

Report of Governing Council

The Governing Council (GC) met from 9:00–16:00 hours on October 20, 2012, and from 13:00–17:00 hours on October 21, under the chairmanship of Dr. Lev Bocharov. All Contracting Parties were represented at the two sessions (*GC Endnote 1*).

AGENDA ITEM 1

Welcome and opening remarks

The Chairman called the meeting to order, welcomed the participants and requested an introduction of members for each national delegation and representatives of PICES. Dr. Bocharov noted changes in the GC membership after the 2011 PICES Annual Meeting (PICES-2011) and welcomed new national delegates, Mr. Lifeng Cui (China), Mr. Yoshiaki Takahashi (Japan), Mr. Yong-Seok Kang (Korea) and Dr. Harold Batchelder (U.S.A.) to the Organization.

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

In accordance with *Rule 1(ii)* of the [PICES Rules of Procedure](#), all Contracting Parties were requested to notify the Executive Secretary, three weeks in advance (by September 28), of the names of delegates, advisors, members and alternates, attending each meeting of the Organization. The Executive Secretary indicated that substantial changes in the composition of some delegations, especially for China and the United States, took place in the last two weeks prior to the Annual Meeting, and asked each Contracting Party to submit corrections to the PICES Secretariat so that Council can examine the final Delegation List at its second session.

AGENDA ITEM 2

Adoption of agenda and meeting procedures

Council reviewed and approved, without modifications, the provisional agenda circulated on September 3, 2012 (*GC Endnote 3*). 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 2012, the Secretariat did not receive proposals from any country to accede to the PICES Convention.

The Executive Secretary indicated that after the PICES Rules of Procedure were amended to allow experts from outside of PICES to serve as *ex-officio* members on PICES Technical Committees and subsidiary bodies of PICES Scientific Committees (Decision 2009/A/5(i)), no interest in *ex-officio* membership was expressed by non-Contracting Parties. Council re-iterated its view expressed at the two previous Annual Meetings that the appropriate approaches to advertise and promote the *ex-officio* membership system and to recruit scientists from other countries to PICES, are scientist-to-scientist communication and bilateral meetings between Contracting and non-Contracting Parties. National delegates were asked to use these approaches as feasible.

The issue was raised on the necessity of an additional amendment to the Rules of Procedure to allow experts from outside of PICES to serve as *ex-officio* members on PICES Scientific Committees. Russia suggested that it would be inappropriate at this stage, and their position was supported by other Contracting Parties.

AGENDA ITEM 4

Report on administration for 2011–2012

The Executive Secretary summarized the activities of the Organization and the Secretariat since PICES-2011. Council reviewed and adopted the report (*GC Endnote 4*).

AGENDA ITEM 5

Relations with relevant international and regional organizations/programs

The Executive Secretary reported that letters of invitation to attend PICES-2012 as observers were sent to 48 organizations and programs selected from the 2011 *Standing List of International and Regional Organizations and Programs* (with some additions), and 34 were present at the meeting (*GC Endnote 5*).

Representatives of these organizations/programs attended meetings of Science Board, Standing Committees and/or their subsidiary bodies. In particular:

- Dr. Yutaka Masuda (Vice-Chairman of IOC) and Dr. Satoru Taguchi (Vice-President of SCOR) attended the Science Board meeting on October 14 to discuss joint activities of their organizations with PICES in 2013 and beyond (details can be found in the annual report of Science Board).
- Dr. Adolf Kellermann (Head of ICES Science Programme) attended the Science Board meeting on October 19 to discuss joint activities of the two organizations and progress made within the [PICES/ICES framework for scientific cooperation](#) endorsed in 2011 (details can be found in the annual report of Science Board).
- Representatives of others organizations/programs expressed their views on potential areas of collaboration with PICES (including specific proposals for 2013 and beyond) at the meetings of Standing Committees and/or their subsidiary bodies, and the meetings of FUTURE Advisory Panels (details can be found in the annual reports of Standing Committees and expert groups).
- Several programs and organizations had posters on display outlining general information about these programs/organizations and highlighting their scientific objectives and recent activities.

The Executive Secretary also provided information on PICES representation at meetings of other programs and organizations since PICES-2011:

- Dr. Toru Suzuki (TCODE Chairman) represented PICES at the meeting of the IODE Study Group for the Ocean Data Portal (February 20–22, 2012, Oostende, Belgium);
- Dr. Phillip Mundy (MONITOR Vice-Chairman) represented PICES at the meeting of the ICES Working Group on the Northwest Atlantic Regional Sea (March 6–8, 2012, Falmouth, MA, U.S.A.);
- Drs. Toru Suzuki and Hernan Garcia (TCODE Vice-Chairman) represented PICES at the meeting of the IODE Group of Experts on Biological and Chemical Data Management and Exchange Practices (March 26–30, 2012, Oostende, Belgium).
- Dr. Mark Wells (S-HAB member) represented PICES at the meeting of ICES-IOC Working Group on Harmful Algal Bloom Dynamics (April 24–27, Oban, UK);
- Drs. Shoshiro Minobe (WG 27 Co-Chairman) and Hiroaki Saito (AP-COVE Chairman) represented PICES at the CLIVAR Pacific Implementation Panel meeting (April 29–May 1, 2012, Noumea, New Caledonia);
- Dr. Alexander Bychkov (PICES Executive Secretary) represented PICES at the 45th session of the IOC-UNESCO Executive Council (June 24–30, 2012, Paris, France) and, as a member of the International Review Committee, at the Yeosu Declaration Forum and Roundtable (August 12, 2012, Yeosu, Korea);
- Dr. Masahide Kaeriyama (AP-AICE member) represented PICES at the 12th meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (July 18–23, 2012, Sapporo, Japan);
- Drs. Skip McKinnell (PICES Deputy Executive Secretary) and Thomas Therriault (Science Board Vice-Chairman) represented PICES at the 2012 SCICOM meeting held in conjunction with the ICES Annual Science Conference (September 16–22, 2012, Bergen, Norway);

- Dr. Takeo Kurihara (WG 21 member) will represent PICES at the 17th Intergovernmental Meeting of the Northwest Pacific Action Plan (November 1–2, 2012, Jeju, Korea).

Council reviewed the progress made in the integration and coordination of PICES activities with other international scientific organizations and programs of regional and global scale, and with regional scientific and monitoring efforts (national and involving several PICES Contracting Parties) in the North Pacific, and re-confirmed its support to the holding of co-sponsored symposia/sessions/workshops/training courses, and to the creation of joint expert groups as directions of actual collaboration (see *GC Endnote 4*, Section V for details). Council also approved the revised *Standing List of International and Regional Organizations and Programs* developed by Science Board and agreed with the identified priorities for interaction in 2012–2013 (*GC Endnote 6*; Decision 2012/S/9). This list will be used, in part, to assist the Executive Secretary and Science Board in decisions regarding sending PICES representatives to meetings of other organizations and programs.

AGENDA ITEM 6

PICES Strategic Plan and Action Plans

At PICES-2011, Council unanimously adopted the [PICES Strategic Plan](#) developed by [SG-USP](#) ((Decision 2011/A/4(i)). The Plan mandates the preparation of 3-year Action Plans by Scientific and Technical Committees, Executive Committees (Finance and Administration Committee and Science Board), and the Secretariat. To monitor performance, the Action Plans have to be reviewed at each Annual Meeting, and revised if necessary.

Dr. Sinjae Yoo (Science Board Chairman) reported that Action Plans of all Scientific and Technical Committees, but MEQ, were presented and reviewed at PICES-2012. It was noted that Action Plans among the Committees lacked a consistency, with some being too detailed and others not detailed enough. It was suggested that a link to FUTURE would allow easier comparability. The Committees were requested to revise their Action Plans and submit them to FUTURE Advisory Panels by the end of January 2013. It is expected that Action Plans are finalized and presented at the 2013 inter-sessional Science Board meeting (ISB-2013).

Council briefly reviewed Action Plans for the Science Board and Finance and Administration Committee, and suggested no changes to these documents.

AGENDA ITEM 7

Yeosu Declaration and Yeosu Project

The Executive Secretary reminded that the [Ocean Expo-2012](#) was held from May 12 to August 12, 2012, in Yeosu, Korea, under the theme “*The Living Ocean and Coast*”. PICES was a major international sponsor, jointly with ICES and IOC, of the [2nd International Symposium on “Effects of climate change on the world’s oceans”](#), convened as one of the official events (the first academic event) related to the Expo-2012. The summary of the symposium and reports on all workshops convened in conjunction with the symposium are now published in the [July 2012 issue of PICES Press](#).

At PICES-2011, Council accepted an invitation for PICES to be represented on the International Review Committee (IRC) of the Yeosu Declaration pursued as the intellectual legacy of the Ocean Expo-2012 Yeosu Korea (Decision 2011/A/5(i)). In 2011–2012, the Executive Secretary, as a member of IRC, was involved in discussions and reviews of several drafts of the Declaration (54 world-renowned marine experts from world leading organizations, including PICES, have contributed to drafting and reviewing the Declaration), and participated in the Yeosu Declaration Roundtable conducted on August 12, 2012, to identify possible actions and next steps to implement the spirit of the Yeosu Declaration, and particularly, potential areas of focus for the Yeosu Project. This Project is an international cooperation program designed to strengthen capacities of developing countries in meeting the challenges related to the ocean and the environment. It is intended to be the practical element as a tool that translates the spirit of the Yeosu Declaration and the theme of Expo 2012

Yeosu Korea to action. At the request by Dr. Bocharov, this agenda item was introduced by Dr. Dosoo Jang, Chairman of the Yeosu Declaration Preparation Committee. Main points of his presentations were later included in the [January 2013 issue of PICES Press](#).

Approximately nine million US dollars are being invested in the pilot stage of the Yeosu Project from 2009 to 2012. In 2011, PICES submitted a set of three proposals, each associated with activities of a different FUTURE Advisory Panel, but they were not funded. The Korean delegation informed Council that the National Assembly is currently evaluating the pilot phase of the Yeosu Project in order to decide the level of funding and policies for the main stage of the Project. The latter is expected to provide opportunities for international organizations.

AGENDA ITEM 8

World Ocean Assessment (UN Regular Process for Global Reporting and Assessment of the State of the Marine Environment)

At PICES-2011, Council discussed involvement of the Organization in the UN Regular Process (UNRP) for Global Reporting and Assessment of the State of Marine Environment (*aka* World Ocean Assessment) and agreed that while PICES has considerable experience and expertise in developing regional assessments, the best approach for the Organization at this time is to indicate its willingness to conduct scientific peer review of regional assessment of North Pacific marine ecosystems. In accordance with Council's Decision 2011/A/6(i), the Executive Secretary sent a letter to the Secretariat of the Regular Process, the UN Division for Ocean Affairs and the Law of the Sea (UN DOALOS), regarding PICES interest in conducting scientific peer review of UNRP regional assessments of North Pacific marine ecosystems, and in being involved in the regional workshops for the North Pacific and East Asian marginal seas. However, the response from UN DOALOS indicated that the UNRP is not designed to solicit the feedback of intergovernmental bodies, regardless of competency, because the report is developed by state-appointed experts (as a function of their membership in the United Nations).

At the request of the United States, Council reviewed recent progress made in the UNRP (a presentation was given by Ms. Elizabeth Phelps, advisor to the U.S. delegation) and discussed again the potential involvement of the Organization in the World Ocean Assessment. It was indicated that: (1) regional organizations have a role to play in advocating and enhancing opportunity and collaboration between state experts, (2) conveniently, the states responsible for the World Ocean Assessment in the North Pacific also happen to be Contracting Parties to PICES, and (3) PICES' well-established network of regional experts, with experience in integrated marine assessments, can help the region to achieve a comprehensive product. Council pointed out the importance of facilitating the conduct of the World Ocean Assessment and agreed (Decision 2012/A/8) to:

- encourage individuals in the PICES network to join the *Pool of Experts*, the body from which the *Group of Experts* will select authors and reviewers of the first World Ocean Assessment;
- promote the development of North Pacific workshop(s) to enable incorporation of regional knowledge into the first World Ocean Assessment report;
- consider means by which PICES products are visible in the World Ocean Assessment.

Council also thanked the United States for providing a voluntary contribution of \$148,200 to enhance PICES' involvement in this important endeavour.

AGENDA ITEM 9

Schedule, structure and financing of future Annual Meetings

PICES-2013

At PICES-2011, Council accepted the offer of Canada to host the Annual Meeting from October 11–20, 2013, at the Vancouver Island Conference Centre in Nanaimo, British Columbia (Decision 2011/A/7(ii)). Council

also supported the proposed theme of the meeting, “*Communicating forecasts, uncertainty and consequences of ecosystem change to society*”. At PICES-2012, Council approved the theme description developed by Science Board (Decision 2012/A/4(ii)).

PICES-2014

At PICES-2011, Council invited China to explore the feasibility of hosting the Annual Meeting in 2014, and inform the Secretariat on this matter by March 31, 2012 (Decision 2011/A/7(iii)). On March 27, 2012, a letter from Mr. Ying Wang (Director-General, Department of International Cooperation, Ministry of Agriculture) confirmed the willingness of China to host PICES-2014, with specifics to be arranged by the Ministry of Agriculture. Nevertheless, on October 12, 2012, Prof. Jilong Li (Director, Division of Academic Exchange and Cooperation, Chinese Academy of Fishery Sciences), who was designated as the focal point of MOA in liaison with PICES, informed the Executive Secretary that “*MOA feels that there are some difficulties for them to host the 2014 PICES Annual Meeting since some policy changes, but MOA still agrees to host the 2014 PICES Governing Council meeting*”. This position was re-iterated by the Chinese alternate delegate, Prof. Guohui Cui (Vice-President, Chinese Academy of Fishery Sciences) at PICES-2012.

After intensive discussion, Council requested an answer from China by the end of November 2012, regarding its ability to host PICES-2014, and agreed to consider the following options if China is unable to host the Annual Meeting in 2014: (1) asking Korea if it might be prepared to host PICES-2014 and give China the opportunity to host PICES-2015, (2) holding PICES-2014 at the seat of the Secretariat, or (3) merging the FUTURE Open Science Meeting and PICES-2014 (Decision 2012/A/4(iii)).

PICES-2015

Assuming that China agrees to host PICES-2014, Council, following the established 6-year rotation cycle, requested Korea to explore the possibility of hosting PICES-2015, and inform the Secretariat on this matter by March 31, 2013 (Decision 2012/A/4(iv)).

Structure and scientific program of Annual Meetings

At PICES-2009, Council adopted [the final report of the Study Group on Restructuring of the PICES Annual Meeting \(SG-RAM\)](#), and agreed to implement most of the approved changes in the Annual Meeting format starting with PICES-2011 (Decision 2009/A/6(i)). Due to the limited capacity of the venue in Khabarovsk, the number of concurrent sessions at PICES-2011 was 3 instead of 4 as suggested in the SG-RAM report. Considering that PICES-2012 was the first Annual Meeting for which the structure was in accordance with the entire suite of recommendations by SG-RAM, Council decided to discuss the effectiveness of the approved changes in the format of the Annual Meeting at PICES-2013 (Decision 2012/A/4(i)).

The planning and development of the scientific program for a PICES Annual Meeting has becoming increasingly complex. The Science Board Chairman reported that a new web-based system to attract, organize and evaluate proposals from scientists for topic sessions and workshops was developed by the Secretariat and presented at ISB-2012. Science Board agreed to have this system on trial for planning PICES-2013 and inter-session workshops to be held in 2013. Successes and failures in using the new system will be discussed at ISB-2013.

Financing of future Annual Meetings

At PICES-2001, Council approved the charging of a registration fee for future PICES Annual Meetings and indicated that the registration fee structure should be reviewed annually (Decision 2001/A/4(iv)). At the recommendation of the F&A Committee, Council agreed to keep the same registration fee structure for PICES-2013 as for PICES-2010 through PICES-2012 (Decision 2012/A/4(v)).

2012 inter-sessional Science Board meeting

Holding inter-sessional meetings of Science Board and Governing Council has already become an integral part of PICES management, providing an essential opportunity for (1) making timely decisions under the current fast-changing situations in ocean science and policy, (2) mid-term reviews of scientific activities and (3) in-depth discussions on administrative issues of the Organization. The inter-sessional Science Board meetings became even more crucial after Science Board assumed the duties of the Scientific Steering Committee for the second PICES integrative science program, FUTURE.

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

Council approved a 2-day inter-sessional Science Board meeting to be held in spring 2013 in conjunction with a 3-day joint PICES/ICES FUTURE-related workshop on “*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*”. Both events are to be hosted by Russia in St. Petersburg. It was pointed out that this approach will allow stimulating activities under the new framework for PICES-ICES scientific cooperation.

GC AGENDA ITEM 10

Preparations for the Twenty-Fifth Anniversary of PICES

The PICES Convention entered into force on March 24, 1992, and the First PICES Annual Meeting was held October 12–17, 1992, in Victoria, Canada. The Twenty-Fifth Annual Meeting will take place in 2016 and, if there are no deviations from our normal 6-year rotation cycle in hosting Annual Meetings, it will take place in the United States. At PICES-2011, Council agreed that the approaching 25th Anniversary of PICES provides an important opportunity for the Organization and its Contracting Parties to recognize the accomplishments to date and to look forward to the next 25 years. It was suggested to include this item for discussion in the agendas of Council, Science Board and F&A Committee meetings at PICES-2012.

At the recommendation of the F&A Committee, Council approved the formation of an Anniversary Planning Committee (Decision 2012/A/5), consisting of the Chairman of the F&A Committee, Chairman and Vice-Chairman of Science Board, Executive Secretary, and a representative from each of the Contracting Parties. The group’s responsibility would be to direct the planning of activities, fund-raising, and budget for this celebration. The F&A Chairman will lead the Committee and draft the terms of reference for the group (*GC Appendix B*).

AGENDA ITEM 11

Capacity building activities including PICES Intern Program

The Executive Secretary reported on capacity building events/activities organized/funded in 2012 (see Table 1 below) and plans for 2013 and beyond. [All essential components of PICES’ strategy for capacity building](#) were reviewed by Council.

TABLE 1 PICES-sponsored capacity building activities in 2012

Event/Activity	Amount	Fund
PICES/ICES Conference for Early Career Scientists (Majorca, Spain)	101,576	WCF
Travel support for 2012 Climate Change Symposium (Yeosu, Korea)	5,084	TRF
Travel support for 2012 IMBER Summer School (Ankara, Turkey)	6,409	TRF
Travel support for PICES-2012 (Hiroshima, Japan)	25,705	TRF
Demonstration workshop on “ <i>An introduction to rapid assessment survey methodologies for application in developing countries</i> ” (Nagasaki, Japan)	23,294	MAFF
HAB training course (Jakarta/Lombok, Indonesia)	42,195	MAFF
Intern Program	28,472	TRF
Total	232,735	

PICES/ICES Conferences for Early Career Scientists

The main objective for the joint PICES/ICES Conferences for Early Career Scientists (ECS) is to provide an opportunity for scientists at the beginning of their careers to meet colleagues from around the world and develop contacts and collaborations across international borders and disciplines that would persist for decades. After the success of the first conference on “*New frontiers in marine science*” (June 26–29, 2007, Baltimore, Maryland, U.S.A.), PICES and ICES agreed to hold these conferences at regular intervals (every 5 years). The second ECS conference, under the theme “*Oceans of change*”, was hosted from April 24–27, 2012, in Majorca, Spain. The conference was generously supported by ICES and PICES, with additional contributions from the National Oceanic and Atmospheric Administration (U.S.A.) and the North Pacific Research Board (U.S.A.). Underscoring the global interest in the conference, over 550 applications were received from 53 countries. With rare exceptions, 130 selected participants and organizers were less than 36 years of age or within 5 years of receiving a Ph.D. A brief summary of the conference was published in [the July 2012 issue of PICES Press](#).

Council supported suggestion of holding the third ECS conference on the western side on the North Pacific and encouraged the development of a specific proposal for discussion at PICES-2013 or ISB-2014 at the latest.

Schools on marine sciences

Council received a progress report on preparations for the 4th PICES Summer School on “*Ocean observing systems and ecosystem monitoring*” to be held August 19–23, 2013, Newport, Oregon, USA (Decision 2011/S/2(iv)), and indicated the importance of further fund raising efforts by the Secretariat. At the recommendation of Science Board, Council approved holding the 5th PICES Summer School on “*Ecological modeling*” from August 18–21, 2014, in Seoul, Korea (Decision 2012/A/3(iv)).

At PICES-2009, Science Board strongly supported PICES’ involvement in summer schools organized by large-scale ocean research programs, especially by IMBER and SOLAS. In 2012, PICES co-sponsored the IMBER ClimECO3 Summer School on “*A view towards Earth System models: Human-natural system interactions in the marine world*” (July 23–28, 2012, Ankara, Turkey) by providing travel funds and arranging additional support (through national programs/agencies) for 5 early career scientists from PICES member countries: 2 from China, 1 from Japan, and 2 from Korea. At the recommendation of Science Board, Council agreed to co-sponsor the 6th SOLAS Summer School to be held August 23–September 2, 2013, in Xiamen, China (Decision 2012/S/3(iv)).

Training courses

The Executive Secretary reported on two events organized in 2012, with funding from the Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF) for the PICES project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” (see also Agenda Item 18):

- One of the key activities for a component of this PICES/MAFF project conducted by the Working Group on *Non-indigenous Aquatic Species* was 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. The first workshop in this series took place on July 13–16, 2010, at the Kobe University Research Center for Inland Seas, Awaji Island, Japan, and the second workshop was organized jointly with WESTPAC from July 19–21, 2011, at the Phuket Marine Biological Center, Thailand. The third workshop, co-sponsored by FRA, NOWPAP and WESTPAC, was held February 8–9, 2012, at the Seikai National Fisheries Research Institute, Nagasaki, Japan. Over 50 participants from China, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Thailand, and Vietnam received training at these workshops.
- A component of the PICES/MAFF project conducted by the Section on *Ecology of Harmful Algal Blooms in the North Pacific* focused on teaching country-specific training courses most required to ensure seafood safety in Pacific countries outside the PICES region. A [training course](#) on screening methods for testing shellfish for paralytic shellfish poisoning toxins and phytoplankton identification was conducted in Indonesia, from February 17–22, 2012, in Jakarta, and from February 23–24, at Lombok Island. The previous two training courses were held from January 15–23, 2009, in Manila, Philippines and from February 15–19, 2010, in Guatemala City and San José, Guatemala. A follow-up training class, focused on High Performance Liquid Chromatography (HPLC) and Mass Spectrometry (MS) for domoic acid and saxitoxins was organized in collaboration with the U.S. Food and Drug Administration from April 26–29, 2010, in Guatemala City.

At the recommendation of Science Board, Council agreed to join NOWPAP in organizing the training course on “*Remote sensing data analysis*” in fall 2013, in Qingdao, China (Decision 2012/S/3(iv)). This is a follow up of the successful NOWPAP/PICES/WESTPAC training course on the same topic held October 8–12, 2011, in Vladivostok, Russia.

Travel grants

Financial support for participation of students and early career scientists in PICES Annual Meetings and symposia co-sponsored by the Organization is normally provided from the Trust Fund. Contributions to the Fund are on a voluntary basis. Efforts are being made to keep the Trust Fund at the level of \$110,000 by using transfers from the Working Capital Fund. Following the guidelines for operating the Trust Fund (Decision 2006/A/4(i)), the Executive Secretary provided a detailed report on applications received for support and their disposition. This year, a total of ~\$31,000 is expected to be spent to support the participation of scientists from all PICES member countries in the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (Yeosu, Korea) and PICES-2012. This amount includes ~\$7,500 from the Megrey Student Fund established by the family and friends of the late Dr. Bernard Megrey to provide travel awards to graduate students and early career scientists to attend PICES Annual Meetings and conferences co-sponsored by PICES with ICES and ESSAS, three major international organizations in which Dr. Megrey was actively involved. With these expenses, the Megrey Student Fund will be exhausted.

In 2013, travel support from the Trust Fund will be provided to students and early career scientists to attend the 8th Conference on Marine Bioinvasions (August 2013, Vancouver, Canada) and PICES-2013 (October 10–20, 2013, Nanaimo, Canada).

Intern Program

The [PICES Intern Program](#) 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 12 years, 13 scientists and managers from three member countries (5 from China, 5 from Korea and 3 from Russia) have worked as interns at the PICES Secretariat. The Program requires about \$28,000–33,000 per year, and has been financed solely by voluntary contributions.

Following Decision 2011/A/8(i), Contracting Parties were invited to provide voluntary contributions to support the Intern Program in 2012 and beyond. In response to this request, the U.S. National Marine Fisheries Service and Fisheries and Oceans Canada contributed \$20,000 US (\$10,000 per year in 2012 and 2013), and \$10,000 CAD, respectively, to the Trust Fund for the Intern Program. The Executive Secretary summarized the contributions and expenses since the inception of the Intern Program. The F&A Chairman pointed out that at the end of *FY* 2012, the Organization will be holding approximately \$16,900 for the Program. Considering that a remainder of the NOAA grant (\$10,000) can be claimed next year, the amount of funds should be sufficient to maintain the Program in 2013. Voluntary contributions are needed to keep it going beyond this date.

Council thanked the organizations that supported the Intern Program to date, and instructed the Executive Secretary to invite all Contracting Parties to make voluntary contributions to maintain the Program (Decision 2012/A/7(ii)). Considering funding currently available for the Intern Program and stated intentions for contributions by Contracting Parties, Council agreed to extend the period of appointment for the current intern, Dr. Zhuojun Ma (China), to a possible maximum of 12 months, and to initiate the process to obtain the 2013 intern, with the understanding that the intern's term will start no earlier than July 2013. Following the existing rotation cycle, Russia was requested to nominate the intern by January 31, 2013 (Decision 2012/A/7(i)).

GC AGENDA ITEM 12

PICES Visiting Scientist Program

At PICES-2001, Council approved the PICES Visiting Scientist Program (Decision 2001/A/6) with two main objectives: (1) to strengthen the capacity of the Organization to develop and implement projects that have high priority for PICES and Contracting Parties, and (2) to provide professional development of marine scientists and managers from Contracting Parties. It was expected that the Program will allow national agencies and/or other international science organizations to contribute “in kind” toward achieving PICES goals, and will be an alternative way to enhance the ability of the Organization and the Secretariat to support the high priority projects and increasing work demand. However, the Program has been inactive since its inception.

Following Council's Decision 2011/A/9(i), the F&A Committee reviewed and revised the description of the Program, reflecting mostly the possibility of providing additional resources for developing FUTURE products (based on recommendations from Science Board) and having scientists participate “virtually” by performing the work at their home institution or agency. Council approved the revised description (see *GC Appendix B*) and instructed the Executive Secretary to send a letter to the Contracting Parties, requesting their proposals for contributions to the Program (Decision 2012/A/6). It was also pointed out that Science Board is expected to suggest potential tasks for a visiting scientist.

AGENDA ITEM 13

Report and recommendations of the Finance and Administration Committee

The F&A Committee met from 09:00–13:30 hours on October 17, 2012, under the chairmanship of Ms. Patricia Livingston. The [full report](#) is included elsewhere in this Annual Report. All recommendations were brought forward and adopted at the first session of Council on October 20 (see *GC Appendix A*, Decisions 2012/A/1 – 2012/A/7).

AGENDA ITEM 14

Appointment of F&A Committee Chairman

According to *Rule 19(iii)* of the PICES Rules of Procedure, “The Chairman of the Finance and Administration Committee shall be appointed by the Council from among the Committee's members for a period of two years and if re-appointed, total consecutive service may not exceed four years”. Ms. Patricia Livingston (U.S.A.)

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was appointed as the F&A Committee Chairman at PICES-2008 (Dalian, China) and re-appointed for a second term at PICES-2010 (Portland, U.S.A.). This term will end at the conclusion of PICES-2012.

Council accepted the recommendation of the F&A Committee and appointed Dr. John Stein (U.S.A.) as the F&A Committee Chairman for a 2-year term (Decision 2012/A/11). Dr. Stein thanked Council members for their support. Council also expressed its gratitude to Ms. Livingston for her leadership of the F&A Committee over the past 4 years.

AGENDA ITEM 15

Improvement of participation in PICES activities

At PICES-2008, the Executive Secretary presented for the first time background graphic materials to better assess problems existing in PICES Contracting Parties with the participation of their scientists in the activities of the Standing Committees and their subsidiary bodies, and in the Annual Meetings of the Organization. At PICES-2009, Council requested that these files be updated and reviewed annually (Decision 2009/A/8(iii)). The request was re-iterated at the following Annual Meetings, including PICES-2011 (Decision 2011/A/10(ii)). 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.

Information on the participation of Contracting Parties in PICES Annual Meetings for the period from 2005 to 2012 was included in the GC Briefing Book. Preliminary data as of August 26 for PICES-2012 were used to create the graphs, and these numbers have to be revised after the meeting based on actual attendance and presentations. The Executive Secretary indicated that the updated files will be provided by the end of November 2012.

Council instructed the Executive Secretary to continue regularly preparing and circulating to Contracting Parties information, including graphic materials, on the participation of their scientists in the Annual Meetings for the previous six years (Decision 2012/A/9(i)).

Council also re-iterated the necessity for Contracting Parties to: (1) regularly review their national membership, and to provide the updated national membership list to the Secretariat by the first day of the calendar year (January 1), and (2) follow up on *Rule 1(ii)* of the PICES Rules of Procedure in providing the national delegation list for Annual Meetings (Decision 2012/A/9(ii)). 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.

Brief discussion took place on mechanisms of inter-agency coordination for participation in PICES activities. PICES can only strongly recommend that this problem be recognized and solved at the national level to ensure that an agency that has the principal responsibility for interaction with PICES represents the interest of other agencies and coordinate PICES interactions with them, and promotes activities within PICES that have high national interest and relevance.

AGENDA ITEM 16

Progress report on implementation of the second PICES integrative science program

The second integrative scientific program of PICES, [FUTURE](#) (*Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Ecosystems*) is the major enterprise and the highest priority undertaking of the Organization for the period from 2009–2020. The basic principles of the program are contained in the Science Plan approved in principle at PICES-2007 (Decision 2007/S/1), and finalized in

February 2008. The FUTURE Implementation Plan was approved in principle at IGC-2009 (Decision 2009/S/1) and finalized in June 2009. Both documents are available on the PICES website, along with terms of reference for three FUTURE Advisory Panels, AICE (*Anthropogenic Influences on Coastal Ecosystems*), COVE (*Climate, Oceanographic Variability and Ecosystems*) and SOFE (*Status, Outlooks, Forecasts, and Engagement*) established to provide continuing direction, leadership, coordination, and synthesis within PICES toward attaining FUTURE goals. These Advisory Panels are expected to recommend specific activities for consideration by Science Board which serves as the Scientific Steering Committee (SSC) for FUTURE (Decision 2009/S/7(i)).

A progress report on the implementation of FUTURE was presented to Council by Dr. Sinjae Yoo, Chairman of Science Board. He pointed out that with the establishing of several new expert groups in 2010–2011 and the revisions to the terms of reference of the existing expert groups, the Program now has the minimal number of groups required to undertake the tasks identified in the FUTURE Science Plan and Implementation Plan.

The following events were organized in 2012 to advance FUTURE science:

- Understanding the roles and responsibilities of each expert group within the FUTURE framework and conducting the necessary work in concert with other groups in a timely manner are vital for the success of the Program. A 2.5-day inter-sessional workshop was held May 22–24, 2012, in Busan, Korea, to develop a higher level coordination plan where tasks and roles of expert groups, information flows, and products were specified and aligned. A [brief report](#) on what has been discussed and planned during this meeting was published in the 2012 summer issue of PICES Press.
- A 2-day [workshop](#) on “*Climate change projections for marine ecosystems: Best practices, limitations and interpretations*”, led by PICES WG 29, was held on May 13–14, 2012, preceding the 2nd International Symposium on “*Effects of climate change on the world’s ocean*” in Yeosu, Korea. The goal of the workshop was to explore different approaches to modeling the impacts of climate change and variability on marine ecosystems and to highlight their strengths and limitations. A significant motivation was to bring together both global and regional modelers whose communities often work separately. A review manuscript on state-of-the-art approaches for making projections of particular ecosystems is expected as the outcome from the workshop.
- A [4-day Theme Session](#) on “*Climate change effects on living marine resources: From physics to fish, marine mammals, and seabirds, to fishermen and fishery-dependent communities*”, led by PICES/ICES SICCME, was convened on May 16–19, 2012, at the 2nd International Symposium on “*Effects of climate change on the world’s ocean*” in Yeosu, Korea.
- A GLOBEC/PICES/ICES workshop on “*Forecasting ecosystem indicators with process-based models*”, led by PICES WG 27, was held September 7–11, 2012, in Friday Harbor, WA, U.S.A. The goal of this workshop was to identify and model key processes that enable to succinctly and quantifiably explain the mechanisms underlying the correlative relationships in physical-biological datasets, both in the North Pacific and North Atlantic. A set of 10 examples of diagnostic and predictive ecosystem process models of different degrees of complexities were presented and discussed along with a review of the modeling methodologies currently available for process modeling. The [workshop report](#) can be found on the WG 27 website.
- A PICES/ICES Theme Session on “*Understanding, measuring and projecting the limits of resilience in marine ecosystems*” was convened on September 18, 2012, at the 2012 ICES Annual Science Conference in Bergen, Norway.
- FUTURE-related activities scheduled for PICES-2012 included:
 - A ½-day joint meeting of FUTURE Advisory Panels and ½-day concurrent meetings of each Panel to review work plans;
 - A 1-day MEQ/FUTURE Topic Session on “*Social-ecological systems on walleye pollock and other commercial gadids under changing environment: Inter-disciplinary approach*”;
 - A ½-day BIO/MEQ/FUTURE Topic Session on “*Ecosystem responses to multiple stressors in the North Pacific*”, co-sponsored by SOLAS;
 - A ½-day MEQ/FUTURE Topic Session on “*Risk management in coastal zone ecosystems around the North Pacific*”.

A special emphasis in Dr. Yoo's presentation was on a FUTURE Roadmap (a higher level coordination plan where tasks and roles of expert groups, information flows, and products are specified and aligned) and a FUTURE Open Science Meeting (OSM).

Council reviewed the FUTURE Roadmap proposed by Science Board (a draft Roadmap developed based on the outcomes from the 2012 inter-sessional workshop in Busan, Korea, was finalized at PICES-2012), and agreed with recommended activities and timelines for FUTURE, with the addition of a footnote, proposed by Korea, to the suggested timeline of delivering the next edition of the North Pacific Ecosystem Status Report (NPESR-3), stating "under the condition that NPESR-2 is fully completed" (Decision 2012/S/1(i)).

Council approved holding the FUTURE OSM in spring 2014 (Decision 2012/S/3(i)). By 2014, FUTURE will be 5 years old, and the OSM is intended to provide an opportunity to assess what has been achieved and to make necessary course adjustments for the remaining years to fulfil the objectives of the program. After the OSM, an evaluation team consisting of PICES and external experts will gather to make a formal assessment of FUTURE progress.

Council also supported other FUTURE-related activities recommended by Science Board for 2013–2014 (Decision 2012/S/2 and 2012/S/3):

- A 3-day joint PICES/ICES workshop on "*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*" to be held in conjunction with the inter-sessional Science Board meeting in May 2013, in western Russia. This workshop will stimulate S-CCME activities under the new framework for PICES-ICES scientific cooperation.
- A 2-day joint PICES/ICES workshop on "*Development and application of Regional Climate Models-II*" to be held in Seoul, Korea. This workshop will be a follow-up of the meeting convened in October 2011, and will stimulate WG 29 activities under the new framework for PICES-ICES scientific cooperation.
- A joint ICES/PICES Theme Session, led by S-CCME, on climate induced shifts in spatial distributions to be held at the 2013 ICES Annual Science Conference;
- A PICES-2013 Science Board Symposium on "*Communicating forecasts, uncertainty and consequences of ecosystem change*";
- A 1-day joint PICES/ICES workshop, led by WG 27 and AP-COVE, on "*Isolating mechanisms linking physical climate and ecosystem change*" to be held at PICES-2013;
- A 1-day joint PICES/ICES workshop, led by S-CCME, on "*Comparison of size-based and species based ecosystem models*" to be held at PICES-2013.

A special fund to support FUTURE was established at PICES-2007 when Council agreed to earmark \$40,000 of the encumbered funds designated for high-priority PICES projects for the development of the program (Decision 2007/A/3(v)). The evolution of the FUTURE fund was presented by the Executive Secretary. Considering the estimated year-end balance for this fund and the number of activities identified by FUTURE, Council approved the recommendation of the F&A Committee that funds available from all completed projects in the Working Capital Fund as of December 31, 2012, be allocated for the development of FUTURE (Decision 2012/A/3(v)). Council also requested that the Executive Secretary send a letter to the Contracting Parties providing information on planned activities for FUTURE and requesting contributions to these activities, particularly for the 2014 FUTURE OSM (Decision 2012/S/1(ii)).

AGENDA ITEM 17

Report of Science Board

The Science Board met from 12:30–14:00 on October 14, from 15:00–18:00 hours on October 19, and from 8:30–18:00 hours on October 20, under the chairmanship of Dr. Sinjae Yoo. Dr. Yoo presented the report to Council on October 21. The [full report](#) is included elsewhere in this Annual Report. The decisions on scientific issues are summarized in *GC Appendix A* (Decisions 2012/S/1–2012/S/9) and *GC Appendix B*. The discussion on a Study Group on *Radionuclide Science in the North Pacific Ocean* (SG-RS) is reflected below.

The Science Board Chairman informed Council that China proposed to form a new Working Group on *Assessment of Marine Environmental Quality of Radiation around North Pacific*, under the direction of the Marine Environmental Quality Committee (MEQ). After reviewing this proposal, Science Board agreed that an opportunity has to be provided for a wider discussion of the proposal among scientists in member countries, and recommended the establishment of a Study Group on *Radionuclide Science in the North Pacific Ocean* (SG-RS), with the terms of reference and life span as follows:

1. To convene a workshop in China to provide a forum for exchange of views among scientists on the idea of developing a scientific focus on understanding the quantities and distributions of radionuclides in the North Pacific;
2. To refine the terms of reference for the Working Group on *Assessment of Marine Environmental Quality of Radiation around North Pacific* proposed by China in consideration of wider interests of scientists in PICES member countries, including relevance to the FUTURE/AICE mandate;
3. To develop a list of potential Working Group members;
4. To prepare a report with recommendations for future PICES activities and products related to the topic that are consistent with new MEQ Action Plan;
5. To make the final report available by the inter-sessional Science Board meeting in May 2013.

China indicated the willingness to host the SG-RS meeting/workshop, if this expert group is approved. After intensive discussion, five Contracting Parties supported the establishment of the Study Group, and Japan requested time by the end of November 2012 for consultations with various agencies involved in radionuclide research and monitoring in their country. After deliberations, Council agreed with this request.

On November 21, 2012, Dr. Ichiro Nakayama informed the Chairman of PICES that Japan does not oppose the formation of SG-RS “*as far as the activity of the Study Group is conducted from a purely scientific viewpoint*”. Thus, consensus required for the establishment of the *ad-hoc* scientific group by [the PICES Convention](#) (see Article VII, 4(a)) was reached, and SG-RS was approved (Decision 2012/S/7; *GC Appendix B*).

AGENDA ITEM 18

Report on PICES projects supported by the Japanese Trust Fund

2007–2012 PICES/MAFF project

In April 2007, the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan, through the Fisheries Agency of Japan (JFA), approved funding for a 5-year PICES project entitled “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*”. The goals of the project (completed March 31, 2012) were 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 was from the Official Development Assistance (ODA) fund, and involvement of developing Pacific Rim countries was required in activities under this project.

The Executive Secretary informed Council on activities under the project since PICES-2011 and provided a summary on fund transferring and project reporting:

- Funds for *Year 1* of the project (completed on March 31, 2008) in the amount of \$184,980 were transferred to the PICES/MAFF bank account on July 27, 2007. The progress report and the financial report for *Year 1* were submitted to JFA on July 19 and July 23, 2008, respectively.
- Funds for *Year 2* of the project (completed on March 31, 2009) in the amount of \$161,466 were transferred to the PICES/MAFF bank account on July 17, 2008. The financial report for *Year 2* was submitted to JFA on July 21, 2009, and the progress report was sent on August 13, 2009.
- Funds for *Year 3* of the project (completed on March 31, 2010) in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 15, 2009. The progress report and the financial report for *Year 3* were submitted to JFA on July 26, 2010.

- Funds for *Year 4* of the project (completed on March 31, 2011) in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 12, 2010. The financial report and the progress report for *Year 4*, as well as handouts summarizing activities within two sub-projects by the end of *Year 3* were sent to JFA on July 28, 2011.
- Funds for *Year 5* of the project (completed on March 31, 2012) in the amount of \$164,641 were transferred to the PICES/MAFF bank account on July 27, 2011. The financial report for *Year 5* (see *GC Appendix 7*) was submitted on June 20, 2012. Final scientific reports and outreach brochures for both project components were submitted on August 2. Due to seriously delayed business procedures, two other project products, the MNIS database and “*Atlas of Non-indigenous Marine and Estuarine Species in the North Pacific*” became available on October 10 (this deadline was accepted by MAFF/FRA), and a USB with the Atlas and a read-only version of the database in Access 2003 and Access 2007 formats (with installations provided for each of these formats for two operating systems, Windows XP and Windows Vista) will be handed to MAFF/FRA at PICES-2012.

Japan expressed their satisfaction with the implementation of the project. Council thanked Japan for their generous contribution and re-iterated that this project was 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.

2012–2017 PICES/MAFF project

The Executive Secretary reported on a new 5-year PICES project supported by the Japanese Trust Fund. In December 2011, MAFF, again through JFA, approved funding the project on “*Marine ecosystem health and human well-being*”. The goal of this project (to be completed by March 31, 2017) is to identify the relationships between sustainable human communities and productive marine ecosystems in the North Pacific, under the concept of fishery social-ecological systems (in Japan, this concept attracts attentions as the “*Sato-umi*” fisheries management system). Specifically, considering the global changes in climate and human social and economic conditions, the project is expected to determine: a) how do marine ecosystems support human well-being and b) how do human communities support sustainable and productive marine ecosystems. This contribution is from the Official Development Assistance (ODA) Fund and therefore, it is required to involve developing Pacific Rim countries in activities under this project.

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

- The project will be directed by a Project Science Team, co-chaired by two PICES scientists and with membership from additional PICES (and non-PICES) members, as deemed appropriate. The Project will have strong connections and interactions with, and involve and support the activities of, relevant PICES expert groups.
- The Co-Chairmen of the Project Team will serve as the Project Scientific Coordinators and are responsible for reporting annually to the PICES Science Board on the scientific implementation of the project. This report should include a summary of the activities carried out in the year, with an evaluation on the progress made, and a work plan for the following year. The report should be submitted to JFA within 120 days after the close of each project year ending March 31.

Members of the Project Science Team were identified in August 2012. The current membership includes 13 scientists: 3 from Canada, 3 from Japan, 2 from Korea and 4 from USA, and a representative from the PICES Secretariat (<http://www.pices.int/projects/MarWeb.aspx>). A total of 6 PICES expert groups are represented on the Team: Section on *Human Dimensions of Marine Systems* (S-HD), Section on *Harmful Algal Blooms in the North Pacific* (S-HAB), Section on *Climate Change Effects on Marine Ecosystems* (S-CCME), Working Group on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors* (WG 28), Working Group on *Non-indigenous Aquatic Species* (WG 21), and FUTURE Advisory Panel on *Status, Outlooks, Forecasts, and Engagement* (AP-SOFE). The Team is co-chaired by Drs. Mitsutaku Makino (Fisheries Research Agency, Japan, mmakino@affrc.go.jp) and Ian Perry (Fisheries and Oceans Canada,

Ian.Perry@dfo-mpo.gc.ca). The first meeting of the Team was held October 11, 2012, in conjunction with PICES-2012.

The financial principles agreed by MAFF/JFA and PICES for the project are similar to the principles for the first project.

The set of documents requesting funding for *Year 1* of the project (to be completed on March 31, 2013) was sent to the Consulate General of Japan in Vancouver (Canada) on June 10, 2012, and funds in the amount of \$149,880 were transferred to the PICES/MAFF bank account on August 14.

AGENDA ITEM 19

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

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

The Chairman informed Council that the Executive Committee reviewed the 2011 report submitted by the Executive Secretary 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 PICES Executive Secretary position was advertised last time in 1998. Dr. Alexander Bychkov was appointed to this position for a 5-year term starting June 1, 1999. He was re-appointed for a second 5-year term (June 1, 2004 to May 31, 2009) in 2002, and for a third 5-year term (June 1, 2009 to May 31, 2014) in 2008. Recognizing that his term was due to expire and that a decision was required at least 12 months prior to the end of the current term, the Executive Committee considered several options in regard to the Executive Secretary position and recommended that the following two options be advanced for discussion and approval by Council: (1) to re-appoint Dr. Bychkov for another 5-year term, and (2) to extend Dr. Bychkov’s term until December 31, 2016, allowing him to have 20 years of service to PICES (including 3 years as the Assistant Executive Secretary) and to organize and run the 25th Anniversary Annual Meeting). These two options were reviewed, and Council agreed to extend Dr. Bychov’s current term until December 31, 2014 (Decision 2012/A/12(i)) as an interim measure. The discussion regarding these options must be continued at PICES-2013.

The report on the performance evaluation of the Executive Secretary for 2011, with tasks for 2012, is appended as *GC Endnote 8*.

AGENDA ITEM 20

Election of Chairman and Vice-Chairman of PICES

According to *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”.

Dr. Lev Bocharov (Russia) was elected as the Chairman of Council at PICES-2010 (Portland, U.S.A), and his first term will end at the conclusion of PICES-2012. In May 2012, Dr. Bocharov informed the Secretariat that he will not seek a second term and will step down as the Chairman after PICES-2012. A call for nominations was circulated to Contracting Parties on May 31, and only one nomination was received by the August 16 deadline. Dr. Laura Richards, Canadian national delegate and current PICES Vice-Chairman, was nominated by

GC-2012

Dr. David Gillis (Director General, Ecosystem Science, Fisheries and Oceans Canada). At the meeting, Council unanimously elected Dr. Richards as the Chairman (Decision 2012/A/10(i)).

Considering that the Vice-Chairman position became vacant after the election of Dr. Richards, the Chairman called for nominations for this position. Dr. Chul Park, Korean national delegate, was nominated and unanimously elected as the Vice-Chairman (Decision 2012/A/10(ii)).

Delegates thanked Dr. Bocharov for his leadership and efforts over the last two years. As he will resume his duties as the Russian national delegate, Council agreed that Dr. Tokio Wada (Japan) will continue to serve as the Past-Chairman (Decision 2012/A/10(i)). Drs. Richards, Park and Wada expressed their gratitude for the support given by Council.

GC Endnote 1**Participation list**Canada

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

Japan

Yukimasa Ishida (advisor)
Kosuke Kiga (advisor, Oct. 21 only)
Ichiro Nakayama (GC member)
Hiroyuki Shimada (advisor, F&A member)
Yoshiaki Takahashi (GC member)

People's Republic of China

Guohui Cui (alternate delegate, CAFS/MOA)
Chuanlin Huo (advisor, Oct. 20 only)
Ningsheng Yang (advisor)
Wenbo Yang (advisor, Oct. 21 only)
Rui Zheng (alternate delegate, SOA)

Republic of Korea

Dosoo Jang (advisor)
Yong-Seok Kang (GC and F&A member)
Chul Park (GC and F&A member)

Naesun Park (advisor)
Gidong Yeo (advisor)
Ungyul Yi (advisor)

Russian Federation

Vladimir Radchenko (GC member)
Tatiana Semenova (advisor, Oct. 20 only)
Igor Shevchenko (advisor, F&A member)

United States of America

Harold Batchelder (GC member)
Elizabeth Phelps (advisor)
John Stein (GC and F&A member)

Other

Lev Bocharov (PICES Chairman)
Tokio Wada (PICES Past Chairman)
Patricia Livingston (F&A Chairman)
Sinjae Yoo (Science Board Chairman, Oct. 21 only)
Alexander Bychkov (Executive Secretary)
Stewart McKinnell (Deputy Executive Secretary,
Oct. 21 only)

GC Endnote 2**Opening remarks by representatives of Contracting Parties**

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

Mr. Chairman: On behalf of Canada and the Canadian delegation, I would like to thank the Government of Japan and the Fisheries Research Agency for hosting PICES-2012 in Hiroshima. We especially appreciate the hard work of the National Research Institute of Fisheries and Environment of Inland Sea, along with the Secretariat in making this meeting a success.

PICES is an impressive organization. This fact becomes evident to me each year as the Science Board Chairman reviews the long list of annual achievements at the PICES Opening Session. Our challenge will be to ensure that all this activity stays focused on the goals of the PICES Strategic Plan so that marine science in the North Pacific can continue to progress. We also know that FUTURE is a complex program, and we will need to pay close attention to ensure its success.

We also need to consider opportunities to demonstrate the importance and relevance of PICES to our governments. I would like to take this opportunity to congratulate our fellow delegate Dr. Vladimir Radchenko on his appointment as the Executive Director of the North Pacific Anadromous Fish Commission (NPAFC), and I hope that his in-depth knowledge of PICES and NPAFC will lead to collaborations that foster the needs of both organizations. The new North Pacific Fisheries Commission (NPFC) held its first science committee meeting in Juneau in August, and I anticipate that PICES will be well-placed to provide useful advice to NPFC should a need arise.

Unfortunately, the world's economies are continuing to struggle from the economic downturn and this reality will likely slow our progress. Last year, I reported to you that my Department of Fisheries and Oceans faced a

3% budget reduction. Last spring, following a review of all government departments, my department's budget was reduced by an additional 5.8%. Then, just last week, we learned of further restrictions on travel. Together, these actions mean that the Canadian delegation will likely be smaller at forthcoming PICES events. I know that other government agencies face similar pressures. And, while Canada will continue to support PICES, we may not be able to provide the same level of participation or voluntary contribution as in the past. I make these points to emphasize that more than ever, PICES must stay focused on its goals and deliver products as efficiently as possible.

Next year, I have the pleasure of hosting PICES 2013 in my home town of Nanaimo, BC. I look forward to welcoming you all there and sharing with you some of the many things to see and do in the local area. Thank you.

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

Dear Mr. Chairman and Executive Secretary, ladies and gentlemen: It is my great pleasure to be here as the representative of the State Oceanic Administration (SOA) of China to participate in the Governing Council meeting of the 2012 Annual Meeting of PICES. I would like to express our appreciation to the organizers and Secretariat for their effort to guarantee the success of the meeting.

The Chinese Government launches great importance to the marine development, including the integrated marine management, marine ecological civilization establishment and marine scientific research development. We attempt to keep marine economic improvement as well as marine sustainable development.

As a member state of PICES, we perform the duties effectively and make our contribution to PICES. SOA, as an integrated government agency for marine affairs in China, does care about the development and management of PICES, and we are willing to play a more active role in the relevant issues in PICES, such as activities of existing expert groups, establishing new expert groups as needed, and encouraging scientists of SOA to participate actively in all the programs of PICES.

After several years' effort, PICES has become one of the important inter-governmental organizations in the world. We would like to continue our effort for PICES and work together with other member countries for a better tomorrow of PICES.

Last but not least, I would like to thank all the member countries and the organizers again, and wish the meeting a great success. Thank you.

Mr. Yong- Seok Kang (Director, Marine Development and New Growth Division, Ministry of Land, Transport and Maritime Affairs, Republic of Korea)

On behalf of the Korean Government and scientists, I appreciate the efforts of the Japanese Government and the PICES Secretariat for the efforts to lead the 2012 PICES Annual Meeting to a great success.

I also want to thank Contracting Parties who supported the 2nd PICES/ICES/IOC International Symposium on "*Effects of climate change on the world's oceans*" and the Expo 2012, which took place from May 12 to August 12, 2012, in Yeosu, Korea, under the theme "The Living Ocean and Coast".

Since its inception in 1992, PICES made a great stride in our understanding of marine ecosystems. Outcomes, as very useful information and insightful references, are serving governments, scientists and international organizations within and outside the region.

For climate change and other reasons, marine ecosystems are rapidly and constantly changing. The rapidity poses a threat to the entire human race, including us in the North Pacific region. Foreseeing the change and finding a way-out is the mandate of us in the name of PICES. The theme of this year's Annual Meeting, "*Effects of natural and anthropogenic stressors in the North Pacific ecosystems: Scientific challenges and possible solutions*" is just as timely and considerate as previous meetings.

Well aware of the importance of understanding the North Pacific marine ecosystem, Korea will play a due role in the implementation of the second PICES integrative scientific program, FUTURE.

In closing, I renew my gratitude to the Secretariat and the host country and wish for the progress of PICES through Contracting Parties' pure-hearted patronage and close cooperation.

Dr. Vladimir Radchenko (Deputy Director-General, Pacific Research Fisheries Centre (TINRO-Centre), Russian Federation)

Dear Mr. Chairman, distinguished delegates, ladies and gentlemen: We are very pleased to continue our fruitful work in the beautiful city of Hiroshima. The scientific program of the 2012 PICES Annual Meeting was very diverse and comprehensive. Moreover, all sessions and workshops were well-attended and well-executed. I hope that these last two days of the meeting will also go smoothly for our mutual benefits.

The 2011 PICES Annual Meeting was held in Khabarovsk, and there are still several years until our turn will come to host such a sound conference again. But we do not like to stay idle and are happy to invite all Contracting Parties to participate in the inter-sessional Science Board meeting and the PICES/ICES workshop on "*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*" to be convened in the western part of Russia in the spring of 2013.

We appreciate the efforts of the Government of Japan, the PICES Secretariat and the Local Organizing Committee in making this Annual Meeting such a success. The local museum of art made a deep impression and left a feeling of admiration in our hearts. It is a sign of a high level of preparation, kindness and good taste.

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

Thank you, Mr. Chairman: I would like to open my remarks by acknowledging the efforts of Dr. George Boehlert as US Delegate to PICES and his overall outstanding service to PICES. We will miss Dr. Boehlert's participation and his advice to Governing Council, but wish him well in his retirement. While Dr. Boehlert is hard to replace, we have a very capable individual in Dr. Harold (Hal) Batchelder, who was selected to fill the position held by Dr. Boehlert on the US Delegation. Dr. Batchelder has a long standing in PICES and now brings that valuable experience to Governing Council.

Turning now to this Annual Meeting, on behalf of the United States I want to thank the Japanese Government, the sponsoring agencies, the Local Organizing Committee and the PICES Secretariat for hosting the 2012 PICES Annual Meeting in the beautiful city of Hiroshima. The venue was excellent for the Annual Meeting, and the high quality of the science program attests to the continued growth in the relevance of PICES science to important societal issues in all PICES member countries. At this meeting in Hiroshima, we observed that the next generation of PICES scientists is emerging to lead PICES science into the future, which is very encouraging. We also are finding that our science program FUTURE, a very ambitious and cutting-edge science program, is making steady progress. At this meeting, significant progress was made in advancing the goals of FUTURE.

The Annual Meeting program also included excellent presentations on what we have learned from past and recent natural and human-induced disasters, and in particular, the devastating effects of the Great East Japan Earthquake. On behalf of the US Government, I want to acknowledge the cooperation between Japan and the

US to address impacts after the earthquake and tsunami, and in particular the excellent cooperation between our two countries on the issue of marine debris.

The Great East Japan Earthquake also exemplifies the value of PICES as the international science organization for fostering cooperation in the North Pacific in response to natural disasters and for global issues affecting all our member countries, such as global climate change. But there are external forces that are affecting support of ocean science in the US. For the US and other member countries, the slow economic recovery is placing significant pressures on our ability to support ocean sciences at the same level as we have in the recent past. This has some effects on science activities relevant to PICES, such as participation by US scientists in this PICES Annual Meeting. The current situation, however, does not change the US commitment to supporting the science programs and activities of PICES.

In closing, the US wants to again thank the Government of Japan for hosting an outstanding PICES Annual Meeting in Hiroshima. We also want to affirm the critical value of PICES as the premier scientific organization for marine ecosystem science in the North Pacific, a region that delivers critical ecosystem goods and services to all our countries, and supports biodiversity important to a sustainable future. Nonetheless, there are significant pressures on the delivery of ecosystem goods and services, particularly in the coastal and marginal seas, that will benefit from the continued high quality science of PICES. It is therefore important to maintain our commitment to international science cooperation and disseminating resulting science products from the activities and programs of PICES. These observations lead me to conclude that PICES science is flourishing.

Mr. Yoshiaki Takahashi (Director, Foreign Policy Bureau, International Science Cooperation Division, Ministry of Foreign Affairs, Japan)

Dear Mr. Chairman: We are very honored to host the 2012 PICES Annual Meeting here in Hiroshima and welcome you coming all the way to Japan.

First, on behalf of the Government of Japan and its delegation we would like to express our sincere gratitude to all the assistance received from the Contracting Parties after the Great East Japan Earthquake last year. In the aftermath of this disaster, we are still facing difficult problems, but all-out efforts are being made for the reconstruction of our country.

We sincerely hope that the meeting will be productive and meaningful and achieve a great success. Thank you.

GC Endnote 3

Governing Council meeting agenda

1. Welcome and opening remarks by representatives of Contracting Parties and the Chairman of PICES
2. Adoption of agenda and meeting procedures
3. Membership and observers from other countries
4. Report on administration for 2011–2012
5. Relations with relevant international and regional organizations/programs
6. PICES Strategic Plan and Action Plans
7. Yeosu Declaration and Yeosu Project
8. World Ocean Assessment (UN Regular Process for Global Reporting and Assessment of the State of the Marine Environment)
9. Schedule, structure and financing of future Annual Meetings
10. Preparations for the Twenty-Fifth Anniversary of PICES
11. Capacity building activities including PICES Intern Program
12. PICES Visiting Scientist Program
13. Report and recommendations of the Finance and Administration Committee

14. Appointment of F&A Committee Chairman
15. Improvement of participation in PICES activities
16. Progress report on implementation of the second PICES integrative scientific program, FUTURE
17. Report and recommendations of the Science Board
18. Report on PICES projects supported by the Japanese Trust Fund
19. Report of the Executive Committee for evaluating annual performance of the Executive Secretary
20. Election of Chairman and Vice-Chairman of PICES
21. Other business

GC Endnote 4

Report on Administration for 2011–2012

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

- The *FY 2011* operations were completed within budget and with pre-agreed parameters. The financial statements were submitted to the auditor on March 26, 2012, and the audit was completed on May 3. The electronic copy of the Auditor’s Report was circulated to all Contracting Parties on May 4. In the auditor’s opinion, “*the financial statements present fairly, in all material respects, the financial position of the North Pacific Marine Science Organization as at December 31, 2011, and the results of its operations and changes in fund balances for the year then ended*”. Details are reflected under *FA Agenda Item 3*. It is expected that the *FY 2012* operations will be also completed within budget and with pre-agreed parameters. The audit for *FY 2012* will be conducted in March–April 2013.
- 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 2012*. 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 (for the first time), 2011 and 2012, the amount of funds from voluntary contributions, grants and partnerships for various activities initiated or sponsored by PICES exceeded the total annual contribution by Contracting Parties, indicating the Organization’s large dependence on outside funding offers, most of which have specific product and service requirements. Special emphasis was put on fund raising for the Second International Symposium on “*Effects of climate change on the world’s oceans*” (Yeosu, Korea), capacity development activities, and the North Pacific Continuous Plankton Recorder (CPR) survey. Details are reflected under *FA Agenda Item 5*.

II. Planning and organizing the 2012 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 2012 Annual Meeting (October 12–21, Hiroshima, Japan) was hosted by the Government of Japan, in cooperation with the Fisheries Research Agency (FRA) and in coordination with the PICES Secretariat. Local arrangements were made by the National Research Institute of Fisheries and Environment of Inland Sea (FEIS) of FRA. The PICES-2012 theme was “*Effects of natural and anthropogenic stressors in the North Pacific ecosystems: Scientific challenges and possible solutions*”, and the meeting [scientific program](#) covered a broad range of timely and very relevant marine science issues. Almost 470 scientists and managers from 22 countries and 34 international and regional organizations and programs attended the meeting. A total of 17 scientific sessions, 8 workshops and 25 business meetings of our committees and expert groups took place (see *Appendix 1* for the complete list), and 263 talks and 150 posters were presented. Many of these [presentations](#) can be found on the PICES website.
- To get a more comprehensive picture on the Annual Meeting’s theme and to secure funding, several international organizations/programs were invited, and subsequently agreed, to co-sponsor (by covering

travel of additional invited speakers and/or convenors) the following Topic Sessions and workshops relevant to their scientific interests: “*Jellyfish in marine ecosystems and their interactions with fish and fisheries*” (ICES), “*Ecosystem responses to multiple stressors in the North Pacific*” (SOLAS), “*Challenges in understanding North Hemisphere climate variability and change*” (CLIVAR and ICES), “*Changing ocean biogeochemistry and its ecosystem impacts*” (ICES, IMBER and SOLAS), “*Arctic – sub-Arctic interactions*” (ESSAS), and “*Global patterns of phytoplankton dynamics in coastal ecosystems*” (SCOR). Three events were organized jointly with Japanese agencies/societies: Topic Sessions on “*Environmental contaminants in marine ecosystems: Seabirds and marine mammals as sentinels of ecosystem health*” (JSPS) and “*Effects of natural and artificial calamities on marine ecosystems and the scheme for their mitigation*” (JSFO and FRA), and a workshop on “*Recruitment of juvenile Japanese eel (*Anguilla japonica*) in eastern Asia*” (FRA).

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

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

- In 2012, logistical and financial arrangements were made for 18 inter-sessional events (symposia, sessions, workshops and meetings) convened at various locations around the North Pacific and the world-at-large (see *Appendix 2* for the complete list). The landmark events of the year were the [2nd PICES/ICES Conference for Early Career Scientists \(ECS\) on “Oceans of change”](#) (April 24–27, 2012, Majorca, Spain), and the [2nd International Symposium on “Effects of climate change on the world’s oceans”](#) (May 13–20, 2012, Yeosu, Korea). The ECS conference provided an opportunity to foster a networking of future generations of ocean scientists working on the Northern Hemisphere early in their career. Only the second in what is anticipated to be a series of PICES/ICES ECS conferences, it was a tremendous success, with presentations from 130 participants selected from 550 applicants (see the [article](#) in PICES Press for details). The Symposium was the first academic event organized in conjunction with Ocean Expo-2012, and was attended by almost 330 scientists from 31 countries. The summary of the symposium and brief reports on all convened workshops are now published in the [July 2012 issue of PICES Press](#).
- Preparations, arrangements or planning are in progress for several symposia/meetings to be convened in 2013–2014. This includes events such as the PICES/ICES workshop on “*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*” (May 2013, western Russia); PICES Summer School on “*Ocean observing systems*” (August 2013, Newport, U.S.A.) and FUTURE Open Science Meeting (April 2014, Hawaii, U.S.A.).

IV. Coordinating the publication program of the Organization

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

- Publications produced after PICES-2011 included: 3 special issues of primary journals (work is also in progress for 3 more special issues to be published in 2013), 3 reports in the PICES Scientific Report Series (editing is in progress for 3 more reports to be published in spring 2013), several special and outreach publications, 2 issues of PICES Press, *etc.* (see *Appendix 3* for the complete list). Outreach publications are a new important part of the publication program of PICES.
- Further progress was made in the implementation of the Action Plan resulting from the 2008 PICES Publications Review:
 - A License Agreement was negotiated on the inclusion of PICES publications in the [EBSCO Publishing database](#), the most-used, premium online information resources for libraries and other institutions. Last year, the License Agreement was signed with the [ProQuest Science Journals database](#).
 - All new PICES publications were added to the IAMSILIC (International Association of Aquatic and Marine Science Libraries and Information Centers) [digital repository “Aquatic Commons”](#), to ensure that there is a complete collection at this source.

V. Intensifying the cooperation with other organizations/programs

As many of the scientific and capacity building issues addressed by PICES are not unique to the North Pacific, 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 some of these organizations/programs is reflected in *Appendix 4*.

- Thirty-four international and regional organizations and programs (see *GC Endnote 5* for the complete list) accepted the invitation to be present as observers at PICES-2012 (compare this number with 28 in 2011, 32 in 2010, 30 in 2009, and 21 in 2008), and expressed their views on potential areas of collaboration with PICES, including specific proposals for 2013 and beyond, at the meetings of Science Board, Standing Committees and/or their subsidiary bodies. Several organizations and programs had posters on display highlighting their objectives and recent activities.
- In 2012, PICES was represented (by officers or chairmen/members of committees and expert groups) as an observer at the meetings of international organizations/programs such as CLIVAR, ICES, IMBER, IOC-UNESCO, IODE, ISC and NOWPAP (see *GC Agenda Item 5* for details). The Executive Secretary participated in the 45th session of the IOC-UNESCO Executive Council (June 24–30, 2012, Paris, France) and, as a member of the International Review Committee, in the [Yeosu Declaration Forum and Roundtable](#) (August 12, 2012, Yeosu, Korea).
- The holding of co-sponsored symposia/sessions/workshops/training courses and the creation of joint expert groups were chosen as directions of actual collaboration:
 - In 2012, 4 international symposia, 11 topic sessions, 4 workshops, and several capacity building events were organized in partnership with other organizations and programs (see *Appendix 1* and *2* for details);
 - After amendments to the [PICES Rules of Procedure](#) were approved to allow experts from outside of PICES to serve as *ex-officio* members on PICES Technical Committees and subsidiary bodies of PICES Scientific Committees, several organizations requested this status. In 2012, representatives of NOWPAP nominated *ex-officio* members to serve on the Working Group on *Non-indigenous Aquatic Species* and Study Group on *Marine Pollutants*.
 - The only active joint expert group is the PICES/ICES Section (Strategic Initiative) on *Climate Change Effects on Marine Ecosystems* (the expected life is 2011–2020).
 - PICES currently supports associated members for two SCOR Working Groups: WG 137 on *Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time Series Observation* (Dr. Sinjae Yoo, Korea) and WG 140 on *Biogeochemical Exchange Processes at the Sea-Ice Interfaces* (Dr. Lisa Miller, Canada).

VI. Administrating the Secretariat

- To increase the capacity of the Secretariat, a funding of ~\$39,000 was secured to support a part-time contract position at the PICES Secretariat. This amount includes a contribution from the Korea Ocean Research and Development Institute (specifically for assisting the Science Board Chairman) and an overhead for the PICES/MAFF project on “*Marine ecosystem health and human well-being*”.
- The PICES Intern Program has been a useful mechanism not only for the professional development of marine scientists and managers from PICES Contracting Parties, but also for increasing the capacity of the PICES Secretariat to support the work of the Organization. From May 2000 to December 2012, 13 scientists and managers from three member countries (5 from China, 5 from Korea and 3 from Russia) have worked as interns at the PICES Secretariat. Over the years the Intern Program has been financed solely by voluntary contributions. In 2012, the U.S. National Marine Fisheries Service and Fisheries and Oceans Canada contributed \$20,000 US and \$10,000 CAD, respectively, to the Trust Fund for the Program. With these contributions, the amount of funds kept for the Intern Program should be sufficient to maintain the Program in 2013. Details can be found under *GC Agenda Item 11*.
- The Executive Secretary has served as the co-coordinator (with Dr. Sonia Batten, SAHFOS) of a funding consortium to support the North Pacific Continuous Plankton Recorder (NP CPR) survey, and was responsible for the funding management and reporting for two PICES projects supported by the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan, the project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” (2007–2012) and the project on “*Marine ecosystem health and human well-being*” (2012–2017). The Deputy Executive Secretary has served as a member of the Scientific Project Team for the second PICES/MAFF project.

Appendix 1: Scientific sessions, workshops and business meetings convened at PICES-2012Sessions

- ¾-day Science Board Symposium on “*Effects of natural and anthropogenic stressors in the North Pacific ecosystems: Scientific challenges and possible solutions*”;
- 1-day BIO Contributed Paper Session;
- 1-day BIO/FIS Topic Session on “*Jellyfish in marine ecosystems and their interactions with fish and fisheries*” (co-sponsored by ICES);
- ½-day BIO/FIS/POC Topic Session on “*Advances in understanding the North Pacific Subtropical Frontal Zone ecosystem*”;
- ½-day BIO/MEQ Topic Session on “*Environmental contaminants in marine ecosystems: Seabirds and marine mammals as sentinels of ecosystem health*” (co-sponsored by JSPS);
- ½-day BIO/MEQ/FUTURE Topic Session on “*Ecosystem responses to multiple stressors in the North Pacific*” (co-sponsored by SOLAS);
- 1-day FIS Contributed Paper Session;
- ½-day FIS/MEQ Topic Session on “*Ecological functions and services associated with marine macrophyte communities as indicators of natural and anthropogenic stressors in nearshore zones of the North Pacific*”;
- ½-day FIS/MONITOR/POC Topic Session on “*Monitoring on a small budget: Cooperative research and the use of commercial and recreational vessels as sampling platforms for biological and oceanographic monitoring*”;
- ½-day MEQ Topic Session on “*Range extension, toxicity and phylogeny of epiphytic dinoflagellates*”;
- 1-day MEQ/FUTURE Topic Session on “*Social-ecological systems on walleye pollock and other commercial gadids under changing environment: An inter-disciplinary approach*”;
- ½-day MEQ/FUTURE Topic Session on “*Risk management in coastal zone ecosystems around the North Pacific*”;
- 1-day MONITOR/POC Topic Session on “*Effects of natural and artificial calamities on marine ecosystems and the scheme for their mitigation*” (co-sponsored by JSFO and FRA);
- 1-day POC Contributed Paper Session;
- 1-day POC Topic Session on “*Challenges in understanding North Hemisphere climate variability and change*” (co-sponsored by CLIVAR and ICES);
- ½-day POC/FIS Topic Session on “*Linking migratory fish behavior to end-to-end models II*”;
- 1-day POC/TCODE Topic Session on “*Changing ocean biogeochemistry and its ecosystem impacts*” (co-sponsored by ICES, IMBER and SOLAS).

Workshops

- 1-day BIO Workshop on “*Identifying critical multiple stressors of North Pacific marine ecosystems and indicators to assess their impacts*”;
- 1-day BIO Workshop on “*Secondary production: Measurement methodology and its application on natural zooplankton community*”;
- 1-day BIO Workshop on “*The feasibility of updating prey consumption by marine birds, marine mammals, and large predatory fish in the PICES regions*”;
- 2-day BIO Workshop on “*Comparison of multiple ecosystem models in several North Pacific shelf ecosystems (MEMIP-IV)*”;
- 1-day FIS Workshop on “*Recruitment of juvenile Japanese eel (*Anguilla japonica*) in eastern Asia*” (co-sponsored by FRA);
- 1½-day MEQ Workshop on “*The contrasting cases of harmful algal blooms in the eastern and western Pacific in 2007 and 2011*”;
- 1-day ESSAS/PICES Workshop on “*Arctic–sub-Arctic interactions*”;
- 2-day SCOR/PICES Workshop on “*Global patterns of phytoplankton dynamics in coastal ecosystems*”.

Business meetings

- ¼-day Science Board (SB) meeting (October 14) and 1½-day SB meeting (October 19 p.m. and October 20);
- 1½-hour overture meetings (October 14 evening) and ½-day meetings of Scientific and Technical Committees (October 17 p.m.);
- 1-day meeting of the SB Section on *Human Dimensions of Marine Systems*;

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

Appendix 2: Inter-sessional symposia/workshops/meetings organized/sponsored after PICES-2011

Symposia

- [2nd PICES/ICES/IOC International Symposium on “Effects of climate change on the world’s oceans”](#) (May 13–20, 2012, Yeosu, Korea), with Hiroaki Saito (Japan) serving as a PICES co-convenor and Alexander Bychkov (PICES Secretariat) serving as a symposium coordinator. The symposium included 10 Theme Sessions and 7 workshops. The summary of the symposium and brief reports on all convened workshops are now published in the [July 2012 issue of PICES Press](#).
- GEOHAB Open Science Meeting on [“Progress in interpreting life history and growth dynamics of harmful algal blooms in fjords and coastal environments”](#), co-sponsored by PICES (May 29–31, 2012, Victoria, Canada);
- [15th International Conference on Harmful Algae](#), co-sponsored by PICES (October 29–November 2, 2012, Changwon, Korea);
- [ICES/PICES Symposium on “Forage fish interactions: Creating the tools for ecosystem based management of marine resources”](#) (November 8–12, 2012, Nantes, France), with Vladimir Radchenko (Russia) serving as a PICES symposium co-convenor, and Akinori Takasuka (Japan) serving as a PICES keynote speaker (see the [article](#) in PICES Press for details).

Joint Theme Sessions at the 2012 ICES Annual Science Conference (September 17–21, 2012, Bergen, Norway)

- Session A on *“Understanding, measuring and projecting the limits of resilience in marine ecosystems”*, with Sinjae Yoo (Korea) and Skip McKinnell (PICES Secretariat) serving as PICES co-convenors;
- Session I on *“Multidisciplinary perspectives in the use (and misuse) of science and scientific advice in Marine Spatial Planning”*, with Thomas Therriault (Canada) serving as a PICES co-convenor;
- Session M on *“Subarctic-Arctic Interactions: Ecological consequences”*, with Anne Hollowed (U.S.A.) serving as a PICES co-convenor;
- Session Q on *“Sustainability of aquaculture”*, with Katsuyuki Abo (Japan) serving as a PICES co-convenor.

Other joint Theme Sessions

- CLIOTOP special session on *“Global science for global governance of oceanic ecosystems and fisheries”* at the Planet Under Pressure Conference, co-sponsored by PICES (March 26–29, 2012, London, UK), with Mitsutaku Makino (Japan) serving as a PICES invited speaker.

Workshops and meetings

- PICES/MAFF Project Synthesis Workshop (March 20–23, 2012, Newport, Oregon, U.S.A.);
- Workshop, led by PICES WG 29, on *“Climate change projections for marine ecosystems: Best practices, limitations and interpretations”* (May 13–14, 2012, Yeosu, Korea);

- FUTURE Roadmap Workshop (May 22–24, 2012, Busan, Korea);
- Inter-sessional Science Board meeting (May 24–25, 2012, Busan, Korea);
- [GLOBEC/PICES/ICES Workshop, led by PICES WG 27, on “Forecasting ecosystem indicators with process-based models”](#) (September 7–11, 2012, Friday Harbor, WA, U.S.A.).

Capacity development events

- 3rd PICES/MAFF Workshop on “*Introduction to Rapid Assessment Survey methodologies for detecting non-indigenous marine species*”, co-sponsored by FRA, NOWPAP and WESTPAC (February 8–9, 2012, Nagasaki, Japan);
- PICES/MAFF training course on screening methods for testing shellfish for paralytic shellfish poisoning toxins and phytoplankton identification (February 17–22 (Jakarta) and February 23–24 (Lombok Island), 2012, Indonesia);
- [2nd PICES/ICES Conference for Early Career Scientists \(ECS\) on “Oceans of change”](#) (April 24–27, 2012, Majorca, Spain);
- [IMBER-led international ClimeCO3 Summer School](#) on “*A view towards Earth System models: Human-natural system interactions in the marine world*”, co-sponsored by PICES (July 23–28, Ankara, Turkey).

Appendix 3: PICES publications in 2012 and beyond

Primary journals

- Special issue based on selected papers from the 2011 Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (Guest Editors: J. Keister, D. Bonnet, S. Chiba, C. Johnson and D. Mackas) in *ICES Journal of Marine Science*, Vol. 69, No. 3, pp. 347–492 (May 2012);
- Special issue based on selected papers from the PICES-2010 Topic Session on “*Economic relation between marine aquaculture and wild capture fisheries*” (Guest Editors: M. Pang and P. Leung) in *Aquaculture Economics and Management*, Vol. 16, No. 2, pp. 98–181 (April-June 2012);
- Special issue (dedicated to Dr. Bernard Megrey) based on selected papers from the 2011 ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and subpolar ocean ecosystems: Progress in observations and predictions*” (Guest Editors: K. Drinkwater, G.L. Hunt, Jr., O. Asthórsson and E. Head) in *ICES Journal of Marine Science*, Vol. 69, No. 7, pp. 1119–1328 (September 2012);
- The following special issues are in progress and are expected to be submitted/published in 2013:
 - *ICES Journal of Marine Science* – special issue based on selected papers from the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” (Editor: E. Anderson);
 - *Marine Ecology Progress Series* – special topic section based on selected papers from the PICES-2011 Topic Session on “*Mechanisms of physical-biological coupling forcing biological hotspots*” (Guest Editors: R. Suryan, J. Alheit, E. Hazen, O. Katugin, Y. Watanuki, I. Yasuda);
 - *Fisheries Science* – special issue based on selected papers from the 2012 Topic Session on “*Social-ecological systems on walleye Pollock and other commercial gadids under changing environment: Inter-disciplinary approach*” (Guest Editors: K. Criddle, S. Kim, M. Makino, I. Perry, Y. Sakurai and A. Velikanov);
 - *Progress in Oceanography* – special issue based on selected papers from the 2012 Topic Session on “*Advances in understanding the North Pacific Subtropical Frontal Zone ecosystem*” (Guest Editors: T. Ichii, S. McKinnell and M. Seki)
 - *Progress in Oceanography* – special issue on modeling marine ecosystem dynamics dedicated to Dr. Bernard Megrey (Guest Editors: E. Curchitser, G. Huse and S.I. Ito).

PICES Scientific Report series

- Makino, M. and Fluharty, D. (Eds.). Report of the Study Group on *Human Dimensions*, PICES Sci. Rep. No. 39, 40 pp. (published in December 2011);
- Foreman, M.G. and Yamanaka, Y. (Eds.). Report of Working Group 20 on *Evaluations of Climate Change Projections*, PICES Sci. Rep. No. 40, 165 pp. (published in December 2011);
- McKinnell, S. (Ed.). PICES Advisory Report to the Cohen Commission on “*The decline of Fraser River sockeye salmon in relation to marine ecology*”, PICES Sci. Rep. No. 41, 149 pp. (published in September 2012);
- The following reports are in progress and are expected to be submitted/published in spring 2013:

- Shaw, C.T. and Peterson, W. (Eds.). Report of the Working Group on *Comparative Ecology of Krill in Coastal and Oceanic Waters around the Pacific Rim*;
- Takeda, S. and Chai, F. (Eds.). Report of Working Group 22 on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean*;
- Hollowed, A. and Kim, S. (Eds.). Report of the Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish*.

Other Publications

- Special publication based on selected peer-reviewed papers and a conference summary from the 26th Lowell Wakefield Symposium on *“Ecosystems 2010: Global Progress on Ecosystem-based Fisheries Management”* co-sponsored by [Alaska Sea Grant](#), [ICES](#), [FAO](#), [PICES](#) and [NOAA](#) (Guest Editors: G.H. Kruse, H.I. Browman, K.L. Cochrane, D. Evans, G.S. Jamieson, P.A. Livingston, D. Woodby and C.I. Zhang). 2012. *Global progress in ecosystem-based fisheries management*. Alaska Sea Grant, UAF. 396 pp. (published as a pdf only to be accessed at <http://seagrant.uaf.edu/bookstore/pubs/AK-SG-12-01.html>);
- Lee II, H. and Reusser, D. 2012. *Atlas of non-indigenous marine and estuarine species in the North Pacific* (published in pdf format only);
- Outreach brochures on harmful algal bloom and non-indigenous species components of the PICES/MAFF project on *“Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim”*;
- USB (for all PICES-2012 participants) with PICES Scientific Publications from 1993–2012.

E-Newsletter

- Two regular issues of PICES Press: Vol. 20, No. 1 (winter 2012) and Vol. 20, No. 2 (summer 2012).

Announcements/Posters/Books of Abstracts

- Book of Abstracts for the 2nd International Symposium on *“Effects of Climate Change on the world’s oceans”* (Yeosu, Korea);
- Announcement, poster and Book of Abstracts for PICES-2012 (Hiroshima, Japan);

Appendix 4: Relations with international scientific organizations and programs

Climate Variability and Predictability Program (CLIVAR)

The main area for cooperation between PICES and CLIVAR is the impact of climate variability and change on marine ecosystems.

- A Topic Session on *“Challenges in understanding North Hemisphere climate variability and change”* was convened at PICES-2012 and co-sponsored by CLIVAR and ICES;
- A joint CLIVAR/PICES Theme Session on *“Biophysical interactions”* will be held at the 2nd International Symposium on *“Boundary Current dynamics”* (July 8–13, 2013, Lijiang, China);
- Drs. Shoshiro Minobe (WG 27 Co-Chairman) and Hiroaki Saito (AP-COVE Chairman) represented PICES at the CLIVAR Pacific Implementation Panel meeting (April 29–May 1, 2012, Noumea, New Caledonia);
- Dr. Toshio Suga represented CLIVAR at PICES-2012;

Ecosystem Studies of Sub-Arctic Seas (ESSAS)

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

- PICES provided organizational support for the second ESSAS Open Science Meeting (OSM) on *“Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction”* (May 2011, Seattle, USA). Special issue of *ICES Journal of Marine Science* (dedicated to Dr. Bernard Megrey) based on selected papers from this OSM (Guest Editors: K. Drinkwater, G.L. Hunt, Jr., O. Astthórsson and E. Head) was published in September 2012 (Vol. 69, No. 7, pp. 1119–1328).
- The goal of the Marine Ecosystem Model Inter-comparison Project (MEMIP), initiated by PICES and ESSAS in 2008, is to compare the performance of various lower trophic level marine ecosystem simulation models in predicting the abundance and distribution of coastal zooplankton functional groups. A series of joint MEMIP workshops has been organized in conjunction with PICES Annual Meetings since 2008. A 2-day MEMIP workshop on *“Comparison of multiple ecosystem models in several North Pacific shelf ecosystems”* was held at PICES-2012.

- A joint ESSAS/PICES workshop on “*Subarctic–Arctic interactions*” was convened at PICES-2012.
- ESSAS is normally present as an observer at PICES Annual Meetings. Drs. Kenneth Drinkwater and Franz Mueter (SSC Co-Chairmen) represented ESSAS at PICES-2012.

Exxon Valdez Oil Spill Trustee Council (EVOSTC)

EVOSTC is a member of the PICES funding consortium to support the North Pacific Continuous Plankton Recorder (NP CPR) survey.

- EVOSTC approved funding of \$188,600 US for operations of the NP CPR project in 2010–2012, and report writing in 2013 (project on “*Measuring inter-annual variability in the herring’s forage base from the Gulf of Alaska*”), with the amount of \$59,700 US for 2012.
- A new project on “*Long-term monitoring of zooplankton populations on the Alaskan Shelf and Gulf of Alaska using Continuous Plankton Recorders*”, with a similar level of funding from 2013–2016, was approved as a part of a Long Term Monitoring Program of EVOSTC.

Food and Agriculture Organization of UN (FAO)

The main area for cooperation between PICES and FAO is the impact of climate change on fish and fisheries.

- FAO joined PICES and ICES as major international sponsors for the International Symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (April 25–29, 2010, Sendai, Japan).
- FAO co-sponsored the 2nd PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 13–20, 2012, Yeosu, Korea) by providing \$10,000 US to support scientists from developing countries and countries with economies in transition to attend the meeting.
- Dr. Yimin Ye represented FAO at PICES-2012.
- FAO experts will be involved in the PICES/ICES workshop on “*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*” to be held May 22–24, 2013 in St. Petersburg, Russia.

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

PICES communicates with various international HAB efforts, including IOC/SCOR GEOHAB Program, through the Section on *Ecology of Harmful Algal Blooms in the North Pacific (HAB-S)*.

- The basic plan has been jointly developed by PICES, ICES and GEOHAB to explore HAB and climate change linkages. It is a two-phase approach, with a Phase I workshop (10–12 persons) to be held in March 2013, to: (1) assess the state of knowledge on HABs and climate change, and (2) identify the most critical research needs that can realistically be addressed over the next 5–10 years. The output would be a review (concept) paper targeted for a high-level scientific journal. In Phase II, the broad topic areas identified by the workshop participants will serve as the foundation for sessions in an Open Science Meeting to be convened in 2014 or 2015.

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

The main area for cooperation between PICES and GESAMP is pollution indicators for assessments of regional and global environmental concerns.

- GESAMP co-sponsored, by supporting an additional invited speaker/convenor, a workshop on “*Pollutants in a changing ocean: Refining indicator approaches in support of coastal management*” at PICES-2011. This workshop led to the formation of a 1-year PICES Study Group on *Marine Pollutants (SG-MP)* in order to (1) identify novel or promising approaches to operational marine pollution assessment in PICES member countries and (2) develop recommendations for a possible expert group on marine pollutants. Dr. Peter Kershaw (GESAMP Vice-Chairman), attended the SG-MP meeting at PICES-2012. It is expected that input from GESAMP will increase efficiencies and the scientific value of the SG-MP outcome.

Integrated Marine Biogeochemistry and Eco-system Research (IMBER)

Issues in marine biogeochemistry and food webs are important components of the integrative science program of PICES, FUTURE.

- PICES and IMBER have convened joint topic sessions at every PICES Annual Meeting since 2008, and IMBER has provided travel funds for an additional invited speaker for each of these sessions. The following sessions were organized in 2011–2012:
 - “How well do our models really work and what data do we need to check and improve them?” (PICES-2011, Khabarovsk, Russia);
 - “Changing ocean biogeochemistry and its ecosystem impacts” (PICES-2012, Hiroshima, Japan).
 IMBER was invited and agreed to co-sponsor a topic session on “Marine ecosystem services and the contribution from marine ecosystems to the economy and human well-being” at PICES-2013.
- PICES co-sponsored the CLIOTOP (IMBER Regional Program on CLimate Impacts on Oceanic TOP Predators) special session on “Global science for global governance of oceanic ecosystems and fisheries” at the Planet Under Pressure Conference (March 26–29, 2012, London, UK), by providing travel support for an invited speaker from the North Pacific.
- IMBER co-sponsored the 2nd PICES/ICES/IOC Symposium on “Effects of climate change on the world’s oceans” (May 13–20, 2012, Yeosu, Korea) by providing partial travel support for 2 speakers for the workshop on “Effects of climate change on advective fluxes in high latitude regions”.
- PICES co-sponsored IMBER IMBIZO II on “[Integrating biogeochemistry and ecosystems in a changing ocean: Regional comparisons](#)” (October 10–14, 2010, Crete, Greece) by providing travel support for 3 invited speakers from the North Pacific and agreed to co-sponsor IMBER IMBIZO III on “Multi-dimensional approaches to the challenges of global change in continental margins and open ocean systems” (January 28–31, 2013, Goa, India) at the same level.
- PICES co-sponsored the IMBER ClimECO3 Summer School on “A view towards Earth System models: Human-natural system interactions in the marine world” (July 23–28, 2012, Ankara, Turkey) by providing travel funds and arranging additional support (through national programs/agencies) for 5 early career scientists from PICES member countries (1 from Japan, 2 from Korea and 2 from China).
- IMBER was invited and agreed to co-sponsor the 2013 PICES Summer School on “Ocean observing systems and ecosystem monitoring” (August 2013, Newport, Oregon, USA).
- In 2011, new expert groups on human dimensions were established by IMBER (Working Group on Human Dimensions ([WG-HD](#))); and PICES (Section on Human Dimensions ([S-HD](#))). These two expert groups have the same motivations, similar objectives, identical challenges, and overlapping membership (Drs. Mitsutaku Makino and Ian Perry are members of both groups) and are well set to work together to more effectively implement their tasks.
- IMBER is normally present as an observer at PICES Annual Meetings. Dr. Kenneth Drinkwater (IMBER SSC member) represented IMBER at PICES-2012.

Intergovernmental Oceanographic Commission of UNESCO (IOC)

Main topics for cooperation between PICES and IOC are: (i) the impact of climate variability and change on marine ecosystems; (ii) monitoring (through GOOS); (iii) harmful algal blooms (through IPHAB and GEOHAB); and (iv) CO₂ data integration and synthesis (through IOCCP).

- IOC and PICES worked together (with ICES as another major international sponsor) to organize the 2nd International Symposium on “Effects of climate change on the world’s oceans” (May 13–20, 2012, Yeosu, Korea). Planning is initiated for the 3rd symposium in this series to be held in the spring of 2015, in Brazil.
- GOOS co-sponsored the workshop to discuss the Framework for Ocean Observing (FOO) held in conjunction with the above mentioned PICES/ICES/IOC Symposium. [The report of the workshop](#) can be found in the July 2012 issue of PICES Press.
- In June 2005, PICES joined the IOC-led Harmful Algal Event DATAbase (HAE-DAT), a partnership in systematically compiling, storing, and presenting on-line records on harmful algal events. Building a common data resource allows inter-comparison of HAB species composition and the magnitude of their environmental and economic impacts. Discussion on this joint project proceeds at each PICES Annual Meeting.
- Information on the basic plan jointly developed by PICES, ICES, SCOR and IOC to explore HAB and climate change linkages can be found under GEOHAB.
- ICES and PICES continue to regularly exchange observers at each others’ annual meetings. Dr. Yutaka Michida (IOC Vice-Chairman) represented IOC at PICES-2012.

International Council for the Exploration of the Sea (ICES)

The two major international marine science organizations in the Northern Hemisphere, ICES and PICES, are focused on different oceans but have many scientific issues in common. The PICES/ICES framework for scientific cooperation was endorsed by both organizations in 2011. The report of the joint Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* identified the following research foci that are currently, or soon to become, areas of joint interest: (1) climate change, (2) ecosystem assessment, (3) marine spatial planning, and (4) ocean acidification and hypoxia/anoxia. A desire was also expressed by both organizations to foster and enhance collaboration in operational areas such as training, knowledge exchange, and communication. Under the proposed framework, cooperation can take the form of co-sponsored symposia, workshops, or topic sessions at each other's annual meetings; expert groups and strategic initiatives where PICES and ICES appoint scientists to focus on topics of joint interest, joint publications, joint training initiatives, joint advice, etc.

- PICES and ICES worked together to organize the 2nd ICES/PICES Conference for Early Career Scientists on “*Oceans of change*” (April 24–27, 2012, Majorca, Spain), 2nd International Symposium on “*Effects of climate change on the world's oceans*” (May 13–20, 2012, Yeosu, Korea) and International Symposium on “*Forage fish interactions: Creating the tools for ecosystem based management of marine resources*” (November 8–12, 2012, Nantes, France).
- Four joint Theme Sessions were convened at the 2012 ICES Annual Science Conference (September 17–21, 2012, Bergen, Norway):
 - Session A on “*Understanding, measuring and projecting the limits of resilience in marine ecosystems*”;
 - Session I on “*Multidisciplinary perspectives in the use (and misuse) of science and scientific advice in Marine Spatial Planning*”;
 - Session M on “*Subarctic-Arctic Interactions: Ecological consequences*”;
 - Session Q on “*Sustainability of aquaculture*”.

Four joint Theme Sessions will be convened at the 2013 ICES Annual Science Conference (September 23–27, 2013, Reykjavik, Iceland):

- Session A on “*Marine litter*”;
- Session B on “*Responses of living marine resources to climate change and variability: Learning from the past and projecting the future*”;
- Session E on “*Do food web dynamics matter in fisheries management?*”;
- Session M on “*Identifying mechanisms linking physical climate and ecosystem change: Observed indices, hypothesized processes, and "data dreams" for the future*”.
- Three joint Topic Sessions were convened at PICES-2012:
 - Session 3 on “*Challenges in understanding North Hemisphere climate variability and change*” (also with CLIVAR);
 - Session 7 on “*Jellyfish in marine ecosystems and their interactions with fish and fisheries*”;
 - Session 14 on “*Changing ocean biogeochemistry and its ecosystem impacts*” (also with IMBER and SOLAS).

Two joint workshops will be convened at PICES-2013:

- Workshop 1 on “*Comparison of size-based and species based ecosystem models*”
- Workshop 2 on “*Identifying mechanisms linking physical climate and ecosystem change: Observed indices, hypothesized processes, and "data dreams" for the future*”
- A GLOBEC/PICES/ICES workshop on “*Forecasting ecosystem indicators with process-based models*”, was held September 7–11, 2012, in Friday Harbor, WA, U.S.A. The goal of this workshop was to identify and model key processes that enable us to succinctly and quantifiably explain the mechanisms underlying the correlative relationships in physical-biological datasets, both in the North Pacific and North Atlantic. A follow-up workshop on “*Identifying mechanisms linking physical climate and ecosystem change*” is planned for PICES-2013.
- In 2011, PICES and ICES established a joint Section (Strategic Initiative) on *Climate Change Effects on Marine Ecosystems*. This group met three times in 2012: in conjunction with the 2nd International Symposium on “*Effects of climate change on the world's oceans*” in May 2012 (Yeosu, Korea), at the 2012 ICES Annual Science Conference in September (Bergen, Norway), and at PICES-2012 in October.

Proposals have been submitted for the following joint events: (1) an inter-sessional workshop on “*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*” to be held in May 2013, in Russia, (2) a Theme Session on “*Climate-induced shifts in spatial distributions*” to be convened at the 2013 ICES Annual Science Conference in Reykjavik, Iceland; and (3) a workshop on “*Comparison of size-based and species based ecosystem models*” to be convened at PICES-2013 in Nanaimo, Canada.

- Dr. Mark Wells (member of the Section on *Ecology of Harmful Algal Blooms in the North Pacific*) represented PICES at the meeting of ICES-IOC Working Group on Harmful Algal Bloom Dynamics (April 24–27, Oban, UK). Information on the basic plan for “*HAB and climate change events*” developed at this meeting can be found under GEOHAB.
- Two special issues of *ICES Journal of Marine Science* (IJMS) were published based on papers presented at joint symposia: the 5th PICES/ICES Zooplankton Production Symposium on “*Zooplankton population connections, community dynamics, and climate variability*” (May 2012, Vol. 69, No. 3, pp. 347–492) and the 2011 ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*” (September 2012, Vol. 69, No. 7, pp. 1119–1328).
- ICES and PICES continue to regularly exchange observers at each others’ annual meetings.
 - Drs. Skip McKinnell (PICES Deputy Executive Secretary) and Thomas Therriault (Science Board Vice-Chairman) represented PICES at the 2012 SCICOM meeting held in conjunction with the ICES Annual Science Conference in Bergen, Norway.
 - Drs. Anne Christine Brusendorff (ICES General Secretary) and Adolf Kellermann (Head of ICES Science Programme) represented ICES at PICES-2012.

North Pacific Anadromous Fish Commission (NPAFC)

In 1998, NPAFC and PICES signed a Memorandum of Understanding (MOU), and scientists involved in the two organizations have been working together on problems of mutual interest for 15 years, with a good record of joint activities.

- NPAFC co-sponsored the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 13–20, 2012, Yeosu, Korea).
- NPAFC and PICES continue to regularly exchange observers at each others’ annual meetings. Dr. Shigehiko Urawa (Science Sub-Committee Chairman) represented NPAFC at PICES-2012.
- At PICES-2012, PICES and NPAFC agreed to establish a joint Study Group on *Scientific Cooperation in the North Pacific Ocean*, which over approximately one year, will develop a framework of enhanced collaboration between the two organizations to achieve better and/or more rapid understanding of natural and anthropogenic variability in marine ecosystems. The study group will review each organization’s scientific needs and identify where similar key questions or scientific issues might be explored jointly.

North Pacific Research Board (NPRB)

- NPRB joined the PICES funding consortium to support the North Pacific Continuous Plankton Recorder (NP-CPR) survey in 2009, and committed \$50,000 US per year for 5 years (until May 31, 2014) to support operations of the NP CPR project.
- NPRB regularly co-sponsor symposia and capacity building events organized by PICES. This year, \$5,000 US was provided for the 2nd ICES/PICES Conference for Early Career Scientist on “*Oceans of change*” (April 24–27, 2012, Majorca, Spain), and a grant of \$15,000 US for the 2nd PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 13–20, 2012, Yeosu, Korea).
- NPRB was invited to co-sponsor the 2013 PICES Summer School on “*Ocean observing systems and ecosystem monitoring*” (August 2013, Newport, Oregon, USA).
- NPRB is normally represented as an observer at PICES Annual Meetings. Dr. Francis Wiese (Science Director) represented NPRB at PICES-2012.

Northwest Pacific Action Plan (NOWPAP)

NOWPAP’s focus on monitoring and assessment of environmental (anthropogenic) problems combined with the broad scientific mandate of PICES provides the two organizations with great potential for cooperation. Currently, the main contacts and joint activities are on capacity building and various MEQ-related issues, including harmful algal blooms and invasive species and other stressors in coastal zone ecosystems.

- NOWPAP was the very first international organization that requested the *ex-officio* membership in PICES—Dr. Takafumi Yoshida (CEARAC, Japan) was appointed as an *ex-officio* member of the PICES Section on *Ecology of Harmful Algal Blooms in the North Pacific*. In 2012, a representation of NOWPAP on two more expert groups were endorsed by Science Board and approved by Council: Dr. Sangjin Lee (NOWPAP Scientific Affairs Officer) will serve as an *ex-officio* member on WG on *Non-indigenous Aquatic Species* (WG 21), and Dr. Vladimir Shulkin (Russia, NOWPAP POMRAC) on Study Group on *Marine Pollutants* (SG-MP).
- After a success of the 2011 NOWPAP/PICES/WESTPAC training course on “*Remote sensing data analysis*” (October 8–12, 2011, Vladivostok, Russia), PICES was invited and agreed to join NOWPAP in organizing a follow-up course on the same topic to be held in fall 2013, in Qingdao, China. The level of technical and financial support from PICES will be decided in joint consultations.
- A PICES/NOWPAP/WESTPAC workshop on “*Introduction to rapid assessment survey (RAS) methodologies for detecting non-indigenous marine species*”, with a main objective to educate participants in RAS methodologies and demonstrate their application (15 trainees from China, Indonesia, Japan, Korea, the Philippines, Thailand and Vietnam), was held February 8–9, 2012, in Nagasaki, Japan. The outcomes from the NOWPAP regional workshop on “*Marine invasive species (MIS) problems in the Northwest Pacific*” (October 23–24, 2012, in Qingdao, China) will be included in the final report of PICES WG 21.
- NOWPAP is normally represented as an observer at PICES Annual Meetings. Drs. Alexander Tkalin (Coordinator) and Sangjin Lee (Scientific Affairs Officer) represented NOWPAP at PICES-2012.

Scientific Committee on Oceanic Research (SCOR)

SCOR and PICES have worked out ways of cooperation that have made it possible for an international non-governmental organization and a regional intergovernmental organization to share their strengths. Continuing and expanding collaboration between the two organizations is based on the recognition that PICES can play an important role in bringing a North Pacific perspective to the global activities of SCOR, and that by participating in and implementing these activities in the region, PICES can advance its own scientific agenda. PICES contributes to SCOR-sponsored international large-scale ocean research projects (see GEOHAB, IMBER, SOLAS), to ocean carbon activities supported by SCOR, and to several SCOR Working Groups.

- PICES supports associated members for two current SCOR Working Groups:
 - WG 137 on *Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time Series Observation* (Dr. Sinjae Yoo, Korea);
 - WG 140 on *Biogeochemical Exchange Processes at the Sea-Ice Interfaces* (Dr. Lisa Miller, Canada).
- A 2-day SCOR/PICES workshop on “*Global patterns of phytoplankton dynamics in coastal ecosystems*” and a 1-day SCOR WG 137 meeting were held in conjunction with PICES-2012. PICES covered meeting costs and travel expenses for the workshop invited speaker, and SCOR covered the registration fee for all WG members who attended PICES-2012.
- SCOR continues to provide travel support for scientists from countries with “economies in transition” to participate in SCOR-relevant sessions/workshops at PICES Annual Meetings and international symposia led/co-organized by PICES. In 2012, US\$5,000 from the SCOR/NSF fund was provided to each of the following two events:
 - 2nd PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 13–20, 2012, Yeosu, Korea);
 - PICES-2012 (October 12–21, 2012, Hiroshima, Japan).
- PICES appointed a liaison, Dr. George Boehlert (U.S. national delegate), to the SCOR Committee on Capacity Building, who attended the SCOR-led conference on “*Developing a global strategy for capacity building in the ocean sciences*” (August 16–18, 2010, Bremen, Germany) and the 2011 meeting of the SCOR Committee on Capacity Building (April 19–21, 2011, Izmir, Turkey). Dr. Harold Batchelder, the new U.S. national delegate, serves in this capacity from September 2012.
- SCOR and PICES continue to regularly exchange observers at each others’ annual meetings. Dr. Satoru Taguchi (SCOR Vice-Chairman) represented SCOR at PICES-2012.

Surface Ocean-Lower Atmosphere Study (SOLAS)

The main areas for cooperation between PICES and SOLAS include: the impact of iron on biogeochemistry and marine ecosystems; and carbon cycle research studies.

- PICES and SOLAS have convened joint topic sessions and workshops at PICES Annual Meeting since 2006, and SOLAS has provided travel funds for an additional invited speaker/convenor for each of these events. The following joint sessions are to be organized at PICES-2012:
 - Session on “*Ecosystem responses to multiple stressors in the North Pacific*”;
 - Session on “*Changing ocean biogeochemistry and its ecosystem impacts*”.
 SOLAS was invited and agreed to co-sponsor a topic session on “*The changing carbon cycle of North Pacific continental shelves and marginal seas*” at PICES-2013 (October 11–20, 2013, Nanaimo, Canada).
- PICES co-sponsored the 5th SOLAS Summer School (August 29–September 10, 2011, Cargèse, Corsica, France) by providing travel funds for 3 students/early career scientists from PICES member countries (Canada, China and USA), and agreed to support the 6th SOLAS summer school (August 23–September 2, 2013, Xiamen, China) at the same level.
- SOLAS was invited and agreed to co-sponsor the 2013 PICES Summer School on “*Ocean observing systems and ecosystem monitoring*” (August 2013, Newport, Oregon, USA).
- The SOLAS/IMBER Carbon (SIC) Research Working Group is charged with coordination and synthesis of ocean carbon research. PICES, through its Working Groups on *CO₂ in the North Pacific* (WG 13; 1998–2001) and *Biogeochemical Data Integration and Synthesis* (WG 17; 2002–2005), and now through the Section on *Carbon and Climate* (S-CC; 2006–present;), has been long acting as a regional coordinator for these activities. S-CC provides a channel of communication to SIC-WG. There are S-CC members on each of SIC’s subgroups: Dr. Toshiro Saino serves on the subgroup 1 on *Surface Ocean System*, Dr. Masao Ishii is on the subgroup 2 on *Interior Ocean Carbon*, and Drs. Richard Feely and Minhan Dai are members of the subgroup 3 on *Ocean Acidification*.
- SOLAS is normally present as an observer at PICES Annual Meetings. Drs. Lisa Miller and Yukihiko Nojiri (SSC members) represented SOLAS at PICES-2012.

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List of organizations and programs present as observers at PICES-2012

Alaska Ocean Observing System (AOOS)	Dr. Phillip Mundy
Arctic Monitoring and Assessment Program (AMAP)	Dr. Kenneth Drinkwater
Asia-Pacific Fisheries Commission (APFIC)	Dr. Yimin Ye
Asia Pacific Network for Global Change Research (APN)	Mr. Xiaojun Deng
Bering Sea Ecosystem Study (BEST-BSIERP)	Dr. Francis Wiese
Central and Northern California Ocean Observing System (CeNCOOS)	Dr. Steven Bograd
Climate Variability and Predictability Program (CLIVAR)	Dr. Toshio Suga
Coordinating Body on the Seas of East Asia (COBSEA)	Dr. Ellik Adler
Ecosystem Study of Sub-Arctic Seas (ESSAS)	Dr. Kenneth Drinkwater
Food and Agriculture Organization (FAO)	Dr. Franz Mueter
Group of Experts on Scientific Aspects of Marine Pollution (GESAMP)	Dr. Yimin Ye
Global Ocean Observing System (GOOS)	Dr. Peter Kershaw
Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)	Dr. Yutaka Michida
Intergovernmental Oceanographic Commission (IOC) of UNESCO	Dr. Kenneth Drinkwater
IOC Sub Committee for the Western Pacific (WESTPAC)	Dr. Yutaka Michida
International Council for the Exploration of the Sea (ICES)	Dr. Yutaka Michida
International Ocean Carbon Coordinated Project (IOCCP)	Dr. Anne Christine Brusendorff
International Oceanographic Data and Information Exchange (IODE)	Dr. Adolf Kellermann
International Program for Deployment of Profiling Floats (Argo)	Dr. Masao Ishii
International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC)	Mr. Alexander Kozyr
	Mr. Ward Appeltans (via webex)
	Dr. Toshio Suga
	Dr. Hideki Nakano
	Dr. Francisco Werner

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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. Shigehiko Urawa
North Pacific Fishery Management Council (NPFMC)	Ms. Patricia Livingston
	Dr. Gordon Kruse
North Pacific Research Board (NPRB)	Dr. Francis Wiese
Northwest Association of Networked Ocean Observing Systems (NANOOS)	Dr. Jack Barth
Northwest Pacific Action Plan (NOWPAP)	Dr. Sangjin Lee
	Dr. Alexander Tkalin
Pacific Arctic Group (PAG)	Dr. Jackie Grebmeier
	Dr. Takeshi Kikuchi
Pacific Coast Ocean Observing System (PaCOOS)	Dr. Francisco Werner
Pacific Seabird Group (PSG)	Dr. Ken Morgan
Sir Alister Hardy Foundation for Ocean Science (SAHFOS)	Dr. Sonia Batten
Southern California Coastal Ocean Observing System (SCCOOS)	Dr. J. Anthony Koslow
Scientific Committee on Oceanic Research (SCOR)	Dr. Satoru Taguchi
Surface Ocean Low Atmosphere Study (SOLAS)	Dr. Lisa Miller
	Dr. Yukihiro Nojiri
World Climate Research Programme (WCRP)	Dr. Toshio Suga

GC Endnote 6

2012-2013 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 Working Group, 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
BEST-BSIERP*	Bering Sea Ecosystem Study
CeNCOOS	Central and Northern California Ocean Observing System
CERF	Coastal and Estuarine Research Federation
CLIVAR*	Climate Variability and Predictability Program
ESSAS*	Ecosystem Studies of Sub-Arctic Seas
EVOSTC	<i>Exxon Valdez</i> Oilspill Trustee Council
FAO	Food and Agriculture Organization
GESAMP	Group of Experts on Scientific Aspects of Marine Pollution
GOOS*	Global Ocean Observing System
IAMSLIC	International Association of Marine Science Libraries
IASC	International Arctic Science Committee
IATTC	Inter-American Tropical Tuna Commission
ICES*	International Council for the Exploration of the Sea
IGBP	International Geosphere-Biosphere Program
IHDP	International Human Dimensions Programme on Global Environmental Change
IMBER*	Integrated Marine Biogeochemistry and Ecosystems Research
IMO	International Maritime Organization
IOC*	Intergovernmental Oceanographic Commission
IOCCP*	International Ocean Carbon Coordinated Project
IODE	International Oceanographic Data and Information Exchange

IPCC*	Intergovernmental Panel on Climate Change
IPHC	International Pacific Halibut Commission
ISC	International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean
IWC	International Whaling Commission
NAFO	Northwest Atlantic Fisheries Organization
NANOOS	Northwest Association of Networked Ocean Observing Systems System
NEAR-GOOS*	North East Asian Regional GOOS
NOWPAP*	Northwest Pacific Action Plan
NPAFC*	North Pacific Anadromous Fish Commission
NPFC	North Pacific Fisheries Commission
NPFMC	North Pacific Fishery Management Council
NPRB*	North Pacific Research Board
PaCOOS*	Pacific Coast Observing System
PAG	Pacific Arctic Group
POGO	Partnership for Observing the Global Oceans
PSC	Pacific Salmon Commission
PSG	Pacific Seabird Group
SAHFOS*	Sir Alister Hardy Foundation for Ocean Science
SAON	Sustaining Arctic Observing Networks
SCCOOS	Southern California Coastal Ocean Observing System
SCOPE	Scientific Committee on Problems of the Environment
SCOR*	Scientific Committee on Oceanic Research
SOLAS*	Surface Ocean Low Atmosphere Study
SPC	South Pacific Commission
SPREP	South Pacific Regional Environmental Program
START	South Asian Regional Committee for the System for Analysis, Research and Training
UNEP	United Nations Environment Program

GC Endnote 7

Financial report for Year 5 (completed on March 31, 2012) of the PICES/MAFF project on “Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim”

BACKGROUND

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

PICES and MAFF/JFA agreed upon on the following organizational principles for 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, USA, E-mail: steven.s.rumrill@state.or.us) was elected as the MEQ Chairman at the 2009 PICES Annual Meeting. He has delegated Dr. Jamieson to continue serving as the Project Scientific Coordinator.]

FINANCIAL PRINCIPLES AND BUDGET CATEGORIES

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

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

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

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

PROJECT BANK ACCOUNT AND PAYMENT HISTORY

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

Bank name: TD Canada Trust

Bank number: 004

SWIFT Code: 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)

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

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

July 27, 2007. The progress report and the financial report for *Year 1* were submitted to JFA on July 19 and July 23, 2008, respectively.

- The set of documents requesting funding for *Year 2* (completed on March 31, 2009) was sent to JFA on April 3, 2008 and, based on instructions from JFA, to the Consulate General of Japan in Vancouver (Canada) on June 2, 2008. Funds in the amount of \$161,466 were transferred to the PICES/MAFF bank account on July 17, 2008. The financial report for *Year 2* was submitted to JFA on July 21, 2009, and the progress report was sent on August 13, 2009.
- The set of documents requesting funding for *Year 3* (completed on March 31, 2010) was sent to the Consulate General of Japan in Vancouver (Canada) on June 10, 2009. Funds in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 15, 2009. The progress report and the financial report for *Year 3* were submitted to JFA on July 26, 2010.
- The set of documents requesting funding for *Year 4* (completed on March 31, 2011) was sent to the Consulate General of Japan in Vancouver (Canada) on May 28, 2010, and the requested revisions were directed to JFA on June 24, 2010. Funds in the amount of \$187,505 were transferred to the PICES/MAFF bank account on July 12, 2010. The progress report and the financial report for *Year 4* were submitted to JFA on July 28, 2011.
- The set of documents requesting funding for *Year 5* (completed on March 31, 2012) was sent to the Consulate General of Japan in Vancouver (Canada) on June 10, 2011. Funds in the amount of \$164,641 were transferred to the PICES/MAFF bank account on July 27, 2011. The financial report for *Year 5* and final products (scientific report, brochures, USBs with a MNIS database and “*Atlas of non-indigenous marine and estuarine species in the North Pacific*”, are due by July 31, 2012.

BUDGET EXECUTION FOR FISCAL YEAR 5

The budget allocated for *Year 5* was \$164,641. The proposed budget breakdown and actual expenses for each of the budget categories, and the project account balance as of March 31, 2012 are shown in Table 1. The combined surplus of \$62,001 for *Year 3* and *Year 4* was distributed among the budget categories as shown in column 2 of Table 1 (numbers in blue). Table 2 provides more details on actual expenses of the major categories.

Table 1 Allocations and expenses for *Year 5*.

Category	Year 5 Allocation + Previous Surplus	Actual Expenses	Remainder
Travel & meetings	103,000+44,000 = 147,000	138,996	8,004
Contracts	33,000+6,000 = 39,000	40,886	(1,886)
Equipment	7,000+11,500 = 18,500	25,573	(7,073)
Miscellaneous	238+501 = 739	73	666
Overhead	21,403	21,403	0
Total	226,642	226,931	(289)
Interest earned			289
Account Balance			0

Table 2 Breakdown of expenses for various budget categories for Year 5.

Category/Activity	Expenses
Travel & meetings	138,996
PICES/MAFF workshop on “ <i>Rapid assessment survey methodologies for detecting non-indigenous marine species</i> ” (July 19–21, 2011, Marine Biological Center, Phuket, Thailand)	24,249
Travel support for one speaker and 12 students to participate in the 7th International Conference on Marine bioinvasions (August 23–25, 2011, Barcelona, Spain)	6,932
Travel of PICES experts to Indonesia (September 2011 and February 2012) for preparation and conducting of the 3 rd PICES/MAFF HAB training course	35,959
Fourth PICES/MAFF rapid assessment survey (October 7–14, 2011, Vostok, Russia), held in conjunction with the 2011 PICES Annual Meeting (Khabarovsk, Russia)	20,558
Travel for NIS sub-project PI and WG 21 Co-Chairman to report on the MNIS component of the project at the 2011 Annual Meeting (October 2011, Khabarovsk, Russia)	12,353
PICES/MAFF demonstration workshop on “ <i>An introduction to rapid assessment survey methodologies for application in developing countries</i> ” (February 8–9, 2012, Seikai National Fisheries Research Institute, Nagasaki, Japan)	23,294
MNIS Synthesis Meeting (March 20–23, 2012, Newport, U.S.A.)	7,797
Travel for the HABs sub-project PI to report on the HAB component of the project at the 2012 FUTURE Workshop and inter-sessional Science Board Meeting (May 22–26, 2012, Pusan, Korea)	1,618
Travel of PICES experts to Indonesia (September 2012) to review the progress made since the 3 rd PICES/MAFF HAB training course	6,236
Contracts	40,886
Macro photo images for NIS database	1,234
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)	7,970
To provide assistance to project Coordinators and sub-project Principle Investigators (Ms. Rosalie Rutka, Stranby Technical Services)	29,792
To design final colour brochures for both sub-projects (Ms. Melinda Stephenson, Alkemi Creative)	1,890
Equipment	25,573
Equipment and materials for a HAB training program in developing countries	23,293
Purchase of USBs for NIS database and “ <i>Atlas of non-indigenous marine and estuarine species in the North Pacific</i> ” for distribution to JFA and PICES community	2,280
Miscellaneous	73
Overhead	21,403

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, 2011, was assessed during the regular PICES audit for *FY 2011*. The financial statements were submitted to the auditor on March 26, 2012, and the audit was completed on May 3. The electronic copy of the Auditors' Report was received and circulated to all Contracting Parties on May 4. In the auditor's opinion, the financial statements present fairly, in all material respects, the financial position of the North Pacific Marine Science Organization as at December 31, 2011, and the results of its operations and changes in fund balances for the year then ended. The financial statements for the rest of *Year 5* of the MAFF project (January 1 to March 31, 2012) will be evaluated during the regular PICES audit for *FY 2012*.

GC Endnote 8

Report on the performance evaluation of the Executive Secretary for 2011

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 2011 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 2012. 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 2011, and the commitments for 2012, 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 2011

Dr. Bychkov's commitments in 2011 were as follows:

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

Items (a) to (e) are essential for administration of the Organization and are consistent with *Rule 10* of the PICES Rules of Procedure that spells out the responsibilities of the Executive Secretary. Cooperation with other organizations is highly important to advance the PICES scientific agenda and to incorporate a North Pacific perspective into global scientific activities. Given the current stringent funding situation of the Contracting Parties, fund-raising is also a very important activity to maintain the Organization at its present

level of activities, which is the rationale for items (f) and (g) to be added to the tasks of the Executive Secretary.

Evaluation 2011 accomplishments

The Executive Secretary as the Chief Executive Officer of PICES, is quite important for managing the Organization. With the initiation of FUTURE, the second integrative science program of the Organization, there has been an increase in the planning and activities in PICES to ensure the success of this program. Dr. Bychkov's accomplishments on the ongoing commitments (items (a)-(e)) fulfilled our expectations, even though there were many difficulties encountered.

Besides the annual contributions from Contracting Parties, PICES funds to be managed include various grants and voluntary contributions. Dr. Bychkov appropriately managed and executed funds in accordance with PICES Financial Regulations and Canadian generally accepted accounting principles. The 2011 Annual Meeting (PICES-2011) in Khabarovsk, Russia was very successful, with almost 330 participants from 17 countries and 28 organizations/programs. PICES also held or contributed to the planning and support for 20 inter-sessional events in 2011. Logistical and financial arrangements provided by the Secretariat were essential for the success of the Annual Meeting and inter-sessional events. The most important inter-sessional event was the 5th International Zooplankton Production Symposium on "*Population connections, community dynamics, and climate variability*" held in March 2011, in Pucón, Chile. There were almost 300 scientists from 36 countries in attendance and 159 talks and 203 posters were presented, which was an outstanding success. Preparations, arrangements, and planning for other international symposia to be held in 2012 are underway, including the 2nd PICES/ICES Conference for Early Career Scientists (April 24-27, 2012, in Majorca, Spain) and the 2nd International Symposium on "*Effects of climate change on the world's oceans*" (May 14-20, 2012, in Yeosu, Korea). Dr. Bychkov was a very effective manager of the Secretariat staff, including the PICES interns. In addition, significant progress was made in implementing the Action Plan for the PICES Publication Program, especially with respect to establishing a License Agreement with ProQuest Science Journals database to ensure indexing of all PICES publications to the article level.

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

Based on his accomplishments in 2011 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 2011

In accordance with the practice of the Canadian Public Service system, an executive is eligible for a maximum of 12% performance pay ("at-risk pay"), except for the candidate evaluated as "Did not meet". In addition, if performance is evaluated as "Surpassed", then the executive is eligible for a maximum of 3% bonus (Appendix 2). The Committee evaluated Dr. Bychkov's overall performance for 2011 as "Succeeded+". Because the Committee also considered that his tasks in 2011 were quite difficult, the Committee decided that a performance pay equal to 12% of his salary would be appropriate for this period.

Setting commitments for 2012

The Committee set Dr. Bychkov's commitments in 2012 as follows. Items (a) to (e) are essential for administration of the Organization in 2012 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 continues to be an important task in order to sustain the Organization at the present level of activities. Therefore, the Committee added items (f) and (g).

- a. Managing the budget of the Organization and implementing the Organization's financial regulations;
- b. Administrating the Secretariat personnel/office;
- c. Planning and organizing the Annual Meeting;
- d. Providing secretarial services to meetings/symposia/conferences approved by Council;
- e. Coordinating the publication program of the Organization;
- f. Intensifying the cooperation with other organization/programs;
- g. Fund-raising for prioritized activities of the Organization in 2012 and beyond.

Recommendations with respect to the Executive Secretary position

The appointment of the Executive Secretary is mentioned in *Article VIII* of the PICES Convention (<http://www.pices.int/about/convention.aspx>) and, according to *Rule 3(iii,b)* of the PICES Rules of Procedure (http://www.pices.int/about/rules_procedure.aspx), requires consensus of all Contracting Parties. His/her main duties and responsibilities are spelled out in *Rule 10* of the Rules of Procedure.

The Executive Secretary position was last advertised in 1998. Dr. Bychkov was appointed to this position for a 5-year term starting June 1, 1999, re-appointed for a second 5-year term (June 1, 2004 to May 31, 2009) in 2002, and for a third 5-year term (June 1, 2009 to May 31, 2014) in 2008. Because the decision on the Executive Secretary's position shall be made at least 12 months prior to the end of the current term, this issue has to be brought to Council at the 2012 PICES Annual Meeting.

The Organization can take several approaches to fill the Executive Secretary position after the completion of Dr. Bychkov's current term on May 31, 2014:

1. advertise the position, carry out the competition, and select a new Executive Secretary;
2. extend Dr. Bychkov's term (*e.g.*, for 2.5 years - until December 31, 2016, allowing him to have 20 years of service to PICES (including 3 years as the Assistant Executive Secretary) and to organize and run the 25th Anniversary Annual Meeting);
3. re-appoint Dr. Bychkov for another 5-year term.

Given the importance of the planning necessary for a successful 25th Anniversary Annual Meeting, it is the recommendation of this committee that options (2) and (3) be advanced for discussion and approval of one of these by the PICES Finance and Administration and Governing Council at PICES-2012.

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

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

- **Surpassed:** Went well beyond performance expectations.
- **Succeeded+:** Exceeded the performance expectations. Or, fully succeeded in a position of greater scope and complexity in relation to those of other executive level jobs.
- **Succeeded:** Has fully achieved the performance expectations.
- **Succeeded-:** Did not fully succeed in meeting performance expectations. Or, while succeeded, it was in a position with performance expectations of less scope and complexity in relation to those of other executive level jobs.
- **Did not Meet/Unable to Assess:** Did not achieve performance expectations or unable to assess the performance during the cycle (due to leave, training, special assignment).

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

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

GC Appendix A

2012 Governing Council decisions

2012/A/1: Auditor

- i. Council accepted the audited accounts for *FY* 2011.
- ii. Council authorized the Executive Secretary to sign a new 3-year contract (for *FYs* 2012-2014) with the current auditor *Flader, Hale & Hughesman*.

2012/A/2: Annual contributions

- i. 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.
- ii. Council instructed the Executive Secretary to send a letter to the Contracting Parties regarding the need for timely payment of the annual contribution and describing the difficulties that late and/or partial payment causes the Organization.

2012/A/3: Budget and fund-raising

- i. Council accepted the estimated accounts for *FY* 2012.
- ii. Council approved the *FY* 2013 budget of \$850,000. The amount of \$113,200 will be transferred from the Working Capital Fund to balance the budget, setting the total annual contribution at \$736,800, and the 2013 annual fee at \$122,800 per Contracting Party.
- iii. Council approved a transfer from the Working Capital Fund to the Relocation and Home Leave Fund in order to bring the balance of this fund to \$100,000.
- iv. Council approved a transfer from the Working Capital Fund to the Trust Fund to recover the 2012 expenses, and to restore the Trust Fund to the level of \$110,000. This transfer will include \$11,870 from the amount remaining in the PICES-2010 Annual Meeting fund.
- v. Council agreed that the available balance of funds in the Working Capital Fund as of December 31, 2012, from the 2011 Zooplankton Production Symposium and 2012 PICES/ICES Conference for Early Career Scientists be allocated for the development of the PICES integrative science program on “*Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Ecosystems*” (FUTURE).
- vi. Council approved a lump sum employer contribution of \$20,000 from the *FY* 2013 budget and an additional lump sum payment from a *FY* 2012 surplus in the General Fund to the International Fisheries Commission Pension Plan to pay down unfunded liabilities.

2012/A/4: Future PICES Annual Meetings and 2013 inter-sessional Science Board meeting

- i. Considering that PICES-2012 was the first Annual Meeting for which the structure was in accordance with the entire suite of recommendations by the Study Group on *Restructuring of the PICES Annual Meeting* (SG-RAM), Council decided to discuss the effectiveness of the approved changes in the format of the Annual Meeting at PICES-2013.
- ii. Council approved the theme description, “*Communicating forecasts, uncertainty and consequences of ecosystem change to society*”, for PICES-2013 to be held from October 11-20, 2013, in Nanaimo, British Columbia, Canada.
- iii. Council requested an answer from China by the end of November 2012, regarding its ability to host PICES-2014, and agreed to consider the following options if China is unable to host PICES-2014: (1) asking Korea if it might be prepared to host PICES-2014 and give China the opportunity to host PICES-2015, (2) holding PICES-2014 at the seat of the Secretariat, or (3) merging the FUTURE Open Science Meeting and PICES-2014.
- iv. Assuming that China agrees to host PICES-2014, Council, following the established 6-year rotation cycle, requested Korea to explore the possibility of hosting PICES-2015, and inform the Secretariat on this matter by March 31, 2013.

- v. Council agreed to keep the same registration fee structure for PICES-2013 as for PICES-2010 through PICES-2012:

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

- vi. Council approved an inter-sessional Science Board meeting to be held May 20–21, 2013, immediately prior to a 3-day joint PICES/ICES FUTURE-related workshop on “*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*” to be convened May 22–24, 2013. Both events are to be hosted by Russia in St. Petersburg.

2012/A/5: Twenty-Fifth Anniversary of PICES

Council approved the formation of a planning committee for the twenty-fifth anniversary of PICES, consisting of the Chairman of the Finance and Administration (F&A) Committee, Chairman and Vice-Chairman of Science Board, Executive Secretary, and a representative from each of the Contracting Parties. The group’s responsibility would be to direct the planning of activities, budget and fund-raising for this celebration. Council instructed the F&A Committee Chairman to draft the terms of reference for the group (see *GC Appendix B*).

2012/A/6: PICES Visiting Scientist Program

Council approved the revised description of the PICES Visiting Scientist Program (see *GC Appendix B*) and instructed the Executive Secretary to send a letter to the Contracting Parties, requesting their proposals for contributions to the Program.

2012/A/7: PICES Intern Program

- i. Considering funding currently available for the Intern Program and stated intentions for contributions by Contracting Parties, Council agreed to extend the period of appointment for the 2012 intern, Dr. Zhuojun Ma (China), to a possible maximum of 12 months, and to initiate the process to obtain the 2013 intern, with the understanding that the intern’s term will start no earlier than July 2013. Following the existing rotation cycle, Russia was requested to nominate the intern by January 31, 2013.
- ii. Council instructed the Executive Secretary to invite Contracting Parties to provide voluntary contributions to the Trust Fund to support the Intern Program in 2013 and beyond.

2012/A/8: World Ocean Assessment (UN Regular Process for Global Reporting and Assessment of the State of the Marine Environment)

Council pointed out the importance of facilitating the conduct of the World Ocean Assessment and agreed to:

- (1) encourage individuals in the PICES network to join the *Pool of Experts*, the body from which the *Group of Experts* will select authors and reviewers of the first World Ocean Assessment;
- (2) promote the development of North Pacific workshop(s) to enable incorporation of regional knowledge into the first World Ocean Assessment report;
- (3) consider means by which PICES products are visible in the World Ocean Assessment.

2012/A/9: Improvement of participation in PICES activities

- i. 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.
- ii. Council re-iterated the necessity for Contracting Parties to: (1) regularly review their national membership, and to provide the updated national membership list to the Secretariat by the first day of the calendar year (January 1), and (2) follow up on *Rule 1(ii)* of the PICES Rules of Procedure in providing the national delegation list for Annual Meetings.

2012/A/10: Election of Chairman and Vice-Chairman

- i. Dr. Laura Richards (Canada) was unanimously elected as the Chairman of PICES for a 2-year term (2012–2014) to replace Dr. Lev Bocharov (Russia). As Dr. Bocharov will resume his duties as the Russian national delegate, Council agreed that Dr. Tokio Wada (Japan) will continue to serve as the Past-Chairman.
- ii. Dr. Chul Park (Korea) was unanimously elected as the Vice-Chairman of PICES for a 2-year term (2012–2014) to replace Dr. Laura Richards.

2012/A/11: Appointment of F&A Committee Chairman

Dr. John Stein (U.S.A.) was appointed as the Chairman of the F&A Committee for a 2-year term (2012–2014).

2012/A/12: PICES Secretariat

- i. Council extended the term of the Executive Secretary until December 31, 2014;
- ii. Council agreed to consider a complex of issues related to the structure and staffing of the Secretariat at PICES-2013 and, in preparation for this discussion, directed the F&A Chairman to work with the Executive Secretary over the next year to (1) prepare position descriptions for both the Executive Secretary and the Deputy Executive Secretary, (2) develop the process and timeline for staffing the Deputy Executive Secretary position, and (3) review the organizational structure and salary budget of the Secretariat.

2012/S/1: PICES Integrative Science Program, FUTURE

- i. Council approved activities and timelines for FUTURE (FUTURE roadmap) proposed by Science Board, with the addition of a footnote to the suggested timeline of delivering the next edition of the North Pacific Ecosystem Status Report (NPESR-3), stating “under the condition that NPESR-2 is fully completed”.
- ii. Council requested that the Executive Secretary send a letter to the Contracting Parties providing information on planned activities for FUTURE and requesting contributions to these activities, particularly for the 2014 FUTURE Open Science Meeting.

2012/S/2: 2013 PICES Annual Meeting

- i. The following scientific sessions are to be convened at PICES-2013:
 - ¾-day Science Board Symposium on “*Communicating forecasts, uncertainty and consequences of ecosystem change to society*”;
 - 1-day BIO Contributed Paper Session;
 - 1-day BIO/FIS Topic Session on “*Marine ecosystem services and the contribution from marine ecosystems to the economy and human well-being*”;
 - ½-day BIO/FIS/POC Topic Session on “*Are marine ecosystems of the North Pacific becoming more variable?*”;
 - 1-day BIO/FIS/MEQ/TCODE/FUTURE Topic Session on “*Ecosystem indicators to characterize ecosystem responses to multiple stressors in North Pacific marine ecosystems*”;
 - 1-day BIO/POC/MONITOR/TCODE/FUTURE Topic Session on “*Recent trends and future projections of North Pacific climate and ecosystems*”;
 - 1-day FIS Contributed Paper Session;
 - 1-day FIS/FUTURE Topic Session on “*Science needs for offshore oil and gas development in the North Pacific*”;
 - 1-day FIS/TCODE Topic Session on “*Banking on recruitment curves; returns on intellectual investment*”;
 - ½-day MEQ Contributed Paper Session;
 - ½-day MEQ/FUTURE Topic Session on “*Status, trends and effects of pollutants in coastal ecosystems: Implications for wildlife and humans*”;
 - 1-day MONITOR Topic Session on “*Towards the development of low-cost cooperative ocean monitoring networks* [the title was changed to “*Cost-effective, cooperative ocean monitoring*”];

- 1-day POC Contributed Paper Session;
 - 1-day POC Topic Session on “*The changing carbon cycle of North Pacific continental shelves and marginal seas*”.
- ii. The following workshops are to be convened at PICES-2013:
- 1-day PICES/ICES Workshop on “*Comparison of size-based and species based ecosystem models*”;
 - 1-day PICES/ICES Workshop on “*Identifying mechanisms linking physical climate and ecosystem change: Observed indices, hypothesized processes, and "data dreams" for the future*”;
 - 1-day BIO Workshop on “*Marine bird and mammal spatial ecology*”;
 - ½-day MEQ Workshop on “*The economic impacts of harmful algal blooms on fisheries and aquaculture*”;
 - 1-day MEQ Workshop on “*Traditional seafoods of coastal aboriginal communities in the North Pacific: Insight into food, social and ceremonial uses at Snuneymux’w First Nation in Nanaimo, British Columbia*”;
 - 1-day TCODE Workshop on “*Tools, approaches and challenges for accessing and integrating distributed datasets*”;
 - 1-day FUTURE Workshop on “*Evaluating tools for assessment of species vulnerability to anthropogenic climate change*”.
- iii. The following business meetings are to be held at PICES-2013:
- ¼-day Science Board (SB) meeting (October 13) and 1½-day SB meeting (October 18 afternoon and October 19);
 - 1½-hour overture meetings (October 13 evening) and ½-day meetings of Scientific and Technical Committees (October 16 afternoon);
 - 1-day meeting of the SB Section on *Human Dimensions of Marine Systems*;
 - ½-day meeting of the BIO/FIS/POC Section on *Climate Change Effects on Marine Ecosystems*;
 - 1-day meeting of the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific*;
 - ½-day meeting of the POC/BIO Section on *Carbon and Climate*;
 - 1-day meeting of the MEQ Working Group on *Non-indigenous Aquatic Species*;
 - 1-day meeting of the BIO Working Group on *Jellyfish Blooms around the North Pacific Rim*;
 - ¾-day meeting of the POC Working Group on *North Pacific Climate Variability and Change*;
 - 1-day meeting of the MEQ/BIO Working Group on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors*;
 - ½-day meeting of the POC Working Group on *Regional Climate Modeling*;
 - 1-day meeting of the BIO Advisory Panel on *Marine Birds and Mammals*;
 - ½-day meeting of the POC/MONITOR Advisory Panel for a *CREAMS/PICES Program in East Asian Marginal Seas*;
 - ½-day meeting of the MONITOR Advisory Panel on the *Continuous Plankton Recorder Survey in the North Pacific*;
 - 1-day meeting of the MEQ Study Group on *Marine Pollutants*;
 - ½-day concurrent meetings of the FUTURE Advisory Panels on *Anthropogenic Influences on Coastal Ecosystems, Climate, Oceanographic Variability and Ecosystems* and *Status, Outlooks, Forecasts, and Engagement*, preceded by a ½-day joint meeting of these Panels.

2012/S/3: Inter-sessional symposia/sessions/workshops/meetings

The following inter-sessional events are to be convened/co-sponsored in 2013 and beyond:

- i. Symposia/conferences:
- International Symposium on “*Climate variability and change on marine resources and fisheries: Toward a South Pacific Integrated Ecosystem Studies Program (SPICES)*”, January 7–10, 2013, Concepción, Chile (co-sponsored by PICES);
 - IMBER IMBIZO III on “*The future of marine biogeochemistry, ecosystems and societies: Multi-dimensional approaches to the challenges of global change in continental margins and open ocean systems*”, January 28–31, 2013, Goa, India (co-sponsored by PICES);
 - 4th International Jellyfish Bloom Symposium, June 5–7, 2013, Hiroshima, Japan (co-sponsored by PICES);

- 8th International Conference on Marine Bioinvasions, August 20–22, 2013, Vancouver, Canada (co-sponsored by PICES);
 - 1st FUTURE Open Science Meeting, April 2014, Honolulu, U.S.A.;
 - ICES Symposium on “*Ecological basis of risk analysis for marine ecosystems*”, June 2–6, 2014, Helsinki, Finland (co-sponsored by PICES);
 - 3rd International Symposium on “*Effects of climate change on the world’s oceans*”, spring 2015, Brazil (primary international sponsors: PICES, ICES and IOC).
- ii. Joint Theme Sessions:
- CLIVAR/PICES Theme Session on “*Biophysical interactions*” at the 2nd International Symposium on “*Boundary Current dynamics: Its connection with open-ocean, coastal processes, biophysical interactions and responses to global climate change*”, July 8–13, 2013, Lijiang, China;
 - ICES/PICES Theme Sessions on “*Marine litter*” (Session A), “*Responses of living marine resources to climate change and variability: Learning from the past and projecting the future*” (Session B), “*Do food web dynamics matter in fisheries management?*” (Session E), and “*Identifying mechanisms linking physical climate and ecosystem change: Observed indices, hypothesized processes, and “data dreams” for the future*” (Session M), at the 2013 ICES Annual Science Conference, September 23–27, 2013, Reykjavik, Iceland.
- iii. Workshops and meetings:
- 2-day workshop to exchange views on the idea of developing a scientific focus within PICES on understanding the quantities and distributions of radionuclides in the North Pacific, March 2013, Xiamen, China;
 - 5-day PICES/ICES/GEOHAB workshop on “*Harmful algal blooms in a changing world*”, March 18–22, 2013, Friday Harbor, WA, U.S.A.;
 - 2-day inter-sessional Science Board meeting, May 20–21, 2013, St. Petersburg, Russia;
 - 3-day PICES/ICES workshop on “*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*”, May 22–24, 2013, St. Petersburg, Russia;
 - 1-day inter-sessional meeting of the Working Group on *Jellyfish Blooms around the North Pacific Rim* prior to the 4th International Jellyfish Bloom Symposium, June 4, 2013, Hiroshima, Japan;
 - 3-day workshop on “*Development and application of Regional Climate Models-II*”, September 3–5, 2013, Busan, Korea.
- iv. Capacity development events:
- PICES Summer School on “*Ocean observing systems and ecosystem monitoring*”, August 19–23, 2013, Hatfield Marine Science Center, Newport, U.S.A.
 - 6th SOLAS Summer School, August 23–September 2, 2013, Xiamen, China (co-sponsored by PICES);
 - NOWPAP/PICES training course on “*Remote sensing data analysis*”, fall 2013, Qingdao, China;
 - 2014 PICES Summer School on “*Ecological modeling*”, August 18–21, 2014, Seoul, Korea.

2012/S/4: Travel and representation at the meetings of other organizations/programs

- i. 2013 PICES Annual Meeting:
- Invited speakers for Science Board Symposium and Topic Sessions, with the normal allocation of approximately \$5,000 per Committee/Program; additional requests are subject to fund availability;
 - One invited speaker for each of the approved workshops (see 2012/S/2(ii)).
- ii. Inter-sessional events:
- PICES representative to participate in the ESSAS (Ecosystem Studies of Sub-Arctic Seas) Annual Meeting on “*Climate Effects on Spatial Dynamics of Sub-Arctic and Arctic Marine Ecosystems*” and the ESSAS Scientific Steering Committee Meeting (January 7–11, 2013, Hakodate, Japan);
 - PICES representative(s) to attend the 22nd Session of IODE (International Oceanographic Data and Information Exchange) of IOC-UNESCO (March 11–15, 2013, Ensenada, Mexico);
 - PICES representative to attend the NPAFC CSRS (Committee on Scientific Research and Statistics) meeting (April 23–24, 2013, Honolulu, U.S.A.);
 - PICES representative to participate in the 27th Session of the IOC (Intergovernmental Oceanographic Commission of UNESCO) Assembly (June 2013, Paris, France);

- PICES representative to give a seminar at the ISC (International Scientific Committee for Tuna and Tuna-like Species) Annual Meeting (July 17–22, 2013, Busan, Korea) focusing on environmental data availability and modeling capabilities and possible techniques for incorporating this information into ISC stock assessments;
- PICES representatives and convenors for the joint Theme Sessions to participate in the ICES Annual Science Conference (September 23–27, 2013, Reykjavik, Iceland);
- PICES representative to attend the SCOR (Scientific Committee on Oceanic Research) Executive Committee Meeting (November 25–28, 2013, New Zealand);
- PICES representative to participate in the 18th NOWPAP (Northwest Pacific Action Plan) Intergovernmental Meeting (TBD).

2012/S/5: Publications

- i. The following publications are to be produced in or submitted to primary journals in 2013:
 - Special issue of *ICES Journal of Marine Science* based on selected papers from the 2nd International Symposium on “*Effects of climate change on the world’s oceans*” to be published in 2013;
 - Special issue of *Progress in Oceanography* on modeling dedicated to Dr. Bernard Megrey (Guest Editors: E. Curchitser and S.I. Ito) to be published in 2013;
 - Special issue of *Progress in Oceanography* based on selected papers from the 2012 Topic Session on “*Advances in understanding the North Pacific Subtropical Frontal Zone ecosystem*” (Guest Editors: T. Ichii, S. McKinnell and M. Seki) to be submitted in 2013;
 - Special issue of *Fisheries Science* based on selected papers from the 2012 Topic Session on “*Social-ecological systems on walley Pollock and other commercial gadids under changing environment: Inter-disciplinary approach*” (Guest Editors: K. Criddle, S. Kim, M. Makino, I. Perry, Y. Sakurai and A. Velikanov) to be submitted in 2013;
 - Review paper in a peer-reviewed journal based on the results from the 2013 PICES/ICES/GEOHAB workshop on “*Harmful algal blooms in a changing world*” to be submitted in 2013;
 - Set of papers in a peer-reviewed journal based on the results from the 2013 PICES/ICES workshop on “*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*” to be submitted in 2013.
- ii. The following publications are to be produced in the PICES Scientific Report series in 2013:
 - Final Report of the Working Group 21 on *Non-indigenous Aquatic Species* (Editors: D. Smith and T. Therriault);
 - Final Report of the Working Group 23 on *Comparative Ecology of Krill in Coastal and Oceanic Waters Around the Pacific Rim* (Editors: W. Peterson and T. Shaw);
 - Final report of the Working Group 24 on *Environmental Interactions of Marine Aquaculture* (Editors: K. Abo, B. Dumbauld and S. Johnson);
 - Final report of the Study Group on *Marine Pollutants* (Editor: P. Ross);
 - Report of the 2012 GLOBEC/PICES/ICES Workshop on “*Forecasting ecosystem indicators with process-based models*” (Editors: E. Di Lorenzo, A. Miller and S. Minobe);
 - Final report for the Climate Change and Carrying Capacity Program (Editor: H. Batchelder).
- iii. Other publications to be produced in 2013 include:
 - a. Announcement, poster and Book of Abstracts for PICES-2013 (October 12–21, 2013, Nanaimo, Canada);
 - b. Two regular issues of PICES Press to be published on the website and distributed electronically in January (Vol. 21, No. 1) and July (Vol. 21, No. 2) of 2013;
 - c. PICES E-news to be published on the website and distributed electronically (4 issues per year).

2012/S/6: Future of current PICES expert groups

- i. The FIS/MEQ Working Group on *Environmental Interactions of Marine Aquaculture* (WG 24) completed the terms of reference and will be disbanded.
- ii. To allow the development of a proposal for future activities on non-indigenous species within PICES, the life span of the MEQ Working Group on *Non-indigenous Aquatic Species* (WG 21) was extended for 1 year (until October 2013).

- iii. To allow the development of a proposal for future activities on marine pollutants within PICES, the life span of the MEQ Study Group on *Marine Pollutants* (SG-MP) was extended for 1 year (until October 2013).
- iv. Changes in the terms of reference for the MEQ Section on *Ecology of Harmful Algal Blooms in the North Pacific* (S-HAB) are to be discussed at ISB-2013 under the revised MEQ Action Plan.

2012/S/7: New PICES expert groups

Following the process decided by Council at PICES-2012, a Study Group on *Radionuclide Science in the North Pacific Ocean* (SG-RS) was established under the direction of Science Board, with terms of reference as described in *GC Appendix B*.

2012/S/8: Chairmanship and membership for Science Board, Standing Committees and expert groups

- i. To facilitate the continuity of Science Board affairs, Council established a Science Board Chairmanship position to allow the election of the Chairman of Science Board one year before the official change of the chairmanship (Decision 2006/A/11). Dr. Thomas Therriault (Canada) was unanimously elected for this position.
- ii. The following reflects changes in Chairmanship and Vice-Chairmanship for Standing Committees:
 - Mr. Chuanlin Huo (China) was elected as the Chairman of MEQ to replace Dr. Steven Rumrill (U.S.A.);
 - Ms. Darlene Smith (Canada) was elected as the Vice-Chairman of MEQ to replace Dr. Mitsutaku Makino (Japan);
 - Dr. Phillip Mundy (U.S.A.) was approved as the Chairman of AP-SOFE to replace Mr. Robin Brown (Canada).

2012/S/9: Relations with other organizations and programs

Council approved the revised *Standing List of International and Regional Organizations and Programs* and agreed with the identified priorities for interaction in 2012–2013 (see *GC Endnote 6*).

GC Appendix B

PICES 25th Anniversary Planning Committee

The 25th anniversary of the North Pacific Marine Science Organization (PICES) is on the horizon (the 25th Anniversary Annual Meeting will be held in 2016) and is worthy of celebration, reflection and looking forward. PICES was established in 1992 to promote and coordinate marine scientific research in the northern North Pacific and adjacent seas, and has made significant contributions to this mission through its scientific programs and other activities. The 25th Anniversary of PICES provides an important opportunity for the Organization and its member countries to recognize the accomplishments to date and to look forward to the next 25 years.

The formation of a Planning Committee for the 25th Anniversary of PICES was approved at the 2012 PICES Annual Meeting.

Terms of Reference

1. To direct the planning of events, activities and products for the PICES 25th Anniversary year that:
 - a. summarize the scientific accomplishments and advancements to date that are related to marine science in the North Pacific;
 - b. promote and highlight both the scientific importance of PICES accomplishments and associated benefits to member countries;
 - c. provide an opportunity to look forward to future advancements in marine science in the next 25 years.
2. To prepare the budget and plan fund-raising activities for the PICES 25th Anniversary year;
3. To report annually to F&A and GC on progress, with final recommendations and associated financial implications due for presentation at PICES-2014.

Examples of activities and products to be considered include:

- Web products such as: a 25th anniversary photo album highlighting people and events over PICES history, interactive historical timeline of PICES, video of PICES accomplishments, 25 photos that depict 25 years of PICES, *etc.*;
- Publications such as: a 25th anniversary edition of PICES news and a special journal issue that highlights the science advancements of PICES and future of marine science in the North Pacific;
- Events such as: a 25th anniversary gala with invited dignitaries and scientists from PICES history and key partners, including ICES, IOC, SCOR, *etc.*;
- Events in each member country such as lecture series;
- Special scientific sessions at the 25th Anniversary Annual Meeting (PICES-2016) that reflect on the progress in key areas germane to PICES, and a session devoted to the next 25 years of marine science in the North Pacific;
- Development of a 25th anniversary logo that would be on all PICES communications during the anniversary year.

Membership

The membership of the Committee includes: Chairman of the Finance and Administration (F&A) Committee, Chairman and Vice-Chairman of Science Board, Executive Secretary, and a representative from each of the Contracting Parties.

Visiting Scientist Program (approved on October 20, 2012)

Rationale

Scientific activities sponsored and/or conducted by PICES have increased significantly since its inception in 1992, as has its production of scholarly works. Growth was achieved by making efficient use of national contributions and by attracting external funding for PICES activities. In addition, the new PICES FUTURE Scientific Program, which began in 2009, will require a great deal of scientific involvement, oversight, and collaboration in order to be successful. This will involve the need to deliver timely, high quality scientific products to the PICES community and beyond. PICES is seeking ways to enhance the ability of the Organization and the Secretariat to support the increasing demand. Establishing a PICES Visiting Scientist Program will allow national agencies and/or other international science organizations to contribute “in kind” toward achieving PICES goals, and improve the way the Organization functions.

Objectives of the program

- to provide for and enhance collaborative projects among PICES member countries;
- to strengthen the capacity of the Organization to develop and implement projects that have high priority for PICES and member countries, particularly those linked to integrative science programs of PICES;
- to provide professional development of marine scientists and managers from PICES member countries.

Nature of the program

Each visiting scientist (expert) will be made available to PICES through secondments from national agencies and/or other international science organizations. He/she will be given a specific task that is important to PICES and is also in the interests of his/her agency/organization. The secondment should be governed by a mutual agreement developed between PICES and the seconding agency/organization. The agreement spells out the terms of reference for the tasks, responsibilities, duration, as well as the legal terms.

The expert will perform the given task either at the PICES Secretariat, at their home institution, or at an institution of another PICES country that has agreed to host the expert, while the expert remains on the payroll of his/her agency/organization. The expert’s agency/organization shall pay the salary, allowances, and expenses incurred in travel to and from the place of residence and the location of the secondment. Since the

expert will continue to be an employee of his agency/organization while working on their collaborative project, his/her expenses relating to taxes, medical and life insurance coverage, and any other benefits to which the expert is entitled, will remain the responsibility of his/her agency/organization.

PICES or the hosting institution shall provide appropriate facilities, including office space and administrative services. Travel expenses associated with the expert's work under the collaborative project will be shared by PICES or the hosting agency and the expert's agency/organization as agreed upon in the MOU.

Qualification

The expert should be an experienced individual (Ph.D. or master's level scientist with over 5 years of post-master's degree experience) with good scientific writing and oral communication skills in English. The particular qualifications will depend on the tasks outlined for the collaborative project.

Duration and starting date

The program will be implemented following approval by the Governing Council and identification of potential tasks by the Science Board. The expert's term will start after approval of the specific MOU. Duration of the term will depend on the specific task. The expert may be onsite for as little as two weeks to as long as visa requirements allow. Applicants may have already identified a host institution or PICES will help identify hosts.

Information required from potential host institutions

Institutions interested in hosting a PICES Visiting Scientist should provide the following information, in a short proposal describing the visiting scientist's term at the host institution:

- Help requested: mentoring in research, technology assistance, teaching, *etc.*
- Term of service desired, including specific dates
- Local subsistence provided
- Language abilities desired
- Plans by the host institution to build on the training received or assistance provided.

Study Group on Radionuclide Science in the North Pacific Ocean (SG-RS)

Parent Committee: Science Board

Duration: 1 year

Terms of Reference (*approved* on October 21, 2012)

6. To convene a workshop in China to provide a forum for exchange of views among scientists on the idea of developing a scientific focus on understanding the quantities and distributions of radionuclides in the North Pacific;
7. To refine the terms of reference for the Working Group on *Assessment of Marine Environmental Quality of Radiation around the North Pacific* proposed by China in consideration of wider interests of scientists in PICES member countries, including relevance to the FUTURE/AICE mandate;
8. To develop a list of potential Working Group members;
9. To prepare a report with recommendations for future PICES activities and products related to the topic that are consistent with the new MEQ Action Plan;
10. To make the final report available by the inter-sessional Science Board meeting in May 2013.