

2023 Annual Report of WG 49

‘Climate Extremes and Coastal Impacts in the North Pacific’

Working Group 49 held 5 virtual co-chairs meetings (Jan 25/26, Mar 13/14, May 30/31, Aug 15/16, and Aug 21/22, 2023) before the virtual working member meeting on September 18th/19th, 2023 (*Endnote 1*). During the meeting, the 13 participants reviewed our Terms of Reference and action plans for the upcoming in-person meeting in Seattle. Working Group 49 then held its second in-person business meeting at PICES 2023 on October 26th, 2023, (*Endnote 2, 3*). The primary objective of this meeting was to review our progress to pursue our Terms of Reference.

AGENDA ITEM 1

Review September 2023 Interim Meeting ([agenda and meeting notes](#))

Participants briefly discussed the WG 49 virtual meeting held in September 2023. The agenda for this meeting was to review our Terms of Reference and prepare our agenda for the (PICES 2023) in-person meeting.

AGENDA ITEM 2

Working Group 49 Action Plan

Participants discussed the obstacles for our Action Plan and strategies to improve our activities.

Group 1 (Karen & Hiroshi): Hiroki Kuroda has already started to investigate the summer 2021 Japan ECE, with emphasis on the fisheries system. Christopher Free and others have summarized the 2014-2016 marine heatwave in the eastern Pacific. DSPIR framework could enable comparison across the two events on either side of the Pacific. We know the most about marine heatwaves and this is our expertise. This provides the groundwork for workshop case study comparison.

Group 2 (Rob, Dan, and Yajuan): Relatively little economic and social science expertise, we may need to add/bring in these expertise. Regarding the workshop, we should come prepared to compare case studies. One way to do this would be to use the same framework ahead of time and discuss comparisons in the workshop. Data availability may vary by region (particularly for socioeconomics). Review best practices for socioeconomic indicators (these are available, for example, for application of indicators for fisheries management decisions), gap analysis.

Group 3 (Shoshiro, Charles, three observers): For predictions we need a physical model. Climate projections aren't matching observations. Our WG may want to focus on shorter term predictions, removes climate prediction as a bias. We should construct the WG activities around ongoing research of members (integrate from the nation presentations). "Identify drivers" is unclear. Some of the TOR are very heavy. We are reviewing previously published work, or existing modeling work that has not yet been published.

Group 4 (Chan Joo, Hiroki, Helen, Sukgeun, Hajime): So far, we have considered bottom-up ECEs, but we may also want to identify ECEs using ecological and social fluctuations like fisheries events. We need a working definition. We should consider forming a task force to move forward with census activities. This group also noted that ECE criteria differ between physical oceanography and other fields (e.g., 28°C of SST is the threshold of MHW in aquaculture since bivalves start dying off, and not in the discussion, but temperature-dependent sex determination in sea turtles has a certain threshold temperature).

AGENDA ITEM 3

Presentations from member country representatives

One representative researcher of each member nation and an external group (World Climate Research Programme) introduced research on marine climate extremes (*Endnote 3*).

AGENDA ITEM 4

Climate Extremes in the Pacific Survey

Participants reviewed results of a 2023 survey on climate extremes in the Pacific ([summary document](#) and the [recording of the September 2023 Interim Meeting](#)) and discussed how to apply the survey to working group activities (especially TOR 1) and to enhance the working group action plan.

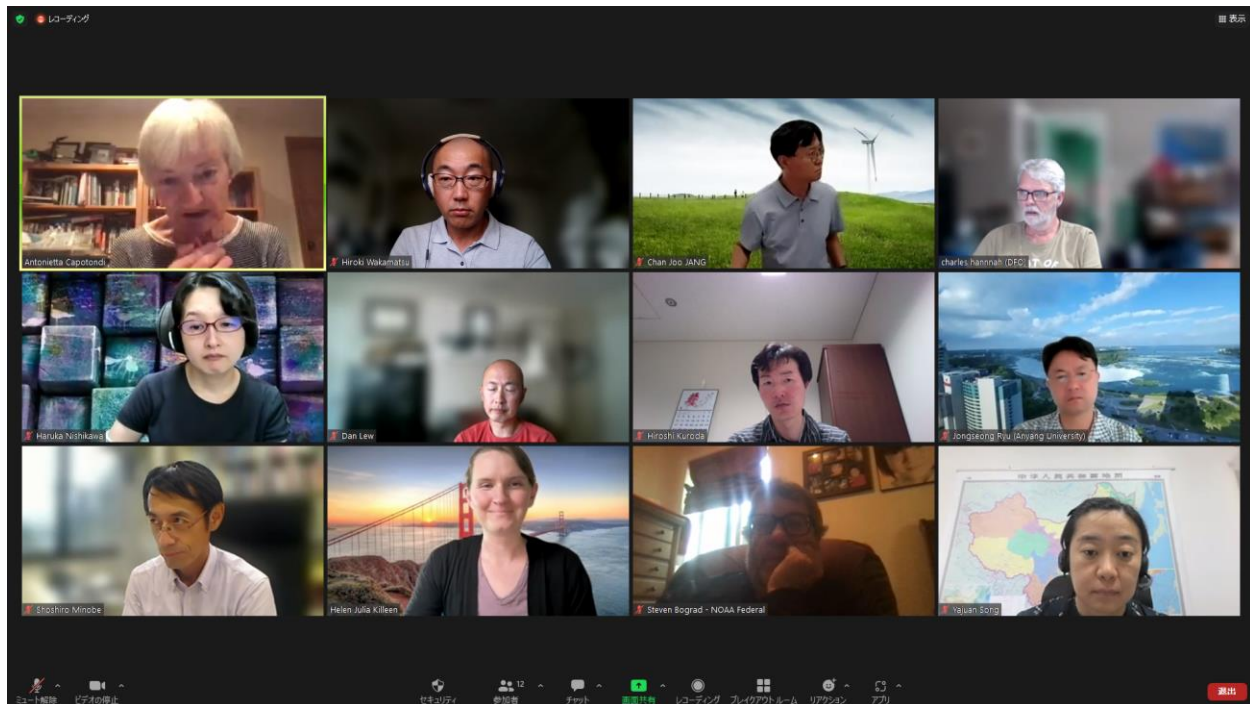
AGENDA ITEM 5

Summary of meeting activities and concluding remarks

Participants summarized the discussions from the in-person meeting and identified items that need to be addressed in the future as well as necessary tasks to accomplish the Terms of Reference.

Endnote 1

WG-49 participants at the first virtual meeting in September 2023.



Endnote 2

WG-49 participation list at PICES 2023

Members

Karen Hunter [virtual] (Co-chair, Canada)
Hiroki Wakamatsu (Co-chair, Japan)
Chan Joo Jang (Co-chair, Korea)
Steven Bograd (USA, temporary caretaker Chair)
Helen Killeen (Co-chair, USA)
Charles Hannah (Canada)
Song Yajuan [virtual] (China)
Hiroshi Kuroda [virtual] (Japan)
Haruka Nishikawa [virtual] (Japan)
In-Seong Han [virtual] (Korea)
Sukgeun Jung (Korea)
Sung Yong Kim [virtual] (Korea)
Jonseong Ryu [virtual] (Korea)
Vera Trainer (USA)
Dan Lew [virtual] (USA)
Rob Suryan [virtual] (USA)
Shoshiro Minobe (WCRP)

Members unable to attend

China: Changming Dong, Jian Tony Ma
Korea: Minho Kwan, Yajuan Song,
USA: Emmanuele di Lorenzo
Antonietta Capotondi (Co-chair, CLIVER)

Observers

Moojoon Lee (Korea)
Sinjae Yoo (Korea)
Hajime Tanaka (Japan)

Endnote 3

**WG49 PICES-2023 meeting agenda
October 26th, 1400-1730**

- 1400-1410** Introductory remarks
1410-1415 Review September 2023 Interim Meeting ([agenda and meeting notes](#))
1415-1520 Working Group 49 Action Plan
1520-1540 Coffee Break
1540-1640 Presentations from member country representatives
Canada - **Dr. Charles Hannah**
China - **Dr. Yajuan Song** (virtual presentation)
Japan - **Dr. Haruka Nishikawa** (virtual presentation)
Korea - **Dr. Jongseong Ryu** (virtual presentation)
United States - **Dr. Vera Trainer**
World Climate Research Programme: Explaining and Predicting Earth System Change Lighthouse Activities - **Dr. Shoshiro Minobe**
- 1640-1650** Break
1650-1720 Climate Extremes in the Pacific Survey
1720-1730 Summary of meeting activities and concluding remarks

