

Report of the 2014 inter-sessional Science Board meeting

Saturday, April 19, 2014

The twelfth inter-sessional Science Board meeting took place on the Kohala Coast, Hawaii, on April 19, 2014, followed by a meeting of the Scientific Steering Committee for FUTURE on April 20, and a ½-day joint FUTURE Evaluation Team/Science Board meeting on April 21. The first day's meeting was attended by 30 members and guests (*ISB-2014 Endnote 1*). Science Board Chairman, Dr. Thomas Therriault, called the meeting to order at 9:00 h on April 19 and welcomed Science Board members and guests. After self-introductions, the draft agenda was adopted without any revisions or additions (*ISB-2014 Endnote 2*). In order to accommodate members and guests who were not able to stay past the first day's meeting, Agenda Item 13 on the MOE project on tsunami debris and NIS was placed after Agenda Item 2 and Science Board members, Drs. Michael Foreman (POC) and Toru Suzuki (TCODE), presented their mid-term reports (Agenda Item 14) before the close of the first day's meeting.



Participants of the ISB-2014 meeting (from left): Chuanlin Huo (MEQ), Phillip Mundy (AP-SOFE), Enrique Curchitser (Governing Council), Adi Kellermann (ICES), Michael Foreman (POC), Tom Therriault (Science Board Chairman), Harold (Hal) Batchelder (PICES Deputy Executive Secretary), John Stein (Governing Council), Alex Bychkov, (PICES Executive Secretary), Hiroaki Saito (Science Board Vice-Chairman), Steven Bograd (MONITOR), Angelica Peña (BIO), Chul Park (PICES Vice-Chairman), Ken Mori (F&A), Libby Logerwell (FIS), Jennifer Boldt (MONITOR), Hideaki Maki (MOE, Japan), Igor Shevchenko (representing Russia), Toru Suzuki (TCODE), Karin Baba (Japan), Laura Richards (PICES Chairman), Robin Brown (Governing Council), Guangshui Na (WG 31).

AGENDA ITEM 2

Interactions with other organizations

ICES (International Council for the Exploration of the Sea)

Representing ICES, Dr. Adolf (Adi) Kellermann (Head, ICES Science Program) briefly described the makeup of the Organization, recent changes that have been made to it, including a new General Secretary (Dr. Anne Christine Brusendorff, appointed in 2012), a new corporate design, new website, new mechanisms of

communication, and a new ICES Strategic Plan (2014–2018) that is focused on integrated ecosystem management, extends work into the Arctic Ocean and in aquaculture, and has an enhanced training program. Symposia for proposed joint ICES/PICES activities in 2015/2016 are: “*Oceans past*” (May 18–20, 2015, Tallin, Estonia), “*Marine ecosystem acoustics*” (May 24–28, 2015, Nantes, France), “*Understanding marine socio-ecological systems: including the human dimension in Integrated Ecosystem Assessments*” (February or March 2016, Paris, France), “*Drivers of dynamics of small pelagic neritic fish resources*” (first half of 2016, venue TBD; see Agenda Item 4) and 6th Symposium on “*Zooplankton production*” (April/May 2016, Bergen, Norway; see Agenda Item 4). The ICES/PICES Symposium on “*Ecological basis of risk analysis for marine ecosystems*” (co-convened by Dr. Alexi Orlov, representing PICES) will take place June 2–4, 2014, in Porvoo, Finland. PICES should consider doing a press release of the symposium, similar to the one done by ICES (<http://www.ices.dk/news-and-events/news-archive/press-releases/Pages/Press-Release---Ecological-Basis-of-Risk-Analysis-for-Marine-Ecosystems-symposium-taking-place-in-Finland-in-June.aspx>). It was suggested that PICES also could take an approach similar to ICES and follow up the symposium with a training course on risk analysis. ICES has budgeted for the proposed ICES/PICES Early Career Scientist Conference tentatively scheduled for 2017 (see Agenda Item 5).

Motivation for extending research into the Arctic was in response to increased shipping and the maritime fishing industry reaching into new fishing areas. ICES will review the document for scientific cooperation between ICES and PICES at its Annual Science Conference this coming September. Drs. Laura Richards and Hal Batchelder will replace Drs. Skip McKinnell and Sinjae Yoo in the joint PICES/ICES Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science*, and will work by correspondence with original members, Drs. Therriault and Hiroaki Saito, to review the document before PICES-2014.

Action: document for scientific cooperation between ICES and PICES to be reviewed by correspondence and submitted to Science Board for approval at PICES-2014.

SCOR (Scientific Committee on Oceanic Research)

Proposals for eight new SCOR working groups were received by Science Board during the inter-sessional meeting. Deadline for comments to SCOR is August 1 and decisions will be made by SCOR September 17. Dr. Therriault instructed the Committee Chairs to circulate the proposals to their members and email their suggestions to him by July 11.

Action: Committee Chairs to send comments to Dr. Therriault by July 11.

Dr. Batchelder reported on SCOR/PICES collaboration discussed at the SCOR Annual General Meeting he and former Science Board Chairman, Dr. Sinjae Yoo, attended in November 2013. The three proposals selected by Science Board for PICES affiliation last year were not chosen by SCOR. In particular, the joint PICES/ICES proposal for a working group on “zooplankton production measurement methodologies and their application” was rejected because it was considered too premature, and the SCOR reviewers wanted to have more background information that the approach would work to arrive at secondary production. It was noted that the process for submission and review is very rigorous, and that national reviews carry more weight than international reviews. Drs. Batchelder and Saito will attend the next SCOR Annual General Meeting on May 6, 2014 to discuss on how to proceed with SCOR/PICES collaboration.

Action: Drs. Batchelder/Saito to report on SCOR/PICES collaboration at PICES-2014.

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

As follow-on to the Phase I workshop on “*Harmful algal blooms in a changing world*” held March 18–22, 2013, in Friday Harbor, USA, a proposal for a Phase II Open Science Meeting or workshop in conjunction

with the PICES/ICES/FAO Symposium on the “*Effects of climate change on the world’s oceans*” March 23–27, 2015 in Santos, Brazil, was not received in time for discussion at the inter-sessional meeting.

Action: Science Board to defer discussion on GEOHAB Phase II until PICES-2014.

IODE (International Oceanographic Data and Information Exchange of IOC, UNESCO)

IODE continues to support PICES through TCODE activities. The TCODE workshop on “*Tools, approaches and challenges for accessing and integrating distributed datasets*” co-sponsored by IODE (cancelled at PICES-2013 due to the U.S. government shutdown but rescheduled for PICES-2014) has been changed to an e-poster session and will not be co-sponsored by IODE.

NOWPAP (Northwest Pacific Action Plan)

NOWPAP conducts many joint activities with PICES, most recently the capacity building joint NOWPAP/PICES training course on “*Remote sensing data analysis*” in Qingdao, China (October 21–25, 2013) and a range of MEQ-related issues such as co-sponsoring a Topic Session (S8) on “*Marine debris in the ocean: Sources, transport, fate and effects of macro- and micro-plastics*” at PICES-2014. Science Board agreed to strengthen ties with NOWPAP, including involving TCODE to interact with NOWPAP DINRAC, and recommended establishing a formal group to explore joint collaboration. MEQ Chairman, Mr. Chuanlin Huo and TCODE Chairman, Dr. Toru Suzuki, agreed that their committees would contribute to the activities of the group if it was established.

Action: Dr. Therriault and Secretariat to develop a request for collaboration with NOWPAP to be submitted to Governing Council following the inter-sessional Science Board meeting.

CLIVAR (Climate Variability and Predictability Project of the World Climate Research Program)

CLIVAR is interested in adding ecosystem and biogeochemical activities to its project and PICES has the opportunity to contribute its expertise as cooperation with CLIVAR steadily builds. U.S. CLIVAR is considering the incorporation of ecosystems in its modelling efforts. Dr. Enrique Curchitser (Co-Chair of WG 29 on *Regional Climate Modeling*), a member of the Working Group on Ocean Model Development in U.S. CLIVAR, will represent PICES in the project. Dr. Shoshiro Minobe (Co-Chair of WG 27 on *North Pacific Climate Variability and Change*) will represent PICES at the Pan-CLIVAR meeting July 17–18, 2014, The Hague, The Netherlands.

Action: Dr. Minobe to provide a report on the Pan-CLIVAR meeting at PICES-2014.

NPAFC (North Pacific Anadromous Fish Commission)

Dr. Elizabeth (Libby) Logerwell (Co-Chair of the joint NPAFC/PICES Study Group on *Scientific Cooperation in the North Pacific (SG-SC-NP)*) reported that the SG had completed the NPAFC/PICES Framework for Enhanced Scientific Cooperation in the North Pacific Ocean in March and was seeking Science Board input to the Framework before NPAFC’s annual meeting in May. Two major topics of joint interest are the effects of climate change on the dynamics and production of Pacific salmon populations, and oceanographic properties and the growth and survival of Pacific salmon. Science Board agreed that there were many FUTURE elements in the NPAFC science plan and that POC’s expert groups could make significant contributions. It would be a good opportunity for PICES to provide input to the NPAFC science plan.

Action: Science Board to provide feedback on the SG-SC-NP Framework to Dr. Logerwell prior to the NPAFC meeting on May 12.

UN Process for the First World Ocean Assessment (WOA)

At the invitation of Dr. Chul Park (member of the Group of Experts for WOA, Korea), Dr. Therriault is preparing a chapter on the status of major groups of species and habitats in the North Pacific to contribute towards the first UN World Ocean Assessment. He is in the process of consulting with Drs. Park and Jake Rice (member of the Group of Experts for WOA, Canada) on feedback for the chapter.

IMBER (Integrated Marine Biogeochemistry and Ecosystem Research)

IMBER has provided a white paper to the scientific community which defines new research directions for the marine biogeochemistry and ecosystem research community beyond 2015. Dr. Saito has forwarded the paper to the Committees for comments. He has contacted S-CC member, Dr. Masao Ishii, who has agreed to represent PICES on the SSC if he is accepted by IMBER.

Action:

- Committee Chairs to send comments to Drs. Therriault, Saito and Batchelder before the end of April;
- Dr. Saito to prepare a proposal nominating Dr. Ishii by end of day, April 20;
- Dr. Batchelder to write to IMBER asking for clarification on a formal letter of nomination supporting Ishii with POC and BIO adding their signatures in support;
- Dr. Batchelder to provide PICES' comments on IMBER white paper to IMBER Secretariat on May 5 for consideration at their OSC in June.

GOOS (Global Ocean Observing System)

A report was prepared by PICES representatives, Drs. David Checkley, Sanae Chiba, and Masao Ishii, on the outcome of the First Technical Experts' Global Ocean Observing Workshop on "*Essential Ocean Variables for biology and biogeochemistry*" held November 13–15, 2013. The purpose of the workshop was to identify and develop approaches to observe non-physical Essential Ocean Variables (EOVs) described in the Framework for Ocean Observations (FOO) (developed by Dr. Checkley who represented PICES on the Integrated Framework for Sustained Ocean Observations Task Team in 2010). Among the outcomes of the Workshop was the recommendation by the biology group, which included technical experts, Drs. Checkley and Chiba, to form a GOOS Biology Panel and by the biogeochemistry group, which included Dr. Masao Ishii, to form a GOOS Biogeochemistry Panel. The Panels will continue to discuss potential biology and biogeochemistry EOVs, solicit community input, and ultimately propose EOVs and associated Technical Advisory Groups.

Science Board agreed that PICES should play an active role in GOOS, especially in supporting two PICES-associated candidate pilot projects, NP CPR data (which is contributing project of GACS) to derive EOVs and CalCOFI data to determine minimal observing requirements to derive EOVs, and in the activities of MONITOR, since one of its terms of reference is to serve as a forum for coordination and development of inter-regional and international components of the North Pacific Ocean Observing Systems, including the GLOBAL Ocean Observing System, GOOS.

Executive Secretary, Dr. Alexander Bychkov, announced that more will be known about the framework for BIO and MONITOR to work with after he attends the IOC meeting in July.

Action: BIO/MONITOR to provide an update on framework report at PICES-2014.

IAMSLIC (International Association of Aquatic and Marine Science Libraries and Information Centers)

PICES benefits from its relationship with IAMSLIC through the housing of its digital publications (PICES Press newsletters, annual reports, PICES Special Publications, and PICES Science Reports in the IAMSLIC database repository, Aquatic Commons). Science Board recommended to co-sponsor IAMSLIC at their Annual Conference in Noumea, New Caledonia (September 14–18, 2014) at the level of SEAHORSE \$1000.

Action: Secretariat to contact IAMSLIC with decision and prepare materials for a vendor's table.

IIOE-II (International Indian Ocean Expedition II)

A brief report was prepared by PICES representative, Prof. Dejun Dai (First Institute of Oceanography, SOA, China), who attended the meeting on November 20–21, 2013 in Qingdao, China. A number of details were not reported on, so Dr. Batchelder will provide a report from the draft minutes of the meeting from SCOR which also sent a representative.

Action: Dr. Batchelder to report on the IIOE-II meeting at PICES-2014.

SOLAS (Surface Ocean – Lower Atmosphere Study)

SOLAS is under the auspices of IGBP which is near the end of its lifespan. SOLAS has been invited to seek sponsorship from the new Future Earth initiative. SOLAS is co-sponsoring a workshop (W5) on “*SOLAS into the Future: Designing the next phase of the Surface Ocean-Lower Atmosphere Study within the context of the Future Earth Program*” at PICES-2014 and Science Board will discuss the new initiative after the workshop.

Action: Science Board to re-visit SOLAS after PICES-2014.

ICSU (International Council for Science) and FAO (Food and Agriculture Organization of the UN)

Dr. Saito reported on two workshops he attended as a PICES representative. The purpose of the SIMSEA (Sustainability Initiative for Marginal Seas in East Asia) workshop (February 27–28, 2014, Yokohama, Japan) was to exchange information on the research programs on marginal seas in Asia and the western Pacific for an integrative sustainability research program involving natural, social, economic, engineering and technological sciences and to discuss and co-design a collaborative interdisciplinary research program on the marginal seas in Asia and western Pacific under the framework of Future Earth. The East Asian marginal seas were outside the PICES convention area so Science Board determined that no further action be taken on this subject.

The FAO regional workshop on “*Vulnerable Marine Ecosystems in the North Pacific Ocean*” (March 11–13, 2014, Tokyo, Japan) had several purposes including discussing the concept of VMEs, reviewing existing information and identifying future requirements for establishing VMEs in the North Pacific high seas, and reviewing information from the North Pacific Fisheries Commission (NPFC). There is limited knowledge on physical and climate processes around VMEs, and both processes have relied heavily on PICES to provide information on biodiversity-related areas where it is making inroads. NPFC adopted interim measures for VMEs in the Northwest Pacific in 2007 and Northeast Pacific in 2011. The NPFC Convention could enter into force in 2015, but in the meantime, VMEs on seamounts have been identified.

SAHFOS/CPR (Sir Alister Hardy Foundation for Ocean Science/NP Continuous Plankton Recorder)

Canada, Japan and the U.S. are the only PICES member countries currently conducting observations in the CPR program. PICES collaborates with SAHFOS through the program. CPR obtains its funding through contributions from a consortium of international agencies and organizations for E–W (Japan–Canada) and N–S (Alaska–Washington) but there are no funds to expand the program. It was suggested that A-Line Monitoring of Japan try to combine its Western Pacific data with N–S VOS data although it might be difficult to merge the two methods. It was also suggested that Russia and Korea be encouraged to become involved.

AGENDA ITEM 13

MOE project on tsunami debris and NIS

Dr. Hideaki Maki (member of MEQ, WG 31) presented on a 3-year (April 2014–March 2017) PICES project on the “*Effects of marine debris caused by the Great Tsunami of 2011*” funded by the Japanese Ministry of Environment. Funding was finalized in March and the financial and organizational principles are in place. A

draft work plan will be completed in May 2014. The project team will conduct surveys on the current status and possible influence of tsunami debris on the marine environment, coastlines, ecosystems and human communities on the west coast of North America and Hawaii. Five items are postulated for study: modelling of debris transport, surveillance and monitoring, risk assessment, coastal ecosystem impacts, and education and outreach.

A kick-off meeting of the tsunami debris project will take place at PICES-2014. Workshops or topic sessions on the project will be proposed during its lifespan at PICES Annual Meetings. The project will also contribute knowledge to PICES' Strategic Plan and to FUTURE questions.

AGENDA ITEM 3

3rd Climate Change Symposium

Twelve theme sessions are in place for the 3rd PICES/ICES/IOC Symposium on the “*Effects of climate change on the world's oceans*” (March 23–27, 2015, Santos City, Brazil). Sixteen workshop proposals were received by the deadline of April 14, 2014. The symposium convenors will assess the proposals for quality before determining the number to fix for parallel sessions. Symposium coordinators, Dr. Alexander Bychkov (PICES), Dr. Adolf Kellermann (ICES) and Dr. Luis Valdés (IOC) will undertake fundraising after the program has been set.

AGENDA ITEM 4

Other possible symposia in 2014 and beyond

GEOHAB

The status for a GEOHAB Open Science Meeting for 2015 is unknown as no proposal has been submitted to Science Board.

PICES/ICES 6th International Zooplankton Production Symposium

The 6th International Zooplankton Production Symposium co-sponsored by PICES and ICES will take place in Bergen, Norway, and will be hosted by the Institute of Marine Research. ICES has nominated Dr. Astthor Gislason as its ICES convenor. Science Board accepted BIO's recommendation of Dr. Atsushi Tsuda as PICES convenor and Dr. William Peterson as SSC member, with the caveat that an early career scientist be nominated as an alternate on the SSC in case Dr. Peterson declined the invitation. BIO Chair, Dr. Angelica Peña will contact BIO members for early career scientist names. Science Board agreed with Dr. Alexander Bychkov's nomination of Dr. Batchelder as symposium co-ordinator. It was suggested that the zooplankton symposium and the small pelagic fish symposium (see below) be separated as far apart in the year as possible to allow the Secretariat time to prepare each event.

Action:

- Dr. Peña to contact Drs. Tsuda and Peterson to accept positions, and BIO members for names of early career scientists as alternate SSC member by end of May;
- Dr. Batchelder to act as PICES co-ordinator for the symposium;
- Dr. Batchelder to introduce Drs. Tsuda and Gislason to each other by email and initiate symposium tasks.

PICES/ICES Symposium on “Drivers of dynamics of small pelagic neritic fish resources”

The proposal for a small pelagic fish symposium submitted by Dr. Jürgen Alheit (ICES) was unanimously supported by FIS and by Science Board. FIS recommended fisheries scientist, Dr. Yoshioki Oozeki (FRA, Japan), as PICES convenor. Dr. Alheit will act as ICES convenor. Dr. Emanuele di Lorenzo was nominated as SSC member in response to the suggestion to have a physical oceanographer and a plankton expert on the

committee. PICES will take the lead in organizing the symposium, as small pelagic fish are a more important resource in the Pacific Ocean than in the Atlantic. Although there were concerns that the workload of the Secretariat will increase substantially for that year (two major symposia and a PICES Annual Meeting), Dr. Bychkov assured Science Board that the Secretariat was capable and that the returns for holding the symposia would be that it will greatly enhance PICES' profile in the scientific community. Science Board agreed that the location for the symposium should be in either Korea or Japan although some internal issues in both countries need to be resolved.

Recommendation: Science Board supports holding a small pelagic fish symposium, and recommends Dr. Oozeki as PICES convenor and Dr. di Lorenzo as SSC member.

Action:

- Secretariat to contact FAO to be a symposium co-sponsor;
- Secretariat to start formal correspondence with Korea and Japan to identify host country;
- BIO to nominate a plankton scientist for SSC.

3rd World Conference of Marine Biodiversity

An invitation by Dr. Shang Chen (S-HD, China) to submit an abstract/attend the 3rd World Conference on Marine Biodiversity in Qingdao, China (October 12–16, 2014) was circulated to the Section on *Human Dimensions of Marine Systems* members and the Secretariat prior to the ISB-2014 meeting.

Action: Secretariat to circulate the announcement to the wider PICES community.

AGENDA ITEM 5

Capacity building

PICES/ICES Early Career Scientist Conference

The first two PICES/ICES Early Career Scientist conferences were held in the USA (2007) and Europe (2012). A third conference has been proposed for 2017 in the western Pacific in order to encourage Asian participation. The Korean Ministry of Oceans and Fisheries has expressed willingness to host the conference but the Secretariat was waiting for official confirmation at the time of the ISB meeting. It was suggested that Dr. Hanna Na (Korea; PICES SSC member from 2012) be added to the SSC for continuity. Science Board requested that the senior scientists of the standing committees provide names for a PICES ECS convenor.

Action:

- Secretariat to communicate with Korea on hosting the ECS;
- Secretariat to contact Dr. Na to be on SSC;
- Committee senior scientists to provide a name for PICES ECS convenor by August 1.

PICES Summer School

No proposals were presented for a PICES Summer School in 2015.

Summer schools co-sponsored by PICES

The IMBER and SOLAS summer schools that PICES co-sponsors hold their events on alternate years. SOLAS will be holding a summer school in 2015, but has not approached PICES for co-sponsorship yet.

ISB-2014

AGENDA ITEM 7

Wooster and POMA awards

Three nominations for the Wooster Award and two nominations for the POMA were submitted to the Secretariat by the deadline of March 31, 2014. MONITOR and TCODE provided their rankings for the POMA. Science Board met *in camera* to select a recipient for each award. The recipients for the two awards will be announced at the Opening Session at PICES-2014.

AGENDA ITEM 6

Status of PICES-2014

Invited speakers have been set for all topic sessions except for the Science Board Symposium. Dr. Bychkov complimented the Science Board convenors for the approach taken to try to recruit invited speakers from outside PICES. A number of the speakers have been contacted by FIS, and several speakers are Arctic-oriented which a number of Science Board members considered a good idea to broaden the scope of PICES science. Drs. Logerwell and Saito recommended an Arctic seas expert (Norway) and physical properties of marine ecosystems expert (Kyoto University), respectively, and Science Board recommended Dr. Jacquelynn King from the FUTURE Evaluation Team. It was suggested that NPAFC nominate an invited speaker for the FIS-sponsored workshop (W2) on “*Linkages between the winter distribution of Pacific salmon and their marine ecosystems and how this might be altered with climate change*” for balance. Due to the popularity of the MEQ Topic Session (S8) on “*Marine debris in the Pacific Ocean: Source, transport, fate and effects of macro- and micro-plastics*”, the Secretariat extended the session to 1 day from an originally requested ½-day. The Secretariat will also monitor abstract submissions for the BIO, FIS, MEQ, and POC paper sessions and extend the duration from a ½ day if required.

Action:

- Drs. Logerwell, Saito, and Therriault to contact their respective nominations as soon as possible;
- Secretariat to request NPAFC to nominate an invited speaker for W2.

AGENDA ITEM 8

Venue and date for ISB-2015

ISB-2015 will deviate from meetings in the past, where many ISB meetings have been tied to symposia, to provide a break for Science Board members after the climate change symposium in Brazil in March. Korea has agreed to host the meeting, tentatively in Busan. A tentative date for the meeting is May 2015. The meeting could also be held in conjunction with some sort of FUTURE event, such as a workshop, especially to deal with FUTURE Evaluation Team recommendations.

Action: Science Board to resolve the details by correspondence.

AGENDA ITEM 9

Status of planning for PICES-2015

China will host the PICES Annual Meeting in 2015. The State Oceanographic Administration will act as the local host. Venue and dates have not been set yet. A draft of the theme entitled “*North Pacific ecosystem change and sustainable development*” was sent to Dr. Batchelder before the meeting and the description was edited for clarity by him before being presented to Science Board for review. MEQ Chairman, Mr. Chuanlin Huo, thanked Dr. Batchelder for suggesting a theme and for editing the abstract. Dr. Therriault requested Science Board members to read the description that evening and to provide any comments at the next day’s meeting (see *ISB-2014 Endnote 3*).

Action:

- Committees review theme tonight and provide comments tomorrow;
- China to resolve venue and meeting date by end of May.

AGENDA ITEM 14

Mid-year reports from Scientific and Technical Committees

Progress reports since PICES-2013 highlighting high priority items or those with financial implications of Committees and expert groups are provided below.

Physical Oceanography and Climate Committee (POC)

POC Vice-Chairman, Dr. Michael Foreman, reported that there would be costs for producing the AP-CREAMS sponsored EAST-II project report on “*Oceanography of the Yellow and East China Seas (EAST-II)*” as a PICES Scientific Report. AP-CREAMS requested technical editorial support to complete the project. The tentative dates for completing the manuscripts are by PICES-2014, and the final edition is anticipated to be ready by the end of 2015, so no action needs to be taken now.

Technical Committee on Data Exchange (TCODE)

TCODE Chairman, Dr. Toru Suzuki, announced that TCODE will join IOC/IODE as Associate Data Unit (ADU). TCODE will present a formal application for ADU to Science Board for review and recommendation at PICES-2014, and if approved by Governing Council, will submit the application to IOC.

TCODE will continue to rent a server for metadata federation data. As more data for regional climate projects is gathered, TCODE will have to think about how to store data for long time series. At present, a number of PICES members are housing PICES-related data on their own computers. TCODE will contact the expert groups on their data storage requirements to determine the scope of the issue.

Sunday, April 20, 2014

AGENDA ITEM 9 (continued)

Status of planning for PICES-2015

The theme for PICES-2015 was reviewed overnight by Science Board members and the edits were implemented by Dr. Batchelder. Further comments were offered during the meeting, which added to produce a final draft theme.

AGENDA ITEM 14 (continued)

Mid-year reports from Scientific and Technical Committees*Biological Oceanography Committee*

Working Group on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors* (WG 28) is progressing well in its terms of reference and content for its final report, but the Working Group may need to extend its term in order to expand its case studies to include China.

Fishery Science Committee (FIS)

The only high priority issue of FIS was for Science Board to provide feedback on the SG-SC-NP framework (see action item under NPAFC in Agenda Item 2).

Marine Environmental Quality Committee (MEQ)

It was unanimously agreed that harmful algal blooms (HABs) are very important in terms of human dimensions, especially in the Western Pacific. HAB scientists are generally very active, but PICES is not considered the main forum for their work. Despite the lack of incentives for HAB scientists to be more engaged with PICES, it was agreed that the Organization should find a way for PICES to be more attractive to them and for them to be more productive within PICES. It was noted that S-HAB has made great strides in HAB science in contributing data to HAEDAT. As GEOHAB winds down, there is an initiative under IPHAB to establish GLOBHAB, which is interested in a PICES member to help draft new terms of reference and Science Plan. NOWPAP has a HAB group; when PICES develops its plans for PICES/NOWPAP collaboration (see NOWPAP in Agenda Item 2), it is anticipated that the two organizations will discuss ideas for joint HAB activities. S-HAB is due to be evaluated for another 3-year extension by MEQ. This will be a good opportunity for MEQ and AP-AICE to work with S-HAB to revise their terms of reference to align with MEQ's Action Plan and FUTURE goals. A TCODE member should also be part of the review team to assess HAEDAT database input.

Action:

- MEQ, AICE and TCODE and S-HAB Co-Chair(s) to review S-HABs TORs by first week in August;
- S-HAB to present a term report to MEQ for its term extension;
- MEQ to have recommendations ready by PICES-2014;
- TCODE to nominate member to review team by end of April.

Technical Committee on Monitoring (MONITOR)

The Advisory Panel on the *Continuous Plankton Recorder in the North Pacific* (AP-CPR) is reasonably secure for funding at present but continues to look for more funds beyond 2014.

AGENDA ITEM 11

Implementation of Science Board recommendations and Governing Council Decisions from PICES-2013

Visiting Scientist program

Science Board agreed there were areas in PICES that could benefit from recruiting a visiting scientist. Opportunities to invoke the program could be in the MOE-funded project on tsunami debris, in the development of the North Pacific Ecosystem Status Report, or in areas that may be identified by the FUTURE Evaluation Team. Council will broaden or change the terms of reference to suit Science Board's focus. Once a task/project is in place, it will be advertised widely. Science Board will discuss the program at PICES-2014 after more details of NPESR are known.

Publications

Dr. Bychkov described issues that were prohibiting a number of reports from being published in the PICES Scientific Report series projected for 2014. Although the Working Group on *Jellyfish Blooms around the North Pacific Rim: Causes and Consequences* (WG 26) was very active during its term, it has not been successful in obtaining country reports from Canada, Korea and China despite numerous reminders. Other groups, for various reasons, are also not as far along in gathering their materials, so it is unlikely that many will be earmarked for publication this year.

Action: BIO to encourage delinquent WG 26 members to submit their reports.

AGENDA ITEM 12

PICES' 25th anniversary

Science Board members were asked to provide more ideas on ways to celebrate PICES' 25th anniversary in 2016. Suggestions included:

Social/traditional media – smart phones, tablet applications, historical poster collection of PICES Annual Meetings (could be used for smart phone apps), YouTube videos (general topics tailored to each country plus using a local scientist to explain or answer questions or using different dubbed audio scripts), special edition of PICES Press, construction of a photo album or interactive timeline.

Clothing – T-shirts or fleece hats branded with the PICES logo.

Meetings/symposia – A symposium, topic session/workshop related to national scientific organizations of each country, public and scientific seminars; invited speakers discussing accomplishments of the past and projections for the future; conducting an activity along the lines of NOAA's abc's of stock assessment; holding a gala event to acknowledge key partners and to document joint accomplishments.

Cruises – Research cruises (*e.g.*, KIOST's new vessel will be launched in 2016: have a test cruise and open house, or conduct an *Oshoro-maru* cruise before PICES-2016).

Special PICES logo – Preferences among three examples of stylized logos commemorating the 25th anniversary were provided by a number of Science Board members. It was noted by some members that the logos deviated dramatically from PICES' traditional logo.

Science Board must decide soon if PICES-2016 will follow the same structure of past annual meetings or will deviate to a different format so a budget can be formulated.

Action:

- Science Board to continue to forward ideas to the Anniversary Planning Committee;
- Science Board to have an idea of the structure of PICES-2016 at Yeosu.

AGENDA ITEM 10

Next phase of the North Pacific Ecosystem Status Report

AP-SOFE Chairman, Dr. Phillip Mundy, updated Science Board on the outline for the next version of the North Pacific Ecosystem Status Report (NPESR). The current approach is to have updated web-based ecosystem time series observation (ETSO) reports alternating with a paper report in the fifth year. One of the advantages of going digital is that the data will be easier to organize and update quickly.

The original plan was for SOFE to be the mechanism to deliver NPESR, but with recent changes in key support staff to help in editing, Dr. Mundy acknowledged that SOFE is no longer up to the task, and proposed the establishment of a study group to help develop and aid the implementation of the next generation NPESR (*ISB-2014 Endnote 4*). Science Board approved the establishment of a study group in principle. Membership will need to be established soon if most of the terms of reference are to be addressed at PICES-2014, and it was suggested that instead of a formally appointed study group, a project team be named to speed up the process. Suggested nominees included: Robin Brown (SOFE, TCODE, Canada), Lei Zhou (SOFE, POC, China), Shin-ichi Ito (SOFE, POC, Japan), Suam Kim (S-CCME, Korea), Oleg Katugin (SOFE, Russia), Lyman Thorsteinson (MEQ, USA), William Peterson (SOFE, BIO, USA), Phillip Mundy (SOFE, MONITOR, USA).

Action:

- Committee Chairs to contact potential project team nominees;
- Project team to work on TORs 1–3 of proposed study group and report at PICES-2014.

AGENDA ITEM 15

Other PICES business

PICES Chair, Dr. Laura Richards, asked Science Board advice on how to respond to inquiries related to PICES involvement in Arctic-related activities (*i.e.*, PICES representation at an Arctic-specific meeting) addressed to her. It was agreed that PICES will not initiate projects related to the Arctic, as the Convention covers only the temperate subarctic and adjacent seas, but this does not preclude the exchange of scientific knowledge between North Pacific and Arctic waters.

SSC AGENDA ITEM 16

Advisory Panel Chair rotations

At PICES-2013, AP-COVE endorsed Dr. Hiroaki Saito to remain Chairman for another year, until PICES-2014. Dr. Saito's chairmanship will be discussed on a yearly basis by COVE members, as his work circumstances (transferring from FRA to The University of Tokyo) dictate. Further, the FUTURE Evaluation Team report may include structural changes within the FUTURE program (see below).

Action: discuss AP-COVE chairmanship at PICES-2014.

SSC AGENDA ITEM 17

Current status of the FUTURE Advisory Panels

Advisory Panel on *Anthropogenic Influences on Coastal Ecosystems* (AP-AICE)

AP-AICE Chairman, Dr. Steven Bograd, described a number of issues identified by the FUTURE Evaluation Team that were still preventing AICE from making good systematic progress. In particular, because of lack of participation and country/Committee representation, it was difficult to collaborate on a common issue when members were working at a national or sub-national scale. Limited membership also meant that AICE was not able to act as a nexus among expert groups and Committees. Pending the outcome of the FUTURE Evaluation Team Report (see below), AICE will develop a new work plan for presentation at PICES-2014.

Advisory Panel on *Climate, Oceanographic Variability and Ecosystems* (AP-COVE)

AP-COVE Chairman, Dr. Hiroaki Saito, reported that COVE-related groups were doing well. Working Group on *North Pacific Climate Variability and Change* (WG 27) and Working Group on *Regional Climate Modeling* (WG 29) were making good progress in climate change forecasting and RCM inter-comparisons and assessments. The next step was to bring the biological and human dimension components into forecasting, and to encourage short-term forecasts as well as multi-decadal ones.

Advisory Panel on *Status, Outlooks, Forecasts, and Engagement* (AP-SOFE)

AP-SOFE Chairman, Dr. Phillip Mundy, informed Science Board that some SOFE terms of reference do not match up with the mandate of the Advisory Panel, and that they will need to be revised. The Section on *Human Dimensions of Marine Systems* was progressing well and its contributions will be included in the next NPESR.

SSC AGENDA ITEM 18

FUTURE Open Science Meeting

A FUTURE Open Science Meeting took place April 15–18, 2014, on the Kohala Coast, Hawaii to showcase achievements and to identify gaps in addressing the overarching question “What is the future of the North Pacific, given current and expected pressures?” at the mid-life of the decade-long program. Over 115 participants from all PICES member countries as well as from Australia, New Zealand, Denmark, France,

Germany and the UK attended the meeting which consisted of eight theme sessions and four workshops. On the last day of the meeting, a speaker from each PICES member country summarized national activities related to the FUTURE Science Plan which was followed by a discussion on FUTURE progress, identification of gaps and challenges, and setting the course for the second half of the program.

SSC AGENDA ITEM 19

FUTURE implementation

Science Board agreed that it was not doing a good enough job as SSC in directing the FUTURE APs and that there should perhaps be an arms-length SSC to oversee FUTURE. Issues lay with not having an appropriate mechanism for addressing the levels of communication in both directions between the APs, expert groups and Committees, and not having enough time to meet at the Annual Meetings or mechanisms to meet inter-sessionally. Suggested ways to bring information together might be to have a FUTURE plenary instead of holding a Science Board Symposium, or the Chairs of the APs could meet with the Chairs of expert groups.

Science Board SSC was asked to come up with ways to resolve ambiguities in FUTURE products, such as “are anticipated benefits considered end products?” and to make sure that products produced by expert groups are captured in FUTURE. The SSC needed to do a better job in tracking expected products and progress in creating both final and interim products. The FUTURE Advisory Panels did a good job in providing a rating scheme each expert group could follow for addressing the subset of questions related to the 3 overarching questions of the FUTURE Science Plan, but it was not clear who or how expected products were being tracked. It was suggested that another category be added to the tables indicating “progress” in addition to a column to track talks given at topic sessions and workshops. A common site should be created where the finished and interim products can be put and accessed by the community. For the modelling groups, data need to be either stored on a common site or linked to specific websites for access by other expert groups. There also needs to be a better communication between the FUTURE APs, Committees and expert groups.

Action: Committees to ask expert groups for a list of products related to sub-questions under the 3 overarching questions of the FUTURE Science Plan

SSC AGENDA ITEM 20

Other FUTURE business

None

Monday, April 21, 2014

SCIENCE BOARD/EVALUATION TEAM AGENDA ITEMS 2 AND 3

Evaluation of PICES FUTURE program

The Science Board Chairman called the FUTURE Evaluation Team/Science Board meeting to order at 9:00 and self-introductions were made around the table. All Team members were present except for Dr. Manuel Barange who could not stay for the joint meeting. There were no changes or revisions to the agenda. Dr. Jake Rice presented a report on the progress of FUTURE on behalf of the Evaluation Team. He thanked the Secretariat for providing the Team with background information on the science program. The report was structured around five pieces of commentary on how FUTURE has positioned itself as a flagship science program of PICES. The Team reviewed progress, major accomplishments as well as shortcomings and impediments, and proposed actions to address issues identified. The conclusions were that FUTURE was not fully effective due to its organizational structure. It was recommended that FUTURE stay embedded in PICES, but the governance structure of the program should be changed, and the Team recommended a dedicated

FUTURE SSC to oversee the program and report to Science Board. Science Board enthusiastically supported the idea although there was some concern that some FUTURE AP members who have contributed greatly to the program may feel their efforts have been wasted. Nominations for the SSC will be sought from Committee members. The recommendation was to have approximately 12 members, but more can be added to achieve balance, such as from the Section on *Climate Change Effects on Marine Ecosystems* and Section on *Human Dimensions of Marine Systems*.

Rules of Procedure will need to be revised to allow for the organizational restructuring of the program, and the structure of the Annual Meeting will need to be readjusted. Therefore, it is imperative that Science Board discuss the restructuring in more detail as soon as possible. Once the Evaluation Team receives feedback from Science Board, it will have a final report and recommendations ready by the end of May. A crucial recommendation by the Evaluation Team is that the FUTURE Implementation Plan be updated even if PICES decides not follow through with proposed structural changes.

Action:

- Science Board to provide report feedback to Evaluation Team before mid-May;
- Dr. Therriault to draft a message to Committees and expert groups regarding restructuring after receiving the Evaluation Team final report at end of May;
- Committee Chairs to get feedback from members and expert groups on new restructuring proposals end of June and prepare a summary to send to Dr. Therriault by first week in July;
- Science Board to discuss means of restructuring by teleconference no later than August 1;
- Science Board to submit recommendations to the Secretariat for inclusion in Governing Council briefing book by end of August;
- AP Chairs to bring any AP member concerns to PICES-2014 for discussion;

SCIENCE BOARD/EVALUATION TEAM AGENDA ITEM 4

Other business

None

ISB-2014 Endnote 1

ISB-2014 participation list

Members

Steven Bograd (AP-AICE)
 Jennifer Boldt (MONITOR)
 Michael Foreman (POC Vice-Chairman)
 Chuanlin Huo (MEQ)
 Elizabeth Logerwell (FIS)
 Phillip Mundy (AP-SOFE)
 Angelica Peña (BIO)
 Hiroaki Saito (Science Board Vice-Chairman,
 AP-COVE)
 Igor Shevchenko (representing Russia)
 Toru Suzuki (TCODE)
 Thomas Therriault (Science Board Chairman)

Observers

Karin Baba (Japan)
 Julie Hall (FUTURE Evaluation Team, NZ)
 Shin-ichi Ito (FUTURE Evaluation Team, Japan)
 Oleg Katugin (FUTURE Evaluation Team, Russia)
 Adolf Kellermann (ICES)
 Jacquelynne King (FUTURE Evaluation Team, Canada)
 Hideaki Maki (MOE, Japan)
 Guangshui Na (WG 31, China)
 William Peterson (FUTURE Evaluation Team, USA)
 Jake Rice (FUTURE Evaluation Team, Canada)

PICES

Lev Bocharev (Past PICES Chairman)
 Harold (Hal) Batchelder (Deputy Executive
 Secretary)
 Robin Brown (Governing Council, Canada)
 Alexander Bychkov (Executive Secretary)
 Enrique Curchitser (Governing Council, USA)
 Ken Mori (F&A, Japan)
 Chul Park (Vice-Chairman)
 Laura Richards (Chair)
 John Stein (Governing Council, USA)

ISB-2014 Endnote 2

ISB-2014 meeting agenda

Saturday, April 19, 2014 (09:00-18:00)

Science Board

1. Welcome and adoption of agenda
2. Interactions with other organizations
3. The 3rd Climate Change Symposium in 2015, Brazil
4. Other possible PICES-sponsored conferences/symposia in 2014 and beyond
5. Capacity building/Plan for PICES summer schools
6. Status of PICES-2014, theme and venue
7. Wooster and POMA awards
8. Venue and date for ISB-2015
9. Status of Planning for PICES-2015
10. Next Phase of NPESR
11. Implementation of Science Board recommendations and Governing Council decisions from PICES-2013, Nanaimo
12. PICES' 25th anniversary
13. MOE Project on Tsunami Debris and NIS
14. Mid-year reports from Scientific and Technical Committees
15. Other PICES business

ISB-2014

Sunday, April 20, 2014 (09:00-18:00)

Science Board as SSC for FUTURE

16. AP Chair rotations
17. Presentation and discussion of current status of the FUTURE APs
18. FUTURE Open Science Meeting
19. FUTURE Implementation
20. Other FUTURE business

Monday, April 21, 2013 (09:00-12:30)

Joint Inter-sessional Science Board/FUTURE Evaluation Team Meeting

1. Welcome and adoption of agenda
2. Evaluation of PICES FUTURE program
3. Recommendations and next steps
4. Other business

ISB-2014 Endnote 3

2015 PICES Annual Meeting Theme Proposal
Draft April 16, 2014

North Pacific Ecosystem Change and Sustainability

Since its establishment, PICES has provided leadership in developing a better understanding of the structure, function and changes of North Pacific marine ecosystems. The integrative scientific programs of PICES, and other special activities such as periodic Ecosystem Status Reports, have advanced scientific understanding of coupled physical -biogeochemical-ecological processes of the North Pacific. The current scientific program on Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems (FUTURE) is focusing on developing a better understanding of the combined consequences of climate change and anthropogenic pressures on marine ecosystems, ecosystem services and marine dependent social systems. Climate change research remains important to ocean scientists and governments within PICES. However, the direct and indirect interactions of human activities on coastal and open ocean ecosystems and the services they provide to humans is also of great concern in the North Pacific area. The concentration of humans along coastlines contributes diverse and substantial impacts on adjacent marine environments. A sustainable North Pacific ecosystem is the future desired by both the public and governments. This vision of the future seeks balance between resource protection and resource utilization, and balance between pressing needs at local/regional scales and climate-driven issues at basin/global ocean scales. This theme provides the flexibility to accommodate scientific sessions related to both oceanic and coastal issues, spanning a breadth of topics, which could include climate change, ocean acidification, coastal eutrophication, aquaculture, fishing, pollution, coastal development and planning, sustainability, resilience, vulnerability, and the tradeoffs/conflicts inherent in multiple-use ocean activities.

Annex : PICES Annual Meeting Themes (2004-2014)

	Year	Date	Venue	Theme
1	2004	Oct 14-24	Honolulu, HI, USA	Beyond the continental slope - complexity and variability in the open North Pacific Ocean
2	2005	Sep 29-Oct 9	Vladivostok, Russia	Mechanisms of climate and human impacts on ecosystems in marginal seas and shelf regions
3	2006	Oct 13-22	Yokohama, Japan	Boundary current ecosystems
4	2007	Oct 26-Nov 5	Victoria, BC, Canada	The changing North Pacific: Previous patterns, future projections, and ecosystem impacts
5	2008	Oct 24-Nov 2	Dalian, China	Beyond observations to achieving understanding and forecasting in a changing North Pacific: Forward to the FUTURE
6	2009	Oct 23-Nov 1	Jeju, Korea	Understanding ecosystem dynamics and pursuing ecosystem approaches to management
7	2010	Oct 22-31	Portland, USA	North Pacific Ecosystems Today, and Challenges in Understanding and Forecasting Change
8	2011	Oct 14–23	Khabarovsk, Russia	Mechanisms of the Marine Ecosystem Reorganization in the North Pacific Ocean
9	2012	Oct 12-21	Hiroshima, Japan	Effects of natural and anthropogenic stressors in North Pacific ecosystems: Scientific challenges and possible solutions
10	2013	Oct 11–20	Nanaimo, BC, Canada	Communicating forecasts, uncertainty and consequences of ecosystem change
11	2014	Oct. 17-26	Yeosu, Korea	Toward a better understanding of the North Pacific: Reflecting on the past and steering for the future

ISB-2014 Endnote 4**Proposal for a Study Group on *the North Pacific Ecosystem Status Report, NPESR***

April 19, 2014

To aid the development and assist the implementation of the next generation NPESR from the starting point of the advice provided by SOFE AP at PICES 2013.

Terms of Reference:

1. Address the NPESR issues identified in the SB report 2013 and in the ISB briefing book p. 102;
2. Coordinate the development of the NPESR with chairs of technical and standing committees and chairs of FUTURE AP;
3. Provide a report to PICES SB 2014 that resolves outstanding issues of production and identifies start up and annual operating costs of the next generation NPESR;
4. Convene NPESR Workshop Interim PICES Meeting 2015 to review candidate time series and methods of production;

ISB-2014

5. Present report on the status NPESR to plenary session PICES 2015.

Meeting TORs 4 and 5 requires that SB 2014 approves the report of TOR 3 and recommends funding for staffing and production, and that an editor or editors be identified by that time.

Synopsis of Committee concerns from PICES-2013:

BIO – Schedule and planning should be inclusive, NPESR developed in open discussions;

FIS – Supplying data may not be possible for all countries; data sharing should be universal or should not be done. Concerns about costs (see p. 101 ISB 2014), how would differences be reconciled (study group and workshop), what type of information to be included (up to the technical and standing committees);

POC – Need more details, especially on the level of commitment and engagement by POC members;

MEQ – How would data sets be identified (MEQ), timeline for production (schedule) (up to SB and GC);

MONITOR – needs more details and time to consider them (study group and workshop);

TCODE – Need more details on the methods of production, costs, location of storage of metadata and data.