

# PICES-ICES WG53/WGSPF



ICES  
CIEM



## Joint PICES/ICES Working Group on Sustainable Pelagic Forage Communities

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<https://meetings.pices.int/members/working-groups/wg53>

# Terms of Reference – WG53/WGSPF




- Foster international and interdisciplinary collaboration to establish similar study frameworks and comparative analyses of forage species, their ecology, and fisheries.
- Assess recent progress on understanding fluctuations of forage species (abundance, distribution, diversity, and characteristics) and their impacts on the structure and function of ecosystems, particularly upper trophic levels including marine birds and mammals.
- Identify, prioritize, and recommend research most needed to advance our knowledge and capacity to forecast ecosystem responses to changes in forage species.
- Recommend strategies for studying and monitoring socio-ecological systems to improve ecosystem-based management for the sustainable harvest of forage species.
- Describe how climate change and other anthropogenic factors impact forage species and examine how these factors will affect economies, nutrition of human communities, aquaculture, fishery portfolios, and/or transboundary management among countries with different levels of development in fisheries, and recommend options for adaptation.
- Organize a joint ICES/PICES/FAO symposium on Small Pelagic Fishes tentatively scheduled for April 2026 (La Paz, Mexico)

# Activities





<b><i>Activity 1: Spatiotemporal processes affecting life history</i></b>	R. Asch, D. Silva, B. Erisman
<b><i>Activity 2: Food-web Dynamics</i></b>	S. Garrido, B. Hunt
<b><i>Activity 3: Drivers of growth, reproduction, and survival</i></b>	M. Huret, M. Lindegren, F. Berg, M. Takahashi
<b><i>Activity 4: Distribution, migration and connectivity</i></b>	N. Rodríguez-Ezpeleta, T. Sakamoto
<b><i>Activity 5: Non-climatic and non-fisheries anthropogenic impacts</i></b>	P. Polte, R. Asch, F. Juanes
<b><i>Activity 6: Forage beyond boundary currents</i></b>	R. Rykaczewski, C. Rooper
<b><i>Activity 7: Advanced technologies and methodologies</i></b>	M.M. Angélico, C. Rooper, D. McGowan
<b><i>Activity 8: Short-term forecasts and long-term projections</i></b>	S. Koenigstein, R. Wildermuth
<b><i>Activity 9: Improving management with actionable science</i></b>	K. Jacobson, P. Sun, R. Wildermuth
<b><i>Activity 10: Social-ecological analysis</i></b>	M. Gasalla, N. Heck, I. Kaplan, P. Sun
<b><i>Activity 11: Future in 2050</i></b>	M. Peck, S.-I. Ito, C. Rooper

# Deliverables




## Year 1

- To foster collaboration among the international, scientific and fisheries management community around forage species research (**TOR#1**). Task Forces and Activities that were generated by the expired WG 43 will be reviewed and adjusted to best meet the TORs for the proposed Working. Some activities will be added and activities that are no longer relevant will be deleted. 
- Convene a one-day topic session titled: “*Advances in observational, analytical, and modeling tools that lead to better observations and improved understanding of small pelagic fish*” at the 2024 PICES Annual Meeting in Honolulu, USA (**TOR#3**). 
- Hold at least one in-person or hybrid meeting during Year 1 (**TOR#1**). 

## Year 2

- A series of manuscripts synthesizing existing knowledge on (1) spatial variability across life history stages of forage species, (2) best practices for coupling spatial distribution models with ecosystem models, (3) fleet and management response to spatiotemporal variability of forage species, and related socio-economic impacts, (4) inter- and intra-specific responses to environmental drivers, and (5) cross-system comparisons of internal and external forcing regulating growth is expected to be submitted to peer-reviewed journals (**TOR#2**). 
- Convene a joint ICES/PICES/FAO symposium on forage species that builds upon the 2017 and 2022 Small Pelagic Fish symposia. This symposium is tentatively scheduled for the spring 2026 in La Paz, Mexico (**TOR#6**). 
- Propose and convene topic sessions at the PICES Annual Meeting and ICES Annual Science Conferences, as well as at FAO-sponsored meetings focused on key questions and recent advances in the dynamics of forage species in ecosystems and the impact of forage species on higher trophic levels (**TOR#1, TOR#2, and TOR#3**). 
- Hold at least one in person or hybrid meeting during Year 2 (**TOR#1**). 

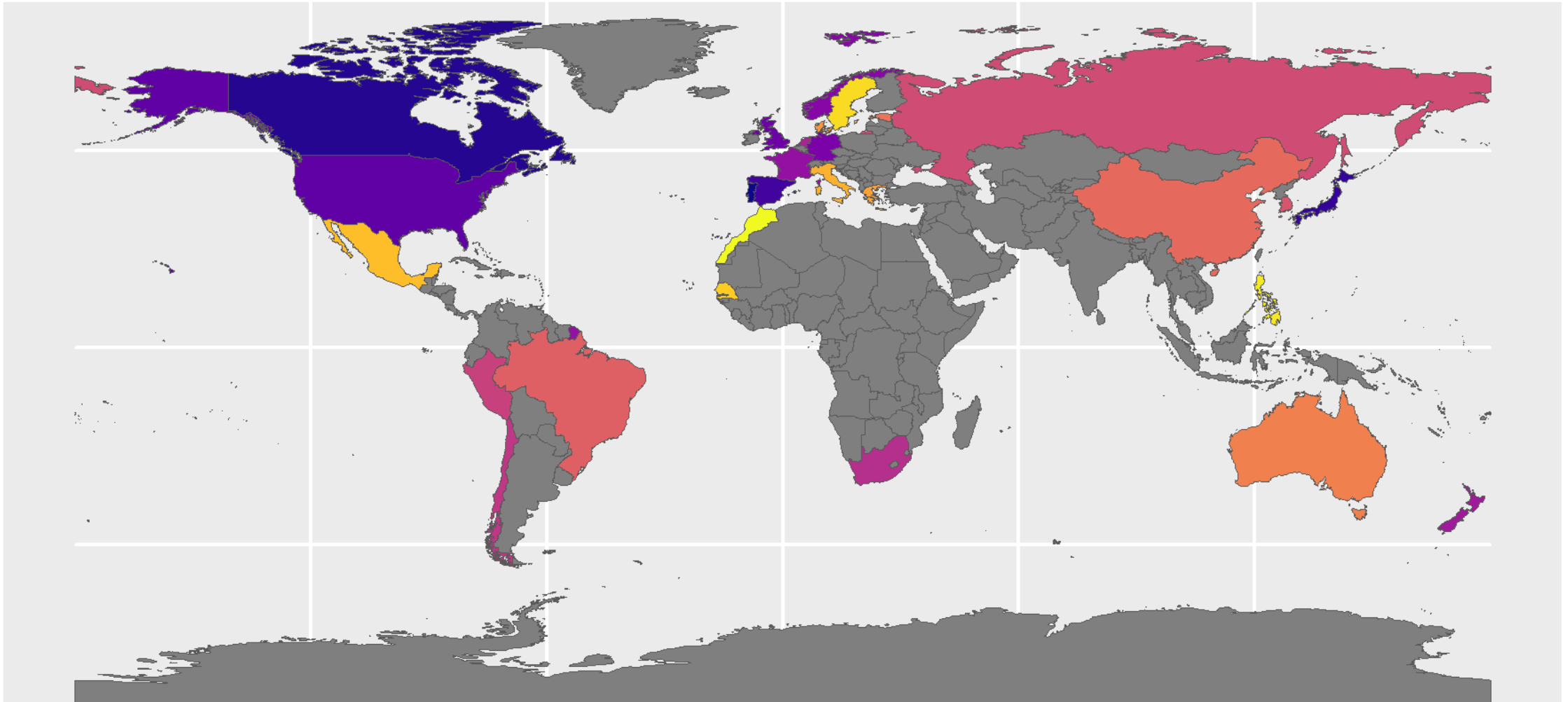
## Year 3

- Generate a manuscript (or a series of manuscripts) that synthesizes key research gaps and questions that are needed to forecast ecosystem responses to changes in forage communities (**TOR#3**) and recommend approaches that will be robust to climate change and other anthropogenic factors (**TOR#5**) to improve ecosystem-based management of forage species (**TOR#4**). 
- Publish studies emerging from the 2026 international symposium in special issues of scientific journals. The timeline for completion of these volumes is tentatively 1–1.5 years following the symposium (Fall 2027). This may be a suitable venue for publication of synthesis manuscript(s) highlighted in **TOR#3, TOR#4, and TOR#5**. 
- Hold at least one in person or hybrid meeting during Year 3 (**TOR#1**) and complete the required PICES Scientific Report (**TOR#7**). 

# WG53/WGSPF Membership

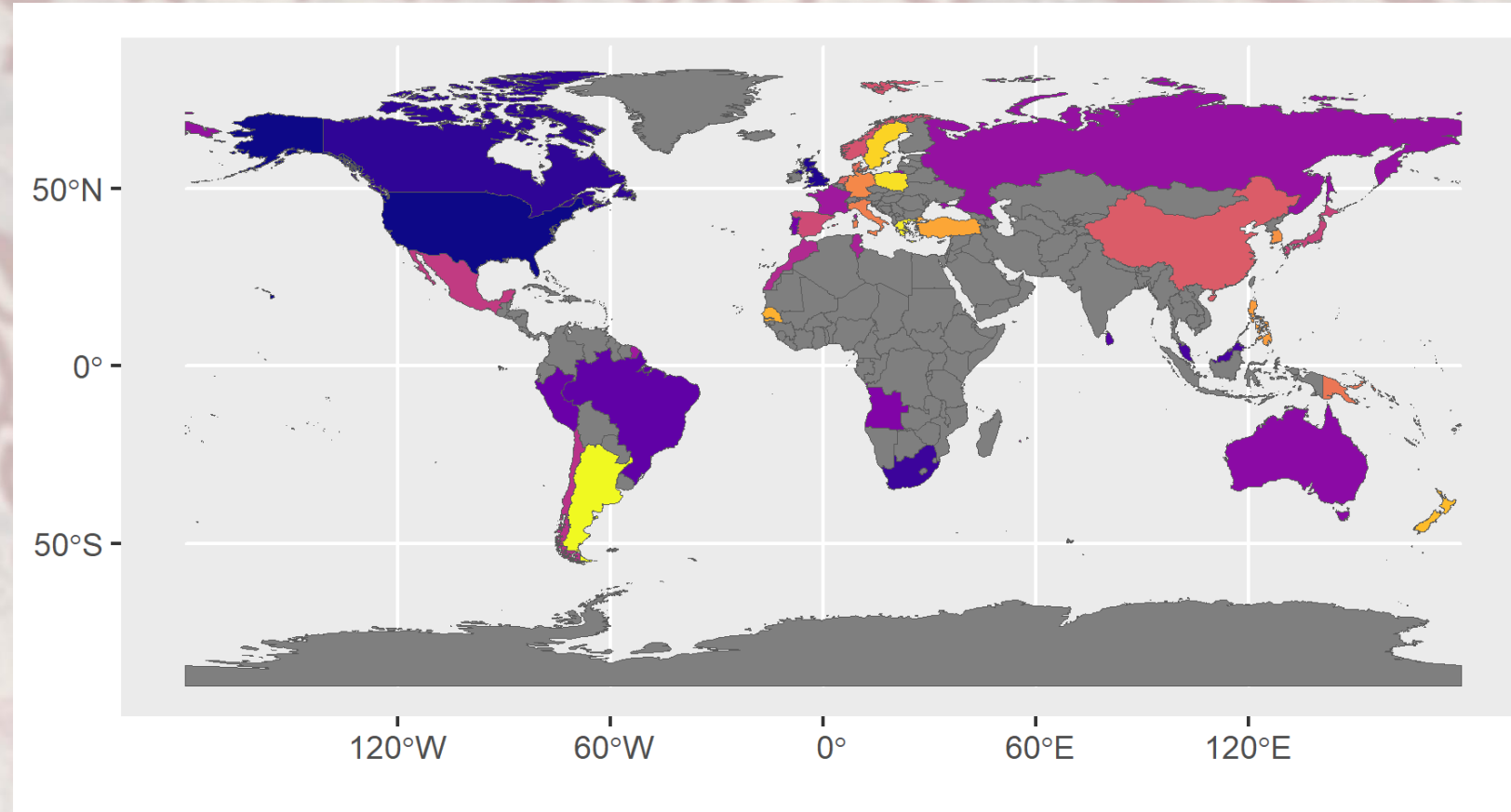
n = 31 countries (+ 4 international organizations)

n = 166 individuals



## Who are we and where did we come from?

- 226 participants
- 36 Countries
- 6 Continents
- 130 organizations represented
- 105 Early Career Ocean Professionals (46%)



## What did we do?

- 8 workshops
- 10 Sessions
- 174 Oral presentations
- 56 Posters



# WGSPF Meetings (July 2024 – July 2028)

## Past

La Paz – February 2024 (transitional meeting)

Honolulu – October 2024 (PICES Annual Meeting)

Lisbon – February 2025

Yokohama – November 2025 (PICES Annual Meeting)

## Present

La Paz – May 2026

## Future

Nanaimo – October 2026 (PICES Annual Meeting – requested)

TBD (ICES Region?) – February-ish 2027

**Publications relevant to year 2 deliverables:**

(1) spatial variability across life history stages of forage species

*Catalán, I. A., Bowlin, N. M., Baker, M. R., Berg, F., Brazier, A., Brochier, T., ... Ospina-Álvarez, A. (2025). Worldwide Appraisal of Knowledge Gaps in the Space Usage of Small Pelagic Fish: Highlights Across Stock Uncertainties and Research Priorities. Reviews in Fisheries Science & Aquaculture, 33(4), 497–558. <https://doi.org/1>*

(2) best practices for coupling spatial distribution models with ecosystem models

(3) fleet and management response to spatiotemporal variability of forage species, and related socio-economic impacts

(4) inter- and intra-specific responses to environmental drivers, and

(5) cross-system comparisons of internal and external forcing regulating growth

**Publications relevant to year 3 deliverables:**

synthesize key research gaps and questions that are needed to forecast ecosystem responses to changes in forage communities and recommend approaches that will be robust to climate change and other anthropogenic factors to improve ecosystem-based management of forage species

*Peck M, Catalan I, Rykaczewski R, Takasuka A, Garrido S, Asch R, Baker M, Bowlin N, Boldt J, Brodeur R, Hansen C, Lluch-Cota S, Huret M, Juanes F, Kaplan I, Koenigstein S, Moyano M, Sanchez R, Rooper C, Sohn D, Takahashi M, Tommasi D; Wildermuth R, In review. Advancing ecological understanding and sustainable management of small pelagic fish . Fish and Fisheries*

**Other publications relevant to the TOR and group activities:**

13 in peer-reviewed literature (2025)

2 technical reports (2025)

1 PICES press (winter)

*Encourage statement about WG in Acknowledgements where appropriate*

*Convenors – Track manuscripts/proposed manuscripts related to TOR from this meeting*

# Upcoming Activities

PICES Annual Meeting (Nanaimo Nov. 8 - 14, 2025)

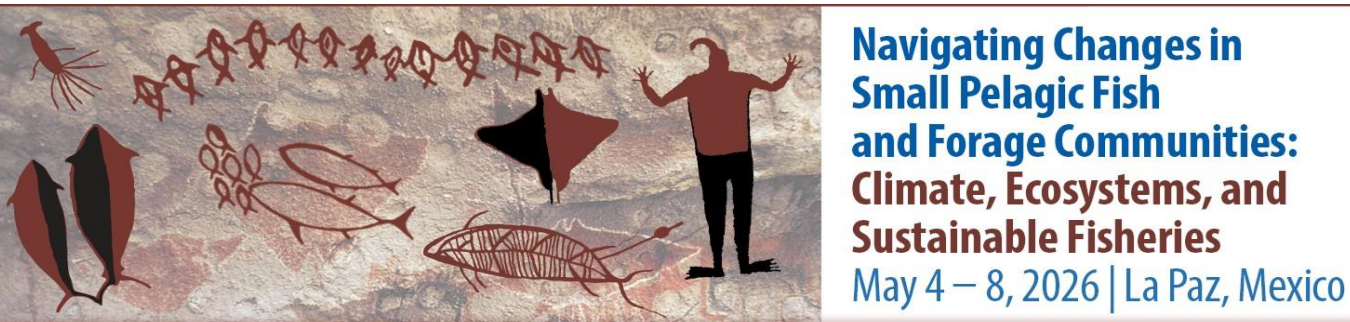
3 SPF Related Sessions (Abstracts due June 15)

- Topic Session S9: Integrating ecosystem and climate into actionable science for small pelagic forage communities
- Workshop W2: Beyond boundaries: Understanding epi- and mesopelagic forage communities of the open ocean
- Topic Session S11: Approaches to Understanding Population Connectivity and Its Impacts

**Next business meeting (PICES Nanaimo?)**

**Next symposium in 2030?**

Individual activity meetings (~quarterly)



Food and Agriculture  
Organization of the  
United Nations

Endorsed by



2021  
2030

United Nations Decade  
of Ocean Science  
for Sustainable Development