

REPORT OF SCIENCE BOARD

Science Board met in Portland, USA on October 24, 2010 (from 12:30–15:00 h) to adopt the draft agenda and to discuss those items set for discussion at the luncheon meeting. Science Board Chairman, Dr. John Stein, welcomed invited observers, Drs. Emilie Brévière (SOLAS), Harald Loeng and Jürgen Alheit (ICES), Luis Valdés (IOC) and Science Board members to the meeting and called it to order (*SB Endnote 1*). The agenda item on “Report of the PICES/ICES SG on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science*”, originally scheduled for discussion at the luncheon meeting, was postponed until the meeting on October 30 to permit more time for discourse and the addition of Agenda Item 9a, “Report on the SG on *Human Dimensions*” (*SB Endnote 2*). Science Board adjourned at 15:00 h and reconvened on October 30, 2010, meeting from 9:00–18:00 h.

October 24, 2010

AGENDA ITEM 2

Review of procedures for Science Board Symposium and Session awards, and Closing Session

Procedures and protocols for determining best presentations for the Science Board Symposium and Topic/Paper sessions sponsored by each Committee/FUTURE Advisory Panel were discussed. Each Committee was responsible for judging its own sponsored session/workshop for the best oral or poster presentation. For multiple-sponsored sessions/workshops, the Science Board Chairman assigned one of the co-sponsoring Committees or FUTURE Advisory Panels to be responsible. Assignments for judging were developed from what had been proposed in the Science Board briefing book. Each chairman was responsible for judging (or delegating to judges) the eligible presentations made at the sessions/workshops relevant to his Committee or FUTURE Advisory Panel. Science Board agreed that, should the pool of eligible oral and poster presentations be small, or not of sufficient quality, there was no obligation to select a presentation for an award.

AGENDA ITEM 3

Implementation of Science Board recommendations and Governing Council decisions from PICES-2009 and the 2010 inter-sessional Science Board meeting

Science Board reviewed previous recommendations and decisions from PICES-2009 and ISB-2010 meetings and noted that while Council had accepted all requests from Science Board, not all recommendations had been successful or completed. Potential reasons for failures were discussed and it was emphasized that Committees need to be clearer about the nature of their requests in future.

Action: Science Board will assess, during PICES-2010, the merits of having the Science Board Symposium begin on the first day and continue on the last day of the Annual Meeting.

Subsequently, at the Science Board meeting on October 31, there was general agreement that splitting the Science Board Symposium did not work well.

AGENDA ITEM 4

Relations with specific international programs/organizations

The Chairman invited the representatives from SOLAS, ICES and IOC to speak to Science Board on areas of potential collaboration with PICES. An invitation was made by Dr. Emilie Brévière, (Executive Officer, SOLAS) to co-sponsor the 5th SOLAS Summer School in Corsica, France in 2011.

Dr. Harald Loeng (representing ICES) presented a list of theme sessions for potential co-sponsorship by PICES, that will be convened at the ICES Annual Science Conference in Poland in 2011. Dr. Loeng also expressed a desire by ICES for closer collaboration with PICES on Arctic issues and on ocean–climate initiatives, notably through the establishment of a joint P/ICES expert group emerging from ICES’ Strategic Initiative on Climate Change and P/ICES WG on *Forecasting Climate Change Impacts on Fish and Shellfish*.

Dr. Valdés (Chief, Ocean Science Section, IOC) noted the close cooperation that IOC has with PICES through HAB-S, GOOS, and IOCCP and invited PICES to express any requests in these initiatives. He pledged IOC support for the 5th International PICES/ICES Zooplankton Production Symposium in Pucón, Chile, in March 2011 and for the 2nd PICES/ICES/IOC International Symposium on “*Effects of climate change on the world’s oceans*” in Yeosu, Korea in 2012. In turn, he welcomed PICES to participate in an IOC/UNESCO workshop on geoengineering, given the expertise of PICES in iron fertilization in the North Pacific, and to collaborate with IOC in research on pollutants (especially microplastics) in the marine environment. He also expressed the desire by IOC to be involved in northern hemisphere studies with PICES and ICES, noting the urgent necessity for an international framework of cooperation for both ocean research and governance in the Arctic. To continue close links between the two organizations, it was noted that *ex officio* status was in effect for some PICES expert groups and it was suggested that the same status for IOC’s International Oceanographic Data Exchange (IODE) be discussed at the TCODE Committee business meeting.

At the Science Board meeting on October 30, Science Board agreed to co-sponsor the SOLAS 5th International Summer School in Cargèse, Corsica, France in August 2011, a number of theme sessions at the ICES Annual Science Conference in Gdansk, Poland in September 2011 (see Agenda Item 12 for list), and to conduct 1-day workshop proposed by MEQ on “*Trends in marine contaminants and their effects in a changing ocean: Refining indicator approaches in support of coastal management*” at PICES-2011 (later, IOC agreed to co-sponsor this workshop).

AGENDA ITEM 5

Advisory report to the Cohen Commission

Deputy Executive Secretary, Dr. Skip McKinnell, reported that a draft of the PICES Advisory Report to the “*Commission of enquiry into the decline of Fraser River sockeye salmon*” was sent to the Science Board Chairman and Chairman-elect on September 15. After comments from peer reviewers were addressed, the report was endorsed by Science Board. The next step will be to seek Council approval to release the draft to the Cohen Commission by November 15 and the final report by December 15, 2010. Results of the report will be presented to the public in February 2011 (subsequently cancelled by the Cohen Commission) followed by a paper to be submitted to *Reviews in Fish Biology and Fisheries*.

Recommendation: Science Board recommends releasing the draft report to the Cohen Commission following approval by Council, by November 15, 2010 with a cover letter stating PICES is prepared only to correct errors and/or points of clarification that the Commission’s reviewers may find before the final report is submitted on December 15, 2010.

Saturday, October 30, 2010

AGENDA ITEM 6

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

Science Board Chairman-elect, Dr. Sinjae Yoo, updated Science Board on the progress of the Study Group on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science* (SG-SP). The objective of the Study Group is to develop a formal framework for cooperation between ICES and PICES

which will serve as a basis for the linkage of science plans and longer-term strategic planning. An informal Study Group meeting took place at the ICES ASC in Nantes, France in September 2010 during which a list of common interests between the two organizations, leading to potential areas of cooperation, was drawn up. Among these were climate change, and improved forecasting, ecosystem resilience and vulnerability, spatial planning, and ocean acidification. Also discussed was a method for developing a process in which PICES would have a chance to consider joint ICES/PICES theme session proposals for the ICES ASC at its ISB meeting in order for this information to be available in a timely manner for decisions to be made at the annual ICES SCICOM meeting. Another issue discussed was the merging of ICES Strategic Initiative on Climate Change (ending in December 2010) with the joint P/ICES WG on *Forecasting Climate Change Impacts on Fish and Shellfish* (WGFCCIFS) into a new entity called the “ICES/PICES Strategic Initiative on Climate Change”. Science Board agreed that the TORs of this strategic initiative proposed by ICES were very broad and included many more aspects of climate change than PICES would be prepared to handle by its expert group. Another concern was the potential for the proposed strategic initiative to overlap with the initiatives of PICES’ FUTURE program. Due to the different structure and procedures of the two organizations, another challenge in aligning ICES and PICES lay with the different methods employed to run an expert group since the scopes of expert groups on each side do not match exactly. To reconcile these issues, the SG-SP will use ISB-2011 as an opportunity to meet.

Action:

- Provide an update on SG-SP report prior to ISB-2011 in time for discussion at the meeting;
- Circulate a draft of the proposed expert group, “ICES/PICES Strategic Initiative on Climate Change”, before ISB-2011 in time for discussion at the meeting.

AGENDA ITEM 7

Report of elections of Committee Chairmen

Changes or continuations in chairmanship are given in the following:

- Dr. Sinjae Yoo to replace Dr. John Stein as Science Board Chairman,
- Dr. Atsushi Tsuda to replace Dr. Michael Dagg as BIO Committee Chairman,
- Dr. Kyung-II Chang to replace Dr. Michael Foreman as POC Committee Chairman,
- Dr. Hiroya Sugisaki to serve a second term as MONITOR Technical Committee Chairman,
- Dr. Toru Suzuki to replace Dr. Bernard Megrey as TCODE Technical Committee Chairman,
- Dr. Dagg elected as BIO Committee Vice-Chairman,
- Dr. Foreman elected as POC Committee Vice-Chairman,
- Dr. Phillip Mundy elected as MONITOR Technical Committee Vice-Chairman,
- Dr. Hernan Garcia elected as TCODE Technical Committee Vice-Chairman.

Science Board expressed its appreciation to Dr. Suzuki for taking up the TCODE chairmanship and preparing for the Annual Meeting on short notice due to the sudden death of Dr. Bernard Megrey.

AGENDA ITEM 8

Election of Science Board Vice-Chairman

SOFE-Chairman, Mr. Robin Brown, nominated Dr. Thomas Therriault as Vice-Chairman of Science Board. Dr. Therriault accepted and was unanimously endorsed for the position by Science Board.

AGENDA ITEM 4 (CONTINUED)

Relations with specific international programs/organizations

Science Board discussed an idea that a newly established Regional Fisheries Management Organization (RFMO) in the North Pacific may request that PICES provide strategic scientific advice on North Pacific

marine ecosystems. The formation of the RFMO is anticipated in response to the UN General Assembly's Resolution 61/105, paragraph 83 calling on RFMOs to protect vulnerable marine ecosystems from bottom fishing activities that would have a significant adverse impact on such ecosystems. Science Board felt it was in a good position to have an advisory role. However, since detailed information on RFMO is lacking, further decision on the engagement with RFMO is deferred until such information is provided.

North Pacific Anadromous Fish Commission (NPAFC) extended an invitation to PICES to co-sponsor an international workshop on the "*Production trends of pink and chum salmon*" (see Agenda Item 12).

Recommendations:

- Science Board is, in principle, prepared to serve as an advisor on strategic science matters to a new RFMO. However, any decision on a potential association with a new RFMO must wait until better information is available.
- Accept the invitation from NPAFC, subject to being granted a role in organizing the workshop.

AGENDA ITEM 9A

Report by Study Group on *Human Dimensions*

SG on *Human Dimensions* Chairman, Dr. Mitsutaka Makino, reviewed the progress the SG has made to date. He noted that all SG members participated and made positive contributions. The SG will produce a draft final report that will include recommendations by January 2011. Because the issue of human dimensions is important and relevant to FUTURE, especially SOFE-AP and a number of other PICES expert groups, the SG felt it was important to circulate the report to these groups for comments and suggestions. A revised draft final report will then be submitted to Science Board for review at ISB-2011, and the final report and recommendations will be presented at PICES-2011. Because of the revised timeline for making revisions and finalization, Science Board agreed to extend the Study Group's life by one year, which also would allow the establishment of a Working Group to coincide with potential funding from the next Japanese Trust Fund budget (2012–2016).

Recommendation: Extend the life of SG-HD by one year to allow for revisions and completion of the report and recommendations, and the establishment of a Working Group at PICES-2011.

AGENDA ITEM 10

Reports from FUTURE Advisory Panels and of the 2010 inter-sessional FUTURE workshop

Chairmen of the FUTURE Advisory Panels (Thomas Therriault, AICE; Hiroaki Saito, COVE; Robin Brown, SOFE) presented their reports to Science Board. The AP Chairmen and Science Board held their first FUTURE SSC meeting in April 2010 in Sendai, Japan, to review draft workplans of the APs and to clarify the process for revising terms of reference for existing expert groups and approving new expert groups to be in alignment with FUTURE's goals. The APs met again for an inter-sessional meeting in Seoul, Korea, August 16–18, 2010 to identify priorities and activities for the next two years and to discuss the means for existing and future expert groups to align their terms of reference with these priorities. At PICES-2010, the FUTURE APs held individual business meetings and then met jointly to discuss common goals and issues. Following the joint meeting, Dr. Therriault developed a survey that was distributed to Committee members to identify and prioritize stressors that could affect PICES ecosystems. The results of the survey will be presented at the proposed workshop on "*Indicators of status and change within the North Pacific marine ecosystems*" and will be used to help develop the terms of reference for the proposed Working Group on *Ecosystem Responses to Multiple Stressors* (see below). An outreach strategy for the second version of the North Pacific Ecosystem Status Report and Working Group 19 PICES Scientific Report on Ecosystem-based Management was discussed. A slide deck (power point presentation) and professional brochure for both products will be produced for a target audience of agencies/organizations dealing with management issues. To ensure high-

quality PICES reports, SOFE-AP was responsible for the peer-review of the Advisory Report to the “*Commission of enquiry into the decline of Fraser River sockeye salmon*”, slated to be released as a draft to the Cohen Commission mid-November. The AP also discussed the feasibility of holding a peer-review of PICES Scientific Reports.

Items of concern included how to strengthen the relationship between Science Board and the APs and how to establish a smoother means of communication between them; how to form joint sessions with Committees at Annual Meetings; and how to increase attendance in AP meetings having lower than expected turnout.

FUTURE APs proposed the establishment of a new Working Group on *Ecosystem Responses to Multiple Stressors*, and a 3-day FUTURE workshop on “*Indicators of status and change within the North Pacific marine ecosystems*” in conjunction with an inter-sessional Science Board meeting in 2011. They also supported proposals for new Working Groups on *Jellyfish Blooms around the North Pacific Rim: Causes and Consequences* (with minor changes to terms of reference) and *North Pacific Climate Variability and Change*.

Action:

- add AP Chairmen to Committee mailing lists or develop a forum for developing topic sessions on the PICES website;
- make all topic session proposals available to the APs at least two weeks in advance of the PICES Annual Meeting (partially formed proposals to be considered, but at a lower priority);
- continue to engage any non-responding AP members to attend FUTURE AP meetings at Annual Meetings and hold the meetings closer to the start of the Annual Meeting when most participants are expected to be present;

AGENDA ITEM 11

FUTURE SSC – Planning for ISB-2011

A proposal for a 3-day inter-sessional FUTURE workshop on “*Indicators of status and change within the North Pacific marine ecosystems*”, to be held in conjunction with the proposed ISB-2011, was supported by Science Board and FUTURE APs. It was felt that this workshop would provide valuable information for a proposed new expert group on multiple stressors. It was agreed that this would be an opportunity to extend an invitation to ICES to participate in the workshop to join forces with FUTURE in exploring this topic. Travel support was requested for three invited speakers to attend the workshop.

Recommendations:

- convene a 3-day Workshop on “*Indicators of status and change within the North Pacific marine ecosystems*”;
- support travel for 3 invited speakers to the Workshop;
- invite ICES to participate in the Workshop.

AGENDA ITEM 12

Summary of Science Board Recommendations to Governing Council

Proposed new expert groups

- Working Group on *Jellyfish Blooms around the North Pacific Rim: Causes and Consequences* (Parent Committee: BIO);
- Working Group on *Ecosystem Responses to Multiple Stressors* (Parent Committees: MEQ and BIO);
- Working Group on *North Pacific Climate Variability and Change* (Parent Committees: POC and MONITOR)

Inter-sessional symposia/sessions/workshops/meetings

Joint theme sessions at the ICES Annual Science Conference, September 19–23, 2011, Gdansk, Poland

- “*Atmospheric forcing of Northern hemisphere ocean gyres and their subsequent impact on the adjacent marine climate and ecosystems*”;
- “*Surplus production models: Quantitative tools to manage exploited fisheries and compare the productivity of marine ecosystems*” (recommended by the FIS Committee but not discussed at the Science Board meeting);
- “*Atlantic redfish and Pacific rockfish: comparing biology, ecology, assessment and management strategies for *Sebastes* spp.*” (recommended by the FIS Committee but not discussed at the Science Board meeting);
- “*Recruitment processes: Early life history dynamics – from eggs to juveniles*” (not discussed at the Science Board meeting);

Workshops/meetings

- FUTURE Workshop on “*Indicators of status and change within the North Pacific marine ecosystems*”, April 26–28, 2011, Honolulu, U.S.A.;
- Inter-sessional Science Board meeting, April 29–30, 2011, Honolulu, U.S.A.;
- Meeting of the PICES/ICES on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science*, April 2011, Honolulu, U.S.A., in conjunction with ISB-2011;
- ICES/PICES Workshop on “*Reaction of northern hemisphere ecosystems to climate events (regime shifts): A comparison*”, May 2–6, 2011, Hamburg, Germany;
- ICES/PICES Workshop on “*Biological consequences of a decrease in sea ice in Arctic and sub-Arctic Seas*” at the second ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*”, May 22, 2011, Seattle, U.S.A.;
- 45th CMOS Congress: “*Ocean, atmosphere and the changing Pacific*”, June 5–9, 2011, Victoria, Canada;
- International Workshop on “*Development and application of regional climate models*”, October 11–12, 2011, Incheon, Korea;
- International Workshop on “*Climate and oceanic fisheries*”, October 3–5, 2011, Cook Islands;
- NPAFC-led workshop on “*Production trends of pink and chum salmon: Why can they retain high abundance?*”, October 30–31, 2011, Nanaimo, Canada.

Capacity building

- SOLAS 5th International Summer School, August 29–September 10, 2011, Corsica, France;
- NOWPAP/IOC-WESTPAC/PICES training course on “*Remote sensing data analysis*”, October 8–12, 2011, Vladivostok, Russia.

Priority items with funding implications

PICES-2011, October 14–22, 2011, Khabarovsk, Russia

- 2 US invited speakers for BIO’s 4th MEMIP workshop on quantitative model–model and model–data analysis and comparison of simulation results (later renamed as “*MEMIP-IV: Quantitative comparison of ecosystem models applied to North Pacific shelf ecosystems–humble pie or glee?*”);
- 2 invited speakers for the CREAMS/PICES EAST 1 POC/MONITOR/TCODE workshop on “*Recent advances in monitoring and understanding of Asian marginal seas: 5-years of CREAMS/PICES EAST-I Program*”, October 14–22, 2011, Khabarovsk, Russia;
- 1 convener for the MEQ workshop on “*Incorporation of satellite remote sensing into monitoring of HABs*” (later renamed as “*Remote sensing techniques for HAB detection and monitoring*”; 1 convener, subsequently changed to 1 invited speaker);
- 1 invited speaker for the MEQ workshop on “*Trends in marine contaminants and their effects in a changing ocean: Refining indicator approaches in support of coastal management*”;

Inter-sessional events

- 1 TCODE member to attend the 21st session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XXI), March 23–26, 2011, Liège, Belgium;
- 3 invited speakers for the FUTURE Workshop on “*Indicators of status and change within North Pacific marine ecosystems*”, April 26–28, 2011, Honolulu, U.S.A.;
- 2 Asian convenors for the International Workshop on “*Reaction of northern hemisphere ecosystems to climate events (regime shifts): A comparison*”, May 2–6, 2011, Hamburg, Germany;
- 1 PICES plenary speaker from Asia for the 45th CMOS Congress: “*Ocean, atmosphere and the changing Pacific*”, June 5–9, 2011, Victoria, Canada;
- 3 early career scientists from PICES member countries to attend the SOLAS 5th International Summer School, August 29–September 10, 2011, Cargèse, Corsica, France;
- 1 PICES convenor for the ICES/PICES session on “*Atmospheric forcing of Northern hemisphere ocean gyres and their subsequent impact on the adjacent marine climate and ecosystems*” at the ICES Annual Science Meeting, September 19–23, 2011, Gdansk, Poland;
- 1 PICES convenor for the ICES/PICES session on “*Atlantic redfish and Pacific rockfish: comparing biology, ecology, assessment and management strategies for *Sebastes* spp.*” at the ICES Annual Science Meeting, September 19–23, 2011, Gdansk, Poland;
- 1 PICES convenor for the ICES/PICES session on “*Recruitment processes: Early life history dynamics – from eggs to juveniles*” at the ICES Annual Science Meeting, September 19–23, 2011, Gdansk, Poland;
- 4 students or early career scientists to attend NOWPAP/IOC-WESTPAC/PICES training course on “*Remote sensing data analysis*”, October 8–12, 2011, Vladivostok, Russia (revised to 3 trainees and 1 lecturer by Governing Council);
- 2 invited speakers for an International Workshop on “*Development and application of regional climate models*”, October 11–12, 2011, Incheon, Korea;
- PICES SSC member for the NPAFC-led workshop on “*Production trends of pink and chum salmon: Why can they retain high abundance?*”, October 30–31, 2011, Nanaimo, Canada;
- 2 Asian scientists to attend Workshop on “*Biological consequences of a decrease in sea ice in Arctic and sub-Arctic Seas*” at the second ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*”, May 22, 2011, Seattle, U.S.A.;
- 4 Asian scientists (2 students or early career scientists) to attend the ESSAS Open Science Meeting, May 22–26, 2011, Seattle, U.S.A. (later revised to 2 Asian early career scientists by Governing Council);
- 1 PICES member to attend an International Workshop on “*Climate and oceanic fisheries*”, October 3–5, 2011, Cook Islands
- 1 MONITOR representative to attend the 2011 meeting of the ICES Working Group on *Operational Oceanographic Products for Fisheries and Environment* (WGOOFE) (dates and venue not known at this time) 2011;
- MONITOR representative to attend the 2011 meeting of the ICES Working Group on *Oceanic Hydrography* (dates and venue unknown at this time);
- 1 MONITOR representative to attend the 2011 meeting of the ICES Working Group on the *Northwest Atlantic Regional Sea* (WGNARS), (dates and venue not known at this time) 2011;
- MEQ representative to attend the 2011 meeting of ICES/IOC Working Group on *Harmful Algal Bloom Dynamics* (dates and venue unknown at this time);

Facilities

- Renew rental of a remote server for PICES TCODE geo-spatial portal site

Publications

Special issues of primary journals (2011–2012)

- *Reviews in Fish Biology and Fisheries* (2011/12; Lead Author: S. McKinnell), review paper on “The decline of Fraser River sockeye salmon in relation to marine ecology”;

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- *ICES Journal of Marine Science* (2012; Guest Editors: J. Keister, C. Johnson, and D. Bonnet), special issue based on selected papers from the 2011 PICES/ICES Zooplankton Production Symposium on “*Population connections, community dynamics and climate variability*”;
- *Nature* (tentative) (2011; Coordinators: A. Hollowed, M. Barange, S. Kim and H. Leong). Synthesis paper from the PICES/ICES/FAO Symposium on “*Forecasting climate change impacts on fish and fisheries*”
- Journal TBD (2011; Lead authors: S. Minobe and E. Di Lorenzo). Review paper from PICES-2009 workshop on “*Exploring the predictability and mechanisms of Pacific low frequency variability beyond inter-annual time scales*”;
- *Aquaculture Economics and Management* (or *Aquaculture, Reviews in Aquaculture, or Fishery Research*) (2012; Guest Editors: TBD), selected papers for a special issue from the PICES-2010 Topic Session on “*Economic relation between marine aquaculture and wild capture fisheries*”;
- Journal TBD (2012; Guest Editors: TBD) selected papers from PICES-2011 Topic Session on “*Mechanisms of Physical-Biological Coupling Forcing Biological “Hotspots” in the Western North Pacific and Western North Atlantic*” (proposals for consideration in 2011);
- Journal TBD (2012; Guest Editors: TBD) selected papers from PICES-2011 Topic Session on “*Identification and characterization of environmental interactions of marine aquaculture in the North Pacific*” (proposals for consideration in 2011).

PICES Scientific Report series

- Final report of the POC Working Group on *Evaluations of Climate Change Projections* (WG 20) (Editors: M. Foreman and Y. Yamanaka);
- Final report of the BIO Working Group on *Iron supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (WG 22) (Editors: F. Chai and S. Takeda);
- Interim workshop report of Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* (WGFCCIFS) (Editors: A. Hollowed, M. Barange, S. Kim and H. Leong);

Other publications

- PICES Advisory Report to the Cohen Commission on “*The decline of Fraser River sockeye salmon in relation to marine ecology*” as Cohen Commission Technical Report No. 1 (Lead author: S. McKinnell);
- Brochure and slide deck based on the second version of the North Pacific Ecosystem Status Report (PICES Special Publication No. 4, 2010)
- Brochure and slide deck based on final report of MEQ Working Group on *Ecosystem-based Management Science and its Application to the North Pacific* (WG 19) PICES Scientific Report No. 37, 2010);

AGENDA ITEM 13

Review of SG on Restructuring of the PICES Annual Meeting report

Based on the final report of SG on *Restructuring of the PICES Annual Meeting*, Science Board recommended:

- that workshops be held on the Friday before the Opening Session, in order to avoid distractions caused by running them concurrently with topic or paper sessions;
- scheduling FUTURE Advisory Panels to hold their individual meetings on Sunday morning prior to the Opening Session, to allow for chances of better participation, followed by a joint meeting in the afternoon in which Science Board (as SSC for FUTURE) would be invited to join;
- extending the Science Board meeting by ½ day on Friday afternoon after the Closing Session, in order to accommodate more business items that have arisen due to increased responsibilities;
- holding Science/Technical Committee overture meetings of up to 1½ hours at some time before normal business meetings to familiarize Committee members with the topics to be discussed;
- running up to four parallel sessions during the Annual Meeting (N.B. only three parallel sessions will be considered at PICES-2011 due to capacity of the venue).

AGENDA ITEM 14

PICES-2011, Khabarovsk, Russia, theme and description, draft schedule of scientific sessions and workshops

Science Board agreed, in principle, with the proposed theme for PICES-2011, “*Mechanisms of marine ecosystem reorganization in the North Pacific Ocean*”, to be held in Khabarovsk, Russia, from October 14–22, 2011 (SB Endnote 3). The following sessions and workshops, by order of Committee, were recommended to be convened.

¾-day Science Board Symposium

Mechanisms of marine ecosystem reorganization in the North Pacific Ocean

1-day BIO/POC Topic Session

Mechanisms of physical-biological coupling forcing biological “hotspots” in the western North Pacific and western North Atlantic (later renamed to “*Mechanisms of physical-biological coupling forcing biological “hotspots”*”)

1-day BIO Contributed Paper Session

1½-day BIO Workshop

Marine Ecosystem Inter-Comparison Project (MEMIP IV) (later renamed as “*MEMIP-IV: Quantitative comparison of ecosystem models applied to North Pacific shelf ecosystems—humble pie or glee?*”)

½-day FIS Topic Session

Population dynamics, trophic interactions and management of cephalopods in the North Pacific ecosystems

1-day FIS/POC Topic Session

Recent changes of North Pacific climate and marine ecosystems: Implications for dynamics of the dominant species

1-day FIS Contributed Paper Session

½-day MEQ Topic Session

Harmful algal blooms in a changing world

½-day MEQ/FIS Topic Session

Identification and characterization of environmental interactions of marine aquaculture in the North Pacific

1-day MEQ/FUTURE Topic Session

Land-sea interactions and anthropogenic impacts on biological productivity of North Pacific Ocean coastal ecosystems

1-day MEQ Workshop (co-sponsored by NOWPAP)

Incorporation of satellite remote-sensing into monitoring of HABs (later renamed to “*Remote sensing techniques for HAB detection and monitoring*”)

1-day MEQ Workshop (co-sponsored by GESAMP and IOC)

Trends in marine contaminants and their effects in a changing ocean: Refining indicator approaches in support of coastal management (later renamed “*Pollutants in a changing ocean: Refining indicator approaches in support of coastal management*”)

½-day POC/FIS Topic Session (co-sponsored by ICES)

Linking migratory fish behavior to end-to-end models

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1-day POC Contributed Paper Session

1-day POC Workshop (reduced to ¾-day after the meeting)

Recent advances in monitoring and understanding of Asian marginal seas: 5 years of CREAMS/PICES EAST-I Program

1-day MONITOR/POC/FUTURE Topic Session

How well do our models really work and what data do we need to check and improve them?

TCODE E-poster Session

Data and data systems for validation of numerical models

AGENDA ITEM 15

Selection of PICES-2012 Theme

Science Board agreed in principle with the theme of PICES-2012, entitled “*Scientific challenge to the North Pacific ecosystem: Understanding and mitigation of the effects of natural and anthropogenic stress*” to be held in Hiroshima, Japan October 12–21, 2012.

AGENDA ITEM 16

High priority activities

Science Board agreed to the proposal from SOLAS (presented at the Science Board meeting October 24) to support the travel for 3 early career scientists from PICES member countries to attend the SOLAS 5th International Summer School, August 29–September 10, 2011, in Cargèse, Corsica, France, as a capacity building activity.

Science Board also agreed to co-sponsor a NOWPAP/IOC-WESTPAC training course on “*Remote sensing data analysis*” by offering travel support for 4 students or early career scientists (later revised to 3 trainees and 1 lecturer by Governing Council) to attend October 8–12, 2011, in Vladivostok, Russia.

Science Board instructed the Advisory Panel for *CREAMS/PICES Program in East Asian Marginal Seas* (CREAMS-AP) to prepare a chapter not included in the published second version of the North Pacific Ecosystem Status Report (PICES Special Publication No. 4, 2010) by next Annual Meeting. It is expected that a review of the ecosystem status of the area focused on by this chapter will happen at the POC Workshop on “*Recent advances in monitoring and understanding of Asian marginal seas: 5-years of CREAMS/PICES EAST-I Program*” to be held at PICES-2011.

AGENDA ITEM 17

Revision of the PICES Strategic Plan/Committee Action Plans

Little time was available to review and discuss the revision of the PICES Strategic Plan, so it was agreed to provide comments by e-mail to the Science Board Chairman for collation by January 1, 2011. This would allow time for Council to incorporate responses and prepare the Plan prior to the proposed 2011 inter-sessional Governing Council meeting.

AGENDA ITEM 18

Next inter-sessional Science Board meeting

Due to the increased responsibilities and number of business items to discuss, Science Board recommended holding an inter-sessional Science Board meeting in 2011, in conjunction with a 3-day FUTURE workshop on

“*Indicators of status and change within North Pacific marine ecosystems*”. The 1-day (tentative) Science Board meeting would be followed by a 1-day (tentative) FUTURE meeting. The United States agreed to host the meetings/workshop in Honolulu, U.S.A.

AGENDA ITEM 19

Other business

Recommendations:

- Science Board supports BIO and MEQ Committees’ recommendation to extend the Advisory Panel on *Marine Birds and Mammals* and Section on *Harmful Algal Blooms*, respectively, for one year in order for these expert groups to address a number of concerns by their parent Committees;
- Science Board gives full support to BIO and POC Committees’ strong recommendation to extend the Section on *Carbon and Climate* (CC-S) for another 5 years due to its extensive accomplishments and activities during its first term (due to changes in the PICES Rules of Procedures, the time until the next review has been revised to 3 years);
- recommended using CC-S’s five-year workplan as an example for the other two expert groups to note;
- recommended disbanding Working Group on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (WG 22) upon the completion of its three-year term in 2010;
- recommended disbanding Working Group on *Evaluations of Climate Change Projections* (WG 20) upon the completion of its three-year term in 2010.

SB Endnote 1

Science Board list of participants

Members

Robin Brown (SOFE)
 Michael Dagg (BIO)
 Michael Foreman (POC)
 Steve Rumrill (MEQ)
 Hiroaki Saito (COVE)
 John Stein (Chairman, Science Board)
 Mikhail Stepanenko (FIS)
 Hiroya Sugisaki (MONITOR)
 Toru Suzuki (TCODE)
 Thomas Therriault (AICE-AP)
 Sinjae Yoo (Chairman-elect, Science Board)
 Xuelei Zhang (alternate, China)

Observers

Jürgen Alheit (ICES)
 Emilie Brévière (SOLAS)
 Alexander Bychkov (PICES)
 Kyung-Il Chang (Chairman-elect, POC)
 Harald Loeng (ICES)
 Mitsutaka Makino (SG-HD)
 Skip McKinnell (PICES)
 Atsushi Tsuda (Chairman-elect, BIO)
 Luis Valdés (IOC)

SB Endnote 2

Science Board agenda

Sunday, October 24, 2010

1. Welcome and adoption of agenda
2. Review of procedures for Science Board Symposium and Session awards, and Closing Session
3. Implementation of Science Board recommendations and Governing Council decisions from PICES 2009 and the 2010 inter-sessional SB/GC meeting
4. Relations with specific international programs/organizations
5. Advisory Report to the “Commission of enquiry into the decline of Fraser River sockeye salmon”

Saturday, October 30, 2010

6. Report of the PICES/ICES SG on *Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science*
7. Report of elections of Committee Chairmen
8. Election of Science Board Vice-Chair
9. Relations with specific international programs/organizations (continued)
- 9a. Report by Study Group on *Human Dimensions*
10. Reports from FUTURE Advisory Panels and of the 2010 inter-sessional FUTURE Workshop
11. FUTURE SSC – Planning for ISB-2011
12. Recommendations for Part 1 - High Priority Items for SB Report to GC
13. Review of SG *Restructuring of the PICES Annual Meeting Report*
14. PICES-2011, Khabarovsk, Russia, theme and description, draft schedule of scientific sessions and workshops
15. Selection of PICES-2012 theme
16. High priority PICES activities
17. Revision of PICES Strategic Plan/Committee Action Plans – Align with FUTURE
18. Next inter-sessional Science Board meeting
19. Other business

SB Endnote 3

Theme for PICES-2011 (Khabarovsk, Russia)
Mechanisms of marine ecosystem reorganization in the North Pacific Ocean

Marine ecosystem variation often is attributed to natural or anthropogenic stressors, especially climatic or hydrological forcing. These studies typically show correlations among ecosystem characteristics and indices of global warming or climatic oscillations. Also, changes in biological communities often are described in terms of their correlative relationships to these large-scale indices. While these studies have produced interesting results, the underlying mechanisms responsible for ecosystem change have not been totally identified, especially when it comes to understanding how populations, communities, and ecosystems are reorganized, sometimes dramatically, over short time periods. Complexity, arising from varying influences of biotic and abiotic factors on multiple spatial and temporal scales, challenges our understanding of these processes. Because of our insufficient understanding of ecological mechanisms for oceanic regions, it is not unusual to find that what has happened in the past cannot adequately predict what will happen in the future. Thus, the focus of this Science Board Symposium will be on describing mechanisms of ecosystem change and reorganization. The influence of factors operating at various temporal and spatial scales will be considered. This symposium will lead to a better understanding of factors that control species composition and ecosystem structure in the North Pacific Ocean, and improve our ability to predict system responses to future stressors, including climate change.