

2022 Report of WG 49 on *Climate Extremes and Coastal Impacts in the North Pacific*

The Working Group on *Climate Extremes and Coastal Impacts in the North Pacific* (WG 49) held an initial ‘meet-and-greet’ virtual call on August 24/25, 2022 (*WG 49 Endnote 1*), during which participants reviewed our proposed Terms of Reference and plans for the upcoming in-person meeting at PICES-2022 in Busan, Korea. Working Group 49 then held its first in-person business meeting at PICES-2022 on September 28, 2022 (*Endnote 2, 3, 4*). The primary objective of this meeting was to elect Co-Chairs and develop a first-year Action Plan.

AGENDA ITEM 2

Review August 2022 first virtual meeting

Participants briefly discussed the first WG 49 virtual meeting held in August, which several WG members and interested participants attended. The agenda for this meeting was simply to introduce ourselves to each other, with an aim to assessing the disciplinary range represented. We also reviewed our Terms of Reference and prepared our agenda for this (PICES-2022) in-person meeting.

AGENDA ITEM 3

Elect leadership

The primary objective of this first WG 49 meeting was to elect Co-Chairs. Our plan was to have 2 Co-Chairs from each side of the Pacific, representing regional, disciplinary and career-stage balance. Several nominations were made, and elections conducted. The new proposed Co-Chairs are:

Karen Hunter (Canada)
Helen Killeen (USA, ECOP)
Chan Joo Jang (Korea)
Hiroki Wakamatsu (Japan, ECOP)

In addition, we have proposed Dr. Antonietta Capotondi to be *ex officio* Co-Chair, representing CLIVAR.

AGENDA ITEM 4

Review Terms of Reference

Members again reviewed our Terms of Reference (ToR), as initially proposed. It was noted that the first three ToR make up the core of the WG activities, while ToR 4 and 5 are quite broad and we need to consider ongoing work in PICES member countries as pilot activities. ToR 6 and 7 were recognized as primarily networking activities. Karen Hunter brought up the point that we will need to agree on definitions for climate extremes, in terms of the type of event and its scale. We also discussed the need to identify potential stakeholders early in the process of prioritizing WG activities.

We proposed a new wording for ToR 5 (*WG 49 Endnote 5*): *Evaluate tools that relate climate extremes to impacts on ecosystem services and effects on human communities to climate extremes and encourage their development.*

AGENDA ITEM 5

Action Plan and timeline

In addition to identifying stakeholders, two priority action items are: (a) plan and develop a census of North Pacific climate extremes (ToR 1), and (b) identify case studies for further study (ToR 2). Members held further discussion on our definition of climate extremes, and thus the scope of the WG. In addition to marine heat waves, we may also consider HABs, biogeochemical extremes, precipitation events, and others. Focusing on events that are relevant to society (*i.e.*, stakeholders) can guide this process. Karen Hunter suggested we develop a survey or questionnaire to solicit contributions to our census/inventory of climate extremes. Members also prepared schematics to visualize some of our initial actions (*WG 49 Endnotes 5, 6*).

WG 49 Endnote 1

WG 49 first virtual meeting in August 2022



WG 49 participants at the first virtual meeting, from top to bottom, left to right: Sanae Chiba, Steven Bograd, Haruka Nishikawa, In-Seong Han, Daisuke Hasegawa, Chan Joo Jang, Charles Hannah, Vera Trainer, Dan Lew, Rob Suryan, Helen Killeen, Hiroshi Kuroda

WG 49 Endnote 2

WG 49 participation list at PICES-2022, September 2022

Members

Charles Hannah (Canada)
 Karen Hunter (Canada)
 Yajuan Song [*virtual*] (China)
 Hiroki Wakamatsu (Japan)
 Daisuke Hasegawa (Japan)
 Hiroshi Kuroda [*virtual*] (Japan)
 Haruka Nishikawa [*virtual*] (Japan)
 In-Seong Han (Korea)
 Chan Joo Jang (Korea)
 Sukgeun Jung (Korea)
 Sung Yong Kim (Korea)
 Jonseong Ryu (Korea)
 Steven Bograd (USA, temporary caretaker Chair)
 Emmanuele di Lorenzo (USA)
 Vera Trainer (USA)
 Antonietta Capotondi [*virtual*] (USA)
 Helen Killeen [*virtual*] (USA)
 Dan Lew [*virtual*] (USA)
 Rob Suryan [*virtual*] (USA)

Members unable to attend

China: Changming Dong, Jian Tony Ma
 Korea: Minho Kwan

Observers

Jim Christian [*virtual*] (Canada)
 Amber Holdsworth [*virtual*] (Canada)
 Jennifer Jackson (Canada)
 Chun Ok Jo (Korea)

WG 49 Endnote 3

WG 49 PICES-2022 meeting agenda

September 28, 0900–1230

1. Welcome, share agenda
2. Review initial August 2022 virtual meeting
3. Elect leadership team [4 Co-Chairs, regional, disciplinary and career stage balance]
4. Review membership and Terms of Reference
 - Identify stakeholders
 - Plan census of North Pacific climate extremes [ToR 1]
 - Identify case study for further exploration [ToR 2]
5. Develop 2022-2023 Action Plan and timeline

WG 49 Endnote 4

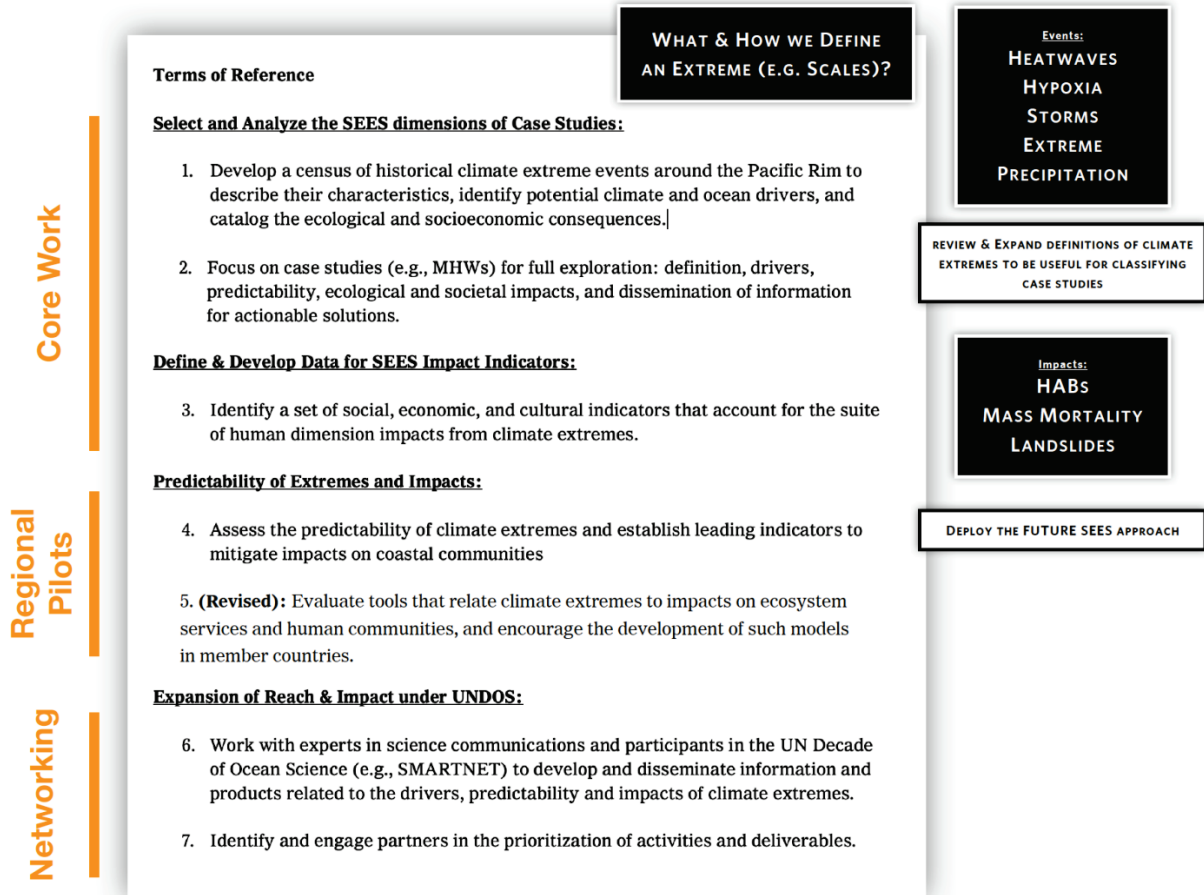
WG 49 first in-person meeting in September 2022 at PICES-2022



WG 49 meeting participants from left to right: Emanuele Di Lorenzo, In-Seong Han, Chan Joo Jang, Karen Hunter, Sung Yong Kim, Jongseong Ryu, Chun Ok Jo, Jennifer Jackson, Charles Hannah, Daisuke Hasegawa, Hiroki Wakamatsu, Steven Bograd. Via Zoom: Antonietta Capotondi, Rob Suryan, Dan Lew, Hiroshi Kuroda, Jim Christian, Haruka Nishikawa, Song Yajuan (not pictured)

WG 49 Endnote 5

WG 49 initial Action Plan from core Terms of Reference



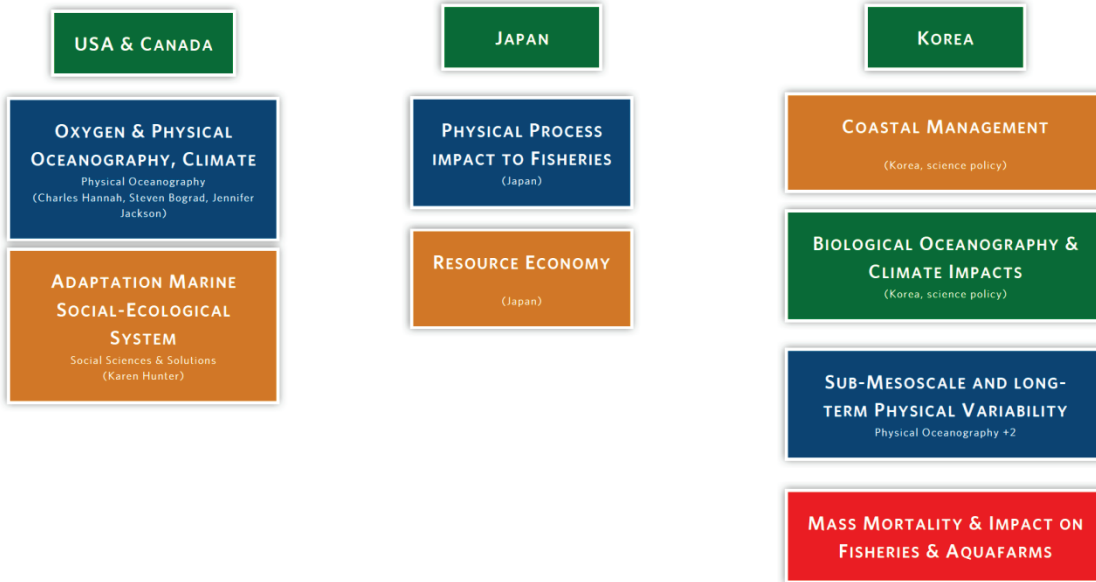
Proposal to revise Term of Reference 5

From: Identify a set of social, economic, and cultural indicators that account for the suite of human dimension impacts from climate extremes.

To: Evaluate tools that relate climate extremes to impacts on ecosystem services and effects on human communities to climate extremes and encourage their development.

WG 49 Endnote 6

WG 49 initial identification of regional climate extremes



Types of Extremes:

Marine heatwaves

Type of Impacts:

Impact on Ecosystem Services

Early warning systems & disaster recovery

Subsurface dynamics

Invasive species & toxic algal blooms