

2024 Report of the Advisory Panel on the Arctic Ocean and the Pacific Gateways (AP-ARC)

PICES established the AP-ARC 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 in May 2024.

The Advisory Panel on the Arctic Ocean and the Pacific Gateways (AP-ARC) had a hybrid meeting on October 26, 2024 (14:00-17:40 Hawaii Standard Time, in Honolulu, USA), at PICES-2024. Co-Chair (PICES), Dr. Sei-Ichi Saitoh, led the meeting.

AGENDA ITEMS 1 and 2

Review AP-ARC terms of reference, history and timeline

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

AGENDA ITEM 3

Review of Publication plan and schedule

Dr. Saitoh proposed a publication plan and schedule for a review report entitled “Review of national/international scientific research in the Arctic Ocean and Pacific Gateways” with contents (*AP-ARC Endnote 3*).

Dr. Sarah Wise proposed a publication plan and schedule for a report in relation to Indigenous knowledge systems in the Arctic Ocean and the Pacific Gateways. The target date of a first draft will be the end of March 2025.

The group discussed theme, kind of publication, editors, lead authors, and target date of the publications.

AGENDA ITEM 4

Discussion on the Proposal of a workshop for PICES 2025

We discussed a **proposal of a workshop for PICES 2025**. The proposed theme of the workshop is:

“Present and future pressures and human activities in the Arctic Ocean and Pacific Gateways”. The final proposal is summarized in *AP-ARC Endnote 4*.

AGENDA ITEM 5

Set dates for March intersessional meeting

The group discussed the intersessional online meeting and selected a date considering the following, potentially conflicting meetings, SCG-CAOFA meeting (4-7 March 2025) and ASSW 2025 (20-28 March 2025). We set the date for the intersessional online meeting from 10-13 March 2025.

AGENDA ITEM 6

Develop Implementation plan - Action items under TOR

The group discussed deliverables for PICES, including the annual/intersessional report, the promotion of workshops/sessions, a potential report from the planned workshop/session (PICES News), a scientific report for PICES, journal papers (including a potential special issue), and other technical reports. As an implementation plan, we reviewed the FIS Action Plan in 2022 as an example. Dr. Saitoh showed a timetable on future activities 2024-2027 with considerations for each ToR. In conclusion, the group will continue to develop an implementation and action plan and propose the plan before PICES 2025.

AGENDA ITEM 7

Discussion to create a Fact Sheet (one page) of AP-ARC (Request from AP-SciCom)

We proposed preparing this Fact Sheet as soon as possible.

AGENDA ITEM 8

Support on ESSAS Open Science Meeting 2025

Dr. Saitoh made an announcement on ESSAS Open Science Meeting 2025 which will be held in Tachikawa, Tokyo, Japan from 24-26 June 2025. We discussed PICES support for this meeting. AP-ARC decided to endorse PICES support, a travel grant for early career scientists and students, for

ESSAS OSM 2025.

AGENDA ITEM 9

Closing

The meeting attendees concurred that further communication would be necessary and should be made online. The Co-Chair thanked the attendees and closed the successful meeting of AP-ARC.

AP-ARC Endnote 1

AP-ARC participation list

Members

Nadja Stefanie Steiner (Canada, Co-Chair)

Sei-Ichi Saitoh (Japan, Co-Chair)*

Sarah Wise (USA, Co-Chair)*

Jennifer Jackson (Canada)*

Takafumi Hirata (Japan)

Kohei Matsuno (Japan)

Kirill Kivva (Russia)

Yury I. Zuenko (Russia)

Elizabeth A. Logerwell (USA)*

Henry Huntington (USA)

Kathleen Stafford (USA)

Eduard Zdor (USA)

Members unable to attend

China: Zhongyong Gao, Fang Zhang

Japan: Fujio Ohnishi

Korea: Hyoung Chul Shin

USA: David Lincoln Fluharty

Observers

Hiromichi Ueno

Alan Haynie (ICES, General Secretary)*

*in person

AP-ARC Endnote 2

AP-ARC business meeting agenda

Hybrid meeting in Honolulu

Date and Time:

October 26, 2024 Honolulu 14:00-17:40 (USA Hawaii Time)

October 26, 2024 Sidney/Seattle 17:00-20:40 (Canada/USA Pacific Time)

October 26, 2024 New York 20:00-23:40

October 27, 2024 Beijing 8:00-11:40

October 27, 2024 Tokyo/Seoul 9:00-12:40

Place:

Hawaii Convention Center Room 307A and online

Start Time: 2024/10/26 14:00 Hawaii Standard Time

Link: <https://us02web.zoom.us/j/5130095105>

Co-Chairs:

Sei-Ichi Saitoh (Japan) - ssaitoh@arc.hokudai.ac.jp

Hyoung Chul Shin (Korea) - hcshin@kopri.re.kr

Nadja Stefanie Steiner (Canada) - nadja.steiner@dfo-mpo.gc.ca

Sarah Wise (USA) - Sarah.Wise@noaa.gov

Agenda (Honolulu Time)

October 26

14:00-14:10

- (1) Welcome and introductions Co-Chairs and participants
- (2) Review of agenda

14:10-15:00

- (3) Publication plan and schedule Sarah Wise and Sei-Ichi Saitoh

15:00-15:20

- (4) Proposal of workshop for PICES 2025

15:20-15:40

Coffee Break

15:40-16:20

- (4) Proposal of workshop for PICES 2025 (Continued)

16:20-16:30

- (5) Set dates for March intersessional meeting

16:30-17:00

- (6) Develop Implementation plan - Action items under TORs

17:00-17:20

- (7) Discussion to create a Fact Sheet (one page) of AP-ARC (Request from AP-SciCom)

17:20-17:30

- (8) Support on ESSAS Open Science Meeting 2025

17:30-17:40

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

AP-ARC Endnote 3

PICES AP-ARC Document Proposal Plan (Sei-ichi Saitoh)

Title: Review of national/international scientific research in the Arctic Ocean and Pacific Gateways

Relation to ToR: ToR 1 and ToR 5

Editors:

Sei-Ichi Saitoh (AP-ARC), Japan, ssaitoh@arc.hokudai.ac.jp;

Co-authors:

TBD (see contents with potential authors)

Documentation objectives:

1. Provide information on present and future national/international scientific research programs in the Arctic Ocean and Pacific Gateways. (IASC published IASC State of Arctic Science Report 2024) Focus on PICES member countries.
2. Understand on-going national/international monitoring programs in the Arctic Ocean and Pacific Gateways.

Contents and potential authors:

Executive Summary

1. Introduction
2. National programs
 - 2.1 Canada (Nadja Steiner, Jennifer Jackson)
 - 2.2 China (Zhongyong Gao)
 - 2.3 Japan (Sei-Ichi Saitoh, Kohei Matsuno, Taka Hirata)
 - 2.4 Korea (Hyoung Chul Shin, Hyoung Sul La)
 - 2.5 Russia (Yury I. Zuenko, Kirill Kivva)
 - 2.6 USA (Sarah Wise, Matt Baker, Elizabeth A. Logerwell, Henry Huntington)
3. International programs
 - 3.1 CAOFA (Hyoung Chul Shin, Elizabeth A. Logerwell, David L. Fluharty)

- 3.2 PAG/DBO (Jackie M. Grebmeier, Lee Cooper)
- 3.3 SAS (Shigeto Nishino)
- 3.4 MOSAiC (Daiki Nomura)
- 3.5 ESSAS (Naomi Harada, Franz Mouter)
- 3.6 SAON (Hejo Eiken)
- 3.7 IPY 2032/33 (?)
- 4. Prospects
- 5. References
- 6. Appendix

Kind of publication: PICES Scientific Report

Target Publication Date:

Finalizing of report structure (content): March 31, 2025

Draft writing: October 31, 2025

Review process: February 28, 2026

Publication: March 30, 2026

AP-ARC Endnote 4

AP-ARC/HD/MEQ/AP-UNDOS joint workshop proposal for PICES 2025

Title: Present and future pressures and human activities in the Arctic Ocean and Pacific Gateways

Duration: 1.0 day

Co-conveners:

Sarah Wise, USA, Sarah.Wise@noaa.gov

Jennifer M. Jackson, Canada, Jennifer.Jackson@dfo-mpo.gc.ca

Nadja Stefanie Steiner, Canada, nadja.steiner@dfo-mpo.gc.ca

Sei-Ichi Saitoh, Japan, ssaitoh@arc.hokudai.ac.jp (corresponding)

Hyoung Chul Shin, Republic of Korea, hcshin@kopri.re.kr

Thomas Therriault, Canada, Thomas.Therriault@dfo-mpo.gc.ca

Workshop description:

Ecological monitoring of the Pacific Arctic conducted over the past decades has shed light on the impacts of climate change driven warming and reduced sea-ice conditions to Arctic marine ecosystems. Over the period of 1974-2014, the date of summer sea ice retreat has occurred earlier at a rate of approximately -0.7 d/yr. The years 2017-2019 were identified as anomalously warm in the Northern Bering and Chukchi Seas and were further characterized by substantial winter sea ice loss. Additional physical changes in the Pacific Arctic include increased heat transport of Pacific water through the Bering Strait, occurrences of marine heat waves, and increased storm activities in the High Arctic. These physical conditions drive multiple ecological impacts spanning the entire Arctic ecosystem from phytoplankton and marine bacteria to marine mammals and ultimately Indigenous and First Nations Peoples throughout the region including Central Yup'ik, Cup'ik, St. Lawrence Island Yupik, Unangan, and Iñupiat. Indigenous communities in the region rely heavily on the marine ecosystem for sustenance, social cohesion, and cultural values.

Climate change is a large-scale phenomenon which underlies multiple regional pressures that affect human activities and the marine ecosystem. Accelerating climate change affects individual ecosystem stressors, the intensity of the pressures on the ecosystem, and the linkages among these.

Additional pressures such as increased marine traffic, harmful algal blooms, invasive species, noise, contamination, litter, hypoxia, ocean acidification and microplastics impact the marine ecosystems of the Pacific-Arctic and its gateways.

To adequately understand the drivers, evolution, and impacts of these various pressures, how they interact with each other, and how those interactive changes impact Arctic communities, it is important to develop and support trans-disciplinary and collaborative approaches using knowledge co-production methods. The interweaving of academic and Indigenous knowledge systems is a key component in this effort. In this workshop, we will focus on present and future pressures and human activities in the Arctic Ocean and Pacific Gateways in alignment with PICES activities with discussions around the evolution of climate-change related pressures acting on the ecosystems. We will identify available information on non-climatic pressures, understanding available knowledge tools (academic and Indigenous), and how to appropriately apply them to achieve a holistic view of the pressures and their impacts, and identifying equitable adaptation/policy/conservation pathways.

Co-organizations: AP-ARC, HD, MEQ, AP-UNDOS

Location: Venue of PICES 2025

Date: PICES 2025 workshop period

Budget request: USD 3000-5000 (travel for one or two invited speakers at the workshop)