES-2010 that the appropriate approaches to advertise the *ex-officio* membership system and to recruit scientists from other countries to PICES, are scientist-to-scientist

communication and bilateral meetings between Contracting and non-Contracting Parties. National delegates were asked to use these approaches as feasible.

AGENDA ITEM 4

Report on administration for 2010–2011

The Executive Secretary summarized the activities of the Organization and the Secretariat since PICES-2010. Council reviewed and adopted the report (*GC Endnote 4*).

AGENDA ITEM 5

Relations with relevant international and regional organizations/programs

The Executive Secretary reported that letters of invitation to attend PICES-2011 as observers were sent to 48 organizations and programs selected from the *2010 Standing List of International and Regional Organizations and Programs* (with some additions), and 28 were present at the meeting (*GC Endnote 5*). Representatives of these organizations and programs attended meetings of Science Board, Standing Committees and/or their subsidiary bodies. In particular:

- Dr. Adolf Kellermann (Head of ICES Science Programme) attended the Science Board meeting (October 16) to discuss the draft report and recommendations of the PICES/ICES Study Group on *Strategic Planning for Scientific Cooperation in Northern Hemisphere Marine Science* (see *Agenda Item 6* for details) and joint activities of the two organizations in 2012 and beyond.
- Representatives of several organizations and programs expressed their views on potential areas of collaboration with PICES (including specific proposals for 2012 and beyond) at the meetings of Standing Committees and/or their subsidiary bodies (details can be found in the annual reports of Standing Committees).
- A number of organizations and programs had posters on display outlining general information about these programs/organizations and highlighting their scientific objectives and recent activities.

The Executive Secretary also provided information on PICES representation at meetings of other programs and organizations since PICES-2010:

- Dr. Vladimir Radchenko, Russian National Delegate to Council, represented PICES at the 2010 NOWPAP Intergovernmental Meeting (November 16–18, 2010, Moscow, Russia);
- Dr. Alexander Bychkov, PICES Executive Secretary, represented PICES at the 2011 POGO Annual Meeting (January 24–26, 2011, Seoul, Korea), the 2011 meeting of the ESSAS Scientific Steering Committee (May 27–28, 2011, Seattle, U.S.A.), the 2011 General Assembly of IOC-UNESCO (June 22–July 1, 2011, Paris, France), and the 2011 SCOR Executive Committee Meeting (September 12–15, 2011, Helsinki, Finland);
- Dr. Toru Suzuki, Chairman of the Technical Committee on Data Exchange, represented PICES at the 2011 IODE Session (March 23–26, 2011, Liège, Belgium);
- Drs. Mark Wells and Charles Trick, S-HAB members, represented PICES at the 2011 meeting of ICES-IOC Working Group on *Harmful Algal Bloom Dynamics* (April 5–8, 2011, Gothenberg, Germany) and at the 2011 IPHAB (Intergovernmental Panel on Harmful Algal Blooms) meeting (April 12–14, 2011, Paris, France);
- Dr. Sinjae Yoo, Science Board Chairman, represented PICES at the 2011 meeting of the IMBER Scientific Steering Committee (April 11–13, 2011, Marseille, France), and the 2011 ICES Annual Science Conference (September 19–23, 2011, Gdansk, Poland);
- Dr. Skip McKinnell, PICES Deputy Executive Secretary, represented PICES at the 2011 meeting of the ESSAS Scientific Steering Committee and the 2011 ICES Annual Science Conference;
- Dr. Masahito Hirota, member of the Study Group on *Human Dimensions*, represented PICES at the 2011 meeting of the LOICZ (Land-Ocean Interactions in the Coastal Zone) Scientific Steering Committee (September 12–15, Yantai, China).

Council reviewed the progress made in the integration and coordination of PICES activities with other international scientific organizations and programs of regional and global scale, and with regional scientific and monitoring efforts (national and involving several PICES Contracting Parties) in the North Pacific (for details see *Appendix 4* in *GC Endnote 4*), and re-confirmed its support to the holding of co-sponsored symposia, sessions, workshops and training courses, and to the creation of joint expert groups as directions of actual collaboration. Council also approved the revised *Standing List of International and Regional Organizations and Programs* developed by Science Board and agreed with the identified priorities for interaction in 2011–2012 (*GC Endnote 6*; Decision 2011/S/8(i)). This list will be used, in part, to assist the Executive Secretary and Science Board in decisions regarding sending PICES representatives to meetings of other organizations and programs.

AGENDA ITEM 6

Report of the PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science*

The two major international marine science organizations in the Northern Hemisphere, ICES and PICES, are focused on different oceans but have many scientific issues in common. Scientific collaboration between PICES and ICES was initiated in 1998, when the Chairman of PICES and the President of ICES signed a Memorandum of Understanding on scientific cooperation that provided a first opportunity for the two organizations to explore each others' interests in marine science and to determine how new advances might be made through cooperative activities. In the past 10 years, there have been significant increases in reciprocal exchanges, cooperative sponsorships of scientific meetings and projects, and deeper linkages that have often developed on a case-by-case basis. The recognition of a need to build a formal framework for cooperation to serve as the basis for linkages of science plans and longer-term strategic planning has resulted in establishing a joint PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* (SG-SP; Decision 2009/S/10(iii)). The SG-SP terms of reference and membership can be found in the 2010 PICES Annual Report at http://www.pices.int/publications/annual_reports/Ann_Rpt_10/2010-GC.pdf.

A summary report on SG-SP activities was given by Dr. Sinjae Yoo. The major points from his presentation were:

- Several SG-SP members and some invited guests, Jürgen Alheit (Germany) and William Karp (U.S.A.) from ICES, and Anne Hollowed (U.S.A.) and Suam Kim (Korea) from PICES, met for the first time on September 21, 2010, at the ICES Annual Science Conference in Nantes, France, to prepare a workplan.
- The second meeting, with all SG-SP members present, took place on April 29, 2011, in conjunction with the 2011 inter-sessional PICES Science Board meeting (Honolulu, U.S.A.). At this meeting, the Study Group: (1) considered specific research areas that can be enhanced by greater cooperation between the two organizations, (2) reviewed possible forms of collaboration, (3) discussed procedures for cooperation and how to monitor/steer joint activities, and (4) agreed on the structure of the final report to be completed by correspondence by August 31, in time to be tabled at the ICES SCICOM meeting in September, and the PICES Science Board meeting in October.
- The draft SG-SP report identified the following research foci that are currently, or soon to become, areas of joint interest: (1) climate change, (2) ecosystem assessment, (3) marine spatial planning, and (4) ocean acidification and hypoxia/anoxia. A desire was also expressed by both organizations to foster and enhance collaboration in operational areas such as training, knowledge exchange, and communication. Under the proposed framework, cooperation can take the form of co-sponsored symposia, workshops, or topic sessions at each other's annual meetings; expert groups and strategic initiatives where PICES and ICES appoint scientists to focus on topics of joint interest; joint publications; joint training initiatives; joint advice; etc.
- The draft report was discussed at the SCICOM meeting during the 2011 ICES Annual Science Conference, and the revised version then had been sent to PICES for further comments.
- Because there was little time for Science Board to review this updated version before the 2011 PICES Annual Meeting, the PICES Secretariat was requested to circulate the report to all Committee and FUTURE Advisory Panels for comments by mid-November. These comments are expected to be reviewed

by PICES SG-SP members who would then make the appropriate changes. The new draft will then be placed on the PICES website for comments by the broader PICES scientific community before finalization.

Council reviewed the available SG-SP draft report and endorsed the outlined approach for strategic collaboration between PICES and ICES. It was concluded that (1) the identified areas for scientific cooperation are of high interest to the Contracting Parties and (2) the proposed framework takes advantage of existing structures in each organization to minimizing additional cost to either of them, and will provide guidance to the scientists in the ICES and PICES communities to develop joint activities and information on the specific (and necessary) procedures of the two organizations that will ensure timely and beneficial results.

Council agreed that the Study Group completed its terms of reference and should be disbanded and that the SG-SP draft report should be included in the 2011 PICES Annual Report (Decision 2011/S/5(i)). Council also supported the recommendations that: (1) a group consisting of the ICES SCICOM Chairman, the PICES Science Board Chairman, the ICES Secretariat Head of Science Programme and the PICES Deputy Executive Secretary monitor, steer and implement collaborative arrangements in line with the SG-SP report, and act as an interface between the Science Board, SCICOM and the proponents of joint activities; and (2) a wider strategic analysis be conducted every 3–5 years, and that this will require an addition of 2–5 members from each organization.

AGENDA ITEM 7

Report on the UN Regular Process (UNRP) for Global Reporting and Assessment of the State of the Marine Environment

At the 2011 inter-sessional Science Board meeting, Dr. Chul Park (Korea) made a brief presentation on the UN Regular Process (UNRP) for Global Reporting and Assessment of the State of the Marine Environment. He suggested that PICES should become involved in this activity, as the scope of the UNRP is linked well with that of FUTURE, and pointed out that PICES' potential role could be to contribute volunteers to draft, peer review, act as consultants, and/or edit report chapters after organizing or participating in a regional workshop (or workshops) to determine the outline for the assessment.

In May 2011, PICES was invited to attend, as an observer, a meeting of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects (AHWG), held June 27–28, 2011, in New York. The invitation was accepted, with expectation that information gathered at the meeting will allow Council to make a decision on the level of PICES' involvement in the UNRP, and Dr. Skip McKinnell, Deputy Executive Secretary and Editor of the PICES North Pacific Ecosystem Status Report, participated in the meeting. A product of this meeting, the UN report A/66/189, can be found at http://www.un.org/depts/los/global_reporting/global_reporting.htm. A summary by Dr. McKinnell was included in the PICES-2011 Council Briefing Book.

Several critical points were highlighted in the report presented by Dr. McKinnell to Council:

- The UNRP is a top-down global endeavour where PICES Contracting Parties may have different views on its utility. By its nature, the process has a strong element of global politics overlaying the development of what is essentially a technical report.
- The current approach implies strong UN leadership, with relatively minor roles for others, including inter-governmental regional organizations.
- The UNRP anticipates that UN Member States will offer to host regional workshops to fulfil the needs of the process. If accepted, UN Member States have to negotiate a UN host conference agreement.
- Capacity building seems to have an inordinately high profile in the UNRP, especially considering that capacity building will have relatively little role to play in meeting the 2014 deadline for the first global assessment.
- The current balance in the Trust Fund established to support the UNRP is very low.
- The North Pacific (extends to the Equator, beyond the area of primary concern to PICES) is considered a region in the UNRP, although marginal seas along the Asian continent are a separate region entitled "The Eastern and South-Eastern Asian Seas (including the Indonesian seas)".

- Current documentation on the UNRP does not specify a period of primary interest, but the 2010 PICES North Pacific Ecosystem Status Report will be six years old by the 2014 target date for the first global assessment because its focus was on the period from 2003–2008.
- The UNRP includes some topics (e.g., socio-economics) that are not part of the normal skill set of the traditional cadre of PICES scientists.

After receiving the report, the following views were expressed by Contracting Parties:

- Japan noted a similarity between the UNRP and the reporting on the status and trends of North Pacific ecosystems by PICES, and pointed out that due to current funding constraints, PICES should focus on its own assessments, and provide outcomes/products to the UNRP, if appropriate.
- China supported PICES' involvement in the UNRP to enlarge PICES' role in global marine affairs.
- Korea suggested for PICES to contribute to the UNRP in the context of FUTURE/AICE (*Anthropogenic Influences on Coastal Ecosystems*), and to be represented at the UNRP Workshop for the Eastern and South-Eastern Asian Seas to be held in February 2012, in China.
- Russia indicated that because of the uncertainty in the UNRP, mismatch of the delineated North Pacific Region in this process with the area of primary concern to PICES, and lack of funding, it would be more appropriate for the Organization to abstain from being involved as a contributor to the report/assessment at this time. However, the experience and expertise PICES has gained in producing comprehensive science-based assessments of North Pacific marine ecosystems might be useful for the UNRP and activities of AHWG. PICES' involvement as a reviewer of regional assessments of North Pacific marine ecosystems will meet the credibility of the Organization and encourage cooperation with other scientific organizations and programs.
- The United States agreed with Russia that while PICES has considerable experience and expertise in developing regional assessments, the best approach for the Organization at this time is to indicate its willingness to conduct scientific peer review of regional assessment of North Pacific marine ecosystems.

Based on this discussion, Council instructed the Executive Secretary to inform the UN Division for Ocean Affairs and the Law of the Sea (UN DOALOS) of PICES' interest in conducting scientific peer review of UNRP regional assessments of North Pacific marine ecosystems and in being involved in the regional workshops for the North Pacific and East Asian marginal seas (Decision 2011/A/6).

AGENDA ITEM 8

Yeosu Declaration and Yeosu Project

The Ocean Expo-2012 (<http://eng.expo2012.or.kr/eng/main.asp>) will be held from May 12 to August 12, 2012, in Yeosu, Korea, under the theme "*The Living Ocean and Coast: Diversity of Resources and Sustainable Activities*". PICES is a major international sponsor, jointly with ICES and IOC, of the 2nd International Symposium on "*Effects of climate change on the world's oceans*" (<http://www.pices.int/climatechange2012.aspx>) to be convened as one of the official events (the first academic event) related to the Expo-2012.

Yeosu Declaration

The Yeosu Declaration is pursued as part of the legacy of the Ocean Expo-2012 and is intended to: (1) enhance the awareness of dangers faced by the ocean; and (2) promote the necessity of international cooperation for turning these challenges into hopes for the future. It is expected that the Yeosu Declaration will celebrate humanity's efforts to find sustainable ways to develop the ocean, and create an international consensus in support of the Expo's theme.

As an international manifesto, the Yeosu Declaration is being developed in consultation with Korean and international marine experts, including those from international organizations. PICES was invited to be on the International Review Committee (IRC) of the Yeosu Declaration. The March 9 draft of the Declaration was presented by Dr. Dosoo Jang, Chairman of the Yeosu Declaration Preparation Committee, and was briefly

discussed at the 2011 inter-sessional Science Board meeting. Dr. Sinjae Yoo, Science Board Chairman, represented PICES at a roundtable IRC meeting held on May 11, 2011, in Seoul, to digest all comments to this draft. The May 20 draft was circulated to all Contracting Parties on May 25, but no comments were received.

At PICES-2011, Dr. Jang presented the September 27 version of the Declaration submitted to the Bureau des International Expositions (BIE) for endorsement at its 150th Assembly scheduled for November 23, 2011. He informed Council that the Yeosu Declaration Ceremony is planned for August 12, 2012, just prior to the Expo Closing Ceremony. The Yeosu Declaration will then be presented at various fora and symposia to raise its visibility and to build a consensus in the international community in support of the content of the document.

All Contracting Parties agreed that the Yeosu Declaration respects the spirit and principles of the United Nations Convention on the Law of the Sea, the Convention on Biological Diversity and many other important documents, and accepted for PICES to be an IRC member for the Declaration (Decision 2011/A/5).

The United States expressed their interest in providing some editorial comments after the meeting, and Dr. Jang confirmed that it will be an opportunity for editorial comments/revisions after the BIE Assembly.

Yeosu Project

The Yeosu Project is an international cooperation program designed to strengthen capabilities of developing countries to meet the challenges related to the ocean. It is being established as a practical element that translates the spirit of the Yeosu Declaration and the theme of the Expo-2012 into action. It is hoped that *“the Yeosu Project will become an important legacy of the Expo-2012 by helping developing countries to create forward looking and environment-friendly methods to preserve and make judicious use of marine resources”*.

The Korean government has allocated approximately ten million US dollars to support the Yeosu Project, and has entrusted its implementation to the Korea International Cooperation Agency (KOICA). The main areas of support were identified as follows:

- Improvement of the marine environment: Measures to respond to climate change, marine pollution, management and conservation of marine resources, marine exploration, and marine safety;
- Development of new marine technologies: Practical use of fisheries resources, utilization of marine biological resources, utilization of marine mineral resources, feasibility studies on offshore and gas development;
- Preservation and utilization of marine resources: Preservation of fisheries resources, advances of fisheries technologies, port logistics technologies.

It was decided that the Yeosu Project will have 3 phases. The first phase, launched in October 2010, includes 7 research and development (R&D) projects and 5 educational/training projects selected for 7 countries in Southeast Asia and the South Pacific. The second phase of the Project, initiated in 2011, focuses on R&D projects carried out by leading Korean institutions in collaboration with local government and research agencies. The third phase of the Project was expected to start in 2011, and to be conducted in collaboration with international organizations. According to the Call for Proposals, the duration of each project is from 6 to 24 months, and available funding is up to \$500,000 US per project.

The Executive Secretary reported that PICES was invited to submit a proposal for the third phase of the Yeosu Project. In consultation with the Science Board Chairman and Vice-Chairman, it was agreed that the proposal should be linked to PICES' integrative science program, FUTURE (Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems), as this program is a vehicle that the PICES community has been using to increase understanding of climatic and anthropogenic impacts on marine ecosystems, and to prepare and deliver ecosystem products. A set of three proposals, each associated with a different FUTURE Advisory Panel, was developed:

- Understanding ecosystem responses to critical stressors around the Pacific Ocean (linked to activities of the Advisory Panel on *Anthropogenic Influences on Coastal Ecosystems*, AICE);

- Understanding North Pacific Climate variability and change (linked to activities of the Advisory Panel on *Climate, Oceanographic Variability and Ecosystems*, COVE);
- Yeosu – Ecosystem Observations for Society and Understanding (YEOSU) (linked to activities of the Advisory Panel on *Status, Outlooks, Forecasts, and Engagement*, SOFE)

Each proposal included both new research and capacity building opportunities. It was also expected that the first two proposals will support activities of two new working groups (WG) established to advance FUTURE science, WG on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors* and WG on *North Pacific Climate Variability and Change*, and the third proposal will assist in developing an operational capacity within the PICES Secretariat for FUTURE/SOFE products. Unfortunately, PICES' proposals were not selected to be funded, mainly due to "insufficient capacity building component".

The Korean delegation informed Council that the fourth phase (the end of the pilot stage) of the Yeosu Project will focus on capacity building of small island states, and re-submitting the proposal at this time is not feasible. However, the future main stage of the Yeosu Project is expected to provide opportunities for international organizations.

AGENDA ITEM 9

Report of the Study Group on *Updating the PICES Strategic Plan*

In 2002, the PICES Review Committee identified the importance of developing a long-term "vision" or Strategic Plan for the Organization. At the 2003 inter-sessional meeting, Council re-iterated the value of such a plan and formed, under the direction of Council, a Study Group on *PICES Strategic Issues* to develop a Strategic Plan (Decision 2003/S/5(iv)). The Study Group was led by the Chairman of PICES and included the Chairman of Science Board and one representative from each Contracting Party as members. The Strategic Plan drafted by this Study Group was adopted at the 2004 inter-sessional meeting (Decision 2004/A/6(i)).

At PICES-2009, Council agreed that the Strategic Plan of the Organization should be updated to ensure that it reflects the vision of all Contracting Parties on the direction of PICES over the next 5–10 years, and approved the establishment of a Study Group on *Updating the PICES Strategic Plan* (SG-USP; Decision 2009/S/7(ii)), under the direction of Council, with the terms of reference and membership as described at http://www.pices.int/members/study_groups/Disbanded_Study_Groups/SG-USP.aspx.

At PICES-2010, Council reviewed the draft SG-USP report and agreed to: (1) extend the life span of SG-USP for 6 months (Decision 2010/S/6(vi)) and (2) convene a SG-USP meeting in conjunction with the 2011 inter-sessional Science Board meeting (Decision 2010/S/3). The draft Strategic Plan developed at this meeting (May 1, 2011) was circulated to and reviewed by all SG-USP members.

At PICES-2011, the latest version of the Strategic Plan was presented by Dr. Laura Richards and unanimously approved by Council (Decision 2011/A/4). Council acknowledged the efforts of the Study Group for developing a concise, forward looking, and well written document. It was also agreed that SG-USP completed its terms of reference and should be disbanded, and that the Strategic Plan should be included in the 2011 PICES Annual Report (Decision 2011/S/5(i); see *GC Endnote 7*).

AGENDA ITEM 10

Schedule, structure and financing of future Annual Meetings

PICES-2012

At PICES-2010, Council accepted the offer of Japan to host the Annual Meeting from October 12–21, 2012, in Hiroshima (Decision 2010/A/5(ii)). A brief presentation on the status of preparations for PICES-2012 was

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given by Dr. Taro Ichii. At the recommendation of the F&A Committee, Council decided to keep the same registration fee structure for PICES-2012 as for PICES-2010 and PICES-2011 (Decision 2011/A/7(iv)), and to provide \$40,000 to the host country to partially cover meeting costs (Decision 2011/A/7(i)).

The proposed theme of PICES-2012, “*Scientific challenge to the North Pacific ecosystem: For the mitigation of the effects of natural and anthropogenic stress*”, was approved in principle at PICES-2010 (Decision 2010/A/5(ii)). The original description was reviewed at the 2011 inter-sessional Science Board meeting and finalized at PICES-2011.

PICES-2013

At PICES-2010, Council invited Canada to explore the feasibility of hosting the PICES Annual Meeting in 2013, and inform the Secretariat on this matter by March 31, 2011 (Decision 2010/A/5(iii)). The Canadian delegation accepted the request and indicated that it had already initiated discussions with its government on this issue. In early December 2010, Canada confirmed its willingness to host PICES-2013. Council approved the proposal to hold the meeting from October 11–20, 2013, at the Vancouver Island Conference Centre in Nanaimo, British Columbia (Decision 2011/A/7(ii)). Some brief information on the status of preparations for PICES-2013 was provided by Dr. Laura Richards.

Council approved in principle the proposed theme of the meeting, “*Communicating forecasts, uncertainty and consequences of ecosystem change to society*”, and instructed Science Board to finalize the theme description at the 2012 inter-sessional Science Board meeting (Decision 2011/A/7(ii)).

PICES-2014

In keeping with the 6-year rotation cycle (Decision 1994/A/6), China was requested to consider the possibility of hosting the PICES Annual Meeting in 2014, and inform the Secretariat on this matter by March 31, 2012 (Decision 2011/A/7(iii)).

Structure of Annual Meetings

At PICES-2009, Council adopted the final report of the Study Group on *Restructuring of the PICES Annual Meeting* (SG-RAM), and agreed to implement most of the approved changes in the Annual Meeting format starting with PICES-2011 (Decision 2009/A/6(i)). It was though decided that the proposed changes in the format of the Opening Session be implemented beginning with PICES-2009, and the recommendation to increase the number of concurrent scientific sessions to 4 per day be on trial at PICES-2010. Due to the limited capacity of the venue in Khabarovsk, the number of concurrent sessions at PICES-2011 was 3 instead of 4 as suggested in the SG-RAM report (http://www.pices.int/publications/annual_reports/Ann_Rpt_10/2010-SG-RAM%20Report.pdf). Considering that most of the approved changes in the format of the Annual Meeting are to be implemented at PICES-2011 and PICES-2012, Council agreed to discuss their effectiveness at the next Annual Meeting in Hiroshima (Decision 2011/A/7(v)). Some preliminary comments were offered by Russia and the United States:

- Russia indicated that increasing the number of concurrent sessions is a preferred option compared with the extension of the Annual Meeting duration.
- The United States pointed out that even with a ¾-day business meeting, the Standing Committees do not have enough time to consider all important agenda items, and additional pre-work by the Committees before the Annual Meeting is needed to ensure that key decisions can be made with adequate deliberations.

2011 inter-sessional Science Board meeting

Holding inter-sessional meetings of Science Board and Governing Council has already become an integral part of PICES management, providing an essential opportunity for (1) making timely decisions under the current fast-changing situations in ocean science and policy, (2) mid-term reviews of scientific activities and (3) in-depth

discussions on administrative issues of the Organization. The inter-sessional Science Board meetings became even more crucial after Science Board assumed the duties of the Scientific Steering Committee for FUTURE.

Earlier, both the F&A Committee and Council expressed and reiterated their support for the concept of inter-sessional meetings but stressed that given meeting costs (including time commitment of the members), the need for such meetings should be evaluated each year. It was also agreed that rotating the place for inter-sessional meetings is highly desirable, especially if overall costs for the Organization are kept to the minimum possible. This approach was implemented by obtaining financial support from the country hosting the inter-sessional meeting and by having the meeting in conjunction with other PICES events.

Council approved an inter-sessional Science Board meeting to be held in conjunction with a 3-day FUTURE implementation workshop in Busan, Korea, immediately after the 2nd PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” in Yeosu, Korea (Decision 2011/A/7 (vi)). Council accepted with gratitude an offer from Korea to host both events in 2012, and thanked Russia for the intent to host ISB-2013, if approved.

AGENDA ITEM 11

Progress report on implementation of the second PICES integrative science program, FUTURE

The second integrative scientific program of PICES, FUTURE, is the highest priority undertaking for the next decade. The basic principles of the program are contained in the Science Plan approved in principle at PICES-2007 (Decision 2007/S/1), and finalized in February 2008. The FUTURE Implementation Plan was approved in principle at IGC-2009 (Decision 2009/S/1) and finalized in June 2009. Both documents are available on the PICES website, along with terms of reference for three FUTURE Advisory Panels, AICE (*Anthropogenic Influences on Coastal Ecosystems*), COVE (*Climate, Oceanographic Variability and Ecosystems*) and SOFE (*Status, Outlooks, Forecasts, and Engagement*) established to provide continuing direction, leadership, coordination, and synthesis within PICES toward attaining FUTURE goals (http://www.pices.int/members/scientific_programs/FUTURE/FUTURE-main.aspx). These Advisory Panels are expected to recommend specific activities for consideration by Science Board which serves as the Scientific Steering Committee (SSC) for FUTURE (Decision 2009/S/7(i)).

A report on the progress made in the implementation of FUTURE since PICES-2010 was presented to Council by Dr. Sinjae Yoo.

- The following events were organized in 2011 to advance FUTURE science:
 - A 3-day workshop on “*Indicators of status and change within North Pacific marine ecosystems*” was held April 26–28, 2011, at the East-West Center, Honolulu, U.S.A. The workshop was co-convened by Sachihiko Itoh (Japan), Jacquelynne King (AP-COVE; Canada), and Thomas Therriault (AP-AICE; Canada) and was attended by more than 50 experts, including 14 contributors (unfortunately Chinese scientists were missing again). The three workshop themes were: (1) ecosystem-level indicators and assessments, (2) ecosystem resilience, and (3) indicator uncertainty, and the goal was to impart existing approaches and concepts to the PICES community in order to provide direction on elements of the FUTURE Science Plan. The major outcome from the workshop was reaching an agreement on a framework to be utilized when selecting and calculating indicators for the common descriptors and attributes for North Pacific ecosystems. The workshop summary and presentations can be found at <http://www.pices.int/publications/presentations/2011-FUTURE-wsh/2011-FUTURE-workshop.aspx>. The workshop led to the refinement of the terms of reference for the PICES Working Group on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors*.
 - A 2-day PICES/ICES workshop on “*Development and application of Regional Climate Models*” was held October 11–12, 2011, at Mayfield Hotel, Seoul, Korea. The workshop was co-convened by Kyung-Il Chang (Korea), Michael Foreman (Canada), Chan Joo Jang (Korea), Myron Peck (Germany) and Angelica Peña (Canada), and funded by two Korean organizations (Ministry of Land, Transport and Maritime Affairs and Seoul National University). The workshop goals were to: (1) provide a

platform to discuss various aspects of regional climate modeling such as different approaches, downscaling, parameterizations, and coupling to the Global Climate Models, and (2) encompass the coupling of Regional Climate Models (RCMs) to ecosystem models. The workshop led to the recommendation of a new PICES expert group on *Regional Ecosystem Modeling*.

- At PICES-2011, the Advisory Panels met concurrently (½ day) and then jointly (½ day) to: (1) review their terms of reference and work plans, and (2) finalize their proposals for new expert groups.
- Based on discussions at the 2011 inter-sessional FUTURE workshop and PICES-2011, several new expert groups were proposed:
 - Working Group 27 on *North Pacific Climate Variability and Change* (under POC)
 - Working Group 28 on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors* (under MEQ and BIO)
 - Working Group 29 on *Regional Climate Modeling* (under POC)
 - Section on *Climate Change Effects on Marine Ecosystems* (under BIO, FIS and POC)
 - Section on *Human Dimensions of Marine Systems* (under Science Board)
 - Study Group on Marine Pollutants (under Science Board)

The first two groups, with terms of reference as described in *GC Appendix B*, were approved in the interim period (Decision 2011/S/6(i)).

- Understanding the roles and responsibilities of each expert group within the FUTURE framework and conducting the necessary work in concert with other groups in a timely manner are vital for the success of the Program. A 3-day inter-sessional workshop was proposed to develop a higher level coordination plan where tasks and roles of expert groups are specified and aligned. The expected outcome from this workshop is a 3- to 5-year roadmap for FUTURE.
- Discussion was initiated on planning for a FUTURE Open Science Meeting to be convened in the spring of 2014 as the Program will be nearing its mid-life by that time. Potential themes and format for the OSM are expected to be considered at ISB-2012.

Council agreed to establish all expert groups proposed by Science Board, with terms of reference as described in *GC Appendix B* ((Decision 2011/S/6(ii)). Council also approved a 3-day inter-sessional FUTURE workshop in conjunction with ISB-2012 and accepted an offer from Korea to host both events in Busan, immediately after the 2nd PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (Decision 2011/A/7 (vi)).

The Executive Secretary reported on the evolution of the FUTURE fund and indicated that the estimated year-end balance for this fund is insufficient. Given the current lack of funding allocated specifically to FUTURE, Council approved the recommendation of the F&A Committee that funds available from all completed projects in the Working Capital Fund as of December 31, 2011, be allocated to the development of the Program, with the provision that it should be used over the next three years (Decision 2011/A/3(iv)).

Dr. John Stein (U.S.A.) pointed out that the progress to date in the implementation of FUTURE has been excellent in some areas and only adequate in others, and commended efforts of Science Board as the FUTURE SSC to make mid-course corrections in the implementation of science program.

AGENDA ITEM 12

PICES Advisory Report to the “*Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River*”

On April 15, 2010, PICES received an invitation to provide scientific advice to the Canadian *Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River*. As the investigation is being conducted by British Columbia Supreme Court judge, Mr. Bruce Cohen, the Commission has taken his name, the Cohen Commission (<http://www.cohencommission.ca>). The advice from PICES was requested in the form of a technical report on the status and trends of marine ecosystems where Fraser River sockeye are known to occur and on potential effects of recent ecosystem variability on their survival, distribution and migration, and participation of a Lead Author in a few expert meetings related to the report’s contents. At the 2010 inter-sessional meeting, Science Board discussed the invitation and agreed that this request is a clear recognition of

PICES' expertise and scientific leadership on issues of climate variability and marine ecology, and accepting the invitation is something that PICES should undertake. This view was supported by Council in June 2010. Dr. Skip McKinnell, PICES Deputy Executive Secretary, was asked to lead the project. The Cohen Commission and PICES agreed to enter into a contract for PICES to recover some of the costs of developing the report.

At the recommendation of Science Board at PICES-2010, Council authorized the release of the draft PICES Advisory Report on "*The decline of Fraser River sockeye salmon *Oncorhynchus nerka* (Steller, 1743) in relation to marine ecology*" to the Cohen Commission (Decision 2010/S/1). At PICES-2011, Dr. McKinnell presented Council with an update on the project:

- The draft PICES Advisory Report was delivered on November 15, 2010, the date specified in the contract between PICES and the Commission. The highlights of the report were presented at a workshop attended by all of the Commission's contract authors on November 29–30, 2010. No comments were received from Commission staff, so the final version was submitted on December 15, 2010, as specified in the contract.
- Subsequently, the report was sent by the Commission for review by scientists of their choosing. Authors of the PICES Advisory Report were provided with an opportunity to respond to reviewers' comments in writing, but there was insufficient time allowed to make revisions in the report because of the Commission's internal deadlines.
- As the lead author of the PICES report, Dr. McKinnell was invited by the Commission to participate in formal hearings before Commissioner Bruce Cohen. He attended a witness preparation session with the Commission's lawyers on June 24, 2011, in Vancouver, British Columbia. The PICES Advisory Report was submitted as "evidence" at a formal hearing on July 5–7, 2011, where Dr. McKinnell was one of three members of a scientific panel providing testimony on marine ecology. Panelists were asked questions by the Commission's lawyers before cross-examination by the Commission's "Participants". These included the Government of Canada (represented by the Department of Justice), the Government of British Columbia, and the lawyers for various groups of stakeholders (aquaculture industry, fishermen, indigenous peoples, *etc.*). Commission hearings are expected to continue through September 2011, and the Commissioner's final report will be made public in June 2012.
- Informal discussions with Commission staff indicate that the PICES Advisory Report drew attention to ocean/climate events in relation to the survival of Fraser River sockeye salmon that had not been previously known or discussed, and that this report will feature rather prominently in the Commissioner's final report. The PICES Advisory Report is now available as Technical Report No. 4 on the Cohen Commission website at <http://www.cohencommission.ca/en/TechnicalReports.php>.
- With a request to bear in mind the integrity of judicial process, the Commission granted permission to present findings from the report at the international conference on "*Salmon at sea: Scientific advances and their implications for management*", held October 11–13, 2011, in La Rochelle, France, and to publish a part of the Advisory Report (an overview on Fraser River sockeye salmon and their marine environment) in a peer-reviewed journal.
- The original contract with the Cohen Commission was amended from \$100,275 to \$109,666 to (1) move some funds from expenses to fees, and (2) cover up preparatory work for Dr. McKinnell's appearance as a witness at the Commission's hearings and travel allowance in this regard. Due to the agreed amendments, the overhead retained by PICES to offset expenses related to the Secretariat's involvement in the Cohen Commission project increased from \$8,775 to \$11,830.

Council thanked Dr. McKinnell and his team for the excellent work in preparing the Advisory Report to the Cohen Commission and agreed to reproduce this report in the PICES Scientific Report Series in 2012 (Decision 2011/S/4(ii)).

AGENDA ITEM 13

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

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

The Executive Secretary informed Council on activities under the project since PICES-2010 (the financial report for *Year 4* is appended as *GC Endnote 8*) and provided a summary on fund transferring and project reporting to date:

- Funds for *Year 1* of the project (completed on March 31, 2008) in the amount of \$184,980 were transferred to the PICES/MAFF bank account on July 27, 2007. The progress report and the financial report for *Year 1* were submitted to JFA on July 19 and July 23, 2008, respectively.
- Funds for *Year 2* of the project (completed on March 31, 2009) in the amount of \$161,466 were transferred to the PICES/MAFF bank account on July 17, 2008. The financial report for *Year 2* was submitted to JFA on July 21, 2009, and the progress report was sent on August 13, 2009.
- Funds for *Year 3* of the project (completed on March 31, 2010) in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 15, 2009. The progress report and the financial report for *Year 3* were submitted to JFA on July 26, 2010.
- Funds for *Year 4* of the project (completed on March 31, 2011) in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 12, 2010. The financial report and the progress report for *Year 4*, as well as handouts summarizing activities within both sub-projects by the end of *Year 3* were sent to JFA on July 28, 2011 (the reports are included in this section).
- The set of documents requesting funding for *Year 5* (to be completed by March 31, 2012) was sent to the Consulate General of Japan in Vancouver on June 10, 2011, and the additional clarifications were directed to JFA on June 17 and June 22. Funds in the amount of \$164,641 were transferred to the PICES/MAFF bank account on July 27.
- The status of the PICES/MAFF account as of December 31, 2010, was assessed in the regular PICES audit of *FY 2010*. The financial statements for the rest of *Year 4* (January 1 to March 31, 2011) and for part of *Year 5* (April 1 to December 31, 2011) will be evaluated in the regular PICES audit of *FY 2011*.

Japan expressed their satisfaction with the implementation of the project and indicated that a proposal was developed and submitted for a new 5-year (2012–2017) PICES/MAFF project related to ecosystem-based management in the coastal zone, including the topics under the 2007–2012 project. The fate of the proposal will be known in December 2011.

Council re-iterated that the PICES/MAFF project has been successful not only in accumulating new scientific knowledge and building capacities within PICES and developing countries, but also in providing support for daily operations of the Secretariat through the agreed 13% overhead. Council thanked Japan for their generous contribution.

AGENDA ITEM 14

Capacity building activities including PICES Intern Program

The Executive Secretary reported on capacity building events/activities organized/funded in 2011 (see Table below) and plans for 2012 and beyond. All essential components of PICES’ strategy for capacity building (http://www.pices.int/about/capacity_strategy.pdf) were reviewed by Council.

2012 PICES/ICES Conference for Early Career Scientists

The main objective of the joint PICES/ICES Conferences for Early Career Scientists (ECS) is to provide an opportunity for scientists at the beginning of their careers to meet colleagues from around the world and develop contacts and collaborations across international borders and disciplines that would persist for decades.

TABLE PICES-sponsored capacity building activities in 2011

Event/Activity	Amount	Fund
Travel support for 2011 Zooplankton Production Symposium	3,939	TRF
Travel support for 2011 ESSAS Open Science Meeting	3,195	MSF/TRF
Travel support for 2011 International Conference on “ <i>Marine bioinvasions</i> ”	6,932	MAFF
Travel support for 2011 SOLAS Summer School	8,254	TRF
2011 NOWPAP/PICES/WESTPAC training course on “ <i>Remote sensing data analysis</i> ”	4,813	TRF
Travel support for PICES-2011	19,923	TRF
Demonstration Workshop for developing countries on “ <i>Rapid assessment survey methodologies for detecting marine non-indigenous species</i> ”	24,249	MAFF
Intern Program	33,232	TRF
Total	104,537	

After the success of the first conference on “*New frontiers in marine science*” (June 2007, near Baltimore, Maryland, USA), PICES and ICES agreed to hold these conferences at regular intervals (every 5 years). At ISB-2009, Science Board endorsed the concept of the second PICES/ICES ECS Conference to be held in 2012 in Europe. The conference, under the theme “*Oceans of change*”, will take place on April 24–27, 2012, in Majorca, Spain (<http://www.ices.dk/marineworld/oceans/index.asp>).

The commitment from ICES for the 2012 ECS Conference is ~\$75,000 (400,000 DKK). An additional contribution of \$50,000 US was provided by the U.S. National Marine Fisheries Service (NMFS). In order to have participation comparable to 2007, Council agreed that the remainder of unused funds from the 2010 PICES/ICES/FAO Symposium on “*Climate change effects on fish and fisheries*” be allocated for the 2012 ECS Conference (Decision 2010/A/3(vii)). This was not implemented as, after consultation with ICES colleagues, all remaining funds from the conference were donated to Japan for the recovery of the fisheries and marine sciences in the Tohoku region impacted by the March 11 Great East Japan Earthquake and tsunami (this donation was used as a core contribution to a fund established by the Japanese Society of Fisheries Oceanography). To compensate for that, \$45,000 of the PICES-2010 Fund surplus was transferred to the 2012 ESC Conference Fund.

Schools on marine sciences

In the past, PICES Summer Schools on marine science have been organized in Asia:

- School on “*Ocean circulation and ecosystem modeling*”, August 23–25, 2006, Busan, Korea;
- School on “*Ecosystem-based management*”, August 23–26, 2008, Hakodate, Japan;
- School on “*Satellite oceanography for the Earth Environment*”, August 25–28, 2009, Seoul, Korea.

Council approved the request from Science Board to hold the PICES Summer School on “*Ocean observing systems and ecosystem monitoring*” in August 2013, in Newport, Oregon, U.S.A. (Decision 2011/S/2(iv)).

At PICES-2009, Science Board strongly supported PICES’ involvement in summer schools organized by large-scale ocean research programs. The following events were co-sponsored by PICES in 2010–2012:

GC-2011

- IMBER ClimECO2 Summer School on “*Oceans, marine ecosystems, and society facing climate change - A multidisciplinary approach*” (August 23–27, 2010, Brest, France) by providing travel funds and arranging additional support (through national programs/agencies) for 9 early career scientists from all PICES member countries (1 from Canada, 1 from Japan, 2 from Korea, 2 from China, 1 from Russia, and 2 from U.S.A.);
- 5th SOLAS Summer School (August 29–September 10, 2011, Corsica, France) by providing travel funds for 3 students/early career scientists from PICES member countries: 1 from each of Canada, China and U.S.A.

At the recommendation of Science Board, Council agreed to co-sponsor the IMBER ClimECO3 Summer School on “*A view towards Earth System models: Human-natural system interactions in the marine world*” to be held July 23–28, 2012, in Ankara, Turkey (Decision 2011/S/2(iv)).

Training courses

The common use of agreed methods for observations and modeling is essential for the pooling of data resulting from cooperative programs. The inter-comparability of methods and their use can be improved through methodological workshops and training courses.

This year, PICES co-sponsored, jointly with NOWPAP, IOC-WESTPAC and several Russian organizations, a training course on “*Remote sensing data analysis*” held October 8–12, 2011, in Vladivostok, Russia. This course focused on practical applications, such as red tide detection, eutrophication, oil spill monitoring, *etc.*, and was complementary to the 2009 PICES Summer School on “*Satellite oceanography for the earth environment*” which had emphasis on sensors (optical, infra-red and microwave) and image processing. PICES provided travel support for a lecturer and 3 students/early career scientists from PICES member countries (Japan, Korea and China).

One of the key activities for a component of the PICES/MAFF project (see Agenda Item 13) conducted by the Working Group on *Non-indigenous Aquatic Species* (WG 21) is the organization of a series of demonstration workshops for developing countries on methodologies for rapid assessment surveys for marine non-indigenous species and collector surveys for biofouling organisms. A pilot workshop took place on July 13–16, 2010, at the Kobe University Research Center for Inland Seas, Awaji Island, Japan, and was attended by scientists from 6 Southeast Asian countries. A larger-scale workshop on “*Rapid assessment survey methodologies for detecting marine non-indigenous species*” (co-sponsored by IOC-WESTPAC) was held July 19–21, 2011, at the Phuket Marine Biological Center, Thailand, and attended by 26 participants, mostly from Southeast Asian countries. Planning is initiated for the third workshop (co-sponsored by FRA, NOWPAP and WESTPAC) to be held tentatively in February 2012, in Nagasaki, Japan (Decision 2011/S/2(iv)).

A component of the PICES/MAFF project conducted by the Section on *Ecology of Harmful Algal Blooms in the North Pacific* focuses on teaching country-specific training courses most required to ensure seafood safety in Pacific countries outside the PICES region. Planning is in progress for a training course on screening methods for testing shellfish for paralytic shellfish poisoning toxins and phytoplankton identification, to be held in February 2012, in Jakarta and Lombok Island, Indonesia (Decision 2011/S/2(iv)).

Travel grants

Financial support for the participation of students and early career scientists in PICES Annual Meetings and symposia co-sponsored by the Organization is normally provided from the Trust Fund. Contributions to the Fund are on a voluntary basis. Efforts are being made to keep the Trust Fund at the level of \$110,000 using transfers from the Working Capital Fund.

In 2010, the Megrey Student Fund was established within the Trust Fund by the family and friends of the late Dr. Bernard Megrey to provide travel awards to graduate students and early career scientists to attend PICES Annual Meetings and conferences co-sponsored by PICES with ICES and ESSAS, three major international organizations in which Dr. Megrey was actively involved.

Following the guidelines for operating the Trust Fund adopted in 2006 (Decision 2006/A/4(i)), the Executive Secretary provided a detailed report on applications received for support and their disposition at the F&A Committee meeting. A total of ~ \$27,000 was spent in 2011 (including ~\$9,200 from the Megrey Student Fund) to support participation of scientists from all PICES member countries in the PICES/ICES Zooplankton Production Symposium (March 2011, Pucón, Chile), ESSAS Open Science Meeting (May, 2011, Seattle, U.S.A.), and PICES-2011 (October 2011, Khabarovsk, Russia). Additionally, ~\$7,000 was spent from the MAFF Fund to support participation of students and early career scientists in the Seventh International Conference on “*Marine bioinvasions*” (August 2011, Barcelona, Spain).

In 2012, travel support from the Trust Fund will be provided to students and early career scientists to attend the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 15–19, 2012, Yeosu, Korea, and the 2012 PICES Annual Meeting (October 12–21, 2012, Hiroshima, Japan).

Intern Program

The PICES Intern Program (<http://www.pices.int/projects/intern.aspx>) aims at the professional development of marine scientists and managers from member countries and increasing the capacity of the Secretariat to support the work of the Organization. The Program was approved in 1999 (Decision 1999/A/7) and commenced in 2000. In 11 years since its inception, 12 scientists and managers from three member countries (4 from China, 5 from Korea and 3 from Russia) have worked as interns at the PICES Secretariat. The Program requires about \$30,000–33,000 per year, and has been financed solely by voluntary contributions.

In 2011, the U.S. National Marine Fisheries Service (NMFS), the Korean Ministry of Land, Transport and Maritime Affairs (MLTM) and Fisheries and Oceans Canada (DFO) contributed \$15,000 US, \$10,000 US and \$10,000 CAD, respectively, to the Trust Fund for the Intern Program. This additional funding made it possible to extend the originally-offered 6-month term of the current intern, Ms. Jeongim Mok (Korea), to a full year.

The F&A Chairman pointed out that at the end of *FY* 2011, the Organization will be holding approximately \$23,000 for the Intern Program. This amount is sufficient to maintain the Program for about 9 months in 2012, and voluntary contributions are needed to keep it going. Council thanked the organizations that supported the Intern Program, and instructed the Executive Secretary to invite all Contracting Parties to make voluntary contributions to maintain the Program in 2012 and beyond (Decision 2011/A/8(i)). Korea and the United States confirmed their intention, indicated at the meeting of the F&A Committee, that they will provide funding at the typical level (\$10,000 and \$15,000 US, respectively) in the coming year. This would be sufficient to support the completion of the current intern’s term and for a full year of a new intern’s term.

Considering the current level of the stipend (\$2,000), funding available for the Program, and stated intentions for contributions by Contracting Parties, Council agreed to initiate the process to recruit the 2012/2013 intern, with the understanding that the intern’s term will start no earlier than June 2012 (Decision 2011/A/8(ii)). In accordance with the guidelines for application and selection of interns, it is expected that China will nominate an intern for the 2012/2013 term. China thanked the other Contracting Parties for their support of the Program and suggested that the intern will be nominated by December 16, 2011.

AGENDA ITEM 15

Improvement of participation in PICES activities

At PICES-2008, the Executive Secretary presented for the first time background graphic materials to better assess problems existing in PICES Contracting Parties with the participation of their scientists in the activities of the Standing Committees and their subsidiary bodies, and in the Annual Meetings of the Organization. At PICES-2009, Council requested that these files be updated and reviewed annually (Decision 2009/A/8(iii)). The request was re-iterated at the following Annual Meetings. At the recommendation of Canada, it was also

agreed that information on the number of presentations (talks and posters) given by participating scientists from each country be added to these materials as a measure of quality of their involvement.

Preliminary information on the participation of Contracting Parties in PICES Annual Meetings for the period from 2006 to 2011 was included in the 2011 GC Briefing Book. Data as of August 27 on registration and abstract submission for PICES-2011 were used to create the graphs. These numbers are expected to be revised after the meeting based on actual attendance and presentations.

In the discussion that followed, the Executive Secretary indicated that all Contracting Parties have Committee or expert group members who never, or rarely, attend PICES Annual Meetings, but the problem is most serious with Chinese scientists. Mr. Yingren Li pointed out that limited participation of Chinese scientists in PICES activities is partially due to national- and agency-level restrictions on the overall number of delegations to international meetings and the number of members in one delegation. He assured Council that appropriate changes in national membership will be made to improve the involvement of Chinese experts.

Dr. John Stein informed Council that the United States has initiated a review of participation of its scientists on PICES Standing Committees and expert groups and will continue this practice in the future. He also shared his observation that at this year's Annual Meeting there were a number of first time participants in PICES and that this is a positive development for the future of the Organization.

Council instructed the Executive Secretary to continue regularly preparing and circulating to Contracting Parties information, including graphic materials, on the participation of their scientists in the Annual Meetings for the previous six years (Decision 2011/A/10(ii)).

Council also re-iterated the necessity for Contracting Parties to: (1) regularly review their national membership, and to provide the updated national membership list to the Secretariat by the first day of the calendar year (January 1), and (2) follow up on *Rule 1(ii)* of the PICES Rules of Procedure in providing the national delegation list for Annual Meetings (Decision 2011/A/10(i)). The national membership lists are required to maintain a historical record of PICES membership, and to assist in improving participation in the activities of the Organization. The national delegation lists are required to assist in better coordinating activities of the Standing Committees and their subsidiary bodies, and in better preparing the Annual Meeting.

AGENDA ITEM 16

Changes in PICES Rules of Procedure

The Executive Secretary reminded Council that the original PICES Rules of Procedure (RoP) and Financial Regulations (FR) were approved on March 24, 1992, the same day when the PICES Convention entered into force. Thorough review of both documents was undertaken by the Study Group on *Rules of Procedure and Financial Regulations* (SG-RPFR), and the revised RoP and FR were adopted (Decision 2006/A/5) at the 2006 inter-sessional Council meeting (Honolulu, U.S.A.). Additional changes in the RoP were introduced in 2009 (Decision 2009/A/5(i) and Decision 2009/A/5(ii)) and 2010 (Decision 2010/A/4). The latest version of the RoP is posted at http://www.pices.int/about/rules_procedure.aspx.

At PICES-2011, the F&A Committee discussed whether changes to the RoP were required, given that the updated PICES Strategic Plan mandates the preparation of 3-year Action Plans by Executive Committees, Scientific and Technical Committees, and the Secretariat. It appears that there is no need in further revisions as there is language in the Chairman's Handbook on "Roles and Responsibilities of Chairmen and Members of PICES Groups" that might suffice. The F&A Chairman will review the language in the Handbook and provide some alternatives for consideration by Council at PICES-2012.

AGENDA ITEM 17

Report of Science Board

The Science Board met from 12:30–14:00 on October 16, from 15:00–18:00 hours on October 21, and from 9:00–18:00 hours on October 22, under the chairmanship of Dr. Sinjae Yoo. Dr. Yoo presented the report to Council on October 23. The full report is included elsewhere in this Annual Report. The discussions on some issues can be found under agenda items 5, 6, 10–12 and 14. The decisions on scientific issues are summarized in *GC Appendix A* (Decisions 2011/S/1–2011/S/8) and *GC Appendix B*. The discussion on the supplementary chapter for the second North Pacific Ecosystem Status Report is reflected below.

In his presentation, Dr. Yoo reminded Council that at PICES-2010, Science Board instructed AP-CREAMS (POC/MONITOR Advisory Panel for a *CREAMS/PICES Program in East Asian Marginal Seas*) to prepare a chapter not included in the second version of the North Pacific Ecosystem Status Report (NPESR-II; PICES Special Publication No. 4, 2010) by the following Annual Meeting. It was expected that a review of the ecosystem status of the area focused on by this chapter will take place at the PICES-2011 workshop on “*Recent advances in monitoring and understanding of Asian marginal seas: 5-years of CREAMS/PICES EAST-I Program*”. He informed Council that after receiving the draft document, Science Board agreed that (1) the supplementary chapter developed by AP-CREAMS should be published as a valuable contribution to NPESR-II, and (2) SOFE and MONITOR should lead the review of the chapter before technical editing. Although Science Board was urged by Dr. Kyung-Ryul Kim to get the supplementary chapter published within 1 month, it was decided that quality should not be sacrificed, but that the chapter should be published as soon as possible. In response to a question from Mr. Masaki Sugamiya (Japan), Dr. Yoo confirmed that a tentative working title of the supplementary chapter is “*Marine Ecosystems of the North Pacific Ocean 2003–2008: Japan/East Sea*”.

In a very intense discussion, the following positions were expressed by Contracting Parties:

Japan

Japan thanked Science Board for all efforts made in drafting the chapter, and confirmed that they recognize its high scientific value. At the same time, Japan expressed its regret that the simultaneous use of both names still remains as the title of the chapter, notwithstanding Japan’s repeated objection. Japan also stated that the approval of the draft publication is unacceptable for them, considering that the Sea of Japan is the one and only internationally established name for the concerned sea area by the United Nations and other international organizations, and that PICES is as an intergovernmental organization.

Japan pointed out that the simultaneous use of both names is far from the established practice in PICES, referring to the fact that Japan has consistently opposed the use of the term every time it appeared. It was also emphasized that the first North Pacific Ecosystem Status Report (NPESR-I; PICES Special Publication No. 1, 2004) cannot be regarded as a precedent, as the PICES Chairperson indicated in the 2004 Governing Council report that “*I point out that this decision by Council concerns only this particular report. Even if no resolution of the name is achieved in other venues within the six-month period, and PICES reverts to its previous practice, this does not necessarily have permanent implications for future uses. It does, however, point out the need for this matter to be settled as soon as possible.*”

Republic of Korea

Korea re-iterated that (1) following instructions from Science Board at PICES-2010, AP-CREAMS completed a 300-pages supplement to NPESR-II, with great efforts of about 80 scientists, (2) Science Board unanimously endorsed the publication of the Supplement, and (3) all Contracting Parties, including Japan, agreed on the importance of this supplement to be published timely.

Korean stated that the title of the supplementary chapter, “*Marine Ecosystems of the North Pacific Ocean 2003-2008: Japan/East Sea*”, should be kept as the same title was adopted for NPESR-I, published in 2004. The Korean delegation distributed the collection of publications/newsletters as a proof that PICES has used the “Japan/East Sea” parallel designation during most of PICES’ history since 1995.

Korea quoted the 2004 Governing Council report, reaffirming how much PICES Contracting Parties wanted to avoid a political contention concerned with a naming issue within PICES: *Chairman indicated that no retrospective discussion of the [naming issue] matter should take place, since the vote at the 2004 interim Council meeting had already settled the issue. She re-iterated that this sort of political question must be resolved outside the forum of a purely scientific organization such as PICES, where timely scientific contributions can otherwise be seriously impeded.*

Korea also stressed out that the Contracting Parties should respect the outcome of the decision made by both AP-CREAMS, which was instructed to complete the supplement, and Science Board, which agreed to have it published. It was pointed out that Contracting Parties must not be trapped by a naming issue, which falls outside the boundaries of PICES' competency.

The Korean delegation indicated that none of the Contracting Parties explicitly made a valid objection, and there was no motion tabled, against the Science Board's decision [recommendation] to publish the supplement. Accordingly, this decision [recommendation] should be respected and considered as approved. If the supplement—the Japan/East Sea Chapter—may not be published timely, that would be certainly an irreparable disappointment to the scientists whose research efforts have contributed to the growth of PICES.

Canada

Canada agreed that the supplementary chapter for NPESR-II is an important scientific product of PICES, and supported the recommendation of Science Board that this work should be published once editing is complete. The support for the publication should not though be interpreted as Canada is taking a position on disputed geographical names within this publication. Canada also indicated that as a science organization, PICES need to find a way to continue its work on scientific issues and to avoid becoming engaged in issues which should be addressed in other more appropriate venues. A hope was expressed that a mutually agreeable solution can be reached between the concerned countries.

People's Republic of China

China pointed out that as a regional marine scientific organization aimed to strengthen and promote the scientific cooperation among the Contracting Parties, PICES is not a proper place to settle diplomatic disputes, and confirmed its position that such issues as differences in the usage of geographical names should be solved by bilateral negotiation of the concerned countries. China agreed that the supplementary chapter for NPESR-II is an important product of PICES and its publication is necessary.

Russian Federation

Russia stated that the supplementary chapter for NPESR-II is an important scientific work of PICES scientists, and the appropriate form of publication must be found by all Contracting Parties. Russia re-iterated its opinion that as a scientific organization, PICES should avoid being involved in issues that are not scientific in nature, and expressed a hope that a compromise will be found by the concerned countries to allow the chapter to be published in the nearest future.

United States of America

The United States indicated that they view the supplementary chapter for NPESR-II as important for the scientific understanding of the ecosystems in the North Pacific and wish to see it published. The United States also concurred with the assessment that PICES should not engage in discussions on different opinions on geographical names that are not scientific in nature and fall outside of its competency. It was suggested that a decision by Council should include two major points as follows: (1) all member countries agree that this supplementary chapter is an important science product of PICES, and (2) all member countries agree to keep this agenda item open to allow member country governments to reflect further on this issue.

After deliberations, the following decision was approved by Council (Decision 2011/S/4(iv)):

All member countries consider that the supplementary chapter for the Second North Pacific Ecosystem Status Report (PICES Special Publication No. 4, 2010) developed by the Advisory Panel for a CREAMS/PICES

Program in East Asian Marginal Seas and endorsed for publication by Science Board, is an important scientific product of PICES, and agree to keep this agenda item open to allow member country governments to reflect further on this issue.

AGENDA ITEM 18

Report and recommendations of the Finance and Administration Committee

The Finance and Administration Committee met from 09:00–13:30 hours on October 19, 2011, under the chairmanship of Ms. Patricia Livingston. The full report is included elsewhere in this Annual Report. All recommendations were brought forward and adopted at the first session of Council (see *GC Appendix A*, Decisions 2011/A/1 – 2011/A/3 and Decisions 2011/A/7 – 2011/A/9).

AGENDA ITEM 19

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

At the recommendation of the United States and in accordance with Financial Regulation 12(i), an Executive Committee of Council for evaluating the annual performance of the Executive Secretary was established at PICES-2007 (Decision 2007/A/7(i)). The terms of reference and membership of the Committee are listed in *2007 GC Appendix B*.

The Chairman informed Council that the Executive Committee reviewed the 2010 report submitted by the Executive Secretary, Dr. Alexander Bychkov, and evaluated his annual performance as “succeeded+” not only for his ongoing commitments but also for the key commitments specifically requested by the Committee. Following the general guidelines for executive positions in the Canadian Public Service system, it was decided that a performance pay equal to 12% of his salary would be appropriate for this period. The report on the performance evaluation of the Executive Secretary for 2010, with tasks for 2011, is appended as *GC Endnote 9*.

AGENDA ITEM 20

Other business –25th PICES Anniversary

The Executive Secretary reminded Council that the PICES Convention (<http://www.pices.int/about/convention.aspx>) entered into force on March 24, 1992, and the 1st PICES Annual Meeting was held October 12–17, 1992, in Victoria, Canada. If we have no deviations from our normal 6-year rotation cycle in hosting Annual Meetings (Decision 1994/A/6), the 25th Annual Meeting will take place in 2016 in the United States. Council agreed that an item on the celebration of the 25th Anniversary of the Organization be included in the agendas of Council, Science Board and F&A Committee meetings at PICES-2012.

GC Endnote 1

Governing Council participation list

Canada

David Gillis (GC and F&A member)
Laura Richards (GC and F&A member)
Darlene Smith (advisor)

Chul Park (GC and F&A member)
Gidong Yeo (advisor)
Ungyul Yi (advisor)

Japan

Taro Ichii (advisor, F&A member)
Yukimasa Ishida (alternate delegate)
Tetsuya Itani (advisor)
Masaki Sugamiya (GC member)

Russian Federation

Oleg Katugin (advisor)
Vladimir Radchenko (GC member)
Igor Shevchenko (advisor, F&A member)

People's Republic of China

Yieren Li (alternate delegate)
Yingren Li (advisor)
Gongke Tan (alternate delegate)

U.S.A.

John Stein (GC member)
Elizabeth Phelps (advisor)

Republic of Korea

Dosoo Jang (advisor)
Kyung-Chul Lee (advisor)
Hyun Taek Lim (GC and F&A member)

Other

Lev Bocharov (PICES Chairman)
Patricia Livingston (F&A Chairman)
Sinjae Yoo (Science Board Chairman, only Oct. 23)
Alexander Bychkov (Executive Secretary)
Skip McKinnell (Deputy Executive Secretary)

GC Endnote 2

Opening remarks by representatives of Contracting Parties

Dr. Laura Richards (Regional Director of Science, Pacific Region, Fisheries and Oceans Canada)

Mr. Chairman: On behalf of Canada and the Canadian delegation, I would like to thank the Russian Federal Agency for Fisheries and the government of the Khabarovsk Region for hosting PICES-2011 in Khabarovsk, Russia. We especially appreciate the hard work of the Pacific Research Institute of Fisheries and Oceanography (TINRO-Center), the Khabarovsk Branch of TINRO-Center and the Secretariat in making this meeting a success.

Now that we have almost completed the update of the PICES Strategic Plan, we need to follow through and ensure that all activities within PICES are aligned with this Plan, along with the priorities and information needs of Contracting Parties. In particular, we recognize that FUTURE is a complex program, and its implementation will be a challenge. We will need to stay focused to ensure that FUTURE can achieve its goals. We should also take opportunities to demonstrate the effectiveness of PICES, such as through collaboration with the proposed new North Pacific Regional Fisheries Management Organization.

Efficiencies are obviously important for any organization. Many of the world's economies are continuing to deal with the fall-out from the global economic situation. In Canada, my Department of Fisheries and Oceans just announced the completion of a 5-year Strategic Review which led to a budget reduction of 3%. An additional review is now in progress, and we anticipate further budget reductions next year which could be as high as 10%. While we will continue to support PICES, we may not be able to provide the same level of participation or voluntary contribution as in the past. None-the-less, we consider international collaboration to be an efficient approach to conducting multi-disciplinary research. I personally witnessed how my own staff benefited from presentations made by our Asian colleagues at this meeting.

Another major event in Canada over the past year has been the federal commission of inquiry into the record-low return of sockeye salmon to the Fraser River in 2009. Then, last year, in 2010, sockeye salmon returned to the Fraser River at the highest level in a century. This year, in 2011, the return is expected to be near average. PICES received a formal request for advice from the Canadian government and contributed evidence to the federal inquiry on ocean conditions possibly related to the poor 2009 sockeye salmon return. Several Canadian PICES scientists (including myself) were also called as expert witnesses. This inquiry is just one example of the importance of PICES work in the North Pacific and the need for close cooperation among PICES members as we attempt to understand and forecast the North Pacific ecosystem and its resources.

We recognize that this has also been a challenging year for Japan. We admire Japan's spirit in the face of adversity and look forward to visiting Hiroshima next year. Thank you.

Dr. Yukimasa Ishida (Director-General, Japan Sea National Fisheries Research Institute, Fisheries Research Agency, Japan)

Thank you, Mr. Chairman. First of all, on behalf of Japan and the Japanese delegation, I sincerely thank the Government of the Russian Federation and the Local Organizing Committee, including TINRO-Center and the Khabarovsk Branch of TINRO-Center for kindly hosting the 2011 PICES Annual Meeting in Khabarovsk. I also thank the PICES Secretariat for preparing for this event. I am sure that their excellent work made a fruitful meeting.

Next, I would like to express my deepest appreciation to all Contracting Parties, PICES scientists and the Secretariat for their support after the March 11 great earthquake and tsunami in northeastern Japan. I also would like to thank PICES and ICES for their joint donation. The Japanese Society of Fisheries Oceanography (JSFO) was identified as the recipient of the donation, and eleven research projects have been supported by this funding. Also the Topic Session on "*Effects of natural and artificial calamities on marine ecosystems and the scheme for their mitigation*" to be convened by Dr. Tokio Wada (PICES Past Chairman) and others at the 2012 PICES Annual Meeting in Hiroshima, will be based partially on the results from these projects.

Finally, there is a great concern about the environmental damage in the area impacted by the tsunami, and of radioactive leakage from the Fukushima nuclear power plant into the atmosphere and ocean. The Japanese Government and Japanese scientists are actively monitoring the affected area and taking appropriate measures to recover from this damage. I appreciate again the contribution and cooperation by PICES Contracting Parties for the quick recovery in Japan from the damages in various fields. Thank you very much.

Mr. Yieren Li (Vice-President, Chinese Academy of Fishery Sciences, Ministry of Agriculture, People's Republic of China)

Good morning everyone: Even though this is the first time for me to participate in the PICES Governing Council meeting, I have known PICES from the very beginning when I worked as a research manager at the Ministry of Agriculture. In the past year, we have witnessed the progress of PICES and achievements by scientists from all Contracting Parties. Here, I would like to express our appreciation for efforts made by Dr. Bocharov and other members of PICES for the development of the Organization, and thank all staff of the PICES Secretariat for their hard work. I also would like to express my special and sincere thanks to the Russian Federal Agency for Fisheries and TINRO-Center for their cooperation and support of PICES-2011. I wish to see a closer collaboration among our six countries next year. Thank you.

Mr. Hyun Taek Lim (Director, Marine Territory and Development Division, Ministry of Land, Transport and Maritime Affairs, Republic of Korea)

Thank you, Mr. Chairman. First of all, congratulations on your chairmanship! And I appreciate all the hard work of the PICES Secretariat and the Khabarovsk Branch of TINRO-Center for preparing this successful Annual Meeting.

For the past 19 years, since its inauguration in 1992, PICES has made great achievements to better understand our seas through international scientific cooperation. Supporting PICES' goal, Korea has made sincere efforts keeping up to its commitments since 1995. On top of this, Korea did not hesitate to seize opportunities for additional contributions. I am sure that as we did in the past, we [Koreans] will be striving to support values of PICES and build up solidarity among our member countries in the future.

At present, PICES is coming of age. Confucius, a great ancient Chinese wise man, said that "trust holds a group together". I dearly wish that the trust among us will continue to enrich our understanding of the seas. In this regard, we are trying to use the Yeosu Project to support activities of international oceanographic organizations. I wish to see an application from PICES in the future, when the main stage of the Yeosu Project is launched.

In closing, I hope to see many of you at the Second PICES/ICES/IOC International Symposium on "*Effects of climate change in the world's oceans*" in Yeosu and at Expo-2012 Yeosu Korea. Thank you.

Dr. John Stein (Director, Northwest Fisheries Science Center, NOAA-Fisheries, U.S.A.)

Dear colleagues: First, on behalf of the United States, I want to acknowledge the hard work by the Local Organizing Committee and TINRO-Center for hosting a very successful meeting here in Khabarovsk. There were a number of scientists attending their first PICES Annual Meeting, and that is very encouraging for the future of the Organization.

Since this is my first meeting as US National Delegate, I look forward to working with all of you as we carry out the business of PICES. In that regard, as the former Chairman of the Science Board, I particularly look forward to implementing FUTURE so that it is highly productive and supports state-of-the art science. I must note, however, that in the United States we foresee tight budgets over the next few years for agencies that support PICES activities, as was also mentioned to be the situation in other Contracting Parties. Nonetheless, the US recognizes the importance of international partnerships and scientific collaboration among PICES member countries to address pressing issues that we all face, such as climate change.

The value of international scientific collaboration is clear. For example, in the past year there were many harmful algal blooms in the eastern Pacific but only very few in the western Pacific. We do not know why and, by collaborating through PICES, we have the best opportunity to better understand such differences and begin to determine the processes and mechanisms that lead to such differences. Similarly, with Pacific salmon we have witnessed some the highest highs and some of the lowest lows in abundance in recent years, and through collaboration we are beginning to identify possible mechanisms and better understand how climate contributes to this variability. The scientific progress on the ecology and oceanography of harmful algal blooms and the influence of climate variability and change on marine fish are but two examples of the strength of PICES as a leading international science organization.

In closing, I look forward to serving as US National Delegate on the Governing Council and to a successful and productive meeting in Hiroshima next year.

Dr. Vladimir Radchenko (Deputy Director-General, Pacific Research Institute of Fisheries and Oceanography, Russian Federation)

Dear Mr. Chairman, national delegates, colleagues, guests, ladies, and gentlemen: On behalf of the Russian delegation, I am happy to greet you in the beautiful city of Khabarovsk, the venue of the PICES Twentieth Annual Meeting. Thank you for coming and sharing with us your knowledge, expertise, and experience.

The scientific part of our meeting has been completed. It was interesting and fruitful. As the Amur River supplies the Sea of Okhotsk and further, the Pacific Ocean, with plentiful nutrients, our meeting gave life to scientific ideas, data, and hypotheses, which can grow into new cooperative international and national

scientific programs and research projects bringing important results. I hope that the official part of our meeting will also go smoothly, similar to a calm flow of the Amur River behind the window of this gorgeous building, and in line with good weather conditions, which we had a chance to enjoy during the last week. Our work is highly important for the future development of the Organization, definition of proper scientific directions, and elaboration of recommendations for fisheries and ecosystem management.

I would like to express our sincere appreciation to the PICES Secretariat for their great efforts in organizing the meeting. With such a high level of preparation and execution, we may expect that our next meetings will also be productive and successful. Thank you.

GC Endnote 3

Governing Council meeting agenda

1. Welcome and opening remarks by representatives of Contracting Parties and the Chairman of PICES
2. Adoption of agenda and meeting procedures
3. Membership and observers from other countries
4. Report on administration for 2010–2011
5. Relations with relevant international and regional organizations/programs
6. Report of the PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science*
7. Report on the UN Regular Process (UNRP) for *Global Reporting and Assessment of the State of the Marine Environment*
8. Yeosu Declaration and Yeosu Project
9. Report of the Study Group on *Updating the PICES Strategic Plan*
10. Schedule, structure and financing of future Annual Meetings
11. Progress report on implementation of the second PICES integrative science program
12. PICES Advisory Report to the *Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River*
13. Progress report on the PICES project “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” supported by the Japanese Trust Fund
14. Capacity building activities, including the PICES Intern Program
15. Improvement of participation in PICES activities
16. Changes in PICES Rules of Procedure
17. Report and recommendations of Science Board
18. Report and recommendations of the Finance and Administration Committee
19. Report of the Executive Committee for evaluating annual performance of the Executive Secretary
20. Other business

GC Endnote 4

Report on Administration for 2010–2011

I. Managing the budget and implementing financial regulations of the Organization

- The *FY* 2010 operations were completed within budget and with pre-agreed parameters. The 2010 Auditor’s Report was completed on April 21, 2011 and circulated to all Contracting Parties on May 10, 2011. In the auditor’s opinion, the financial statements accurately represent the financial position of the Organization as at December 31, 2010, and the results of its operations and changes in fund balances for the year are in accordance with PICES Financial Regulations and Canadian generally accepted accounting principles. Details are reflected under *FA Agenda Item 3*. It is expected that the *FY* 2011 operations will be also completed within budget and with pre-agreed parameters. The audit for *FY* 2011 will be conducted in April 2012.
- According to *Regulation 5* of the PICES Financial Regulations, all national contributions to PICES are payable by the first day of the fiscal year (January 1) to which they relate. All Contracting Parties met their

financial obligations for FY 2011. Japan and the United States paid prior to the due date. The Canadian and Russian contributions arrived in early February 2011, and the Chinese contribution was received on June 30. The Korean contribution came in two instalments: 88.1% at the end of the first quarter, and the remainder on September 20. Details can be found under *FA Agenda Item 4*.

- As current funding constraints from an increase in annual contributions only at the rate of inflation in Canada can impede improvement and development of the Organization, fund-raising continues to be an important component of PICES activities. The level of external funding has increased significantly over the last several years. In 2010, the amount of funds from voluntary contributions, grants, and partnerships for various activities initiated or sponsored by PICES exceeded, for the first time, the total annual contributions by Contracting Parties. This situation repeated in 2011, indicating: (1) the desire of various organizations and programs to work with PICES due to its high reputation, and (2) the Organization's large dependence on outside funding. Special emphasis during the year was put on raising funds for the 5th International Zooplankton Production Symposium on "*Population connections, community dynamics, and climate variability*" (Pucón, Chile), 2nd International Symposium on "*Effects of climate change on the world's oceans*" (Yeosu, Korea), the North Pacific Continuous Plankton Recorder (CPR) survey, and capacity development activities. Details are reflected under *FA Agenda Item 5*.

II. Planning and organizing the 2011 PICES Annual Meeting

PICES Annual Meetings are crucial for the Organization to move forward in achieving its mandate "to promote and coordinate marine scientific research in order to advance scientific knowledge of the area concerned". These meetings, with their high scientific standards, wide variety of topics and good attendance, have become major irreplaceable international fora for marine sciences in the North Pacific.

- The 2011 PICES Annual Meeting (October 14–23, Khabarovsk, Russia) was hosted by the Russian Federal Agency for Fisheries in cooperation with the government of the Khabarovsk Region and in coordination with the PICES Secretariat. Local arrangements were made by the Pacific Research Fisheries Centre (TINRO-Centre) and the Khabarovsk branch of TINRO-Centre. The overall theme for PICES-2011 was "*Mechanisms of marine ecosystem reorganization in the North Pacific Ocean*", and the meeting covered a broad range of timely and very relevant marine science issues. About 330 scientists and managers from 17 countries and 28 international and regional organizations/programs attended 12 sessions, 4 workshops and 23 business meetings of our standing committees and their expert groups (see *Appendix 1* for the complete list) and presented about 200 talks and 140 posters.
- To get a more comprehensive picture on the Annual Meeting theme and to secure funding, several international and national organizations/programs were invited, and they subsequently agreed, to co-sponsor (by covering travel of additional invited speakers and/or convenors) the following Topic Sessions and workshops relevant to their scientific interests: "*Mechanisms of physical-biological coupling forcing biological hotspots*" (ICES), "*Recent changes of North Pacific climate and marine ecosystems: Implications for dynamics of the dominant species*" (ICES), "*Land-sea interactions and anthropogenic impacts on biological productivity of North Pacific Ocean coastal ecosystems*" (NOWPAP), "*Linking migratory fish behavior to end-to-end models*" (ICES), "*How well do our models really work and what data do we need to check and improve them?*" (IMBER), "*Remote sensing techniques for HAB detection and monitoring*" (NOWPAP), and "*Pollutants in a changing ocean: Refining indicator approaches in support of coastal management*" (GESAMP, ICES and IOC).

III. Providing secretarial services to inter-sessional symposia/sessions/workshops/meetings

Through the organization of scientific meetings, PICES aims to facilitate exchange of ideas and information, and to develop international collaborations across disciplines, national boundaries and institutions.

- In 2011, logistical and financial arrangements were made for more than 20 inter-sessional events (symposia, sessions, workshops and meetings) convened at various locations around the North Pacific and the world-at-large (see *Appendix 2* for the complete list). A highlight of the year was the 5th International Zooplankton Production Symposium on "*Population connections, community dynamics, and climate variability*" held in March 2011, in Pucón, Chile. PICES was the major sponsor of this symposium, along with ICES and COPAS (Center for Oceanographic Research in the Eastern South Pacific), Universidad de Concepción. Although most of the Japanese contingent was unfortunately unable to make the meeting due

to the devastating earthquake and tsunami off Honshu just two days before the symposium, almost 300 scientists from 36 countries were in attendance and presented 159 talks and 203 posters, making this event an outstanding success.

- Preparations, arrangements or planning are in progress for several symposia/meetings to be convened in 2012. This includes landmark events such as the 2nd PICES/ICES Conference for Early Career Scientists on “*Oceans of change*” (April 24–27, 2012, Majorca, Spain), and the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (May 14–20, 2012, Yeosu, Korea, in conjunction with the Ocean Expo-2012).

IV. Coordinating the publication program of the Organization

PICES publications are a record of the activities and scientific findings of the Organization. A dynamic and balanced publications program is needed for efficient communication with a highly varied audience.

- Publications produced since PICES-2010 include: 3 special issues of primary journals (peer-reviews are completed for 2 more special issues to be published in 2012), 2 reports in the PICES Scientific Report Series, 1 PICES Advisory Report, 2 issues of PICES Press, several Books of Abstracts, announcements and posters, and a special USB with all PICES scientific publications for the period from 1993–2011 (see *Appendix 3* for the complete list).
- Further progress was made in the implementation of the Action Plan resulting from the 2008 PICES Publications Review, especially with respect to establishing a License Agreement with ProQuest Science Journals database to ensure indexing of all PICES publications to the article level.

V. Intensifying the cooperation with other organizations/programs

As many of the scientific and capacity building issues addressed by PICES are not unique to the North Pacific and concern the entire world, it is crucial to expand cooperation with other international scientific organizations and programs of regional and global scale and with regional scientific and monitoring efforts (national and involving several PICES Contracting Parties) in the North Pacific.

- Progress made in the integration and coordination of PICES’ activities with some organizations and programs is reflected in *Appendix 4*.
- Twenty-eight international and regional organizations and programs (see *GC Endnote 5* for the complete list) accepted the invitation to be present as observers at PICES-2011 (compare this number with 32 in 2010, 30 in 2009, and 21 in 2008), and expressed their views on potential areas of collaboration with PICES (including specific proposals for 2012 and beyond) at the meetings of Science Board, Standing Committees and/or their subsidiary bodies. Several organizations and programs had posters on display highlighting their objectives and recent activities.
- The holding of co-sponsored symposia/sessions/workshops/training courses and the creation of joint expert groups were chosen as directions of actual collaboration. Details can be found under *GC Agenda Item 5*.

VI. Coordinating special projects

The staff of the Secretariat was involved in coordinating/leading several special projects:

- The Deputy Executive Secretary, Dr. Skip McKinnell, served as the Lead Author of the report on “*The decline of Fraser River sockeye salmon *Oncorhynchus nerka* (Steller, 1743) in relation to marine ecology*” for the Cohen Commission (see *GC Agenda Item 12* for details). To allow Dr. McKinnell to focus mostly on this project, his duties within the Secretariat were adjusted.
- The Executive Secretary, Dr. Alexander Bychkov, was responsible for the funding management and reporting for the 5-year project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” supported by the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan (see *GC Agenda Item 13* for details), and served as the co-coordinator (with Dr. Sonia Batten, SAHFOS) of a funding consortium to support the North Pacific Continuous Plankton Recorder (NP CPR) survey (see *FA Agenda Item 5* for details).

VI. Administrating the Secretariat

- To increase the capacity of the Secretariat, a funding of ~\$51,000 was secured to support a part-time contract position at the PICES Secretariat. This amount includes a contribution from the Korea Ocean Research and Development Institute (specifically for assisting the Science Board Chairman) and overheads for the 2011 ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*” (May 22–26, 2011, Seattle, USA), and PICES projects on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” (funded by the Ministry of Agriculture, Forestry and Fisheries of Japan) and on “*The decline of Fraser River sockeye salmon *Oncorhynchus nerka* (Steller, 1743) in relation to marine ecology*” (funded by the Cohen Commission, Canada).
- The PICES Intern Program, approved in 1999 and commenced in 2000, has been a useful mechanism not only for the professional development of marine scientists and managers from PICES Contracting Parties, but also for increasing the capacity of the PICES Secretariat to support the work of the Organization. From May 2000 to December 2011, 12 scientists from three countries (4 from China, 5 from Korea and 3 from Russia) have worked as interns at the PICES Secretariat. Over the years the Intern Program has been financed solely by voluntary contributions. Since PICES-2010, Fisheries and Oceans Canada (\$10,000), the Ministry of Land, Transport and Maritime Affairs of Korea (\$10,000 US), and the U.S. National Marine Fisheries Service (\$15,000 US) contributed a total of ~\$34,500 to the Trust Fund for the Program. With these contributions, the amount of funds kept for the Intern Program is sufficient to maintain it for about 9 months in 2012. Details can be found under *GC Agenda Item 14*.

Appendix 1: Scientific sessions, workshops and business meetings convened at PICES-2011

Sessions

- ¾-day Science Board Symposium on “*Mechanisms of marine ecosystem reorganization in the North Pacific Ocean*”;
- 1-day BIO Contributed Paper Session;
- 1-day BIO/POC Topic Session on “*Mechanisms of physical-biological coupling forcing biological hotspots*” (co-sponsored by ICES);
- 1-day FIS Contributed Paper Session;
- ½-day FIS Topic Session on “*Population dynamics, trophic interactions and management of cephalopods in the North Pacific ecosystems*”;
- 1-day FIS/POC Topic Session on “*Recent changes of North Pacific climate and marine ecosystems: Implications for dynamics of the dominant species*” (co-sponsored by ICES);
- ½-day MEQ Topic Session on “*Harmful algal blooms in a changing world*”;
- ½-day MEQ/FIS Topic Session on “*Identification and characterization of environmental interactions of marine aquaculture in the North Pacific*”;
- 1-day MEQ/FUTURE Topic Session on “*Land-sea interactions and anthropogenic impacts on biological productivity of North Pacific Ocean coastal ecosystems*” (co-sponsored by NOWPAP);
- 1-day POC Contributed Paper Session;
- ½-day POC/FIS Topic Session on “*Linking migratory fish behavior to end-to-end models*” (co-sponsored by ICES);
- 1-day MONITOR/POC/FUTURE Topic Session on “*How well do our models really work and what data do we need to check and improve them?*” (co-sponsored by IMBER).

Workshops

- 1½-day BIO Workshop on “*MEMIP-IV: Quantitative comparison of ecosystem models applied to North Pacific shelf ecosystems—humble pie or glee?*”;
- 1-day MEQ Workshop on “*Remote sensing techniques for HAB detection and monitoring*” (co-sponsored by NOWPAP);
- 1-day MEQ Workshop on “*Pollutants in a changing ocean: Refining indicator approaches in support of coastal management*” (co-sponsored by GESAMP, ICES and IOC);
- ¾-day POC/MONITOR/TCODE Workshop on “*Recent advances in monitoring and understanding of Asian marginal seas: 5 years of CREAMS/PICES EAST-I Program*”.

Business meetings

- ¼-day SB meeting (October 16) and 1½-day SB meeting (October 21 afternoon and October 22);
- 1½-hour overture meetings (October 16 evening) and ½-day meetings (October 19 afternoon) of Scientific (BIO, FIS, MEQ and POC) and Technical (MONITOR and TCODE) Committees;
- 1-day meeting of the POC/BIO Section on *Carbon and Climate* (S-CC);
- 1-day meeting of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific* (S-HAB);
- 1½-day meeting of the MEQ Working Group on *Non-indigenous Aquatic Species* (WG 21), immediately after a 4-day PICES Rapid Assessment Survey (RAS-2011);
- ½-day meeting of the BIO Working Group on *Comparative Ecology of Krill in Coastal and Oceanic Waters around the Pacific Rim* (WG 23);
- ½-day meeting of the MEQ/FIS Working Group on *Environmental Interactions of Marine Aquaculture* (WG 24);
- ½-day meeting of the PICES-ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WG-FCCIFS);
- ½-day meeting of the BIO Working Group on *Jellyfish Blooms around the North Pacific Rim* (WG 26);
- 1-day meeting of the POC Working Group on *North Pacific Climate Variability and Change* (WG 27);
- ½-day meeting of the MEQ/BIO Working Group on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors* (WG 28);
- ½-day meeting of the BIO Advisory Panel on *Marine Birds and Mammals* (MBM-AP);
- ¼-day meeting of the MONITOR Advisory Panel on the *Continuous Plankton Recorder Survey in the North Pacific* (CPR-AP);
- ¼-day meeting of the POC/MONITOR Advisory Panel for a *CREAMS/PICES Program in East Asian Marginal Seas* (CREAMS-AP);
- ½-day concurrent meetings of the FUTURE Advisory Panels on *Anthropogenic Influences on Coastal Ecosystems* (AICE-AP), *Climate, Oceanographic Variability and Ecosystems* (COVE-AP) and *Status, Outlooks, Forecasts, and Engagement* (SOFE-AP);
- ½-day joint meeting of AICE-AP, COVE-AP and SOFE-AP.

Appendix 2: Inter-sessional symposia/workshops/meetings organized/sponsored after PICES-2010Symposia

- 5th International Zooplankton Production Symposium on “*Population connections, community dynamics and climate variability*” (primary sponsors: PICES, ICES and COPAS), March 14–18, 2011, Pucón, Chile;
- 2nd ESSAS (Ecosystem Studies of Sub-Arctic Seas) Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*” (logistical and organizational support and travel support for early career scientists by PICES), May 22–26, 2011, Seattle, U.S.A.;
- 7th International Conference on Marine Bioinvasions (co-sponsored by PICES), August 23–25, 2011, Barcelona, Spain;
- 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (primary international sponsors: PICES, ICES and IOC), May 14–20, 2012, Yeosu, Korea.

Joint Theme Sessions at the 2011 ICES Annual Science Conference (September 19–23, 2011, Gdansk, Poland)

- *Atmospheric forcing of Northern hemisphere ocean gyres and their subsequent impact on the adjacent marine climate and ecosystems*, with Emanuele Di Lorenzo (U.S.A.) and Ichiro Yasuda (Japan) serving as PICES co-convenors;
- *Atlantic redfish and Pacific rockfish: comparing biology, ecology, assessment and management strategies for *Sebastes* spp.*, with Paul Spencer (U.S.A.) serving as a PICES co-convenor;
- *Recruitment processes: Early life history dynamics – from eggs to juveniles*, with Richard Brodeur (U.S.A.) serving as a PICES co-convenor.

Workshops and meetings

- FUTURE Workshop on “*Indicators of status and change within North Pacific marine ecosystems*”, April 26–28, 2011, Honolulu, U.S.A.;
- Inter-sessional Science Board meeting (ISB-2011), April 29–30, 2011, Honolulu, U.S.A.;
- Meeting of the PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in*

- Northern Hemisphere Marine Science*, April 29, 2011, Honolulu, U.S.A., in conjunction with ISB-2011;
- Meeting of the Study Group on *Updating the PICES Strategic Plan*, May 1, 2011, Honolulu, U.S.A.;
 - ICES/PICES workshop on “*Reaction of northern hemisphere ecosystems to climate events: A comparison*”, May 2–6, 2011, Hamburg, Germany, with Sukgeun Jung (Korea) and Yoshiro Watanabe (Japan) serving as PICES co-convenors;
 - ICES/PICES workshop on “*Biological consequences of a decrease in sea ice in Arctic and sub-Arctic Seas*”, May 22, 2011, Seattle, U.S.A., in conjunction with the 2nd ESSAS Open Science Meeting, with Anne Hollowed (U.S.A.) serving as a PICES co-convenor;
 - Workshop on “*Comparative analyses of marine bird and mammal responses to climate change*”, May 22, 2011, Seattle, U.S.A., in conjunction with the 2nd ESSAS Open Science Meeting;
 - Meetings of the PICES-ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WGFCIFS), in conjunction with the 2nd ESSAS Open Science Meeting and the 2011 ICES Annual Science Conference;
 - 45th CMOS (Canadian Meteorological and Oceanographic Society) Congress on “*Ocean, atmosphere and the changing Pacific*”, June 6–9, 2011, Victoria, Canada, with Shin-ichi Ito (Japan) serving as a PICES invited speaker;
 - International workshop on “*Development and application of Regional Climate Models*”, October 11–12, 2011, Seoul, Korea;
 - 2011 Rapid Assessment Survey for marine non-indigenous species, October 9–12, 2011, Vladivostok, Russia;
 - International NPAFC-led workshop on “*Explanations for the high abundance of pink and chum salmon and future trends*” (co-sponsored by PICES), October 30–31, 2011, Nanaimo, Canada, with Sanae Chiba (Japan) and William Crawford (Canada) serving as PICES members of the Scientific Steering Committee.

Capacity development events

- PICES/MAFF Demonstration Workshop for developing countries on “*Rapid assessment survey methodologies for detecting marine non-indigenous species*” July 19–21, 2011, Phuket, Thailand;
- 5th SOLAS Summer School (co-sponsored by PICES), August 29–September 10, 2011, Corsica, France;
- NOWPAP/PICES/WESTPAC training course on “*Remote sensing data analysis*”, October 8–12, 2011, Vladivostok, Russia;
- 2nd ICES/PICES Early Career Scientists Conference on “*Oceans of change*”, April 24–27, 2012, Majorca, Spain.

Appendix 3: PICES publications since PICES-2010

Primary journals

- Special issue of *ICES Journal of Marine Science* (Vol. 67, Issue 9, pp. 1825–2052) based on papers from the ICES/PICES/UNCOVER Symposium on “*Rebuilding depleted fish stocks: Biology, ecology, social science, and management strategies*” (Guest Editor: N. Daan; Convenors: C. Hammer, O.S. Kjesbu, G.H. Kruse, and P.A. Shelton) was published in December 2010 and includes the introduction, keynote and 26 papers co-authored by scientists from the EU, Canada, Russia and U.S.A.;
- Special issue of *ICES Journal of Marine Science* (Vol. 68, Issue 6, pp. 983–1383) based on selected papers presented at the 2010 PICES/ICES/FAO Symposium on “*Climate change effects on fish and fisheries*” (Guest Editors: A.B. Hollowed, S.I. Ito, S. Kim, H. Loeng, and M. Peck) was published in July 2011 and includes the preface and 35 papers co-authored by scientists from around the globe;
- Special issue of *Fisheries Research* (Vol. 122, Issue 3, pp. 105–188) based on selected papers from the PICES-2009 Topic Session on “*Ecosystem-based approaches for the assessment of fisheries under data-limited situations*” (Guest Editors: P. Livingston, G. Kruse and L. Richards) was published in December 2011, and includes the preface and 8 papers co-authored by scientists from FAO, Japan, Korea and U.S.A.;
- Special issue of *ICES Journal of Marine Science* based on selected papers from the 2011 Zooplankton Production Symposium (Guest Editors: J. Keister, C. Johnson, D. Mackas, S. Chiba and D. Bonnet) is expected to be published by May 2012;
- Special issue of *Aquaculture Economics and Management* based on selected papers from the PICES-2010 Topic Session on “*Economic relation between marine aquaculture and wild capture fisheries*” (Guest Editors: M. Pang and P. Leung) is expected to be published in spring 2012.

PICES Scientific Report series

- Makino M. and Fluharty, D. (Eds.). Final report of the Study Group on *Human Dimensions* (PICES Sci. Rep. No. 39), December 2011;
- Foreman, M. and Yamanaka, Y. (Eds.). Final report of the Working Group 20 on *Evaluations of Climate Change Projections* (PICES Sci. Rep. No. 40), December 2011.

Special Publication

- McKinnell, S.M., Curchitser, E., Groot, C., Kaeriyama, M., and Myers, K.W. PICES Advisory Report on “*The decline of Fraser River sockeye salmon *Oncorhynchus nerka* (Steller, 1743) in relation to marine ecology*” was published in February 2011 as Technical Report No. 4 on the Cohen Commission website at <http://www.cohencommission.ca/en/TechnicalReports.php>;

PICES Press – newsletter

- Two regular issues: Vol. 19, No. 1 (winter 2011) and Vol. 19, No. 2 (summer 2011) were published in February and July 2011, respectively.

Other publications

- Book of Abstracts for the 5th International Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (March 14–18, 2011, Pucón, Chile);
- Book of Abstracts for the 2011 ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*” (May 22–26, 2011, Seattle, U.S.A.);
- Announcement, poster and Book of Abstracts for PICES-2011 (October 14–23, 2011, Khabarovsk, Russia);
- Announcement and poster for the 2012 International Symposium on “*Effects of climate change on the world’s oceans*” (May 15–19, 2012, Yeosu, Korea).

Special USB

- A USB drive with PICES Scientific Publications from 1993–2011 was published in October 2011, and included in the PICES-2011 registration package.

Appendix 4: Relations with international scientific organizations and programsAsia-Pacific Fishery Commission (APFIC)

In 2010–2011, contacts were initiated between PICES and APFIC.

- PICES was represented as an observer at the Third Regional Consultative Forum (RCFM) of APFIC held September 1–4, 2010, in Jeju, Korea. Dr. Mitsutaku Makino, Chairman of the PICES Study Group on *Human Dimensions*, gave a presentation focused on human dimensions on the ecosystem approach, and Dr. Suam Kim, Co-Chairman of the joint PICES/ICES Working Group on *Forecasting Climate Change Impact on Fish and Shellfish* introduced activities of this Working Group to South Pacific colleagues.
- Dr. Simon Funge-Smith, Secretary Asia-Pacific Fishery Commission (APFIC), was present as an observer at PICES-2011.

Ecosystem Studies of Sub-Arctic Seas (ESSAS)

PICES and ESSAS (a regional program initiated by GLOBEC in 2005 and placed under IMBER in 2009) share the goal of using a comparative approach in developing predictions of how climate variability and change affect, and will affect, the sustainability of goods and services obtained from Sub-Arctic seas.

- PICES provided organizational support (this included: maintaining the meeting website, handling major finances, on-line registration and abstract submission, compiling the book of abstracts, and arranging the logistics for the venue) for the 2nd ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*” (May 22–26, 2011, Seattle, U.S.A.). The meeting was attended by 195 scientists from 13 countries, and showcased the progress made in understanding the role of climate variability and change on the ecosystem structure and function within Sub-Arctic seas. A brief summary of the meeting was published in the summer 2011 issue of PICES Press (http://www.pices.int/publications/pices_press/volume19/v19_n2/pp_9-13_ESSAS_OSM.pdf).
- Two PICES expert groups convened workshops at the 2nd ESSAS Open Science Meeting: The PICES/ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* organized a 1-day workshop on “*Biological consequences of a decrease in sea ice in Arctic and Sub-Arctic seas*”; and the

PICES Advisory Panel on *Marine Birds and Mammals* held a ½-day workshop on “*Comparative analyses of marine bird and mammal responses to climate change*”, which focused on how to best integrate on-going and new research on marine birds and mammals into long-term PICES and ESSAS programs and objectives.

- The goal of the Marine Ecosystem Model Inter-comparison Project (MEMIP), initiated by PICES and ESSAS in 2008, is to compare the performance of various lower trophic level marine ecosystem simulation models in predicting the abundance and distribution of coastal zooplankton functional groups. A series of joint MEMIP workshops has been organized in conjunction with PICES Annual Meetings since 2008. The workshop, titled “*MEMIP-IV: Quantitative comparison of ecosystem models applied to North Pacific shelf ecosystems—humble pie or glee?*”, was held at PICES-2011.
- ESSAS was present as an observer at PICES-2011 and submitted a proposal for a joint PICES/ESSAS workshop on “*Arctic–sub-Arctic interactions*” to be held at PICES-2012.

Exxon Valdez Oil Spill Trustee Council (EVOSTC)

- EVOSTC joined a funding consortium to support the North Pacific Continuous Plankton Recorder (NP CPR) survey in 2010, and approved a grant for PICES in the amount of \$188,600 US for operations of the NP CPR project in 2010–2013 (project on “*Measuring Inter-annual Variability in the Herring’s Forage Base from the Gulf of Alaska*”), with the amount of \$58,300 US for 2011.

Food and Agriculture Organization of UN (FAO)

- FAO joined PICES and ICES as major international sponsors for the International Symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (April 25–29, 2010, Sendai, Japan).
- FAO agreed to co-sponsor the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (May 14–20, 2012, Yeosu, Korea).

Global Ecology and Oceanography of Harmful Algal Blooms Program (GEOHAB)

PICES communicates with various international HAB programs, including GEOHAB, through the Section on *Ecology of Harmful Algal Blooms in the North Pacific* (HAB-S) established in 2003.

- Since 2005, a series of workshops has been conducted at PICES Annual Meetings to: (1) document the existing knowledge on the eco-physiology of HAB species that impact all, or most, countries in the North Pacific, and (2) review techniques for monitoring HAB species and the environmental factors associated with their occurrence. Dr. Raphael Kudela, GEOHAB SSC Chairman, was an invited speaker for the PICES-2011 on “*Remote sensing techniques for HAB detection and monitoring*”. He also served as a lecturer at the NOWPAP/PICES/WESTPAC training course on “*Remote sensing data analysis*” (October 8–12, 2011, Vladivostok, Russia).

Global Ocean Ecosystem Dynamics project (GLOBEC)

The PICES Climate Change and Carrying Capacity (CCCC) Program provided a mechanism for integrating national GLOBEC or GLOBEC-like research programs in the North Pacific and was a regional component of the international GLOBEC effort.

- Results from the CCCC Program were included in several chapters of the GLOBEC Synthesis Book on “*Marine Ecosystems and Global Change*” published in 2010. A special issue of *Progress in Oceanography* resulted from the PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*” (April 19–21, 2006, Honolulu, U.S.A.) and published in June 2008 (Vol. 77, Nos. 2–3, pp. 83–268; Guest Editors: H. Batchelder and S. Kim) is also considered as a part of GLOBEC’s synthesis effort.
- GLOBEC co-sponsored the PICES/ICES Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (March 14–18, 2011, Pucón, Chile) by providing travel support for early career scientists.

Global Ocean Observing System (GOOS)

- Dr. David Checkley represented PICES on a post-OceanObs’09 Task Team charged with developing a framework for planning and moving forward with an enhanced global sustained ocean observing system over the next decade. This framework is meant to help guide the many different global and regional organizations with a stake in an ocean observing system to work together in a voluntary collaborative way

for mutual gain. A Framework for Ocean Observing (FOO) developed by the Task Team was presented and discussed at the PICES-2011.

- GOOS agreed to co-sponsor the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (May 14–20, 2012, Yeosu, Korea).

Group of Experts on Scientific Aspects of Marine Pollution (GESAMP)

- GESAMP co-sponsored, by supporting an additional convenor/speaker, the PICES-2011 workshop on “*Pollutants in a changing ocean: Refining indicator approaches in support of coastal management*”.

Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)

Issues in marine biogeochemistry and food webs are important components of the new integrative scientific program of PICES on *Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Ecosystems* (FUTURE).

- PICES and IMBER have convened joint Topic Sessions at every PICES Annual Meeting since 2008 (IMBER has provided travel funds for an additional invited speaker for each session):
 - “*End-to-end foodwebs: Impacts of a changing ocean*” (PICES-2008, Dalian, China);
 - “*Outlooks and forecasts of marine ecosystems from an earth system science perspective: Challenges and opportunities*” (PICES-2009, Jeju, Korea);
 - “*Anthropogenic forcing in North Pacific coastal ecosystems: Understanding changes in ecosystem structure and function*” (PICES-2010, Portland, U.S.A.);
 - “*How well do our models really work and what data do we need to check and improve them?*” (PICES-2011, Khabarovsk, Russia).
- PICES co-sponsored the IMBER-led Summer School on “*ClimECO2: Oceans, marine ecosystems, and society facing climate change - A multidisciplinary approach*” (August 23–27, 2010, Brest, France) by providing travel funds and arranging additional support (through national programs/agencies) for 9 early career scientists from all PICES member countries (1 from Canada, 1 from Japan, 2 from Korea, 2 from China, 1 from Russia, and 2 from U.S.A.).
- PICES co-sponsored the 2010 IMBER IMBIZO Conference on “*Integrating biogeochemistry and ecosystems in a changing ocean: Regional comparisons*” (October 10–14, 2010, Crete, Greece) by providing travel support for 3 invited speakers from the North Pacific.
- IMBER agreed to co-sponsor the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (May 14–20, 2012, Yeosu, Korea) by providing travel support for invited speakers of the workshop on “*Effects of climate change on advective fluxes in high latitude regions*”.
- IMBER was present as an observer at PICES-2011 and submitted a proposal for PICES to co-sponsor a IMBER-led international ClimECO3 Summer School on “*A view towards Earth System models: Human-natural system interactions in the marine world*” to be held on July 23–28, in Ankara, Turkey.

Intergovernmental Oceanographic Commission of UNESCO (IOC)

- IOC co-sponsored the 5th International Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (March 14–18, 2011, Pucón, Chile) by providing travel support for scientists from countries with “economy in transition”.
- IOC and PICES are working together (with ICES as another major international sponsor) to organize the second International Symposium on “*Effects of climate change on the world’s oceans*” to be held May 14–20, 2012, in conjunction with the Ocean Expo in Yeosu, Korea.
- IOC co-sponsored, by supporting an additional convenor/speaker, the PICES-2011 workshop on “*Pollutants in a changing ocean: Refining indicator approaches in support of coastal management*”.
- In June 2005, PICES joined the IOC-led **Harmful Algal Event Database** (HAE-DAT), a partnership in systematically compiling, storing, and presenting on-line records on harmful algal events. Building a common data resource allows inter-comparison of HAB species composition and the magnitude of their environmental and economic impacts. Discussion on this joint project proceeds at each PICES Annual Meeting.
- PICES has partnered with IOC to implement the project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” supported by the Japanese Ministry of Agriculture, Forestry and Fisheries. The IOC network is used to determine countries which have the greatest need and a strong interest in improving HAB monitoring and testing, and a commitment to sustainability.
- IOC is normally present as an observer at PICES Annual Meetings.

International Council for the Exploration of the Sea (ICES)

The two major international marine science organizations in the Northern Hemisphere, ICES and PICES, are focused on different oceans but have many scientific issues in common. An MOU between the two organizations was signed in 1998. In the past 10 years, there have been significant increases in reciprocal exchanges, cooperative sponsorships of scientific meetings and projects.

- PICES and ICES served as major international sponsors for the 5th International Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (March 14–18, 2011, Pucón, Chile).
- PICES and ICES are working together to organize the 2nd ICES/PICES Early Career Scientists Conference on “*Oceans of change*” (April 24–27, 2012, Majorca, Spain), 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (May 14–20, 2012, Yeosu, Korea) and International Symposium on “*Forage fish interactions: Creating the tools for ecosystem based management of marine resources*” (November 8–12, 2012, Nantes, France).
- PICES and ICES were both involved in co-sponsoring the 26th Lowell Wakefield Symposium on “*Ecosystems 2010: Global progress on ecosystem-based fisheries management*” (November 8–11, 2010, Anchorage, U.S.A.), and the 2nd ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*” (May 22–26, 2011, Seattle, U.S.A.).
- ICES scientists were actively involved in the FUTURE Workshop on “*Indicators of status and change within North Pacific marine ecosystems*” (April 26–28, 2011, Honolulu, U.S.A.).
- Three joint inter-sessional workshops were organized in 2011: on “*Reaction of northern hemisphere ecosystems to climate events: A comparison*” (May 2–6, 2011, Hamburg, Germany), “*Biological consequences of a decrease in sea ice in Arctic and sub-Arctic Seas*” (May 22, 2011, Seattle, U.S.A.) and “*Development and application of Regional Climate Models*” (October 11–12, 2011, Seoul, Korea).
- Three joint Theme Sessions (“*Atmospheric forcing of Northern hemisphere ocean gyres and their subsequent impact on the adjacent marine climate and ecosystems*”, “*Atlantic redfish and Pacific rockfish: Comparing biology, ecology, assessment and management strategies for *Sebastes* spp*” and “*Recruitment processes: Early life history dynamics – from eggs to juveniles*”) were convened at the 2011 ICES Annual Science Conference (September 19–23, 2011, Gdansk, Poland).
- Three joint Topic Sessions (“*Mechanisms of physical-biological coupling forcing biological “hotspots”*”, “*Recent changes of North Pacific climate and marine ecosystems: Implications for dynamics of the dominant species*” and “*Linking migratory fish behavior to end-to-end models*”) and the workshop (“*Pollutants in a changing ocean: Refining indicator approaches in support of coastal management*”) were convened at PICES-2011.
- In 2008, PICES and ICES established a joint Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish*. This Working Group will meet three times during 2011: in conjunction with the 2nd ESSAS Open Science Meeting in May (Seattle, U.S.A.), at the 2011 ICES Annual Science Conference in September (Gdansk, Poland), and at PICES-2011 in October (Khabarovsk, Russia).
- In 2009, PICES and ICES established a joint Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* to develop a formal framework to serve as the basis for linkages of science plans and longer-term strategic planning for the two organizations. The Study Group met in conjunction with the 2011 inter-sessional Science Board meeting (April 29, 2011, Honolulu, U.S.A.) and submitted the final report for consideration by the ICES SCICOM and the PICES Science Board.
- Drs. Mark Wells and Charles Trick, members of the Section on *Ecology of Harmful Algal Blooms*, represented PICES at the 2011 meeting of ICES WG on *Harmful Algal Bloom Dynamics* (April 5–8, 2011, Gothenberg, Germany).
- Two special issues of *ICES Journal of Marine Science* (IJMS) were published based on papers presented at joint symposia: the ICES/PICES/UNCOVER Symposium on “*Rebuilding depleted fish stocks: Biology, ecology, social science, and management strategies*” (December 2010, Vol. 67, Issue 9, pp. 1825–2052) and the 2010 PICES/ICES/FAO Symposium on “*Climate change effects on fish and fisheries*” (July 2011, Vol. 68, Issue 6, pp. 983–1383).
- Drs. Manuel Barange (Chairman of the ICES SCICOM) and Adolf Kellermann (Head of the ICES Science Programme) participated in the 2011 inter-sessional Science Board meeting.

- ICES is normally represented as an observer at PICES Annual Meetings by the Head of the ICES Science Programme.

North Pacific Anadromous Fish Commission (NPAFC)

In 1998, NPAFC and PICES signed a Memorandum of Understanding (MOU), and scientists involved in the two organizations have been working together on problems of mutual interest for more than a decade, with a good record of joint activities.

- NPAFC co-sponsored the PICES/ICES/FAO Symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (April 25–29, 2010, Sendai, Japan), and convened a workshop on “*Salmon workshop on climate change*” in conjunction with this symposium.
- PICES agreed to co-sponsor the NPAFC-led workshop on “*Production trends of pink and chum salmon: Why they can retain high abundance?*” to be held October 30–31, 2011, in Nanaimo, Canada. Drs. Sanae Chiba (Japan) and William Crawford (Canada) represented PICES on the Scientific Steering Committee.
- NPAFC agreed to co-sponsor the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (May 14–20, 2012, Yeosu, Korea).
- NPAFC is normally represented as an observer at PICES Annual Meetings by the Chairman of the Committee on Scientific Research and Statistics (CSRS).

North Pacific Research Board (NPRB)

- NPRB joined the consortium to support the North Pacific Continuous Plankton Recorder (NP CPR) survey in 2009 and committed support for operations of the project at the level of \$50,000 US per year for 5 years (project #903 from June 1, 2009 to May 31, 2010; and project #1001 from June 1, 2010 to May 31, 2014).
- NPRB provided financial support for the 2010 PICES/ICES/FAO Symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (\$30,000 US), 5th International Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (\$4,000 US), and 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (\$30,000 US).
- NPRB is normally represented as an observer at PICES Annual Meetings by the Executive Director.

Northwest Pacific Action Plan (NOWPAP)

NOWPAP’s focus on monitoring and assessment of environmental (anthropogenic) problems combined with the broad scientific mandate of PICES provides the two regional organizations with good potential for cooperation.

- NOWPAP was the very first international organization requested the *ex-officio* membership in PICES—Dr. Takafumi Yoshida (CEARAC) was appointed as an *ex-officio* member of the PICES Section on *Ecology of Harmful Algal Blooms in the North Pacific*.
- PICES and NOWPAP worked together (with IOC/WESTPAC as another partner) in organizing a training course on “*Remote sensing data analysis*” to be held October 8–12, 2011, Vladivostok, Russia.
- NOWPAP co-sponsored, by covering travel of additional invited speakers, the PICES-2011 Topic Session on “*Land-sea interactions and anthropogenic impacts on biological productivity of North Pacific Ocean coastal ecosystems*” and workshop on “*Remote sensing techniques for HAB detection and monitoring*”.

Scientific Committee on Oceanic Research (SCOR)

Continuing and extending collaboration between the two organizations is based on the recognition that PICES can play an important role in bringing a North Pacific perspective to the global activities of SCOR, and that by participating in these activities, PICES can advance its own scientific agenda. PICES contributes to SCOR-sponsored international large-scale ocean research projects (see GEOHAB, GLOBEC, IMBER, SOLAS), to ocean carbon activities supported by SCOR, and to several SCOR Working Groups.

- PICES appointed a liaison, Dr. George Boehlert (U.S. national delegate), to the SCOR Committee on Capacity Building, who attended the SCOR-led conference on “*Developing a global strategy for capacity building in the ocean sciences*” (August 16–18, 2010, Bremen, Germany), and the 2011 meeting of the SCOR Committee on Capacity Building (April 19–21, 2011, Izmir, Turkey).
- PICES joined a group of organizations (SCOR, POGO, IOC-UNESCO) that sponsor capacity development activities related to ocean science in providing information for a portal recently launched and maintained by the International Oceanographic Data and Information Exchange (IODE) of IOC, a single site where students and early career scientists can go to find out what is available (www.oceansummerschools.org).

- SCOR continues to provide travel support for scientists from countries with “economies in transition” to attend SCOR-relevant sessions/workshops at PICES Annual Meetings and international symposia led/co-organized by PICES. In 2010–2011, \$5,000 US grants from the SCOR/NSF fund were provided for each of the following events: (1) PICES/ICES/FAO symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (April 25–29, 2010, Sendai, Japan), PICES-2010 (October 22–31, 2010, Portland, U.S.A.) and PICES-2011 (October 14–23, 2011, in Khabarovsk, Russia).
- PICES was actively involved in activities of SCOR WG 125 on *Global Comparisons of Zooplankton Time Series* and funded an associate member from the North Pacific (Dr. Harold Batchelder, Oregon State University, U.S.A.). In 2005–2008, this group carried out a variety of comparisons among many of the earlier and longer time series, and developed and applied new visualization and statistical tools. As a follow-up of this activity, a workshop on “*Updates and comparisons of zooplankton time series*” was held at the 5th International Zooplankton Production Symposium (March 14–18, 2011, Pucón, Chile). The workshop was intended to provide updates on recent progress, and also to develop new research directions, tools, and comparisons for the future. The workshop summary is published in the 2011 summer issue of PICES Press (www.pices.int/publications/pices_press/volume19/v19_n2/pp_25-27_ZPS_wsh-3.pdf).
- There are many phytoplankton data sets from diverse parts of the globe that warrant a comparative examination. PICES supported the establishment of SCOR WG 137 on *Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time-Series Observations* that was seen as a logical methodological continuation of SCOR WG 125, and appointed an associate member from the North Pacific (Dr. Sinjae Yoo, KORDI, Korea) to participate in its activities.
- The International Ocean Carbon Coordinated Project (IOCCP), co-sponsored by SCOR and IOC-UNESCO, promotes the development of a global network of ocean carbon observations for research through technical communication and communications services, international agreements on standards and methods, and advocacy and links to global observing systems. This should lead to the joint development of global data products and synthesis activities documenting the ocean carbon cycle. PICES, through its earlier Working Groups, and now through the Section on *Carbon and Climate* (CC-S; 2006–present), has been long acting as a regional coordinator for these activities. CC-S provides a channel of communication to IOCCP. IOCCP is normally represented as an observer at PICES Annual Meetings. Dr. Christopher Sabine (IOCCP SSC Chairman and CC-S member) serves as a liaison between these two groups.

Surface Ocean-Lower Atmosphere Study (SOLAS)

- The main areas for cooperation between PICES and SOLAS include:
 - the impact of iron on biogeochemistry and marine ecosystems [PICES Advisory Panel on *Iron Fertilization Experiment in the Subarctic Pacific Ocean* (1999–2007) and WG 22 on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (2007–2010) and SOLAS Implementation Group 1 on *Biogeochemical Interactions and Feedbacks between Ocean and Atmosphere*];
 - carbon cycle research studies [PICES WG 13 on *CO₂ in the North Pacific* (1998–2001), WG 17 on *Biogeochemical Data Integration and Synthesis* (2002–2005), and Section on *Carbon and Climate* (2006–present), and SOLAS Implementation Group 3 on *Air-Sea Flux of CO₂ and Other Long-Lived Radiatively-Active Gases*].
- Since 2006, several joint PICES/SOLAS workshops and Topic Sessions have been convened at PICES Annual Meetings (SOLAS provided travel funds for an additional invited speaker for each event):
 - “*Modeling iron biogeochemistry and ocean ecosystems*” (workshop at PICES-2006, Yokohama, Japan);
 - “*Natural supplies of iron to the North Pacific and linkages between iron supply and ecosystem responses*” (workshop at PICES-2009, Jeju, Korea);
 - “*Understanding the role of iron in regulating biogeochemical cycles and ecosystem structures in the North Pacific Ocean*” (session at PICES-2010, Portland, U.S.A.).
- PICES co-sponsored the 5th SOLAS Summer School (August 29–September 10, 2011, Cargèse, Corsica, France) by providing travel funds for 3 students/early career scientists from PICES member countries (Canada, PR China and U.S.A.).
- SOLAS is normally present as an observer at PICES Annual Meetings.

GC Endnote 5**List of organizations and programs present as observers at PICES-2011**

Alaska Ocean Observing System (AOOS)	Dr. Phillip Mundy
Asia-Pacific Fisheries Commission (APFIC)	Dr. Simon Funge-Smith
Bering Sea Ecosystem Study (BEST/BSIERP)	Dr. Gordon Kruse
Coastal and Estuarine Research Federation (CERF)	Dr. Steven Rumrill
Climate Variability and Predictability Program (CLIVAR)	Dr. Enrique Curchitser
Ecosystem Study of Sub-Arctic Seas (ESSAS)	Dr. George Hunt, Jr
Food and Agriculture Organization (FAO)	Dr. Simon Funge-Smith
Group of Experts on Scientific Aspects of Marine Pollution (GESAMP)	Dr. Peter Kershaw
Global Ecology and Oceanography of Harmful Algal Blooms (GEOHAB)	Dr. Raphael Kudela
Global Ocean Observing System (GOOS)	Dr. David Checkley
IOC Sub Committee for the Western Pacific (WESTPAC)	Dr. Suchana Chavanich
Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)	Dr. Sinjae Yoo
International Council for the Exploration of the Sea (ICES)	Dr. Adolf Kellermann
International Program for Deployment of Profiling Floats (Argo)	Dr. Howard Freeland
International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC)	Dr. Chi-Lu Sun
International Study of Marine Biogeochemical Cycles of Trace Elements and their Isotopes (GEOTRACERS)	Dr. Minhan Dai
International Whaling Commission (IWC)	Dr. Hidehiro Kato
North East Asian Regional GOOS (NEAR-GOOS)	Dr. Hee-Dong Jeong
North Pacific Anadromous Fish Commission (NPAFC)	Dr. Jin Yeong Kim
North Pacific Fishery Management Council (NPFMC)	Ms. Patricia Livingston
North Pacific Research Board (NPRB)	Dr. Cynthia Suchman
Northwest Association of Networked Ocean Observing Systems (NANOOS)	Dr. Jack Barth
Northwest Pacific Action Plan (NOWPAP)	Dr. Sangjin Lee
	Dr. Alexander Tkalin
Pacific Coast Ocean Observing System (PaCOOS)	Dr. Rosa Runcie
Sir Alister Hardy Foundation for Ocean Science (SAHFOS)	Dr. Sonia Batten
Southern California Coastal Ocean Observing System (SCCOOS)	Dr. Tony Koslow
Surface Ocean Low Atmosphere Study (SOLAS)	Dr. Minhan Dai
Yellow Sea Large Marine Ecosystem Project (YSLME)	Dr. Sinjae Yoo

GC Endnote 6**2011 Standing List of International and Regional Organizations and Programs**

* – priority for interaction

ACIA	Arctic Climate Impact Assessment Program (ACIA of AMAP)
AFSCAR	American Fisheries Society Program on Climate and Aquatic Resources
AMAP	Arctic Monitoring and Assessment Program
AOOS*	Alaska Ocean Observing System
APEC-MRC*	Marine Resources Conservation Working Group, Asia Pacific Economic Cooperation
APEC-FWG*	Fisheries Working Group, Asia Pacific Economic Cooperation
APFIC	Asia-Pacific Fisheries Commission
Argo*	International Program for deployment of profiling floats
BEST-BSIERP*	Bering Sea Ecosystem Study
CeNCOOS	Central and Northern California Ocean Observing System
CERF	Coastal and Estuarine Research Federation
CLIVAR*	Climate Variability and Predictability Program
ESSAS*	Ecosystem Studies of Sub-Arctic Seas
EVOSTC	<i>Exxon Valdez</i> Oilspill Trustee Council

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FAO	Food and Agriculture Organization
GESAMP	Group of Experts on Scientific Aspects of Marine Pollution
GOOS*	Global Ocean Observing System
IAMSLIC	International Association of Marine Science Libraries
IASC	International Arctic Science Committee
IATTC	Inter-American Tropical Tuna Commission
ICES*	International Council for the Exploration of the Sea
IGBP*	International Geosphere-Biosphere Program
IHDP	International Human Dimensions Programme on Global Environmental Change
IMBER*	Integrated Marine Biogeochemistry and Ecosystems Research
IMO	International Maritime Organization
IOC*	Intergovernmental Oceanographic Commission
IOCCP*	International Ocean Carbon Coordinated Project
IODE	International Oceanographic Data and Information Exchange
IPCC*	Intergovernmental Panel on Climate Change
IPHC	International Pacific Halibut Commission
ISC	International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean
IWC	International Whaling Commission
NAFO	Northwest Atlantic Fisheries Organization
NANOOS	Northwest Association of Networked Ocean Observing Systems System
NASCO	North Atlantic Salmon Conservation Organization
NEAR-GOOS*	North East Asian Regional GOOS
NOWPAP*	Northwest Pacific Action Plan
NPAFC*	North Pacific Anadromous Fish Commission
NPFMC	North Pacific Fishery Management Council
NPRB*	North Pacific Research Board
PaCOOS*	Pacific Coast Observing System
PAG	Pacific Arctic Group
POGO	Partnership for Observing the Global Oceans
PSA	Pacific Science Association
PSC	Pacific Salmon Commission
PSG	Pacific Seabird Group
SAHFOS*	Sir Alister Hardy Foundation for Ocean Science
SAON	Sustaining Arctic Observing Networks
SCCOOS	Southern California Coastal Ocean Observing System
SCOPE	Scientific Committee on Problems of the Environment
SCOR*	Scientific Committee on Oceanic Research
SOLAS*	Surface Ocean Low Atmosphere Study
SPC	South Pacific Commission
SPREP	South Pacific Regional Environmental Program
START	South Asian Regional Committee for the System for Analysis, Research and Training
UNEP	United Nations Environment Program
WCPFC	Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
WCRP	World Climate Research Programme
WESTPAC*	Cooperative Study of the Western Pacific, IOC Sub Committee for the Western Pacific
WPFMC	Western Pacific Fishery Management Council

GC Endnote 7**PICES Strategic Plan** (approved October 22, 2011)

The Nations surrounding the North Pacific Ocean depend on its waters for food, economic benefit, transportation, and recreation. The coastal areas support human habitation. Human activities both influence and are influenced by the North Pacific Ocean's living marine resources, and the abundance and productivity of these resources are also driven by natural processes and variability. Effective resource management by each Contracting Party requires comprehensive scientific understanding, including for example, the role of the ocean in climate variability and change. Furthermore, human populations residing in coastal regions are growing, and sustainable use of marine resources and the associated food security concern is a global priority. The potential for disrupting the marine ecosystems is increasing, but mitigation and effective use is possible with sufficient information on the effects of human activities. The North Pacific Marine Science Organization (PICES) has a role to advance scientific knowledge on the North Pacific Ocean, along with its marginal seas, and to make predictions that will improve human conditions and bring benefits to the Contracting Parties. Such a goal can only be achieved by multi-national scientific cooperation. PICES synthesizes and disseminates knowledge and designs multi-national research programs that respond to identified needs.

The PICES Mission

The Organization was created to:

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

The Organization will:

- Provide leadership on scientific issues and identify research priorities and appropriate approaches for their solution;
- Plan, coordinate and implement integrated, inter-disciplinary research programs and related activities to be undertaken through the national efforts of the participating partners;
- Promote the collection and exchange of data and information related to marine scientific research;
- Assess ecosystem status and trends and project future changes;
- Synthesize scientific information and make it available to a broad user community and the public;
- Respond to requests from the Contracting Parties and other organizations to provide advice on scientific issues;
- Develop capacity within the scientific communities of the Contracting Parties;
- Foster partnerships with other organizations and programs that share a common interest.

The PICES Strategy

To implement this mission, PICES has developed a strategy built upon five central themes: (A) Advance scientific knowledge; (B) Apply scientific knowledge; (C) Foster partnerships; (D) Develop capacity, and (E) Ensure a progressive organization. Specific goals are identified within each of these themes as explained below.

Theme A: Advance scientific knowledge**Goal 1: *Understand the functioning, resilience, and vulnerability of marine ecosystems***

PICES scientific activities are dedicated to understanding and quantifying the physical, chemical and biological processes of North Pacific ecosystems, which underlie ecosystem resilience and vulnerability. These processes are also key to understanding how the oceans respond to and are affected by climate change.

Goal 2: *Understand and quantify how marine ecosystems respond to human activities and natural forcing*

Being a part of the ecosystem, humans are affected by natural processes, and in turn impact marine ecosystems. This goal addresses ecosystem effects of climate variability and change, catastrophic events, and anthropogenic stressors in coastal and offshore regions.

Theme B: Apply scientific knowledge

Goal 3: *Provide scientific advice pertinent to North Pacific ecosystems*

For the scientific knowledge to be applied, it first must be made available. PICES provides periodic products on the status, trends and future state of North Pacific ecosystems and develops reports addressing critical and emerging issues. PICES also considers and responds to specific requests for scientific advice from Contracting Parties and other organizations as appropriate. This information provides a basis for user communities to modify their actions.

Goal 4: *Ensure that PICES products are relevant, timely, and broadly accessible*

PICES communicates the results of its scientific activities broadly, through high quality publications, the PICES web page and other electronic media, and production and dissemination of educational materials.

Theme C: Foster partnerships

Goal 5: *Collaborate with organizations and scientific programs relevant to PICES*

Collaboration and communication lies at the heart of creating scientific knowledge and using it effectively. PICES develops close relationships with scientific organizations and programs that have shared goals, by carrying out joint activities and exchanging observers.

Goal 6: *Strengthen communication and engagement with users of PICES scientific products*

For scientific products to be useful, PICES engages user communities from the early stage of the product development through dissemination of the final product.

Theme D: Develop capacity

Goal 7: *Advance methods and tools to improve and enhance scientific activities*

Investments in collecting, recording, managing and analyzing scientific data are enhanced if the observations made by scientists from the Contracting Parties are directly comparable. The quality of science benefits from harmonization of methods and techniques. PICES facilitates and provides opportunities for development of international standards, inter-calibration of methodology and sampling equipment, as well as collaborative opportunities to develop new, creative methodologies.

Goal 8: *Foster collaboration among scientists within PICES*

Capacity building will make it possible for scientists and institutions from all Contracting Parties to participate fully in, and benefit fully from, the cooperative programs that are developed by the Organization. PICES provides venues, organizes activities and develops procedures that facilitate the formation of new collaborations and maintenance of existing productive partnerships. PICES expedites the involvement of young scientists in PICES activities.

Goal 9: *Create education and training opportunities*

A central element of capacity building is education and training. PICES develops training courses to meet the interests and needs of its members in scientific areas such as, methods and skills in data management, modeling, and environmental monitoring.

Theme E: Ensure a progressive organization

Goal 10: *Provide an effective infrastructure to support PICES activities*

The activities in support of the primary mission of PICES require effective support and implementation, as well as broad participation from the scientific communities of the Contracting Parties. An efficient organizational structure and good internal communication ensure a vibrant science enterprise. An effective Secretariat that supports the mission and goals of the Organization is essential to its success.

Implementation

The actions and activities required to meet each of these goals will change over time, and will be implemented through Action Plans. Three-year Action Plans will be prepared for the Executive Committees, Scientific and Technical Committees, and the Secretariat. These plans will describe specific actions and tasks needed to achieve the goals identified above. To monitor performance, the Action Plans will be reviewed at each annual meeting, and revised if necessary.

The PICES Strategic Plan will be reviewed and updated, as required, every five years.

GC Endnote 8

Financial report for Year 4 (completed on March 31, 2011) of the PICES/MAFF project on “Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim”

BACKGROUND

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

The following organizational principles, agreed upon by MAFF/JFA and PICES, apply to the project:

- The project has two distinct components, one on marine/estuarine non-indigenous species (MNIS) and the other one on harmful algal blooms (HABs), and is conducted by two PICES expert groups under the Marine Environmental Quality Committee (MEQ), Working Group on *Non-indigenous Aquatic Species* (WG 21) and Section on *Ecology of Harmful Algal Blooms in the North Pacific* (HAB-S). Each group oversees a specific sub-project.
- The Chairman of MEQ serves as the Project Scientific Coordinator and is responsible for reporting annually to PICES Science Board and MEQ on the scientific implementation of the project. This report should include a summary of the activities carried out for the year, with an evaluation on the progress made, and a workplan for the following year. [Dr. Glen Jamieson (Fisheries and Oceans Canada, E-mail: glen.jamieson@dfo-mpo.gc.ca) was the MEQ Chairman and the Project Scientific Coordinator from April 2007 to October 2009. Dr. Steven Rumrill (University of Oregon, U.S.A., E-mail: steve.rumrill@state.or.us) was elected as Chairman of MEQ at the 2009 PICES Annual Meeting. He has delegated Dr. Glen Jamieson to continue serving as the Project Scientific Coordinator.]

The scientific progress report for *Year 4* was submitted as a separate document simultaneously with this financial report.

FINANCIAL PRINCIPLES AND BUDGET CATEGORIES

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

- A separate bank account shall be established to deposit the remitted funds;
- The interest earned by the fund shall be credited to the project and used in consultation with JFA;
- Any funds remaining after the completion of every fiscal year of the project shall be reported and disposed of in consultation with JFA;
- Transfers of up to 10% of allocations between the budget categories are allowed based solely on the decision by the PICES Executive Secretary. In special cases, transfers up to 20% between the budget categories can be authorized by JFA. All transfers shall be reported at the end of the fiscal year;
- A 13% overhead on the annual budget shall be retained by PICES to offset expenses related to the Secretariat's involvement in the project (based on communication with JFA in November 2008, the originally approved 10% overhead was changed to 13% starting from *Year 3*);
- The PICES Executive Secretary (Dr. Alexander Bychkov, E-mail: bychkov@pices.int) is responsible for the management of the fund and for reporting annually on its disposition to JFA and PICES Governing Council within 120 days after the close of each project year ending March 31.

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

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

PROJECT BANK ACCOUNT AND PAYMENT HISTORY

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

Bank name: TD Canada Trust

Bank number: 004

SWIFT Code: TDOMCATTTOR

Branch name: Sidney

Branch number: 00721

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

Account number: 07210 004 8479 5209963

Account holder: North Pacific Marine Science Organization (PICES)

The following summarizes the fund transferring and project reporting to date:

- The set of documents requesting funding for *Year 1* (completed on March 31, 2008) was sent to JFA on June 20, 2007. Funds in the amount of \$184,980 were transferred to the PICES/MAFF bank account on July 27, 2007. The progress report and the financial report for *Year 1* were submitted to JFA on July 19 and July 23, 2008, respectively.

- The set of documents requesting funding for *Year 2* (completed on March 31, 2009) was sent to JFA on April 3, 2008 and, based on instructions from JFA, to the Consulate General of Japan in Vancouver (Canada) on June 2, 2008. Funds in the amount of \$161,466 were transferred to the PICES/MAFF bank account on July 17, 2008. The financial report for *Year 2* was submitted to JFA on July 21, 2009, and the progress report was sent on August 13, 2009.
- The set of documents requesting funding for *Year 3* (completed on March 31, 2010) was sent to the Consulate General of Japan in Vancouver (Canada) on June 10, 2009. Funds in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 15, 2009. The progress report and the financial report for *Year 3* were submitted to JFA on July 26, 2010.
- The set of documents requesting funding for *Year 4* (completed on March 31, 2011) was sent to the Consulate General of Japan in Vancouver (Canada) on May 28, 2010, and the suggested revisions were directed to JFA on June 24, 2010. Funds in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 12, 2010. The progress report and the financial report for *Year 4* are due by July 31, 2011.

BUDGET EXECUTION FOR FISCAL YEAR 4

The budget allocated for *Year 4* was \$187,505. The proposed budget breakdown and actual expenses for each of the budget categories, and the project account balance as of March 31, 2011 are shown in Table 1. Table 2 provides more details on actual expenses of the major categories. There is a surplus of \$48,664 in *Year 4*. Together with the *Year 3* surplus of \$13,337, the account balance at the *Year 4* fiscal year end is \$62,001 (see the next section, “Recommendation on the use of *Year 3* and *Year 4* combined surplus” for details).

TABLE 1 ALLOCATIONS AND EXPENSES FOR YEAR 4

Category	Allocations	Actual Expenses	Remainder
Travel & meetings	84,000	62,930	21,070
Contracts	48,500	33,294	15,206
Equipment	30,500	18,724	11,776
Miscellaneous	130	0	130
Overhead	24,375	24,375	0
Total	187,505	139,323	48,182
Interest earned			482
<i>Year 4</i> surplus			48,664
<i>Year 3</i> surplus			13,337
Account Balance			62,001

TABLE 2 BREAKDOWN OF EXPENSES FOR VARIOUS BUDGET CATEGORIES FOR YEAR 4.

Category/Activity	Expenses
Travel and meetings	62,930
Travel of PICES experts to the Cook Islands (Sept. 2010 and Apr. 2011) for preparation of the third PICES/MAFF HAB training course and to the Philippines (Mar. 2011) to review progress made since the first PICES/MAFF HAB training course	21,285
Participation of PICES experts in conferences and workshops to discuss training program strategy with other partners and present outcomes from the PICES/MAFF HAB project: - GEOHAB OSM on <i>Benthic Harmful Algal Blooms</i> (June 21–23, 2010, Honolulu, U.S.A.) - AOAC Conference on <i>Seafood Safety</i> (Sept. 27–28, 2010, Orlando, U.S.A.) - PICES Annual Meeting (Oct. 22–29, 2010, Portland, U.S.A.) - 14 th International Conference on <i>Harmful Algae</i> (Nov. 1–5, 2010, Crete, Greece) - Meetings of IPHAB (Paris, France) & ICES WG-HABD (Gothenberg, Germany) (Apr. 2011) - Ciguatoxin detection training (Apr. 11–13, 2011, Alabama, U.S.A.)	4,640 1,238 3,236 1,745 2,441 466
PICES/MAFF demonstration workshop on “ <i>An introduction to rapid assessment survey methodologies for application in developing countries</i> ” (July 13–16, 2010, Marine Station of Kobe University’s Center for Inland Seas on Awaji Island, Japan)	12,921
Third PICES/MAFF rapid assessment survey (Oct. 18–21, 2010, Newport, OR, U.S.A.), held in conjunction with the 2010 PICES Annual Meeting (Portland, U.S.A.)	12,093
Travel support for NIS sub-project PI and WG 21 Co-Chairman to attend the 2010 Annual Meeting (Portland, Oct., 2010); and PI to attend the FUTURE Meeting (Seoul, Aug. 16–18, 2010)	2,045
Travel for the Project Scientific Coordinator to attend the 2010 Annual Meeting	820
Contracts	33,294
To design and layout a colour brochure describing achievements of the NIS initiative (KLT Communications and Carisse Graphic Design Inc.)	2,254
To select, order and test equipment/materials to be used for a HAB training program in developing countries (Mr. Julian Herndon, San Francisco State University)	5,574
To provide assistance to project Coordinators and sub-project Principle Investigators (Ms. Rosalie Rutka, Stranby Technical Services)	25,466
Equipment	18,724
Equipment and materials for a HAB training program in developing countries	13,712
Purchase and shipping of collectors and supplies to member countries for a NIS survey	5,012
Overhead	24,375

RECOMMENDATION ON THE USE OF YEAR 3 AND YEAR 4 COMBINED SURPLUS

The Year 3 surplus of \$13,337 was mainly due to unexpected substantial support provided by the host countries for two major events of that year, the second rapid assessment survey in Korea and the HAB training program in Guatemala.

The *Year 4* surplus of \$48,664 mainly came from: (1) unexpected substantial support provided by the host countries for the third rapid assessment survey in U.S.A. and the first PICES/MAFF demonstration workshop on “*An introduction to rapid assessment survey methodologies for application in developing countries*” in Japan, and (2) the re-scheduling of the third HAB training course in the Southeast Pacific to 2012.

It is recommended that the major part of this combined surplus of \$62,001 be used for (1) conducting *Year 5* rapid assessment surveys and PICES/MAFF workshops on “*Rapid assessment survey methodologies for detecting non-indigenous marine species*” and (2) purchasing equipment for HAB training programs in developing countries.

AUDIT OF THE ACCOUNT

According to the PICES Financial Regulations (http://www.pices.int/about/financial_regulations.aspx; *Regulations 11 and 13*), all our accounts and financial statements are subject of an external audit. The auditing firm *Flader, Hale & Hughesman* (formerly *Flader & Hale*) has been serving as the PICES external auditor since 2003 (Decision 03/A/1(ii)). At the 2008 PICES Annual Meeting, Council agreed to retain this firm as the external auditor for *FYs 2009–2011* (Decision 08/A/1(ii)).

The status of the MAFF account, for the period from April 1 to December 31, 2010, was assessed during the regular PICES audit for *FY 2010*. The financial statements were submitted to the auditor on March 23, 2011, and the audit was completed on April 21. The electronic copy of the Auditors’ Report was received and circulated to all Contracting Parties on May 10. In the auditor’s opinion, the financial statements are an accurate representation of the financial position of the Organization as of December 31, 2010, and the results of its operations and changes in the fund balances are in accordance with Canadian generally accepted accounting principles. The financial statements for the rest of *Year 4* of the MAFF project (January 1 to March 31, 2011) will be evaluated during the regular PICES audit for *FY 2011*.

GC Endnote 9

Report on the performance evaluation of the Executive Secretary for 2010

In accordance with Decision 2007/A/7(i) (Appendix 1), the Executive Committee of Council for evaluating the annual performance of the Executive Secretary (hereafter “Committee”) reviewed the 2010 annual performance of Dr. Alexander Bychkov, the Executive Secretary of the Organization, based on his report (available on request). The Committee determined his performance pay for this period, following the general guidelines for executive positions in the Canadian Public Service system, and also established his commitments for 2011. All discussions and decisions were made by correspondence among the Committee members. Before making the final decision, the Committee explained to Dr. Bychkov the rating for his performance in 2010, and the commitments for 2011, and he agreed with both.

Setting the criteria for rating and performance pay calculation

The salary of the Executive Secretary is based on the EX-2 level at the Department of Fisheries and Oceans (DFO), Canada. Therefore, the Committee set the ratings to define Dr. Bychkov’s performance and the criteria for his performance pay based on the current practice for executive positions in the Canadian Public Service system (Appendix 2).

Commitments in 2010

Dr. Bychkov’s commitments in 2010 were as follows:

- a. Managing the budget of the Organization and implementing the Organization’s financial regulations;
- b. Administering the Secretariat personnel/office;
- c. Planning and organizing the Annual Meeting;
- d. Providing secretarial services to meetings/symposia/conferences approved by Council;

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- e. Coordinating the publication program of the Organization;
- f. Intensifying the cooperation with other organization/programs;
- g. Fund-raising for prioritized activities of the Organization in 2010 and beyond.

Items (a) to (e) are commitments routinely required of the Executive Secretary (“ongoing commitments”), and items (f) and (g) are additional commitments requested by the Committee in last year’s performance evaluation report of the Executive Secretary (“key commitments”).

Evaluation 2010 accomplishments

Dr. Bychkov’s accomplishments on the ongoing commitments (items (a)–(e)) fulfilled our expectations, even though many difficulties were encountered.

Besides the annual contributions from Contracting Parties, PICES funds to be managed include various grants and voluntary contributions. Dr. Bychkov appropriately managed and executed funds in accordance with PICES Financial Regulations and Canadian generally accepted accounting principles. The 2010 Annual Meeting (PICES-2010) in Portland, OR, USA, was very successful, with almost 430 participants from 16 countries and 33 organizations/programs present as observers. PICES also held or contributed to the planning and support for 15 inter-sessional events in 2010. Logistical and financial arrangements provided by the Secretariat were essential for the success of the Annual Meeting and inter-sessional events. The most important inter-sessional event was the symposium on “*Climate change effects on fish and fisheries*” in Sendai, Japan, which had almost 400 scientists from 37 countries. The publication that will result from this symposium will have a very large international scientific impact. Preparations, arrangements and planning for 5 other international symposia to be held in 2011–2012 were made by the PICES Secretariat. Dr. Bychkov was a very effective manager of the Secretariat staff, including the PICES interns. In addition, he implemented the publication program of the Organization. Significant progress was made in implementing the Action Plan for the PICES Publication Program, particularly in getting PICES branding at the article level in special issues of primary journals published by Elsevier, and in the development of a PICES digital document library on a remote server.

His performance was also significant for the additional commitments (items (f) and (g)). PICES cooperation with other organizations and programs is becoming very strong and is making PICES a much more visible and important contributor to international marine science programs. The cooperation developing with ICES is particularly notable and important in this regard. With respect to fund-raising, the amount of funds from voluntary contributions, grants, and partnerships of PICES exceeded, for the first time, the total annual contribution by Contracting Parties.

Based on his accomplishments in 2010 mentioned above, the Committee judged his overall performance as “Succeeded+”, in accordance with the practice of performance evaluation by the Canadian Government.

Setting the performance pay for 2010

In accordance with practice of the Canadian Public Service system, an executive is eligible for a maximum of 12% performance pay (“at-risk pay”), except for the candidate evaluated as “Did not meet”. In addition, if performance is evaluated as “Surpassed”, then the executive is eligible for a maximum of 3% bonus (Appendix 2). The Committee evaluated Dr. Bychkov’s overall performance for 2010 as “Succeeded+”. Because the Committee also considered that his tasks in 2010 were difficult, the Committee decided that a performance pay equal to 12% of his salary would be appropriate for this period.

Setting commitments for 2011

The Committee set Dr. Bychkov’s commitments in 2011 as follows. Items (a) to (e) are essential for the administration of the Organization in 2011 and correspond to Article 10 of the PICES Rules of Procedure as

the responsibility of the Executive Secretary. In addition, cooperation with other organizations and programs is important for developing the scientific ability of PICES. Under the current severe funding situation in Contracting Parties, fund-raising is an important task in order to sustain the Organization at the present level of activities. Therefore, the Committee added items (f) and (g).

- a. Managing the budget of the Organization and implementing the Organization's financial regulations;
- b. Administrating the Secretariat personnel/office;
- c. Planning and organizing the Annual Meeting;
- d. Providing secretarial services to meetings/symposia/conferences approved by Council;
- e. Coordinating the publication program of the Organization;
- f. Intensifying the cooperation with other organization/programs;
- g. Fund-raising for prioritized activities of the Organization in 2011 and beyond.

Appendix 1

Executive Committee of Council for evaluating the Executive Secretary performance

DECISION 2007/A/7:

- i. In accordance with Financial Regulations 12(i), Council established an Executive Committee to complete annual performance review of the Executive Secretary. Terms of reference and membership of the Executive Committee are listed in *GC Appendix B*.
- ii. At its first meeting, the Executive Committee will review achievements of the current Executive Secretary for the previous three years, in preparation for his possible re-appointment. As decision on re-appointment shall be made at least 12 months prior to the end of the term, Council agreed, in accordance with the Article VII of the Convention and Rule 4 of the Rules of Procedure, to vote on the results of the evaluation by correspondence before April 30, 2008.

2007 GC APPENDIX B:

Terms of reference

1. The Executive Committee will complete an annual review of the Executive Secretary performance by April 1 each year, following the general guideline for executive positions in the Canadian public service, and will report to Council at each Annual Meeting.
2. The review will include a written description of achievements for the previous year and tasks for the coming year, along with an overall evaluation of the achievements.
3. The evaluation will be used to set the level of performance pay, following the Canadian policy for executives.

Membership

The Executive Committee will be chaired by the PICES Chairman, with the Chairmen of Science Board and F&A Committee as members.

Appendix 2

Current criteria of rating the performance of and current levels of pay for the executive position of the Canadian Public Service

Ratings are based on results achieved (the *What*), as well as how they were achieved (the *How*). Overall performance is evaluated with the following possible results:

- **Surpassed:** Went well beyond performance expectations.
- **Succeeded+:** Exceeded the performance expectations. Or, fully succeeded in a position of greater scope and complexity in relation to those of other executive level jobs.
- **Succeeded:** Has fully achieved the performance expectations.
- **Succeeded-:** Did not fully succeed in meeting performance expectations. Or, while succeeded, it was in a position with performance expectations of less scope and complexity in relation to those of other executive level jobs.

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- **Did not Meet/Unable to Assess:** Did not achieve performance expectations or unable to assess the performance during the cycle (due to leave, training, special assignment).

The following table illustrates the range of performance awards available according to rating level and the executive's level. Note that these awards do not affect the base salary.

Performance Level	Lump Sum Performance Awards	
	At-Risk Pay	* Bonus
0 (Unable to Assess)	x	x
1 (Did not meet)	x	x
2 (Succeeded-)	✓ EX 1-3: up to 12% of base salary	x
3 (Succeeded)		x
4 (Succeeded +)		x
5 (Surpassed)		✓ EX-1 to EX-3: up to an additional 3%

GC Appendix A**2011 Governing Council decisions****2011/A/1: Auditor**

- i. Council accepted the audited accounts for *FY* 2010.
- ii. Council authorized the Executive Secretary to sign a new 3-year contract (for *FYs* 2012-2014) with the current auditor *Flader, Hale & Hughesman*.

2011/A/2: Annual contributions

- i. Council instructed the Executive Secretary to send a letter commending Contracting Parties for their performance in submitting annual contributions for *FY* 2011, and describing the difficulties that late and/or partial payment causes the Organization.
- ii. Council re-iterated that for planning of their funding requests for annual contributions, Contracting Parties should continue to use the guideline generally accepted at PICES-1999 (Decision 1999/A/2(ii)), which states that the annual contributions will increase at the rate of inflation in Canada.

2011/A/3: Budget and fund-raising

- i. Council accepted the estimated accounts for *FY* 2011.
- ii. Council approved the *FY* 2012 budget of \$838,000. The amount of \$118,600 will be transferred from the Working Capital Fund to balance the budget, setting the total annual contribution at \$719,400, and the 2012 annual fee at \$119,900 per Contracting Party.
- iii. Council approved a transfer from the Working Capital Fund to the Trust Fund to recover the 2011 expenses, and to restore the Trust Fund to the level of \$110,000 by the end of the fiscal year.
- iv. Council agreed that funds available from all completed projects in the Working Capital Fund as of December 31, 2011, be allocated for the development of the PICES integrative science program on “*Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Ecosystems*” (FUTURE), with the provision that the funds should be used over the next three years.
- v. Council instructed the Executive Secretary to send a letter to the Contracting Parties providing information on planned activities for FUTURE and requesting contributions to these activities.
- vi. Council approved an additional lump sum employer contribution of \$20,000 to the International Fisheries Commission Pension Plan to pay down unfunded liabilities.

2011/A/4: PICES Strategic Plan

Council approved the PICES Strategic Plan developed by the Study Group on *Updating the PICES Strategic Plan* (SG-USP).

2011/A/5: Yeosu Declaration

Council accepted an invitation for PICES to be represented on the International Review Committee of the Yeosu Declaration pursued as part of the legacy of the Ocean Expo-2012 Yeosu Korea to be held from May 12 to August 12, 2012, under the theme of “*The Living Ocean and Coast: Diversity of Resources and Sustainable Activities*”.

2011/A/6: UN Regular Process (UNRP) for Global Reporting and Assessment of the State of the Marine Environment

Council instructed the Executive Secretary to inform the UN Division for Ocean Affairs and the Law of the Sea of PICES’ interest in conducting scientific peer review of UNRP regional assessments of North Pacific marine ecosystems, and in being involved in the regional workshops for the North Pacific and East Asian marginal seas.

2011/A/7: Future PICES Annual Meetings and 2012 inter-sessional Science Board meeting

- i. Council approved Japan’s request for \$40,000 to partially cover costs for PICES-2012 to be held from October 12–21, 2012, in Hiroshima. The theme of the meeting, “*Scientific challenge to the North Pacific ecosystem: Understanding and mitigation of the effects of natural and anthropogenic stress*”,

was approved in principle at PICES-2010, and the theme description was finalized at the 2011 inter-sessional Science Board meeting.

- ii. Council accepted the offer of Canada to host PICES-2013 from October 11-20, 2013, in Nanaimo, British Columbia. Council approved in principle the proposed theme of the meeting, “*Communicating forecasts, uncertainty and consequences of ecosystem change to society*”, and instructed Science Board to finalize the theme description by the 2012 inter-sessional Science Board meeting.
- iii. Following the established 6-year rotation cycle, Council requested China to explore the possibility of hosting PICES-2014, and inform the Secretariat on this matter by March 31, 2012.
- iv. Council agreed to keep the same registration fee structure for PICES-2012 as for PICES-2010 and PICES-2011:

Type of registration fee	CDN \$
Regular	275
Early	200
Student	50
Spousal/guest	50

- v. Considering that most of the changes in the format of the Annual Meeting proposed in the final report of the Study Group on *Restructuring of the PICES Annual Meeting* (SG-RAM) are to be implemented at PICES-2011 and PICES-2012, Council agreed to discuss the effectiveness of the approved changes at the next Annual Meeting.
- vi. Council approved an inter-sessional Science Board meeting to be held in conjunction with a 3-day FUTURE implementation workshop to be hosted by Korea in Busan, immediately after the 2nd PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” in Yeosu, Korea.

2011/A/8: Intern Program

- i. Council instructed the Executive Secretary to invite Contracting Parties to provide voluntary contributions to support the Intern Program in 2012 and beyond.
- ii. Considering the current level of the stipend (\$2,000), funding available for the Intern Program, and stated intentions for contributions by Contracting Parties, Council agreed to initiate the process to recruit the 2012/2013 intern, with the understanding that the intern’s term will start no earlier than June 2012.

2011/A/9: Visiting Scientist Program

Council instructed the F&A Committee to review and revise, if necessary, the description of the PICES Visiting Scientist Program (inactive since its inception in 2002), in preparation for a discussion of the program at the 2012 inter-sessional Science Board meeting.

2011/A/10: Improvement of participation in PICES activities

- i. Council re-iterated the necessity for Contracting Parties to: (1) regularly review their national membership, and to provide the updated national membership list to the Secretariat by the first day of the calendar year (January 1), and (2) follow up on *Rule 1(ii)* of the PICES Rules of Procedure in providing the national delegation list for Annual Meetings. The national membership lists are required to maintain a historical record of PICES membership, and to assist in improving participation in the activities of the Organization. The national delegation lists are required to assist in better coordinating activities of the Standing Committees and their subsidiary bodies, and in better preparing the Annual Meeting.
- ii. In order to better assess problems existing in Contracting Parties with the participation of their scientists in the activities of the Standing Committees and their subsidiary bodies, and in the Annual Meetings of the Organization, Council instructed the Executive Secretary to continue to regularly preparing and circulate to Contracting Parties information, including graphic materials, on participation of their scientists in the Annual Meetings for the previous six years.

2011/S/1: 2012 PICES Annual Meeting

- i. The following scientific sessions are to be convened at PICES-2012:
 - ¾-day Science Board Symposium on “*Effects of natural and anthropogenic stressors in the North Pacific ecosystems: Scientific challenges and possible solutions*”;

- 1-day BIO Contributed Paper Session;
 - 1-day BIO/FIS Topic Session on “*Jellyfish in marine ecosystems and their interactions with fish and fisheries*” (co-sponsored by ICES);
 - ½-day BIO/FIS/POC Topic Session on “*Advances in understanding the North Pacific Subtropical Frontal Zone ecosystem*”;
 - ½-day BIO/MEQ Topic Session on “*Environmental contaminants in marine ecosystems: Seabirds and marine mammals as sentinels of ecosystem health*” (co-sponsored by JSPS);
 - ½-day BIO/MEQ/FUTURE Topic Session on “*Ecosystem responses to multiple stressors in the North Pacific*”;
 - 1-day FIS Contributed Paper Session;
 - ½-day FIS/MONITOR/POC Topic Session on “*Monitoring on a small budget: Cooperative research and the use of commercial and recreational vessels as sampling platforms for biological and oceanographic monitoring*”;
 - ½-day FIS/MEQ Topic Session on “*Abundance, ecological functions and ecosystem service of macrophyte vegetations as indicators of natural and anthropogenic stressors in coastal ecosystem and productivity*”;
 - ½-day MEQ Topic Session on “*Range extension, toxicity and phylogeny of epiphytic dinoflagellates*”;
 - 1-day MEQ/FUTURE Topic Session on “*Social-ecological systems on walleye pollock and other commercial gadids under changing environment: An inter-disciplinary approach*”;
 - ½-day MEQ/FUTURE Topic Session on “*Risk management in coastal zone ecosystems around the North Pacific*”;
 - 1-day MONITOR/POC Topic Session on “*Effects of natural and artificial calamities on marine ecosystems and the scheme for their mitigation*” (co-sponsored by JSFO and FRA);
 - 1-day POC Contributed Paper Session;
 - 1-day POC Topic Session on “*Challenges in understanding North Hemisphere climate variability and change*” (co-sponsored by CLIVAR and ICES);
 - ½-day POC/FIS Topic Session on “*Linking migratory fish behavior to end-to-end models II*”;
 - 1-day POC/TCODE Topic Session on “*Changing ocean biogeochemistry and its ecosystem impacts*” (co-sponsored by ICES and IMBER).
- ii. The following workshops are to be convened at PICES-2012:
- 1-day BIO Workshop on “*Identifying critical multiple stressors of North Pacific marine ecosystems and indicators to assess their impacts*”;
 - 1-day BIO Workshop on “*Secondary production: Measurement methodology and its application on natural zooplankton community*”;
 - 1-day BIO Workshop on “*The feasibility of updating prey consumption by marine birds, marine mammals, and large predatory fish in the PICES regions*”;
 - 2-day BIO Workshop on “*Comparison of multiple ecosystem models in several North Pacific shelf ecosystems (MEMIP-IV)*”;
 - 1½-day MEQ Workshop on “*The contrasting cases of harmful algal blooms in the eastern and western Pacific in 2007 and 2011*”;
 - 1-day POC Workshop on “*Arctic–sub-Arctic interactions*” (co-sponsored by ESSAS).
- iii. The following business meetings are to be held at PICES-2012:
- ¼-day Science Board (SB) meeting (October 14) and 1½-day SB meeting (October 19 afternoon and October 20);
 - 1½-hour overture meetings (October 14 evening) and ½-day meetings of Scientific and Technical Committees (October 17 afternoon);
 - 1-day meeting of the SB Section on *Human Dimensions of Marine Systems*;
 - 1-day meeting of the BIO/FIS/POC Section on *Climate Change Effects on Marine Ecosystems*;
 - 1-day meeting of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific*;
 - ½-day meeting of the POC/BIO Section on *Carbon and Climate*;
 - 1-day meeting of the MEQ Working Group on *Non-indigenous Aquatic Species*;
 - ½-day meeting of the FIS/MEQ Working Group on *Environmental Interactions of Marine Aquaculture*;
 - ½-day meeting of the BIO Working Group on *Jellyfish Blooms around the North Pacific Rim*;

- ½-day meeting of the POC Working Group on *North Pacific Climate Variability and Change*;
- 1-day meeting of the MEQ/BIO Working Group on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors*;
- ½-day meeting of the POC Working Group on *Regional Climate Modeling*;
- 1-day meeting of the BIO Advisory Panel on *Marine Birds and Mammals*;
- ½-day meeting of the POC/MONITOR Advisory Panel for a *CREAMS/PICES Program in East Asian Marginal Seas*;
- ¼-day meeting of the MONITOR Advisory Panel on the *Continuous Plankton Recorder Survey in the North Pacific*;
- 1-day meeting of the MEQ Study Group on *Marine Pollutants*;
- ½-day concurrent meetings of the FUTURE Advisory Panels on *Anthropogenic Influences on Coastal Ecosystems, Climate, Oceanographic Variability and Ecosystems* and *Status, Outlooks, Forecasts, and Engagement*, preceded by ½-day joint meeting of these Panels.

2011/S/2: Inter-sessional symposia/sessions/workshops/meetings

The following inter-sessional events are to be convened/co-sponsored in 2012 and beyond:

- i. Symposia:
 - 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (primary international sponsors: PICES, ICES and IOC), May 15–19, 2012, Yeosu, Korea;
 - ICES/PICES International Symposium on “*Forage fish interactions: Creating the tools for ecosystem based management of marine resources*”, November 8–12, 2012, Nantes, France.
- ii. Joint Theme Sessions:
 - CLIOTOP special session “*Global science for global governance of oceanic ecosystems and fisheries*” (co-sponsored by PICES) at the Planet Under Pressure Conference, March 26–29, 2012, London, UK;
 - Theme Sessions on “*Understanding, measuring and projecting the limits of resilience in marine ecosystems*” (A), “*Multidisciplinary perspectives in the use (and misuse) of science and scientific advice in Marine Spatial Planning*” (I), “*Subarctic-Arctic Interactions: Ecological consequences*” (M), and “*Sustainability of aquaculture*” (Q) at the 2012 ICES Annual Science Conference, September 17–21, 2012, Bergen, Norway.
- iii. Workshops and meetings:
 - PICES/MAFF Project Synthesis Workshop, March 20–23, 2012, Newport, Oregon, U.S.A.;
 - MEMIP (*Marine Ecosystem Model Inter-comparison Project*) workshop, spring 2012, Corvallis, U.S.A.;
 - FUTURE Implementation Workshop, May 22–24, 2012, Busan, Korea;
 - Inter-sessional Science Board meeting, May 24–25, 2012, Busan, Korea;
 - ICES/PICES/GEOHAB workshop on “*Climate change and harmful algal blooms*”, in conjunction with the meeting of the ICES Working Group on *Harmful Algal Bloom Dynamics*, spring 2012, TBD;
 - GLOBEC/PICES workshop on “*Forecasting ecosystem indicators with climate-driven process models*”, summer 2012, Friday harbor, WA, U.S.A.;
 - SCOR WG 137 workshop on “*Global patterns of phytoplankton dynamics in coastal ecosystems: Comparative analysis of time series observations*” (co-sponsored by PICES), October 2012, prior to PICES-2012, Hiroshima, Japan.
- iv. Capacity development events:
 - PICES/MAFF Workshop on “*Introduction to Rapid Assessment Survey methodologies for detecting non-indigenous marine species*” (co-sponsored by FRA, NOWPAP and WESTPAC), February 8–9, 2012, Nagasaki, Japan;
 - PICES/MAFF training course on screening methods for testing shellfish for paralytic shellfish poisoning toxins and phytoplankton identification, February 17–22 (Jakarta) and February 23–24 (Lombok Island), 2012, Indonesia;
 - PICES/MAFF Harmful Algal Bloom workshop to review data collected by High Performance Liquid Chromatography and Mass Spectrometry methods, and to provide outreach for the project, March 5–9, 2012, Guatemala;
 - Second ICES/PICES Conference for Early Career Scientists on “*Oceans of Change*”, April 24–27, 2012, Majorca, Spain;

- IMBER Workshop on “Needs assessment for capacity development for integrated marine biogeochemistry and ecosystem research in the Asia-Pacific region” (co-sponsored by PICES), summer 2012, Shanghai, China;
- IMBER-led international ClimECO3 Summer School on “A view towards Earth System models: Human-natural system interactions in the marine world” (co-sponsored by PICES), July 23–28, Ankara, Turkey;
- PICES Summer School on “Ocean observing systems”, August 2013, Hatfield Marine Science Center, Newport, U.S.A.

2011/S/3: Travel and representation at the meetings of other organizations/programs

- i. 2012 PICES Annual Meeting:
 - Invited speakers for Science Board Symposium and Topic Sessions, with the normal allocation of approximately \$5,000 per Committee/Program; additional requests are subject to fund availability;
 - One invited speaker for each of the approved workshops (see 2011/S/1(ii)).
- ii. Inter-sessional events:
 - PICES (MEQ) representative to participate in the 3rd Intergovernmental Review Meeting of the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (January 25–27, 2012, Manila, Philippines);
 - PICES (TCODE) representative to attend the IODE SG-ODP (IOC/IODE Study Group for the Ocean Data Portal) meeting (February 20–22, 2012, Oostende, Belgium);
 - PICES representative to participate in the workshop on “Salmon ocean ecology” (March 20–22, 2012, Newport, U.S.A.);
 - PICES (MONITOR) representative to attend the ICES WGNARS (Working Group on the Northwest Atlantic Regional Sea) meeting (March 6–8, 2012, Falmouth, MA, U.S.A.);
 - PICES invited speaker for the CLIOTOP special session “Global science for global governance of oceanic ecosystems and fisheries” at the Planet Under Pressure Conference (March 26–29, 2012, London, UK);
 - PICES (TCODE) representative to attend the IODE GE-BICH (IOC/IODE Group of Experts on Biological and Chemical Data Management and Exchange Practices) meeting (March 26–30, 2012, Oostende, Belgium);
 - PICES (S-HAB) representative to participate in the planning meeting for the ICES/PICES/GEOHAB workshop on “Climate change and harmful algal blooms” (early 2012, venue TBD);
 - PICES coordinators for the 2nd ICES/PICES Conference for Early Career Scientists on “Oceans of Change” (April 24–27, 2012, Majorca, Spain);
 - PICES (POC/WG 27) representative to attend the CLIVAR Pacific Implementation Panel meeting (April 29–May 1, 2012, Noumea, New Caledonia);
 - PICES convenor for the workshop on “Climate change projections for marine ecosystems: Best practice, limitations and interpretation” (May 13–14, 2012, Yeosu, Korea);
 - PICES representative to attend the 2012 IOC Executive Council Meeting (June 25–29, 2012, Paris, France);
 - PICES representatives and convenors for the joint sessions to participate in the ICES Annual Science Conference (September 17–21, 2012, Bergen, Norway);
 - PICES representative (S-CC) to participate in the 3rd International Symposium on “Oceans in high-CO₂ world” (September 24–27, 2012, Monterey, U.S.A.);
 - PICES representative to attend the NPAFC Annual Meeting (October 7–12, 2012, St. Petersburg, Russia);
 - PICES representative to attend the SCOR General Meeting (October 22–26, 2012, Halifax, Canada);
 - PICES convenor for the International Symposium on “Forage fish interactions: Creating the tools for ecosystem based management of marine resources” (November 8–12, 2012, Nantes, France).

2011/S/4: Publications

- i. The following publications are to be produced in primary journals in 2012–2013:
 - Special issue of *Aquaculture Economics and Management* based on selected papers from the PICES-2010 Topic Session on “Economic relation between marine aquaculture and wild capture fisheries” (Guest Editor: M. Pang) to be published in spring 2012;

- Special issue of *ICES Journal of Marine Science* based on selected papers from the 2011 PICES/ICES Zooplankton Production Symposium on “*Population connections, community dynamics and climate variability*” (Guest Editors: J. Keister, C. Johnson and D. Bonnet) to be published in summer 2012;
 - Review paper on Fraser River sockeye salmon and their marine environment in *Reviews in Fish Biology and Fisheries* (Lead Author: S. McKinnell) to be published in 2012;
 - Synthesis paper from the 2010 PICES/ICES/FAO Symposium on “*Forecasting climate change impacts on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” in *Nature* (Lead author: A. Hollowed) to be published in 2012;
 - Special issue of *Journal of Marine Systems* on modeling dedicated to Dr. Bernard Megrey (Guest Editors: E. Curchitser and S. I. Ito) to be published in May 2013;
 - Special issue of *ICES Journal of Marine Science* based on selected papers from the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” to be published in 2013.
- ii. The following publications are to be produced in PICES Scientific Report series in 2012:
- Final report of the Study Group on *Human Dimensions for Environmental Change* (Editor: M. Makino);
 - Final report of the Working Group on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (Editors: F. Chai and S. Takeda);
 - Final report of the Working Group on *Comparative Ecology of Krill in Coastal and Oceanic Waters around the Pacific Rim* (Editor: W. Peterson);
 - Final report of the Working Group on *Environmental Interactions of Marine Aquaculture* (Editors: K. Abo, I. Burgetz, B. Dumbauld and S. Johnson);
 - Final report of the Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (Editors: A. Hollowed and S. Kim);
 - PICES Advisory Report to the Cohen Commission on “*The decline of Fraser River sockeye salmon in relation to marine ecology*” (Editor: S. McKinnell) – reproduction of the web-based Cohen Commission Technical Report No. 4;
 - Final report of the Climate Change and Carrying Capacity Program (Editors: H. Batchelder).
- iii. Other publications to be produced in 2012 include:
- Atlas of non-indigenous marine and estuarine species in the North Pacific (Editors: H. Lee II and D. Reusser) to be published on the website;
 - Develop a chapter on the biology of anadromous coastal cutthroat trout for the NPAFC 20th anniversary publication project on updating the life histories of Pacific salmon (invitation by NPAFC);
 - Two regular issues of PICES Press to be published on the website and distributed electronically in January (Vol. 20, No. 1) and July (Vol. 20, No. 2) of 2012;
 - PICES E-news to be published on the website and distributed electronically bimonthly;
 - Brochures and slide shows for policy makers, managers, stakeholders and other interested members of society developed, under directions of the FUTURE Advisory Panel on *Status, Outlooks, Forecasts, and Engagement*, based (tentatively) on the final report of the MEQ Working Group on *Ecosystem-based Management Science and its Application to the North Pacific* (PICES Scientific Report, 2010, No. 37, 166 pp.), the Second North Pacific Ecosystem Status Report (PICES Special Publication, 2010, No. 4, 393 pp.) and the final report of the PICES/MAFF project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” (March 2012);
 - Book of Abstracts for the Second International Symposium on “*Effects of climate change on the world’s oceans*” (May 14–20, 2012, Yeosu, Korea);
 - Announcement, poster and Book of Abstracts for PICES-2012 (October 12–21, 2012, Hiroshima, Japan).
- iv. All member countries consider that the supplementary chapter for the Second North Pacific Ecosystem Status Report (PICES Special Publication No. 4, 2010) developed by the Advisory Panel for a CREAMS/PICES Program in East Asian Marginal Seas and endorsed for publication by Science Board, is an important scientific product of PICES, and agree to keep this agenda item open to allow member country governments to reflect further on this issue.

2011/S/5: Future of current PICES expert groups

- i. The following expert groups completed their terms of reference and should be disbanded:
 - BIO Working Group on *Comparative Ecology of Krill in Coastal and Oceanic Waters around the Pacific Rim* (WG 23; October 2007–October 2011);
 - FIS/POC Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (joint PICES/ICES WG-FCCIFS; October 2008–October 2011);
 - Science Board Study Group on *Human Dimensions for Environmental Change* (SG-HD; October 2009–October 2011);
 - PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* (SG-SP; October 2009–October 2011);
 - Study Group on *Updating the PICES Strategic Plan* (SG-USP; October 2009–October 2011);
 Final reports of the first three expert groups will be published in 2012 in the PICES Scientific Report series. The SG-SP final report and the approved new PICES Strategic Plan will be included in the 2011 PICES Annual Report.
- ii. To complete its terms of reference, the life span of the FIS/MEQ Working Group on *Environmental Interactions of Marine Aquaculture* (WG 24) was extended for 1 year (until October 2012). The draft of the WG 24 final report has to be completed by PICES-2012.
- iii. Following a review by the parent committee, the lifespan of the BIO Advisory Panel on *Marine Birds and Mammals* (MBM-AP) was extended for a 3-year term (until October 2014), with revised terms of reference as described in *GC Appendix B*;
- iv. Following a review by the parent committee, the lifespan of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific* (S-HAB) was extended for a 3-year term (until October 2014), pending approval of revisions to terms of reference described in *GC Appendix B* at the 2012 inter-sessional Science Board meeting.

2011/S/6: New PICES expert groups

- i. The following new Working Groups, with terms of reference as described in *GC Appendix B*, were established in the interim period:
 - POC Working Group on *North Pacific Climate Variability and Change* (WG 27);
 - BIO/MEQ Working Group on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors* (WG 28).
- ii. The following new expert groups, with terms of reference as described in *GC Appendix B*, were established at PICES-2011:
 - POC Working Group on *Regional Climate Modeling* (WG 29);
 - BIO/FIS/POC Section on *Climate Change Effects on Marine Ecosystems* (S-CCME);
 - Science Board Section on *Human Dimensions of Marine Systems* (S-HD);
 - MEQ Study Group on *Marine Pollutants* (SG-MP).

2011/S/7: Chairmen/Vice-Chairmen for Standing Committees and Co-Chairmen for *ad hoc* expert groups

- i. The following reflects new appointments for *ad hoc* expert groups in the interim period:
 - Drs. Richard Brodeur (U.S.A.), Young-Shil Kang (Korea) and Shin-ichi Uye (Japan) were appointed as Co-Chairmen of the BIO Working Group on *Jellyfish Blooms around the North Pacific Rim: Causes and Consequences*;
 - Drs. Michael Foreman (Canada), Emanuelle Di Lorenzo (U.S.A.) and Shoshiro Minobe (Japan) were appointed as Co-Chairmen of the POC Working Group on *North Pacific Climate Variability*.
 - Dr. Motomitsu Takahashi (Japan) was appointed as Co-Chairman of the BIO/MEQ Working Group on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors*.
- ii. The following reflects changes in Chairmanship and Vice-Chairmanship for Standing Committees and new appointments for expert groups at PICES-2011:
 - Dr. Elizabeth Logerwell (U.S.A.) was elected FIS Chairman to replace Dr. Mikhail Stepanenko (Russia);
 - Dr. Xianshi Jin (China) was elected FIS Vice-Chairman to replace Dr. Gordon Kruse (U.S.A.);

- Dr. Won-Duk Yoon (Korea) was appointed as Co-Chairman of the BIO Working Group on *Jellyfish Blooms around the North Pacific Rim: Causes and Consequences* to replace Dr. Young-Shil Kang (Korea);
- Drs. Changkyu Lee (Korea) and Vera Trainer (U.S.A.) were re-appointed as Co-Chairmen of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific* for a 3-year term;
- Drs. Rolf Ream (U.S.A.) and Yutaka Watanuki (Japan) were re-appointed as Co-Chairmen of the BIO Advisory Panel on *Marine Birds and Mammals* for a 3-year term.

2011/S/8: Relations with other organizations and programs

- i. Council approved the revised *Standing List of International and Regional Organizations and Programs* developed by Science Board and agreed with the identified priorities for interaction in 2011–2012.
- ii. Council approved in principle the report of the joint PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science*, and agreed with identified focal research and operational areas that can be enhanced by greater cooperation between the two organizations. The adopted framework will serve as the basis for linkages of PICES and ICES science plans and longer term strategic planning.
- iii. Council agreed to appoint an associate PICES member, Dr. Lisa Miller (Section on *Carbon and Climate*, Canada) to serve on the SCOR Working Group on *Biogeochemical Exchange Processes at the Sea-Ice Interfaces*.

GC Appendix B

Advisory Panel on Marine Birds and Mammals (MBM-AP)

Parent Committee: BIO

Duration: 3 years

Terms of Reference (updated and approved at PICES-2011)

1. Provide information and scientific expertise to the Biological Oceanography Committee and the FUTURE Program, and, when necessary, to other scientific and technical committees, with regard to the biology and ecological roles of marine mammals and seabirds in the PICES region;
2. Identify important problems, scientific questions, and knowledge gaps for understanding the impacts of climate change and anthropogenic factors on marine mammals and seabirds and ecosystems in the PICES region through Workshops, Theme Sessions and Scientific Reports;
3. Assemble information on the status and key demographic parameters of marine mammals and seabirds and contribute to the Status Reports and Outlooks;
4. Improve collaborative, interdisciplinary research with marine mammal and seabird experts and the PICES scientific community.

Section on Ecology of Harmful Algal Blooms in the North Pacific (S-HAB)

Parent Committee: MEQ

Duration: 3 years

Terms of Reference (updated at PICES-2011 and under revision)

1. Continue PICES member country data entry into the joint ICES-PICES harmful algal event database to allow global comparison of changes in harmful algal bloom occurrences.
2. Convene workshops and sessions including joint sessions with other international organizations to evaluate and compare results and maintain an awareness of state-of-the-art advances outside the PICES community.

3. Convene a joint PICES/ ICES workshop to assess the purported links between climate change and HAB character, frequency and severity, and publish a comprehensive review paper that identifies the near- and long-term research priorities and the monitoring structures needed to effectively hindcast and forecast future HAB events.
4. Produce and post on the PICES website papers that document the unanimous HAB Section opinion on timely subjects related to HABs, including topics related to FUTURE such as how human activities (increased cultural eutrophication and climate changes including temperature, changes in stratification and ocean acidification) might affect harmful algal bloom incidence and magnitude.

Working Group on North Pacific Climate Variability and Change (WG 27)

Parent Committee: POC

Duration: 3 years

Motivation

To develop essential understandings of the mechanisms of North Pacific climate variability and change that can better guide the formulation of process-based hypotheses underlying the links between ecosystem dynamics and physical climate.

Terms of Reference (approved at the 2011 inter-sessional Science Board meeting)

1. Develop conceptual frameworks and low-order models of North Pacific climate variability and change, which can be used by climate researchers to investigate the mechanisms of those variations and by ecosystem scientists to explore hypotheses linking ecosystem dynamics and physical climate.
2. Summarize the current understanding of mechanisms of Pacific climate variability and change, and evaluate the strengths of the underlying hypotheses with supporting evidence.
3. In conjunction with ecosystem scientists, coordinate the development and implementation of process-based models, which include important processes in simple forms, to hindcast the variability of available long-term biological time series.
4. Develop a method to identify and provide uncertainty estimates of decadal variability in recent historical climate and ecosystem time series.
5. Provide improved metrics to test the mechanisms of climate variability and change in IPCC models, and in coordination with other PICES working groups and FUTURE Advisory Panels, assist in evaluating those models and providing regional climate forecasts over the North Pacific.
6. Understand and fill the gaps between what physical models can currently produce and what ecosystem scientists suggest are the important physical forcing factors required for predicting species and ecosystem responses to climate variability and change.
7. Maintain linkages with, and summarize the results from National and International programs/projects such as CLIVAR, IMBER, US CAMEO, ESSAS, Japanese Hot Spot in the Climate System, POMAL, CREAMS EAST-I, POBEX, and others.
8. Convene workshops and sessions to evaluate and compare results and maintain an awareness of state-of-the-art advances outside the PICES community.
9. Publish a final report summarizing results.

**Working Group on Development of Ecosystem Indicators
to Characterize Ecosystem Responses to Multiple Stressors (WG 28)**

Parent Committees: BIO and MEQ

Duration: 3 years

Motivation

Marine ecosystems of the North Pacific, both coastal and offshore, are impacted by multiple emerging stressors, such as increased temperature, change in iron supply, harmful algal bloom events, invasive species, hypoxia/eutrophication and ocean acidification. These multiple stressors can act synergistically to change ecosystem structure, function and dynamics in unexpected ways that differ from single stressor responses. Further, it is expected that stressors will vary by region, and critical stressors in PICES' regional ecosystems should be identified and characterized to allow comparative studies on North Pacific ecosystem responses to multiple stressors that will help determine how ecosystems might change in the future and identify ecosystems that are vulnerable to natural and anthropogenic forcing. This Working Group can address emerging issues from PICES WG 22 on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (iron chemistry in low pH ocean, anthropogenic dust flux), PICES WG 23 on *Comparative Ecology of Krill in Coastal and Oceanic Waters Around the Pacific Rim* (hypoxia impact on euphausiids), and PICES WG 21 on *Non-indigenous Aquatic Species* (non-indigenous marine species) thereby highlighting the need for integrative studies.

Terms of Reference (approved at the 2011 inter-sessional Science Board meeting)

1. Identify and characterize the spatial (and temporal) extent of critical stressors in North Pacific ecosystems both coastal and offshore and identify locations where multiple stressors interact; identify trends in these stressors, if possible.
2. Review and identify categories of indicators needed to document status and trends of ecosystem change at the most appropriate spatial scale (*e.g.*, coastal, regional, basin).
3. Using criteria agreed to at the 2011 PICES FUTURE Inter-sessional Workshop in Honolulu, determine the most appropriate weighting for indicators used for:
 - a. documenting status and trends,
 - b. documenting extent of critical stressors,
 - c. assessing ecosystem impacts/change.
4. Review existing frameworks to link stressors to impacts/change, assessing their applicability to North Pacific ecosystems and identify the most appropriate for application to North Pacific ecosystems.
5. Determine if ecosystem indicators provide a mechanistic understanding of how ecosystems respond to multiple stressors and evaluate the potential to identify vulnerable ecosystem components.
6. For 1-2 case studies, identify and characterize how ecosystems respond to multiple stressors using indicators identified above. Are responses to stressors simply linear or are changes non-linear such that small additional stressors result in much larger ecosystem responses? Do different parts of the ecosystem respond differently (*e.g.*, trophic level responses)? How do stressors interact?
7. Publish a final report summarizing results with special attention to FUTURE needs. This WG will focus primarily on delivery of FUTURE Questions 3 and 1.

Working Group on Regional Climate Modeling (WG 29)

Parent Committee: POC

Duration: 3 years

Motivation

With the realization that physically-based future climate projections are the starting point for many socio-economic impact and adaptation considerations to future climate change and that global climate models, although they capture large scale climate behaviour, have limitations for regional assessments due to their coarse spatial resolutions, a working group is proposed to assess state-of-the-art regional climate modeling efforts, their implications for regional ecosystem studies and to further their development in the North Pacific Ocean and its marginal seas.

Terms of Reference (approved at PICES-2011)

1. Assemble a comprehensive review of existing regional climate modeling efforts.
2. Assess the requirements for regional ecosystem modeling studies (*e.g.*, how to downscale the biogeochemistry).
3. Continue the development of RCM implementations in the North Pacific and its marginal seas.
4. Convene special sessions and inter-sessional workshops dedicated to the RCM topic.
5. Publish report and/or review paper on best practices for regional coupled modeling.
6. Establish connections between PICES and climate organizations (*e.g.*, CLIVAR) and global climate modeling centers (*e.g.*, NCAR, JAMSTEC, CCCMA).
7. Collaborate with other PICES expert groups such as WG-27, S-CCME and the FUTURE Advisory Panels possibly by producing “Outlooks”.
8. Publish a final report summarizing results.

Section on Climate Change Effects on Marine Ecosystems (S-CCME)

(joint expert group with ICES Strategic Initiative on *Climate Change Effects on Marine Ecosystems*)

Parent Committees: BIO, FIS and POC

Duration: lifetime of FUTURE

S-CCME Goals (approved at PICES-2011)

- Define, coordinate and integrate the research activities needed to understand, assess and project climate change impacts on marine ecosystems;
- Plan strategies for sustaining the delivery of ecosystem goods and services, and when possible predictions should include quantifying estimations of uncertainty;
- Define and quantify the vulnerability and sustainability of marine ecosystems to climate change, including the cumulative impacts and synergetic effects of climate and marine resource use;
- Build global ocean prediction frameworks, through international collaborations and research, building on ICES and PICES monitoring programs.

Core Elements of S-CCME Implementation Plan Phases (3 years in duration)

- Synthesis of existing knowledge;
- Advancement of new science and methodology;
- Communication of research findings.

Phase 1: 2012-2014

- **Synthesis of existing knowledge:**
 - Complete synthesis papers from the 2010 Sendai Symposium and 2012 Yeosu Symposium;
 - Interpret the vulnerabilities of marine ecosystems to changing climate.
- **Advancement of new science and methodology:**

- Identify techniques for predicting climate change impacts in systems impacted by decadal variability;
- Define the vulnerability of commercial species to climate change and identify which species would be most likely to experience shifts in spatial distributions;
- Engage the global earth system modelling community in modelling climate change effects on marine ecosystems and identify opportunities for collaborations;
- Build response scenarios for how the human community will respond to climate change.
- **Communication and integration of science through international symposiums:**
 - Publish results in peer reviewed literature;
 - Serve as symposium/session co-convenors;
 - Assist in preparing and convening the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 2012, Yeosu, Korea).

Phase 2: 2015-2017

- Continue to advance new science focused on climate change effects on marine ecosystems through theme/topic sessions and workshops;
- Update and improve forecasts with IPCC AR5 scenarios;
- Convene an international symposium in 2016;
- Develop regional synthesis reports;
- Initiate inter-sessional training for projecting climate change impacts on marine ecosystems;
- Continue collaboration with global climate change research community.

Phase 3: 2018-2020

- Continue to advance new science focused on climate change effects on marine ecosystems through theme/topic Sessions and workshops;
- Update and improve predictions with IPCC AR6 scenarios;
- Develop regional synthesis reports;
- Convene an international symposium in 2018.

Section on *Human Dimensions of Marine Systems* (S-HD)

Parent Committee: Science Board

Duration: lifetime of FUTURE

Objective

To better understand and communicate the societal implications of the conditions and future trends of North Pacific marine ecosystems (FUTURE vision), to provide a forum for the integration of FUTURE-related studies using social science approaches and tools, and to facilitate the close discussions and communications among researchers from both the natural and social sciences.

Terms of Reference (approved at PICES-2011)

Section on *Human Dimensions of Marine Systems* (S-HD) is the scientific body responsible for the promotion, coordination, integration and synthesis of research activities related to the contribution of the social sciences to the second PICES integrative science program on “*Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Ecosystems*” (FUTURE), to PICES Scientific Committees, and to PICES as an organization.

1. S-HD will work towards SCIENTIFIC clarification of differences in societal objectives and needs among stakeholders in different sectors and countries. Based on that result, S-HD will develop an inventory of potential recipients, and their communication requirements for FUTURE and other PICES products, such as the state of the ocean reports (FUTURE Objective 2).

2. Based in part on the results of TOR 1, and with close coordination and communication with the Advisory Panel on *Status, Outlooks, Forecasts, and Engagement* (SOFE-AP) and other expert groups within PICES, S-HD will SCIENTIFICALLY explore the consequences to and responses of human social systems to factors such as climate-induced changes in marine ecosystems (FUTURE key question 3.4). Social science tools summarized in Table 3.1 of the final report of the Study Group on *Human Dimensions* will be applied to such an analysis.
3. S-HD will contribute a Human Dimension Chapter to the next North Pacific Ecosystem Status Report (FUTURE Objective 2).
4. S-HD will facilitate academic cooperation with other international research activities such as ICES, IMBER, LOICZ, *etc.*, and organize a symposium on the study of the human dimensions of marine ecosystems.

Study Group on *Marine Pollutants*

Parent Committee: MEQ

Duration: 1 year

Description and Statement of Purpose

The purpose of the proposed Study Group on *Marine Pollutants* (SG-MP) is to identify novel or promising approaches to monitoring pollutant trends over space and time, and to evaluate impacts on biota at the population level. The Study Group will establish a list of priority substances and pollutant indicators in PICES member countries using a series of case studies (*e.g.*, microplastics in seawater, seabird egg monitoring for persistent organic pollutants (POPs) over time; risk-based ranking of complex pollutant mixtures in sediments). This will help identify those methods or approaches that would benefit from harmonization (*e.g.*, characterization of heterogenous microplastic content in seawater or biota), and improve data delivery and scientific advice to managers and stakeholders.

While the Study Group will focus on impacts to biota, linkages will be established with those efforts that describe socio-economic impacts of pollution (*e.g.*, fisheries closures, consumption guidelines, impacts on endangered species, special vulnerability of coastal and indigenous peoples). Input from regional and international bodies such as ICES (International Council for the Exploration of the Sea), GESAMP (Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection) and NOWPAP (Northwest Pacific Action Plan), will increase efficiencies and the scientific value of the SG-MP outcome.

The establishment of SG-MP is consistent with the FUTURE Science Plan component 3 (*How do human activities affect coastal ecosystems and how are societies affected by changes in these ecosystems?*), and contribute insight into the structure, function and resilience of ecosystems as in components 1 and 2. This will provide a critical evaluation of highly complex pollutant mixtures, clarify priority concerns in the North Pacific, and provide a platform to evaluate the relative importance of pollutants compared to other stressors.

Terms of Reference

1. Identify novel or promising approaches to operational marine pollution assessment in PICES member countries by:
 - a. establishing a list of priority pollutant concerns for each of the PICES member countries;
 - b. identifying useful indicators of status, trends and effects; and
 - c. identifying those issues or methods that would benefit from harmonization.
2. Identify interactions within PICES scientific committees and expert groups that will complement the Study Group and will be consistent with the ecosystem approach espoused by FUTURE.
3. Explore potential partnerships with other professional or multilateral organizations (*e.g.*, ICES, GESAMP, NOWPAP) which could lead to joint activities (working group, sessions, publications), improve efficiencies and strengthen scientific outcomes.
4. Develop recommendations for a possible PICES Working Group on marine pollutants.