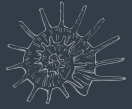


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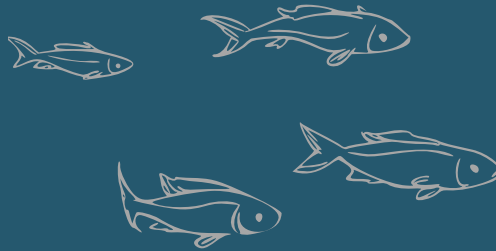
Enhancing Early Career Ocean Professional Engagement in PICES



Prepared by the
Early Career Ocean Professional
Study Group (SG-ECOP)



PURPOSE



For nearly two decades, PICES has provided support for the participation of early career ocean professionals (ECOPs) in workshops and symposia and has recognized the excellence of presentations by ECOPs at its Annual Meetings. The purpose of this document is to assess the representation of ECOPs in PICES, explore opportunities for enhanced engagement, and provide recommendations to PICES on ECOP engagement.





BACKGROUND

To remain vibrant and relevant over the long-term, professional organizations must attract, integrate and retain diverse perspectives, especially those of early career professionals. The Early Career Ocean Professionals Study Group (SG-ECOP) was formed to highlight ways in which PICES currently attracts ECOPs, to identify areas where the organization could be adapted to foster greater ECOP participation, and to develop a framework for ensuring ECOPs remain engaged over the long-term.

Stronger integration of ECOPs within PICES will benefit ECOPs via:

- 1) Knowledge sharing, training, and mentorship;
- 2) Direct experience in relevant professional skills such as international collaborations, intergovernmental engagement, science communication, and conference organization;
- 3) Employment, support, or other professional opportunities.

Complementary, enhanced linkages between PICES and ECOPs will benefit PICES via:

- 1) Increasing diversity, initially across career-stages, but eventually by incorporating a greater number of disciplines and sectors and by developing and strengthening relationships with countries and organizations located in different ocean basins;
- 2) Expertise in new research techniques and greater emphasis on science communication;
- 3) Greater capacity to achieve PICES' mandate and to engage in new international initiatives (e.g., UN Ocean Decade).



ECOP DEFINITION



ECOP is broadly considered an ocean professional who is in the initial phases of his/her/their career and self-identifies as an early career scientist or practitioner. We recommend that PICES use an expanded definition for ECOPs to include professionals who graduated with a degree more than 5 years ago but who still consider themselves as early in their career.

The definition we propose is:

Self-identified: Someone who self-identifies as an early career professional and in the beginning of his/her/their career

Within 10 years of obtaining a degree or 5 years in a current position: 10 years or less since obtaining a degree or less than 5 years in a current job or profession

We suggest that this broader definition be applied to the general PICES ECOP definition, but recognize that PICES ECOP award(s) (e.g., PICES Zhu-Peterson award criteria) could be based on different rules, depending on needs or funding. In addition, this definition would also be aligned with the standard used by the Ocean Decade ECOP Program.



PICES COMMUNITY ASSESSMENT

In early July 2021, the SG-ECOP, in collaboration with the Study Group on Science Communications (SG-SciCom), distributed an online survey to all PICES Committee and Expert Group members.

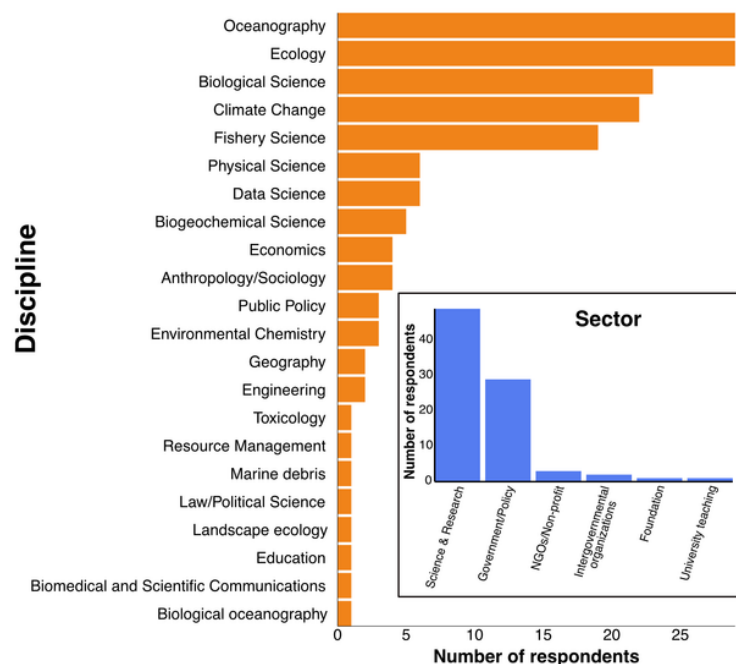
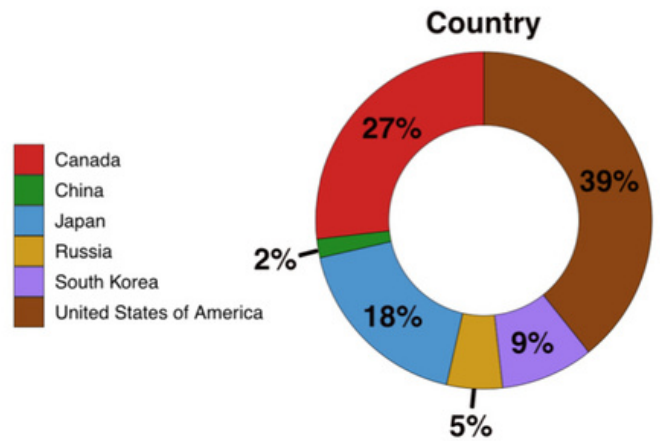
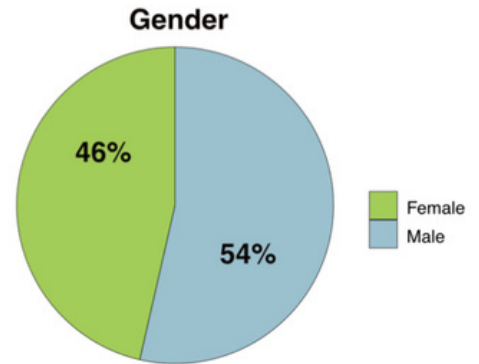
The primary goal of this survey was to better understand the diversity and demographics of active PICES members by consulting the PICES community.

Out of 399 individuals reached by email, 56 responses were recorded (~15%), including 12 self-identified ECOPs.*

Key demographic results show a **relative gender balance among respondents**. While members from Canada and the United States were overrepresented, making up more than 60% of all responses, there was a relatively low turnout of PICES members from China (2%), Russia (5%) and Korea (9%).

Members from Expert Groups are working across a **wide and diverse range of disciplines**, covering both the marine natural and social sciences, with more emphasis on the former (e.g., oceanography, ecology and biological science).

The vast majority of respondents are **primarily involved in science and research activities**, although more than half of them had reported being active in the government and policy spheres. No other sectors (e.g., private and non-profit) were particularly well-represented across the survey sample.



*Following the administration of the survey, we realized that colleagues from some countries were likely unable to access the survey since it was conducted in Google Forms. Thus, we would recommend any future surveys to be run with Slido (or other accessible service) or run via a mixture of platforms that would guarantee every member country access.



PICES ECOPS ASSESSMENT

In early 2020, an online survey was also distributed to PICES ECOPs.

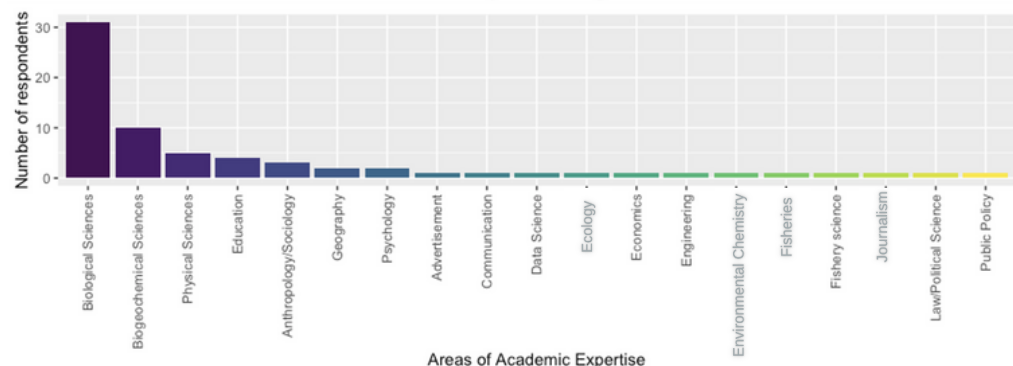
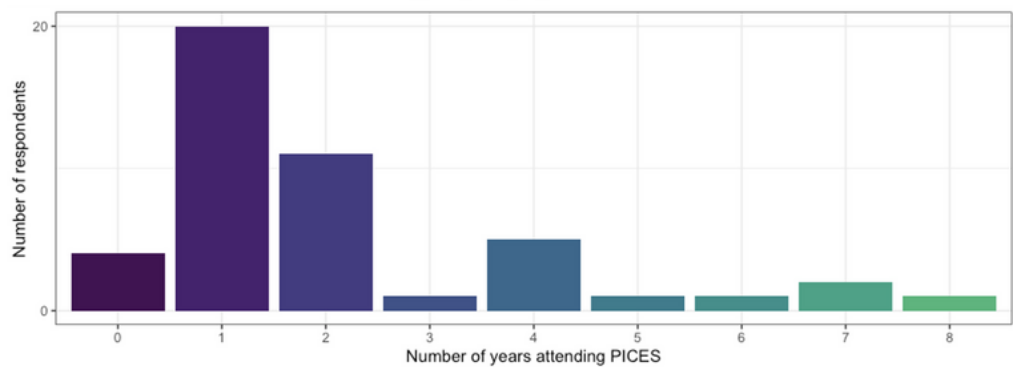
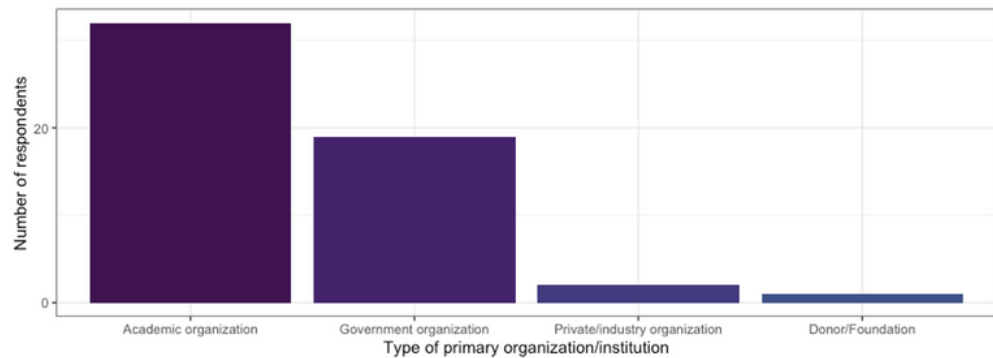
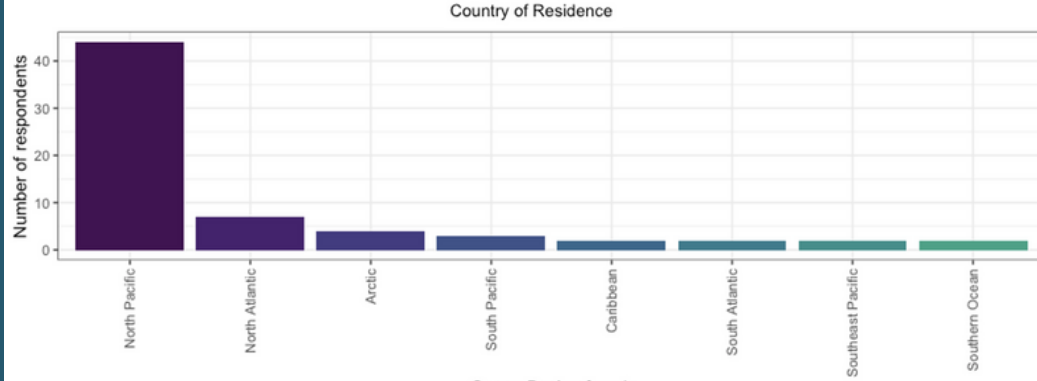
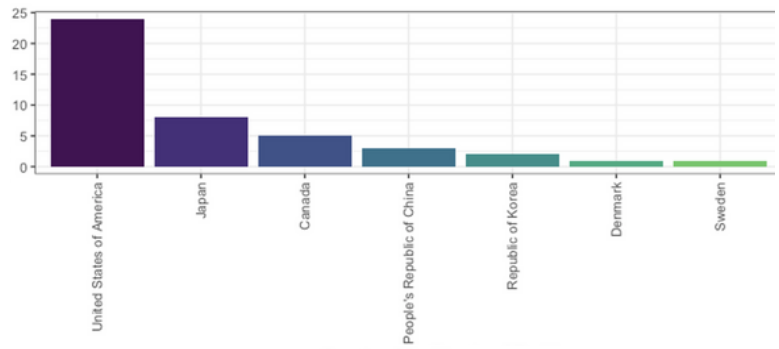
The primary goal of this survey was to better understand the demographics and views of PICES ECOPs.

ECOPs represent PICES member countries along with other nations globally. Similar to the broader PICES survey, China, Korea, and Russia were not as well represented in the ECOP survey, which suggests that recruitment may initially target these member countries.

PICES ECOPs predominantly work in the North Pacific ocean basin, but span the globe.

PICES ECOPs are mostly from academic or government organizations, with a few from industry organizations and foundations. Many are relatively new to PICES events.

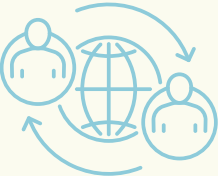
PICES ECOPs have a diversity of academic expertise, primarily from biological and physical disciplines, but spanning many different disciplines from education to public policy.



PICES ECOPs have a range of professional interests including those related to fisheries, climate change, ecology and ecosystems, science communication, policy, conservation, among many others.



83% of ECOPs were not part of an existing Early Career Professional network which suggests that a PICES ECOP community may be important to connect ECOPs in the North Pacific.



Key needs & goals of PICES ECOPs

- Networking & collaboration**
- Better understanding of PICES & how to get more involved**
- Mentorship by experienced PICES members**
- Engagement in PICES** related to: interdisciplinary science collaboration, policy, science communication, and diversity, equity, and inclusion



RECRUIT

How do we initially identify & recruit new ECOPs?



Active recruitment of ECOPs is important in any organization but possibly even more so in an international cooperative organization like PICES. Active recruitment not only demonstrates that PICES values ECOPs and their role in the organization, but also provides opportunities for new and younger members to become active participants. Recruiting and initially engaging ECOPs in PICES mainly happens through PICES events, such as the Annual Meeting, workshops, and summer schools.

We recommend that PICES continue to encourage ECOP participation through professional support such as travel to PICES-sponsored events, open presentation sessions, opportunities to host engaging workshops, and early career scientist awards (e.g., Zhu-Peterson and best presentation awards).



RECRUIT

RECOMMENDATIONS

Revitalize PICES communications so ECOPs can easily understand PICES activities



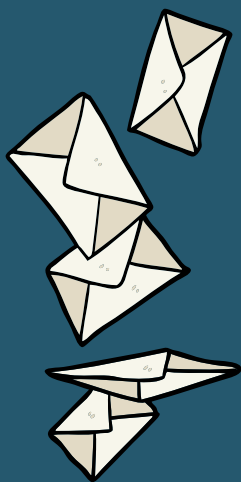
This may require a website face-lift and “About” page. In addition, the development of an ECOP section on PICES website could highlight ECOP activities, feature ECOP profiles, facilitate mentor-mentee pairing and communication, and encourage participation. SG-SciCom has recommended modification of the PICES website to make it more user-friendly, so we suggest that this recommendation could be implemented by SG-SciCom. This could also include a one-page pamphlet on PICES structure and objectives in an easily disseminated form and in the language of all PICES member countries. In addition, communication could also include opportunities to connect to youth such as through continuing outreach/presentation to local schools during the Annual Meeting.

Clearly articulate the benefits of participating in PICES



We recommend ensuring that the value of participating in PICES is communicated clearly and is aligned with incentives from different sectors, cultures, and institutions. For example, deliverables associated with PICES Expert Groups and other PICES structures could be aligned with specific sectors (e.g., academic/research – manuscripts and peer-reviewed publications; data science – applications & data visualizations; communications – articles, videos, etc.).

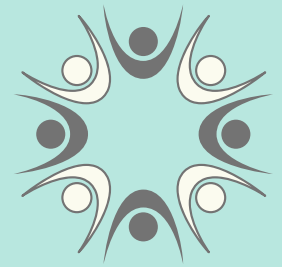
Recruit diverse new members through existing networks, personalized invitations, & inclusive, accessible, and welcoming language



One of the key recommendations in recruiting new members to PICES was to ensure that invitations and recruitment are personalized. For example, personalized invitations to PICES Annual Meetings could be from regional or sectoral representatives and made available in all six member country languages. This could include requesting national members of expert groups to actively recruit new members from their domestic meetings. In addition, PICES & ECOP activities could be advertised at existing society meetings within each member country. A recruiting pamphlet or one-pager could be distributed to existing ECOP or domestic professional networks and relevant events. Finally, for surveys and other communications, it may be helpful to have introductions in native languages.

ENGAGE

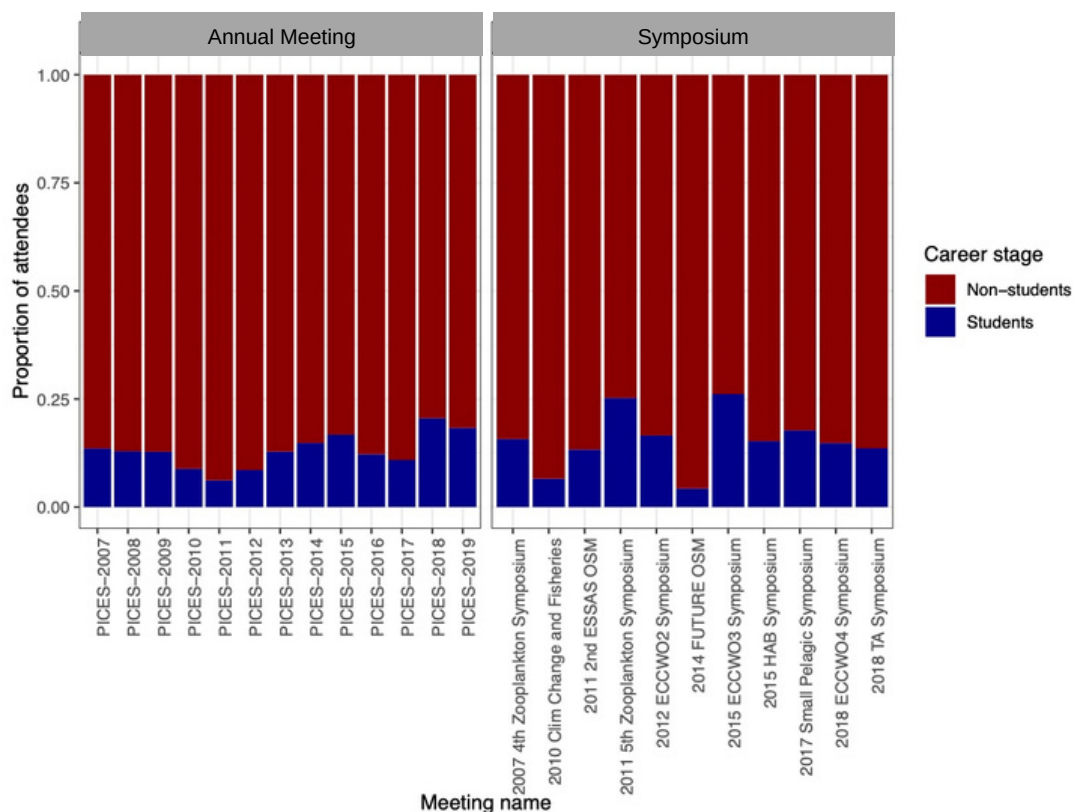
How do we initially engage new ECOPs?



PICES events, specifically the Annual Meeting & workshops serve as a great opportunity to initially engage ECOPs in PICES

Ideally, our target distribution of career stage for Annual Meetings and its workshops would be split into thirds by early, mid, and late career attendees. Given that a relatively equal distribution is our goal, then records of previous meeting attendees were below that (~10% of attendees at PICES Annual Meetings are 'students'). However, non-student ECOPs (e.g., postdocs) would not be registered as 'ECOP' (i.e., student) in these plots, based on data from the PICES Secretariat. Including these non-student ECOPs may double the percentage of total ECOPs (students and post-grads) at these meetings to ~20%, though that percentage is currently unknown. In conclusion, PICES meetings likely have lower ECOP participation than would be ideal, but perhaps not that much lower (~20% predicted versus 33% ideal).

As such, one recommendation is for PICES to collect better demographic data from meeting and symposium attendees since this would facilitate more accurate assessment of ECOP participation in PICES.



ENGAGE

RECOMMENDATIONS



Develop and curate resources to help ECOPs integrate and participate effectively in PICES

This could include establishing an ECOP opportunity section on the PICES website, and broadcast future opportunities via Twitter, and developing an introductory pamphlet as part of the PICES registration package (e.g., now you have joined PICES and here is what you need to know). Both of these could be developed in collaboration with SG-SciCom. In addition, a 1-2 page pamphlet could be circulated at meetings and symposia with a list of PICES engagement opportunities. The first ECOP opportunities flyer has been created and is in the process of being translated into all of the PICES member country languages. Once translation is complete we will share the flyer via email, social media and the PICES website.



Cultivate a sense of community to retain members

This could include encouraging ECOP community building and engagement at the Annual Meeting & other PICES events, such as through workshops or social events that facilitate the continued engagement of ECOPs beyond the meeting. For example, an ECOP workshop could introduce the current low, medium and full commitment opportunities for engagement in PICES and help to facilitate incorporation into a mentoring program through a speed networking session and/or a sign-up sheet for shadowing opportunities with Expert Groups. In addition, a first time attendee sticker could be included on name badges at meetings and other events to foster a sense of community.

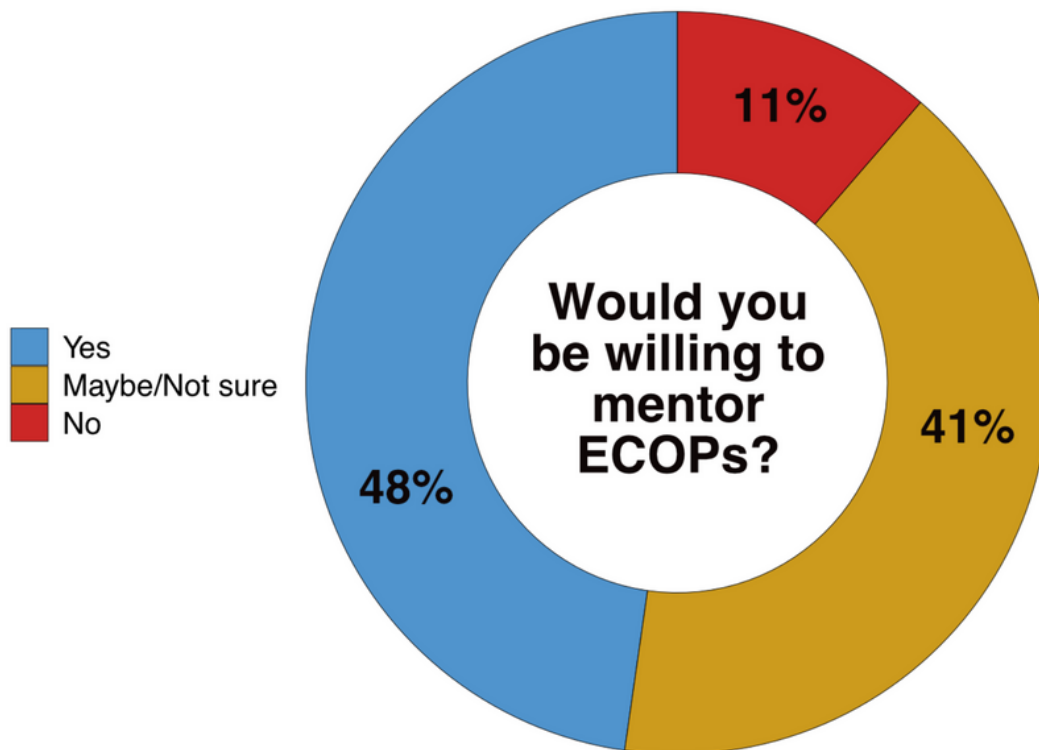
SUSTAIN

How do we sustain engagement?



The probability of retaining ECOPs within PICES will increase if there are opportunities for active participation in key aspects of the organization. These include participating in and collaborating on science, research and communication projects and activities within Expert Groups (such as Study Groups, Working Groups, Sections, Advisory Panels or Special Projects), providing input to decision-making bodies (which include the Science Board and Governing Council), and supporting the Secretariat in the operational aspects of PICES.

Many experienced PICES members expressed their willingness to mentor ECOPs, so mentorship and knowledge sharing coupled with ECOP engagement in Expert Groups could help to sustain engagement of ECOPs in PICES.



SUSTAIN

RECOMMENDATIONS



Establish a PICES mentorship program

We recommend developing a mentorship program to help build and nurture relationships during and beyond Annual Meetings, and which can be especially valuable for some ECOPs. Mentees and mentors could fill out profile forms to match expertise/interests and could have an initial meeting to discuss what they are looking for from the relationship and establish the level of commitment they are expecting. The mentorship program can be modeled off existing programs, such as the Peer2Peer mentorship program established by the Global Ocean Acidification Network or the MPOWIR, a community-based program that offers mentoring services to early career physical oceanographers, especially junior women. The PICES mentorship program could also be developed in partnership with other organizations and initiatives such as the Global ECOP Ocean Decade Program, and be advertised as a key benefit of being part of PICES.

Develop an ECOP Advisory Panel & encourage ECOPs to join PICES Expert Groups



An ECOP-centric advisory panel could help to incorporate diverse early career ocean professionals (ECOPs) into the PICES scientific scope and organizational capacity. The advisory panel could support and direct ECOP participation within PICES broadly, as well as encourage ECOP participation in specific areas and topics of interest to the PICES community.



In addition, ECOPs could “shadow” the members of an Expert Group (EG) at their meetings, workshops or topic sessions preceding or during the PICES Annual Meeting or within the context of the mentorship program. If the ECOP would like to join the EG, they can reach out to the EG co-chairs to express their interest. The EG co-chairs would then make a request to their Parent Committee to add members. The Parent Committee would then submit the request to Science Board for approval, and the final decision will be made by the member of Governing Council (GC) representing the ECOP’s country. Any ECOP can reach out to the PICES Secretariat, members of Science Board or Governing Council with questions about how best to engage with PICES.



We could ensure that there are ECOP representatives on PICES integrative science program Steering Committee (i.e., FUTURE SSC). This could include ECOP engagement and advancement as part of the SSC terms of reference. This could also include offering ECOP internships to support and collaborate with the PICES administration at the Secretariat and post-doc or other professional positions focused on integrating research among PICES-affiliated researchers.

SUMMARY

RECOMMENDATIONS



Establish an ECOP-centric advisory panel to incorporate diverse early career ocean professionals (ECOPs) into the PICES scientific scope and organizational capacity. This includes identifying opportunities for participation, recruiting diverse ECOPs, and sustaining ECOP engagement. The advisory panel will support and direct ECOP participation within PICES broadly, as well as encourage ECOP participation in specific areas and topics of interest to the PICES community.



Continue to explore opportunities for ECOP representation in PICES through enhanced demographic data collection and assessment. Continue to assess opportunities to enhance representation in PICES Expert Groups and organizational structures. This could include identifying reasonable, quantitative benchmarks for ECOP participation, within PICES as a whole and in specific Expert Groups, decision-making bodies, and other key administrations and improving statistical information by tracking the demographics of the PICES Annual Meeting and community.



Recruit diverse ECOPs through revitalized communications & existing networks. Actively work to recruit ECOPs, from different regions, sectors, and disciplines into PICES by revitalizing communication and connecting with existing networks. This could include supporting the PICES website, developing an ECOP section on the PICES website, and asking members of PICES to actively invite ECOPs to the Annual Meeting and Committee and Expert Group meetings. We suggest that invitations be personalized, such as from regional representatives, and include all six member country languages.



Engage ECOPs through professional opportunities in Expert Groups, programs, & other aspects of PICES structure. Incorporate ECOPs into all levels of PICES, including participation in Expert Groups and the Secretariat and ultimately leadership roles within the organization. For example, this could include post-docs or interns supporting Expert Groups or the Secretariat. In addition, ECOPs could see which Expert Groups align with their areas of interest, join their meetings, and contact the Expert Group co-chairs for advice and guidance. We also recommend that EGs have at least 25% ECOP members.



Foster inter-generational exchange through mentorship programs and activities. Foster inter-generational exchange and mentorship between experienced PICES members, ECOPs, and emerging ECOPs (e.g., youth), such as by encouraging later career ocean professionals to mentor ECOPs who are eager to participate in expert groups and other organizational bodies.



Collaborate with partners to develop and advance inclusive engagement in the North Pacific and internationally. Work with other international, regional, and national organizations, initiatives and/or countries to further ECOP engagement, especially those related to mentorship, diverse engagement, and early career professional recruitment, retention, and participation. This could include developing a North Pacific ECOP network to connect within and across regions globally and within the context of international processes, like the UN Decade of Ocean Science for Sustainable Development (2021-2030).

ACKNOWLEDGEMENTS & REPORT PREPARATION

This report was developed by the PICES Early Career Ocean Professional Study Group (SG-ECOP) with input from the PICES community. The report was prepared by SG-ECOP members: Erin V. Satterthwaite (USA), Alexandra C.D. Davis (Canada), Cameron Freshwater (Canada), Raphael Roman (Japan), Aoi Sugimoto (Japan), Pengbin Wang (China), Hanna Na (Korea), Anna Kurnosova (Russia), Hannah Lachance (USA), and Matthew Savoca (USA); ECOP mentors including: Vera Trainer (USA) and Steven Bograd (USA); and with input from members of the SG-ECOP including: Hiroaki Sugino (Japan), Yanhui Zhu (Japan), Di Qi (China), Taylor Goelz (USA), and Bum Soo Park (Korea).

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