

Report of the Advisory Panel on *North Pacific Coastal Ocean Observing Systems*

The Advisory Panel on *North Pacific Coastal Ocean Observing Systems* (AP-NPCOOS) held a virtual meeting on September 23–24, 2020. There were 12 participants from 5 PICES member countries (Canada, Japan, Korea, Russia, USA) (*AP-NPCOOS Endnote 1*). The meeting was convened by Co-Chairs Dr. Naoki Yoshie (Japan) and Dr. Kim Juniper (Canada).



AP-NPCOOS meeting participants. First row from left: Daisuke Hasegawa, Naoki Yoshie, Vyacheslav Lobanov; Second row: S. Kim Juniper, Jack Barth, Jae-Hak Lee; third row: Hanna Na, Sung Yong Kim, Akash Sastri; fourth row: Charles Hannah.

AGENDA ITEM 1

Introductions

The Co-Chairs, members and observers introduced themselves. The Co-Chairs reviewed the goals for the meeting and the meeting agenda (*AP-NPCOOS Endnote 2*).

AGENDA ITEM 2

Progress on AP-NPCOOS Terms of Reference

With respect to the AP-NPCOOS Terms of Reference (*AP-NPCOOS Endnote 3*), the Co-Chairs noted that AP-NPCOOS is making good progress on convening workshops/sessions to engage those involved in coastal ocean observing systems from around the North Pacific through workshops at annual PICES meetings.

AP-NPCOOS – 2020

AGENDA ITEM 3

Report from FUTURE Scientific Steering Committee

Dr. Vyacheslav Lobanov provided an update on FUTURE Scientific Steering Committee activities and progress in the development of the Social-Ecological-Environmental Systems (SEES) framework in FUTURE.

AGENDA ITEM 4

Spring School update in 2020 and future direction/plans

Dr. Yoshie reported that the COVID-19 pandemic restrictions forced the cancellation of the PICES-approved and funded 2021 PICES Spring School in Kagoshima, Japan on the topic of the deep scattering layer in the coastal zone. For administrative reasons it would not be possible to host the Spring School in 2022.

AP-NPCOOS members discussed the idea of organizing Virtual Summer Schools that would focus on building skills for the analysis of time-series oceanographic datasets from the coastal zone. This would be modeled after the 2018 PICES Summer School hosted by Ocean Networks Canada in Victoria, British Columbia. A Virtual Summer School would consist of:

- Pre-recorded lectures provide oceanographic context for each dataset;
- Pre-recorded lectures and online materials that would present analytical methods and tools;
- Real-time tutorials, scheduled to accommodate time zone differences.

Each member country would contribute a time-series dataset that would be hosted by a member organization that would also provide virtual machine access to participants to conduct the analyses, as was successfully demonstrated during the 2018 PICES Summer School.

A request to hold over approved Spring School funds for a 2021 virtual summer school or an in-person spring/summer school in 2022 was forwarded to MONITOR and TCODE parent committees for consideration at ISB-2021.

AGENDA ITEM 5

Report from MONITOR

Dr. Kim provide a brief summary of the MONITOR business meeting, held on September 23 and 24, prior to AP-NPCOOS' meeting.

AGENDA ITEM 6

Report of OOI activities

Dr. Jack Barth provided on update on activities of the US Ocean Observatory Initiative (OOI).

AGENDA ITEM 7

Updates on Coastal Ocean Observing Systems in PICES member countries

Members provided updates on national coastal ocean observing programs with most reporting sea-going activities to have been severely reduced as a result of the ongoing coronavirus pandemic.

AGENDA ITEM 8

AP-NPCOOS Terms of Reference for the next five years

Recognizing the importance of early career training and capacity building in coastal ocean research, and in light of the success of the 2018 PICES Summer School and the level of interest in the COVID-cancelled 2020 Spring School, both initiated at AP-NPCOOS meetings, members discussed and agreed to propose Term of Reference “*Convene in-person and virtual summer schools to build capacity in the next generation of ocean researchers.*” to replace current Term of Reference #4 (*AP-NPCOOS Endnote 3*). This fourth Term of Reference was forwarded to MONITOR and T-CODE for approval at their September 23–24 and September 29–30 meetings, respectively.

AGENDA ITEM 9

General discussion and next plans

Members agreed to prepare and forward proposals for two activities at PICES-2021:

- *Plenary Speaker* - Invitation of a plenary speaker in the science sessions to present the Intergovernmental Oceanographic Commission’s Ocean Best Practices System. Among the Terms of Reference of AP-NPCOOS is the mission to advise on best practices in coastal observing. Members agreed that a partnership with this IOC initiative would be the most effective way for the entire PICES community to share and access Ocean Best Practices, as we enter the UN Decade of Ocean Science for Sustainable Development.
- *Essential Biological Variables Workshop* – Proposal (*AP-NPCOOS Endnote 4*) to host a workshop to review the current state of the monitoring of Essential Biodiversity Variables in the coastal zones of PICES members countries and pathways to expanded implementation and development of best practices. A budget for travel support for a workshop guest presenter was forwarded for approval.

AP-NPCOOS Endnote 1**AP-NPCOOS participation list**Members

S. Kim Juniper (Canada, Co-Chair)
 Naoki Yoshie (Japan, Co-Chair)
 Charles Hannah (Canada)
 Akash Sastri (Canada)
 Sung Yong Kim (Korea)
 Jae-Hak Lee (Korea)
 Vyacheslav Lobanov (Russia)
 Jack A. Barth (USA)

Members unable to attend

China: Manchun Chen, Zhongsheng Lin, Chuanxi Xing
 Japan: Hidekatsu Yamazaki

Observers

Hanna Na (Korea)
 Daisuke Hasegawa (Japan)

AP-NPCOOS Endnote 2

AP-NPCOOS meeting agenda

September 23, 2020, 1600 PST

1. Introductions
 - a. Co-Chairs
 - b. Members
2. Progress on AP-NPCOOS Terms of Reference (Co-Chairs)
3. Report from FUTURE Scientific Steering Committee (Vyacheslav Lobanov)
4. Spring School update in 2020 and future direction/plans (Naoki Yoshie)
5. Report from MONITOR business meeting (Sung Yong Kim)
6. Report of OOI activities (Jack Barth)
7. Updates on Coastal Ocean Observing Systems in PICES member countries, with emphasis on EOV/EBV monitoring under COVID-19 restriction: 10-minute presentations by each member country (members). Discussion.

September 24, 2020, 1500 PST

8. Discussion – AP-NPCOOS Terms of Reference for the next five years, particularly in relation UN Decade for Ocean Science for Sustainable Development (2021–2030)
9. General discussion and next plans (Co-Chairs and members)

Meeting ends

AP-NPCOOS Endnote 3

AP-NPCOOS revised Terms of Reference

1. Develop and advise about best practices for coastal ocean observing systems (examples of topics to be considered include: observing platforms, sensors and sensor calibration, data quality control, user interfaces to data and information products, data delivery to users, data archiving);
2. Convene workshops/sessions to engage those involved in coastal ocean observing systems from around the North Pacific;
3. Advise on linkages between coastal ocean observing systems and both PICES activities (*e.g.*, FUTURE Science Program, North Pacific Ecosystem Status Report) and open-ocean observatories (*e.g.*, Argo),
- ~~4. Review the PICES Data Inventory and identify data and/or data products developed under the direction of the AP-NPCOOS not currently recorded in the Data Inventory and inform MONITOR and TCODE, the TCODE Chair and the Secretariat.~~
4. *Convene in-person and virtual summer schools to build capacity in the next generation of ocean researchers.* (new term of reference)

AP-NPCOOS Endnote 4

**Proposal for a Workshop on
“Monitoring Essential Biodiversity Variables in the coastal zone”
At PICES-2021**

Convenors: Charles Hannah (Canada) Naoki Yoshie (Japan), Jack Barth (USA), Vyacheslav Lobanov (Russia), Hanna Na (Korea)

Duration: 1 day

The goals of FUTURE and UN Decade of Ocean Science require systematic and sustained observations of marine ecosystems, especially in the coastal regions where the interactions between humans and the marine environment are most intense. The Advisory Panel on North Pacific Coastal Ocean Observing Systems is responsible for advising PICES on the linkages between coastal ocean observing systems and the PICES FUTURE Science Program.

We propose a Workshop to address the question of how the PICES community plan to measure the Essential Biodiversity Variables (EBV; Miloslavich *et al.* 2018 DOI: [10.1111/gcb.14108](https://doi.org/10.1111/gcb.14108)) and make them available to the community (the essence of Coastal Ocean Observing Systems). The workshop will provide a basis for identifying gaps in observing systems relative to FUTURE’s goals of providing a synthesis of knowledge on: a) ecosystem resilience and vulnerability; b) ecosystem response to natural and anthropogenic forcing; and c) future ecosystem change.

We will solicit contributions that will address the following questions: 1) what is the current state of monitoring EBVs in each PICES country; 2) what new technologies are being developed which will help monitor EBVs (*e.g.*, eDNA, satellite mapping of macro algae); 3) which technologies are moving beyond the pilot stage to the mature stage; and 4) what is the state of the art in getting EBVs into databases and getting them out via user friendly interfaces?

The primary output from the workshop is expected to be a journal article describing the current state of the art in both the measurement of EBVs in the coastal zone and in making the data widely available.

We will identify an invited speaker and will request travel support.

Potential support by: MONITOR, TCODE, BIO, FUTURE