

Report of Working Group 31 on *Emerging Topics in Marine Pollution*

The Working Group on *Emerging Topics in Marine Pollution* (WG 31) met from 9:00 to 18:00 h on October 18, 2014 in Yeosu, Korea, under the chairmanship of Drs. Won Joon Shim (Korea) and Olga Lukyanova (Russia). The meeting objective was to review activities during the first year (2013–2014) of WG 31, plan for activities during the second year (2014–2015), and discuss the strategy and future plan to compile marine pollution data in the Pacific region.

AGENDA ITEM 1

Welcome and adoption of agenda

WG 31 membership was finalized on January 21, 2014 and updated on May 21, 2014. Ten out of 17 WG members from all six member countries participated the meeting (*WG 31 Endnote 1*). After review by members, the draft agenda was slightly modified and adopted (*WG 31 Endnote 2*).

AGENDA ITEM 2

Introduction of WG 31 mission

It was the first meeting of WG 31. Thus, the background, mission, terms of reference, future activity and linkage to FUTURE program of the WG were reviewed by Dr. Shim.

AGENDA ITEM 3

Review of the main achievements of WG 31 in 2014

A 1-day MEQ Topic Session (S8) in 2014 meeting, entitled “*Marine debris in the ocean: Sources, transport, fate and effects of macro- and micro-plastics*” was held at PICES-2014. Seventeen oral presentations, including four invited papers, and 10 poster presentations (total 27) were accommodated. The session was co-sponsored by ICES, NOWPAP and GESAMP.

A special issue of the scientific journal *Archives of Environmental Contamination and Toxicology* (Springer/2013 IF = 1.960) will feature selected submissions from Topic Session S8. Dr. Shim is serving as a co-Guest Editor of this special issue. Publication is set for late 2015. The submission deadline is the end of February 2015. A total of 14 papers are expected.

AGENDA ITEM 4

Topic session and workshop proposals for PICES-2015

A 1-day Topic Session proposal entitled “*Indicators of emerging pollution issues in the North Pacific Ocean*” was proposed by Co-Convenors, Drs. Peter Ross, Olga Lukyanova and Won Joon Shim (*WG 31 Endnote 3*), and supported by the WG members. Travel funds are requested for 3 invited speakers. Presenters will be invited to submit papers to a special issue of a scientific journal. It is expected that data and results from this session will be important as WG 31 supports the needs of FUTURE plans and reporting.

A 1-day workshop on “*Marine environment emergencies: Detection, monitoring and response*” was proposed by co-convenors, Drs. Ziwei Yao, Peter Ross, Won Joon Shim, and Olga Lukyanova, and forms part of the established 3-year plan of activities for WG 31. The workshop was supported by the WG members under the condition that it be combined with another oil spill response-related workshop proposed by NOWPAP.

AGENDA ITEM 5

Establish strategy and plan in data compilation for PICES status report

The WG spent half a day discussing and compiling emerging marine pollution data in the North Pacific region. Four target pollutants were selected based on the SG-MP study conducted by the Study Group on *Marine Pollutants* ([PICES Scientific Report No. 46](#)): (1) Persistent, bioaccumulative and toxic (PBT) substances, (2) Hydrocarbons (*e.g.*, PAHs), (3) Metals or elements of concerns, and (4) Marine debris and microplastics.

The data on the four target pollutant classes will be obtained from (i) scientific papers and reports, (ii) governments, organizations, and scientists, (iii) the existing database from regional monitoring programs.

WG members were divided into four task force groups:

- (1) PBT substances: Peter Ross (Canada), John Elliot (Canada), Guangshui Na (China), Hideshige Takada (Japan), Hyo-Bang Moon (Korea), Olga Lukyanova (Russia), Gina Ylitalo (USA);
- (2) Hydrocarbons: Kazuhiko Mochida (Japan), Hideaki Maki (Japan), Un Hyuk Yim (Korea), Staci Simonich (USA), Gina Ylitalo (USA);
- (3) Metals or elements of concerns: Don-Woon Hwang (Korea), Mikhail Simokon (Russia);
- (4) Marine debris and microplastics; Won Joon Shim (Korea), Nancy Wallace (USA).

The timeframe for data compilation was discussed and tentatively established as follows:

- December 2014: Selection of indicators for each emerging pollution issues;
- March 2015: Collection of available data for indicators;
- June 2015: first draft for data interpretation and feedback from the WG 31 members;
- September 2015: second draft for data interpretation and visualization;
- October 2015: Sharing of results at WG 31 meeting and feedback (PICES-2015).

AGENDA ITEM 6

Preparation of WG 31 report for FUTURE and MEQ meeting

The major items of the WG 31 report were discussed and finalized for presentation at the joint FUTURE Advisory Panel meeting and at the Committee meeting of its parent, MEQ.

AGENDA ITEM 7

Relations with other groups/organizations

The relationship between WG 31 activities and other groups within and outside of PICES was discussed.

AGENDA ITEM 8

Other business

There was no additional business to discuss and thus, the meeting adjourned at 18:00 h.

WG 31 Endnote 1**WG 31 participation list**Members

John Elliott (Canada)
 Olga Lukyanova (Russia, Co-Chair)
 Hideaki Maki (Japan)
 Kazuhiko Mochida (Japan)
 Guangshui Na (China)
 Won Joon Shim (Korea, Co-Chair)
 Hideshige Takada (Japan)
 Nancy Wallace (USA)
 Un Hyuk Yim (Korea)
 Gina Ylitalo (USA)

Observers

Karin Baba (Japan)
 Chuanlin Huo (China)
 K. Ishimaru (Japan)
 Peter Kerwshaw (GESAMP)
 Yutaka Watanuki (Japan)

WG 31 Endnote 2**WG 31 meeting agenda**

Saturday, October 18, 2014

[09:00 – 12:30] Morning session

1. Welcome and adoption of agenda (Co-Chairs)
 Welcome and agenda outline
2. Introduction of WG 31 mission (All)
 Introduce and share background, mission, terms of reference and plans for WG 31
3. Review of main achievements of WG 31-2014 (Co-Chairs)
 Summarize the main achievements of WG 31 in the past 1 year
4. Proposals of new topics and direction (Co-Convenors)
 Introduction of the proposed topic session and workshop for 2015 and discussion

[14:00 – 18:00] Afternoon session

5. Design strategy for data compilation plans for PICES status report (All)
6. Selection of topics (refer to SG-MP report), timeframe, and data compilation methods
7. Preparation of WG 31 report for MEQ meeting (All)
8. Relations with other groups/organizations (All)
9. Introduce the progress on their work with other groups or other organizations.
10. Other business (All)

WG 31 Endnote 3

Proposal for a 1-day MEQ Topic Session on “Indicators of emerging pollution issues in the North Pacific Ocean” at PICES-2015

Co-sponsors: NOWPAP

Co-Convenors: Olga Lukyanova (Russia), Peter S. Ross (Canada), Won Joon Shim (Korea)

This session led by the Working Group on *Emerging Topics in Marine Pollution* (WG-ETMP) anticipates wide-ranging interest from a number of disciplines. The session aims to attract presentations on the use of sediments, shellfish, fish, seabirds, and marine mammals as indicators of marine pollution. Novel approaches and study designs will be discussed, with the aim of providing managers, regulators and scientists with timely feedback on emerging pollution threats. Depending on the study design and sample matrix, it is expected that pollutants to be discussed will include hydrocarbons, organochlorine pesticides, flame retardant chemicals, metals, pharmaceuticals, microplastics and other contaminants. Presentations that provide insight into the identification of contaminants of emerging concern, the ranking of priority pollutants from multiple sources, and the assessment of the relative importance of pollutants among other natural and anthropogenic stressors are encouraged. Presenters will be invited to contribute to a special issue of a scientific journal.

Proposal for 1-day Workshop on “Marine environment emergencies: Detection, monitoring and response” at PICES-2015

Co-sponsors: NOWPAP, ICES

Co-Convenors: Ziwei Yao (China), Seong-Gil Kang (Korea/NOWPAP), Peter Ross (Canada), Won Joon Shim (Korea), Olga Lukyanova (Russia)

In recent years, the importance of marine environmental emergency issues has been illustrated by oil and chemical spills, as well as by a major nuclear power plant accident. Globalization of markets has led to rapid growth of maritime transport in the North Pacific, which has become more vulnerable to ship-source incidents, including oil and hazardous and noxious substances (HNS) spills. Oil and HNS spills may be hazardous to human health, harm living resources and marine life, and can damage amenities or interfere with other legitimate uses of the sea. In 2003, the NOWPAP Regional Oil and HNS Spill Contingency Plan (RCP) provided technical and operational guidelines for regional cooperation in responding to oil and HNS spills. Marine environmental emergency issues and their strategies become an increasingly important topic for PICES member countries. However, accepted scientific and monitoring methods to document the ecological impacts of such emergencies, and post-accident recovery of the environment, are lacking. In order to better understand the interaction between the marine ecosystem and human pressures, and to formulate sustainable marine development strategies more effectively, an applied information sharing workshop for PICES is timely. The workshop on marine environmental emergencies has three objectives. The first is to summarize important examples of North Pacific marine environmental emergencies from the perspective of different nations, and to discuss the different approaches taken by PICES member countries. The second is to develop response strategies and capacities of PICES members in light of environmental emergencies. The third is to develop joint strategies to improve responsiveness and effectiveness of current national approaches to manage and mitigate such emergencies in the PICES region. The workshop will address the following three aspects: (1) oil and chemical spills and their damage on the marine environment, (2) detection methods for oil and chemical spills and (3) spill response, monitoring and mitigation strategies at the interface of science and management. Case studies will be used to illustrate this workshop and will serve to focus efforts to design a response and monitoring framework for implementation in the event of a major environmental emergency.