

2021 Report of Working Group 37 on *Zooplankton Production Methodologies, Applications and Measurements in PICES Regions*

The Working Group on *Zooplankton Production Methodologies, Applications and Measurements in PICES Regions* (WG 37) annual business meeting was held at online (Zoom) on September 21, 2021 from 14:00 to 17:00 h (Pacific Standard Time, UTC-8), under the chairmanship of Dr. Toru Kobari (Japan) and Dr. Akash Sastri (Canada) (see *WG 37 Endnote 1*). 6 participants including national representatives and 1 observer attended and participated in the meeting (*WG 37 Endnote 2*).



WG 37 virtual meeting participants during PICES-2021.

AGENDA ITEM 1

Activities in 2021

Dr. Kobari reported on the following WG activities in 2021.

Workshop at the PICES 2021 Annual Meeting

The workshop (W1) on “*Can we link zooplankton production to fisheries recruitment?*” was convened October 18, 2021 during PICES-2021. Co-Convenors were Toru Kobari, Russ Hopcroft, Hui Liu and Karyn Suchy. The workshop was virtual with topics presented using pre-recorded MS PowerPoint File. Discussion was conducted using Zoom. Presenters included 6 from Japan, 3 from Canada and 2 from USA:

- Toru Kobari (Comparison of plankton community structure, standing stocks and productivity along the Kuroshio at the Tokara Strait)
- Gen Kume (Distribution, feeding habits, and growth of chub mackerel, *Scomber japonicus*, larvae during a

high-stock period in the northern Satsunan area, southern Japan)

- Yusuke Manako (Community structure of fish larvae associated with advections of the Kuroshio and its neighboring waters)
- Yusuke Tokumo (Importance of gelatinous zooplankton on plankton food web in the Kuroshio based on metabarcoding analysis)
- Tomoko Kusano (How to adapt growth and productivity of fish larvae to the Kuroshio)
- Karyn D. Suchy (Model-based spatiotemporal variability in mesozooplankton productivity in the Salish Sea)
- Shin Kazuno (Source of coastal waters advected to the Kuroshio using particle-tracking experiments on high-resolution coastal ocean model)
- Lian Kwong (Evaluating pathways of environmental association with mesozooplankton and fisheries production)
- Hui Liu (Promising perceptions of linking zooplankton production to fisheries dynamics)
- Megan N. Wilson (The Tortoise and the Hare: distinct early growth strategies in a nearshore groundfish persist in the seasonally variable Northern California Current)
- Theresa A. Venello (The effect of zooplankton community composition on spatiotemporal variability of trophic transfer efficiency in the subarctic NE Pacific)

Due to the limited time for discussions among workshop participants, the following approaches were proposed by Dr. Kobari prior to the meeting.

1. *For efficient and effective discussions*

Under the format of PICES workshops during the Annual Meeting, it would have been difficult to have a productive discussion on workshop objectives (How can we link zooplankton production to fisheries recruitment?) and to compile them without any direct implications or contributions. Therefore, the chair of the workshop conveners (T. Kobari) first, encouraged all participants to add the implications of their topics to the workshop objectives. Second, to promote efficient and effective discussions within short discussion duration, the participants were asked to indicate some points to be discussed as follows: 1) What is necessary for zooplankton production to evaluate fishery dynamics and production? 2) What are advantages/disadvantages for current zooplankton production methodologies and measurements to link fishery dynamics and production? All participants were requested to present their ideas and solutions as slide presentations.

2. *Create an online platform for discussion*

As an example, Dr. Kobari created a folder in Google Drive to upload the presentation files. (Some files were uploaded in early October.) The files were open for anyone wishing to post comments. Working Group members were encouraged to use this folder for a platform of open discussions for all participants before the PICES-organized “discussion hour”.

AGENDA ITEM 2

Plans to complete terms of reference

▪ **Term of reference 4**

Build a platform of information exchange on zooplankton production measurements through an interactive website for regional and/or global mapping

WG 37 has no available platform for information “exchange” on zooplankton production measurements through an interactive website. As alternative platform, “figshare” was proposed for exchanging production data sets. Dr. Kobari asked contributing authors to provide production data sets for the WG final report but

unfortunately, some data owners have not permitted their data sets to be used because figshare is a public platform. The other data sets have been uploaded successfully to <https://figshare.com/>.

▪ **Term of reference 7**

Publish a final report summarizing results

After positive comments and suggestions by two BIO committee reviewers, the report co-editors and section co-authors made revisions and sent the revised version to BIO committee by the end of September. The final revised report was recommended for publication by BIO committee (October 4th 2021, following the WG 37 business meeting), and subsequently approved for publication by Science Board and Governing Council at their respective meetings.

WG 37 Endnote 1

WG 37 meeting agenda

1. Activities done in 2021
2. Plans to complete terms of references
 - Build a platform of information exchange on zooplankton production measurements through an interactive website for regional and/or global mapping (ToR4).
 - Publish a final report summarizing results (ToR7).
3. Others

WG 37 Endnote 2

WG 37 participation list

Members

Toru Kobari (Co-Chair, Japan)
 Akash Sastri (Co-Chair, Canada)
 Karyn Suchy (Canada)
 Kazuaki Tadokoro (Japan)
 Hui Liu (USA)
 Lidia Yebra (*ex officio* member, representing ICES)

Members unable to attend

China: Qing Yang
 Korea: Se-Jong Ju, Jung-Hoon Kang
 Russia: Vladimir Napazakov
 USA: Russell Hopcroft

Observer

Minju Kim (Korea, representing Se-Jong Ju)

PICES

Lori Waters (Secretariat)