

The Marine Environmental Quality Committee

The business meetings of the Marine Environmental Quality Committee (MEQ) were held on October 14, 2012 (18:00 to 19:30 h) and on October 17, 2012 (14:00 to 18:00 h) in Hiroshima, Japan., Dr. Mitsutaku Makino, accepting the role of acting MEQ Chair after the unexpected stepping down of Dr. Steven Rumrill, called the meetings to order and welcomed 8 members from all PICES member countries and 14 observers (*MEQ Endnote 1*). The agenda was reviewed and adopted without modification (*MEQ Endnote 2*).

AGENDA ITEM 2

Implementation of PICES-2011 decisions

MEQ sponsored or co-sponsored the following Topic Sessions and Workshops at PICES-2012 in Hiroshima, Japan:

1. MEQ Topic Session 2 (½-day) *Range extension, toxicity and phylogeny of epiphytic dinoflagellates*. Co-convenors: William Cochlan (USA), Satoshi Nagai (Japan);
2. MEQ/FUTURE Topic Session 5 (1-day) *Social-ecological systems on walleye pollock and other commercial gadids under changing environment: Inter-disciplinary approach*. Co-convenors: Keith Criddle (USA), Suam Kim (Korea), Mitsutaku Makino (Japan), Ian Perry (Canada), Yasunori Sakurai (Japan), Anatoliy Velikanov (Russia);
3. BIO/MEQ/JSPPS Topic Session 6 (½-day) *Environmental contaminants in marine ecosystems: Seabirds and marine mammals as sentinels of ecosystem health*. Co-convenors: Peter Ross (Canada), Hideshige Takada (Japan), Yutaka Watanuki (Japan);
4. FIS/MEQ Topic Session 9 (½ day) *Ecological functions and services associated with marine macrophyte communities as indicators of natural and anthropogenic stressors in nearshore zones of the North Pacific*. Co-convenors: Ik-Kyo Chung (Korea), Jun Shoji (Japan);
5. BIO/MEQ/FUTURE/SOLAS Topic Session 10 (½ day) *Ecosystem responses to multiple stressors in the North Pacific*. Co-convenors: Vladimir Kulik (Russia), Ian Perry (Canada), Motomitsu Takahashi (Japan).
6. MEQ/FUTURE Topic Session 13 (½-day) *Risk management in coastal zone ecosystems around the North Pacific*. Co-Convenors: Masahide Kaeriyama (Japan), Thomas Therriault (Canada).
7. MEQ Workshop 6 (1½-day) *The contrasting cases of HABs in the eastern and western Pacific in 2007 and 2011*. Co-convenors: Changkyu Lee (Korea), Mark Wells (USA).

AGENDA ITEM 3

Relations with other programs/organizations

Dr. Peter Kershaw, representing the Group of Experts on Scientific Aspects of Marine Pollution (GESAMP), made presentation on their activities relevant to PICES, with special emphasis on WG37 on Metals [mercury] in the marine environment working group (UNEP, SIDA); WG38 on Atmospheric input of chemicals to the ocean (WMO, UNIDO, IMO, SCOR); WG39 on Establishment of trends in global pollution in coastal environments (IAEA, UNIDO); WG40 on Sources, fate and effects of micro-plastics in the marine environment (IOC, IMO, UNEP, UNIDO, NOAA, PE, ACC).

Mr. Sangjin Lee, Drs. Alexander Tkalin, and Masa Ohyama from Northwest Pacific Action Plan (NOWPAP) made a presentation on their Medium Term Strategy (2012–2017). MEQ recognized many common interests and the possibility of future collaboration in topics such as oil spills, marine litter, marine protected areas, invasive species, climate change, *etc.*

Dr. Ellik Adler also attended the meeting as an observer representing the UNEP Coordinating Body on the Seas of East Asia (COBSEA).

MEQ 2011

AGENDA ITEM 4

Suggested theme for PICES-2014

No suggestions were presented.

AGENDA ITEMS 5 and 13

Other business

None.

AGENDA ITEM 6

Reports from MEQ expert groups

1. WG 21 on *Non-indigenous Aquatic Species* (2005–2012; Co-Chairs: Darlene Smith, Vasily Radashevsky)
 - Organized a Rapid Assessment Survey Demonstration workshop in Nagasaki, Japan (February 8–9, 2012), attended by 25 people from 7 countries;
 - Submitted its final report and brochure on PICES Nonindigenous Species Information System, the Atlas of Nonindigenous Marine and Estuarine Species in the North Pacific, and Rapid Assessment Survey Projects to MAFF (Japan);
 - Final report of the Working Group is now being prepared;
 - WG 21's next activities were discussed, and several options were identified (see Agenda Item 7).
2. WG 24 on *Environmental Interactions of Marine Aquaculture* (2008–2012; Co-Chairs: Ingrid Burgetz, Katsuyuki Abo, Brett Dumbauld)
 - Submitted its final report without contributions from China;
 - Held its final meeting at PICES-2013 on October 13, and the WG successfully finished its activities;
 - WG members recognized that environmental research on aquaculture is still important for PICES. So, aquaculture should be included in the revised MEQ Action Plan, with close coordination with FIS.
3. WG 28 on *Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors* (2011–2014; Co-Chairs: Ian Perry, Motomitsu Takahashi)
 - Organized S10 and W1 at this Annual Meeting;
 - Constructed a web-based questionnaire to experts on habitat vulnerability and stressors;
 - Prepared draft contents of the WG final report
4. Study Group on *Marine Pollutants* (2011 – 2012; Chair: Peter Ross)
 - Based on the identification of the hot topics in marine pollutants, the SG final report is being prepared;
 - Discussed future activities after the SG. Based on this, a proposal was made to establish a new section (Agenda Item 7);
 - Proposed one Topic Session and one Workshop for PICES-2013 (Agenda Item 9).
5. Section on *Ecology of Harmful Algal Blooms in the North Pacific* (2003-2014; Co-Chairs: Changkyu Lee, Vera Trainer)
 - Successfully organized local HAB training centers in the Philippines, Guatemala, and Indonesia as part of a PICES Seafood Safety Project funded by MAFF;
 - Identified the potential contributions and links to a new PICES/MAFF funded project on “*Marine ecosystem health and human well-being*”, and therefore have revised the Section's TOR;
 - Organized S2 and W6 at this Annual Meeting;
 - Proposed one Topic Session and one Workshop for PICES-2013 (Agenda Item 9).

AGENDA ITEM 7

Proposals of new expert groups

The following proposals were discussed at the MEQ meeting, but since MEQ did not have a revised Action Plan, the concepts of the Committee's activities are still very vague. (See Agenda Item 8 for a discussion on preparing an Action Plan.)

1. SG-MP (Chair, Peter Ross) proposed a new Section on "Emerging Topics in Marine Pollution" (S-ETMP).
 - 5 PICES member countries supported the proposal, and Canada abstained.
 - The relationship/linkage/demarcation with the proposed Radiation Working Group (see item #2) should be made clear.
2. Dr. Chuanlin Huo (MEQ China member) proposed a new Working Group on the "Assessment of Marine Environmental Quality of Radiation around North Pacific" (MEQR; *MEQ Endnote 3*).
 - The Chinese delegation confirmed that the State Oceanic Administration (SOA) of China will host a workshop before the next Annual Meeting in order to discuss more the proposed WG the relationship with other expert groups and to refine the Terms of Reference (TOR).
3. S-HAB (Co-Chair, Vera Trainer) proposed revised TOR.
 - The new TOR, linking closely with the new PICES project on "*Marine ecosystem health and human well-being*" funded by MAFF, should be discussed in 2013 after MEQ has revised its Action Plan.
4. WG 21 (Co-Chair, Darlene Smith) proposed activities after the end of WG 21's term.
 - WG 21 has largely finished its job and proposed four options for the further activities related to invasive species: 1) new Section, 2) new WG, 3) new AP, or 4) collaboration with SG-MP.
 - WG-21 needs some more time to finalize WG Final Report and prepare new TOR for the above options. So, MEQ agreed to recommend the extension of the WG's lifespan for one more year, and to discuss it at the 2013 Annual Meeting.

AGENDA ITEM 8

Review and revision of MEQ Action Plan

Based on the template made by the former MEQ Chair, Dr. Rumrill, Committee members submitted their opinions and views. Based on these, the new Chairman-elect (Dr. Chuanlin Huo) will organize a special task team to develop a draft of the revised MEQ Action Plan in order to discuss it at the next PICES Annual Meeting in Nanaimo, Canada.

AGENDA ITEM 9

Items with financial implications for 2013

Topic Session proposals for PICES-2013 ranked by MEQ

1. *Ecosystem indicators to characterize ecosystem responses to multiple stressors in North Pacific marine ecosystems* (1 day; *WG 28 Endnote 5*) – 6 votes;
2. *Status, trends and effects of pollutants in coastal ecosystems: Implications for wildlife and humans* (½ day; *SG-MP Endnote 3*) – 6 votes;
3. *Science needs for offshore oil and gas development in the North Pacific* (1 day; *FIS Endnote 3*) – 5 votes;
4. *Aquatic invasive species in the North Pacific: integrating research and management* (1day; [not accepted at the Science Board meeting]) – 4 votes;
5. *Emerging issues with Diarrhetic Shellfish Poisoning* (½ day; *S-HAB Endnote 4*) - 3 votes.

A ½-day MEQ Contributed Paper Session was also recommended.

MEQ 2011

Workshop proposals for PICES-2013 ranked by MEQ

1. *Traditional seafoods of the Snuneymux'w First Nation in Nanaimo, BC: insight into food, social and ceremonial uses* (1 day + field trip; SG-MP Endnote 4) – 6 votes;
2. *Economic impacts of harmful algal blooms on fisheries and aquaculture* (1½ day; S-HAB Endnote 4) – 3 votes.

Funds from MEQ

The allocation of Committee funding for invited speakers to Topic Sessions/Workshops is as follows:

- Ecosystem indicators: \$2500
- Pollutants: \$2000
- Traditional seafoods in First Nation: \$500

AGENDA ITEM 10

MEQ Best Presentation and Poster awards for PICES-2012

The Best Oral Presentation to an early career scientist for an MEQ-sponsored Topic Session/Workshop was presented to Kyung-Su Kim (Pukyong National University, Korea) for his talk on “The combined effects of elevated carbon dioxide concentration and temperature on the early development stage of olive flounder *Paralichthys olivaceus*” at Topic Session S10 (*Ecosystem responses to multiple stressors in the North Pacific*). Kanako Naito (Prefectural University of Hiroshima, Japan) received the Best Poster award for “*Iron as a triggering factor for harmful dinoflagellate blooms*”, also in S10. (For further details on award recipients see the list at the end of the Session Summaries section in the [2012 Annual Report](#).)

AGENDA ITEM 11

Report on FUTURE

A presentation was made by AP-AICE Chairman, Dr. Thomas Therriault, on FUTURE’s roadmap and the FUTURE Open Science Meeting scheduled for 2014. MEQ members had little time left for discussion.

AGENDA ITEM 12.

Election of the next Chair and Vice-Chair of MEQ

Before conducting the election among Science Board members, PICES Executive Secretary, Dr. Alexander Bychkov, explained the PICES procedure for electing a Committee Chairman. Dr. Chuanlin Huo was elected Chair, and Ms. Darlene Smith was elected as the Vice-Chair.

AGENDA ITEM 13

Other business

None.

MEQ Endnote 1**MEQ meeting participants**Members

Ik Kyo Chung (Korea)
 Chuanlin Huo (China)
 Hideaki Maki (Japan)
 Mitsutaku Makino (Japan, Vice-Chairman; Acting
 Chairman)
 Olga Lukyanova (Russia)
 Won Joon Shim (Korea)
 Darlene Smith (Canada)
 Thomas W. Therriault (Canada)
 Lyman Kaye Thorsteinson (USA)

Observers

Katsuyuki Abo (Japan)
 Ellik Adler (UNEP/COBSEA)
 Karin Baba (Japan)
 Liqi Chen (China)
 Yoichiro Ishibashi (Japan)
 Peter Kershaw (GESAMP)
 Sangjin Lee (NOWPAP)
 Masa Ohyama (UNEP/NOWPAP)
 Ian Perry (Canada)
 Annamalai Subramanian (Japan)
 Alexander Tkalin (NOWPAP)
 Vera Trainer (USA)
 Tokio Wada (Japan)
 Mark Wells (USA)

MEQ Endnote 2**MEQ meeting agenda**

Sunday, October 14, 2012 (18:00 – 19:30)

1. Welcome and adoption of agenda (Makino)
2. Implementation of PICES-2011 decisions (Makino)
3. Relations with other programs/organizations
4. Suggested theme for PICES-2014 (Makino)
5. Other business (Makino)

Wednesday, October 17, 2012 (14:00 – 18:00)

6. Reports from MEQ expert groups (WG 21, WG 24, WG 28, SG-MP, S-HAB)
7. Proposals of new expert groups (if any, tbd)
8. Review and revision of MEQ Action Plan (Makino)
9. Items with financial implications for 2013 (topic sessions, workshops, etc.) (Makino)
10. MEQ Best Presentation and Poster awards for PICES-2012 (Makino)
11. Report on FUTURE (Therriault)
12. Election of the next Chair and Vice-Chair of MEQ (Makino)
13. Other business (Makino)

MEQ Endnote 2

**Proposal to establish a Working Group on
the Assessment of Marine Environmental Quality of Radiation around North Pacific
[later changed to a Study Group on Radionuclide Science in the North Pacific Ocean]**

Background

The widespread application of nuclear science and technology has led to increasing amounts of radionuclides being released directly or indirectly into the ocean. Radioactive pollution is becoming a key issue concerned by marine research scientists, especially when a nuclear accident happens.

A large amount of radioactive contaminant was released into the North Pacific from a recent nuclear accident, and the long half-life radionuclides will stay in the marine environment for a long time and possibly endanger the marine ecosystem or human-being health through food chains. Thus it is very important to monitor the radiation exposure level and assess the effects of radioactive substances on marine ecosystem in the North Pacific waters.

A Working Group was proposed to exchange and share the technologies and experiences on the monitoring of the radioactive contaminants in the North Pacific waters, to assess the relevant effect and radiological risk in waters, to promote public understanding of radiation effects and to encourage the enactment of more reasonable regulations concerning the use of radiation. The proposed terms of reference were:

1. To unify the detecting methods of concerned nuclides in PICES member states;
2. To discuss and implement intercalibration of NIT (Nuclear Isotopic techniques) in PICES member states;
3. To exchange and select the assessment methods of marine environmental quality of radiation (MEQR) among PICES member states;
4. To recommend the reference organism species in the North Pacific waters;
5. To assess the current marine environmental quality of radiation of the North Pacific waters;
6. To compile a list of existing databases of MEQR experts of the North Pacific for academic exchange;
7. To promote collaboration among PICES member states.

To provide an opportunity for greater discussion of the proposal among scientists in PICES member countries, Science Board recommended a Study Group to:

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

Suggested members

Chairman: A senior scientist on marine radioecology from China and a senior scientist on Marine Radioecology from the eastern North Pacific.

Recommended Chairman:

Yusheng Zhang, Third Institute of Oceanography, State Oceanic Administration (SOA).