

2023 Report of the Study Group on the Arctic Ocean and the Pacific Gateways

PICES established the Study Group on the Arctic Ocean and the Pacific Gateways (SG-ARC) to develop a strategic plan on how to coordinate and integrate PICES scientific activities on Arctic issues and to further advance the understanding of the Arctic system and linkages and impacts to the North Pacific (GC approved (GC-2022/S/7 ii)).

SG-ARC had a virtual meeting on September 19, 2023 (16:00-18:00 Pacific Standard Time) at PICES 2023. Co-Chair (PICES) Dr. Sei-Ichi Saitoh led the meeting.

AGENDA ITEMS 1 and 2

Review SG-ARC terms of reference, history, and time plan

Following self-introductions of participants (*SG-ARC Endnote 1*), the meeting agenda (*SG-ARC Endnote 2*) was reviewed by participants. Dr. Saitoh also introduced the history and time plan of the SG.

AGENDA ITEM 3

Review on the report of SG-ARC

Dr. Saitoh reported the overview of **Status of the report and revision process** with contents (*SG-ARC Endnote 3*). We discussed the revision of the report with focus on a strategic plan to establish new EG for Arctic Ocean and Pacific gateways. Finally, we decided to submit the report in PICES 2023.

AGENDA ITEM 4

Discussion on the proposal for PICES Advisory Panel on the Arctic Ocean and Pacific Gateways (AP-ARC)

We discussed ToR for new EG and developed four ToR. Finally, we decided to submit a proposal for a new EG (AP-ARC) in PICES 2023.

AGENDA ITEM 5

Proposal of session and workshop for PICES 2024

There is no proposal of session and workshop for PICES 2024 because the term of SG-ARC is only one year.

AGENDA ITEM 6

WGICA annual meeting in PICES 2023 (Oct.20-23)

Dr. Saitoh announced an intersessional activity to hold the 8th WGICA meeting in hybrid format. The meeting is planned for October 20-23, 2023. Dr. Lis Lindal Jørgensen, Dr. Martine Heuvel-Greve, and Dr. Saitoh will promote the meeting as hybrid-meeting organizers. The meeting agenda is found in *SG-ARC Endnote 4*. Four members of SG-ARC will give invited talks in the afternoon session of October 21 (*SG-ARC Endnote 4*).

AGENDA ITEM 7

SG-ARC business meeting in PICES 2023 annual meeting (Oct. 22)

We proposed holding a hybrid business meeting of SG-ARC. The meeting is planned for October 22, 2023 and Dr. Saitoh will promote the meeting as hybrid-meeting organizer. The meeting agenda is found in *SG-ARC Endnote 5*.

AGENDA ITEM 8

Closing

Members concurred that further communication would be necessary and should be made on-line. The Co-Chair thanked the attendees and closed the successful meeting of SG-ARC.

SG-ARC Endnote 1

SG-ARC Participation List

Members

Sei-Ichi Saitoh (Japan, Co-Chair/PICES)

Taka Hirata (Japan)

Fujio Ohnishi (Japan)

Hyoung Chul Shin (Korea)

Hyoung Sul La (Korea)

David Fluharty (USA)

Zack Oyafuso (USA)

Sarah Wise (USA)

Members unable to attend

China: Zhongyong Gao, Guangshui Na, Fang Zhang

Observers

Natsuhiko Otsuka (Japan)

SG-ARC Endnote 2

SG-ARC Meeting Agenda

Virtual meeting before PICES 2023 annual meeting

Date and Time:

September 19, 2023 Sidney/Seattle 16:00-18:00 (Canada/USA Pacific Time)

September 19, 2023 New York 19:00-21:00

September 20, 2023 Beijing 7:00-9:00

September 20, 2023 Tokyo/Seoul 8:00-10:00

Topic: PICES SG-ARC Business Meeting

Time: September 19, 2023 16:00 (Canada/USA Pacific Time)

Link: <https://zoom.us/j/98812985673?pwd=eW54MUxYVVEybWhsOVhHZm04SFU1QT09>

Meeting ID: 988 1298 5673

Pass Code: 009213

Chair: Sei-Ichi Saitoh, Hokkaido University

Members of SG-ARC:

Zhongyong Gao (China)

Guangshui Na (China)

Fang Zhang (China)

Hyoung Chul Shin (Korea)

Hyoung Sul La (Korea)

Sei-Ichi Saitoh (Japan, Co-Chair)

Fujio Ohnishi (Japan)

Taka Hirata (Japan)

Zack Oyafuso (USA)

Sarah Wise (USA)

David Fluharty (USA)

16:00-16:10

- (1) Welcome and introductions S.-I. Saitoh and participants
- (2) Review of agenda

16:10-16:50

- (3) Review on the report of SG-ARC
Status of the report and revision process

16:50-17:30

- (4) Discussion on the proposal for AP-ARC
Proposal for PICES Advisory Panel on the Arctic Ocean and Pacific Gateways (AP-ARC)

17:30-17:35

- (5) Proposal of session and workshop for PICES 2024

17:35-17:45

- (6) WGICA annual meeting in PICES 2023 (Oct.20-23)

17:45-17:55

- (7) SG-ARC business meeting in PICES 2023 annual meeting (Oct. 22)

17:55-18:00

(8) Close of meeting S.-I. Saitoh

SG-ARC Endnote 3

Contents of the report of SG-ARC

- 1 Introduction 1
- 1.1 Background (Sei-Ichi/Hyoung-Chul)
- 1.2 Past and current Status
- 1.2.1 WGICA (Sei-Ichi)
- 1.2.2 PICES WG39 (Sei-Ichi)
- 1.2.3 PICES WG44 (Sarah/Libby)
- 1.2.4 WGIEANBS-CS (Libby/Yury)
- 1.2.5 PICES SG-ARC (Sei-Ichi/Hyoung-Chul)
- 1.3 Impacts of Arctic changes on its marine ecosystem and biodiversity and the linkage to mid-latitude oceans (Zack)
- 1.4 Human activities and Pressures in the Arctic Ocean (Dave/Hyoung-Chul/Sei-Ichi)
2. SG and the need for new EG (Sei-Ichi/Hyoung-Chul)
3. Plan and contributions of new EG and the follow-up (Hyoung-Chul/Sei-Ichi)
4. Conclusion (Sei-Ichi/Hyoung-Chul/Zack/Sarah)
5. References
6. Appendix
- A. Proposal of AP-ARC (Sei-Ichi/Hyoung-Chul/Dave)

SG-ARC Endnote 4

8th WGICA annual meeting - 20-23 October 2023

Agenda for the WGICA hybrid-meeting,

How: Hybrid meeting (In person and On-line)

When: 20-23 October 2023 (09AM-06PM USA West Time).

Where: Seattle, USA, Westin Seattle Hotel (Same venue of PICES 2023)

Objectives:

This meeting will report on the progress of our products on Human activities and its pressures in the Central Arctic Ocean, and the vulnerability of the ecosystem. The meeting will also present relevant topics for this study area through a series of talks. Discussion on how to engage stakeholders and right holders in our activities will be initiated to obtain advice on the present knowledge of the CAO ecosystem and activities in the study area.

Agenda (all times are local to Seattle)

Friday 20 October 2023

6:30-8:30 participate from private hotel rooms: On-line access point (Teams invitation has been sent):

https://teams.microsoft.com/l/meetupjoin/19%3ameeting_MDdiYjdjM2YtNzg1OS00MDIwLTk1OWMtZmM5MmFjMjgzNjc0%40thread.v2/0?context=%7b%22Tid%22%3a%2227d137e5-761f-4dc1-af88-d26430abb18f%22%2c%22Oid%22%3a%22d611b9ec-6274-4c5b-9a12-e82da3c4b4db%22%7d

Meeting ID: 370 858 473 875

Passcode: 4tENuQ

WGICA annual meeting to catch up with European and Asian experts (3:30-5:30 PM CET; 10:30-00:30 PM Asian time).

6:30-6:40: Introduction by co-chairs

6:40-7:10: Status of Report 2 and planned activities during the meeting

7:10-7:40: Status of paper and planned activities during the meeting

7:40-8:10: Stakeholder engagement – planned activities during the weekend

8:10-8:30: Any other business

9:00-12:30: Westin Seattle Hotel, Olympic 2F: On-line access point (Teams invitation has been sent):

https://teams.microsoft.com/l/meetupjoin/19%3ameeting_ZDdiMDM3YTItZjZiZi00NGRkLWFkZTYtMGFiMmVmNDk1M2Vm%40thread.v2/0

[?context=0%7b%22id%22%3a%2227d137e5-761f-4dc1-af88-](https://context=0%7b%22id%22%3a%2227d137e5-761f-4dc1-af88-)

d26430abb18f%22%2c%22oid%22%3a%22d611b9ec-6274-4c5b-9a12-e82da3c4b4db%22%7d

Meeting ID: 344 087 282 823

Passcode: mUayLC

WGICA annual meeting - Report 2

9:00-9:10: Introduction by co-chairs

9:10-10:30: Review of Report 2 - human activities

10:30-10:50: *Coffee*

10:30-12:30: Review of Report 2 - human activities (continued)

12:30-14:00: *Lunch*

14:00-15:20: Review of Report 2 – Ecosystem components

15:20-15:40: *Coffee*

15:40-17:30: Discussion on Finalization of Report 2 (time plan)

Saturday 21 October 2023

9:00-12:30: Westin Seattle Hotel, Elliot Bay 1F.

Participate in the PICES W9 “*Indigenous and Community-Led Approaches to support climate change adaptation and Ecosystem Resilience in the North Pacific and Arctic*”.

14:00-17:30. Westin Seattle Hotel, Olympic 2F. On-line access point (Teams invitation has been sent):

https://teams.microsoft.com/l/meetupjoin/19%3ameeting_NDA4NzA2NDQtNDIwZS00Y2M1LWJj

MjUtNTFkY2Q2OWI2YzZl%40thread.v2/0

[?context=0%7b%22id%22%3a%2227d137e5-761f-4dc1-af88-](https://context=0%7b%22id%22%3a%2227d137e5-761f-4dc1-af88-)

d26430abb18f%22%2c%22oid%22%3a%22d611b9ec-6274-4c5b-9a12-e82da3c4b4db%22%7d

Meeting ID: 384 528 794 997

Passcode: Udp8TP

Presentations of research in and papers about the Central Arctic Ocean and Pacific gateways.

14:00-14:20: Lis Lindal Jørgensen, Martine van den Heuvel-Greve, Sei-Ichi Saitoh (in person). **The results of and activities in the Working Group of the Integrated ecosystem assessment for the Central Arctic Ocean (WGICA).**

14:20-14:50: David Fluharty (University of Washington, USA) (On-line). **Present and future governance of the Central Arctic Ocean.**

14:50-15:20: Zack Oyafuso (NOAA, USA) (In person). **Impacts of Arctic changes on its marine ecosystem and biodiversity and the linkage to mid-latitude oceans.**

15:20-15:40: *Coffee*

15:40-16:10: Hyoung-Chul Shin (KOPRI, Korea) (On-line). **Activities on WG of Fisheries Agreement in the Central Arctic Ocean.**

16:10-17:00: Sarah Wise (NOAA, USA) (In person). **Importance of Indigenous Knowledge holders in WGIEKNBS-CS.**

17:00-17:30: Discussion

Sunday 22 October 2023

(9:00-12:30, location: Westin Seattle Hotel, Olympic 2F). On-line access point (Teams invitation has been sent):

https://teams.microsoft.com/l/meetupjoin/19%3ameeting_M2JjYzFiOWEtNDg3My00NGU3LTNmZDctYjY3YmE4MjA3YmEz%40thread.v2/0?context=%7b%22Tid%22%3a%2227d137e5-761f-4dc1-af88-d26430abb18f%22%2c%22Oid%22%3a%22d611b9ec-6274-4c5b-9a12-e82da3c4b4db%22%7d

Meeting ID: 332 579 169 466

Passcode: A9pBTp

Integrated Ecosystem Assessment and communication/outreach

9:00-9:10: Introduction by co-chairs

9:10-10:30: Discussion of the main conclusion of the scoring exercise of WGICA

10:30-10:50: *Coffee*

10:30-12:30: How to involve and communicate (with possible involvement of IK).

(14:00-17:30, location: Westin Seattle Hotel, Olympic 2F).

Participate in SG-ARC business meeting.

14:00-14:10: Introduction by co-chairs

14:10-15:20: Finalization of the Report to the SG-ARC

15:20-15:40: Coffee

15:40-17:00: Finalization of the Proposal to AP-ARC

17:00-17:30: Summary of meeting

Monday 23 October 2023

(07:00-10:00 USA West Time): participate from private hotel rooms: On-line access point

(Teams invitation has been sent):

https://teams.microsoft.com/l/meetupjoin/19%3ameeting_MDc3MjA5ODgtOTVmYy00ZjZmLWFJ

[YzMtNGJmNzhmYzU4NjBh%40thread.v2/](#)

[0?context=%7b%22Tid%22%3a%2227d137e5-761f-4dc1-af88-](#)

[d26430abb18f%22%2c%22Oid%22%3a%22d611b9ec-6274-4c5b-9a12-e82da3c4b4db%22%7d](#)

Meeting ID: 319 634 199 873

Passcode: 9bmHTy

WGICA annual meeting to catch up with European and Asian experts (4-7PM CET; 11-2PM Asian time).

7:00-8:00: Summary and main conclusions from the annual meeting

8:00-9:00: Plans for 2024 (Report 2, Paper, update of our Ecosystem Overview and Annual report)

9:00-9:30: Revision of WGICA ToR

9:30-10:00: Emerging issues, to be provided online to European and Eastern participants

SG-ARC Endnote 5

Agenda of SG-ARC Business Meeting

Day and Time: October 22 PM (14:00-17:30)

location: Westin Seattle Hotel, Olympic 2F

On-line access point:

<https://zoom.us/j/94176513258?pwd=RWx0eG9qYnBXcjZLcmRGT1NKam5xdz09>

Meeting ID: 941 7651 3258

Pass Code: 395450

Agenda

14:00-14:10: Introduction by co-chairs

14:10-15:20: Finalization of the Report to the SG-ARC

15:20-15:40: Coffee

15:40-17:00: Finalization of the Proposal to AP-ARC

17:00-17:30: Summary of the meeting