

REPORT OF GOVERNING COUNCIL

The Governing Council (GC) met from 9:00–18:00 hours on October 30, 2010, and from 12:00–16:00 hours on October 31, under the chairmanship of Dr. Tokio Wada. All Contracting Parties were represented at the two sessions (*GC Endnote 1*).

AGENDA ITEM 1

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. He reminded that at the 2009 inter-sessional meeting (IGC-2009), Council approved, effective PICES-2009, to change the format of the Opening Session by abolishing remarks by the Contracting Parties, except for the host country. Instead, the opportunity is provided to national delegates to make their statements at the beginning of the Governing Council meeting. All statements made are appended as *GC Endnote 2*.

Dr. Wada noted changes in the GC membership after the 2009 PICES Annual Meeting (PICES-2009) and welcomed new national delegates, Mr. Masaki Sugamiya (Japan), Dr. Lae-Hyung Hong (Korea) and Dr. Vladimir Radchenko (Russia), to the Organization.

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 October 1), of the names of delegates, alternate delegates, advisors and members, attending each meeting of the Organization. The Executive Secretary briefly reviewed submitted documents and asked each Contracting Party to examine its draft Delegation List and submit the final Delegation List prior to the second session of Council.

AGENDA ITEM 2

Adoption of agenda and meeting procedures

Council reviewed and approved the provisional agenda circulated on August 22, 2010, with the addition of the update on the development of a new regional fisheries management organization (RFMO) in the North Pacific under Agenda Item 21 – Other Business (*GC Endnote 3*).

At the first session of Council, 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 2010, the Secretariat did not receive proposals from any country to accede to the PICES Convention.

Many of the scientific and capacity development issues addressed by PICES are not unique to the North Pacific and concern the entire world. To facilitate collaborations with non-Contracting Parties and other organizations, a formal framework to recruit external experts to PICES activities has been discussed by Council since 2006.

At IGC-2009, Council approved (Decision 2009/A/5(i)) the proposed amendments to the Rules of Procedures in order to allow experts from outside of PICES to serve as *ex-officio* members on PICES Technical Committees and subsidiary bodies of PICES Scientific Committees (see *Definitions, Rule 1, 13, 14, 15*). The nomination of an *ex-officio* member can come either from a PICES expert group or from a non-Contracting Party or an organization, and the appointment requires endorsement by Science Board and approval by Council. At PICES-2009, Technical Committees and expert groups were informed about these changes in the Rules of Procedure and were requested to discuss potential implications of these changes on their membership.

Since PICES-2009, representatives of 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 the Section on *Ecology of Harmful Algal Blooms in the North Pacific* (HAB-S), Section on *Carbon and Climate* (CC-S) and Technical Committee on Monitoring (MONITOR), respectively. The Chairman indicated that this is a positive development, but pointed out that all three *ex-officio* members came from other organizations, and no interest was expressed so far by non-Contracting Parties. Council discussed how to publicize the PICES *ex-officio* membership system and recruit scientists from other countries, and two approaches were suggested as potentially efficient: scientist-to-scientist communication and bilateral meetings between Contracting and non-Contracting Parties.

AGENDA ITEM 4

Relations with relevant international and regional organizations/programs

The Executive Secretary reviewed the progress made in the integration and coordination of PICES activities with other international scientific organizations/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 6*). He pointed out that invitation letters to attend PICES-2010 as observers were sent to 47 organizations and programs, and 32 were present at the meeting (*GC Endnote 4*), surpassing 30 observers in 2009 and 21 in 2008, and demonstrating that PICES is continuing to build relations in productive ways. Representatives of these organizations/programs expressed their views on potential areas of collaboration with PICES at the meetings of Science Board, Standing Committees and/or their subsidiary bodies. In particular:

- Dr. Luis Valdés (Head of the Ocean Science Section of IOC-UNESCO) attended the Science Board meeting and meetings of several expert groups to share his views on potential areas of collaboration between IOC and PICES. These areas include: (1) climate change and variability, (2) marine biodiversity, (3) marine protected areas and marine spatial planning, (4) ocean research and environmental governance in the Arctic, (5) geo-engineering (given PICES' expertise in the area of iron fertilization in the North Pacific), and (6) new marine pollutants, such as plastics and microplastics, and their impact on habitats and ecosystems. Dr. Valdés also addressed the participants at the PICES-2010 Opening Session in connection with the 50th anniversary of IOC (see *OP Endnote 7* in the Report on Opening Session).
- Representatives of ICES, Drs. Jürgen Alheit and Harald Loeng, attended the Science Board meeting to discuss joint activities of the two organizations in 2011 and beyond, including the outcomes of the first meeting of the PICES/ICES Study Group on *Strategic Planning for Scientific Cooperation in Northern Hemisphere Marine Science* [see Agenda Item 9 for details]. They also participated in the meetings of several Standing Committees and expert groups, including the PICES/ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish*, and co-convened the joint PICES/ICES Topic Session on “*Impact of climate variability on marine ecosystems: Understanding functional responses to facilitate forecasting*”.
- Dr. Emilie Brévière (Executive Officer of SOLAS) attended the Science Board meeting and meetings of several expert groups to discuss joint scientific and capacity development activities, including the proposal for PICES to co-sponsor the 2011 SOLAS Summer School. She also gave a presentation at the joint PICES/SOLAS Topic Session on “*Understanding the role of iron in regulating biogeochemical cycles and ecosystem structures in the North Pacific Ocean*”.
- Ms. Nora Deans (Communication and Outreach Director of NPRB) gave an invited presentation on various approaches taken by NPRB in their successful outreach and engagement activities at the meeting of the FUTURE Advisory Panel on *Status, Outlooks, Forecasts, and Engagement* (SOFE-AP) and at the joint meeting of FUTURE Advisory Panels.
- Representatives of several programs/organizations expressed their views on potential areas of collaboration with PICES at the meetings of Standing Committees and/or their subsidiary bodies, and submitted specific proposals for joint activities in 2011 and beyond (details can be found in the reports of Standing Committees).
- Some programs and organizations had posters on display outlining general information about their programs/organizations and highlighting their scientific objectives and recent activities.

Council supported the holding of co-sponsored symposia/sessions/workshops/training courses and 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 at ISB-2010 and agreed with the identified priorities for interaction in 2010–2011 (Decision 2010/S/9). This list (*GC Endnote 5*) is used, in part, to assist the Executive Secretary and Science Board in decisions regarding sending PICES representatives to meetings of other organizations/programs.

AGENDA ITEM 5

Report on administration for 2009–2010

The Executive Secretary summarized the activities of the Organization and the Secretariat since PICES-2009. Council reviewed and adopted the report (*GC Endnote 6*).

AGENDA ITEM 6

Schedule, structure and financing of future Annual Meetings

PICES-2011

At IGC-2009, the Russian Federation expressed its willingness to host the Annual Meeting in 2011, and this invitation was accepted by Council (Decision 2009/A/6(iii)). At PICES-2009, Council agreed that the venue and dates for the meeting will be decided in spring 2010. After a site visit by the Executive Secretary in May 2010, a complex of government buildings in Khabarovsk was recommended as the venue. Following presentation by the Russian delegation on the status of preparations for PICES-2011, Council approved the proposal to host PICES-2011 from October 7–16 or October 14–23, 2011, in Khabarovsk (Decision 2010/A/5(i)). At the recommendation of the F&A Committee, it was decided to keep the same registration fee structure for PICES-2011 as for PICES-2010 (Decision 2010/A/5(iv)), and to provide \$40,000 to the host country to partially cover meeting costs (Decision 2010/A/5(i)).

The theme of the meeting, “*Mechanisms of marine ecosystem reorganization in the North Pacific Ocean*”, was approved in principle at PICES-2009, and the theme description was finalized at ISB-2010 in Sendai, Japan.

PICES-2012

At PICES-2009, Japan was requested to explore the feasibility of hosting the Annual Meeting in 2012, and inform the Secretariat on this matter by March 31, 2010 (Decision 2009/A/6(iv)). On March 28, Dr. Mitsuyuki Hirai (Japanese national delegate to PICES) extended an invitation for PICES-2012 to be held in his country. This invitation was confirmed during the visit of the Executive Secretary to Japan in August 2010. Brief information on the status of preparations for PICES-2012 was provided by the Japanese delegation. Council accepted the offer of Japan to host PICES-2012 from October 12–21, 2012, in Hiroshima (Decision 2010/A/5(ii)).

Council approved in principle the proposed theme of the meeting, “*Scientific challenge to the North Pacific ecosystem: Understanding and mitigation of the effects of natural and anthropogenic stress*”, and instructed Science Board to finalize the theme description at ISB-2011.

PICES-2013

Following the established 6-year rotation cycle (Decision 1994/A/6), Council requested Canada to explore the possibility of hosting the 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 has already initiated discussions with its government on this issue.

ISB-2011 and IGC-2011

At earlier meetings, Council expressed and re-iterated its support for the concept of inter-sessional meetings, but stressed that given meeting costs (including time commitment of the members), the need for such meetings

should be evaluated each year. The inter-sessional Science Board meetings became even more crucial after Science Board assumed the duties of the Scientific Steering Committee for the second PICES integrative science program on “*Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Ecosystems*” (FUTURE). Council approved the Science Board request to convene a 1½- or 2-day inter-sessional meeting in the spring of 2011, immediately after a 3-day inter-sessional FUTURE-workshop on “*Indicators of status and change within North Pacific marine ecosystems*”, and supported extending an invitation to ICES to participate in the workshop and use this opportunity for the PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* (SG-SP) to meet immediately after the workshop and prior to ISB-2011 (Decision 2010/A/5(v)).

The Chairman pointed out the importance of the inter-sessional Governing Council meetings for making timely decisions under the current fast-changing situations in ocean science and policy, and asked Council to consider holding IGC-2011 in conjunction with ISB-2011 for discussing and approving revisions to the PICES Strategic Plan. Council did not reach consensus on this issue as the proposal was not supported by China, but agreed convening a 1-day meeting of the Study Group on *Updating the PICES Strategic Plan* (SG-USP) immediately after ISB-2011 (Decision 2010/S/3).

Council accepted with gratitude an offer from the United States to host the FUTURE workshop, ISB-2011 and associated events, with potential venue being Honolulu.

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 recommended changes in the format of the Annual Meeting starting with PICES-2011 (Decision 2009/A/6(i)). It was decided though 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 (instead of 3 per day) be on trial at PICES-2010. Science Board and Council members exchanged initial impressions from these new arrangements and also from some changes in the Annual Meeting structure made by Science Board for PICES-2010 (e.g., holding the Science Board symposium in plenary not only immediately after the Opening Session on Monday, but also immediately prior to the Closing Session on Friday afternoon). The structure of PICES 2011 proposed by Science Board, and supported by Council, will be in accordance with SG-RAM recommendations, with the exception of the number of concurrent sessions (3) due to the limited capacity of the venue in Khabarovsk.

AGENDA ITEM 7

Progress report on implementation of new PICES integrative scientific program, FUTURE

The second integrative scientific program of PICES, FUTURE, will be one of the highest priority activities of the Organization 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 and finalized in June 2009 (Decision 2009/S/1). 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 the FUTURE goal (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 FUTURE SSC (Decision 2009/S/7(i)).

At the second session of Council, Drs. John Stein (Science Board Chairman) and Sinjae Yoo (Science Board Chairman-elect) reported on the progress made in the implementation of FUTURE since PICES-2009. It was pointed out that the first year is critical for the success and growth of major programs, and PICES made every effort to foster FUTURE. Activities that took place in 2010 were highlighted:

- At ISB-2010 (April 23–24, Sendai, Japan), one full day was dedicated to FUTURE – it was the first time that Science Board met as the FUTURE SSC. The main objectives of the meeting were to: (1) review the draft work plans for the Advisory Panels, and (2) clarify the process for revising terms of reference for existing expert groups and approving new expert groups to meet FUTURE goals. At this meeting, Science Board strongly supported the idea of convening a 3-day workshop to advance work plans for FUTURE Advisory Panels and to share ideas on the many common threads they are encountering in moving the program forward.
- The inter-sessional workshop, supported by the Korean government and hosted by the Korea Ocean Research and Development Institute (KORDI), was held from August 16–18, 2010, in Seoul, Korea. In addition to FUTURE Advisory Panel members, workshop attendees included representatives from most PICES expert groups associated with these Panels. All Contracting Parties but China were represented at the workshop. The goal of the workshop was to expedite the early phase of FUTURE implementation by (1) identifying priority topics and activities for the Advisory Panels for the first triennium (2010–2012), and (2) discussing the potential for existing and new expert groups to address these priorities. The specific outcomes for Science Board review were the work plans for the early phase of FUTURE and recommendations for new expert groups.
- At PICES-2010, the Advisory Panels met concurrently (½ day) and then jointly (½ day) to: (1) review their terms of reference, (2) complete their work plans for the first triennium, and (3) finalize their proposals for new expert groups.
- To ensure that FUTURE remains relevant to all Contracting Parties, a survey was developed and circulated to PICES members *via* Standing Committees to identify and prioritize stressors that could impact ecosystems in the area of concern to PICES. A matrix of major stressors for both coastal and oceanic systems around the North Pacific was created based on input providing both country and committee perspectives. Although the survey identified regional pressures, it also highlighted a number of high priority stressors across the North Pacific, including climate change, loss of sea ice, hypoxia, organic pollutants, habitat loss, invasive species, harmful algal blooms, and capture fisheries.
- To warrant high-quality reporting, SOFE developed a review process for the Advisory Report on “*The decline of Fraser River sockeye salmon in relation to North Pacific marine ecology*” to be released as a draft to the Cohen Commission on November 15 (see Agenda Item 10 for details). This Advisory Panel also discussed the feasibility of holding a peer-review of PICES Scientific Reports, and an outreach strategy for the second North Pacific Ecosystem Status Report (PICES Special Publication No. 4) and the final report of the Working Group 19 on *Ecosystem-Based Management Science and its Application to the North Pacific* (PICES Scientific Report No. 37). A power point presentation and professional brochure for both products is expected to be produced for a target audience of agencies/organizations dealing with management issues.

Dr. Stein summarized recommendation made by Science Board based on discussions at the 2010 inter-sessional FUTURE workshop and PICES-2010:

- Three new Working Groups (WG) were proposed:
 - WG on *Jellyfish Blooms around the North Pacific Rim: Causes and Consequences* (under BIO)
 - WG on *Ecosystem Responses to Multiple Stressors* (under MEQ and BIO)
 - WG on *North Pacific Climate Variability and Change* (under POC)
- Two inter-sessional workshops were specifically suggested to advance FUTURE science:
 - A 3-day workshop on “*Indicators of status and change within the North Pacific marine ecosystems*”, to be held in conjunction with ISB-2011, to identify: (1) the means of determining ecosystem resilience or vulnerability; (2) ecosystem-level indicators of status and change, including but not limited to fisheries-based indicators; (3) methods to characterize uncertainty in these indicators; (4) common ecosystem indicators to be used for regional comparisons by the PICES community. It was agreed that this would be an opportunity to extend an invitation to ICES to participate in the workshop to join forces with FUTURE in exploring this topic.
 - A 2-day workshop, to be convened immediately prior to PICES-2011 in Korea, to: (1) discuss various aspects of regional climate modeling (*e.g.*, different approaches, downscaling, parameterizations, and coupling to general circulation models) and (2) encompass the coupling of regional climate models to ecosystem models.

Council agreed to establish WG on *Jellyfish Blooms around the North Pacific Rim: Causes and Consequences* (Decision 2010/S/7), but put the other two recommended Working Groups on hold, pending further review and revisions to their proposed terms of reference. Council also approved holding both inter-sessional workshops (Decision 2010/S/3).

The Executive Secretary reported on the evolution of the FUTURE fund and indicated that the estimated year-end balance for this fund is small. Given the current lack of funding allocated specifically to FUTURE, Council approved the recommendation of the F&A Committee that funds currently under “high priority PICES projects” (\$21,996) be earmarked for FUTURE (Decision 2010/A/3(v)). Council also 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 (Decision 2010/A/3(vi)).

In the general discussion, it was re-iterated that:

- Serious attention should be paid to connections between the FUTURE Science Plan and the Strategic Plan of the Organization, and to linkages between scientific outcomes of FUTURE and the ocean management policies of Contracting Parties;
- National research projects form the basis of FUTURE, and PICES’ role is to coordinate international collaboration. It was premature to conceive coordinating the directions of national projects related to FUTURE at that time, as PICES is only at an early stage of the program. In the coming years though, it will be necessary to review how these national projects can better be coordinated to enhance FUTURE.

AGENDA ITEM 8

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 IGC-2003, a Study Group on *PICES Strategic Issues* was formed, under the direction of Council, to develop a Strategic Plan (Decision 2003/S/5(iv)). The Strategic Plan (http://www.pices.int/about/PICES_strategy.pdf) drafted by this Study Group was adopted at IGC-2004 (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 for 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), under the direction of Council, with the following terms of reference (Decision 2009/S/7(ii)):

1. Review the PICES Strategic Plan, the FUTURE Implementation Plan, and current Action Plans of PICES Standing Committees;
2. Review the strategic plans of other relevant international organizations such as ICES;
3. Consider the views of Contracting Parties on the priorities for marine scientific research in the North Pacific Ocean over the next 5-10 years;
4. Propose revisions to the PICES Strategic Plan (if necessary) in time for consideration by Governing Council at PICES-2010 in Portland, U.S.A.

It was agreed that SG-USP will be led by the Chairman of PICES, and its membership will include the Past-Chairman of PICES, the Vice-Chairman of PICES, the Science Board Chairman and Science Board Chairman-elect, and one representative from each of the two Contracting Parties, Canada and China, that otherwise are not represented on the Study Group. The Executive Secretary and Deputy Executive Secretary will serve as *ex-officio* members of the Study Group. The full SG-USP membership is as follows:

Dr. Tokio Wada (PICES Chairman, Japan) – Chairman
Dr. Vera Alexander (PICES Past Chairman) – member
Dr. Lev Bocharov (PICES Vice-Chairman, Russia) – member
Dr. Fangli Qiao (Science Board member, China) – member

Dr. Laura Richards (Council and F&A member, Canada) – member
 Dr. John Stein (Science Board Chairman, U.S.A.) – member
 Dr. Sinjae Yoo (Science Board Chairman-elect, Korea) – member
 Dr. Alexander Bychkov (Executive Secretary) – *ex-officio member*
 Dr. Skip McKinnell (Deputy Executive Secretary) – *ex-officio member*

The draft SG-USP report and the revised Strategic Plan were circulated to Contracting Parties on October 25, 2010. Council reviewed the draft SG-USP report at PICES-2010 and agreed to extend the life span of SG-USP for 6 months (Decision 2010/S/6(vi)) and to convene a SG-USP meeting in conjunction with ISB-2011 (Decision 2010/S/3).

AGENDA ITEM 9

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

Dr. Sinjae Yoo updated Council on the progress made by the PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* (SG-SP). The SG-SP goal is to develop a formal framework for cooperation between ICES and PICES to serve as the basis for linkages of science plans and longer-term strategic planning of the two organizations. This Study Group was approved in principle at PICES-2009 (Decision 09/S/10(iii)), where Council directed the Secretariat and Science Board to work with ICES to finalize the terms of reference, membership and timelines for the group. The agreed terms of reference are listed below:

1. Study Group members will review their organization's existing and planned scientific activities to identify scientific themes that could potentially benefit from the other's involvement in these activities.
2. Lists of potential areas of cooperation will be exchanged by September 2010.
3. A meeting/workshop will be convened after documents are exchanged in spring 2011 to:
 - a. Improve understanding of the science activities of each organization;
 - b. Review scientific topics from TOR#1 to identify areas of common interest;
 - c. As an example of recent cooperation, review progress of the joint Working Group on *Forecasting of Climate Change Impacts on Fish and Shellfish* (WG-FCCIFS) established in 2008;
 - d. Develop a framework for cooperation between ICES and PICES that lists categories of joint activities and the rationale for each, including the benefits to each Organization from the joint activity; identify priorities for joint activities within categories;
 - e. Recommend processes for implementing TOR#3d;
 - f. Recommend approaches to develop a strategic plan for cooperation and mechanisms to periodically update that plan.
4. The Co-Chairmen will prepare a final Study Group report for distribution by the PICES and ICES Secretariats by August 2011.

The SG-SP membership is limited to 4 people from each organization and includes:

- Dr. Sinjae Yoo, PICES Science Board Chairman (approved at PICES-2009) – Co-Chairman;
- Dr. Skip McKinnell, PICES Deputy Executive Secretary (approved at PICES-2009);
- Dr. Thomas Therriault, Chairman of the PICES FUTURE Advisory Panel on *Anthropogenic Influences on Coastal Ecosystems* (recommended at ISB-2010 and approved by correspondence);
- Dr. Hiroaki Saito, Chairman of the PICES FUTURE Advisory Panel on *Climate, Oceanographic Variability and Ecosystems* (recommended at ISB-2010 and approved by correspondence).
- Dr. Manuel Barange, Chairman of the ICES Science Committee (SCICOM) – Co-Chairman;
- Dr. Adolf Kellermann, Head of the ICES Science Programme;
- Dr. Mark Dickey-Collas, Chairman of the ICES SCICOM Science Steering Group on *Sustainable Use of Ecosystems*;
- Dr. Begoña Santos, Chairman of the ICES SCICOM Study Group on Science Cooperation (SGSC).

Dr. Yoo briefly summarized the results of an informal SG-SP meeting held on September 21, 2010, at the ICES Annual Science Conference (ASC) in Nantes, France (*GC Endnote 7*). At this meeting, improved forecasting of climate change impacts on marine ecosystems, ecosystem resilience and vulnerability, spatial planning, and ocean acidification/hypoxia were identified as areas where collaboration will be beneficial to help advance both FUTURE and the ICES Science Plan. Also discussed was a method for developing a process allowing PICES to consider joint ICES/PICES theme session proposals for the ICES ASC at its ISB meeting in order for this information to be available in a timely manner for decisions to be made at the annual ICES SCICOM meeting. Special consideration was given to the future of the joint PICES/ICES WG on *Forecasting Climate Change Impacts on Fish and Shellfish* and a new entity proposed by ICES and called the “ICES/PICES Strategic Initiative on Climate Change”.

Two major concerns expressed by Science Board at PICES-2010 were that (1) the terms of reference for this Strategic Initiative were very broad and (2) it could potentially overlap with activities of FUTURE. Another challenge in aligning ICES and PICES is the different methods employed by the two organizations to form and run expert groups. To reconcile these issues, Science Board suggested using ISB-2011 as an opportunity for SG-SP to meet. This recommendation was accepted by Council (Decision 2010/A/5(v)).

AGENDA ITEM 10

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

In November 2009, the Prime Minister of Canada established a commission of inquiry to discover why Fraser River sockeye salmon are not as abundant as they once were, especially from 2007 to 2009. As the investigation is being conducted by British Columbia Supreme Court judge, Mr. Bruce Cohen, the commission has taken his name (<http://www.cohencommission.ca>). The mandate of the Cohen Commission is to examine the effect of environmental changes along the Fraser River and in the ocean, and the potential effects of various factors that may have affected the ability of sockeye salmon to reach traditional spawning grounds or to reach the ocean. The Commission is also looking into the current state of Fraser River sockeye salmon stocks and the long-term projections for those stocks to develop recommendations for improving sustainability of the sockeye salmon fishery in the Fraser River, including changes to the existing policies, practices and procedures. To achieve independence from the organizations that manage and assess the fishery, 12 groups of independent scientists were invited to conduct research and offer their views on specific issues.

On April 15, 2010, PICES received an invitation to provide a scientific advice to the Commission. The advice 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 (“*The decline of Fraser River sockeye salmon in relation to North Pacific marine ecology*”), and participation of a Lead Author in a few expert meetings related to the report’s contents.

PICES is not designed to provide a short-term, tactical, management advice, but Article V(d) of the Convention (<http://www.pices.int/about/convention.aspx>) indicates that one of the scientific functions of the Council is “to consider request to develop scientific advice pertaining to the area concerned”. Rule 12(iv)(d) of the Rules of Procedure (http://www.pices.int/about/rules_procedure.aspx) further stipulates that “*Science Board shall review and make recommendations to the Council concerning the provision of scientific advice to the Contracting Parties or other international organizations requesting such advice*”. According to the approved mechanism for dealing with requests from Contracting Parties for advice (Decision 1993/A/5), Council’s role in this process is to: (1) decide on the acceptance of the request for advice, and (2) authorize release of the report.

At ISB-2010, 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 recommendation was supported by Council. Dr. Skip McKinnell, PICES Deputy Executive Secretary, was asked to lead the project.

Dr. McKinnell presented the summary report on the project to Council:

- The three major objectives of the report were to: (1) provide a summary of what is known about the biology and ecology of Fraser River sockeye salmon in the ocean, (2) describe why returns were especially low in 2009, and (3) discuss the nature and cause(s) of low productivity during the last 15 years.
- Work began in late June with a team of co-authors endorsed by Council and the Commission. The team included: Enrique Curchitser (Rutgers University, U.S.A.), Kees Groot (Canada, DFO emeritus), Masahide Kaeriyama (Hokkaido University, Japan), and Katherine Myers (University of Washington, U.S.A.).
- A draft report consisting of two documents, the Detailed Study (~150 pages) and the Executive Summary (~27 pages, with 1 page of “Short Answers to Key Questions”) was completed and sent to the Science Board Chairman and Science Board Chairman-elect on September 15, 2010.
- At the recommendation by SOFE, the draft was reviewed by several Science Board members and two external reviewers, one from the eastern Pacific (U.S.A.) and one from the western Pacific (Japan), selected by Science Board from the list of “salmon in the marine environment” experts provided by SOFE.
- After comments from peer-reviewers were addressed, the draft report was endorsed by Science Board at PICES-2010 and submitted for consideration by Council. Science Board recommended releasing the draft report to the Cohen Commission by November 15, 2010, with a cover letter stating that PICES is prepared only to correct errors and/or points of clarification that the Commission’s reviewers may find before the final report is submitted on December 15, 2010.

After some questions on the procedure in the Cohen Commission and comments on the conclusion of the report, Council authorized the release of the draft PICES Advisory Report to the Cohen Commission (Decision 2010/S/1). Council thanked Dr. McKinnell and his team for their enthusiastic work to prepare the report within a very short period. Closing discussion on this issue, the Chairman pointed out that the request for advice from the Cohen Commission was different from the 2003 request of the United States government on the implications of the 1998 regime shift for North Pacific fisheries, as the Commission also requested advices from other organizations and individuals for getting a comprehensive view on the poor return of the Fraser River sockeye salmon in 2007–2009. He also indicated that a review process for PICES products was established through the preparation of this report, and these reviews are important to ensure that the products are of the highest quality associated with PICES science.

AGENDA ITEM 11

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 (from April 1, 2007 to March 31, 2012) PICES project entitled “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*”. The goals of the project are to develop international systems to collect, exchange and store relevant data, and to foster partnerships with non-PICES 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-2009 (the financial report and the scientific progress report for *Year 3* are appended as *GC Endnote 8*) and provided a summary on fund transferring and project reporting to date:

- Funds for the first year of the project (completed by March 31, 2008) in the amount of \$184,980 were transferred to the PICES/MAFF bank account on July 27, 2007. The financial report and the progress report for *Year 1* were submitted to JFA on July 23 and July 19, 2008, respectively.
- Funds for the second year of the project (completed by 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 the third year of the project (completed by March 31, 2010) in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 15, 2009. The financial report and the progress report for *Year 3* were submitted to JFA on July 26, 2010.

- The required set of documents requesting funding for *Year 4* (to be completed by March 31, 2011) was sent, following instructions from JFA, to the Consulate General of Japan in Vancouver (Canada) on May 28, 2010, and the requested revisions were directed to JFA on June 24. Funds in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 12.
- The status of the PICES/MAFF account as of December 31, 2009, was assessed in the regular PICES audit of *FY 2009*. The financial statements for the rest of *Year 3* of the MAFF project (January 1 to March 31, 2010) and for part of *Year 4* (April 1 to December 31, 2010) will be evaluated in the regular PICES audit of *FY 2010*.

Japan expressed their satisfaction with the progress of the current project and indicated that JFA is developing a proposal for a new 5-year (2012–2017) PICES/MAFF project related to ecosystem-based management, including the topics under the 2007–2012 project. It was also pointed out that to assist JFA in the application process, the project leaders were requested to prepare appealing posters or brochures on the accomplishments to date, and also to summarize the issues likely to remain when the current project is completed.

Council concluded that the 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 again for their generous contribution.

AGENDA ITEM 12

Capacity building activities including PICES Intern Program

The Executive Secretary reported on capacity building activities in 2010 and plans for 2011 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 Early Career Scientists Conference

At ISB-2009, Science Board endorsed the concept of the second PICES/ICES Early Career Scientists (ECS) Conference to be held in 2012 in Europe. The main objective for the conference is to provide an opportunity for scientists at the beginning of their careers to meet colleagues from around the globe and develop contacts and collaborations across international borders and disciplines that would persist for decades. The conference, under the theme "*Oceans of change*", will take place in April 2012, in Majorca, Spain, with local arrangements made by the Mediterranean Institute for Advanced Studies (<http://www.ices.dk/marineworld/oceans/index.asp>). The Scientific Steering Committee (SSC) consisting of 6 early career scientists (3 from each Organization) was set. PICES SSC members include: Bryan Black (Oregon State University, U.S.A.), Hanna Na (Seoul National University, Korea) and Naoki Yoshie (Ehima University, Japan). Drs. Skip McKinnell (PICES) and Adolf Kellermann (ICES) will serve as conference coordinators. Drs. Franz Mueter (PICES) and Elizabeth North (ICES), SSC members of the 2007 ECS Conference, accepted an invitation to join the group as senior advisors.

Fund-raising for the conference was initiated, and the contribution of \$50,000 US was received from the U.S. National Marine Fisheries Service. At the recommendation of the F&A Committee and in order to have participation comparable to the 2007 PICES/ICES ECS Conference, 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 ESC Conference (Decision 2010/A/3(vii)).

Schools on marine sciences

At PICES-2009, Science Board suggested that collaborating with IMBER and SOLAS on summer schools, normally dominated by attendees from Europe and North America, may provide additional opportunities for PICES and would also broaden the participating countries and scientific cultures involved. In 2010, PICES co-sponsored the IMBER-led international ClimECO2 Summer School on "*Oceans, marine ecosystems, and society facing climate change - A multi-disciplinary approach*" (August 23–28, 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 expenses for this event were at the level of \$7,000. At the recommendation of Science Board, Council approved the request to co-sponsor the 5th SOLAS Summer School to be held August 29–September 10, 2011, in Corsica, France (Decision 2010/S/3).

Training courses and manuals/guides

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 the development of methodological workshops/training courses and publication/distribution of manuals/guides.

PICES was invited to join NOWPAP and WESTPAC in organizing a training course on “*Remote sensing data analysis*” to be held in fall 2011, and hosted by the Far Eastern Branch of Russian Academy of Sciences, with the Pacific Oceanological Institute (POI) as the main organizer, in Vladivostok, Russia. At ISB-2010, Science Board supported PICES involvement in the proposed course that will focus on practical applications, such as red tide detection, eutrophication, oil spill monitoring, *etc.*, and will be complementary to the training at 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. The Science Board recommendation was approved by Council (Decision 2010/S/3).

A component of the PICES/MAFF project (see Agenda Item 11) 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. In 2010, two courses were conducted in Guatemala: (1) training in screening methods for testing shellfish for paralytic shellfish poisoning toxins and phytoplankton identification, with specific focus on harmful species in Guatemala (February 15–19, 2010; in Guatemala City and San José; http://www.pices.int/publications/pices_press/volume18/18_issue2.aspx), and (2) training on High Performance Liquid Chromatography (HPLC) and Mass Spectrometry (MS) for detection of domoic acid and saxitoxins (April 26–29, 2010, in Guatemala City; http://www.pices.int/publications/pices_press/volume17/17_issue2.aspx). Planning is in progress for a training course for the South Pacific Island community (with focus on ciguatoxins and ciguatoxic cells, a devastating problem to Pacific Island fisheries), to be held in the spring of 2011 (Decision 2010/S/3).

One of key activities for a component of the PICES/MAFF project 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 was held July 13–16, 2010, at the Kobe University Research Center for Inland Seas, Awaji Island, Japan, and attended by scientists from Indonesia (1), Malaysia (1), Philippines (2), Singapore (1), Thailand (1) and Vietnam (1). Planning is initiated for a larger-scale demonstration workshop for Southeastern Asian countries to be held tentatively in late spring or early summer 2011, in Thailand (Decision 2010/S/3).

To foster the common use of best methods for CO₂ measurements and allow for inter-comparability of collected data, the PICES Section on *Carbon and Climate* oversaw the development of the “*Guide to best practices for ocean CO₂ measurements*” published in 2007 as PICES Special Publication No. 3 and IOCCP (SCOR/IOC International Ocean Carbon Coordinated Project) Report No. 8. The Guide is now used worldwide, and is considered the definitive reference of the ocean CO₂ system. The Guide is available on-line from the Carbon Dioxide Information Analysis Center (CDIAC) web-site in individual chapters or as a whole document. Hard copies are also available upon request from PICES and CDIAC. To increase the use of the Guide, volunteers were being sought to assist with translations of the Guide to languages other than English. The Executive Secretary reported that the Korean and Chinese translations of the Guide were published in 2010.

Travel grants

A total of about \$29,400 from the Trust Fund were spent in 2010 to support participation of students and early career scientists in the 2010 PICES/ICES/FAO Symposium on “*Climate change effects on fish and fisheries*” (Sendai, Japan) and PICES-2010 (Portland, U.S.A.). This amount includes a SCOR (Scientific Committee on Oceanic Research) grant of US\$5,000 to cover participation of scientists from countries with “economies in transition” to SCOR-relevant sessions and workshops at PICES-2010. Council members expressed their thanks to SCOR for continuing support of PICES activities. Following the revised 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.

From the Working Capital Fund, PICES also provided travel support for 6 students from the Oregon State University to attend PICES-2010.

The Megrey Student Fund was established within the Trust Fund based on donations by the family and friends of the late Dr. Bernard Megrey to provide travel awards to graduate students and early career scientists from all Contracting Parties 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.

In 2011, travel grants from the Trust Fund (including the Megrey Student Fund) will be provided to students and early career scientists to attend the PICES/ICES Zooplankton Production Symposium (Pucón, Chile), ESSAS Open Science Meeting (Seattle, U.S.A.) and PICES-2011 (Khabarovsk, Russia). It is also expected that travel grants from the MAFF Fund will be provided to support participation of students and early career scientists in the “*Marine bioinvasions*” conference (Barcelona, Spain).

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 10 years, 11 scientists and managers from three member countries (4 from China, 4 from Korea and 3 from Russia) have worked as interns at the PICES Secretariat.

The Program requires about \$30,000–\$32,000 per year (\$2,000 stipend per month, travel expenses and English lessons), and has been financed solely by voluntary contributions. In 2010, 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 US\$15,000, US\$10,000 and CND\$10,000, respectively, to the Trust Fund for the Intern Program. The Executive Secretary indicated that NMFS and DFO have been the most generous partners of this activity to date, providing from 2000–2010 ~\$182,500 and \$91,500, respectively, for the Program. Council thanked both organizations and MLTM for their support, and instructed the Executive Secretary to invite all Contracting Parties to make voluntary contributions to maintain the Program in 2011 and beyond (Decision 2010/A/6(ii)).

At the end of *FY* 2010, PICES will be holding about \$22,000 for the Intern Program. With the stipend level of \$2,000 per month (Decision 2007/A/6(iii)), this amount is sufficient to maintain the Program for only 8 months in 2011. On September 10, 2010, Ms. Jeongim Mok (Marine Policy Division, MLTM, Korea) was nominated and subsequently selected as the 2011 PICES intern. Considering the current level of the stipend and funding available for the Intern Program, Council agreed to offer her a 6-month term (starting May 1, 2011), with possible extension (up to 12 months) if additional funding becomes available (Decision 2010/A/6(i)).

At the recommendation of the F&A Committee, Council approved changes in the description of the Intern Program clarifying that the focus of the Program is on the professional development of early career marine scientists and managers from Contracting Parties (Decision 2010/A/6(iii)).

Conference on “Developing a global strategy for capacity building in the ocean sciences”

Dr. George Boehlert, U.S. national delegate, represented PICES at the SCOR-led conference to discuss a global capacity building strategy in the ocean sciences held August 16–18, 2010, in Bremen, Germany. He presented a brief report from the conference and pointed out that the conference website (http://www.scor-int.org/CB_Summit.htm) is a good source of capacity building information from participating organizations. Council agreed that Dr. Boehlert should continue to serve a liaison between PICES and the SCOR Committee on Capacity Building.

AGENDA ITEM 13

Improvement of participation in PICES activities

At PICES-2008, the Executive Secretary presented for the first time the background graphic materials for the last six Annual Meetings to better assess problems existing in the 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 requested that these files be updated annually (Decision 2009/A/8(iii)). 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.

The Executive Secretary provided information on the participation of Contracting Parties in PICES activities for the period from 2005 to 2010. He specified that for PICES-2010 preliminary data on registration and abstract submission (as of September 30) were used to create the graphs, and the numbers have to be revised after the meeting. It was highlighted 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.

China informed Council that after PICES-2009 some measures were taken to improve involvement of Chinese scientists in activities of the Organization, unfortunately without significant positive outcome to date, mainly due to: (1) national- and agency-level restrictions on the overall number of delegations to international meetings and the number of members in one delegation; (2) internal problems, including inter-agency communication and coordination, with appointment of members; and (3) differences in key research areas for Chinese scientists and scientists from other Contracting Parties. China committed to make the appropriate changes in the national membership to ensure better involvement of Chinese experts, and recommended that PICES should take into account the key research areas in different Contracting Parties to balance the participation. It was also noted that this year, the delegation from the State Oceanic Administration (SOA) encountered unexpected and undesirable visa problems, and several SOA scientists missed PICES-2010 as they did not get their U.S. visas in time. China expressed hope that the host country can do more to help PICES members in receiving their visas easier.

The Chairman indicated the importance of materials provided by the Secretariat for improving the participation in PICES activities and suggested that Council should review this issue at each Annual Meeting in the future.

AGENDA ITEM 14

U.S. proposals on a new membership category and web- and video-conferencing in PICES

Dr. George Boehlert explained the background of both proposals.

“Corresponding member” category

The rationale for this proposal was that PICES is often limited in the individuals able to contribute to its working bodies to those able to regularly attend PICES meetings. Many PICES bodies would benefit from expertise of additional individuals who may be unable to attend meetings, but have the potential to strongly contribute via correspondence to the deliberations and output of the group. Such a category may not be

appropriate to the Standing Committees, which require face-to-face meetings and Annual Meeting participation, but it might be useful for selected expert groups (Advisory Panels, Working Groups, *etc.*). There would be no expectation of meeting attendance, but responsiveness, document review, and value added to the body's deliberations and output would be required. If this proposal is supported, changes to the Rules of Procedure will be required under *Definition of Terms, Rules 13 and 15*.

It was pointed out that the F&A Committee discussed the proposal for the new "corresponding member" category in PICES and noted that the current Rules of Procedure do not prevent such membership. Therefore, no amendments to the Rules of Procedure to explicitly add this membership category were recommended by the Committee. The U.S. concurred with the sense of the F&A Committee that the "corresponding member" category is permitted under the current Rules of Procedure but noted that should such members be appointed they have to be properly identified so that the lack of expectation of PICES Annual Meeting attendance is clear. Following the suggestion by the F&A Committee, the U.S. withdrew the proposal.

Web- and video-conferencing

The basis for this proposal was the necessity to facilitate PICES activities without the cost and time commitments of long-distance travel. While PICES obviously cannot function without valuable face-to-face meetings, there are other times when IP-based video- or tele-conferencing, can serve as a low-cost, valuable means of improving the function of various PICES bodies. It can also serve the purpose of engaging those members of bodies who are unable to travel – who otherwise might have little input to the discussion. Many organizations, including ICES, are making use of tele-conferencing methods, and they are gaining greater acceptance.

The Executive Secretary reported on options for tele-conferencing in different functions, and suggested that though there are no technical and financial problems in implementing this proposal, the time difference, English proficiency and cultural differences among Contracting Parties can potentially be a problem. This view was supported by all Asian countries.

The U.S. thanked the Secretariat for researching the topic and acknowledged the successful use of these techniques during the inter-sessional FUTURE workshop in August 2010. The U.S. accepted the point made by the Executive Secretary that PICES encompasses many time zones, and that arranging meetings across the Pacific can be logistically difficult, but pointed out that video- and tele-conferencing is not recommended to routinely replace face-to-face meetings, but should be used where possible to decrease travel requirements (and associated carbon footprint) or to include members who were unable to attend for other reasons.

After discussion, Council agreed that video- and tele-conferencing should not replace the current business meetings at the Annual Meetings. As this approach is helpful in reducing the cost and time commitments, the Executive Secretary was instructed to attempt implementing it for smaller meetings and meetings of appropriate expert groups selected in consultation with Science Board. Practical ways have to be sought to resolve logistical difficulties.

AGENDA ITEM 15

Proposed changes in PICES Rules of Procedure

After the proposal on the "corresponding member" category was withdrawn, the only suggested amendments to the Rules of Procedure were in respect to a specific review period and the chairmanship for a Section. At the recommendation of the F&A Committee, Council approved the changes as proposed, with the exception of changing the time period for review and Co-Chairmen terms to be three years instead of the proposed five years (Decision 2010/A/4). Changes are shown in italics in boxes below:

- Including a specific review period for a Section by the parent Scientific Committee [*Rule 13(iii)(d)*]

Section

(d) shall be responsible to and reviewed regularly (*every three years*) by the parent Scientific Committee.

- Adding a clause on the chairmanship for a Section [*Rule 17*]

For Sections, Co-Chairmen are selected from the membership by the Science Board for approval by the Council to serve for a term of three years, and shall be eligible for re-appointment;

AGENDA ITEM 16

Report of Science Board

The Science Board met from 12:30–15:00 on October 24 and from 9:00–18:00 hours on October 30, under the chairmanship of Dr. John E. Stein. Drs. Stein and Yoo presented the report to Council on October 31. The full report can be found elsewhere in this Annual Report. Discussions on some issues can be found under agenda items 4, 6, 7 and 9–11. Decisions on scientific issues are summarized in *GC Appendix A* (Decisions 2010/S/1–2010/S/9).

AGENDA ITEM 17

Report and recommendations of the Finance and Administration Committee

The Finance and Administration (F&A) Committee met from 09:00–13:00 hours on October 27 and from 09:00–11:30 hours on October 28, under the chairmanship of Ms. Patricia Livingston, who presented the report to Council on October 30. The full report is included elsewhere in this Annual Report. Decisions on financial and administrative issues are summarized in *GC Appendix A* (Decisions 2010/A/1 – 2010/A/6).

The F&A Committee report expressed special concern to the operation of the PICES Secretariat in the future, as the terms of the Executive Secretary and Deputy Executive Secretary are now scheduled to end in the same year, 2014. Council briefly discussed the necessity of taking some measures to ensure continued smooth operations of the Organization well before this date. It was pointed out that the advanced hiring of a replacement even for one of these positions to allow a sufficient training period has significant financial implications. Japan requested the Secretariat to develop several possible approaches (scenarios) for Council to better assess these implications.

AGENDA ITEM 18

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

At the recommendation of the United States and in accordance with Financial Regulations 12(i), an Executive Committee of Council for evaluating the annual performance of the Executive Secretary was established at PICES-2007 (Decision 2007/A/7(i)). 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 2009 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 PICES Chairman. 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 2009, with tasks for 2010, is appended as *GC Endnote 9*.

AGENDA ITEM 19

Election of Chairman and Vice-Chairman of PICES

In accordance with Rule 6 of the Rules of Procedure, “*The Chairman and the Vice-Chairman shall each be elected from among the delegates for a term of two years and each shall be eligible for re-election only once for a successive term*”. Drs. Tokio Wada (Japan) and Lev Bocharov (Russia) were elected as the Chairman and Vice-Chairman of Council, respectively, at PICES-2006 (Decision 2006/A/9), and re-elected for these positions at PICES-2008 (Decision 2008/A/9). Their second terms will end at the conclusion of PICES-2010.

Following Rule 5(ii) of the Rules of Procedure, “*Nominations of candidates for elections in the Council shall be sent in writing to the Executive Secretary at least 60 days prior to the start of the Annual Meeting at which the election will occur*”. On October 13, 2009, Dr. Bocharov was recommended by Mr. Victor Risovanyi (Acting Head, Russian Federal Agency for Fisheries) to be considered for the next PICES Chairmanship. On July 27, 2010, Dr. Laura Richards (Canada) was recommended by Dr. Sylvain Paradis (Director-General, Ecosystem Science, Fisheries and Oceans Canada) for the position of the PICES Vice-Chairman. At the meeting, Council unanimously elected Dr. Bocharov as the Chairman (Decision 2010/A/8(i)) and Dr. Richards as the Vice-Chairman (Decision 2010/A/8(ii)) of PICES. Drs. Bocharov and Richards expressed their gratitude for the support given by Council.

Delegates thanked Dr. Wada for his strong leadership and efforts over the past four years. He will continue serving PICES as the Past-Chairman (Decision 1996/A/5) and, in this advisory capacity, will attend the meetings of Council for the period of Dr. Bocharov’s Chairmanship (Decision 2010/A/8(i)).

AGENDA ITEM 20

Appointment of F&A Committee Chairman

In accordance with Rule 19(iii) of the Rules of Procedure, “*The Chairman of the F&A Committee shall be appointed by the Council from among the Committee’s members for a period of two years and if re-appointed, total consecutive service may not exceed four years*”. Ms. Patricia Livingston (U.S.A.) was appointed as the Chairman of the F&A Committee at PICES-2008 (Decision 2008/A/10), and her first term of office would come to an end at this year’s Annual Meeting. At the recommendation of the Committee, and in accordance with Rule 19(iii), Council re-appointed Ms. Livingston as the F&A Chairman for another 2-year term (Decision 2010/A/9).

AGENDA ITEM 21

Other business – Update on the development of a new regional fisheries management organization (RFMO) in the North Pacific

At PICES-2008, Council briefly touched on the issue of future collaboration with a new Regional Fisheries Management Organization for the North Pacific (NPRFMO), currently under consideration, following the adoption of the Resolution 61/105 on *Sustainable Fisheries* by the United Nations (UN) General Assembly. Negotiations originally targeted the regulation of the deep sea fisheries in the North Pacific (especially the fisheries around Emperor’s Sea Mounts), but then have extended to cover the entire North Pacific and to include some pelagic species which are not covered by existing RFMOs (squid, sardines, *etc.*) Initial expert and technical consultations related to vulnerable marine ecosystems involved Japan, Korea, Russia, and the United States of America. Canada, China, Chinese Taipei, and Mexico were invited and they had agreed to join this discussion. It was indicated that PICES is interested and willing to work closely with this new NPRFMO, but this collaboration should be based on, and take advantage of, the well-established and balanced scientific activities of PICES. It was also pointed out that even though PICES is not designed to provide short-term tactical management advice, the Organization is well placed to provide advice on broad issues concerning North Pacific marine systems.

More substantial discussion on the approach to be taken in working with NPRFMO proceeded at IGC-2009. At this meeting, Council agreed that PICES could contribute to a sustainable and wise use of the North Pacific marine ecosystems and bio-resources by giving broad scientific advice to NPRFMO, and this would also meet the expectations of the Contracting Parties for scientific products of PICES to be relevant for national policy making. Council also suggested that PICES should pay attention to the progress of the inter-governmental negotiations on NPRFMO. National delegates were asked to approach their governments about the nature of cooperation between the two organizations.

The Chairman requested all Contracting Parties to comment on the expectations of their governments on relations between PICES and NPRFMO, and the following views were expressed:

- Canada pointed out that since the convention area for the NPRFMO is likely to be similar to that of PICES, significant opportunities for collaboration on scientific issues among PICES, NPRFMO and NPAFC are anticipated, and recommended to consider any cost efficiencies which might be possible through cooperative arrangements.
- China indicated that as NPRFMO has not been established, its scope, structure and functions are not clear yet. In addition, some countries proposed to extend the NPRFMO boundaries ten degrees toward south to make the jurisdiction docked between the NPRFMO and the South Pacific RFMO. If accepted, the convention areas for NPRFMO and PICES will be different and that may cause some unexpected problems. China suggested to re-visit the issue after every aspect of NPRFMO will be decided.
- Japan advised that PICES should pay due attention to the progress of the inter-governmental negotiations on NPRFMO and not prejudge on the specifics about nature of cooperation between the two organizations before the NPRFMO convention is ratified.
- Following the intervention from Japan, the United States agreed it would be premature to make concrete approaches concerning the formal relationship between PICES and NPRFMO pending completion of the arrangements for the convention and indicated their willingness to raise the issue on collaboration between the two organizations with U.S. delegations to NPRFMO.
- Korea pointed out that MLTM (Ministry of Land, Transport and Maritime Affairs) has the responsibility for PICES, but is not involved in the inter-governmental negotiations on NPRFMO. Information was requested from the relevant ministry and will be provided after the Annual Meeting.
- Russia provided substantive information on the outcomes from the 9th Negotiating Session to establish NPRFMO held on September 5–9, 2010, in Yuzhno-Sakhalinsk (Russia), and plans for 10th Multilateral Meeting on the management of high seas fisheries in the North Pacific Ocean to be hosted from February 27 to March 4, 2011, in Vancouver (Canada). As for the relationships between PICES and NPRFMO, Russia suggested that PICES should wait until the convention is signed, and only after that establish relationships with the new organization.

Based on this discussion, it was concluded that PICES should continue keeping attention to the progress of the inter-governmental negotiations on NPRFMO and be open for establishing working relations after the NPRFMO convention is ratified.

GC Endnote 1

Participation list

Canada

Sylvain Paradis (GC and F&A member)
Laura Richards (GC and F&A member)
Darlene Smith (advisor)

Japan

Taro Ichii (advisor, F&A member)
Yukimasa Ishida (alternate delegate)

People's Republic of China

Yingren Li (alternate delegate)
Yuan Wang (alternate delegate)

Republic of Korea

Chungmo Jung (alternate delegate)
Hyun-Young Kim (advisor)
Chul Park (GC and F&A member)

Russian Federation

Lev Bocharov (GC member)
Oleg Katugin (advisor)
Vladimir Radchenko (GC member)

U.S.A.

George Boehlert (GC member)
Samuel Pooley (GC member)
Elizabeth J. Tirpak (advisor, F&A member)

Other

Tokio Wada (PICES Chairman)
Vera Alexander (PICES Past-Chairman)
Patricia Livingston (F&A Chairman; only October 30)
John Stein (Science Board Chairman)
Sinjae Yoo (Science Board Chairman-elect)
Alexander Bychkov (Executive Secretary)
Skip McKinnell (Deputy Executive Secretary; only October 30)

GC Endnote 2

Opening remarks by representatives of Contracting Parties

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

Dear Mr. Chairman: On behalf of Canada and the Canadian delegation, I would like to thank the United States of America for hosting PICES-2010 in Portland, Oregon. We especially appreciate the hard work of the Pacific States Marine Fisheries Commission and the Secretariat in making this meeting a success.

Canada is particularly pleased to see the progress we have made in turning the FUTURE science program into reality. Many of the sessions at PICES-2010 were already focused on topics relevant to FUTURE. This is an encouraging start. However, we still need additional and ongoing work to ensure that the PICES Standing Committees continue to be engaged and active in FUTURE-related activities.

We will also need to continue our work on updating the PICES Strategic Plan so that all activities within PICES are aligned with the current priorities and information needs of member countries.

I understand that today we will discuss progress on negotiations for the new North Pacific RFMO. Since the convention area is likely to be similar to that of PICES, Canada anticipates significant opportunities for collaboration on scientific issues among PICES, the new RFMO and NPAFC. We should also consider any cost efficiencies which might be possible through cooperative arrangements.

Cost efficiencies are obviously important for any organization. Many of the world's economies are dealing with the fall-out from the global economic situation. In Canada, my department of Fisheries and Oceans is about to undergo a five-year strategic review and will be expected to reduce its budget by 5%. While we will continue to support PICES, we may not be able to provide the same level of participation as in the past.

This has been an interesting year for Canada for other reasons. As you may know, about a year ago the Canadian Government initiated a federal inquiry to study the apparent collapse of the sockeye salmon from the

Fraser River on Canada's West coast. Quite unexpectedly, in 2010 we have seen the highest returns of sockeye salmon to the Fraser River in a century. Clearly, as evidenced by these recent events, the biology of Pacific salmon is complex. The cooperative scientific research and exchange of information on the North Pacific ecosystem and its resources, including Pacific salmon, is very important to Canada. Thank you.

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

Dear Mr. Chairman: First of all, I would like to thank the Government of the United States of America and the Local Organizing Committee for kindly hosting the Nineteenth PICES Annual Meeting here in Portland. Also, I thank the PICES Secretariat for its effort to prepare this meeting.

Secondly, Japan is very pleased with PICES activities, including the PICES project entitled "*Development of the prevention systems for harmful organisms' expansion in the Pacific Rim*" supported by the Japanese Trust Fund. This 5-year project was initiated in 2007, and Japan hopes that PICES will complete this project successfully next year. Japan also expects that these kinds of activities will be continued based on the successful present project.

Thirdly, Japan is pleased with the good start of the second PICES integrated science program, FUTURE. There were three Topic Sessions at PICES-2010 supported jointly by FUTURE and the Standing Committees. I am especially pleased to learn that the PICES Chairman, Dr. Tokio Wada, and the US national delegate, Dr. George Boehlert, made presentations at one of these sessions on marine renewable energy. I am happy that the leaders on both sides of the North Pacific Ocean have an interest in marine renewable energy and hope that they will direct their additional renewable energy into PICES activities. Thank you very much.

Ms. Yuan Wang (Department of International Cooperation, State Oceanic Administration, People's Republic of China)

Dear Mr. Chairman, distinguished delegates, ladies and gentlemen: On behalf of China and the Chinese delegation, I would like to thank the United States of America for inviting us here to the beautiful city of Portland. We appreciate the hard work of the Local Organizing Committee and the PICES Secretariat in preparing for this meeting.

This year, China welcomed many international events, such as the 33rd World Ocean Peace Conference, the celebration of the 50th anniversary of IOC-UNESCO, the 1st China International City Forum and the Marine Eco-civilization Forum (Wenzhou) 2010.

China is very pleased with the ongoing success of PICES activities and hopes that they will contribute to the cooperation throughout the Pacific Rim, and will serve to encourage and promote the abilities of scientists in developing countries to address this growing concern. Also, at PICES-2010 activities for implementing a new PICES integrated science program called FUTURE started. This program is focused on marine environmental issues, and includes the coastal areas of each member country. China expects that the activities of FUTURE will provide valuable knowledge not only to scientists but also to ordinary citizens and policy makers in PICES member countries and other nations around the world.

Since its involvement in PICES, China has put a lot of emphasis on, and has taken a very active part in PICES activities, and at the same time, shouldered the responsibility and made contributions to its development together with other member countries. In the future, China will continue to support PICES by encouraging more involvement and cooperation. We also hope that through the implementation of FUTURE, we can achieve a better understanding of the responding mechanism of the marine ecosystem in the North Pacific to climate change and human activities, improve the capacity of forecasting and understanding the trends and development of marine ecosystem in the North Pacific, and help to adapt to climate change and make sustainable use of the marine ecosystem.

Finally, I hope the coordinated activities of the PICES scientific community will foster the international cooperation needed to carry out our important tasks more effectively. I wish productive days to every participant here in Portland. Thank you very much.

Dr. Chul Park (Chungnam National University, Republic of Korea)

Distinguished Chairman and national delegates: On behalf of the government of the Republic of Korea and the Korean delegation, I would like to show our appreciation to Dr. Tokio Wada, Chairman of PICES, Ms. Patricia Livingston, Chairperson of the F&A Committee, and Dr. Alexander Bychkov, Executive Secretary of PICES, for their enthusiastic effort in putting together this Nineteenth Annual Meeting, PICES-2010. I also would like to thank the Government of the United States of America for successfully preparing this meeting.

In spite of the relatively short history of the Organization, we, in PICES, are catching up ICES pretty fast. And this must be due to the excellent leadership shown by the former chairpersons and present leaders. On behalf of the Korean delegation, I would like to thank them for their devotion.

We are gathered here in the need for improved scientific understanding of the North Pacific Ocean and its processes, living resources, and oceanographic features. Obviously, questions related to the main theme of this year's Annual meeting, "*North Pacific ecosystems today, and challenges in understanding and forecasting change*", can be best answered through a spirit of international scientific cooperation.

The United Nations (UN) has launched a program "*UN Regular Process (UNRP) for Global Reporting and Assessment of the State of the Marine Environment*". Based on the assessment of assessments, the global ocean environments are going to be evaluated for sustainable use by humanity. This work, scheduled to be completed by 2014, is very much similar to what PICES has done already. Following the first edition in 2004, the second edition of the North Pacific Ecosystem Status Report was produced this year, although the chapter on the "East/Japan Sea" was missing. We congratulate PICES for this landmark publication, and also expect to see the missing chapter on website as well as independent hard copy as soon as possible. This report itself shows that PICES is proceeding in the right direction in a timely manner. I believe our new science program, FUTURE, must be a leading action for the UN Regular Process, and the Korean government is willing to support FUTURE as we did for the former Climate Change and Carrying Capacity program.

In 2012, Korea will host an Ocean Expo in Yeosu. PICES, along with ICES and IOC, has proposed a symposium during the Expo, and this symposium titled "*Effects of climate change on the world's oceans*" was chosen as one of the opening acts. The symposium is a follow-up of the previous one in Gijón (Spain) in 2008, and we believe it will prove to be a milestone in humanity's effort to cope with climate change. The Korean government will do everything to make this symposium a success. Also, I would like to ask all Contracting Parties to join the efforts.

Again, I would like to extend my special thanks to all the staff of the PICES Secretariat and Local Organizing Committee for their efforts and hard work, which enabled this Annual Meeting to be very fruitful. Thank you very much.

Dr. Lev Bocharov (Director-General, Pacific Research Institute of Fisheries and Oceanography, Russian Federation)

Distinguished Mr. Chairman, national delegates and advisors: On behalf of the Russian Federation, our delegation would like to express our great appreciation on how this year's Annual Meeting has been organized and held. It is due to the PICES Secretariat and representatives of the Contracting Parties, whose efforts have made this meeting a success.

In Russia, we foresee that the progress of PICES as an international scientific body is largely associated with the successful implementation of the FUTURE program. PICES has notably increased diversity in the scientific fields and directions under its expertise. It leads us to new results but also creates some new

challenges and obligations. We must respond in a proper and timely manner to these new challenges by improving our organization structure, strengthening our efforts, and involving new specialists in the major framework of our activities.

Russia is going to host the next PICES Annual Meeting in Khabarovsk in 2011. It will be the 20th anniversary of our Organization, a small jubilee not for celebration, but for making a brief stop in order to look behind us to see what has been done and into the future (=FUTURE) at our prospects to make milestone reports, and after that... to continue our work. I would like to ensure you that Russia will maintain PICES activities at the highest level. Thank you.

Dr. George Boehlert (Director, Hatfield Marine Science Center, Oregon State University, U.S.A.)

The United States would like to thank the Pacific States Marine Fisheries Commission and PICES Secretariat for the excellent organization of the meeting and the hospitality. As the member of the Governing Council from this State, I would like to welcome you all to Oregon. Ocean and coastal science in Oregon is very strong, as evidenced by the high level of participation of Oregon scientists at PICES-2010. My institution, Oregon State University (OSU), has one of the larger marine science programs among US academic institutions. We have a great diversity of organizations at OSU's Hatfield Marine Science Center in Newport, and facilities are under construction to house NOAA's research fleet headquarters there. This Center also hosted the successful rapid assessment survey conducted by scientists from the PICES Working Group on *Non-indigenous Aquatic Species* during the week prior to the meeting. We note that the excellent scientific sessions at PICES-2010 clearly demonstrate the excitement of PICES scientists about the FUTURE program. Finally, I would like to express the appreciation of the US delegation for the fine work of the Council and Science Board Chairmen as they complete their terms in 2010.

GC Endnote 3

Governing Council meeting agenda

1. Opening remarks by representatives of Contracting Parties
2. Adoption of agenda and meeting procedures
3. Membership and observers from other countries
4. Relations with relevant international and regional organizations/programs
5. Report on administration for 2009–2010
6. Schedule, structure and financing of future Annual Meetings
7. Progress report on implementation of new PICES integrative scientific program, FUTURE
8. Report of the Study Group on *Updating the PICES Strategic Plan*
9. Report of the PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science*
10. PICES Advisory Report to the Commission of inquiry into the decline of Fraser River sockeye salmon
11. 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
12. Capacity building activities including PICES Intern Program
13. Improvement of participation in PICES activities
14. U.S. proposals on
 - Consideration of a new membership category called "corresponding member" in PICES
 - Investigation of web- and video-conferencing for PICES activities
15. Proposed changes in PICES Rules of Procedure
16. Report and recommendations of the Science Board
17. Report and recommendations of the Finance and Administration Committee
18. Report of the Executive Committee for evaluating annual performance of the Executive Secretary
19. Election of Chairman and Vice-Chairman of PICES
20. Appointment of F&A Committee Chairman
21. Other business

GC Endnote 4

List of organizations/programs present as observers at PICES-2010

Alaska Ocean Observing System (AOOS)	Ms. Molly McCammon
Bering Sea Ecosystem Study (BEST/BSIERP)	Dr. Jeffrey Napp
	Dr. Phyllis Stabeno
Census of Marine Life	Dr. Vera Alexander
	Dr. Michael Feldman,
	Dr. Paul Snelgrove
Climate Variability and Predictability Program (CLIVAR)	Dr. Toshio Suga
Coastal and Estuarine Research Federation (CERF)	Dr. Steven Rumrill
Ecosystem Study of Sub-Arctic Seas (ESSAS)	Dr. Kenneth Drinkwater
	Dr. George Hunt, Jr.
<i>Exxon Valdez</i> Oil Spill Trustee Council (EVOSTC)	Dr. Elise Hsieh
	Ms. Catherine Boerner
Group of Experts on Scientific Aspects of Marine Pollution (GESAMP)	Dr. Peter Kershaw
Global Ocean Observing System (GOOS)	Dr. Luis Valdés
Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)	Dr. Sinjae Yoo
Intergovernmental Oceanographic Commission (IOC) of UNESCO	Dr. Luis Valdés
International Association of Marine Science Libraries	Mr. Brian Voss
International Council for the Exploration of the Sea (ICES)	Dr. Jürgen Alheit
	Dr. Harald Loeng
	Dr. Juan Valero
International Pacific Halibut Commission (IPHC)	
International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC)	Dr. Jae Bong Lee
International Program for Deployment of Profiling Floats (Argo)	Dr. Howard Freeland
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)	Dr. Chris Oliver
North Pacific Research Board (NPRB)	Dr. Clarence Pautzke
	Ms. Nora Deans
Northwest Pacific Action Plan (NOWPAP)	Dr. Sangjin Lee
Northwest Association of Networked Ocean Observing Systems (NANOOS)	Dr. Jan Newton
Northwest Atlantic Fisheries Organization (NAFO)	Dr. Vladimir Shibanov
Pacific Arctic Group (PAG)	Dr. Sue Moore
Pacific Fishery Management Council (PFMC)	Mr. Michael Burner
Scientific Committee on Oceanic Research (SCOR)	Dr. Wolfgang Fennel
Sir Alister Hardy Foundation for Ocean Science (SAHFOS)	Dr. Sonia Batten
Southern California Coastal Ocean Observing System (SCCOOS)	Dr. Karen Baker
	Dr. Tony Koslow
	Dr. Sam McClatchie
	Dr. William Sydeman,
Surface Ocean Low Atmosphere Study (SOLAS)	Dr. Emilie Breviere
World Climate Research Programme (WCRP)	Dr. Toshio Suga
Yellow Sea Large Marine Ecosystem Project (YSLME)	Dr. Sinjae Yoo

GC Endnote 5

2010 Standing List of International and Regional Organizations and Programs

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 WG, Asia Pacific Economic Cooperation
APEC-FWG*	Fisheries Working Group, Asia Pacific Economic Cooperation
APFIC	Asia-Pacific Fisheries Commission
APN	Asia-Pacific Network for Global Change Research
Argo*	International Program for deployment of profiling floats (linked with GOOS)
BEST*	Bering Ecosystem Study
CERF	Coastal and Estuarine Research Federation
CLIVAR*	Climate Variability and Predictability Program
CoML*	Census of Marine Life
ESSAS*	Ecosystem Studies of Sub-Arctic Seas
EVOSTC	Exxon Valdez Oil Spill Trustee Council (EVOSTC)
FAO	Food and Agriculture Organization
GCOS*	Global Climate Observing System
GEOS	Global Earth Observing System of Systems
GESAMP	Group of Experts on Scientific Aspects of Marine Pollution
GLOBEC*	Global Ocean Ecosystem Dynamics
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
ICSU	International Council of Scientific Unions
IGBP*	International Geosphere-Biosphere Program
IGOSS	Integrated Global Ocean Services System
IMBER*	Integrated Marine Biogeochemistry and Ecosystems Research (former OCEANS)
IMO	International Maritime Organization
IOC*	Intergovernmental Oceanographic Commission
IODE	International Oceanographic Data and Information Exchange
IPCC*	Intergovernmental Panel on Climate Change
IPHC	International Pacific Halibut Commission
IWC	International Whaling Commission
NAFO	Northwest Atlantic Fisheries Organization
NANOOS	Northwest Association of Networked Ocean Observing Systems – Integrated Ocean Observing 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
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
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
WCRP	World Climate Research Program
WESTPAC*	Cooperative Study of the Western Pacific, IOC Sub Committee for the Western Pacific
WMO	World Meteorological Organization

GC Endnote 6

Report on Administration for 2009–2010

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

- The 2009 fiscal year operations were completed within budget and with pre-agreed parameters. In the auditor's opinion, the financial statements accurately represent the financial position of the Organization as at December 31, 2009, 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*. The audit of *FY 2010* will be conducted in April 2011.
- 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 2010*. Japan and the United States paid prior to the due date. Korean, Russian and Canadian contributions arrived at the end of the first quarter, and the Chinese contribution was received in early August. 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 contribution by Contracting Parties. Special emphasis was put on fund raising for the 2010 PICES/ICES/FAO Symposium on "*Climate change effects on fish and fisheries*" (Sendai, Japan), the 2011 Zooplankton Production Symposium on "*Population connections, community dynamics, and climate variability*" (Pucón, Chile), the North Pacific Continuous Plankton Recorder (CPR) program, and capacity building activities. Details are reflected under *FA Agenda Item 5*.

B. Planning and organizing the 2010 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 2010 Annual Meeting (October 22–31, Portland, U.S.A.) was hosted by the Government of the United States of America, in coordination with the PICES Secretariat, with logistical support provided by the Pacific States Marine Fisheries Commission. The PICES-2010 theme was "*North Pacific Ecosystems Today, and Challenges in Understanding and Forecasting Change*". About 430 scientists and managers from 16 countries and 32 international and regional organizations and programs attended 17 sessions, 5 workshops and 22 business meetings of the committees and expert groups (see *Appendix 1* for the complete list), and presented 376 talks and 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 subsequently agreed, to co-sponsor (by covering travel of additional invited speakers and/or convenors for these events) the following Topic Sessions relevant to their scientific interests: "*Census of Marine Life – Exploring ocean life: Past, present and future*" (US CoML), "*Impact of climate variability on marine ecosystems: Understanding functional responses to facilitate forecasting*" and "*Development and use of ocean observing and forecasting systems*

in coastal and marine management” (ICES), “*Anthropogenic forcing in North Pacific coastal ecosystems: Understanding changes in ecosystem structure and function*” (IMBER), “*Identifying vulnerable marine ecosystems in the North Pacific*” (NPFMC), and “*Understanding the role of iron in regulating biogeochemical cycles and ecosystem structures in the North Pacific Ocean*” (SOLAS).

- The Secretariat was also actively involved in the implementation of changes in the format of the Annual Meeting approved by Council based on the recommendation of the Study Group on *Restructuring the PICES Annual Meeting* (SG-RAM).

C. 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 2010, logistical and financial arrangements were made for 15 inter-sessional 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). The premier event of the year was the symposium on “*Climate change effects on fish and fisheries*” held in April 2010 in Sendai, Japan. PICES was the major international sponsor of this event, along with ICES and FAO. The response to the symposium exceeded our expectations, with over 350 abstracts submitted, and almost 400 scientists from 37 countries attending.
- Preparations, arrangements or planning are in progress for 5 more international symposia to be convened in 2011–2012. This includes the upcoming landmark events such as the 5th International Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (March 2011, Pucón, Chile), the ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*” (May 2011, Seattle, U.S.A.), the second PICES/ICES Early Career Scientist Conference on “*Oceans of change*” (April 2012, Balearic Islands, Spain), and the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” to be held in conjunction with the Ocean Expo-2012 (May 2012, Yeosu, Korea).

D. 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 in 2010 included: 4 special issues of primary journals (peer-reviews are in progress for 2 special issues and 1 special section in a regular issue to be published in 2011), 1 PICES Special Publication, 2 reports in the PICES Scientific Report Series, 2 issues of PICES Press, 1 special USB and several Books of Abstracts, announcements and posters (see *Appendix 3* for the complete list).
- Significant progress had been made in the implementation of the Action Plan resulting from the 2008 PICES Publications Review, especially with respect to:
 - PICES branding on the article level in special issues of primary journals published by Elsevier;
 - Development of a PICES digital document library using “geo-network” software on a remote server;
 - Translating PICES publications into other languages;
 - Negotiating a License Agreement on the inclusion of PICES Publications in the ProQuest Science Journals database.

E. 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. Progress made in the integration and coordination of PICES’ activities with these organizations and programs is reflected in *Appendix 4*.
- Thirty two international and regional organizations and programs were present at PICES-2010, surpassing 30 observers in 2009 and 21 in 2008, and demonstrating that we are continuing to build our international

relationships in productive ways. Representatives of these organizations/programs expressed their views on potential areas of collaboration with PICES (including specific proposals for 2011 and beyond) at the meetings of Science Board, Standing Committees and/or their subsidiary bodies.

- The holding of co-sponsored symposia/sessions/workshops/training courses and the creation of joint expert groups were chosen as directions of actual collaboration:
 - Two international symposia and several topic sessions and workshops were organized in partnership with other organizations and programs in 2010 (see *Appendixes 1* and *2* for the complete list). Preparations are in progress for 4 joint international symposia/conferences to be held in 2011–2012.
 - Amendments to the PICES Rules of Procedure (http://www.pices.int/about/rules_procedure.aspx) were made to allow experts from outside of PICES to serve as *ex-officio* members on PICES Technical Committees and subsidiary bodies of PICES Scientific Committees (*Rules 13–15*). Three international organizations, IGBP (International Geosphere-Biosphere Programme), NOWPAP (Northwest Pacific Action Plan) and SAON (Sustaining Arctic Observing Networks), expressed their interest in having *ex-officio* members on the Section on *Ecology of Harmful Algal Blooms in the North Pacific* (HAB-S), Section on *Carbon and Climate* (CC-S), and Technical Committee on Monitoring (MONITOR), respectively. These requests were supported by PICES expert groups, endorsed by Science Board and approved by Council. In 2010, the Secretariat took necessary steps in completing these arrangements.
 - In 2008, PICES and ICES formed the first joint expert group, Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WG-FCCIFS). At PICES-2009, Council approved in principle a joint PICES/ICES 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. In 2010, the Secretariat and Science Board worked with ICES to finalize the terms of reference, membership and timelines for the group.
 - PICES supported the establishment of SCOR WG 137 on *Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time Series Observation*, and agreed to provide funding for an Associate Member from the North Pacific (Dr. Sinjae Yoo, Korea) to participate in its activities. This Working Group is considered as a logical methodological continuation of the successful SCOR WG 125 on *Global Comparisons of Zooplankton Time Series*, in which PICES was also represented by an Associate Member (Dr. Harold Batchelder, U.S.A.).

F. 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 Co-Editor (with Dr. Michael Dagg, BIO Chairman) of the second PICES North Pacific Ecosystem Status Report, and as the Lead Author of the report on “*The decline of Fraser River sockeye salmon in relation to North Pacific marine ecology*” for the Cohen Commission, Canada. To allow Dr. McKinnell to focus mostly on these two projects, his duties within the Secretariat were adjusted.
- The Executive Secretary 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, and served as the co-coordinator (with Dr. Sonia Batten) of a funding consortium to support the North Pacific Continuous Plankton Recorder (NP CPR) survey.

G. Administrating the Secretariat

- To increase the capacity of the Secretariat, a funding of approximately \$36,000 was secured to support a part-time contract position at the PICES Secretariat. This amount includes overheads for 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 “*The decline of Fraser River sockeye salmon in relation to North Pacific marine ecology*” (funded by the Cohen Commission, Canada).

- The PICES Intern Program, 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 October 2010, 11 scientists from three countries (4 from China, 4 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-2009, Fisheries and Oceans Canada (\$10,000), the Ministry of Land, Transport and Maritime Affairs of Korea (\$10,000 US), TINRO-Center of Russia (\$5,000 US) and the U.S. National Marine Fisheries Service (\$15,000 US) contributed a total of ~\$40,500 to the Trust Fund for the Program. These contributions were sufficient to maintain the Program for about 18 months.

Appendix 1: Scientific sessions, workshops and business meetings convened at PICES-2010

Sessions

- 1½-day Science Board Symposium on “*North Pacific ecosystems today, and challenges in understanding and forecasting change*”;
- 1-day BIO Contributed Paper Session;
- ½-day BIO Topic Session on “*Understanding the role of iron in regulating biogeochemical cycles and ecosystem structures in the North Pacific Ocean*” (co-sponsored by SOLAS);
- ½-day BIO Topic Session on “*The Practical Handbook at 50: A celebration of the life and career of Tim Parsons*”;
- ½-day BIO Topic Session on “*Census of Marine Life – Exploring ocean life: Past, present and future*” (co-sponsored by CoML);
- 1-day FIS Contributed Paper Session;
- ½-day FIS Topic Session on “*Oceanographic and demographic processes affecting the reproductive biology of exploited marine stocks*”;
- 1-day FIS/BIO Topic Session on “*Observations of ecosystem mixing under climate change*”;
- 1-day FIS/MEQ Topic Session on “*Economic relation between marine aquaculture and wild capture fisheries*”;
- 1-day FIS/POC/BIO Topic Session on “*Impact of climate variability on marine ecosystems: Understanding functional responses to facilitate forecasting*” (co-sponsored by ICES);
- ½-day MEQ Topic Session on “*Conceptual and numerical models of HAB dynamics*”;
- ½-day MEQ/FIS Topic Session on “*Identifying vulnerable marine ecosystems in the North Pacific*” (co-sponsored by NPFMC);
- 1-day MEQ/FUTURE Topic Session on “*Anthropogenic forcing in North Pacific coastal ecosystems: Understanding changes in ecosystem structure and function*” (co-sponsored by IMBER);
- 1-day POC Contributed Paper Session
- ½-day POC/BIO/MONITOR/FUTURE Topic Session on “*Comparing the two major gyres of the subarctic North Pacific – Seasonal and interannual variability and its predictability*”;
- ½-day POC/MEQ/FUTURE Topic Session on “*Marine renewable energy development in coastal and estuarine environments around the North Pacific*”;
- 1-day MONITOR Topic Session on “*Development and use of ocean observing and forecasting systems in coastal and marine management*” (co-sponsored by ICES);
- TCODE E-Poster Session on “*Monitoring and ocean observing systems*”.

Workshops

- 2-day BIO Workshop on “*Marine ecosystem model inter-comparisons (III)*”;
- ½-day FIS Workshop on “*Beyond Lagrangian: Modeling migratory fish behavior in Global Circulation Models*”;
- 1-day MEQ Workshop on “*New technologies and methods in HAB detection. I. HAB species detection*” (includes ½-day laboratory demonstration);
- ½-day POC Workshop on “*PICES Working Group 20 on Evaluations of Climate Change Projections: Progress and FUTURE*”;
- 2-day POC/BIO Workshop on “*Carbon data synthesis (III)*”.

Business meetings

- ¼-day Science Board meeting (October 24) and 1-day Science Board meeting (October 30);
- ½-day meetings of Scientific (BIO, FIS, MEQ and POC) and Technical (MONITOR and TCODE) Committees to be run concurrently;
- 1-day meeting of the POC/BIO Section on *Carbon and Climate* (CC-S);
- 1-day meeting of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific* (HAB-S);
- 2-day meeting of the MEQ Working Group on *Non-indigenous Aquatic Species* (WG 21), immediately after a 4-day PICES Rapid Assessment Survey (RAS-2010);
- ½-day meeting of the BIO Working Group on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (WG 22);
- 1-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 Advisory Panel on *Marine Birds and Mammals* (MBM-AP);
- ½-day meeting of the MONITOR Advisory Panel on the *Continuous Plankton Recorder Survey in the North Pacific* (CPR-AP);
- ½-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;
- 1-day meeting of the Study Group on *Human Dimensions for Environmental Change*.

Appendix 2: Inter-sessional symposia/workshops/meetings organized/sponsored after PICES-2009

Since PICES-2009, the following inter-sessional symposia, workshops and meetings were convened, for which financial, travel and logistical arrangements were made:

- Second PICES Harmful Algal Bloom training course, February 10–19 and April 26–29, 2010, Guatemala;
- 12th Salmon Ecology Workshop (co-sponsored by PICES), March 24–25, 2010, Santa Cruz, CA, U.S.A.;
- 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 (approved in 2008);
- Inter-sessional Science Board meeting, April 23–24, 2010 (immediately prior to the PICES/ICES/FAO Symposium), Sendai, Japan;
- Meetings of the PICES/ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish*, April 29–30, 2010 (immediately after the PICES/ICES/FAO Symposium), Sendai, Japan, and September 22, 2010 (in conjunction with the 2010 ICES ASC), Nantes, France;
- POC/BIO Workshop on “*Carbon data synthesis (II)*”, June 2–3, 2010, Tokyo, Japan;
- Meeting of the Study Group on *Human Dimensions for Environmental Change*, June 24–25, 2010, Yokohama, Japan;
- Demonstration workshop on “*Introduction to rapid assessment survey and collector survey methodologies for application in developing countries*”, July 13–16, 2010, Kobe University Research Center for Inland Seas, Awaji Island, Japan;
- Inter-sessional FUTURE workshop, August 16–18, 2010, Seoul, Korea;
- International ClimECO2 Summer School on “*Oceans, marine ecosystems, and society facing climate change - A multidisciplinary approach*” (co-sponsored by PICES), August 23–28, Brest, France;
- CREAMS/PICES EAST-II (East Asian Seas Time-series) Workshop, September 11–12, 2010 (at the 5th PEACE (Program of the East Asian Cooperative Experiments) Conference, Gangneung, Korea);
- ICES/PICES Theme Session on “*Responses to climate variability: comparison of northern hemisphere marine ecosystems*” at the 2010 ICES Annual Science Conference, September 20–24, 2010, Nantes, France;

- Second IMBER IMBIZO on “*Integrating biogeochemistry and ecosystems in a changing ocean: Regional comparisons*” (co-sponsored by PICES), October 10–14, 2010, Crete, Greece;
- 26th Lowell Wakefield Symposium on “*Ecosystems 2010: Global progress on ecosystem-based fisheries management*” (co-sponsored by PICES), November 8–11, 2010, Anchorage, U.S.A.;

Appendix 3: PICES publications in 2010 and beyond

Primary journals

- Special issue of *Deep-Sea Research II* based on papers from the SEEDS-II experiment (Guest Editors: M. Uematsu, M. Wells, A. Tsuda and H. Saito) was published in December 2009 (Vol. 56, Is. 26, pp. 2731-2958) and includes the introduction and 20 papers co-authored by scientists from Japan (majority), Canada and U.S.A.;
- Special issue of *Deep-Sea Research II* on krill biology and ecology dedicated to Edward Brinton based on selected papers from the 4th International Zooplankton Production Symposium (Guest Editors: S. Kawaguchi and W. Peterson) was published in April 2010 (Vol. 57, Is. 7-8, pp. 493-692) and includes the introduction, memorial and 17 papers co-authored by scientists from Australia, Chile, China, France, Japan, Korea, Mexico, UK and U.S.A.;
- Special issue of *Continental Shelf Research* on tides in marginal seas dedicated to Prof. Alexei Nekrasov (Guest Editors: A. Rabinovich, M. Foreman, B. Kagan and J. Cherniawsky) was published in April 2010 (Vol.30, No. 6, pp. 533-714) and includes the introduction, memorial and 16 papers co-authored by scientists from all PICES member countries, Germany, Italy and Mexico, with 10 papers focusing on the North Pacific and adjacent seas;
- Special issue of *Deep-Sea Research II* based on selected papers from the OECOS (Oceanic Ecosystem Comparison in the Subarctic Pacific) experiment (Guest Editors: C. Miller and A. Yamaguchi) was published in September 2010 (Vol. 57, Is. 17–18, pp. 1593-17420) and includes the introduction and 11 papers co-authored by scientists from Japan and U.S.A.;
- Special section in a regular issue of *Journal of Oceanography* based on selected papers from the PICES-2009 Topic Session on “*Anthropogenic perturbations of the carbon cycle and their impacts in the North Pacific*” (Guest Editors: T. Ono, K. Lee, C. Sabine and T. Saino) is expected to be published in June 2011;
- Special issue of *ICES Journal of Marine Science* based on selected papers from the 2010 PICES/ICES/FAO Symposium on “*Forecasting climate change impacts on fish and shellfish*” (Guest Editors: A. Hollowed, S.-I Ito, S. Kim, H. Loeng and M. Peck) is expected to be published in June 2011, with sufficient time to be considered by review panels responsible for the next assessment report (AR5) of the Intergovernmental Panel on Climate Change (IPCC);
- Special issue of *Fisheries Research* 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 (lead), G. Kruse and L. Richards) is expected to be published in September 2011.

PICES Special Publications

- McKinnell, S.M. and Dagg, M.J. (Eds.). *Marine Ecosystems of the North Pacific Ocean, 2003-2008* (PICES Special Publication No. 4, 393 pp.) was published in September 2010;
- Dickson, A.G., Sabine, C.L. and Christian, J.R. (Eds.). *Guide to best practices for ocean CO₂ measurements* (PICES Special Publication No. 3, 2007) was published in Korean and Chinese languages in 2010.

PICES Scientific Report series

- Jamieson, G. Livingston P. and Zhang C.-I. (Eds.). *Final Report of Working Group 19 on Ecosystem-based Management Science and its Application to the North Pacific* (PICES Sci. Rep. No. 37, 166 pp.) was published in September 2010;
- Pakhomov, E. and Yamamura, O. (Eds.). *Final Report of the Advisory Panel on Micronekton Sampling Inter-calibration Experiment* (PICES Sci. Rep. No. 38, 109 pp.) was published in September 2010.

Special CD-ROM/USB

- USB with PICES Scientific Publications from 1993–2010 was published in October 2010 and included in the PICES-2010 registration package.

PICES Press – newsletter

- Two regular issues: Vol. 18, No. 1 (winter 2010) and Vol. 18, No. 2 (summer 2010) were published in February and July 2010, respectively.

Other publications

- Book of Abstracts for 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);
- Announcement and Book of Abstracts for PICES-2010 (October 22–31, 2010, Portland, U.S.A.);
- Announcement and Poster for the 2011 Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (March 14–18, Pucón, Chile)
- Announcement for the 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.);
- Poster for PICES-2011 (October 14–22, 2011, Khabarovsk, Russia).

Appendix 4 Relations with international scientific organizations and programs

Asia-Pacific Fishery Commission (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 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.

Ecosystem Studies of Sub-Arctic Seas (ESSAS)

- PICES and ESSAS, a regional program initiated by GLOBEC in 2005 and moved under IMBER since 2009, share the goal of developing comparative studies of the sub-arctic seas and understanding how climate variability affects their productivity and ability to support sustainable commercial and subsistence harvests.
- PICES and ESSAS have organized a series of joint workshops on “*Marine ecosystem model inter-comparisons*” convened in conjunction with PICES Annual Meetings since PICES-2008.
- PICES agreed to provide organizational support for the ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*” to be held May 22–26, 2011, in Seattle, U.S.A. This support includes: maintaining the OSM website, handling on-line registration and abstract submission, compiling the book of abstracts, and arranging the logistics for the venue.
- PICES/ICES Working Group on *Climate Change Impacts on Fish and Shellfish* will convene a workshop on “*Biological consequences of a decrease in sea ice in Arctic and Sub-Arctic seas*” at the 2011 ESSAS OSM.

Exxon Valdez Oil Spill Trustee Council (EVOSTC)

- EVOSTC joined a funding consortium to support the North Pacific Continuous Plankton Recorder (NP CPR) survey 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 interannual variability in the herring’s forage base from the Gulf of Alaska*”), with the amount of \$56,800 US for 2010.

Food and Agriculture Organization of UN (FAO)

- FAO became a major international sponsors (with PICES and ICES) for the symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (April 25–29, 2010, Sendai, Japan).

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*” and published

in June 2008 (Vol. 77, Nos. 2–3, pp. 83–268; Guest Editors: H. Batchelder and S. Kim) (April 19–21, 2006, Honolulu, U.S.A.) is also considered as a part of GLOBEC synthesis effort.

- The PICES/ICES/GLOBEC special issue of *Deep-Sea Research II* on krill biology and ecology dedicated to Edward Brinton based on selected papers from the 4th Zooplankton Production Symposium (Guest Editors: S. Kawaguchi and W. Peterson) was published in April 2010 (Vol. 57, Is. 7-8, pp. 493-692).

Global Ocean Observing System (GOOS)

- PICES as one of the endorsing organizations had a representative (Dr. Jack Barth, MONITOR member) to serve on the Program Committee for the OceanObs'09 Conference. Dr. David Checkley represents PICES on a post-conference Integrated Framework for Sustained Ocean Observations Task Team charged with formulating recommendations on a future framework for planning and moving forward an enhanced global sustained ocean observing system over the next decade.

International Council for the Exploration of the Sea (ICES)

- PICES and ICES served as major international sponsors (with FAO) for the symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (April 25–29, 2010, Sendai, Japan).
- The joint Theme Session on “*Responses to climate variability: comparison of northern hemisphere marine ecosystems*” was held at the 2010 ICES Annual Science Conference (September 20–24, 2010, Nantes, France), and two joint Topic Sessions on “*Impact of climate variability on marine ecosystems: Understanding functional responses to facilitate forecasting*” and “*Development and use of ocean observing and forecasting systems in coastal and marine management*” were convened at PICES-2010.
- PICES and ICES are working together to organize the 5th Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (March 14–18, 2011, Pucón, Chile) the second PICES/ICES Early Career Scientists Conference on “*Oceans of change*” (April 2012, Balearic Islands, Spain) and the 2nd International Symposium on “*Effects of climate change on the world's oceans*” to be held in conjunction with the Ocean Expo-2012 (May 2012, Yeosu, Korea).
- PICES and ICES are 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 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.).
- In 2008, PICES and ICES established a joint Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish*. This Working Group held three meetings during 2010: immediately after the PICES/ICES/FAO on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” in April, at the 2010 ICES Annual Science Conference (ASC) in September, and at PICES-2010 in October.
- In 2009, Council approved in principle a joint PICES/ICES 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. In 2010, the Secretariat and Science Board worked with ICES to finalize the terms of reference, membership and timelines for the group. The first meeting of the Study Group was held at 2010 ICES ASC.
- The PICES/ICES/GLOBEC special issue of *Deep-Sea Research II* on krill biology and ecology dedicated to Edward Brinton based on selected papers from the 4th Zooplankton Production Symposium (Guest Editors: S. Kawaguchi and W. Peterson) was published in April 2010 (Vol. 57, Is. 7-8, pp. 493-692).
- PICES was represented as an observer at the meeting of the ICES GOOS Working Group held April 20–21, 2010, in Woods Hole, U.S.A.

Integrated Marine Biogeochemistry and Eco-system Research (IMBER)

- Issues of marine biogeochemistry and food webs are important components of the new integrative science program of PICES on “*Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Ecosystems*” (FUTURE). FUTURE was invited to become a Contributing Project to IMBER (to be discussed at PICES-2010).
- IMBER co-sponsored (by supporting an additional invited speaker) the Topic Session on “*Anthropogenic forcing in North Pacific coastal ecosystems: Understanding changes in ecosystem structure and function*” at PICES-2010 (Portland, U.S.A.).

GC-2010

- PICES co-sponsored the IMBER-led Summer School on “*ClimECO2: Oceans, Marine ecosystems, and society facing climate change - A multidisciplinary approach*” (August 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.
- PICES co-sponsored the 2010 IMBER IMBIZO Conference on “*Integrating biogeochemistry and ecosystems in a changing ocean: Regional comparisons*” (October 2010, Crete, Greece) by providing travel support for 3 invited speakers from the North Pacific.
- IMBER agreed to co-sponsor the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” to be held in May 2012, in conjunction with the Ocean Expo-2012 in Yeosu, Korea.

Intergovernmental Oceanographic Commission of UNESCO (IOC)

- IOC provided financial support (\$7,500 US) for the 2010 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).
- 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 in May 2012 in conjunction with the Ocean Expo-2012 in Yeosu, Korea.
- In June 2005, IOC and PICES signed a formal agreement to establish a partnership in systematically compiling, storing and presenting on-line, records on harmful algal events. Event records are compiled and stored annually in the format specified in the **Harmful Algal Event Database (HAE-DAT)** hosted by IOC. The HAE-DAT partnership is open to other appropriate and complementary regional organizations so as to achieve global coverage. 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 work 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.

North Pacific Anadromous Fish Commission (NPAFC)

- 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 2010, Sendai, Japan) and convened a workshop on “*Salmon workshop on climate change*” in conjunction with the symposium.
- NPAFC contributed to the second PICES North Pacific Ecosystem Report by reporting on the status of salmon in the North Pacific.

North Pacific Research Board (NPRB)

- NPRB joined a funding 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 (from June 1, 2009 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), 2011 Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (\$4,000 US) and 2011 ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ecosystems: Progress in observation and prediction*” (\$30,000 US).
- Ms. Nora Deans (Communication and Outreach Director of NPRB) will give a presentation on various approaches used by NPRB in their successful outreach and engagement activities at the meeting of the FUTURE Advisory Panel on *Status, Outlooks, Forecasts, and Engagement* (SOFE-AP) and at the joint meeting of all FUTURE Advisory Panels.

Scientific Committee on Oceanic Research (SCOR)

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

- PICES was represented by Dr. George Boehlert, U.S. national delegate, at the SCOR-led conference to discuss a global capacity building strategy in the ocean sciences (August 16–18, 2010, in Bremen, Germany).
- SCOR continues to provide travel support for scientists from countries with “economies in transition” to attend SCOR-relevant sessions/workshops at PICES Annual Meetings and international symposia co-organized by PICES. In 2010, \$5,000 US from the SCOR/NSF fund were allocated for each of the following two events: PICES/ICES/FAO symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (April 2010, Sendai, Japan) and PICES-2010 (October 2010, Portland, U.S.A.).
- Terms of reference for PICES Working Group 22 on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* include compiling and synthesizing available iron biogeochemistry data in the North Pacific, and data sets of iron and related parameters in the North Pacific will be included in the WG 22 final report to be published in 2011. These activities are closely linked to the mandate of SCOR WG 131 on *The Legacy of in situ Iron Enrichment: Data Compilation and Modeling* to develop a database for open access of the completed iron-enrichment experiments.
- PICES strongly supported the establishment of SCOR WG 137 on *Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time-Series Observations*, and agreed to finance an associate member from the North Pacific (Dr. Sinjae Yoo, KORDI, Korea).

Surface Ocean-Lower Atmosphere Study (SOLAS)

- The main research area for collaboration between PICES and SOLAS has been the impact of iron on biogeochemistry and marine ecosystems. PICES, through its Advisory Panel on the *Iron Fertilization Experiment in the Subarctic Pacific Ocean* (IFEP-AP; 1999–2007), and now through Working Group on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (WG-22; 2007–present), has long been acting as a regional coordinator for these activities. Terms of reference for WG 22 are closely linked with those of SOLAS Implementation Group 1 on *Biogeochemical Interactions and Feedbacks between Ocean and Atmosphere*.
- A set of 19 papers resulting from the Second Subarctic Pacific Iron Experiment for Ecosystem Dynamics Study (SEEDS-II; 2004) developed under the umbrella of IFEP-AP and SOLAS-Japan was published as a special issue of *Deep-Sea Research II* (Guest editors: M. Uematsu, M. Wells, A. Tsuda and H. Saito) in December 2009 (Vol. 56, No. 26, pp. 2731–2957).
- SOLAS co-sponsored (by supporting an additional invited speaker) the topic session on “*Understanding the role of iron in regulating biogeochemical cycles and ecosystem structures in the North Pacific Ocean*” at PICES-2010.

GC Endnote 7

The Minutes of the PICES/ICES SG-SP meeting Nantes, France, ICES ASC, September 21, 2010

Attendance

Manuel Barange, Chairman of the ICES Science Committee (SCICOM)

Mark Dickey-Collas (The Netherlands), Chairman of the ICES SCICOM Science Steering Group on *Sustainable Use of Ecosystems* (SSGSUE)

Begoña Santos (Spain), Chairman of the ICES SCICOM Science Study Group on *Science Cooperation* (SSGSC)

William Karp (U.S.A.), Chairman of the ICES SCICOM Science Steering Group on *Ecosystem Surveys Science and Technology* (SSGESST)

Sinjae Yoo, Science PICES Board Chairman-elect

Skip McKinnell, PICES Deputy Executive Secretary

Anne B. Hollowed (U.S.A.), Co-Chairman of the PICES/ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WGFCCIFS)

Suam Kim (Korea), Co-Chairman of the PICES/ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WGFCCIFS)

Jürgen Alheit (Germany), member of the PICES/ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WGFCCIFS)

(This meeting was not planned as a formal SG meeting. As the two PICES members (Drs. Yoo and McKinnell) were attending the ICES ASC, the meeting was called on. Consequently, the other two PICES members (Hiroaki Saito, Thomas Therriault) did not participate, but will be briefed on the progress.)

Agenda

1. *Strategic cooperation: Topics and issues*

Sinjaee Yoo presented information on the PICES second integrative science program FUTURE (*Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems*) to be implemented from 2009 to 2019. The research theme of FUTURE can be constructed around the following 3 questions:

- What determines an ecosystem's intrinsic resilience and vulnerability to natural and anthropogenic forcing?
- How do ecosystems respond to natural and anthropogenic forcing, and how might they change in the future?
- How do human activities affect coastal ecosystems and how are societies affected by changes in these ecosystems?

Manuel Barange had already presented the ICES Revised Science Plan, which will be implemented from 2009 to 2013, during the ASC. The ICES Science Plan consists of sixteen research topics under three thematic areas:

- Understanding Ecosystem Functioning
- Understanding Interactions of Human Activities with Ecosystems
- Development of Options for Sustainable Use of Ecosystems

The discussion then centred on the identification of synergies and areas where collaboration will be beneficial to help deliver both FUTURE and the ICES Science Plan. Obvious areas where a global perspective of research is needed were:

- Climate change (improving forecasting)
- Ecosystem resilience and vulnerability (a central theme of the European Marine Strategy Framework Directive)

In the first case, progress has already been made towards cooperation by the establishment of a joint Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WGFCCIFS) in 2008.

In the case of ecosystem resilience and vulnerability, both organizations could benefit from joining forces since this topic is not well developed in either, and cooperation will both reduce duplication and improve efficiency. A possible way forward could be the setting up of a Joint Workshop tasked with addressing the meaning of resilience and vulnerability, the mechanisms involved and the design of potential indicators to measure these ecosystem metrics. The earliest opportunity in this direction is a workshop on "*Ecological indicators for ecosystem structure, function, resilience, and vulnerability*" (tentative title) being planned and to be discussed at PICES-2010. If approved, this workshop will take place in conjunction with the inter-sessional PICES Science Board meeting in spring 2011. Some ICES scientists will participate in the workshop. The PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* will also take this opportunity to meet.

Other potential areas of common interests were spatial planning and ocean acidification. There were some discussion on these issues and SG-SP will consider these topics and others in preparing the strategic plan.

2. *Managing joint sessions/workshops at ICES Annual Science Conferences and PICES Annual Meetings*

At present, the participation of PICES scientists in the ICES ASC and joint symposia is being covered by PICES. This is not a common mechanism in ICES (money to cover the travelling costs of ICES participants has been made available on some occasions from sources such as the SI Fund, but normally it is expected to be covered at a national expense). Manuel Barange proposes to discuss with the ICES Council the possibility of creating/identifying a pot of money specific for this purpose as a way forward.

Theme session proposals for the ICES ASC are voted on and decided one year in advance, at the previous September meeting of SCICOM. The PICES Science Board meets 3 weeks after the ASC. This could cause a problem if some of the theme sessions are going to be run in collaboration between both organizations since the decisions will, in principle, be taken by ICES before PICES has had a chance to approve them. It was suggested that a possible solution will be to present the joint theme sessions for PICES consideration at their inter-sessional Science Board meeting in April before the ICES SCICOM meeting in September. Drs. McKinnell and Kellermann were requested to develop a schedule that would allow better planning of jointly convened P/ICES theme/topic sessions at each other's annual meetings.

Joint workshops do not need to go through this process since they can be approved during the year.

3. *Symposia: Update and future plans*

The list of co-sponsored symposia is given in Table 1. There is a good number of symposia being run in collaboration between both organizations and it was felt that no changes were needed in this area. The table also lists two symposia in 2012 (*Forage Fish Interactions and Ecosystem Approach to Fisheries Management* and *Early Career Scientist Conference "Oceans of Change"*) where a final decision about co-sponsorship has not yet been reached.

4. *Roadmap for the joint P/ICES SG*

The joint PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* (SG-SP), as presently structured, is due to produce a final report by August 2011. It was felt that its ToRs would be better served if the life span of this Study Group was extended, due to the importance and long-term nature of the framework for cooperation between ICES and PICES.

If the life span of the SG-SP is to be extended, it was discussed that members could meet each year, alternately at the ICES Annual Conference or at the PICES Annual Meeting.

5. *AOB*

The issue of a joint ICES/PICES training programme was raised but not discussed further during the meeting due to a lack of time. No other items of business were raised during the meeting

GC Endnote 8

Financial and progress reports for Year 3 (completed on March 31, 2010) of the PICES/MAFF project on "Development of the prevention systems for harmful organisms' expansion in the Pacific Rim"

PICES/MAFF PROJECT FINANCIAL REPORT FOR YEAR 3

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 PICES project entitled "*Development of the prevention systems for harmful organisms' expansion in the Pacific Rim*". The anticipated duration of the project is 5 years (from April 1, 2007 to March 31, 2012), and its goals are to develop international systems to collect, exchange and store relevant data, and to foster partnerships with non-PICES member countries and related international organizations. The contribution is from the Official Development Assistance (ODA) fund, and involvement of developing Pacific Rim countries is required in activities under this project.

The Japanese Trust Fund was announced in April 2007, at the inter-sessional Governing Council meeting in Yokohama, Japan. The following organizational principles, agreed by MAFF/JFA and PICES, apply to the project:

- The project has two distinct components, one on marine/estuarine non-indigenous species (NIS) 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 the previous MEQ Chairman, Dr. Glen Jamieson, to continue serving as the Project Scientific Coordinator and to be responsible for reporting annually on the progress of the scientific implementation of the project.]
- 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 scientific progress report for *Year 3* will be 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 is responsible for the management of the fund and for reporting annually on its disposition to PICES Governing Council and JFA, within 120 days after the close of each project year ending March 31.

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

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

- Miscellaneous

This category covers minor expenses associated with the project (mail and phone charges, bank charges, etc.) and includes contingencies such as fluctuations in currency exchange rates.

PROJECT BANK ACCOUNT AND PAYMENT HISTORY

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

Bank name: TD Canada Trust

Bank number: 004

SWIFT Code: TDOMCATTOR

Branch name: Sidney

Branch number: 00721

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

Account number: 07210 004 8479 5209963

Account holder: North Pacific Marine Science Organization (PICES)

Funds for the first year of the project (completed by March 31, 2008) in the amount of \$184,980 were transferred to the PICES/MAFF bank account on July 27, 2007. The financial report and the progress report and for *Year 1* were submitted to JFA on July 23 and July 19, 2008, respectively.

Funds for the second year of the project (completed by 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 the third year of the project (completed by March 31, 2010) in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 15, 2009. The financial report and the progress report for *Year 3* are due to July 31, 2010.

BUDGET EXECUTION FOR FISCAL *YEAR 3*

The budget allocated for *Year 3* was \$187,505. The second year of the project ended up with a surplus of \$3,489. JFA had no objections to PICES' suggestion of using the surplus to support the HAB training program held in Guatemala. The initially proposed budget breakdown and final allocations (with the *Year 2* surplus) is shown in Table 1. This table also includes actual expenses and remaining (or overspent) funds for each of the budget categories, and the project account balance as of March 31, 2010. There is a surplus of \$13,337 at the fiscal year end. Table 2 provides more details on actual expenses of the major categories.

Table 1 Allocations and expenses for *Year 3*.

Category	Initial Allocations	Final Allocations	Actual Expenses	Remainder
Travel & meetings	80,000	83,489	67,580	15,909
Contracts	54,000	54,000	57,856	(3,856)
Equipment	28,000	28,000	27,991	9
Miscellaneous	1,130	1,130	64	1,066
Overhead	24,375	24,375	24,375	-
Total	187,505	190,994	177,866	13,128
Interest earned				209
Account Balance				13,337

Table 2 Breakdown of expenses for various budget categories for *Year 3*.

Category/Activity	Expenses
Travel & meetings	67,580
Travel of PICES experts to Guatemala for preparing the PICES/MAFF HAB training program (September 2009)	9,323
PICES/MAFF HAB training classes in Guatemala (February and April 2010) and follow-up	21,273
Participation of PICES experts in conferences and workshops focused on seafood safety in developing nations to promote the PICES/MAFF HAB project and discuss training program/class strategy with other international partners (IOC/WESTPAC Workshop on “ <i>Marine Invasive Species and Management in the Western Pacific Region</i> ” in June 2009 (Bangkok, Thailand), GEOHAB Open Science Meeting on “ <i>HABs and Eutrophication</i> ” in October 2009 (Beijing, PR China), PICES Annual Meeting in October 2009 (Jeju, Korea))	5,777
Second PICES/MAFF Rapid Assessment Survey held in conjunction with the PICES Annual Meeting (Jeju, Korea, October 2009)	10,454
Travel of PICES experts for preparing the Third PICES/MAFF Rapid Assessment Survey (Newport, U.S.A.) to be held in conjunction with the PICES Annual Meeting (Portland, U.S.A., October 2010)	5,385
Participation of PICES experts and early career scientists in the Sixth International Conference on “ <i>Marine Bioinvasions</i> ” (August 2009, Portland, OR, U.S.A.)	15,368
Contracts	57,856
To modify the PICES NISIS database and manual by including (1) a bulk data import utility; (2) functionality for searching, extracting and exporting summarized data on NIS distributions; (3) ability of adding pictures and pdf files associated with NIS for taxonomic identification (Ms. Deborah Reusser, U.S. Geological Survey)	26,195
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)	5,411
To provide assistance to project Coordinators and sub-project Principle Investigators (Ms. Rosalie Rutka, Stranby Technical Services)	26,250
Equipment	27,991
Equipment and materials for a HAB training program in developing countries	27,558
Shipping of equipment to member countries for a NIS survey	433
Overhead	24,375
Miscellaneous (bank and mail charges)	64

RECOMMENDATION ON THE USE OF YEAR 3 SURPLUS

The *Year 3* surplus of \$13,337 was mainly due to unexpected substantial support provided by host counties for two major events of that year, the second PICES rapid assessment survey in Korea and the HAB training program in Guatemala. It is recommended that these funds be used for future rapid assessment surveys and 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, 2009, was assessed during the regular PICES audit for *FY 2009*. The financial statements were submitted to the auditor on March 30, 2010, and the Auditor's Report was completed on May 12. In the auditor's opinion, the financial statements are an accurate representation of the financial position of the Organization as of December 31, 2008, 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 3* of the MAFF project (January 1 to March 31, 2010) will be evaluated during the regular PICES audit for *FY 2010*.

PICES/MAFF PROJECT SCIENTIFIC PROGRESS REPORT FOR YEAR 3

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 PICES project entitled "*Development of the prevention systems for harmful organisms' expansion in the Pacific Rim*". The anticipated duration of the project is 5 years (from April 1, 2007 to March 31, 2012), and its goals are to develop international systems to collect, exchange and store relevant data, and to foster partnerships with non-PICES member countries and related international organizations. The contribution is from the Official Development Assistance (ODA) fund, and involvement of developing Pacific Rim countries is required in activities under this project.

The Japanese Trust Fund was announced in April 2007, at the inter-sessional Governing Council meeting in Yokohama, Japan. The following organizational principles, agreed by MAFF/JFA and PICES, apply to the project:

- The project has two distinct components, one on marine/estuarine non-indigenous species (NIS) 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@dfm-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 the previous MEQ Chairman, Dr. Glen Jamieson, to continue serving as the Project Scientific Coordinator and to be responsible for reporting annually on the progress of the scientific implementation of the project.]
- 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.

This report includes summaries of the activities carried out for *Year 3* (ended on March 31, 2010) and workplans for *Year 4* (to be completed by March 31, 2011) for both sub-projects. The financial report for *Year 3* is being submitted by the PICES Executive Secretary as a separate document.

Marine/Estuarine Non-Indigenous Species (NIS sub-project)

There are two initiatives within the NIS sub-project:

- *Database Initiative*: Development of a database of marine/estuarine species to be used to capture information on non-native species and to allow sharing of this information, not only among PICES member countries, but more broadly with any community studying non-indigenous species. Dr. Henry Lee II (U.S. Environmental and Protection Agency, U.S.A., E-mail: lee.henry@epa.gov) serves as the Principle Investigator for this initiative.
- *Taxonomy Initiative*: Development of a taxonomic system to allow identification and documentation of non-indigenous species establishment outside of their native range. Dr. Thomas Therriault (Fisheries and Oceans Canada, E-mail: Thomas.Therriault@dfo-mpo.gc.ca) serves as the Principle Investigator for this initiative.

Database Initiative

The main objectives under the *Database Initiative* are to:

- a. Develop and populate a database of marine/estuarine species that can be queried for distributional, ecological, and physiological data at different taxonomic levels and spatial distributions;
- b. Couple natural history with species' spatial distributions to better understand potential risks.

A comprehensive database, named PICES NISIS database, is being developed based on the United States Environmental Protection Agency (EPA) and the United States Geological Survey (USGS) "Pacific Coast Ecosystem Information System" (PCEIS) spatial database. In *Year 1*, a prototype database was developed and tested for a pilot non-indigenous taxon (bivalves) by all PICES member countries in order to identify potential limitations and agree on standards, data elements and data entry templates. In *Year 2*, a revised working version of the database was distributed for testing and population by all PICES member countries.

Specific activities under the *Database Initiative* in *Year 3* are as follows:

- Version 1 of the PICES NISIS database with information as supplied by member countries was completed and distributed to all member countries at the 2009 PICES Annual Meeting (October 2009, Jeju, Korea).
- The PICES NISIS manual was updated and distributed with the latest version of the database.
- Data from the first PICES rapid assessment survey conducted in October 2008 (Dalian, PR China) was incorporated into the database.
- A bulk data import utility called the "BitBot" was developed to support easier integration of species location information from "comma-delimited" files, databases and excel spreadsheets.
- Functionality for searching, extracting and exporting summarized data on NIS distributions was added to the database.
- The ability of adding pictures and pdf files associated with NIS for taxonomic identification purposes was added to the database.
- Taxonomic conflicts of NIS in the database are in the process of being resolved by taxonomic experts.
- Collection and standardization of NIS data from Pacific Rim countries were initiated.
- Some progress was made on summarizing the situation on bioinvasions in the North Pacific based on information submitted by WG 21 members. This information is being entered into the database, and the database is being enhanced to generate an atlas-format pdf with distribution and life history information on all species that are classified non-indigenous somewhere in the North Pacific. This task is scheduled for completion by October 2010.

A *Database Initiative* workplan for *Year 4* includes the following activities:

- Complete the final version of the PICES NISIS database by November 2010 (no additional funds are requested for database development);
- Revise the PICES NISIS database manual to include all updates to the database;
- Continue collection, standardization and entry of NIS data by PICES member countries, including data from PICES rapid assessment and collector surveys;

- Publish on a CD-ROM and on the PICES website a *Species Atlas* summarizing the situation on bioinvasions in the North Pacific with distribution and life history information extracted from the PICES NISIS database.

Taxonomy Initiative

The main objectives under the *Taxonomy Initiative* are to:

- a. Identify taxonomic needs in PICES member countries;
- b. Conduct rapid assessment surveys (in both inter-tidal and sub-tidal environments) in conjunction with PICES Annual Meetings, using taxonomic experts and students from the host country, supplemented by international experts as needed, and enter georeferenced data into the PICES NISIS database;
- c. Conduct collector surveys for biofouling organisms in PICES member countries or other Pacific Rim countries by using standardized methodology with assistance of taxonomic experts within the survey country, supplemented by international experts as needed, and enter georeferenced data into the PICES NISIS database;
- d. Develop taxonomic information system/tools.

Specific activities under the *Taxonomy Initiative* in Year 3 are as follows:

- The second PICES rapid assessment survey was conducted in conjunction with the 2009 PICES Annual Meeting to identify and document both native and non-indigenous species at four port locations (Busan, Ulsan, Masan, and Jungmok) in Korea. Samples were collected by scientists and technicians from the host country, and processed by a group of Korean and international taxonomic experts immediately prior to the Annual Meeting (October 19-22, 2009) at the Jeju Biodiversity Institute. In addition, visual surveys and trapping were conducted in Jeju Port, and intertidal samples were collected at the UNESCO Seongsan Ilchulbong (Sunrise Peak) Heritage site. Tremendous support was provided by the local hosts, especially Drs. Kyoung-Soon Shin and Jung-Hoon Kang (KORDI).
- At least 386 species were identified from all samples (though some organisms could not be identified to species). At least 7 non-indigenous species were positively identified, including a barnacle (*Balanus eburneus*), the bivalve *Mytilus galloprovincialis*, 4 amphipods and a polychaete. Several cryptogenic amphipods were also detected. The invasion status of many species is currently under resolution.
- Sub-tidal collectors for biofouling organisms were prepared and shipped by Dr. Therriault to each PICES member country for deployment during the summer of 2009. Collectors were deployed by Canada, China, Japan and Korea. Initial sample processing was done by the collecting country and discussed at the WG 21 meeting during the 2009 PICES Annual Meeting. In Japan, the survey was built upon one conducted last year when efforts focused on Tokyo Bay. In 2009, collectors were deployed at several locations around Osaka Bay (data analysis is underway, forming the basis of a graduate thesis for a student at Kobe University). To characterize fouling communities in 2009, Canada deployed collectors at two sites and re-confirmed the presence of a number of non-indigenous species, especially tunicates.
- Plans were developed and logistical details were coordinated for the third rapid assessment survey in conjunction with the 2010 PICES Annual Meeting to be held in Portland, Oregon, U.S.A. The survey will be conducted at two port locations: Coos Bay (collectors) and Yuquina Bay (collectors and field collections). Collectors will be deployed by scientists and technicians from the host country during the summer of 2010, and samples will be processed by a group of U.S. and international experts in October 2010, immediately prior to the PICES Annual Meeting, using the Hatfield Marine Science Center (Newport, Oregon) as a technical base. In addition, selected taxonomic groups will be targeted this year, which will involve bringing together experts on these groups from both Asia and North America. This will allow significant cross-pollination and provide the opportunity to resolve outstanding taxonomic issues for these selected groups of organisms.
- Planning was initiated and preliminary arrangements for a venue for a Demonstration Workshop on “*Methodology for rapid assessment and collector surveys*” for developing countries to be held in Japan in Year 4.

A *Taxonomy Initiative workplan for Year 4* includes the following activities:

- Continue database entry of taxonomic groups, as determined by WG-21, including data from the first (Dalian, PR China, October 2008) and second (Jeju, Korea, October 2009) PICES rapid assessment surveys and completed collector surveys;
- Conduct the third PICES rapid assessment survey prior to the PICES Annual Meeting in October 2010, at two port locations in the United States of America: Coos Bay (collectors) and Yuquina Bay (collectors and field collections);
- Start preparations for the fourth rapid assessment survey to be conducted in Russia immediately prior to the PICES Annual Meeting in October 2011;
- Evaluate the potential of additional collector deployments in 2010 or 2011 (additional collectors, if needed, will be shipped early in *Year 4*);
- Finalize and conduct a Demonstration Workshop on “Methodology for *rapid assessment and collector surveys*” for developing countries planned for mid-July 2010 in Japan (at ‘Marine Site’, Kobe University Research Center for Inland Seas, Awaji Island, Hyogo Prefecture);
- Initiate consultations with researchers responsible for NIS monitoring in developing Pacific Rim countries, especially with respect to the adoption of the rapid assessment survey and/or collector survey protocols;
- Continue to identify taxonomic gaps for PICES member countries and explore options to fill these gaps using the PICES NISIS database developed under the *Database Initiative*, including NIS from other regions (e.g., Atlantic, Southern Pacific).

In summary, for the *NIS sub-project* all deliverables for *Year 3* are on target and completed as scheduled.

Harmful Algal Blooms (HAB sub-project)

The HAB sub-project focuses on preparing and teaching country-specific training courses most needed to ensure seafood safety in the Pacific countries outside the PICES region, *i.e.* in Southeast Asia and in Central/South America. Dr. Vera Trainer (Northwest Fisheries Science Center, U.S.A., E-mail: Vera.L.Trainer@noaa.gov) serves as the Principle Investigator for this sub-project,

Specific activities under the *HAB sub-project* in *Year 3* are as follows:

- Surveying the Pacific community and selection of Guatemala for the HAB training program: The community research partnership approach to seafood safety training, adopted by the HAB sub-project has been expanded to Guatemala. The choice of Guatemala as a country fulfilling the project guidelines was determined through assessment of a response from Dr. Leonel Carrillo Ovalle, (Center for Marine Studies and Aquaculture (CEMA) at the University of San Carlos, Guatemala) to a questionnaire distributed via the IOC (Intergovernmental Oceanographic Commission of UNESCO) network, and conversations with Drs. Leonardo Guzman, Chairman of IPHAB (IOC International Panel on Harmful Algal Blooms) and member of HAB-FANSA (IOC HAB Working Group for South America) and José Luis Peña Manjarrez, Chairman of ANCA (IOC HAB Working Group for Central America and Caribbean) at the IPHAB Conference (April 22–25, 2009, Paris). Based on our discussions with these individuals representing Central America and South America, Guatemala was assessed as a country with a strong need for a HAB training program and a suitable infra-structure for success. Guatemala was a perfect match to the criteria used for country selection in the project, such as (1) the magnitude of the HAB problem, (2) the need for training, and (3) the likelihood of sustainability.

The sustainable model for the implementation of the PICES-led initiative in Guatemala included:

- *Initiation and implementation at the community level:* Dr. Carrillo Ovalle, our primary in-country contact, has developed strong partnerships with all the institutions responsible for management of red tides, known as “marea roja” in Guatemala.
- *Engagement of participants in cross-disciplinary research and management groups:* Through cross-fertilization, individuals can gain a balanced perspective on both the value of the project and of their own contribution.

- *Building partnerships for extended interactions and commitments:* Continued education and knowledge transfer are essential for proper capacity building, and our communications with Dr. Carrillo Ovalle will persist through monthly Skype calls to assist with data interpretation and to assess further needs.
- Development of training program in Guatemala:

An initial visit to Guatemala took place in September 2009. During this visit, PICES scientists involved in developing course content had discussions with personnel at several institutions:

 - University of San Carlos (USAC): Dr. Leonel Carrillo Ovalle, Professor-Investigator at the Center for Marine Studies and Aquaculture (CEMA) at USAC and a representative of Guatemala and a country focal point at IOC;
 - National Institute for Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH), the organization responsible for emergency response to natural disasters (earthquake, volcanoes, harmful algal blooms, *etc.*) in Guatemala: Engineer Eddy Sanchez, Director of INSIVUMEH and President of the National Commission on Red Tides, and Engineer Mario Bautista, General Deputy Director of INSIVUMEH;
 - Fisheries and Aquaculture Management Unit (UNIPESCA): Mr. Manuel Cabrera (Director), Mr. Manuel de Jesus Ixquiac (Coordinator), Mr. Ruben Bran Lopez (seafood safety inspector responsible for, monitoring of biotoxins), and Mr. Vinicio Juarez (GIS specialist responsible for the mouse bioassays);
 - Naval Academy: Head of Academy, and Captains A. Porras and L. Veliz. There is a letter of understanding between the Naval Academy and CEMA that allows for cooperation in training and resource use (*i.e.*, small boats used for sampling);
 - Universidad Del Valle (private university in Guatemala City): Dr. Lucia Gutierrez.

The site visit confirmed that the close collaboration of university scientists with peers in industry and government management groups form the basis for a strong project in Guatemala and that the greatest need for training included:

- screening methods for toxin detection for paralytic shellfish poisoning (PSP) toxins;
 - a review of phytoplankton identification, with specific focus on harmful species in Guatemala;
 - instructions in basic concepts in oceanography as there is no oceanography program in Guatemala.
- Training classes in Guatemala:

The training program in Guatemala included two training classes held from February 15–19, 2010, at the USAC in Guatemala City, and at the Naval Academy in San Jose on the Pacific coast of Guatemala near the border to El Salvador.

 - There were 31 participants at the 4-day intensive course at USAC: 25 CEMA/USAC students, 4 inspectors from UNIPESCA and 2 members of the National Health Laboratory (LNS-Laboratorio Nacional de Salud).
 - There were also a total of 15 participants during the 2.5-day training at the Naval Academy, including the Pacific Coast Guard Commander, 2 Caribbean Command members, 4 Pacific Command members, 4 UNIPESCA inspectors, 3 members of the Quetzal Port Authority, the lab manager for Acumaya shrimp farm and 2 agronomists.
 - Both classes included training on screening methods for toxin detection, phytoplankton identification and basics in oceanography. The quality of teaching and the students' understanding of concepts were assessed through impromptu quizzes and a final exam. A notebook was provided to all participants that included an agenda, a summary of HAB syndromes in humans, a phytoplankton key, individual micrographs of HAB species of concern in Guatemala, and handouts on toxin detection methods, including the Jellett PSP test and ELISA (Abraxis shipboard Enzyme-Linked Immunosorbent Assay). Reference materials for the classes were provided by Dr. Yasukatsu Oshima (Kitasato University, Japan).
 - Over the next year, Jellett PSP rapid tests and ELISA will be evaluated by LNS. A combination of techniques will be used to assess the accuracy of toxin screening methods. Chemical methods (HPLC and LC/MS) will provide structural confirmation of toxins present in samples tested by biologically-based methods (ELISA, Jellett and the standard mouse bioassay). A Memorandum of Understanding will be possibly implemented to clarify project goals and to assure steady progress. Monthly Skype

calls with our CEMA colleagues will allow PICES scientists to provide advice on data analysis and interpretation.

HAB sub-project Workplan for Year 4 includes the following activities:

- Expand influence of the PICES HAB project by participating in conferences and workshops focused on seafood safety in developing nations and by discussing training course/class strategy with other international partners:
 - The protocols and teaching strategies for monitoring development and effective use of the demonstration equipment (purchased in *Years 1–3*) will be discussed at upcoming conferences, including the GEOHAB Open Science Meeting (OSM) on “*Harmful Algal Blooms in Benthic Systems*” (especially at the training workshop on “*Taxonomy challenges and identification of benthic dinoflagellates*”) in June 2010 (Honolulu, U.S.A.), and the PICES Annual Meeting in October 2010 (Portland, Oregon, U.S.A.). Ideology of the PICES HAB project complements the intensive cell-based monitoring approach by GEOHAB. The advice of OSM organizers and attendees will help in identifying the next nation that will benefit from a joint toxin- and toxic cell-monitoring program that distinguishes PICES HAB training classes.
 - Articles will be prepared for the spring 2010 issue of IOC Harmful Algal News and the summer 2010 issue of PICES Press that document the distinctive strategy of the PICES HAB project.
- Continue to survey the Pacific community to establish need(s) for the HAB training program, and types of training most needed to ensure seafood safety:

The need for a HAB training program in Pacific developing countries was assessed in a questionnaire sent through the IOC network to a number of WESTPAC (IOC Regional Secretariat for Study of the Western Pacific), IOCARIBE (IOC Sub-Commission on the Caribbean and Adjacent Regions) and ANCA (IOC Sub-Commission in Central and South American) countries (*Years 1-3*). Through IOC involvement, we plan to continue gaining formal support of key national and local regional officials, especially in the Southeast Pacific Island community, and to improve our understanding of the regional operational structure and laboratory facilities in countries suitable for hosting training classes under this project.
- Follow-up on the 2009 and 2010 PICES HAB training classes:
 - The first PICES training class was held in January 2009, in Manila, the Philippines. Monthly SKYPE communications have been underway since March 2009, which allow assessment of the progress made. A follow up visit to the Philippines is planned for October 2010, to review data and to strategize future seafood safety monitoring in this country.
 - Another Guatemala training class will be held in April 2010, to fulfill the specific request of Guatemalan scientists to learn high performance liquid chromatographic (HPLC) and mass spectrometry (MS) methods for the detection of marine toxins. HPLC equipment was donated to USAC by US AID, but is currently not in use. The class will be organized in collaboration with the U.S. Food and Drug Administration, and will be led by their lead HPLC expert, Dr. Alison Robertson. Training will include lectures on the chemistry of marine toxins and the theory of chromatography, and practical laboratory exercises on sample extraction and clean-up for both paralytic shellfish toxins and domoic acid, data analysis and interpretation of HPLC chromatographs, and enzyme-linked immunosorbent assay for paralytic shellfish toxins. The participation of one Guatemala scientist in the training course on approved methods for Paralytic Shellfish Toxin Analysis (June 2010, Seattle, U.S.A.) is planned to complete the HPLC training. This will be combined with a visit to Dr. Trainer’s laboratory at the Northwest Fisheries Science Center.
- Plan logistics and hold the 2011 PICES HAB training class:

The next PICES HAB training class in the Southeast Pacific is tentatively planned for January-February 2011, for the Cook Islands. Again, the need and desire for this training was expressed through the PICES questionnaire circulated by IOC. Course content is under development and will be structured following discussions during the site visit. The focus of this training class will be on monitoring for ciguatoxins and

ciguatoxic cells, a devastating problem to Pacific Island fisheries. In fact, this problem is so severe that certain populations of the Cook Islands are no longer eating fish, a major source of protein to the region. Neighboring countries may be invited to participate in this training.

In summary, *Year 3* for the HAB sub-project involved planning for and conducting a training class in Guatemala; and planning for future training classes. It further developed the framework for training activities.

GC Endnote 9

Report on the performance evaluation of the Executive Secretary for 2009

In accordance with Decision 07/A/7(i) (Appendix 1), the Executive Committee of Council for evaluating the annual performance of the Executive Secretary (hereafter “Committee”) reviewed the 2009 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 2010. 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 2009, and the commitments for 2010, 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 2009

Dr. Bychkov’s commitments in 2009 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;
- e. Coordinating the publication program of the Organization;
- f. Intensifying the cooperation with other organization/programs;
- g. Facilitating the development of the next North Pacific Ecosystem Status Report;
- h. Fund-raising for prioritized activities of the Organization in 2009 and beyond.

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

Evaluation 2009 accomplishments

Executive Secretary, the Chief Executive Officer of the Organization, is important for managing the Organization. 2009 was a pivotal year in PICES’ history, with the initiation of FUTURE, the new integrative science program of the Organization. Dr. Bychkov’s accomplishments on the ongoing commitments (items (a) to (e)) fulfilled our expectations, even though his tasks were not easy.

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 2009 Annual

Meeting (PICES-2009) in Jeju, Korea, was very successful, with almost 500 participants from 18 countries and 30 organizations/programs. PICES also held 14 inter-sessional events in 2009. Logistical and financial arrangements provided by the Secretariat were essential for the success of the Annual Meeting and inter-sessional events. In the activities of the Study Group on *Restructuring the PICES Annual Meeting* (SG-RAM), the Secretariat provided statistical analysis of the practice and structure of the previous Annual Meetings. This analysis was helpful in developing recommendations that will hopefully allow reaching a balance between scientific requests and administrative needs. Dr. Bychkov also guided and supervised well the Secretariat staff, including the PICES interns. In addition, he implemented the publication program of the Organization. His performance was also significant for the additional commitments (items (f) to (h)). In 2009, PICES amended its Rules of Procedure to allow experts from outside of PICES to serve as *ex-officio* members on PICES Technical Committees and subsidiary bodies of PICES Scientific Committees. PICES also established a joint Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* with ICES. In consultation with the Council and Executive Committees, he led these activities. To facilitate the development of the next North Pacific Ecosystem Status Report, he arranged for Dr. Skip McKinnell, Deputy Executive Secretary, to be one of the Co-Editors by adjusting Dr. McKinnell's duties within the Secretariat. Because there are funding constraints due to limitations in increasing the annual contributions, fund-raising continues to be an important component of PICES activities. Dr. Bychkov actively performed in this area in cooperation with the Governing Council and Executive Committees.

Based on his accomplishments in 2009 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 2009

In accordance with practice of the Canadian Public Service system, an executive is eligible for a maximum of 12% performance 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 2009 as "Succeeded+". Because the Committee also considered that his tasks in 2009 were difficult, the Committee decided that a performance pay equal to 12% of his salary would be appropriate for this period.

Setting commitments for 2010

The Committee set Dr. Bychkov's commitments in 2010 as follows. Items (a) to (e) are essential for administration of the Organization in 2010 and correspond to Article 10 of the PICES Rules of Procedure as the responsibility of the Executive Secretary. In addition, cooperation with other organization and programs is quite 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. Administering 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 2010 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.

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

Overall performance is evaluated with the following possible results:

- *Did not meet*
Did not achieve 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
- *Succeeded*
Has fully achieved the 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
- *Surpassed*
Went well beyond performance expectations

If performance is evaluated as “Did not meet”, no performance pay (“at-risk” pay) can be awarded. Otherwise, the candidate is eligible for “at-risk” pay. In addition, if performance is evaluated as “Surpassed”, then the candidate is eligible for a “bonus”.

GC Appendix A

2010 Governing Council decisions

2010/A/1: Auditor

Council accepted the audited accounts for *FY* 2009.

2010/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* 2010, 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.

2010/A/3: Budget and fund-raising

- i. Council accepted the estimated accounts for *FY* 2010.
- ii. Council approved the *FY* 2011 budget of \$814,000. The amount of \$116,800 will be transferred from the Working Capital Fund to balance the budget, setting the total annual contribution at \$697,200, and the 2011 annual fee at \$116,200 per Contracting Party.
- iii. Council approved a transfer from the Working Capital Fund to the Trust Fund to recover the 2010 expenses, and to restore the Trust Fund to the level of \$110,000 by the end of the fiscal year.
- iv. Council approved a transfer from the Working Capital Fund to restore the Relocation and Home Leave Fund to the level of \$100,000 by the end of the fiscal year.
- v. Council approved that funds (\$21,996) under “high priority PICES projects” be earmarked for the development of the PICES integrative science program on “*Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Ecosystems*” (FUTURE).
- vi. 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.
- vii. Council approved that the surplus funds remaining from the 2010 PICES/ICES/FAO symposium on “*Climate change effects on fish and fisheries*” be allocated for the 2012 PICES/ICES Conference for Early Career Scientists.
- viii. Council directed the Executive Secretary to write letters soliciting new members and additional contributions for the consortium to support the North Pacific Continuous Plankton Recorder program.
- ix. Council approved an additional lump sum employer contribution of \$20,000 to the International Fisheries Commission Pension Plan to pay down unfunded liabilities.

2010/A/4: PICES Rules of Procedure

Council approved the proposed amendments to the Rules of Procedure (*Rule 13(iii)(d)* and Rule 17) to more clearly describe the review period and co-chairmanship duration for Sections.

2010/A/5: Future PICES Annual Meetings and 2011 inter-sessional Science Board meeting

- i. Council accepted the proposal from the Russian Federation to host PICES-2011 from October 7–16 or October 14–23, 2011, in Khabarovsk, and agreed to provide \$40,000 to the host country to partially cover meeting costs. The theme of the meeting, “*Mechanisms of marine ecosystem reorganization in the North Pacific Ocean*”, was approved in principle at PICES-2009, and the theme description was finalized at ISB-2010.
- ii. Council accepted the offer of Japan to host PICES-2012 from October 12–21, 2012, in Hiroshima. Council approved in principle the proposed theme of the meeting, “*Scientific challenge to the North Pacific*”.

ecosystem: Understanding and mitigation of the effects of natural and anthropogenic stress”, and instructed Science Board to finalize the theme description at ISB-2011.

- iii. Following the established 6-year rotation cycle, Council requested Canada to explore the possibility of hosting PICES-2013, and inform the Secretariat on this matter by March 31, 2011.
- iv. Council agreed to keep the same registration fee structure for PICES-2011 as for PICES-2010:

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

- v. Council approved a 1½- or 2-day inter-sessional Science Board meeting to be hosted by the United States of America and be held in the spring of 2011, immediately after a 3-day inter-sessional FUTURE workshop on “*Indicators of status and change within North Pacific marine ecosystems*”, and supported extending an invitation to ICES to participate in this workshop and use this opportunity for the PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science (SG-SP)* to meet immediately prior to ISB-2011.

2010/A/6: Intern Program

- i. Considering the current level of the stipend (\$2,000) and funding available for the Intern Program, Council agreed that the 2011/2012 intern, Ms. Jeongim Mok (Marine Policy Division, Ministry of Land, Transport and Maritime Affairs, Republic of Korea), be offered a 6-month term, with possible extension (up to 12 months) if additional funding become available.
- ii. Council instructed the Executive Secretary to invite Contracting Parties to provide voluntary contributions to the Trust Fund to support the Intern Program in 2011 and beyond.
- iii. Council approved changes in the description of the Intern Program clarifying that the focus of the Program is on the professional development of early career marine scientists and managers from PICES member countries.

2010/A/7: Improvement of participation in PICES activities

- i. Council re-iterated the necessity for Contracting Parties to (1) regularly review their national membership and make changes as appropriate, 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 stating that “*each Contracting Party is requested to notify the Executive Secretary, three weeks in advance, of the names of delegates, alternate delegates, advisors and members, attending each meeting of the Organization*”. 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 regularly preparing and circulating to Contracting Parties information on participation of their scientists in the Annual Meetings for the previous six years.

2010/A/8: Election of Chairman and Vice Chairman

- i. Council unanimously elected Dr. Lev Bocharov (Russia) as the Chairman of PICES for a 2-year term (2010–2012). Accordingly Dr. Tokio Wada (Japan) will serve as the Past-Chairman.
- ii. Council unanimously elected Dr. Laura Richards (Canada) as the Vice-Chairman of PICES for a 2-year term (2010–2012).

2010/A/9: Appointment of F&A Committee Chairman

Council re-appointed Ms. Patricia Livingston (U.S.A.) as the Chairman of the Finance and Administration Committee for a 2-year term (2010–2012).

2010/S/1: PICES Advisory Report to the Cohen Commission

Council authorized the release of the PICES Advisory Report to the Cohen Commission (*Commission of Inquiry into the Decline of Fraser River Sockeye Salmon*) on the decline of Fraser River sockeye salmon in relation to marine ecology. Council endorsed the invitation to provide scientific advice on this issue in June 2010, noting that this request is a clear recognition of PICES' expertise and scientific leadership on issues of climate variability and marine ecology.

2010/S/2: 2011 PICES Annual Meeting

The following scientific sessions are to be convened at PICES-2011:

- 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’*”;
- 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*”;
- 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*”;
- 1-day POC Contributed Paper Session;
- ½-day POC/FIS Topic Session on “*Linking migratory fish behavior to end-to-end models*”;
- 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?*”;
- TCODE E-Poster Session on “*Data and data systems for validation of numerical models*” (linked with the MONITOR/POC/FUTURE Topic Session).

The following workshops are to be convened at PICES-2011:

- 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*” (jointly with NOWPAP);
- 1-day MEQ Workshop on “*Pollutants in a changing ocean: Refining indicator approaches in support of coastal management*”;
- 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*”.

The following business meetings are to be held at PICES-2011:

- ¼-day Science Board (SB) meeting (first Sunday) and 1½-day SB meeting (second Friday and Saturday);
- 1½-hour overture meetings and ½-day meetings of Scientific (BIO, FIS, MEQ and POC) and Technical (MONITOR and TCODE) Committees to be run concurrently;
- 1-day meeting of the POC/BIO Section on *Carbon and Climate (CC-S)*;
- 1-day meeting of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific (HAB-S)*;

- 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 the BIO Working Group on *Comparative Ecology of Krill in Coastal and Oceanic Waters around the Pacific Rim* (WG 23);
- 1-day meeting of the MEQ/FIS Working Group on *Environmental Interactions of Marine Aquaculture* (WG 24);
- 1-day meeting of the PICES-ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WG-FCCIFS);
- 1-day meeting the BIO Working Group on *Jellyfish Blooms around the North Pacific Rim* (WG 26);
- 1-day meeting the POC Working Group on *North Pacific Climate Variability and Change* (WG 27), if this Working Group is approved prior to PICES-2011;
- ½-day meeting the MEQ/BIO Working Group on *Ecosystem Responses to Multiple Stressors* (WG 28), if this Working Group is approved prior to PICES-2011;
- ½-day meeting the SB Study Group on *Human Dimensions for Environmental Change* (SG-HD)
- 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 meetings 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.

2010/S/3: Inter-sessional symposia/sessions/workshops/meetings

The following inter-sessional events are to be convened/co-sponsored in 2011 and beyond:

Symposia

- 5th International Zooplankton Production Symposium on “*Population connections, community dynamics and climate variability*” (primary international sponsors: PICES and ICES), March 14–18, 2011, Pucón, Chile (approved in 2008);
- Second 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*” (organizational support and travel support for early career scientists by PICES), May 22–26, 2011, Seattle, U.S.A. (approved in 2009);
- 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) as one of the official events related to Ocean Expo-2012, May 14–18, 2012, Yeosu, Korea (approved in 2009).

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 Drs. 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 Dr. Paul Spenser (U.S.A.) serving as a PICES co-convenor;
- *Recruitment processes: Early life history dynamics – from eggs to juveniles*, with Dr. Richard Brodeur (U.S.A.) serving as a PICES co-convenor;
- *Surplus production models: Quantitative tools to manage exploited fisheries and compare the productivity of marine ecosystems*, with Drs. Jennifer Boldt and R. Ian Perry (Canada) serving as PICES co-convenors.

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 2011, Honolulu, U.S.A., in conjunction with ISB-2011;
- Meeting of the Study Group on *Updating the PICES Strategic Plan (SG-USP)*, May 1, 2011, Honolulu, U.S.A., in conjunction with ISB-2011;
- ICES/PICES workshop on “*Reaction of northern hemisphere ecosystems to climate events: A comparison*”, May 2–6, 2011, Hamburg, Germany, with Drs. 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 Dr. 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 (WGFCCIFS)*, in conjunction with the 2nd ESSAS Open Science Meeting and the 2011 ICES Annual Science Conference;
- Meeting of the Advisory Panel for a *CREAMS/PICES Program in East Asian Marginal Seas, spring 2011*, Hangzhou, China;
- 45th CMOS (Canadian Meteorological and Oceanographic Society) Congress on “*Ocean, atmosphere and the changing Pacific*”, June 6–9, 2011, Victoria, Canada (co-sponsored by PICES);
- International workshop on “*Development and application of Regional Climate Models*”, October 11–12, 2011, Incheon, Korea, immediately prior to PICES-2011;
- 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.

Capacity development events

- 3rd PICES/MAFF Harmful Algal Bloom training course for the South Pacific Island community, spring 2011, Fiji;
- PICES/MAFF Rapid Assessment Survey Demonstration Workshop for Southeastern Asian countries, late spring or early summer 2011, Bangkok, Thailand;
- 5th SOLAS Summer School (co-sponsored by PICES), August 29–September 10, 2011, Cargèse, Corsica, France;
- NOWPAP/PICES/WESTPAC training course on “*Remote sensing data analysis*”, October 8–12, 2011, Vladivostok, Russia, immediately prior to PICES-2011;
- 2nd ICES/PICES “*Oceans of Change*” Conference for Early Career Scientist, April 2012, Majorca, Spain.

2010/S/4: Travel support

PICES will provide/arrange travel support for:

2011 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;
- Two invited speakers for each of the following workshops: BIO Workshop on “*MEMIP-IV: Quantitative comparison of ecosystem models applied to North Pacific shelf ecosystems--humble pie or glee?*” and POC/MONITOR/TCODE Workshop on “*Recent advances in monitoring and understanding of Asian marginal seas: 5 years of CREAMS/PICES EAST-I Program*”;
- One invited speaker for each of the following workshops: MEQ Workshop on “*Remote sensing techniques for HAB detection and monitoring*” and MEQ Workshop on “*Pollutants in a changing ocean: Refining indicator approaches in support of coastal management*”.

Inter-sessional events

- TCODE representative to attend the 21st Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XXI; March 23–26, 2011, Liege, Belgium);
- Three invited speakers for the FUTURE Workshop on “*Indicators of status and change within North Pacific marine ecosystems*” (April 26–28, 2011, Honolulu, U.S.A.);
- Two PICES convenors for the ICES/PICES workshop on “*Reaction of Northern Hemisphere ecosystems to climate events: A comparison*” (May 2–6, 2011, Hamburg, Germany);
- Two scientists to attend the 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.);
- Two Asian early career scientists to participate in the 2nd ESSAS Open Science Meeting (May 22–26, 2011, Seattle, U.S.A.);
- PICES plenary speaker for the 45th Canadian Meteorological and Oceanographic Society Congress on “*Ocean, atmosphere and the changing Pacific*” (June 6–9, 2011, Victoria, Canada);
- PICES representative to attend the 2011 IOC General Assembly (June 22–30, 2011, Paris, France);
- PICES SSC member and early career scientists to attend the 7th International Conference on Marine Bioinvasions (August 23–25, 2011, Barcelona, Spain);
- Three early career scientists to attend the 5th SOLAS Summer School (August 29–September 10, 2011, Cargèse, Corsica, France);
- PICES representative to attend the 2011 SCOR Executive Committee Meeting (September 12–15, 2011, Helsinki, Finland);
- PICES representative and convenors for the joint sessions on “*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*” to participate in the 2011 ICES Annual Science Conference (September 19–23, 2011, Gdansk, Poland);
- Two invited speakers for the international workshop on “*Development and application of Regional Climate Models*” (October 11–12, 2011, Incheon, Korea);
- Three trainees from the Northwest Pacific region and 1 lecturer for the NOWPAP/PICES/WESTPAC training course on “*Remote sensing data analysis*” (October 8–12, 2011, Vladivostok, Russia);
- PICES representative to attend the 2011 NPAFC Annual Meeting (October 24–28, 2011, Nanaimo, Canada);
- PICES SSC member for the NPAFC-led workshop on “*Production trends of pink and chum salmon: Why they can retain high abundance?*” (October 30–31, 2011, Nanaimo, Canada);
- MONITOR representative to attend the 2011 meeting of the ICES Working Group on *Operational Oceanographic Products for Fisheries and Environment* (dates and venue are unknown) – subject to fund availability;
- MONITOR representative to attend the 2011 meeting of the ICES Working Group on *Oceanic Hydrography* (dates and venue are unknown) – subject to fund availability;
- MONITOR representative to attend the 2011 meeting of the ICES Working Group on *The Northwest Atlantic Regional Sea* (dates and venue are unknown) – subject to fund availability;
- MEQ representative to attend the 2011 meeting of ICES/IOC Working Group on *Harmful Algal Bloom Dynamics* (dates and venue are unknown) – subject to fund availability.

2010/S/5: Publications

The following publications are to be produced in 2011–2012:

Primary journals

- Special section in a regular issue of *Journal of Oceanography* based on selected papers from the PICES-2009 Topic Session on “*Anthropogenic perturbations of the carbon cycle and their impacts in the North Pacific*” (Guest Editors: T. Ono, K. Lee, C. Sabine and T. Saino) to be published in June 2011 (approved in 2009);
- Special issue of *ICES Journal of Marine Science* based on selected papers from the 2010 PICES/ICES/FAO Symposium on “*Forecasting climate change impacts on fish and shellfish: Forecasting impacts,*

assessing ecosystem responses, and evaluating management strategies” (Guest Editors: A. Hollowed, S.-I Ito, S. Kim, H. Loeng and M. Peck) to be published in June 2011, with sufficient time to be considered by review panels responsible for the next assessment report (AR5) of the Intergovernmental Panel on Climate Change (approved in 2009);

- Special issue of *Fisheries Research* 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) to be published in September 2011 (approved in 2009);
- Review paper on “*The decline of Fraser River sockeye salmon in relation to marine ecology*” in *Reviews in Fish Biology and Fisheries* to be published in late 2011 or early 2012 (Lead Author: S. McKinnell);
- 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 late spring or early summer of 2012;
- Special issue of a peer-reviewed journal (*Aquaculture Economics and Management, Aquaculture, Reviews in Aquaculture, or Fishery Research*) based on selected papers from the PICES-2010 Topic Session on “*Economic relation between marine aquaculture and wild capture fisheries*” to be published in 2012.

PICES Scientific Report series

- Final report of the POC Working Group (WG 20) on *Evaluations of Climate Change Projections* (Editors: M. Foreman and Y. Yamanaka);
- Final report of the BIO Working Group (WG 22) on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (Editors: F. Chai and S. Takeda);
- Final report for the Climate Change and Carrying Capacity Program (Editor: H. Batchelder and M. Kishi);
- Interim report of the POC/FIS Working Group (PICES/ICES WGFCCIFS) on *Forecasting Climate Change Impacts on Fish and Shellfish* (Editors: A. Hollowed, M. Barange, S. Kim and H. Loeng).

PICES Press – newsletter

- Two regular issues to be published in winter (Vol. 19, No. 1) and summer (Vol. 19, No. 2) of 2011.

Other publications

- PICES Advisory Report to the Cohen Commission on “*The decline of Fraser River sockeye salmon in relation to marine ecology*” as Cohen Commission Technical Report (Editor: S. McKinnell);
- Review paper from the PICES-2009 workshop on “*Exploring the predictability and mechanisms of Pacific low frequency variability beyond inter-annual time scales*” (Lead Authors: S. Minobe and E. Di Lorenzo);
- 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*” (Coordinators: A. Hollowed, M. Barange, S. Kim and H. Loeng);
- Brochure and slide show based on the final report of the MEQ Working Group (WG 19) on *Ecosystem-based Management Science and its Application to the North Pacific* (PICES Scientific Report, September 2010, No. 37, 166 pp.) – summary for policy makers, managers, commercial stakeholders and other interested members of society;
- Brochure and slide show based on the Second North Pacific Ecosystem Status Report (PICES Special Publication, September 2010, No. 4, 393 pp.) – summary for policy makers, managers, commercial stakeholders and other interested members of society;

2010/S/6: Future of current PICES expert groups

- i. The following two expert groups completed their terms of reference and should be disbanded:
 - POC Working Group on *Evaluations of Climate Change Projections* (WG 20; 2006–2010);
 - BIO Working Group on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (WG 22; 2007–2010).
 Final reports of these expert groups will be published in the PICES Scientific Report series in 2011.

- ii. Following a 5-year review by the parent committees, the lifespan of the POC/BIO Section on *Carbon and Climate* (CC-S) was extended for a 3-year term (until October 2013).
- iii. The lifespan of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific* (HAB-S) was extended for 1 year (until October 2011), with the required review of past activities and future directions by the parent committee at PICES-2011 for a possible continuation.
- iv. The lifespan of the BIO Advisory Panel on *Marine Birds and Mammals* (MBM-AP) was extended for 1 year (until October 2011), with the required review of past activities and future directions by the parent committee at PICES-2011 for a possible continuation.
- v. The life span of the Science Board Study Group on *Human Dimensions for Environmental Change* (SG-HD) was extended for 1 year (until October 2011). The SG-HD draft report has to be presented at the 2011 inter-sessional Science Board meeting and the final report has to be completed by PICES-2011.
- vi. The life span of the Study Group on *Updating the PICES Strategic Plan* (SG-USP) was extended for 6 months (until April 2011). The final report of this group has to be presented at the 2011 SG-USP meeting to be held in conjunction with ISB-2011.

2010/S/7: New PICES expert groups

A Working Group on *Jellyfish Blooms around the North Pacific Rim: Causes and Consequence* (WG 26) was established, under direction of the Biological Oceanography Committee (BIO), with the following terms of reference:

1. Review past and ongoing studies on the reproductive biology of jellyfish species that cause problematic blooms.
2. Compile existing data on temporal variations in jellyfish abundance in the North Pacific and its marginal seas, and analyze them in relation to regional environmental and climate changes in order to identify causes of increasingly recurrent jellyfish blooms.
3. Elucidate the role of jellyfish in coastal and oceanic marine food webs and assess the impacts of jellyfish blooms on marine ecosystems and socio-economies such as fisheries and aquaculture.
4. Evaluate methodologies for predicting blooms and for diminishing their impact on marine and human systems, including bloom forecast modeling and the modification of fishing gears.
5. Promote international collaboration among PICES member countries for exchanging available information on jellyfish, and encourage joint research surveys on jellyfish among PICES member countries.
6. Provide jellyfish metrics as indicator of ecosystem change and resiliency in cooperation with FUTURE AICE-AP and SOFE-AP and FUTURE related expert groups.
7. Publish a final report summarizing the results, including recommendations to policy makers for reducing impacts of jellyfish blooms in the North Pacific.

2010/S/8: Chairmen and Vice-Chairmen for standing committees and *ad hoc* expert groups

The following reflects changes in Chairmanship/Vice-Chairmanship and new appointments for Scientific and Technical Committees and *ad hoc* expert groups:

- Dr. Sinjae Yoo (Korea) became Science Board Chairman to replace Dr. John Stein (U.S.A.);
- Dr. Thomas Therriault (Canada) was elected Science Board Vice-Chairman;
- Dr. Atsushi Tsuda (Japan) was elected BIO Chairman to replace Dr. Michael Dagg (U.S.A.);
- Dr. Michael Dagg (U.S.A.) was elected BIO Vice-Chairman;
- Dr. Kyung-Il Chang (Korea) was elected POC Chairman to replace Dr. Michael Foreman (Canada);
- Dr. Michael Foreman (Canada) was elected POC Vice Chairman to replace Dr. Ichiro Yasuda (Japan);
- Dr. Hiroaya Sugisaki (Japan) was elected MONITOR Chairman for a second 3-year term;
- Dr. Phillip Mundy (U.S.A.) was elected MONITOR Vice-Chairman for a second 3-year term;
- Dr. Toru Suzuki (Japan) was elected TCODE Chairman to replace late Dr. Bernard Megrey (U.S.A.);
- Dr. Hernan Garcia (U.S.A.) was elected TCODE Vice-Chairman to replace Dr. Kyu-Kui Jung (Korea);
- Dr. Changkyu Lee (Korea) was appointed Co-Chairman of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific* to replace Dr. Hak-Gyoon Kim (Korea);

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- Drs. James Christian (Canada) and Toshiro Saino (Japan) were re-appointed as Co-Chairmen of the POC/BIO Section on *Carbon and Climate*;
- Dr. Brett Dumbauld (U.S.A.) was appointed as Co-Chairman of the FIS/MEQ Working Group on *Environmental Interactions of Marine Aquaculture* (WG 24) to replace Dr. Kevin Amos (U.S.A.);
- Drs. Rolf Ream (U.S.A.) and Yutaka Watanuki (Japan) were appointed as Co-Chairmen of the BIO Advisory Panel on *Marine Birds and Mammals* to replace Drs. Hidehiro Kato (Japan) and William Sydeman (U.S.A.);

2010/S/9: Relations with other organizations and programs

Council approved the revised *Standing List of International and Regional Organizations and Programs* developed by Science Board at ISB-2010 and agreed with the identified priorities for interaction in 2010–2011.