

2025 Report of AP-NIS

Purpose of Annual Reports: Since PICES-2022, Committees/FUTURE are requested to hold **at least one virtual business meeting before the Annual Meeting**. Committees/FUTURE (mandatory) and Expert Group (optionally upon request) will have **an in-person business meeting during the Annual Meeting**. This Annual Report is to record the discussion items and outcomes of these business meetings.

Context:

In 2025, AP-NIS held two business meetings in addition to conducting some activities by correspondence. A virtual business meeting was held on Monday, September 29, 2025 and chaired by AP-NIS co-chair Dr. Therriault (Canada). An additional in-person business meeting, also chaired by Dr. Therriault, was held on Sunday, November 9, 2025 at PICES-2025 in Yokohama, Japan. For both meetings, the chair welcomed participants (*Endnote 1*) and adopted the draft agenda that was circulated to AP-NIS members in August 2025 for review and comment (*Endnote 2*). Members present for the in-person meeting are shown in *Endnote 3*.

VIRTUAL MEETING

AGENDA ITEM 1

Welcome, Introductions, Opening Remarks

Dr. Therriault welcomed meeting participants and asked if there were any changes or modifications required of the agenda. No changes were needed and the agenda was adopted.

AGENDA ITEM 2

Discuss logistics for in-person meetings

AP-NIS had a brief discussion about the challenges of in-person meetings and discussed if it would be possible to host the business meeting outside of the Annual Meeting in conjunction with a conference or other event where AP-NIS members were expected to participate. However, the limited number of participants at the virtual meeting was insufficient to reach any conclusion as multiple member countries were not represented.

AGENDA ITEM 3

Discuss and rank requests for Science Board

This agenda item covered several important topics including funding requests, membership, collaborations, and capacity building. The chair noted that two US members would need to resign from AP-NIS due to changes within the US federal government and that longtime member from Japan, Prof Kawai, would be resigning this year as well. AP-NIS will request SB to seek replacements via the appropriate channels. AP-NIS discussed specific funding requests, specifically a targeted request from the International Conference on Aquatic Invasive Species (ICAIS-2026). AP-NIS supported the suggestion that Dr. Therriault work with the local organizing committee to align PICES funding (if approved) at the Castle Ward level (£2,000) be directed to ECOP travel support or registration fee waivers for participants from PICES member countries.

AGENDA ITEM 4

Discuss topic session and workshop proposals for PICES-2026

AP-NIS discussed the success of past sessions and workshops held at PICES Annual Meetings, but it was unclear if AP-NIS members would submit a proposal for the Nanaimo meeting. Members agreed to continue discussions in Yokohama when more members would be available.

AGENDA ITEM 5

Update on Korean proposal supported by AP-NIS at PICES-2023

This agenda item was deferred given Dr. Choi, the primary proponent, was unable to attend the virtual business meeting. Follow-up online discussions suggested there may be opportunities to align eDNA efforts within PICES member countries for early detection of NIS.

AGENDA ITEM 6

Other Business

No other business was raised. Dr. Therriault concluded the virtual portion of the AP-NIS meeting.

IN-PERSON MEETING

AGENDA ITEM 7

Welcome, Introductions, Opening Remarks

Dr. Therriault welcomed meeting participants and meeting participants conducted a round of introductions. The agenda was reviewed and with no changes required, the agenda was adopted.

AGENDA ITEM 8

Invited Presentation: “150 years of history of marine non-indigenous species in Japan and future challenges”

Prof Keiji Iwasaki (Nara University, Japan) gave a very insightful presentation that outlined the history of marine invasions in Japan dating back to the time when international trading vessels were allowed to enter territorial waters as Japan emerged from its isolation period in the 1850s. He provided details about the dynamics of a global invader, *Mytilus galloprovincialis*, in Japan and noted how the species has spread, introgressed with native *Mytilus* species and efforts to mitigate damages to oyster culture. His presentation also touched on the role of various vectors that have contributed to the spread of NIS in Japan, including small boats and fishing vessels. Finally, he touched on climate change effects and some of Japan’s policies and regulations around invasive species. This presentation highlighted how knowledge gained in Japan could be applied to other places dealing with similar invaders.

AGENDA ITEM 9

Continue to share information on marine NIS in the North Pacific via country reports using the reporting template (supports ToR 1-3)

This agenda item typically covers country reports, but it was noted that not all members have access to the types of data that might be most useful to AP-NIS. Although a discussion of revising the ToR for AP-NIS was beyond the scope of this meeting, it was noted that such a discussion should be held in the future or changes in reporting might not be required every year as novel introductions are expected to be rare while spread of existing invaders is likely ongoing in all PICES countries.

Key findings with respect to newer detections from member reports include the first record of the barnacle *Amphibalanus improvisus* on British Columbia’s north coast in Canada, the confirmed establishment of three invasive fouling species: *Hydroides elegans*, *Thalamoporella californica*, and *Schizoporella errata* in Korean major ports, and reports of Chinese mitten crab (*Eriocheir sinensis*) on the west coast of the United States. A number of higher risk species also were identified for Japan in Iwasaki-san’s presentation (Agenda Item 8). Established monitoring programs are highly diverse among PICES member countries and discussions on possible standardization will be the focus of a future AP-NIS discussion.

AGENDA ITEM 10

Discuss draft Topic Session Proposal from Virtual Business Meeting (supports ToR 4) and plan to submit online

This agenda item is a continuation of a discussion that started during the virtual business meeting in September. AP-NIS discussed the possibility of organizing another eDNA-focused session at PICES-2026 but questioned if there would be enough new information to justify another session/workshop given the highly successful workshop at PICES-2025. Further, it was noted that S-HAB was working on session and workshop

proposals that were similar and could be an opportunity for AP-NIS and S-HAB to work more closely on these MEQ-related topics. No specific session or workshop proposal was advanced for PICES-2026.

AGENDA ITEM 11

Discussion of a Special Project to be undertaken by AP-NIS based on proposal submitted last year (Choi)

This agenda item was deferred as Prof Choi was unable to attend the AP-NIS business meeting. However, he did indicate that it still may be possible to receive funding from Korea for this proposal. AP-NIS did discuss other possible projects of interest under Agenda Item 17.

AGENDA ITEM 12

Discuss DNA/eDNA as an area of interest for AP-NIS

This agenda item was largely deferred as several members working in this space were unable to attend in-person. Further, as noted in Agenda Item 2, several molecular experts have recently left the group making discussions on how best to proceed more complicated. It was noted that molecular approaches in general have rapidly increased in popularity and that many member states now have active programs, some of which intersect with NIS early detection networks. Further, other international/intergovernmental organizations have ongoing efforts in this space including NOWPAP and two ICES working groups (WGITMO and WGBOSV), with overlapping membership that should facilitate information sharing and reduce possible redundant efforts.

AGENDA ITEM 13

AP-NIS members agreed to identify documents related to standardized methods for use of eDNA for NIS early detection/monitoring within their countries that can be discussed at PICES. Possible recommended strategy for PICES member countries?

As discussed at multiple AP-NIS meetings, all PICES member countries have advanced molecular tools, including those used for early detection or monitoring of NIS. It was agreed that Dr. Therriault would talk to the PICES Secretariat about creating a website or online portal that could serve as a clearinghouse for relevant technical and guidance documents. It was unclear if a standard protocol was needed or would be helpful for PICES member countries, but such documents and training would be invaluable to developing countries outside the PICES domain and would enhance capacity building efforts with numerous groups.

AGENDA ITEM 14

Update on PICES FUTURE Program, including UN Decade for Ocean Science

Dr. Therriault provided an update on the status and future direction of FUTURE and other relevant changes happening within the organization. AP-NIS could have a role in NPESR-4 as it already produces actionable scientific information.

AGENDA ITEM 15

Update on Global NIS Activities of Interest to AP-NIS

Dr. Therriault provided an update on upcoming conferences and publications of interest to the group including the recently completed International Conference on Marine BioInvasions (Madeira, October 2025) where PICES supported three ECOPs, the upcoming ICAIS (Belfast, Aug 2026), and the Third World Ocean Assessment that is expected to be published in 2026 following UN General Assembly approval that contains a chapter on NIS.

AGENDA ITEM 16

Finalize info/funding requests for MEQ

Dr. Therriault added the requests discussed and approved by AP-NIS to the SB briefing materials as requested.

AGENDA ITEM 17

Other Business

AP-NIS again discussed possible projects of interest to the group that would provide some focus over the next few years. It was noted that, given the current globally challenging conditions, any project would need to be

relatively low cost and supported by AP-NIS members. There was discussion about the role of debris facilitating the transport of NIS (similar to work done as part of the ADRIFT project), the utility of DNA/RNA, and better understanding vectors and pathways. To this last item, AP-NIS thought that progress could be possible by identifying species that could have been introduced by aquaculture or shipping (either biofouling or in ballast water). The idea was to focus on species who have been translocated at the pan-Pacific scale initially but that this might be broadened, depending on findings, to a more global analysis. This idea leverages the *Mytilus galloprovincialis* example discussed by Prof Iwasaki under Agenda Item 8 and could leverage molecular analyses as well.

Dr. Tepolt (USA) introduced a new proposal aimed at developing a better understanding of mesopelagic species in the North Pacific, especially the Great Pacific Garbage Patch, using molecular tools to understand genetic structure and connectivity. The addition of coastal baseline surveys in PICES member countries could help elucidate patterns of gene flow and population structure.

AP-NIS Endnote 1

AP-NIS participation list (both online and in-person meetings)

Members

Dr. Therriault (Canada, Co-Chair)
Dr. Nagai (Japan, In-person ONLY)
Dr. Shin (Korea, In-person ONLY)
Dr. Tepolt (USA)

Members unable to attend

China: Dr. Zhan (Co-chair), Dr. Wang, Dr. Zheng
Japan: Prof. Kawai (stepping down)
Korea: Prof. Choi, Dr. Park
Russia: N/A
USA: Dr. Darling, Dr. Kreiger (both stepping down)

Observers

Prof Iwasaki (Japan, In-person ONLY)
Dr. Baek (Korea, In-person ONLY)
Dr. Hyun (Korea, In-person ONLY)

PICES

None

AP-NIS Endnote 2

AP-NIS meeting agenda

DRAFT AGENDA for VIRTUAL and IN-PERSON MEETINGS

AP-NIS Pre-PICES 2025 Meeting

Mon Sept 29, 2025 at 4:00 PM PDT

AP-NIS In-person PICES-2025 Meeting

Yokohama, Japan

Sun Nov 9, 2025 (Icho Room)

(W11 NIS Workshop - Harnessing Environmental DNA (eDNA) for Early Detection and Monitoring of Marine Invasions in the Face of Climate Change, Sat Nov 8, 2025)

Virtual Meeting Agenda

- 1) Welcome, Introductions, Opening Remarks
- 2) Discuss logistics for in-person meetings
 - a. PICES Annual Meeting
 - b. Other Meetings?
- 3) Discuss and Rank Requests for Science Board
 - a. Funding Request from ICAIS (see attachment)
 - b. Travel support for AP-NIS participation in other meetings, workshops, conferences, etc.
 - c. Changes in TOR, membership, etc.
 - d. Possible capacity development opportunities
- 4) Discuss Topic Session and Workshop Proposals for PICES-2026 (Nanaimo, Canada) – Due Nov 24, 2025 (online)
- 5) Update on Korean proposal supported by AP-NIS at PICES-2023
- 6) Other Business

In-Person Meeting Agenda

- 7) Welcome, Introductions, Opening Remarks (Tom/Aibin)
- 8) Invited Presentation: “150 years of history of marine non-indigenous species in Japan and future challenges“. (Iwasaki-san)
- 9) Continue to share information on marine NIS in the North Pacific via country reports using the reporting template (supports ToR 1-3)

- 10) Discuss draft Topic Session or Workshop Proposals from Virtual Business Meeting (supports ToR 4) and plan to submit online
- 11) Discussion of a Special Project to be undertaken by AP-NIS based on proposal submitted last year (Choi)
 - a. Discuss other potential joint projects for AP-NIS
 - i. eDNA
 - ii. biofouling monitoring
 - iii. others
- 12) Discuss DNA/eDNA as an area of interest for AP-NIS (links to past and potential future AP-NIS sessions/workshops)
 - a. Collaboration with ICES on Viewpoint (Darling/Therriault)
 - b. Joint workshops with NOWPAP (on pause)
 - c. eDNA manual/best practices
- 13) AP-NIS members agreed to identify documents related to standardized methods for use of eDNA for NIS early detection/monitoring within their countries that can be discussed at PICES. Possible recommended strategy for PICES member countries?
 - a. Japanese eDNA Society manual
 - b. DFO's Science Advisory Report
 - c. Others
- 14) Update on PICES FUTURE Program, including UN Decade for Ocean Science
- 15) Update on Global NIS Activities of Interest to AP-NIS
 - a. World Ocean Assessment 3 has started with expected Chapter on NIS
 - b. Others?
- 16) Other Business
- 17) Adjourn

AP-NIS Endnote 3

AP-NIS members present for the in-person meeting in Yokohama.

