

Report of the Marine Environmental Quality Committee

The meetings of the Marine Environmental Quality Committee (MEQ) were held on October 20 (18:00–20:00) and October 23 (14:00–18:00), 2019 in Victoria, Canada. Five member countries, except Russia and USA, sent members to the meetings. Thirteen participants attended (*MEQ Endnote 1*).

Experts Groups (S-HAB, AP-NIS, WG 42) reported their progress and requests, and Dr. Takafumi Yoshida, representing NOWPAP, introduced the development of relevant areas with PICES. Based on a review of the main achievements of MEQ in 2019, ideas/proposals for new topics and direction, and items with financial implications for 2020 were discussed. The details were reported as follows.



MEQ participants at the MEQ meeting, PICES-2019, Victoria, Canada. Back row, from left: Pengbin Wang, Yumi Okochi, Yuka Murayama, Chengjun Sun, Guangshui Na, Minkyu Choi, Takafumi Yoshida. Front row, from left: Hideaki Maki, Toyomitsu Horii, Andrew Ross, Douding Lu, Mark Wells, Thomas Therriault.

Sunday, October 20, 2019 (18:00 – 20:00)

AGENDA ITEM 1

Welcome and adoption of agenda

MEQ Chair Dr. Guangshui Na and Vice-Chair Dr. Andrew RS Ross called the MEQ meeting to order on day 1 and day 2, respectively. MEQ members and observers provided self-introductions and a brief statement about their interests and expertise. All participants reviewed the agenda which was adopted without revisions (*MEQ Endnote 2*).

AGENDA ITEM 2

Implementation of PICES-2018 decisions

The implementation of decisions since PICES-2018 regarding MEQ's expert groups, S-HAB, AP-NIS, and WG 42 was reported by their respective Co-Chairs (see the details in Agenda Item 8).

AGENDA ITEM 3

Main achievements of MEQ in 2019

At PICES-2019, MEQ has sponsored 2 sessions and 3 workshops, including nearly 40 oral presentations, 17 poster presentations. These MEQ topic meeting focused on Environmental indicators of plastic pollution, harmful algal blooms and mariculture. Dr. Guangshui Na introduced the main work and achievements of MEQ in 2019. At PICES-2019 MEQ sponsored or co-sponsored the following topic sessions:

- MEQ Topic Session (S7): *Environmental indicators of plastic pollution in the North Pacific* (co-sponsored by NOWPAP) (Oct. 24, 1 day)
Convenors: Matthew Savoca (USA), Chengjun Sun (China), Lev Neretin (NOWPAP)
Invited speakers: Stephanie Avery, Daoji Li (China)
- MEQ Topic Session (S10): *Linking changes in climate, nutrient distribution, phytoplankton ecology, and production of algal exudates in the North Pacific* (Oct. 23, ½ day)
Convenors: Andrew Ross (Canada), Sayaka Yasunaka (Japan)
- MEQ Contributed Paper Session
Convenors: Guangshui Na (China), Andrew RS Ross (Canada)
- MONITOR/MEQ Workshop (W9): *Monitoring non-indigenous species in PICES Member countries: Towards Best Practices* (Oct. 19, 1 day)
Convenors: Thomas Therriault (Canada), Hiroshi Kawai (Japan), Jeanette Davis (USA)
Invited speaker: Emily Grason (USA)
- MEQ Workshop(W18): *Economic effects of HABs: Recommended practices* (Co-sponsored by SCOR, ISSHA, NOWPAP, IOC, GlobalHAB, FAO) (Oct. 17, 2 days)
Convenors: Vera L. Trainer (USA), Keith Davidson (ICES)
- MEQ WorkshopW19: *The impacts of mariculture to coastal ecosystems* (Oct. 19, 1/2 day)
Convenors: Zengjie Jiang (China), Xianshi Jin (China), Michael Graham (USA), Kristi Miller-Saunders (Canada), In-Kwon Jang (Korea), Mi Young Cho (Korea), Igor Sukhin (Russia)
Invited speakers: Qingli Zhang (China), Michael Rust (USA)

AGENDA ITEM 4

Revise and submit the new Action Plan of MEQ

At ISB-2019, Science Board Chair Dr. Hiroaki Saito instructed Committees to update their Action Plans (AP) (last updated in 2015). MEQ began revisions immediately after ISB-2019. On September 27, Dr. Na and Dr. Ross completed the first draft of MEQ AP (2019-2024). It was circulated MEQ members for input and suggestion on September 30. After input, the AP was further revised, and reviewed again at the MEQ meeting. The final draft was submitted to Science Board and PICES Secretariat.

AGENDA ITEM 5

PICES Data Inventory

At ISB-2019, Committees were instructed to review the terms of reference of their expert groups and have Data Management Policy responsibilities added to their ToRs, and to have their expert groups identify any data holdings affiliated with their group and report back to their parents before PICES-2019. MEQ and its expert groups discussed their contributions to PICES Database. AP-NIS' NIS-related database has already been listed in the PICES Data Inventory.

AGENDA ITEM6

Update on “Disbanded” MEQ Expert Groups (WG30)

The Working Group on *Assessment of Marine Environmental Quality of Radiation around the North Pacific* (WG30) was expected to end in 2017 but was extended for 2 years to finish its Final report and brochure. The Final report and brochure were submitted to MEQ and PICES Secretariat by May 30, 2019. WG 30 circulated the report to all the member countries for a last check in June, and collected suggestions and comments from Canada, China, Korea and Japan, except Russia and USA. They expect to complete and submit the Final Report to MEQ and PICES Secretariat in November 2019.

AGENDA ITEM7

Other business

None

Wednesday, October 23, 2019 (14:00 – 18:00)

AGENDA ITEM8

Reports from MEQ Expert Groups1. Section on *Ecology of Harmful Algal Blooms in the North Pacific (S-HAB)*

- Dr. Douding Lu (China) stepped down Co-Chair of S-HAB and Dr. Pengbin Wang was elected as the new Co-Chair;
- S-HAB member, Dr. Andrew Ross, co-convened MEQ Topic Session (S10) on “*Linking changes in climate, nutrient distribution, phytoplankton ecology, and production of algal exudates in the North Pacific*” and S-HAB member, Dr. Vera Trainer, co-convened MEQ Workshop (W18) on “*GlobalHAB: Evaluating, reducing and mitigating the cost of harmful algal blooms: a Compendium of case studies*” at PICES-2019;
- S-HAB members participated in drafting the *Guidelines for Best Practices for the Study of HABs and Climate Change* (8 chapters).

S-HAB requests:

- ½-day S-HAB meeting at PICES-2020;
- ½-day Topic Session on “The effect of ocean acidification on harmful algal species growth and toxicity” at PICES-2020;
- 1-day Workshop on “*The Expansion of Harmful Algal Blooms (HABs) from lower to higher latitudes*” at PICES-2020;
- Travel support for 1 PICES representative to attend the GlobalHAB Scientific Steering Committee meeting in 2020 (\$2,500);
- Travel support for 1 PICES member to participate in the ICES Working Group for Harmful Bloom Dynamics meeting in April 2020, TBD, Europe (\$2,500);
- A Russian scientist to replace Dr. Olga Lukyanova.

2. Advisory Panel on *Marine Non-indigenous Species (AP-NIS)*

- AP-NIS will upload available country records to AquaNIS before PICES-2020 (ToR 1). AquaNIS uploads will be ongoing so each country will review and update as data are ready. Dr. Therriault will continue to work with database developers to finalize details to ensure PICES data is uploaded and available for exchange as needed;

AP-NIS request:

- 1½-day AP-NIS meeting at PICES-2020;
- 1-day Workshop on “*Using eDNA to assess and manage non-indigenous species in the North Pacific*”.

3. Working Group on *Indicators of Marine Plastic Pollution* (WG 42)

- Prof. Juying Wang participated in a NOWPAP microplastics pollution workshop, September 27, 2019, Dalian, China;
- Drs. Jennifer Lynch and Wonjoon Shim participated in an international Workshop on “*The science of microplastics in the World Ocean*”, October 15–18, 2019, Woods Hole, Massachusetts;
- Updated ToR#1

WG 42 requests:

- 1-day meeting at PICES-2020;
- 1-day Topic Session on “*Using environmental indicators to assess baselines, targets, and risk of plastic pollution in the North Pacific*”;
- Funding (\$3,000) for a WG42 member to participate in the International Symposium on *Plastics in the Arctic and Sub-Arctic Region*, April 21–23, 2020, Reykjavik, Iceland;
- Funding (\$3,000) for WG 42 member to present at the International Workshop *Emerging Technologies to Advance Research and Decisions on the Environmental Health Effects of Microplastics*, January 27-28, 2020, Washington, DC;
- 2 additional members from Canada and 3 members from Russia be added to WG 42.

MEQ reviewed 16 Topic Session proposals and 9 Workshop proposals for PICES-2020 and gave the highest ranking for MEQ sponsorship of Topic Sessions on:

- *Impacts of climate change on aquaculture*;
- *Using environmental indicators to assess baselines, targets, and risk of plastic pollution in the North Pacific*;
- *Using eDNA to assess and manage non-indigenous species in the North Pacific*;
- *The effect of ocean acidification on harmful algal species growth and toxicity*;

Workshops:

- *The Expansion of Harmful Algal Blooms (HABs) from lower to higher latitudes*;
- *Sea turtles and environmental stressors in the North Pacific*;
- *The social-ecological-environmental dynamics of climate extremes in Pacific coastal systems*.

MEQ reviewed the proposals for ICES ASC 2020 and gave the highest ranking for PICES support to:

- *The impacts of marine shipping and their effects on coastal communities and ecosystems*;
- *Advances and challenges in marine litter pollution*;
- *Marine sediment extraction: footprint, sustainability and effects*.

AGENDA ITEM 9

Special Project on The Detection and Human Dimension of Ciguatera Fish Poisoning (CFP)

This project is funded by the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan. MEQ will have strong connections and interactions with this project through S-HAB. S-HAB suggested members of CFP should be nominated by PICES member countries and their research field could be broadened to biotoxins. Anticipated products include:

- A PICES Scientific Report Series based on the results from the project including lessons learned;
- A report summary to be published for the general public as a colorful brochure highlighting the project’s purpose and findings;
- Several newsletter (PICES Press) articles (as with the FishGIS project);
- Project training materials to be collated and translated into Indonesian Bahasa to enhance sustained training activities by Indonesian government personnel and community leaders beyond the term of the project;
- Generation of an electronic database of citizen-science data collection that is automatically uploaded to the Indonesian National Ocean Data Center.

MEQ supports this project.

AGENDA ITEM10

MEQ Best Oral Presentation award and Best Poster award for PICES-2019

Dr. Dorothy Horn(USA)was presented with the Best Oral Presentation award by Dr. Na for her reporton“*Impacts of environmentally-relevant concentrations of polypropylene rope on Pacific mole crab (*Emerita analoga*) development and lifespan*”in the MEQ-sponsored Topic Session(S7) on “*Environmental indicators of plastic pollution in the North Pacific*”, also co-sponsored by NOWPAP. The Best Poster Presentation award was given to Cathryn Wood by Dr. Na for her poster on “*Perfluorinated environmental contaminant concentrations in sea turtle blood and eggs from Hawaii to Saipan*” from the MEQ Paper Session.

AGENDA ITEM11

Relations with other groups/organizations

Dr. Takafumi Yoshida (NOWPAP *ex officio*in MEQ) introduced the progress of relevant areas with PICES. All participants discussed the high priority areas of cooperation between NOWPAP and MEQ listed in the PICES-NOWPAP [Framework](#) for Scientific Cooperation in the North Pacific Ocean. Both sides have strong interests in marine microplastics, harmful algal bloom, marine non-indigenous species and typical emerging contaminants.

AGENDA ITEM12

Other business

A US representative has not attended the MEQ meeting for three consecutive years. MEQ requests better participation from the US and from Russia or replacement of those members, and a replacement for Russian member, Dr. Olga Lukyanova.

MEQ Endnote 1**MEQ participation list**Members

Guangshui Na (China, Chair)
Andrew Ross (Canada, Vice-Chair)
Minkyu Choi (Korea)
Akihide Kasai (Japan)
Weol-Ae Lim (Korea)
Hideaki Maki (Japan)
Kazuhiko Mochida (Japan)
Thomas Therriault (Canada)

Members unable to attend

Canada: Peter Ross
China: Chuanlin Huo, Chunhou Li
Korea: Seongjin Hong
Russia: Tatyana A. Belan, Elena Maximovna Latkovskaya
USA: Staci Simonich, Gina Ylitalo

Observers

Toyomitsu Horii (Japan)
Douding Lu (S-HAB Co-Chair/China)
Yuka Murayama (Japan NUS Co., Ltd.)
Yumi Okochi (Japan NUS Co., Ltd.)
Chengjun Sun (WG 42 Co-Chair/China)
Pengbin Wang (China)
Mark Wells (S-HAB Co-Chair/USA)
Takafumi Yoshida (NOWPAP)

MEQ Endnote 2

MEQ meeting agenda

Sunday, October 20, 2019 (18:00 – 20:00)

1. Welcome and adoption of agenda
2. Implementation of PICES-2018 decisions
3. Review the main achievements of MEQ in 2019
4. Revise and submit new Action Plan of MEQ
5. Review PICES Data Inventory (All)
6. Update on “Disbanded” MEQ Expert Groups (WG 30)
7. Other business (All)

Wednesday, October 23, 2019(14:00 – 18:00)

8. Reports from MEQ Expert Groups and discussion (S-HAB, AP-NIS, WG 42)
 - High priority items (things that need to be reported to SB) from each ExG
 - Main activities of each ExG in 2019 and plans for 2020 and beyond
 - Proposals of new Action Plan (All)New topics and direction should be discussed for the development of MEQ
 - Statement about sessions and workshops for PICES 2020 (sponsors or other delegates)
 - Items with financial implications for 2020 (Topic Sessions, Workshops, *etc.*) (All)All ExGs to identify items with financial implications (meeting travel, workshops, *etc.*). This meeting will form the document about financial implications conveyed to Science Board.
9. Review new Special Project on “The Detection and Human Dimension of Ciguatera Fish Poisoning in Indonesia”
10. MEQ Best Oral Presentation award and Best Poster award for PICES 2019
11. Relations with other groups/organizations (All)
10. Other business (All)