POC Committee Meeting Agenda (*DRAFT*)

PICES 27th Annual Meeting, October 2018

Dates: **October 28th, 6:00 pm - 8:00 pm** / **October 30th, 2:00 pm - 6:00 pm**

Venue: Yokohama, Japan

**First half of POC Business Meeting, Sun. October 28, 6-8pm (2 hours)**

1. Welcome and introductions remarks (5 min)
2. Membership updates (5 min) (Appendix I)
3. Changes to, adoption of, agenda and appointment of rapporteur (5-10 min)
4. POC Sessions at PICES 2018 (5 min) (Appendix II)
5. **Publications** updates (5 min)
	* Final Report of WG 27 on North Pacific Climate Variability and Change
	* Final Report of WG 29 on Regional Climate Modeling
	* Scientific Report AP-CREAMS PICES Scientific Report Oceanography of the Yellow and East China Seas (EAST-II region)
	* Scientific Report S-CC on Basin-wide Ocean Acidification and De-oxygenation
6. Publications proposals in 2018 and beyond (5 min)
7. **Upcoming meetings** relevant to POC (5 min) (Appendix III)
8. Priority of items with funding implications
9. POC Best Presentation and Poster Awards, Early career judgment for POC (Appendix V)
10. **Review POC messaging board**, documenting business meetings, topic sessions and workshops
11. **Planning for PICES 2019 & POC Action Items - Part I (7:30-8:00pm)**

**Group Dinner on October 28, location TBD**

**Second half of POC Business Meeting (4 hours), Wed. Oct. 30, 2-6pm**

1. **ExGs Progress Reports** and future plans of POC active groups (30 min)
	* S-CCME: Joint PICES/ICES Section on Climate Change Effects on Marine Ecosystems (Jan 2012-2017)
	* S-CC: Section on Carbon and Climate (Oct 2003 – 2016, still continuing)
	* WG 38: Working Group on Mesoscale and Submesoscale Processes (Nov 2016 - Oct 2019)
	* WG 40: Working Group on Climate and Ecosystem Predictability (Jul 2017 - Oct 2020)
	* AP-CREAMS: Advisory Panel for a CREAMS/PICES Program in East Asian Marginal Seas (Oct 2015 - Oct 2019)
2. Requests from and to existing ExGs
3. **FUTURE Updates** (5 min)
4. Updates from international organizations/programs (20 min) (Appendix VI)
5. **NPESR update** - North Pacific Ecosystem Status Report (10 min)
6. **Panel Discussion on future directions of POC and PICES Science Plan** (each POC member will provide a short 2-3min input)
7. **Reports from 2018 PICES Session**
	1. S6: POC/FIS: Interannual variability in marine ecosystems and its coupling with climate projections
	2. S9: POC: Meso-/submeso-scale processes and their role in marine ecosystems
	3. S11: FIS/POC: Environmental variability in Arctic and Subarctic ecosystems and impacts on fishery management strategies
8. **New Proposals** for ExGs, meetings, workshops, symposia, conferences
	* Proposal for new PICES ExGs (e.g. WG, SG, Sections)
	* Ranking of PICES 2019 proposals (Appendix IV)
	* SCOR proposal recommendation and outcomes
9. **Planning for PICES 2019 & POC Action Items - Part II (5:20-5:50pm)**
	1. Report sheet to SB
10. Other business
11. Adjourn

POC Agenda Appendices

Appendix I: POC Membership status 4

Appendix II: POC Sessions at PICES 2018 4

S5: Seasonal to interannual variations of meso-/submeso-scale processes in the North Pacific 4

S7: Ecological responses to variable climate changes and their applicability to ecosystem predictions 5

S8: Internal tides, nonlinear internal waves, and their impacts on biogeochemistry, climate and marine ecosystems via ocean turbulent mixing processes 6

S10: Ocean acidification and deoxygenation and their impact on ocean ecosystems: Synthesis and next steps 7

W4: Synthesizing projected climate change impacts in the North Pacific 7

Appendix III: Upcoming Meetings relevant to POC 8

OceanVisions2019 – Climate Summit 8

Second NPAFC-IYS Workshop 9

Future Oceans – 2nd IMBER Open Science Conference 9

2019 Ocean Observing Conference (OceanObs’19) 9

PICES-2019 Annual Meeting 9

Appendix IV: Proposed Sessions and Workshops PICES 2018 (draft) 9

Connecting Science and Communities in a Changing North Pacific 9

Appendix V: POC Best Presentation and Poster Award (draft) 11

Appendix VI: International Observers 11

# Appendix I: POC Membership status

**Canada**: James Christian, Michael Foreman (vice-chair), Jennifer Jackson

**China**: Fangli Qiao, Fan Wang, Lei Zhou

**Japan**: Daisuke Hasegawa, Shin-ichi Ito, Hiromichi Ueno

**Korea**: SungHyun  Nam, Chan Joo Jang, Hee-Dong Jeong

**Russia**: Vyacheslav Lobanov, Elena Ustinova, Yury Zuenko (Vice Chair)

**USA**: Steven Bograd, Emanuele Di Lorenzo (Chair), Jerome Fiechter

# Appendix II: POC Sessions at PICES 2018

## S5: Seasonal to interannual variations of meso-/submeso-scale processes in the North Pacific

Convenors:

Annalisa Bracco (USA), corresponding

Sachihiko Itoh (Japan)

Elena Ustinova (Russia)

Invited Speakers:

Yu-Lin Eda Chang (Japan Agency for Marine-Earth Science and Technology, JAMSTEC)

Bo Qiu (Department of Oceanography, University of Hawaii at Manoa)

Recent observations and model simulations suggest that the ocean currents and biogeochemistry at and near the ocean surface undergo prominent seasonal variability at the submesoscales (scales of 0.1–10 km). The submesoscale seasonal variability is a function of the ratio of lateral to vertical density gradients and, in the open ocean, depends primarily on the mesoscale activity of the flow. Consequently, in the open ocean numerous submesoscale cyclonic eddies can form in winter and the vorticity distributions are skewed towards positive values typical of cyclonic structures. This skewness is highly reduced from spring to fall. In coastal areas, on the other hand, density gradients can be forced not only by mesoscale circulations but also by freshwater fluxes from rivers or melting glaciers, resulting in a seasonal cycle that may differ significantly from region to region, and in interannual variability controlled in part by hydrological and cryospheric processes. Implications of such variability for the ocean biogeochemistry and nutrient distributions are poorly understood. This session aims at characterizing the variability of mesoscale and submesoscale circulations and its linkages with the marine ecosystem in the PICES region at seasonal-to-interannual scales. We welcome as well contributions about future changes in mesoscale variability or in mixed-layer depth and its buoyancy, and therefore in submesoscale variability, in warming climate scenarios.

## S7: Ecological responses to variable climate changes and their applicability to ecosystem predictions

Co-sponsor: CLIVAR

Convenors:

Ryan Rykaczewski (USA), corresponding

Akinori Takasuka (Japan)

Chan Joo Jang (Korea)

Invited Speaker:

Susan Allen (University of British Columbia (UBC), Canada)

In the North Pacific, regional and large-scale climate forcing impacts a range of physical and ecological characteristics including temperature, stratification, ocean circulation, upwelling, biogeochemical properties, and primary and secondary production. These characteristics, in turn, can impact the distribution, composition, and productivity of fisheries resources. However, the accuracy of many climate-ecosystem relationships derived from historical observations deteriorates when faced with new observations. Reducing the uncertainty associated with climate-ecological relationships requires an understanding of the mechanisms that govern empirical correlations. In this session, we seek presentations focused on climate-ecosystem relationships and whether such relationships can be expected to persist under future (e.g., months to decades) climate conditions. Many regional and large-scale properties of the physical ocean state can be skillfully predicted over scales of seasons (and years for some properties), and we hope that such ability, with further clarification of predictable properties in different regions on different timescales, can be used in combination with understanding of robust climate-ecosystem relationships to provide forecasts of marine ecosystems that will be useful to resource management and utilization.

## S8: Internal tides, nonlinear internal waves, and their impacts on biogeochemistry, climate and marine ecosystems via ocean turbulent mixing processes

Convenors:

Shin-ichi Ito (Japan), corresponding

SungHyun Nam (Korea)

John Barth (USA)

Annalisa Bracco (USA)

Invited Speakers:

Kristen Davis (University of California, USA)

Yign Noh (Yonsei University, Korea)

Ichiro Yasuda (The University of Tokyo, Japan)

Mixing in the ocean occurs over a broad range of scales and plays a major role in the exchanges of water, nutrients, carbon and heat, thus controlling ocean biogeochemistry and climate. Ocean turbulent mixing is often associated with internal tides and nonlinear internal waves, however the internal wave generation, propagation, and dissipation mechanisms in most of the North Pacific are not well understood due to limited observations and model capabilities. Intense ocean mixing generally occurs in presence of tidal movements around rough bottom topography such as that found on continental shelves, in straits, atop ocean ridges, and around island chains. Strong internal tides and nonlinear internal waves are commonly found in the North Pacific, particularly in shallow seas, outer and inner shelves, and nearshore zones. Recently, a periodic fluctuation of seawater properties, nutrients and oxygen concentrations synchronous with the 18.6-year nodal tide has been observed in the subarctic and subtropical oceans in the North Pacific. Some studies have suggested that the 18.6-year nodal tide might regulate a basin wide climate mode in the North Pacific that has the potential to accelerate or decelerate climate warming depending on the phase. Given the key role played by ocean mixing in controlling biogeochemical interactions and global climate variability, it is our urgent task to elucidate mechanisms of ocean turbulent mixing processes and its impacts.

We propose a topic session that involves participation from multiple PICES committees and focuses on internal tides, nonlinear internal waves, ocean mixing processes, and their impacts on biogeochemistry, climate and marine ecosystems. Specifically, we would welcome presentations on topics such as (a) observational and numerical approaches to understand internal tides, nonlinear internal waves, ocean mixing processes and their distribution, (b) turbulent mixing impacts on biogeochemistry, climate and marine ecosystems, (c) future projections of North Pacific considering 18.6-year nodal tide.

## S10: Ocean acidification and deoxygenation and their impact on ocean ecosystems: Synthesis and next steps

Co-sponsor: ICES

Convenors:

Jim Christian (Canada)

Tsuneo Ono (Japan), corresponding

Silvana Birchenough (ICES)

Invited Speakers:

Christopher Harley (Department of Zoology, University of British Columbia, Canada) Shoshiro Minobe (Faculty of Science, Hokkaido University, Japan)

Studies of ocean acidification (OA) are showing progress, in particular, monitoring of oceanic acidification status (ca. pH, pCO2 and  aragonite,  calcite) in the various PICES countries has significantly progressed in recent years. Progress has also been achieved in the field of biological OA impact. The importance of interactions with other stressors (temperature, deoxygenation, etc.), interspecific interaction (e.g., OA effects on prey species), and biological ability to adapt to OA stress, are increasingly recognized. We welcome presentations from the fields of OA monitoring and impact experiments, to construct new perspective on present OA status in the North Pacific. Presentations on future projections are also welcome. We also welcome presentations about plans for further progress in our understanding, such as continuous carbon system monitoring by new technologies, new experimental studies for OA adaptation, and field observation of biological responses to existing OA and deoxygenation events.

## W4: Synthesizing projected climate change impacts in the North Pacific

Co-sponsor: ICES

Convenors:

Anne Hollowed (USA), corresponding

Shin-ichi Ito (Japan)

Jacquelynne King (Canada)

Myron Peck (ICES)

Invited Speakers:

William Cheung (The University of British Columbia, Canada)

Taketo Hashioka (Japan Agency for Marine-Earth Science and Technology (JAMSTEC))

Scientists have endeavored to project the implications of climate change on marine ecosystems throughout the North Pacific. We expect that many researchers will complete these projections by June 2018 in anticipation of the 4th Effects of Climate Change on the World’s Oceans symposium. A workshop is needed to compare and synthesize results from this international projection modeling effort. The workshop will provide a forum for discussions of: a) Projection outcomes under different modeling approaches; b) Opportunities for comparative studies looking at projected impacts on selected species or fisheries in different LMEs; c) How modeling teams addressed the uncertainty landscape including issues of scenario, parameter and model uncertainty; and d) The range of potential harvest strategies selected and their performance relative to different national value systems. We anticipate that a manuscript will be generated from this session that will be submitted to a peer reviewed journal.

# Appendix III: Upcoming Meetings relevant to POC

## OceanVisions2019 – Climate Summit

April 1-4, 2019

Atlanta, GA, USA

Abstract Deadline November 15

The OceanVisions2019 - Climate Summit "Successes in resilience, adaptation, mitigation, and sustainability" is co-organized by researchers at Georgia Tech, Stanford University, Scripps Institution of Oceanography, and the Smithsonian Institution in coordination with the IOC-UNESCO, the Ocean Conservancy and Georgia Aquarium. The goal is to highlight ocean-based science and engineering successes in the areas of resilience, adaptation, mitigation and sustainability and promote scalable solutions across human, climate and ecological dimensions

Sponsors/Organizers: Georgia Tech, IOC-UNESCO, Ocean Conservancy.

<http://oceanvisions.org/oceanvisions19>

## Second NPAFC-IYS Workshop

May 18–20, 2019

Portland, Oregon, USA

Jan 15, 2019 - Abstract Submission Deadline

## Future Oceans – 2nd IMBER Open Science Conference

June 17–21, 2019

Brest, France

## 2019 Ocean Observing Conference (OceanObs’19)

Sept. 16-20, 2019

Honolulu, HI, USA

Mar 15, 2019 - Abstract Deadline

## PICES-2019 Annual Meeting

Oct. 16-27, 2019

Victoria, BC, Canada

Submit PICES-2019 Proposals

by Oct. 29, 2018

# Appendix IV: Proposed Sessions and Workshops PICES 2018 (draft)

Proposal can be submitted here: <https://www.pices.int/logon/default.aspx?ReturnUrl=%2fsecure%2fupdate_profile.aspx%3fa%3dp&a=p>

## Connecting Science and Communities in a Changing North Pacific

PICES-2019 Annual Meeting

Place: Victoria, Canada

Sponsors/Organizers: PICES

<https://meetings.pices.int/meetings/annual/2019/pices/scope>

The North Pacific Ocean is rapidly changing due to an increasing number of stressors. This presents challenges for understanding, collaboration, and communication. More specifically: 1) What are the effects of human activities and climate change on ecosystems and the services they provide?, 2) Are there ways to improve collaboration among organizations and integrate a variety of knowledge sources to answer this question?, and 3) How can we communicate this knowledge effectively to the public? Climate change is an over-arching stressor that delivers a non-stationary background upon which other stressors act. Further, there are a wide variety of human stressors, such as fishing, aquaculture, microplastics/marine litter, invasive species, and shipping that can alter ecosystem structure, function, productivity, and biodiversity. Anticipating and detecting ecosystem responses to these stressors is a challenge, especially when responses may be non-linear and synergistic or antagonistic. Additional challenges include integrating the complexity of multiple spatial and temporal scales and incorporating climate change into sustainable ecosystem management. PICES provides a unique forum for collaboration among North Pacific member nations and other science organizations to address these challenges. There are, however, opportunities for further collaborations to better improve our understanding of the North Pacific, such as engagement with Indigenous people, citizen science programs, collaborative surveys, and coupled coastal - deep water oceanographic monitoring programs. Communicating the results of ecosystem science to the public and coastal societies is another area for advancement, as many scientists receive little or no training in communicating their results to a layperson audience or in two-way communication, where feedback can inform science.

We welcome submission of topic sessions and workshops addressing these integrative and complex issues. In particular, the PICES FUTURE (Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems) Integrative Science program would benefit from better information on: 1) the effects of human activities on coastal ecosystems, ecosystem services, and human societies; forecasting the effects of climate change on the distribution and productivity of species and communities; incorporating climate change, multiple stressors, and different temporal and spatial scales into sustainable resource and ecosystem management; tools to evaluate ecosystem response thresholds and common ecosystem reference points; and forecasting impacts of coastal stressors (e.g., microplastics, pollution, invasive species, shipping, aquaculture); 2) collaborative work with Indigenous people, with citizen science programs, with other science organizations, and across the western and eastern North Pacific; and 3) methods for more effectively communicating science to the public.

# Appendix V: POC Best Presentation and Poster Award (draft)

These are last year criteria, there will be an update at the SB meeting prior to the POC business meeting.

**Eligibility**

* Oral – 1st author & presenter should be early career scientist.
* Poster – previously no age limit but for this meeting limited to only ECS

**Sessions**

* POC judging will be for POC Poster, S5, S8, S9, S10 ECS orals and posters, and any ECS posters arising from W4. (Tentatively POC will be responsible for judging total of 9 ECS orals and 5 ECS posters)]
* Evaluation sheet. [Rosalie will provide hard copies in SB mail folder in Secretariat room at meeting/ and can also send electronically if requested.]

# Appendix VI: International Observers

See table here: <https://www.dropbox.com/s/5fo32ultslhewdq/2018-PICES-Observers.xlsx?dl=0>