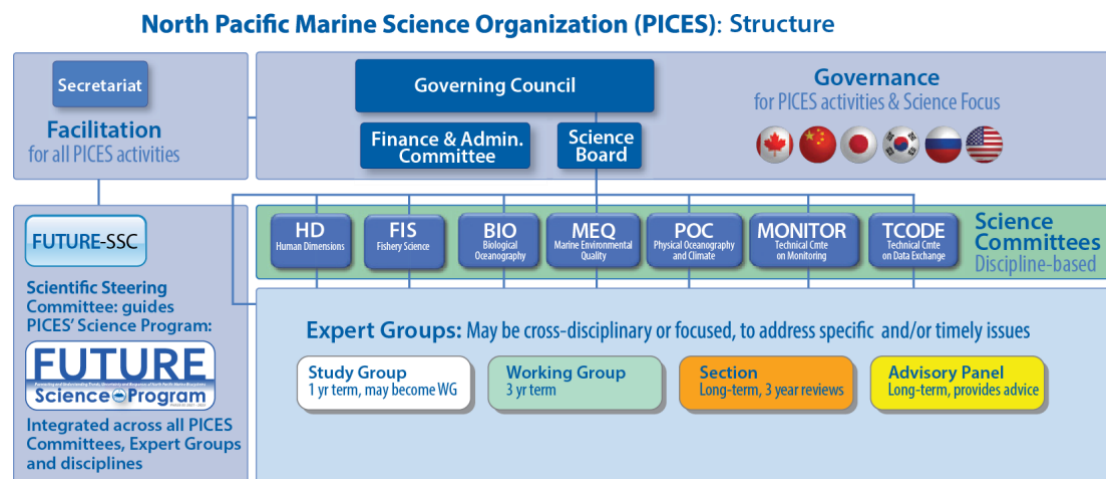


**SCOR and PICES Collaborative Activities**  
 Report from PICES for the 2022 SCOR Annual Meeting  
 (4-6 October 2022, Busan)  
 Prepared by Sanae Chiba

**1. PICES: What We Are**

The North Pacific Marine Science Organization (PICES) is an intergovernmental scientific organization established by an international convention in 1992, in order to promote and coordinate marine scientific research in the North Pacific and adjacent seas. Our current member countries are Canada, Japan, People’s Republic of China, Republic of Korea, Russian Federation and the United States of America. PICES’ goals are to (1) advance scientific knowledge and capacity available for the member countries, including information on human activities affecting, and affected by marine ecosystems, and (2) provide a mechanism for collaboration among scientists in addressing timely and critical scientific questions about the North Pacific. Celebrating its 30 year anniversary in 2022, PICES has become a major forum for the discussion and sharing of marine science in the North Pacific. Information on the Organization and its activities is available on the PICES website at <http://www.pices.int>.



**Figure 1. PICES Structure:** Over 20 Expert Groups plan and implement scientific projects in multidisciplinary areas under the auspices of seven Standing Science/Technical Committees. The PICES flagship programme, FUTURE, integrates outcomes of the Expert Groups on the Pacific Social-Ecological-Environmental System (SEES) Framework that enables understanding of the combined system elements of the Climate System, Processes, Marine Ecosystem, and the Human System.

**2. Update of PICES Activities relevant to SCOR for 2021-2022 and Beyond**

**i. Annual meeting**

In October 2021, PICES held its annual meeting virtually for the second consecutive year, with China as the local host. The virtual meeting option, though it was not initially planned, resulted in the substantial reduction of the PICES carbon footprint over two years: we saved 3,254 tonnes of carbon which is equivalent to 7,324 barrels of oil. **PICES 2022 will be held in Busan, Korea for September 23 - October 2**, which will be the long-awaited in-person meeting for the PICES community. The experience during the pandemic brought us the benefits of an environmentally sustainable, cost-effective, and less time-consuming alternative to the traditional in-person meeting structure. That led us to the establishment of a new Study Group: Generating Recommendations to

Encourage Environmentally- Responsible Networking (SG-GREEN) to consider how best to balance the benefits of each option.

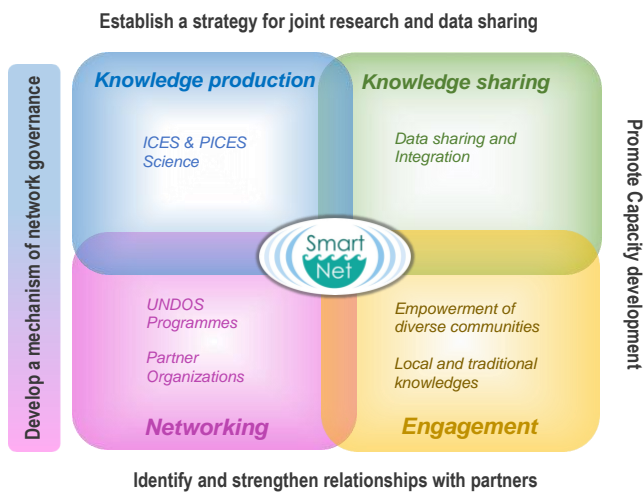
ii. United Nations Decade of Ocean Science for Sustainable Development (UNDOS) Programme: SmartNet

ICES/PICES joint programme “**Sustainability of Marine Ecosystems through global knowledge networks (SmartNet)**” was endorsed as one of the first batch of [UNDOS Programmes](#) in June 2021. To ensure that regional scientific knowledge can be provided by international communities to address global environmental and socio-economic challenges, SmartNet will be expanding its science network to non-ICES/PICES countries and organizations including the communities in the Southern Hemisphere and Pacific Small Island Developing States (SIDS).

**SmartNet: Emphasizing Collaboration Areas**

SmartNet will establish a global knowledge network for ocean science by strengthening and expanding the collaboration of ICES/PICES and partner organizations. It will support and leverage ICES/PICES member countries' activities related to UNDOS, by emphasizing areas of mutual research interest including **climate change, fisheries and ecosystem-based management, social, ecological and environmental dynamics of marine systems, coastal communities and human dimensions**, and **communication and capacity development**. It also incorporates strategies to facilitate **UNDOS cross-cutting inclusivity themes** relating to gender equality, early career engagement, and involvement of indigenous communities and developing nations in the planning and implementation of joint activities.

Contacts:  
[Jörn Schmidt](#), ICES, [Steven Bograd](#), PICES



PICES hopes to explore the opportunities to further synergise the activities of SCOR and PICES through the implementation of SmartNet, particularly in the area of UNDOS cross-cutting challenges such as capacity development, promotion of early career ocean professionals (ECOP) (see next section).

**Figure 2.** SmartNet structural landscape

iii. SCOR/PICES Joint ECOP Event

The newly established PICES Advisory Panel: AP-ECOP has enthusiastically been working across PICES Expert Groups and also expanding the ECOP network at a global scale, for example, through the participation in the [ECOP event at UN Ocean Conference](#) held in Lisbon in July this year. **SCOR, PICES and KIOST (Korea Institute of Ocean Science and Technology)** plan to hold a **joint one-day ECOP Session** “Towards a better capacity for ECOPs” on October 3<sup>rd</sup> in Busan, Korea, where Annual Meetings of both organizations are held back-to-back. The major aims of the event are to

introduce international science organizations to Korean ECOP, showcase the status and needs of ECOP capacity in different global regions and programmes, and to identify the regional and case specific strategy for capacity development. ECOPs and mentors from PICES, SCOR community and Korea will participate in the event.

**SCOR – PICES Collaboration in 2021-2022**

SCOR and PICES have demonstrated a cooperative model for an international non-governmental organization and a regional intergovernmental organization to share their strengths in championing ocean science. Continuing and expanding collaboration between PICES and SCOR is based on the recognition that **PICES can play an important role in bringing a North Pacific perspective to the global activities of SCOR, by participating in and implementing these activities in the region.** The collaboration is implemented through activities in the following areas:

- i. Contribution of scientific expertise to the relevant international scientific projects
- ii. Reciprocal representation of the SCOR and PICES Executives at annual meetings
- iii. Capacity development

i. Contribution of scientific expertise to the relevant international scientific projects

PICES contributes scientific expertise to SCOR-sponsored international large-scale ocean research projects e.g., Harmful Algal Blooms [GlobalHAB], IMBeR, SOLAS, GACS [Global Alliance of Continuous Plankton Recorder Surveys]), and to SCOR-supported projects e.g. (IOCCP [International Ocean Carbon Coordination Project]). PICES also has supported several **SCOR Working Groups (Table 1)** by sending experts to WGs and co-funding their activities such as summer schools (see the section iii. Capacity Development for an example).

**Table 1.** Current SCOR WGs which the PICES community has contributed to.

	Title	Period of Activities
WG154	Integration of Plankton-Observing Sensor Systems to Existing Global Sampling Programs (P-OBS)	2018-
WG155	Eastern Boundary Upwelling Systems (EBUS): diversity, coupled dynamics and sensitivity to climate change	2018-

ii. Reciprocal representation by the SCOR and PICES Executives at annual meetings

SCOR and PICES have regularly exchanged observers to each other’s annual/executive meetings in the past several years, and PICES representatives have presented activity updates at the SCOR annual meeting. The SCOR President (2020-2022), Dr. Sinjae Yoo, who is also the former PICES Science Board Chair, regularly represented SCOR at the PICES Annual Meeting. SCOR Executive Director, Dr. Patricia Miloslavich was invited to the Science Board meeting at PICES 2021. To further enhance the collaboration in the area of capacity development, the current PICES Deputy Executive Secretary, Sanae Chiba has been a member of the **SCOR Capacity Development Committee** from 2021.

iii. Capacity development

**SCOR and PICES are both strong proponents of capacity development.** PICES has appreciated the funding support of SCOR for early career scientists and scientists from developing countries to attend PICES sponsored international conferences (**Table 2**). In July 2022, SCOR funded USD 6000 for ECOP participants from developing countries to attend the ICES/PICES/DFO sponsored “[4th Early Career Scientist Conference](#)” held in Newfoundland, Canada (see the [column](#) for the details).

SCOR has committed 5000 USD to support the participation of scientists from developing countries to the conference “Small Pelagic Fish: New Frontiers in Science for Sustainable Management” in Portugal in November 2022. PICES has applied for travel support for developing country participants at the [5<sup>th</sup> Effect of Climate Change on the World’s Ocean](#) (ECCOW5) to be held in April 2023, in Bergen, Norway.

**Table 2.** SCOR Relevant International Symposia that PICES co-sponsored/organised in 2022 -2024. See the links for the details of meetings.

Date	Conference Title	Place	Note/website
Feb 2022	<a href="#">AGU Ocean Science Meeting (OSM)</a>	Virtual	PICES co-sponsors the meeting.
Jul 2022	4th <a href="#">Early Career Scientist Conference</a>	Newfoundland Canada	Organizers: ICES/PICES/DFO Canada <b>SCOR funded 6000 USD for ECS from developing countries</b> *see <a href="#">column</a> for the details
Sept 2022	<a href="#">SOLAS Open Science Conference</a>	Cape Town, South Africa	Organizer: SOLAS <b>SCOR and PICES co-sponsor the meeting.</b> PICES support PICES ECOP travel
Nov 2022	<a href="#">Small Pelagic Fish (SPF) Symposium</a>	Lisbon, Portugal	Organizers: ICES/PICES/FAO <b>SCOR has committed 5000 USD.</b>
Apr 2023	<a href="#">5<sup>th</sup> Effect of Climate Change on the World’s Ocean</a> (ECCOW5)	Bergen, Norway	Organizers: ICES/PICES/IOC/FAO <b>PICES applied for SCOR travel support for ECS from developing countries.</b>
Mar 2024	7 <sup>th</sup> Zooplankton Production Symposium (Website: TBA)	Hobart, Australia	Organizers: ICES/PICES
2024 (date: TBD)	<a href="#">MSEAS: Marine Socio-Ecological System Symposium</a>	TBD	Organizers: ICES/PICES/NOAA. Initially planned to be held in 2020.

Every year, PICES sponsors capacity development events organized by its Expert Groups. In 2022, two virtual Summer Schools “Ocean Big Data Virtual Summer School” and “Ocean Turbulence: From Observing to Research” will be held in August (**Table 3**). Both events were originally planned as in-person events including a field training programme, but had to be modified to virtual events due to the influence of the Pandemic. PICES also regularly supports capacity development events organized by the SCOR partner organizations including SOLAS and IMBeR (**Table 3**).

**Table 3.** Capacity Development events organized by PICES and/or SCOR relevant partner organizations in 2022 and beyond. See the link for the details of the Event.

Date	Event Title	Place	Note/website
August 2022	<a href="#">Ocean Big Data Virtual Summer School</a>	Virtual	Organiser: PICES, Ocean Networks Canada
August 2022	<a href="#">Ocean Turbulence: From Observing to Research</a>	Virtual	Organiser: PICES, Institute of Oceanography, CAS, China
June 2023	<a href="#">SOLAS Summer School</a>	Cape Verde, Senegal	Initially planned to be conducted in 2021 SCOR Sponsors the event and PICES supports travel of ECOP participants.
2022?2023?	<a href="#">IMBeR ClimEco8 Summer School</a>	TBA	No information available yet. Some participants from PICES are expected.



## Report of the 4<sup>th</sup> ICES-PICES Early Career Scientist Conference, St John's, Newfoundland, Canada, July 17-21, 2022.

The ECSC4 Conference had received endorsement in 2020 as a United Nations Decade of Ocean Science for Sustainable Development (UNDOS) activity. This was the first joint ICES-PICES conference convened since before the COVID-19 pandemic. Despite the international travel disruption, the event brought together about 140 people from 20 countries - 117 ECS presenters and Scientific Steering Committee (SSC) members (see table below), mid and late career organizers and key-note speakers, volunteer helpers and judges - in a successful and vibrant conference. There was also a pre-conference evening net-working panel and workshop hosted by the Marine Environmental Observation, Prediction and Response Network (MEOPAR) and a Global ECOP workshop led by the Canadian node.

### Residency of Early Career Scientist participants

Country	Number of participants	Country	Number of participants
Australia	1	Mexico	1
Canada	33	Netherlands	1
Denmark	5	Norway	7
France	1	Poland	4
Germany	3	Portugal	4
Iceland	1	Republic of Korea	4
Ireland	1	Spain	3
Italy	3	Sweden	3
Latvia	2	United Kingdom	10
Lithuania	5	United States	25

SCOR funded US\$ 6000 for travel support of early career scientists from developing countries to attend this meeting. Although selected two of three funding recipients could not attend because of the unfortunate travel circumstances, Jorge Moreno (Mexico) managed to participate in and gave his talk "*Oceanographic and atmospheric phenomena effect on the abundance and distribution of the Giant Manta Ray at the Revillagigedo archipelago, Eastern Tropical Pacific*". The conference also received financial support from MEOPAR, the Ocean Frontier Institute, and the National Science Foundation through Woods Hole Oceanographic Institute. This additional support was invaluable in being able to deliver this event.

This was the fourth Conference in the series, each held 5 years apart. The value of such an event to the ECS communities of ICES and PICES was extremely evident – as well as the enthusiastic discussions in each session there was a lot of activity on social media and many positive experiences expressed by the attendees on Twitter using #ecsc4. PICES now takes its turn to find a host for the fifth ECS Conference, slated for 2027.



*Modified from the original report by Sonia Batten*