



Agenda Item 1: Welcome, adoption of agenda

Dr. Trainer called the meeting to order, reviewed call etiquette and Zoom technology instructions, and facilitated introductions of attendees. The list of those in attendance follows, along with a Zoom screenshot from the meeting.

Science Board

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| • Vera Trainer | Science Board Chair |
| • Igor Shevchenko, rep. Russia | Science Board Vice-Chair |
| • Steven Bograd | FUTURE SSC Co-Chair |
| • Sukyung Kang | FUTURE SSC Co-Chair |
| • Akash Sastri | BIO Chair |
| • Xianshi Jin | FIS Chair |
| • Mitsutaku Makino | HD Chair |
| • Andrew Ross | MEQ Vice-Chair |
| • Emanuele Di Lorenzo | POC Chair |
| • Sung Yong Kim | MONITOR Chair |
| • Jeanette Gann | TCODE Chair |

Invited Guests

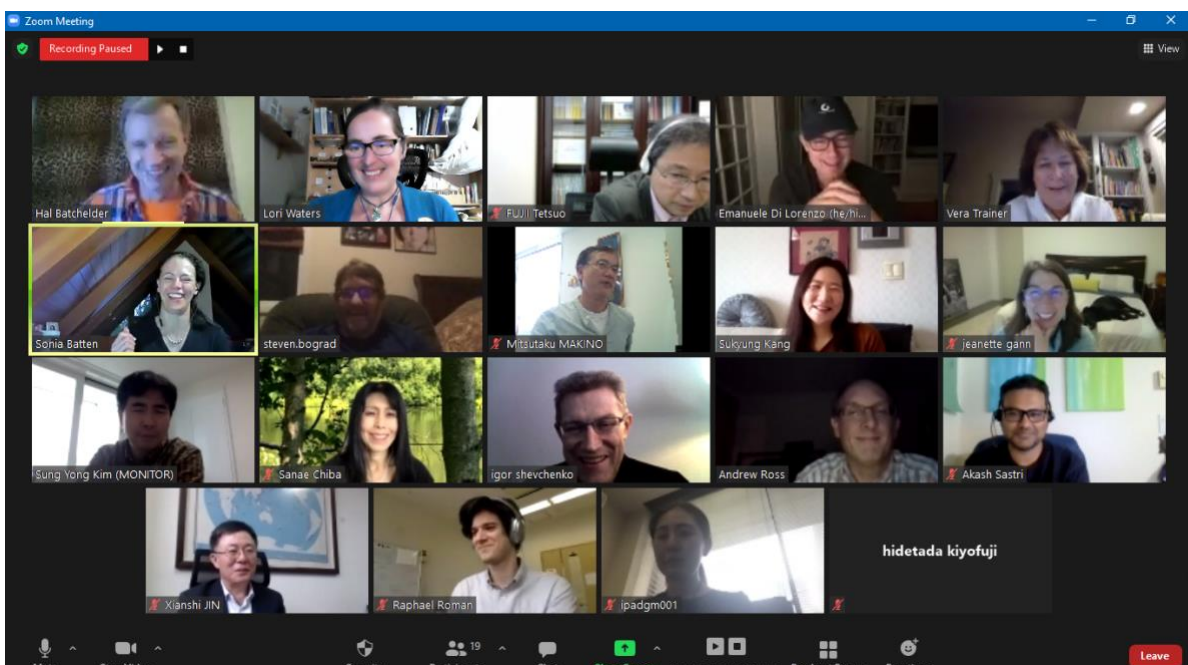
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|---------------------|---------------------------------------|
| • Alex Bychkov | PICES |
| • William Karp | ICES |
| • Jörn Schmidt | ICES |
| • Raphael Roman | ECOP |
| • Kaori Imai | Observer, Min. Foreign Affairs, Japan |
| • Hidetaka Kiyofuji | F&A Member, Japan Fisheries Agency |
| • Yugo Shimizu | Observer, Japan Fisheries Agency |

*Governing Council

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| • Enrique Curchitser | PICES Chair |
| • Tetsuo Fujii | PICES Vice-Chair |

PICES Secretariat

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| • Sonia Batten | Executive Secretary |
| • Harold (Hal) Batchelder | Deputy Executive Secretary |
| • Sanae Chiba | Deputy Executive Secretary (Incoming) |
| • Lori Waters | Science Board Support |





Agenda Item 2: Mid-year report: FUTURE-Scientific Steering Committee (SSC)

Co-chairs Dr. Bograd and Dr. Kang reported that there have been no recent changes in FUTURE SSC membership. The SSC's is currently transitioning PICES primary Science Program from Phase II into Phase III. Recent activities included: drafting the final report for PICES FUTURE Phase II Science Program; finalizing the [FUTURE Phase III Science and Implementation Plan](#) approved by GC at PICES-2020; contributing to the joint PICES/ICES letter to leadership to develop a strategy for the UN Decade of Ocean Science (UNDOS); review of the NPESR3 Synthesis report; updating of the FUTURE liaison table to provide liaisons to new PICES expert groups; updating of schematic with new EG's; review of scientific achievements outlined by Expert Groups under the parenting of FUTURE-SSC; completion of the 2020 FUTURE Annual Report; and the addition of PICES Expert Group products into the FUTURE product matrix. Drs. Bograd and Kang thanked Saeseul Kim, PICES intern, who presented a draft of her updated FUTURE product matrix. The SSC would like to ensure that all future PICES expert groups map their activities and products onto the product matrix during their terms. This will help to ensure that all identified PICES Science research themes and implementation objectives are achieved, as the matrix enables identification of research gaps in order to propose new expert groups to address gaps.

Dr. Bograd shared that at the FUTURE-SSC has considered a number of agenda items aimed at preparing this important next phase of PICES FUTURE Science Program work. These include: potential collaboration with the Asia Pacific Network (APN); formation of new Expert Groups to facilitate specific PICES scientific needs; planning activities and goals for the United Nations Decade of Ocean Science (UNDOS); drafting a brochure on FUTURE phase II science completion; planning for 2021; increasing FUTURE science communication, including planning/storyboarding of new FUTURE videos; preparing a peer-reviewed manuscript to highlight FUTURE science questions which were addressed well, and highlighting gaps with the aim of setting out potential implications for large-scale science programs. FUTURE intends to create new communication pieces in future, including new FUTURE videos.

The SSC has formed a sub-group to coordinate logistics and to plan for the next FUTURE Open Science Meeting (OSM) in February of 2023 in Hawaii, USA or Jeju, Korea. As many meetings are currently being rescheduled due to the Covid-19 pandemic, the OSM will be timed for minimum conflict with other meetings, to allow maximum participation. The meeting will highlight and synthesize accomplishments of the FUTURE Phase II (2014-2020) Science Program and related activities, including from other international organizations, and introduce the FUTURE Phase III program. The application of Social-Ecological-Environmental (SEES) frameworks to marine issues will be the main meeting theme, with a format to include ideation workshops and activities to brainstorm solution roadmaps to set initial PICES science activities for the UN Decade of Ocean Science for Sustainable Development, particularly within the North Pacific.

The FUTURE-SSC requested that Science Board endorse its plans as set out in its report to SB, to complete its final report before the end of summer, and to include within it the updated FUTURE Product Matrix. The SSC also requested that Science Board endorse its plans to move ahead with an Open Science Meeting in 2023. Science Board endorsed both of these plans.



Agenda Item 3: PICES Special Project reports

SEATurtle Special Project

Dr. Akash Sastri provided an update on behalf of the SEATurtle Project Science Team (PST). Achievements to date include the development of sea turtle tagging plans for both Japan and Korea during 2021. The group has experienced challenges related to Covid-19, but has continued with the development of a research plan, including genetic studies of the Jeju Island sea turtle population. The group is currently planning to expand their outreach initiatives, which include the creation of an interview research plan, and an upcoming submission for PICES Press. The Project Science Team did not make any requests of Science Board. Below: Project SEATurtle Intersessional Team meeting screenshot, March 1, 2021.



Ciguatera Special Project

Dr. Makino updated the Science Board on the PICES / MAFF Ciguatera Special Project, which builds upon the technology developed during the FishGIS Special project completed in 2020. Current project goals include major updates of the smartphone app, as no field trips or local workshops are possible during the Covid-19 pandemic. Dr. Makino reminded SB of the goals of the project to: assess the state of the local corals by monitoring aspects water quality and document the outbreaks of eel-grass or the expansion of dead corals; detect the presence of the toxin-containing dinoflagellate (*Gambierdiscus*) in the reef environment; and avoid the transfer of likely contaminated fish from the damaged environment to the tables of families. The Ciguatera Project Science Team did not make any requests of Science Board.



Agenda Item 4: PICES-2021

Dr. Batten outlined a draft plan for PICES-2021, which would be held as a virtual meeting, partially based on the success of PICES-2020. Virtual business meetings would be held ahead of time in September, the workshops would go ahead during the week of October 22nd, the opening session would be held on October 25th, via Zoom, much like the opening of PICES-2020. Science Sessions would be held on October 26th and 27th. The final session is proposed as a poster session with an opportunity for networking.

Science Board reviewed the proposed sessions and endorsed the draft plan, which would allow for all proposed workshops to go ahead as virtual meetings to allow discussion of previously-recorded talks available one week ahead of the workshop.

It is unclear how many topic session conveners wish to have as virtual sessions, so the Secretariat committed to contacting conveners so that a schedule could be drafted based on sessions which will proceed at PICES-2021. It is likely that the schedule would accommodate three or four parallel sessions, but that some sessions would have to be cancelled.

The poster session is planned using the ePosterBoard platform, and will include a social component to allow participants to speak with presenters and colleagues. In this respect, it is hoped that the combined poster and networking session would mirror a typical PICES meeting. For the Science Board session, SB and the Secretariat will endeavor to ensure that there are participants from every Standing Committee. Sonia will follow up with SB to provide pricing for the ePosterBoard session, and to propose a meeting schedule based on Science Board feedback.

Plenary requests will be considered as part of the new draft schedule.

Dr. Trainer committed to revising Science Board's session description and will seek Science Board feedback.

The draft proposal for PICES-2021 as set out at ISB-2021 is appended as Appendix A.

Agenda Item 5: PICES-2021 Awards

Science Board chose the award recipients for the Wooster, POMA and the Zhu-Peterson awards, who will be recognized during the awards ceremony to take place during the opening of PICES-2021.

Agenda Item 6: Scientific and Technical Mid-Year Reports

Highlights of expert group achievements can be found on the homepages of each expert group, and in their annual reports. Below is a summary of requests to Science Board which were received at ISB-2021, and forwarded to Governing Council.

Membership requests - summary:

1. Request Russian membership: SG-ECOP, SG-SciCom, S-CCME, WG-43, WG-45, WG-48, S-MBM had no representation from Russia at last meeting.
2. Request Chinese membership: SG-UNDOS, AP-NIS
3. Request for Korean member: WG-45 requests Saang-Yoon Hyun be appointed as Korean member
4. Request for Canadian members: WG-47 requests Dr. Chris Rooper and Dr. Jackson Chu from Canada
5. Request for US members: WG-47 requests Dr. Samuel Georgian from USA; AP-NIS, wg-45 requests Melissa Haltuch and Christine Stawitz as US members;
6. These groups are requesting better gender balance: WG-48
7. These groups are requesting additional ECOP membership: WG-47, WG-48.
8. WG-48 requests Dr. Paul Covert as an ECOP member
9. WG-48 requests the addition of Piotr Margonski as an *ex officio* member of the WG from ICES.



Membership requests in full:

- **SG-UNDOS:** requests members from China.
- **SG-ECOP:** requests members from Russia
- **SG-SciCom** requests members from Russia.

- **S-MBM** - notes no representation from Russia at last meeting
- **S-CCME** S-CCME does not have a member from Russia, and requests for appointment from Russia were made through the BIO, FIS and POC Committees

- **AP-NIS:** Dr. Jeanette Davis (USA) notified AP-NIS that PICES 2020 would be her last meeting as she was taking on a new role with NOAA. Thus, a replacement is urgently needed. Names can be provided if desired. China has not participated in any meeting of AP-NIS thus far and Russia did not name any delegates.

- **WG-43** requests a member from Russia with interests in participating in the planned 2022 international symposium in Lisbon, Portugal and in associated activities.
- **WG-45:**
 - WG-45 currently has no members from Russia, and requests that some be added. We have a couple of Russian colleagues in mind, and are in the process of confirming their interest.
 - Sukgeun Jung (Korea) has decided to withdraw as a WG-45 member. He has recommended Saang-Yoon Hyun for a replacement, who has expressed interest in joining the group.
 - WG-45 currently has only one official PICES member from the US, despite active involvement from several US scientists. We recommend that Melissa Haltuch and Christine Stawitz be added to the group as official PICES WG-45 members.
 - WG-45 has contacted Sonia Batten regarding these membership issues, and her advice was to work through the FIS committee. We were planning to do that once we confirmed interest in membership from our Russian colleagues.

- **WG47** is looking for suitable ECOP representation:
 - WG47's TOR include collating oceanographic variables to develop species distribution models (SDMs) and other quantitative analytical methods. To achieve the TOR, the co-chairs envisioned building on the research activities of WG32 on Biodiversity of Biogenic Habitats. Unfortunately, key scientists from WG32 that we identified in WG47's proposal have not been nominated. These are Dr. Chris Rooper and Dr. Jackson Chu from Canada and Dr. Samuel Georgian from USA. Not having these scientists involved with PICES WG47 will make it significantly difficult to achieve WG47's TOR. The co-chairs recommend that these three be nominated to ensure that WG47 can achieve its TOR.

- **WG-48**
 - WG-48 requests that the gender balance and ECOP representation of their group be addressed. WG-48 now has three female members, one of whom is an ECOP, however, there is an ongoing effort to improve representation of both groups.
 - WG-48 suggests Dr. Paul Covert be considered as an ECOP member.
 - WG-48 requests members from Russia. None have been suggested. Dr. David Kimmel is currently asking among his colleagues.
 - WG-48 requests the addition of Piotr Margonski as an *ex officio* member of the WG from ICES.



Additional Expert Group requests / information

- **SG-UNDOS Invitation to Professor Fangli Qiao:**
 - During discussions regarding UNDOS, several members of SB suggested that it would be helpful if Professor Fangli Qiao were to join the SG-UNDOS. Dr. Na was requested to invite Professor Fangli Qiao to join the SG-UNDOS Expert Group, if possible. Science Board supported this invitation.
- **SPF2022:**
 - WG-43 advises that the Small Pelagic Fish Symposium has now been postponed to November 11 - 17, 2022. Science Board has been requested to send names to the Secretariat if they know of people who might appropriately serve as conveners for this Symposium.
- **SG-SciCom** is concerned that only six GC members have participated in the SG-SciCom Governing Council Survey. Vera and Sonia committed to requesting that GC members participate in the SG-SciCom Survey. (See Appendix B).

Agenda Item 7: Proposed Expert Groups

Science Board considered five proposals for new expert groups, as follows.

- **WG proposal: CHANGE**
 - Science Board will not make a decision regarding this proposed Expert Group until the TORs have been refined and resubmitted to SB.
- **WG proposal: WG-IMCE 1 (Pathogens)**
 - The proposal for this Expert Group is on hold and will require strong leadership to move forward.
- **WG proposal: WG-IMCE 1 (Ecosystems)**
 - The Science Board Chair will approach this group to request that they participate in the FUTURE-SSC's proposed workshop to further scope a Climate Extremes Expert Group.

With respect to both IMCE working group proposals, it was noted that there is not consensus interest from all member countries in this topic at this time.

- **WG proposal: Climate Extremes (FUTURE)**
 - FUTURE-SSC will hold a workshop on June 23 (North America), June 24 (Asia), and will request that interested parties attend to scope a group or groups to investigate Climate Extremes. FUTURE-SSC will reach out to partners for this workshop, including CLIVAR, IMBER, and APN. The Secretariat will issue the invitation to all PICES members to participate in this workshop.
- **SG proposal: Joint APN-PICES Study Group on Scientific Cooperation in the Pacific Ocean**
 - Science board recommended formation of the proposed Joint PICES/APN Study Group on Scientific Cooperation in the Pacific Ocean.



Agenda Item 8: Code of Ethics for PICES operations

Dr. Batten presented the results of the Ethics Code survey, along with the latest version of the proposed *Code of Ethics for PICES Operations* for consideration by Science Board, which was developed in response to GC Decision 2020/A/10.

Science Board considered and revised the proposed Code of Ethics, and recommended that the following wording be adopted:

PICES is committed to:

- Providing a welcoming and inclusive environment, that encourages all staff, members and guests to aspire to principles of integrity and respect in their interactions and to maintain a respectful environment free from harassment and discrimination (harassment includes speech or behavior that is not welcome or is personally offensive, regardless of intent).
- Respecting the human rights, and worth of all persons regardless of age, physical appearance, gender expression, sexual orientation, ethnicity, religion or other group identity or political beliefs.
- Conducting the work of the Organization with integrity. Members should strive to encourage diverse voices and the full participation of all, not to misrepresent results, to not plagiarize and to appropriately acknowledge contributions of others.

Agenda Item 9: UN Ocean Decade

Dr. Bograd provided an overview of the joint ICES/PICES Sustainability of Marine Ecosystems through global knowledge networks (SMARTNET) endorsed program for UNDOS, and the intention for this to build on existing initiatives to facilitate research and knowledge generation. ICES and PICES have a history of working together in a number of marine science areas, and on cross-cutting themes (such as inclusion of ECOPs, etc). The Study Group on ICES/PICES Ocean Decade (SG-IPOD) coordinates the UNDOS proposal efforts.

PICES/ICES have had a number of calls regarding UNDOS, and received some feedback. Initially the IOC looked at creating clusters of projects with similar themes and geographical areas. Take home message was that the clusters were uncomfortable with the clustering structure, as it would add additional need for resources and governance structure that could hamper individual efforts. The IOC re-categorized SMARTNET as a stakeholder engagement network, to synthesize actions and skills, but there is a need for additional clarity regarding stakeholder definitions. PICES and ICES both intend to ensure that the project is science-based, rather than administrative.

Dr. Di Lorenzo presented on the advancement of Ocean Solutions network with PICES and partners. The aim would be to develop consensus among partners and stakeholders in order to gain broad acceptance of proposed solutions. This initiative would develop solution roadmaps that set out challenges and solution needs (technology, science, policy, and finance). Pilot programs would follow from the solution roadmaps, and would be leveraged to tap capital investment funding. The overarching idea is to focus on system-level problems, and creating an intentional move towards creating big solutions to big problems. The network would function as a think-tank to scope problems, create solutions, and to bring venture funding on board to develop and deploy solutions.

Ongoing discussions will include IPOD, PICES partners, UNESCO, and the Ocean Visions Summit leaders. It was noted that there is potential to use the Coastal Impacts Expert Group as a solution-focused group to contribute to this vision.



Agenda Item 10: PICES-Sponsored Conferences / Symposia

Dr. Batten provided an overview of the following symposia, and invited additional details from other speakers where noted:

1. **NPAFC-IYS Virtual workshop 2021**. Registration has closed and this event takes place May 25–27, 2021 (Canada/USA) May 26–28, 2021 (Japan, Korea, and Russia)
2. **MSEAS-2021**. Has been provisionally postponed to December 2021, but may be further delayed in order to allow a F2F meeting.
3. **FUTURE-OSM** - planning continues, and further details will be provided when available.
4. **IYS Symposium**. Currently scheduled for Oct.4-6. 2022. Further details will be provided when available.
5. **ICES/PICES/FAO International Symposium on Small Pelagic Fish (SPF) 2022**. To be held November 7-11, 2022, in Lisbon, Portugal.
6. **ICES PICES ECS 2022**, St John's, Newfoundland, Canada, 9-12 May 2022. Theme and scope: Ocean Sciences for the Future we want. Further details will be provided when available.
7. **ECCWO5 Norway 2023** – Bergen, Norway, 17-21 April 2023. Further details will be provided when available, and Science Board was requested to consider possible names for convenors, and to expect further follow-up on this item after ISB-2021.
8. **ICES/PICES ZPS 2024**. This event will take place in Hobart, Tasmania, and is now postponed to Spring of 2024. Further details will be provided when available.
9. **EXPO-2025**

Dr. Bychkov provided an overview presentation for Science Board, describing PICES proposed participation at this global event. Expo will be in Osaka, Japan, and is projected to welcome around 28,000,000 visitors. Organizers are considering a public display linked to the PICES ADRIFT project. Project results had striking results for ocean science worldwide, based on science which involved 13 countries, including all PICES member countries. Japanese citizens may be very interested in this project as the tsunami had a large impact on Japanese society. At present, the display is proposed to be comprised of three components that would: reflect the scientific results from the project and technologies which were used to achieve the result; show (either digitally or by displaying physical objects) various kinds of memorials that washed ashore in various places, such as numerous articles rafted to North America and landed, and were preserved in various kinds of memorials in US and Canada, with some returned to Japan; and, by showing the human dimensions by including cultural, artistic and spiritual connections to the tsunami. The last portion could showcase the significant global literature and cultural/artistic responses to the tsunami which were produced, and would be a way of including cultural impacts. Artists, musicians, etc. could be invited to be there to present their work, either in person, or shared through digital technology.

After considering the presentation and seeking clarification from Dr. Bychkov on proposal details, Science Board recommended that PICES support it in principle, including planning its presentation during World Expo-2025, with the proviso that Science Board advice be incorporated in planning a broad display of PICES science in cooperation with and input from its Science Communication Expert Group.



Agenda Item 11: Capacity Building

ClimEco7 Summer School: Dr. Batchelder provided information on the ClimEco7 Summer School. Normally PICES supports these schools but this year was not asked to support the school, which is now being held as a virtual event, 9-13 August. Science Board was not requested to provide funding or support.

SOLAS Summer School: Dr. Batten provided an update. This school has now been postponed to 2023. Science Board was requested to defer its previously approved funding amount of \$10,000.00. Science Board recommended that its previously recommended \$10K funding to support the SOLAS Summer School be deferred to 2023.

APNCOOS - Ocean Big Data virtual summer school: Science Board recommended deferring previously allocated funding support to 2022, with funds "not to exceed \$15K" for the AP-NPCOOS Ocean Big Data virtual summer school and with the priority use of funds being facilitation of student participation.

AP-NIS requested \$5K in funding to support travel for ECS/PICES organizer at PICES eDNA workshop (May 2022 in Annapolis, MD, USA). Science Board directed AP-NIS to provide additional details, which will be considered at PICES-2021.

WG-39 Requested Travel Support WGICA physical meeting in ICES HQ: 12-14 October 2021 (physical or virtual depending on condition of COVID-19), in case of virtual, not necessary. Science Board will consider a request when funding needs are clear.

Agenda Item 12: PICES-2022

After considering a brief update from Dr. Batten, Science Board recommended that the following two themes be proposed as options to Korea, for PICES-2022:

1. Achieving the Ocean We Want in the UNDOS
(Note: some Science Board members felt that this proposed theme was too general).
2. Sustainability of Marine Ecosystems through global knowledge networks during UNDOS

Science Board considered revising the Science Board session theme for PICES-2021, to change it slightly from PICES-2020, in hope of attracting additional sessions for this year. Science Board agreed to further consider the SB Session theme via correspondence.

Agenda Item 13: PICES-2023

Dr. Batten provided a verbal update. Science Board will further discuss the PICES-2023 theme at PICES-2021. Consideration will be given to building on the SMARTNET idea for the UN Decade of Ocean Science.



Agenda Item 14: Publications update

Dr. Batchelder provided an update on PICES publications, and Science Board recommended the following publications. For item #4, the ICES/PICES/PAME Working Group paper on the Central Arctic Ocean, Science Board requested that the Secretariat follow up with PICES partners and request that PICES and other partner logos be added to this collaborative publication.

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| 1. Barth, J. A. et al, 2019: Better Regional Ocean Observing Through Cross-National Cooperation: A Case Study from the Northeast Pacific, <i>Frontiers in Marine Science</i> , 6, doi:10.3389/fmars.2019.00093 |
| 2. Lee, E. A., S. Y. Kim, and H. S. Min, 2019: Climatological descriptions on regional circulation around the Korean Peninsula, <i>Tellus A: Dynamic Meteorology & Oceanography</i> , 71:1, 1 - 22 doi: https://doi.org/10.1080/16000870.2019.1604058 |
| 3. Frontiers in Marine Science special issue on North Pacific Climate and Ecosystem Predictability on Seasonal to Decadal Timescales resulting from the 2019 Qingdao workshop and papers from the PICES-2019 Annual Meeting in Victoria. Editors: S. Minobe, A. Capotondo, F. Chai, M. Jacox, M Nonaka, and R. Rykaczewski. |
| 4. WG-39 Publications Update: 2020 ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean (WGICA). <i>ICES Scientific Reports</i> . 2:79. 144 pp. http://doi.org/10.17895/ices.pub.7454 |
| 5. Hallegraeff, G.M., Anderson, D.M., Belin, C., Bottein, M-Y.D, Bresnan, E., Chinain, M., Enevoldsen, H., Iwataki, M., Bengt, K., McKenzie, C.H., Sunesen, I., Pitcher, G.C., Provoost, P., Richardson, A., Schweibold, L., Tester, P.A., Trainer, V.L., Yñiguez, A.T., Zingone, A. "Perceived global increase in algal blooms is attributable to intensified monitoring and new impacts" <i>Nature Communications, Earth & Environment</i> . 1-10. https://doi.org/10.1038/s43247-021-00178-8 |
| 6. WG-43 Review Paper: Peck, M. A., Alheit, J., Bertrand, A., Catalán, I. A., Garrido, S., Moyano, M., ... & van der Lingen, C. D. (2020). Small pelagic fish in the new millennium: A bottom-up view of global research effort. <i>Progress in Oceanography</i> , 102494. https://doi.org/10.1016/j.pocean.2020.102494 |
| 7. Trainer, V.L., Batten, S., Bograd, S.J., Chiba, S., Satterthwaite, E.V., Waters, L., Schmidt, J., Johannesen, E., Karp, W., Brusendorf, A.C. 2021: Championing Ocean Diversity: Introducing the SMARTNET Ocean Knowledge Network - Accessible, Diverse, and Solution-Oriented. <i>Eco Magazine, UN DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT SPECIAL ISSUE</i> . 228-231. http://digital.ecomagazine.com/publication/?i=707374&ver=html5&p=228 |

Agenda Item 15: Greener Meetings

Drs. Batten and Trainer briefly outlined PICES desire to move towards carbon neutrality, and requested that Science Board consider making future policy recommendations with respect to "green" policies for PICES meetings, to be further discussed at PICES-2021.

Agenda Item 16: PICES Partners

At PICES-2020, EG's were requested to submit suggestions for potential PICES partnerships. The Secretariat added these suggestions to the spreadsheet that PICES Secretariat normally uses for issuing meeting invitations for observers and partner participation. Science Board was asked to request that contact information be provided to the Secretariat.

//End of ISB-2021



Appendix A: Proposal for PICES-2021 Virtual Annual meeting

1. All Expert Groups to have a virtual Business meeting, unless they are disbanding and their work can be completed by correspondence. Chairs will be asked to confirm and provide meeting links to the Secretariat.
2. Workshops. Suggested plan is for pre-recorded workshop presentations (if any) to be available for viewing for 1 week and then there be a 1-hour discussion meeting on Zoom for the workshop itself. In this way we can accommodate all proposed workshops. Convenors will be asked to confirm if they want to go ahead virtually in this fashion, or resubmit a request for a workshop in 2022 at PICES-2021.
3. Session convenors will be asked if they wish to hold their session virtually in 2021. Then, using the rankings provided by SB at PICES-2020, time slots will be filled in descending order of priority but also being mindful of producing a balanced program.

Tentative Schedule:

| When | Activity | Platform etc |
|-----------------------------------|---|--|
| September 1-25 | SG and WG Business meetings | Zoom (hosted by PICES Sec) or other platform (hosted by Ex Grp Chairs). Suggest limit to 1x3hr meeting or 2x 2hr meeting for each group. |
| September 26-October 9 | Section, AP, Committees and FUTURE Business Meetings | Zoom (hosted by PICES Sec) or other platform (hosted by Ex Grp Chairs) |
| Week of October 10-16 | SB Business Meeting, F&A Meeting | Zoom (hosted by PICES Sec) |
| October 18-22 | Workshops We had 15 proposed (6 held over from 2020, 3 held in 2020 but requested again and 6 new). SB noted that 4 could be combined into 2, so a maximum of 13 WS if all go ahead. | For those that wish to go ahead virtually, recorded presentations will be uploaded and available to be viewed by registered participants at any time from October 11 th . Workshops will then have a 1-hour discussion session (no presentations) using Zoom. This way we can accommodate all 13 if needed (spaced out, for a total of 3-4 hours each day). |
| October 25 | Opening ceremony (key note address, Year in Review, Awards) SB Symposium | Possibly Zoom or possibly E-posterboards pending discussion and quote (Vera to be MC). A 3-3.5-hour session in total, about an hour to 90 minutes for the opening and ~4 Symposium talks, much like last year. Key note address from a Chinese scientist. |
| October 26-29 | Science sessions | Science Board Discussion needed to determine how many parallel sessions to aim for. PICES Sec can host two. China could possibly host some? Suggest a 2-hour session for each. Fill slots using the rankings from SB last year, after asking convenors if they want to go ahead. |
| October 28-29 | Virtual Poster session (something like image below) | Waiting on confirmation that the E-posterboards platform is accessible from China. My suggestion is that we have E-posters available to view for a couple of days prior to a live event where presenters can interact with their audience. Suggest 2x 1 hour slots (1 most favorable for Asian time zones, 1 most favorable for North American time zones that don't conflict with the Science sessions. If this platform won't work, will search for another or ask China to host? Would be a cost to this. Submissions can be for Committee paper sessions, and for science sessions as in a typical annual meeting. Committees will need to appoint judges for Early Career presentations. Science Board Discussion, and vote to recommend /not recommend use of ePosters platform for Virtual Poster session. |
| October 30 th or later | Presenter Awards for ECS. | Announced on Webpage and Twitter (no live ECS award presentations) |
| Week of November 1 | Governing Council | Likely on Zoom, TBD |



Appendix B: SG-SciCom Survey for GC and PICES Executive Alumni

SURVEY LINK: <https://forms.office.com/r/vLFn6gtuQX>
PICES Science Communications Survey for GC and PICES Executive Alumni

Dear Members of PICES Governing Council and PICES Executive Alumni,

As the Governing Council (and former PICES Executives), you are the leaders who best understand PICES goals and organizational priorities, and how PICES activities support the scientific requirements of PICES member countries. Therefore, the PICES Study Group on Science Communication (SG-SciCom) would like direct feedback from you as PICES leaders, to help us effectively plan PICES Science Communication priorities and deliverables going forward. We have prepared the survey below to garner your feedback. It should take you approximately 6 minutes to complete.

In particular, as the United Nations Decade of Ocean Science for Sustainable Development (UNDOS) has recently begun, any specific suggestions you have for PICES Science Communication initiatives to support PICES UNDOS plans are welcomed. We hope you will also provide any other advice or information you feel SG-SciCom should consider in our planning for PICES Science Communication deliverables.

Thank you, from SG-SciCom members, for your support of our efforts to improve PICES Science Communications - we appreciate your time, wisdom and insight!

For more information on SG-SciCom TORs, please see: <https://meetings.pices.int/members/study-groups/SG-SciCom>

1. What primary PICES goals / priorities should PICES Science Communications support?
2. Which PICES Science Communications deliverables would best support PICES goals and priorities?
3. PICES Science Communications can be used to help inform -- through research findings and research synthesis products -- policy and management decisions that ultimately enhance marine ecosystem health. What is your vision of the sort of positive ocean ecosystem changes that PICES Science Communication can help inspire?
4. If you have any comments or suggestions regarding PICES Science Communications as they relate to the United Nations Decade of Ocean Science for Sustainable Development (UNDOS), please provide them here.
5. Please identify three primary audiences PICES should aim to reach when communicating its scientific findings. (Example: 1. PICES conference participants, 2. General public, 3. School children.). Please number your audiences 1-3 as shown so that you can rank them in the next question.
6. For the three audiences you identified as audiences 1-3 in question 5, please rate the importance of these audiences, from least important to very important.

| | Least important | Important | Very important |
|------------|-----------------|-----------|----------------|
| Audience 1 | | | |
| Audience 2 | | | |
| Audience 3 | | | |

7. Please list the Science Communications tools or media (e.g. brochures, media releases, website, posters, videos, white papers, books, podcasts, etc.) you think will best enable PICES to reach its priority audiences. These suggestions can include communication methods not currently being employed by PICES.
8. What additional information or advice do you have for PICES SG-SciCom as we plan PICES Science Communications moving forward?
9. What is your age in years?



Report of PICES Science Board: 2021 Intersessional Meeting (ISB-2021)
held online via Zoom, from May 11/12 (North America) to 13/14 (Asia).

- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70 or older
- Prefer not to answer

10. How many years have you been participating with PICES?

11. Please provide information on your career sector. Select all that apply.

- Academic
- Government
- Non-Governmental Organization (NGO)
- Private Sector

12. Please briefly describe your discipline.

<submit>