Report of WG40

Co-chairs: Shoshiro Minobe, Antonietta Capotondi, Michael Jacox, Masami Nonaka, Ryan Rykaczewski

Outline:
- Research Topic on Frontiers in Marine Science (working group final report)
- Looking Back: How was the PICES-CLIVAR joint WG created.

**Working Group 40: Climate and Ecosystem Predictability**

**Acronym:** WG 40

**Parent Committee:** POC
**Parent Program:** FUTURE SSC

**Term:** Jul. 2017- PICES-2020

**Extended**
at PICES-2020 until PICES-2021

**Final Product TBA**

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Research Topic

North Pacific Climate and Ecosystem Predictability on Seasonal to Decadal Timescales

<table>
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<th>Topic Editors</th>
<th>13 articles</th>
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<tbody>
<tr>
<td>Shoshiro Minobe</td>
<td>Fei Chai</td>
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<tr>
<td>Hokkaido University, Sapporo, Japan</td>
<td>Second Institute of Oceanography, Ministry of Natural Resources, Hangzhou, China</td>
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<td>Antonietta Capotondi</td>
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<td>University of Colorado, Boulder, United States</td>
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<td>Masami Nonaka</td>
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<td>Japan Agency for Marine-Earth Science and Technology, Yokosuka, Japan</td>
<td>Pacific Islands Fisheries Science Center (NOAA), Honolulu, United States</td>
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One paper is under review. After that paper accepted, we will submit our editorial paper, which conclude the research topic.

Mentioned in WG49 background.
We have analyzed biological indicators from both eastern and western basins.

- Previous studies used only eastern or western basin indicators.

- We have found the first mode is closely related to the global warming, rather than PDO.
We discussed how to use already-existing activity of subseasonal, seasonal and decadal climate predictions for marine ecological forecasting.

Machine learning is promising.
A problem is that only SST are available for some projects, but as S2S did it is not difficult to ocean spatial 2-dimension data available.
How was the PICES CLIVAR joint WG created?
First encounter

• When Manu, Dr. Mike Foreman and I served as co-chairs of WG27, Dr. Toshio Suga asked us to come to CLIVAR Pacific Regional Panel Meeting in New Caledonia for discussion of collaboration between the PICES and CLIVAR.

• Dr. Hiroaki Saito and I went New Caledonia and explained about what is PICES and possibility of collaboration in the Panel meeting in 2012. One of panel co-chair, Dr. Wenju Cai, is now CLIVAR SSG co-chair.

• But specific plan does not take a form until 2016.
Working group creation

• CLIVAR has built Climate Dynamics Panel, and Prof. Mat Collins and I served as funding co-chairs since 2015.

• Manu envisioned a joint working group between CLIVAR and PICES.

• At the 2016 CLIVAR Open Science Conference in Qingdao, Antonietta (Pacific Panel co-chair), Ryan (Eastern Boundary Research Focus co-chair), and I (Climate Dynamics Panel co-chair) proposed the joint WG, as essentially a PICES WG, in which some CLIVAR scientists participate. CLIVAR SSG approved our proposal.
  • CLIVAR cannot have a working group just for the North Pacific.

• Next year in 2017, after five years of the first encounter, joint WG40 started. We three CLIVAR scientists are listed as CLIVAR co-chairs.
For Future collaborations

- We hope that PICES and CLIVAR will keep collaborations.
  - CLIVAR scientists who joined PICES WG could be more visible. One person attending two organizations is not collaboration, but her/his separate jobs.

- WCRP Light House Activity, Explaining and Predicting Earth System Change, to which I am a member, can also collaborate with PICES. I am happy to attend an appropriate expert group as a liaison. In our workshop, many researchers said that ocean is promising for decadal prediction.

Thank you!

- We are pleased that this first PICES-CLIVAR joint working group has successfully finished.