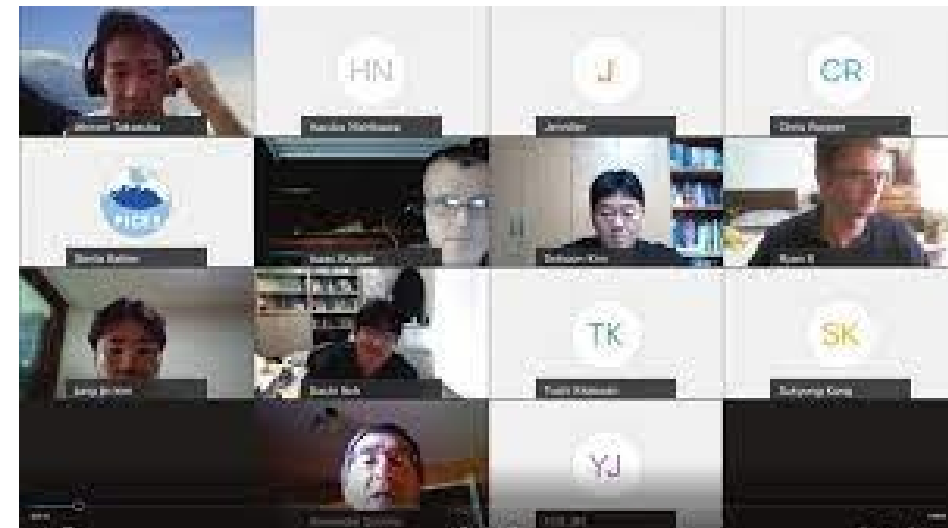
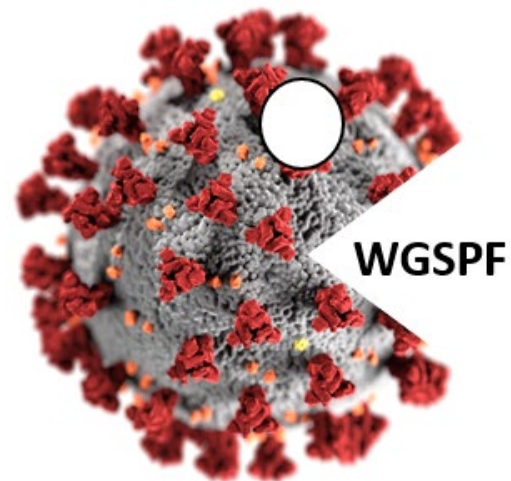


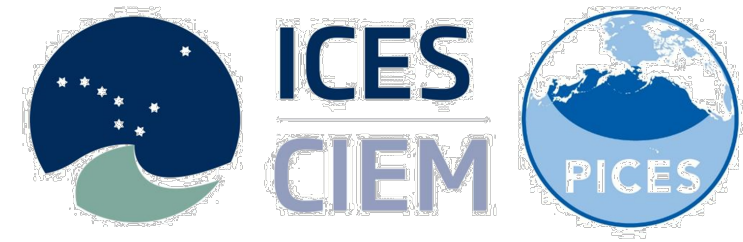
# ICES/PICES WGSPF 1<sup>st</sup> Annual meeting

Friday the 10<sup>th</sup>, Monday the 13<sup>th</sup>, and  
Tuesday the 14<sup>th</sup> of September, 2021

Co-chairs:

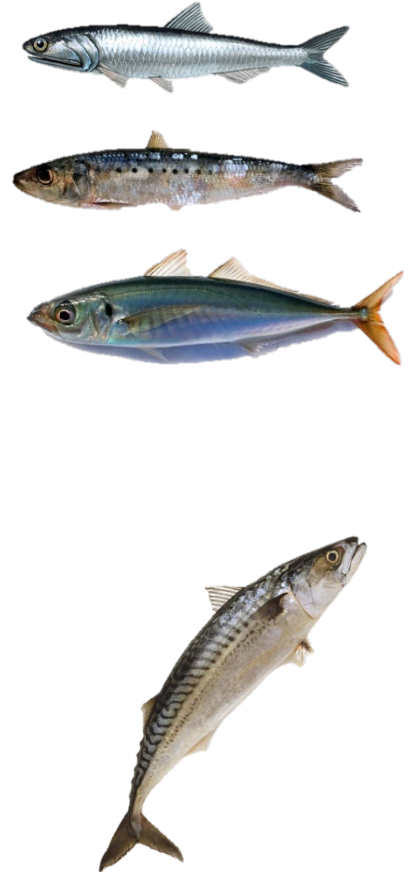
M. Peck, R. Rykaczewski, I. Catalán, A. Takasuka

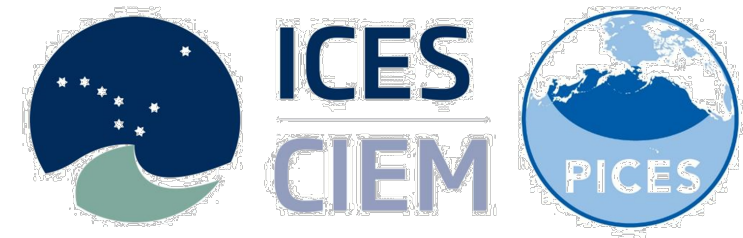




## OUTLINE

- **FRIDAY (10 Sept)**
  - **Introduction**
  - **Status of the SPF Symposium**
    - Session descriptions
    - Workshops overview
    - Important dates
  - **Task Force 1- Ecological Process Knowledge (EPK)-Main results and Discussion for each of the activities below**
    - Activity 1: Critical review, evaluation and testing of classic hypotheses.
    - Activity 2: Life cycle Closures-Bottlenecks and gaps in knowledge.
    - Activity 3: Drivers of spatial distribution and Phenology
    - Activity 4: Food-web Dynamics
    - Activity 5: Internal and external drivers of growth, reproduction, and survival
  - **General Discussion (including cross-activity ideas)**





## OUTLINE

- **MONDAY (13 Sept)**

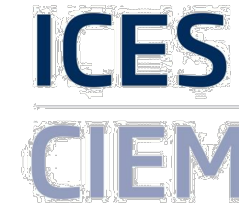
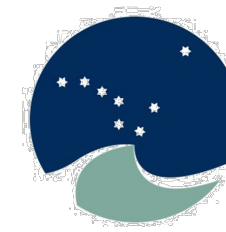
- Continuation or brief review of discussions on Task Force 1.
- Task Force 2-Translating process knowledge. Inputs and outputs to management structures and policy advice (TPK)
  - Activity 6: Survey design and monitoring
  - Activity 7: Improving short-term forecasts and/or long-term projections
  - Activity 8: Improvements to management
- **General Discussion** (including cross-activity ideas)



- **TUESDAY (14 Sept)**

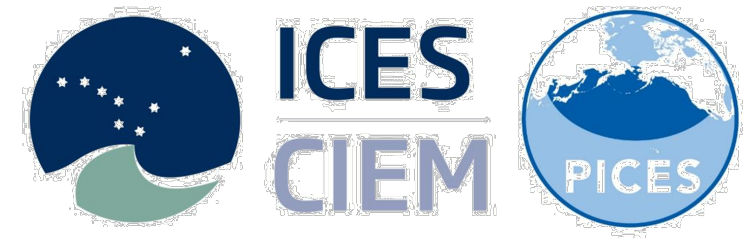
- Task Force 3 - Social-Ecological Approaches (SEA) - Main results and Discussion for each of the activities below:
  - Activities 9-11: Networks, vulnerability and opportunities of dependent human communities, tradeoffs in goods and services and bioeconomic analyses
- Planning of the Annual WG Reports, **reviewing ToRs**
- Planning of the Final Meeting at the 2022 SPF symposium
- Recommendations to increase efficiency of international collaboration inside the WG





## INTRODUCTION

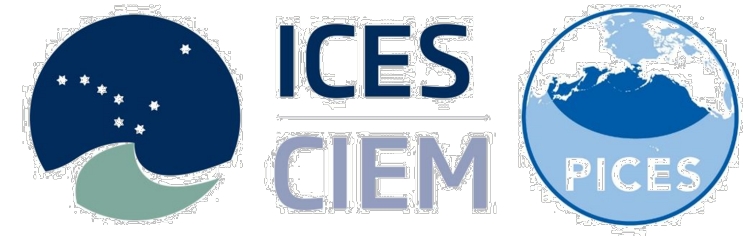
		MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
✓ Initial report	Year 2020	9-12 March	Copenhagen, Denmark	Final report by January 2023	Inter-sessional meeting, funding mechanisms being explored. Location dependent on success of funding raising efforts. ✓
✓ Interim 6 months report	Year 2020	22-30 October	Online meeting		PICES AM: PICES AM: WG43 Business Meeting and Workshop #6 on SPF dynamics in the North Pacific ✓
✓ Interim report (Sept 28)	Year 2021	10, 13-14 September	Online meeting		(ICES ASC) ✓
	Year 2021	18-29 October	Online meeting		PICES AM: WG43 Business Meeting and Workshop #2 on SPF variability
	Year 2022	Spring	TBA		Synthesis writing workshop planned (depending on successful funding applications)
	Year 2022	September	TBA		(ICES ASC)
	Year 2022	October	TBA		(PICES AM)
Final report (2023)	Year 2022	Late November	Lisbon, Portugal		SPF Symposium



## INTRODUCTION

### ToRs (Terms of reference)

- a) **To review recent progress on understanding how various drivers (environmental and/or anthropogenic) impact the population dynamics of SPF** in different ecosystems and whether and how potential drivers shift with changes in ecosystem state.
- b) **Create a networking environment for international and multidisciplinary collaboration to foster the establishment of similar study frameworks and comparative analyses of SPF across different social–ecological systems**, based on updated time series data sets of climate indices, environmental factors and fisheries biology as well as ecophysiological information (feeding, growth and survival).
- c) **Identify, prioritize and conduct research most needed to advance our knowledge and capacity to predict the population dynamics of SPF** at both short (seasonal to inter-annual) and long (decadal to centennial) time scales.
- d) **Recommend strategies of marine ecosystem monitoring and fisheries management of SPF** which will contribute to sustainable ecosystem-based fisheries management, through biophysical, ecosystem and/or socio–economical models.
- e) **Propose topic sessions at PICES Annual Meetings and ICES Annual Science Conferences focused on advances in SPF science and to organize a joint ICES/PICES symposium on SPF at regular intervals** (e.g., once every 4 years) leading to the publication of findings in special issues of primary journals.



## INTRODUCTION

The relation of our work this last year with the **ToR** will be discussed in more detail on the last day. In general

- Most activities identified a series of specific topics and have made progress. These activities have addressed each ToR.
- Most activities met several times, 2 to 9, between 2020 and 2021.
- One paper is already published in PiO (Peck et al., 2021).
- The WG activity has been presented at ICES/PICES events (sessions?)
- It was generally recognized that a large delay occurred in the projected work for 2020-2021, due to the pandemic.
- Most activities contributed to the Symposium delineation (delayed 8 months), either proposing sessions, proposing speakers, workshops, etc. This was our last and crucial ToR.

# Status of the 2022 SPF Symposium

**Small Pelagic Fish:  
New Frontiers in Science  
and Sustainable  
Management**  
November 7 - 11, 2022  
Lisbon, Portugal

ICES  
CIEM  
FAO  
Food and Agriculture  
Organization of the  
United Nations

## SCOPE

Small pelagic fish (SPF) account for more than 30% by weight of the total landings of capture fisheries around the world. SPF populations of both marine and inland ecosystems are crucial for ensuring global food security. SPF also play an important role in the transfer of energy in food webs through mid-trophic levels, so understanding processes affecting the dynamics of their populations, their role in marine ecosystems and how these shape robust management practices continues to be a high priority. During the last four decades, coordinated, global research efforts (see tab on History of Global Collaboration on SPF) have targeted these and other topics, yielding important comparative analyses and highlighting key gaps in our knowledge. For example, global analyses revealed oscillations in the productivity of SPF populations linked to climate variability on various (seasonal to multi-decadal) scales that have resulted in dramatic consequences for ecological and human communities. The exchange of information and ideas drawn from comparing populations across the globe can be particularly insightful as we seek to improve management strategies.

Substantial scientific progress continues to be made on understanding the drivers and dynamics of SPF in ecosystems across a range of spatial and temporal scales. The integration of numerical models with ever-growing data from monitoring efforts and stock assessments has enabled more comprehensive consideration of hypotheses describing SPF population variability. Additionally, the rapid development of new methods like eDNA, machine learning, and genome analysis to ascertain population structure can offer new insight to long-standing questions. The application of various regional management strategies and approaches to studying coupled social-ecological systems in collaboration with industry and other stakeholders is ripe for comparative research.

The international symposium on "Small Pelagic Fish: New Frontiers in Science for Sustainable Management" will highlight the state-of-the-art in these and other topics related to the ecology and sustainable management of SPF. The symposium complements collaborative research conducted by the joint [ICES/PICES Working Group on Small Pelagic Fish](#) and is relevant to the goals of the [UN Decade of Ocean Science for Sustainable Development](#), particularly "to bolster scientific research for a sustainably harvested ocean ensuring the provision of food supply."

This symposium is endorsed by



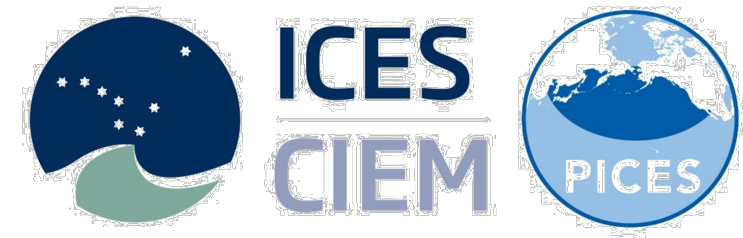
- **IMPORTANT NEWS / UPDATES**
- Scope
- Global Collaboration on SPF
- Organizers
- Plenary and Invited Speakers
- Symposium Structure
- Scientific Program
- Poster Session
- Schedule
- Book of Abstracts
- Presentations
- **Registration**
- Registration Summary
- **Abstract Submission**
- Submitted Abstracts
- **Financial Support**
- Publication
- **Venue**
- Transportation



Thanks Susana!



Thanks symposium coordinators,  
A.Bychkov (PICES) and J. Kellner (ICES)

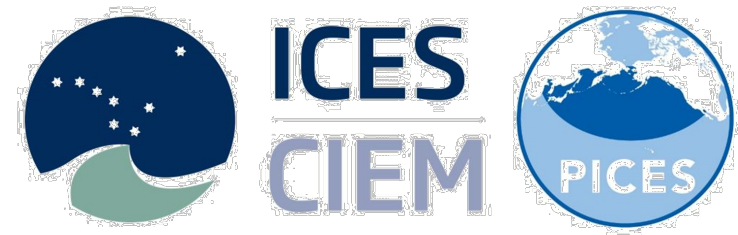


## STRUCTURE

- **Concurrent half-day workshops** proposed by the scientific community scheduled on November 7, immediately **prior to the main 4-day program**.
- **Morning plenary sessions** on November 8–11 to provide **overarching keynote presentations** and to **introduce topics for the concurrent sessions to be convened on the same day to a broader audience**, and an **afternoon summary plenary session/panel on November 11**;
- **Concurrent topic sessions (starting in the late morning)** on November 8–11; these topic sessions, identified by the Scientific Steering Committee, will include invited and contributed papers selected for oral or poster presentation;
- **Posters on display for the entire symposium** along with a dedicated **evening poster session/reception** on November 8 or 9 when poster presenters are expected to be available to answer questions, **if this would be possible in the post-COVID world**.



# Status of the 2022 SPF Symposium



## Workshops

## Sessions

Topic Sessions	
Concurrent Topic Sessions every day, following a morning plenary session	
<u>Session 1:</u> Trophodynamic Processes	Act.1
<u>Session 2:</u> Life Cycle Closure: Advances in Process Understanding	Act. 2+5
<u>Session 3:</u> Understanding Population- and Ecosystem-level Shifts: From Seasonal Timing to Tipping Points	Act.3
<u>Session 4:</u> Responses to Climate Variability and Change at Decadal to Centennial Time Scales	Act.4+7
<u>Session 5:</u> Progress in Pelagic Surveys: From Biomass Estimates to Monitoring Ecosystems	Act.6
<u>Session 6:</u> Reconciling Ecological Roles and Harvest Goals: Development and Testing Management Strategies to Safeguard Marine Ecosystem Services	Act.7-8
<u>Session 7:</u> Advancing Social-ecological Analyses and Sustainable Policies for Dependent Human Communities	Act.9-10



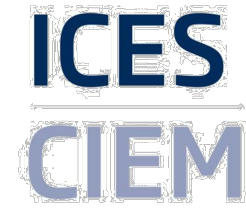
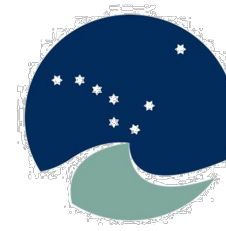
<https://meetings.pices.int/meetings/international/2022/pelagic/scope>

I.Kaplan et al.

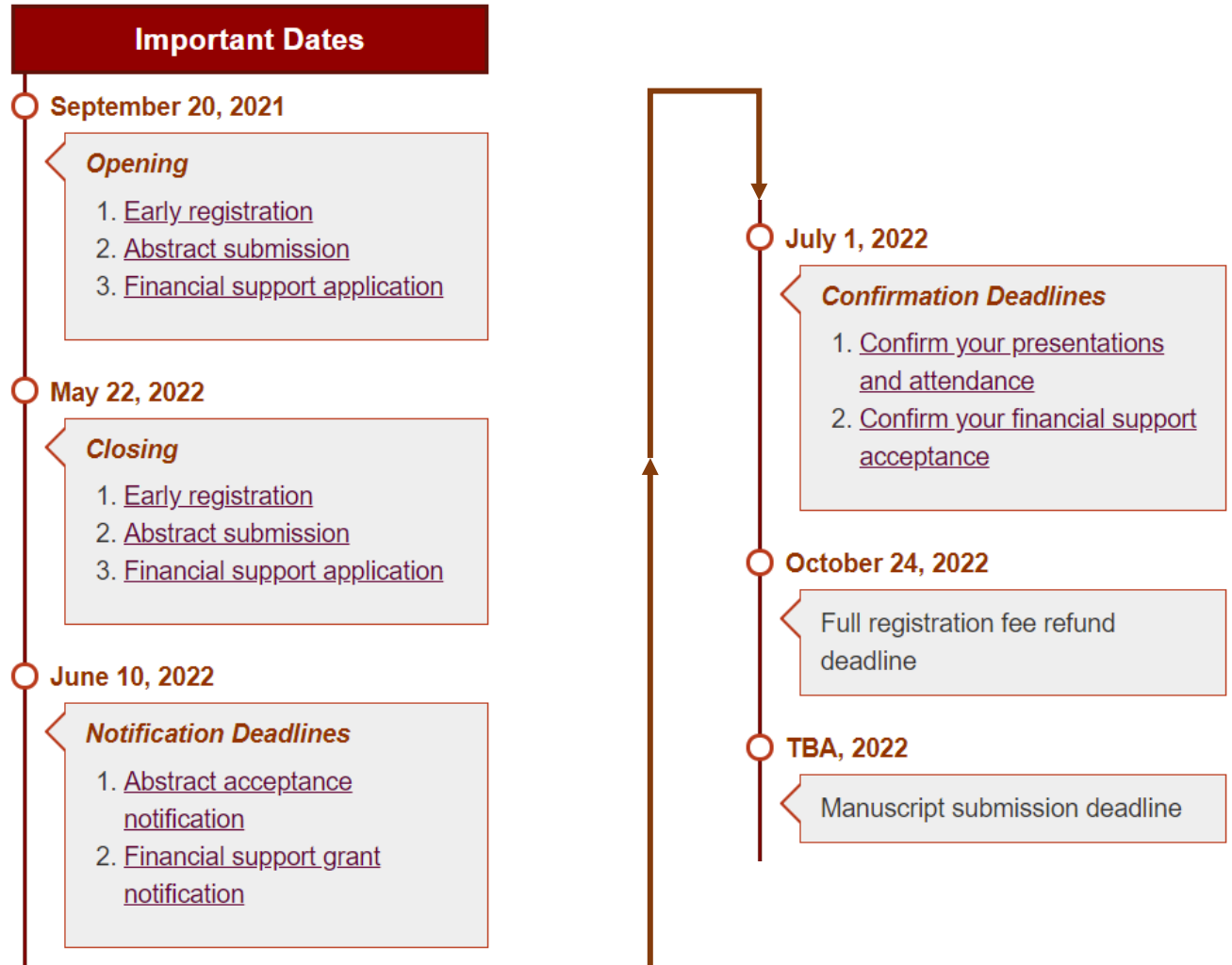
Uriarte et al.

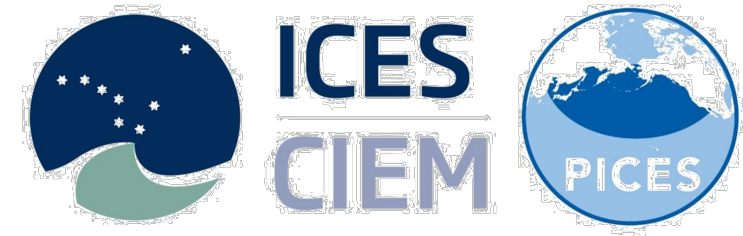
Dominguez-Petit et al.

Concurrent Workshops	
All workshops will be half-day and held concurrently on November 7	
<u>Workshop 1:</u> Application of Genetics to Small Pelagic Fish	
<u>Workshop 2:</u> The Devil's in the Details of Using Species Distribution Models to Inform Multispecies and Ecosystem Models	
<u>Workshop 3:</u> Small Pelagics for Whom? Challenges and Opportunities for the Equitable Distribution of Nutritional Benefits	
<u>Workshop 4:</u> Evaluating Inter-Sectoral Tradeoffs and Community-Level Response to Spatio-Temporal Changes in Forage Distribution and Abundance	
<u>Workshop 5:</u> Recent Advances in the Daily Egg Production Method (DEPM): Challenges and Opportunities	
<u>Workshop 6:</u> Small Pelagic Fish Reproductive Resilience	



# Status of the 2022 SPF Symposium



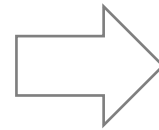


**Task Force 1:** Ecological Process Knowledge (EPK)

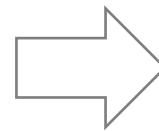
**Task Force 2:** Translating Process Knowledge - Inputs and outputs to management structures and policy advice (TPK)

**Task Force 3 :** Social-Ecological Approaches (SEA)

For each activity, we will use 1/2 slides, compiled by the Co-chairs. Each Task leader to intervene



All general discussion points are summarized **by Task force at the end of each block if they have been raised by more than one activity.** Otherwise, they are discussed after each activity



## Task Force 1: Ecological Process Knowledge (EPK)

### Activity

**A.1** Critical review, evaluation and testing of hypotheses. Leaders: A.Takasuka & M.Peck.

22 members

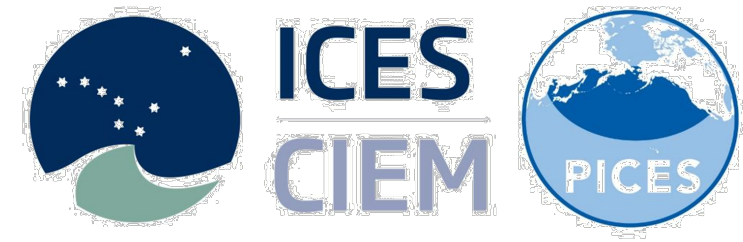


*Objective 1: Literature review to evaluate and test hypotheses related to biology, ecology, and management of SPF.*

*Objective 2: Providing the ideas of hypotheses to be tested to the other Activity groups.*

### Main actions/results

- 1) Setting up key questions as the first step.  
(a) What hypotheses have been proposed for mechanisms of population dynamics, recruitment, roles in ecosystems, etc. so far?. (b) What are advantages/disadvantages of the existing hypotheses? (c) Any new hypotheses in your mind? (d) How to test the hypotheses? Literature review, modelling approach, and/or meta-analysis? (e) Any other ideas to proceed with Activity 1.
- 2) Collecting hypotheses to be reviewed and tested from the members. A methodology has been developed, and a table initiated.
- 3) Structure of the paper proposed.



## Task Force 1. General points for WG meeting

### Ideas

Activity 1 wants to confirm that the framework and direction of A.1. is OK. Comments?

Activity 1 unsure that it is possible to extend the coverage of hypotheses to management topics.



## Task Force 1: Ecological Process Knowledge (EPK)

### Activity

**A.2** Life cycle closures— bottlenecks and gaps in knowledge. Leaders: I.Catalán & N.Bowlin.

27 members



*The goal of the activity is to analyze spatial processes responsible for life cycle closure. Process-based., IBMS, etc.*

*Missing the development of initial ideas including comparing processes across systems explaining life-cycle closure (IBMs etc.)*

### Main actions/results

**Discussed many potential topics in the first meetings, but 2 crystallized by now.**

- 1) “Spatiotemporal Variability in Key Life History Processes of SPF: A Global GAP Analysis”. (Catalán et al., collaborative). Data being collected and processed.
- 2) Review paper on Adaptation/SDM across regions/species and how this information may be integrated on the adequate management (Silva et al. Collaborative)

**Plus:** Theme Session (S2) in the SPF symposium 2022: Life Cycle Closure: Advances in Process Understanding (together with Activity 5)

## Task Force 1: Ecological Process Knowledge (EPK)

### Activity

**A.3** Drivers of Spatial Distribution and Phenology in Small Pelagic Fishes. Leaders: R. Asch & M. Moyano



Other activities: Organization of Session 3 (“Understanding Population- and Ecosystem-level Shifts: From Seasonal Timing to Tipping Points”) at SPF symposium

### Main actions/results

- 1) Phenology paper (R. Asch et al.; collaborative). **Research question:** What biotic and abiotic factors influence SPF spawning phenology trends and variability?
- 2) Species distribution paper (Moyano et al. Collaborative). **Research question:** How stable are SPF environmental response curves?
- 3) Research goals, methods, and datasets have been identified for both papers, but data collection and analysis has been delayed from initial plans. The goal is to have data in hand by end of the year and analysis ready by spring 2022.

## Task Force 1: Ecological Process Knowledge (EPK)

### Activity

**A.4** Food-web dynamics (links to prey, predators and competitors). Leaders: S. Garrido (ICES)& R. Brodeur.

27 participants



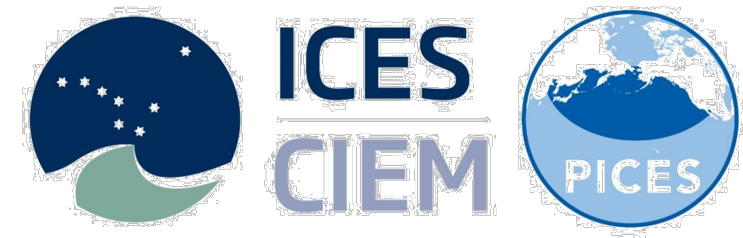
### Main actions/results

Topic 1 - **Testing the wasp-waist hypothesis**, in collaboration with Activity 1. What is the changing role of SPF in food webs?

Topic 2.1 - **Analyzing/Compiling information of temporal and spatial variability of predation pressure**, which can offer some information of natural mortality of SPF (review paper of the predation impact on SPF, maybe a meta-analysis if sufficient data is available).

Topic 2.2 - **Study SPF through predators' diets** (abundances, distributions, is it the fast or slow growers that get eaten?).





## Task Force 1: Ecological Process Knowledge (EPK)

### Activity

**A.4** Food-web dynamics (links to prey, predators and competitors). Leaders: S. Garrido (ICES)& R. Brodeur.

27 participants

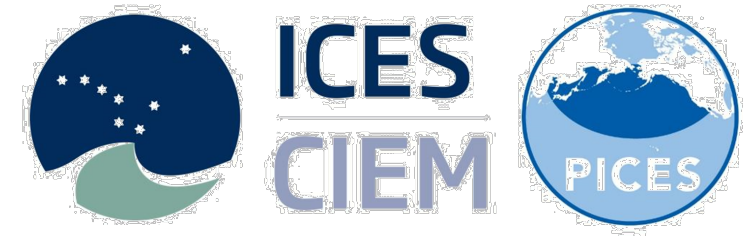


### Main actions/results

Topic 3: **How do changes in zooplankton affect SPF?** (species biomass composition, size distributions). Oftentimes the focus is on adults, but what about the **larvae**?

Topic 4: **Changes in the flow of energy and organic matter (i.e., trophic transfer efficiencies) through SPF-dominated food webs?**

Topic 5: Is **intraguild predation** a significant factor in SPF population dynamics? What is the **spatial scale of these interactions?** What is the spatial and temporal overlap between predators and prey (potential tools include MARSS, ARIMAS; joint models)?



## Task Force 1: Ecological Process Knowledge (EPK)

### Activity

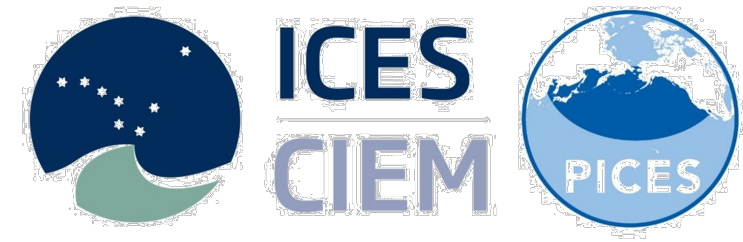
**A.4** Food-web dynamics (links to prey, predators and competitors). Leaders: S. Garrido (ICES)& R. Brodeur.

27 participants



### Main actions/results

- Convenor of the **SPF Symposium. S1. Trophodynamic processes.** Also, **local organizer.**
- **Book** on Coastal Pelagic Foodwebs. Potential chapters already delineated. Co-editors: S. Garrido, C. van der Lingen, Ric Brodeur...



## Task Force 1. General points for WG meeting

### Ideas

Activity 4: Suggestions on the list of topics?

Activity 4: Book: decide on articpation/chapters/coordinate with other activities.

- Find publisher
- Scheduling

## Task Force 1: Ecological Process Knowledge (EPK)

### Activity

**A.5** Internal and external drivers of growth, reproduction and survival. Leaders: M. Huret, M. Lindegren & F. Berg. **35 people involved**

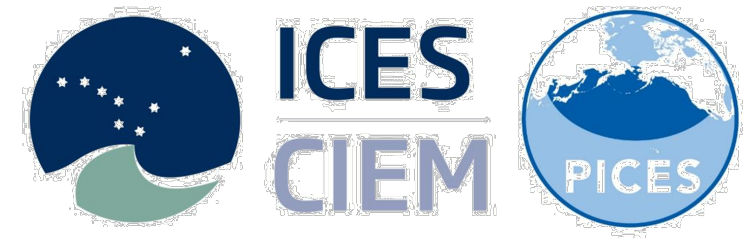


*What variability in the life history traits (growth, reproduction, survival) across species and regions ?*

*What is the relative influence of internal vs. external drivers on this variability ?*

### Main actions/results

- 1) Final list of co-leaders and sub-activities:
  - a) **Experimental**: Review and analysis of available data on traits and associated exp. Conditions. F. Berg
  - b) **Modelling**: mechanistic, bioenergetics. M. Huret. C)
  - c) **Statistical**: Meta-analysis. Lindegren.
- 2) Joint Session S2 at the Symposium (A2+A5). “Life Cycle Closure: Advances in Process Understanding. Presenting results in there
- 3) Template to fill in data on LH traits



## Task Force 1. General points for WG meeting

### Ideas

Consider mentoring event at Symposium?

Consider increasing group visibility online? e.g., short clips from selected members / invited speakers to symposium

Some overlap in topics and questions (A5, A2-A3), but this should be an opportunity

Explore ways to facilitate data sharing across activities and ICES/PICES groups. Best way?

To a certain extent, progress is limited by time availability of project leads

→ Support from intern(s) or ECRs?

### Proponents



A. 3



A. 3



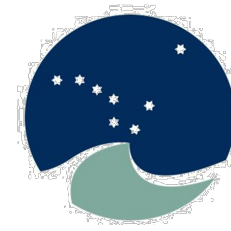
A. 5



A.1,2,3,5



A.2,3,5



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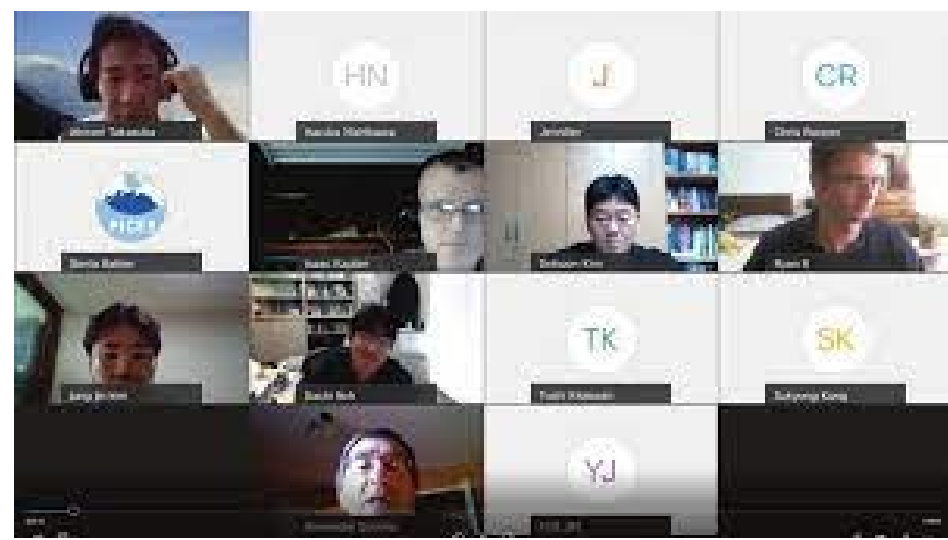
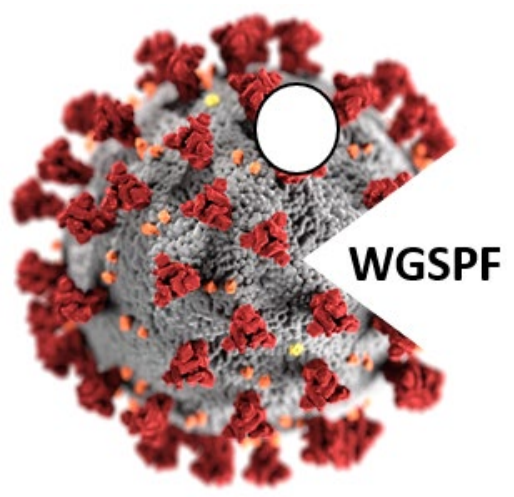


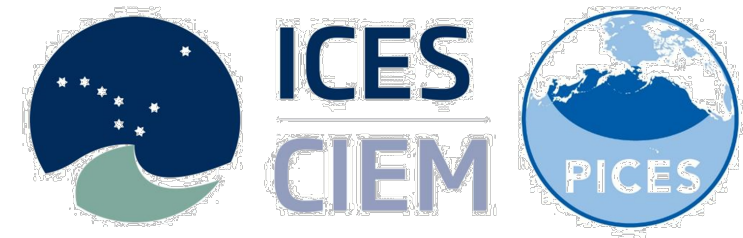
# ICES/PICES WGSPF 1<sup>st</sup> Annual meeting

Friday the 10th, **Monday the 13th**, and  
Tuesday the 14th of September, 2021

Co-chairs:

M. Peck, R. Rykaczewski, I. Catalán, A. Takasuka





## OUTLINE

- **MONDAY (13 Sept)**

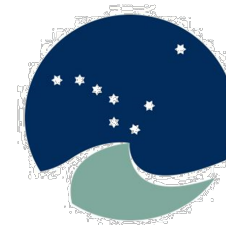
- Continuation or brief review of discussions on Task Force 1.
- Task Force 2-Translating process knowledge. Inputs and outputs to management structures and policy advice (TPK)
  - Activity 6: Survey Design and monitoring
  - Activity 7: Improving short-term forecasts and/or long-term projections
  - Activity 8: Improvements to management
- **General Discussion** (including cross-activity ideas)



- **TUESDAY (14 Sept)**

- Task Force 3 - Social-Ecological Approaches (SEA) - Main results and Discussion for each of the activities below:
  - Activities 9-11: Networks, vulnerability and opportunities of dependent human communities, tradeoffs in goods and services and bioeconomic analyses
- Planning of the Annual WG Reports, **reviewing ToRs**
- Planning of the Final Meeting at the 2022 SPF symposium
- Recommendations to increase efficiency of international collaboration inside the WG





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**Comments to the Chat on Friday:**

**Comments to activity 1 (re-worked).**

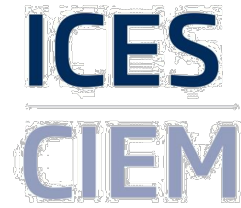
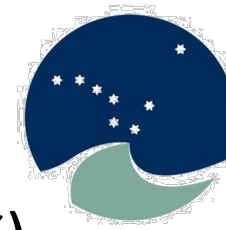
- **Activity 1: Critical Review, evaluation and testing of classic hypotheses.**

1. Exploring hypotheses regarding key processes that influence SPF population variability is an effort that is distinct from exploring how environmental information can be incorporated into management.

2. There is no shortage of conceptual hypotheses regarding variability in SPF. However, the *testable hypotheses* are few and far between.

We, as a community, should better recognize the distinction between those two types of hypotheses and *strive towards testable hypotheses* (or at least an outline of the data needed to test some of the currently untestable hypotheses). I expect that this point will be a component of a perspectives paper that comes out of the WG.





## Task Force 2. Translating Process Knowledge - Inputs and outputs to management structures and policy advice (TPK)

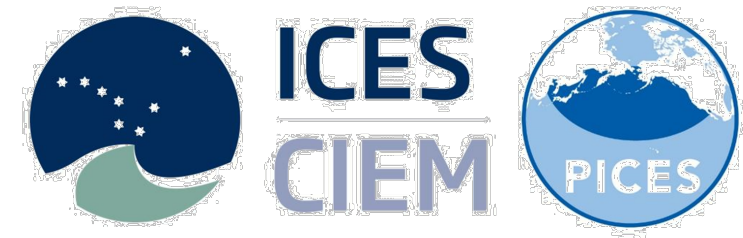
### Activity

**A.6.** Survey design / monitoring (knowledge from fishers), citizen science. Leads: M. Kloppmann (ICES) & C. Rooper (PICES). [11 ICES+7PICES](#)



### Main actions/results

- 1) Database for SPF surveys (metadata and survey descriptions). It includes. **Survey Table:** Survey type, survey methods, survey target species, life history stages, bycatch SPF, región/área, survey timing, temporal and spatial resolution, time series duration , contact information. **Species Table:** similar information but organized by species captured (can be cross-referenced with the Survey Table). [2020 Meeting Documents\10 Task Forces and Activities\02. Task Force 2 \(Activity 6-8\)\Activity 6](#)
- 2) Theme Session (S5) in the SPF symposium 2022: Progress in Pelagic Surveys: From Biomass Estimates to Monitoring Ecosystems



## Task Force 2. General points for WG meeting

### Ideas

- Ideas for making the database more useful to the other groups would be welcome
- Existing surveys driven by single species stock assessments (indices of abundance-recruitment)
- Under-utilization of data
- Inaccessibility of data
- Difficult to keep important time-series with no economic implications
- “New” technologies could use a bit more standardization-development (not as mature as bongo nets and trawls)

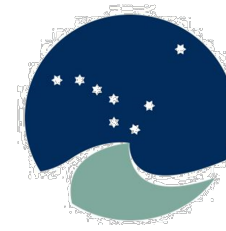
### Proponents



A.6-> important for A2,A3+?



A.6



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## TF 2. Specific comments of activities

### Ideas

There are many gaps

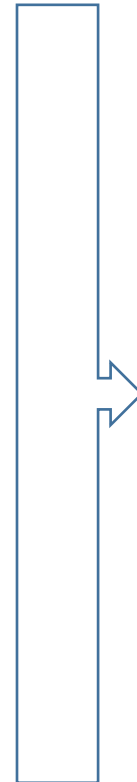
- Known surveys that are not included
- Regions that are not well covered
- Species that are not well surveyed

Most information is from NW Pacific and Atlantic

- New round of outreach to PICES members needed
- Southern hemisphere generally under-represented

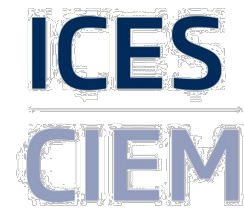
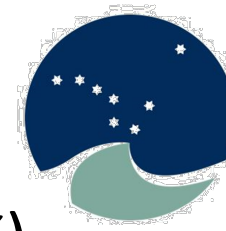
Progress has been relatively slow

- Attainable goal, but not very exciting



### Proponents

A.6



## Task Force 2. Translating Process Knowledge - Inputs and outputs to management structures and policy advice (TPK)

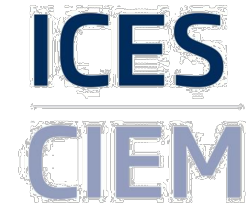
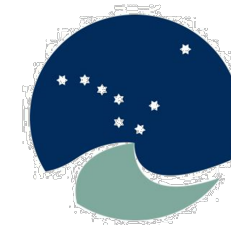
### Activity

**A.7.** Improving short-term forecasts and/or long-term projections. Leaders: R. Rykaczewski (PICES) & S. Koenigsten (ICES) [16 participants](#).



### Main actions/results

- 1)** Censusing the different efforts underway to offer future forecasts of SPF populations. Several examples are given for the Canary current, California Current, Humboldt Current and Kuroshio Current. From single drivers to complex models
- 2) A)** 2022 SPF symposium: Session 4: Responses to Climate Variability and Change at Decadal to Centennial Time Scales. **B)** Workshop 2: The Devil's in the Details of Using Species Distribution Models to Inform Multispecies and Ecosystem Models



## Task Force 2. General points for WG meeting

### Ideas

Discussions with those closer to management (Activity #8 and Task Force 3) would be valuable.

Question for managers:

What sorts of forecasts (and their precision) are useful?

How might we best communicate (and quantify) uncertainty in forecasts?

In what aspects of management will forecasts find the most use?

Setting quotas in time and space?

Informing stock assessments (e.g., survey locations, catchability), biological (e.g., relevant biological processes) and oceanographic research (relevant env. covariates)?

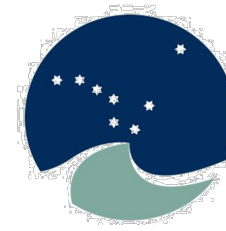
Allocation of SPF between commercial fisheries and other ecosystem needs (e.g., forecasting poor forage conditions for higher predators)?

Societal/political climate change adaptation? (e.g., feed into IPCC reports)?

### Proponents



A.7



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## TF 2. Specific comments of activities

### Ideas

Recognition that there are aspects of SPF ecology that are more predictable (e.g., distribution or phenology) and others that are less predictable (e.g., recruitment success). Should we focus on low-hanging fruit?

Challenges of modeling physical vs. ecological vs. fisheries drivers (density-dependent vs. independent processes). Can modeling highly variable SPF serve to better understand fish stock dynamics in general?

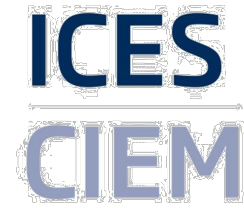
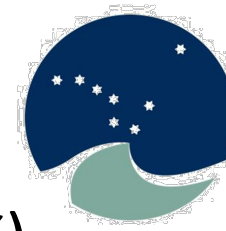
Needs and uncertainties will be different for short-term (i.e., seasonal to few years) vs. long-term projections. We have initiated an effort to summarize these different needs.

“Extreme” climate and hydrological events have been receiving a lot of attention recently. Perhaps this emphasis can be extended to SPFs.

- What conditions stimulate extreme anomalies in SPF recruitment, abundance, or distribution?
- What are the sensitivities of SPF to extreme climate events?

### Proponents

A.7

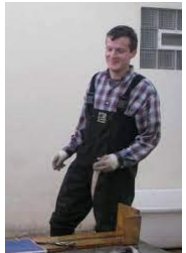


## Task Force 2. Translating Process Knowledge - Inputs and outputs to management structures and policy advice (TPK)

### Activity

#### **A.8.** Improvements to management.

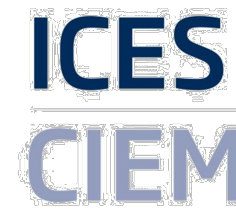
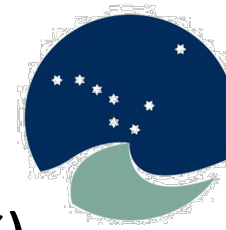
Leaders: I. Kaplan, R. Nash, S. Lluch-Cota & A. Uriarte.



### Main actions/results

Which is the best strategy to manage the highly productive and variable SPF?

1. still assembling management strategies for pelagic fish which we can test across different ecosystems. Candidates include spatial management, aggregate catch limits, size thresholds, and including ecological indicators.
2. Still assembling models (and volunteers) to test candidate management strategies.
3. Results to be submitted for presentation in SPF Symposium **Session 6**, “Reconciling Ecological Roles and Harvest Goals: Development and Testing Management Strategies to Enhance Marine Ecosystem Services”

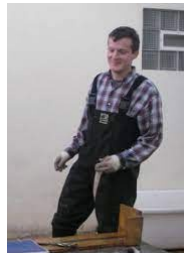


## Task Force 2. Translating Process Knowledge - Inputs and outputs to management structures and policy advice (TPK)

### Activity

#### **A.8.** Improvements to management.

Leaders: I. Kaplan, R. Nash, S. Lluch-Cota & A. Uriarte.

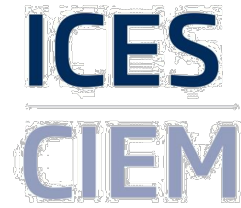
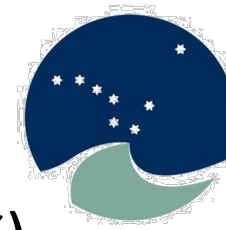


### Main actions/results

#### **How can CC and environmental variability be integrated into the Management Strategy Evaluation (MSE)?**

1. A review of methods of incorporating realistic environmental change into assessment, advice and Management Strategy Evaluation is ongoing through a review of what has been done by regions with respect to incorporating environmental drivers into Assessments, MSEs and advice for management. Results to be submitted for presentation in SPF Symposium Session 6.
2. In addition: A complementary review of procedures for detecting changes in the patterns of recruitment series which might be attributed to environmental change.





## Task Force 2. Translating Process Knowledge - Inputs and outputs to management structures and policy advice (TPK)

### Activity

#### **A.8.** Improvements to management.

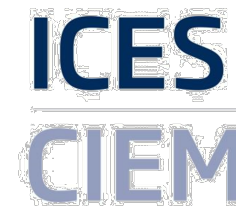
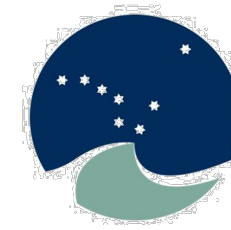
Leaders: I. Kaplan, R. Nash, S. Lluch-Cota & Uriarte.



### Main actions/results

**How can we objectively and over inter-annual scales define dynamic indicators to help management on: a) the attribution or partition biomass reductions to the influence of climate versus overfishing, and b) the relative trophic importance of small pelagics within the ecosystem?**

- 1. Ongoing review** paper on strategies that have been considered to detect and attribute biomass fluctuations to climate variability. There will be a section covering fisheries subjected to the MSC certification process. Results will be submitted for presentation in the SPF Symposium Session 6.
- 2. Ongoing analysis** on improvements in sustainable management resulting from the MSC certification process in the Gulf of California SPF. Results will be submitted for presentation in the SPF Symposium (session/workshop TBD).



## Task Force 2. General points for WG meeting

### Ideas

Most of the Activity 8-related issues will be presented in the SPF Symposium Session 6. How to ensure integration of Activity 8 participants in the rest of the Symposium? One option: see **Workshop 2: The Devil's in the Details of Using Species Distribution Models to Inform Multispecies and Ecosystem Models**

Another option: see **Workshop 4: Evaluating Inter-Sectoral Tradeoffs and Community-Level Response to Spatio-Temporal Changes in Forage Distribution and Abundance**

Enhancing the cooperation in overlapping areas of research covered in other Tasks e.g. ( for instance with activity 2 or 7 etc.).

A.8 has not been sufficiently successful in collecting management and unpublished data from the different fishery systems. Should we try to integrate a **single "official" data request from the entire WGSPF?** Maybe we should create a dedicated working group for data acquisition.

Across our nations and institutes, we face a challenge that fishermen and managers often focus on ~2-10 year time frames, while climate change impacts may occur over longer ~25-100 year timeframes. The challenge is how to bridge this potential gap in timeframes and engage with fishery managers on these questions?

### Proponents



A.8

## Task Force 3. Social-Ecological approaches(SEA)

### Activity

**A.9.** Networks, vulnerability and opportunities of dependent human communities, Leads: Peck (ICES)+?



**A.10.** Quantifying trade-offs in goods and services (end-to-end-models), Original Leads: C. Hansen (ICES) & I. Kaplan (PICES) (but see action/ results)

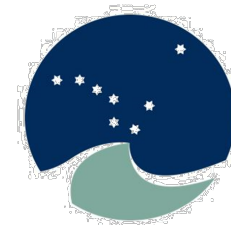


**A.11.** Bioeconomic modelling (including stakeholder engagement).

### Main actions/results

- 1) E-mail discussions have created a group of interested participants but concrete work has not started.
- 2) Symposium should act as catalyst for activities:
  - S7 – Advancing Social-ecological Analyses and Sustainable Policies for Dependent Human Communities
  - W3 – Small Pelagics for Whom? Challenges and Opportunities for the Equitable Distribution of Nutritional Benefits
  - W4 – Evaluating Inter-Sectoral Tradeoffs and Community-Level Response to Spatio-Temporal Changes in Forage Distribution and Abundance
- 3) Most likely combine A9-A11 into two activities. This all depends on ongoing work and finding motivated (e.g. early career?) Activity Leads.

End of Day 2



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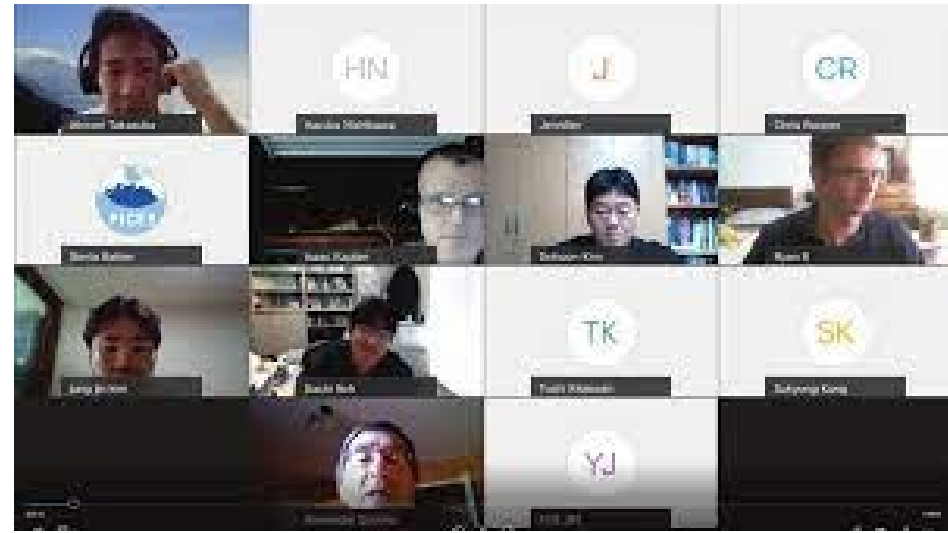
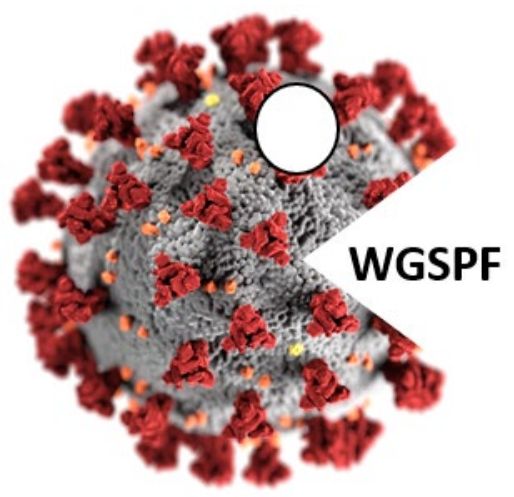


# ICES/PICES WGSPF 1<sup>st</sup> Annual meeting

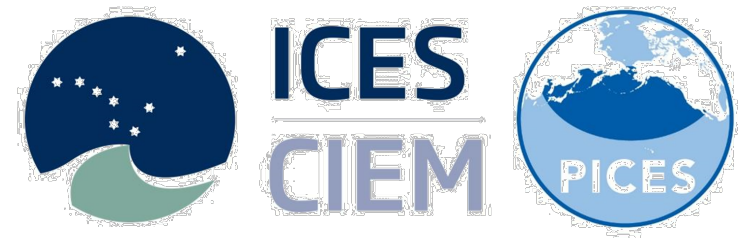
Friday the 10th, Monday the 13th, and  
**Tuesday the 14th** of September, 2021

Co-chairs:

M. Peck, R. Rykaczewski, I. Catalán, A. Takasuka



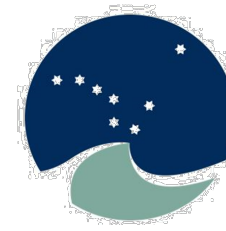
OUTLINE (modified)



• **TUESDAY (14 Sept)**

- 16:00. Fast tour through sharepoint
- 16:10. Planning of the Annual WG Reports, **reviewing ToRs**
- 16:30. Planning of the Final Meeting at the 2022 SPF symposium
- 17:00. General Discussion on the WG
  - Breakout rooms Discussions (30 mins)
- 17:30 reconvene from Breakout rooms, final discussion
- Wrap-up





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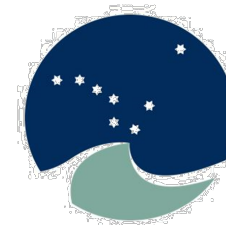
# Planning of the Annual Activity Reports

- ICES/PICES WGSPF anual reports.

For ICES, an interim working group e-evaluation is needed in 10 days after the end of this meeting. A template is available. It must include:

- WG info
- Summary of progress (300 Word)
- Follow up required
- progress made with respect to ToR (including delays etc.). We'll include changes in Symposium Schedule, and timing of products (likely after the symposium)
- Changes to any of the ToR required?
- Rewording
- Next meeting: location and dates
- Science guidelines
- List of participants





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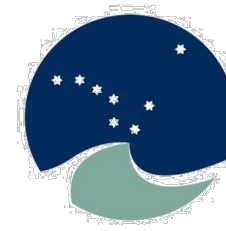


# Planning of the Annual Activity Reports

- ICES/PICES WGSPF annual reports.
- Short interim report will include statements organized by ToRs (Terms of Reference)
- The main changes with respect to the initial workplan is the delay by 8 months of a key ToR E (Topic sessions and Symposium)
- ToR A **To review recent progress on understanding how various drivers (environmental and/or anthropogenic) impact the population dynamics of SPF** in different ecosystems and whether and how potential drivers shift with changes in ecosystem state. **Review paper(s) within peer-reviewed journal(s).**
  - *Send us any ongoing paper. Enumerating related topics?*
  - *Compilation of number of meetings per related activity/topic*







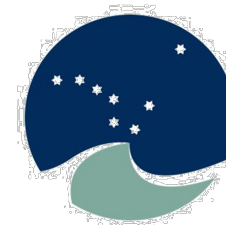
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# Planning of the Annual Activity Reports

- ICES/PICES WGSPF annual reports.
- Short interim report will include statements organized by ToRs (Terms of Reference)
- The main changes with respect to the initial workplan is the delay by 8 months of a key ToR E (Topic sessions and Symposium)
- ToR B **Create a networking environment** for international and multidisciplinary collaboration to foster the establishment of similar study frameworks and **comparative analyses of SPF across different social–ecological systems**, based on updated time series data sets of climate indices, environmental factors and fisheries biology as well as ecophysiological information (feeding, growth and survival). [Reports to ICES/PICES, peer-reviewed papers \(perspectives\)](#)
  - *Send us any ongoing paper/report*
  - *Describe databases in activities*
  - *Compilation of number of meetings per related activity/topic*





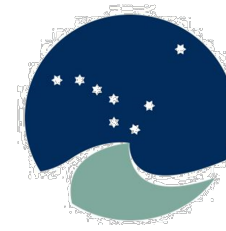
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# Planning of the Annual Activity Reports

- ICES/PICES WGSPF annual reports.
- Short interim report will include statements organized by ToRs (Terms of Reference)
- The main changes with respect to the initial workplan is the delay by 8 months of a key ToR E (Topic sessions and Symposium)
- Tor C **Identify, prioritize and conduct research** most needed to advance our knowledge and capacity to predict the population dynamics of SPF at both short (seasonal to inter-annual) and long (decadal to centennial) time scales. [Reports to ICES/PICES, peer-reviewed papers.](#)
  - *Send us any ongoing paper/report*
  - *Compilation of number of meetings per related activity/topic*
  - *Brief description of the related activities*





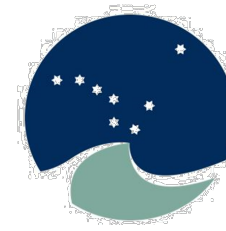
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# Planning of the Annual Activity Reports

- ICES/PICES WGSPF annual reports.
- Short interim report will include statements organized by ToRs (Terms of Reference)
- The main changes with respect to the initial workplan is the delay by 8 months of a key ToR E (Topic sessions and Symposium)
  - ToR d. **Recommend strategies of marine ecosystem monitoring and fisheries management of SPF** which will contribute to sustainable ecosystem-based fisheries management, through biophysical, ecosystem and/or socio-economical models. [Reports to ICES/PICES, peer-reviewed papers.](#)
    - *Send us any ongoing paper/report*
    - *Compilation of number of meetings per related activity/topic*





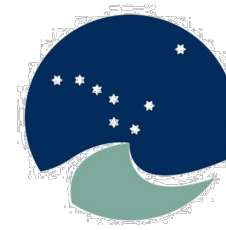
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# Planning of the Annual Activity Reports

- ICES/PICES WGSPF annual reports.
- Short interim report will include statements organized by ToRs (Terms of Reference)
- The main changes with respect to the initial workplan is the delay by 8 months of a key ToR E (Topic sessions and Symposium)
  - **ToR e. Propose topic sessions** at PICES Annual Meetings and ICES Annual Science Conferences focused on advances in SPF science and **to organize a joint ICES/PICES symposium on SPF** at regular intervals (e.g., once every 4 years) leading to the publication of findings in special issues of primary journals. **Reports to ICES/PICES, peer-reviewed papers**
    - *Will justify the 8-month delay*
    - *Provide link to web, and brief description of the activity*
    - *Papers associated with the symposium will also be delayed*





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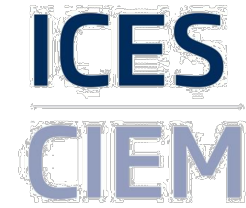
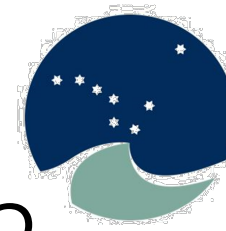


# Planning of the Final Meeting

- The final WGSPF meeting will take place right after the 2022 SPF symposium
- We are planning the best way to do it. It will probably take place in a hotel near the Symposium Venue, during Saturday and Sunday. We have 3 rooms.
- Time will be devoted to
  - i) the organization of publications to be submitted for peer-review,
  - ii) planning the continuation of the WG (e.g., FAO interest), and
  - iii) drafting the Final Report.



Ideas for a fruitful meeting?



# Needed improvements in the WG? (breakout)

- How can we fund meetings?
- How to Improve efficiency on International collaboration?
- How to improve Cross-activities interaction?
- How to foster engagement in particular areas/topics?
- Are we missing key expertise in the WG/Activities?
- How to practically proceed with Data->minimum, a table linking data and provider
- How to better manage(e.g., run meetings) the WG in 2022?



# Final remarks/conclusions

- Overall, good progress of several activities. Some will gain speed before the symposium
- Good involvement of activity leaders, and good attendance to meetings in most cases. High potential for many dormant ideas
- May 22, deadline for abstracts->ensure contributions to the symposium!
- Data->shared at least at the level of a table with identified contributors
- Actions on visibility needed, possibly at the level of Symposium?
- Plan for final meeting. Writing meeting before that?