

REPORT OF MARINE ENVIRONMENTAL QUALITY COMMITTEE

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The meeting of the Marine Environmental Quality Committee (MEQ) was held from 13:30-17:30 hours on October 17, 2004. The Chairman, Dr. John E. Stein, called the meeting to order and welcomed the participants (*MEQ Endnote 1*). The Committee reviewed the draft agenda (*MEQ Endnote 2*), and it was adopted.

Business from the 2003 meeting (Agenda Item 3)

There were no pressing issues for the Committee pending from the 2003 meeting in Seoul, Korea. The Chairman summarized in some detail the report of the inter-sessional Science Board meeting, with the participation of the Governing Council, held May 6-8, 2004, in Jeju, Korea.

Membership and chairmanship of MEQ (Agenda Item 4)

The Committee expressed again its concern that there was no participation in MEQ from China this year, nor has there been for the previous few years. While MEQ members from Japan were not able to participate, observers from Japan were in attendance, and MEQ appreciates their contribution.

There continues to be an overall issue of having full participation in MEQ by all PICES member countries. At this meeting, only 7 of the 17 members of MEQ were in attendance. The Committee acknowledged Korea's review of membership on the Scientific Committees of PICES, and welcomed the appointment and active participation of new members, Dr. Hak-Gyoon Kim and Prof. Kee-Hyum Kim.

This was the fourth year of Dr. Stein's chairmanship of MEQ, and it was the intent of the Committee to elect a new Chairman at this year's meeting. However, after serious efforts to identify a candidate from the western Pacific, the Committee was not successful. Dr. Stein was requested to serve for an additional year,

and he agreed to do so while the Committee identifies a candidate from the western Pacific, if possible; if not, then the Committee will consider candidates from the eastern Pacific. A new Chairman of MEQ will be elected at PICES XIV.

On a related matter, the Committee agreed with the proposal to establish a Vice-Chairman position for each of the Standing Committees.

Reports from subsidiary bodies under the direction of MEQ (Agenda Item 5 - 7)

HAB Section: Dr. Vera L. Trainer, Section Co-Chairman, presented a report of Harmful Algal Bloom Section (HAB-S) activities since PICES XII. Her presentation included reports on the HAB-S meeting held October 16, 2004, and a report on the MEQ Workshop on "Developing a North Pacific HAB data resource II" held October 15, 2004. These two reports are included elsewhere in this Annual Report.

EBM Study Group: Dr. Glen Jamieson, Co-Chairman of the MEQ/FIS Study Group on *Ecosystem-based management and its applications to the North Pacific* (SGEBM), reported on the activities of the Study Group in 2004, and their meeting held October 14, 2004. The report of this meeting is included elsewhere in this Annual Report. The Study Group completed its terms of reference and prepared a report which describes current efforts and programs on EBM in PICES member countries. SGEBM proposed to establish a Working Group on *Ecosystem-based management* (see below), under the direction of FIS and MEQ, which MEQ endorsed and forwarded the proposal to Science Board. The Study Group also requested the consideration of publishing their final report in the PICES Scientific Report Series. The Committee agreed to present this proposal to Science Board with the change that the request is to pursue publication of the report in an appropriate venue.

Working Group 18 on mariculture: Dr. Carolyn S. Friedman, Co-Chairman of the MEQ/FIS Working Group 18 on *Mariculture in the 21st century – The intersection between ecology, socio-economics and production*, reported on Working Group activities in 2004. This was the first year for WG 18, and their activities focused on preparation of country reports on the status and projected trends in marine aquaculture. The Working Group received reports from all countries, except Russia, and looks forward to getting this report in the very near future. The report of the WG 18 meeting is included elsewhere in this Annual Report.

MEQ inter-sessional activities in 2004 and interactions with ICES (Agenda Items 8, 9 and 17)

Last year, ICES requested that PICES consider co-sponsoring a major 3-day symposium on “Marine bioinvasions” to be held in spring 2006, at a location on the east coast of the United States to be decided. Science Board supported this request, and it was approved by Governing Council. Dr. Yasuwo Fukuyo (Japan) was recommended as the PICES co-convenor for the symposium.

Following PICES XII, there was further communication with ICES to foster interactions on bioinvasions. The results were that:

- Drs. Yasuwo Fukuyo and Mark L. Wells (U.S.A.) represented PICES at the meetings of the ICES/IOC/IMO Working Group on *Ballast Waters and Other Ship Vectors* (WGBOSV) and ICES Working Group on *Introductions and Transfers of Marine Organisms* (WGITMO), held consecutively in March 2004, in Italy;
- ICES accepted an invitation to co-sponsor a Topic Session on “Introduction of marine species” at PICES XIII by identifying and covering travel expenses of an invited speaker and convenor; Dr. Stephan Gollasch (Chairman of WGITMO and WGBOSV) served as the ICES co-convenor for this session.

Introductions and spread of non-indigenous species is an area of considerable interest to the

Committee both scientifically and for building collaboration with ICES.

MEQ proposals for new subsidiary bodies (Agenda Item 10)

The Committee supported the proposal from the Study Group on *Ecosystem-based management science and its application to the North Pacific* to form a Working Group on this topic, under the direction of FIS and MEQ. Terms of reference with additional information together with suggested membership and chairmanship can be found in *SGEBM Endnote 4*.

Proposed Topic Sessions and Workshops for PICES XIV (Agenda Item 11)

The following Topic Sessions and workshops are proposed for PICES XIV:

- a ½-day Topic Session on “Ecological effects of offshore oil and gas development and oil spills” (*MEQ Endnote 3*);
- a ½-day Topic Session, jointly with FIS, on “Current and emerging issues of marine and estuarine aquaculture in the Pacific region: Carrying capacity, ecosystem function, and socioeconomics” (*WG 18 Endnote 5*);
- a 1-day workshop on “Review of selected harmful algae in the PICES Region: I. *Pseudo-nitzschia* & *Alexandrium*”, preceded by a ½-day laboratory demonstration on algal toxins detection techniques (*HAB-S Endnote 4*);
- a 1-day workshop on “Introduced species in the North Pacific” (*MEQ Endnote 4*). A request was formulated during discussion at the MEQ Topic Session at PICES XIII on “Introductions of marine species”; there was strong support for this request from all PICES countries (see Agenda Item 20).

Both MEQ and FIS Committees discussed the proposal from SGEBM to convene a 1-day Topic Session on “Ecosystem indicators and models” at PICES XIV (*SGEBM Endnote 5*). The Committees concluded that the session should be considered next year as a session at PICES XV.

Theme for PICES XV (Agenda Item 12)

The Committee had no specific suggestions for a theme for the PICES Annual Meeting two years hence, because of a lack of clarity among Committee members on which country will host the meeting. However, the Committee expressed some support for the following theme: "Ecosystem protection and sustainable use".

PICES Strategic Plan and developing an MEQ Action Plan (Agenda Items 13 and 16)

Dr. Stein reviewed the PICES Strategic Plan and noted the need for each Committee to begin developing an Action Plan that reflects activities of the Committee for the next 3 – 5 years that will meet the goals and objectives of the Strategic Plan. MEQ committed to develop, by e-mail, a list of action items organized by PICES strategic goals.

Developing the next major PICES scientific program (Agenda Item 14)

Last year, the Committee suggested the broader ecological issues of harmful algae as a candidate for a major scientific program in PICES, and offers the same suggestion this year. Additionally, the Committee recommended that ecosystem-based management and sustainable use of living marine resources is another strong candidate that would highlight the human dimension. Other potential topics are:

- Biological invasions - effect on ecological structure and function and interaction with climate change;
- Establishing a PaCOS-type coastal/shelf ocean observing system in the western Pacific; the main interest here was the focus of PaCOS on monitoring of living marine resources; and
- The human dimension issue of how the health of the ocean can have direct and indirect public health risks. In the United States, a Presidential appointed Ocean Commission has highlighted the need for increased attention and research on "oceans and human health", in which the interest is both in how humans affect the health of the ocean and then how ocean health increases

public health risks. This topic is of increasing interest internationally and in the United States; the US Congress is funding a major *Ocean and Human Health Initiative* again in 2005.

PICES website: MEQ contribution (Agenda Item 15)

At PICES XII, Dr. Alexander Tkalin agreed to be a lead for posting scientific content on the MEQ web page. Unfortunately, Dr. Tkalin could not attend this year's meeting nor spend much time on the web page content due to a change in his employment. MEQ will need to identify another member to serve on a "Web Publications Committee" recommended by Science Board. MEQ encouraged the HAB Section and WG 18 to examine reports and presentations from PICES XIII for possible inclusion on the Committee's web page.

Items with financial implications (Agenda Item 18)

MEQ requests support for the following activities:

- Travel support for three specialists to speak and demonstrate techniques at the workshop on "Review of selected harmful algae in the PICES Region: I. *Pseudo-nitzschia* & *Alexandrium*" proposed to be held in conjunction with PICES XIV. Those being considered as invitees are: D. Anderson, expert on *Alexandrium*; S. Bates, expert on *Pseudo-nitzschia*; and M. Quilliam, expert on HPLC measurement of biotoxins;
- Travel support for an MEQ representative to attend the ICES/IOC/IMO SGBOSV meeting, to be held the 3rd week of March 2005, in Norway. Potential attendees are Drs. Wells and Fukuyo;
- Publication of the SGEEM report as either a PICES Scientific Publication Series or alternative venue.

2004 MEQ Best Presentation Award (Agenda Item 19)

The MEQ Best Presentation Award was given to Jennifer Boehme (University of Maine) for her

paper (co-authored with M. Wells) on “Ballast water exchange verification using the optical characterization of dissolved organic matter” presented at the MEQ Topic Session on “Introductions of marine species”.

Other business (Agenda Item 20)

MEQ Topic Session on “Introductions of marine species”: The joint PICES/ICES Topic Session on “Introductions of marine species” was convened at PICES XIII, on October 20, 2004. The report of this session is included elsewhere in this Annual Report. In the discussion held at the session, participants requested that MEQ holds a 1-day workshop at the next Annual Meeting on topics related to introductions of marine species. The workshop should include reports by each member country on the status in developing inventories of introduced organisms; reports of activities related to research on natural (current and organisms such as turtles and birds), and anthropogenic (ballast water, hull fouling, fisheries, *etc*) vectors; and reports of activities related to the Ballast Water Management Convention, especially measurement of compliance of ballast water exchange, and measurement of effectiveness and development of systems of ballast water treatment.

The workshop also aims to have a discussion on the establishment of a Working Group on species introductions under the direction of MEQ. Terms of reference for the Working Group may include, but are not limited to:

- Establish an inventory of biological invasions in the PICES region;
- Establish cooperative work with the ICES Working Group on *Introductions and Transfers of Marine Organisms* and the

ICES/IOC/IMO Working Group on *Ballast and Other Ship Vectors*;

- Create campaign materials to increase scientist interest in this topic as well as materials to increase public awareness.

Recognizing that some member countries do not have many research reports and scientists working on the subjects listed in item 1, one year of preparation is needed before holding the workshop. Additionally, during the next year’s session participants will work to increase awareness among their countries’ scientists and obtain information related to introductions of marine organisms. Dr. Yasuwo Fukuyo (Japan) and one scientist from Canada or U.S.A. (TBD) will serve as co-convenors of the workshop.

CREAMS/PICES Program: Prof. Kee-Hyun Kim gave a brief presentation on the status of CREAMS and requested consideration by MEQ for CREAMS to become a more integral program of PICES. The Committee thanked Prof. Kim for his presentation, and recommends to Science Board that the CREAMS/PICES Program on East Asian Marginal Seas be considered, as appropriate, for more formal inclusion in the science program of the Organization.

Young Scientists Conference: The Committee discussed the proposal of holding a joint PICES-ICES Young Scientists Conference in 2007, and recommended that PICES continue supporting the conference. The Committee will work by e-mail to identify a young scientist associated with MEQ to serve on the Conference Steering Committee. MEQ members agreed that such a conference provides an important opportunity for young scientists to make contact with peers that could lead to longer-term international collaboration.

MEQ Endnote 1

Participation List

Members

Tatyana Belan (Russia)
Glen Jamieson (Canada)
Hak-Gyoon Kim (Korea)
Kee-Hyun Kim (Korea)
John E. Stein (U.S.A., Chairman)
C. Michael Watson (U.S.A.)
Dong-Beom Yang (Korea)

Observers

Alexander Bogdanovsky (Russia)
Elena Borozdinova (Russia)
Eun Seob Cho (Korea)
Ik Kyo Chung (Korea, WG 18 Co-Chairman)
Jian-Guang Fang (China)
Carolyn S. Friedman (WG 18 Co-Chairman)
Stephan Gollasch (Germany, ICES)
Toyomitsu Horii (Japan)
Ichiro Imai (Japan)
Sook Yang Kim (Korea)
Olga Lukyanova (Russia)
John Moores (Canada)
Michael Rust (U.S.A.)
Vera L. Trainer (U.S.A., HAB-S Co-Chairman)
Yasunori Watanabe (Japan)

MEQ Endnote 2

MEQ Meeting Agenda

1. Welcome and introductions
2. Approval of agenda
3. Business from the 2003 meeting
4. Discussion of:
 - a) developing a Vice-Chairman position for MEQ Committee
 - b) status of MEQ Chairmanship
5. Report from Harmful Algal Bloom Section
6. Report from Working Group 18 on *Mariculture in the 21st Century*
7. Report from Study Group on *Ecosystem-based management science and its application to the North Pacific*
8. Report on proposed joint ICES/PICES symposium on "Marine bio-invasions"
9. Report on inter-sessional meetings
10. Proposals for new subsidiary bodies (require Terms of Reference and list of potential members)
11. Topic session proposals for PICES XIV
12. Theme for PICES XV
13. MEQ Strategic Plan – review
14. Discussion of steps towards next major PICES scientific program(s)
15. PICES website – contribution from MEQ
16. Discussion of future MEQ activities (e.g., Inter-calibration of data, such as HAB data, chemical contaminants, habitat, aquaculture related, *etc.*)
17. Relations with other international programs and organizations
18. Items with financial implications
 - a) Proposed inter-sessional meetings for 2004 and beyond
 - b) Proposed publication for 2004 and beyond
 - c) Travel support requests
 - d) Other items
19. 2004 MEQ Best Presentation Award
20. Other business
21. Preparation of report and recommendations to Science Board

MEQ Endnote 3

Proposal for a 1/2-day MEQ Topic Session at PICES XIV on “Ecological effects of offshore oil and gas development and oil spills”

In recent years, offshore oil and gas production expanded to new areas of the world ocean. Unfortunately, oil and gas exploration and extraction can be associated with negative ecological consequences. For example, seismic surveys may interfere with commercial fishing, installation of platforms disturb habitats of marine fish and invertebrates, and the discharge of drilling muds introduce a number of contaminants into the surrounding waters. Oil spills associated with offshore operations or with tanker accidents also threaten the marine environment. Recent spills have demonstrated

vulnerability of coastal communities. Oil slicks at sea can kill or otherwise adversely affect marine birds and mammals, zooplankton, as well as the eggs and larvae of fish and invertebrates. The goal of this session is to bring together marine scientists working on these issues and to discuss what steps can be taken to minimize adverse ecological effects of offshore oil and gas production.

Recommended co-conveners: Kazuichi Hayakawa (Japan) and John Wardrop (Australia/Russia).

MEQ Endnote 4

Proposal for a 1-day MEQ Workshop at PICES XIV on “Introduced species in the North Pacific”

The workshop will include presentations on the status of introduced organisms in member countries and progress in developing inventories of introduced species; reports of activities related to research on vectors, including natural (currents and organisms such as turtles and birds), and anthropogenic (ballast water, hull fouling, fisheries, etc) ones; and reports of activities related to the Ballast Water Management Convention, especially

measurement of compliance with ballast water exchange protocols, and measurement of effectiveness and development of systems of ballast water treatment. The workshop aims to have a discussion on the establishment of a Working Group on introduced species under MEQ.

Recommended co-conveners: Yasuwo Fukuyo (Japan) and Glen Jamieson (Canada).