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International Council for
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2024 FRSG Expert Group ToRs

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Generic ToRs for Regional and Species Working Groups

Approved in Resolutions meeting on 31 October 2023

The following ToRs apply to: AFWG, HAWG, NWWG, NIPAG, WGWIDE, WGBAST, WGBFAS, WGNSSK, WGCSE, WGDEEP, WGBIE, WGEEL, WGEF, WGHANSA and WGNAS.

The working group should focus on:

- a) Conduct an assessment on the stock(s) to be addressed in 2024 using the method (assessment, forecast or trends indicators) as described in the stock annex and documented in TAF; - complete and document an audit of the calculations and results; and produce a **brief** report of the work carried out regarding the stock, providing summaries of the following where relevant:

Quality control and quality assurance of input data. In the event of late, missing or inconsistent data document issues and deviations from the stock annex.

- i) Where misreporting of catches is significant, provide qualitative and where possible quantitative information and describe the methods used to obtain the information;
- ii) For relevant stocks (i.e., all stocks for NEAFC request advice), estimate the percentage of the total catch that has been taken in the NEAFC Regulatory Area in the most recent years.
- iii) For category 2 and 3 stocks requiring new advice in 2024, implement the methods in guidance for harvest control rules and stock assessments for stocks in categories 2 and 3. Replace the former 2 over 3 advice rule (2 over 5 for elasmobranchs) which is no longer considered precautionary.
- iv) Evaluate spawning stock biomass, total stock biomass, fishing mortality, catches (projected landings and discards) using the method described in the stock annex;
 - 1) for category 1 and 2 stocks, in addition to the other relevant model diagnostics, the recommendations and decision tree formulated by WKFORBIAS (see Annex 2 of https://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/Fisheries%20Resources%20Steering%20Group/2020/WKFORBIAS_2019.pdf) should be considered as guidance to determine whether an assessment remains sufficiently robust for providing advice.
 - 2) If the assessment is deemed no longer suitable as basis for advice, provide advice using an appropriate Category 2-5 approach as described in ICES technical guidance for harvest control rules and stock assessments for stocks in categories 2 and 3 or in Advice on fishing opportunities (for Cat 5 & 6).
 - 3) If the assessment has been moved to a Category 2-5 approach in the past year, consider what is necessary to move back to a Category 1 and develop proposal for the appropriate benchmark process.
- v) Provide all requested catch scenarios for the year(s) beyond the terminal year of the data (These are listed in ICES Guidance for completing single-stock advice)
- vi) Historical and analytical performance of the assessment and catch options with a succinct description of associated quality issues. For the analytical performance of category 1 and 2 age-structured assessments, report the mean Mohn's rho (assessment retrospective bias analysis) values for time series of recruitment, spawning stock biomass, and fishing mortality rate. The WG report should include a plot of this retrospective analysis. The values should be calculated in accordance with the "[Guidance for completing ToR viii\) of the Generic ToRs for Regional and Species Working Groups - Retrospective bias in assessment](#)" and reported using the [ICES application](#) for this purpose.
- b) Produce and quality assure a first draft of the advice for each stock according to ACOM guidelines.
- c) Include non-fisheries conservation considerations in accordance with the "ICES Guidelines on Non-Fisheries Conservation Considerations".

- d) Review progress on benchmark issues and processes of relevance to the Expert Group.
 - i) update the benchmark issues lists for the individual stocks in SID;
 - ii) review progress on benchmark issues and identify potential benchmarks to be initiated in 2025 for conclusion in 2026;
 - iii) determine the prioritization score for benchmarks proposed for 2025–2026;
 - iv) as necessary, document generic issues to be addressed by the Benchmark Oversight Group (BOG)
- e) Prepare the data calls for the next year’s update assessment and for planned data evaluation workshops;
- f) Identify research needs of relevance to the work of the Expert Group.
- g) Review and update information regarding operational issues and research priorities on the Fisheries Resources Steering Group SharePoint site.
- h) Update TAF, SAG, ASD (Advice and Scenarios database) and SID with final assessment input and output and advice information.
- i) Consider and comment on Ecosystem and Fisheries Overviews with a focus on:
 - i) identifying and correcting mistakes and errors (both in the text, tables and figures), and
 - ii) proposing concrete evidence-based input that is considered essential for the advice but is currently under-developed or missing (with references and Data Profiling Tool entries, as appropriate).

Information of the stocks to be considered by each Expert Group is available [here](#).

AFWG – Arctic Fisheries Working Group

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG02 The **Arctic Fisheries Working Group** (AFWG), chaired by Daniel Howell, Norway, will meet in (Bergen) 8–12 April 2024 to:

- a) Address generic ToRs for Regional and Species Working Groups, for all regionally relevant stocks.
- b) Conduct reviews as required of any time-series computed using the STOX and ECA open source software for use in assessment in the Barents Sea.
- c) Where relevant, provide references to other available sources of scientific assessment and advice for fisheries in the region.

The assessments will be carried out on the basis of the stock annex. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group on the dates specified in the 2024 ICES data call.

AFWG will report by 3 May 2024 for the attention of the Advisory Committee.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert’s country can attend this Expert Group.

HAWG – Herring Assessment Working Group for the Area South of 62°N

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG03 The **Herring Assessment Working Group for the Area South of 62°N** (HAWG), chaired by Aaron Brazier, UK, and Nis Sand Jacobsen*, Denmark, will meet:

In ICES HQ, Copenhagen, Denmark 23–25 January 2024 to:

- a) Compile the catch data of sandeel in assessment areas 1r, 2r, 3r, 4, 5r, 6, 6a and 7r and address generic ToRs for Regional and Species Working Groups that are specific to sandeel stocks in the North Sea ecoregion;

and in Aberdeen University, UK, 12-21 March 2024 to:

- b) Compile the catch data of North Sea and Western Baltic herring on 12-14 March;
- c) Address generic ToRs for Regional and Species Working Groups on 15-21 March, for all other stocks assessed by HAWG.

The assessments will be carried out based on the Stock Annex. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group on the dates specified in the 2024 ICES data call.

HAWG will report by 10 February (sandeel), 21 April (sprat) and 28 May (herring) 2024 for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group

NIPAG – Joint NAFO/ICES Pandalus Assessment Working Group

T3 - To be approved on the Resolutions Forum when remaining issues have been addressed

2023/AT/FRSG04 The **Joint NAFO/ICES Pandalus Assessment Working Group** (NIPAG), chaired by Fabian Zimmermann, Norway (ICES Chair) and Martha Krohn, Canada (NAFO Chair), will meet from 6–9 May 2024 in IMR, Tromsø, to:

- a) Address generic ToRs for Regional and Species Working Groups for Northern shrimp in divisions 3.a and 4.a East stock.
- b) The WG will reconvene in the autumn (TBC) to address generic ToRs for Regional and Species Working Groups, for other regionally relevant stocks."

NIPAG will report by 24 May 2024 for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group

NWWG – Northwestern Working Group

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG05 The **Northwestern Working Group** (NWWG), chaired by Helga Bára Mohr Vang*, Faroe Islands, and Teunis Jansen, Denmark, will meet at ICES Headquarters, 22–26 April 2024 to:

- a) Address generic ToRs for Regional and Species Working Groups for all stocks except those listed in ToR b) and ToR c);

online during 4 – 6 September 2024 to:

- b) Address generic ToRs for Regional and Species Working Groups, for Beaked redfish (*Sebastes mentella*) in ICES subareas 5, 12, and 14 (Iceland and Faroe grounds, North of Azores, East of Greenland) and NAFO subareas 1 and 2 (deep pelagic stock > 500 m), and for Beaked redfish (*Sebastes mentella*) in ICES subareas 5, 12, and 14 (Iceland and Faroe grounds, North of Azores, East of Greenland) and NAFO subareas 1 and 2 (shallow pelagic stock < 500 m).

and online during 21-24 October 2024 to:

- c) Address generic ToRs for Regional and Species Working Groups, for Cod (*Gadus morhua*) in Subdivision 5.b.1 (Faroe Plateau), Cod in Subdivision 5.b.2 (Faroe Bank,) Haddock (*Melanogrammus aeglefinus*) in Division 5.b (Faroes grounds) and Saithe (*Pollachius virens*) in Division 5.b (Faroes grounds).

The assessments will be carried out on the basis of the stock annex. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group on the dates specified in the 2024 ICES data call.

NWWG will report by 15 May, 10 September, and 10 November 2024 for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group

WGAMEEL – Working Group on American Eel

Approved in November 2021 – Updated in September 2022

2021/2/FRSG06 **Working Group on American Eel** (WGAMEEL), co-chaired by Thomas Pratt, Canada, and Kristen Anstead, USA, will be established, will work on ToRs, and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2022	September 13-15, 2022	Online	Interim report by 29 September 2022 to Fisheries Research Steering Group	
Year 2023	TBD	USA	Interim report to Fisheries Research Steering Group	
Year 2024	TBD	Canada	Final report to Fisheries Research Steering Group	

ToR descriptors

ToR	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
	This should capture the objectives of the ToR	Provide very brief justification, e.g. advisory need, links to Science Plan and other WGs	Use codes (<i>max 3 per ToR</i>)	1, 2 or 3 years	Specify what is to be provided, when and to whom
a	Collate and evaluate data on American eel abundance, distribution, habitat, and biology from surveys and fisheries in Canada and the United States	Fishery-independent and fishery-dependent time series datasets available for various life stages (glass eels, elvers, yellow eels, silver eels) in both countries will be critically reviewed. While the primary focus will be on abundance time series, other types of data (distribution, habitat, biology) may also be important to consider.	1.7, 1.8, 3.1	Year 1	Review paper
b	Assemble information on spatial population structure of growth-phase American eels and devise approaches to fill data gaps	Growth-phase American eels are known to use all sheltered coastal (bay, estuary) and all accessible freshwater (river, stream, lake, pond) habitat types. However, knowledge of eel status is often based on habitat-specific series-of-opportunity (e.g. stream electrofishing, estuary seining), leaving data gaps in other habitats (lakes and ponds). This effort will search for previously unexploited data sources and draw on GIS-based modelling tools to advance a pan-habitat understanding of growth-phase American eel status and relative abundance.	1.7, 1.8, 3.1	Years 1 & 2	Review paper
c	Enhance current understanding of eel	Recognizing the complexity of	3.6, 7.1, 7.5	Years 1, 2 & 3	Review paper

<p>spatial distribution, abundances, alternative management strategies, and appreciation of the cultural and social significance of eels by integrating existing Indigenous knowledge systems to complement current scientific knowledge</p>	<p>Indigenous knowledge systems (IKS) as distinct ways of knowing, IKS is becoming increasingly recognized for its contribution as a form of adaptive management than may enhance sustainable management of resources. However, few attempts to integrate scientific knowledge and IKS exist for eels. The WG will compile existing Indigenous knowledge for the purpose of enhancing current understanding and to improve the management and sustainability of eels.</p>		4.3	Years 2 & 3 Review paper
<p>Compare and contrast modelling approaches used for European and American eels and identify data needs for these approaches</p>	<p>Beginning in 2007, the European Union mandated member states to compare current European silver eel escapement in eel management units to estimated escapement under pristine conditions. However, this method has not been used to provide management advice, which is instead based on recruitment trends. The American eel has been assessed in US Atlantic states by a model based on fisheries-induced abundance changes, and in Canada's Maritimes Region by spawner-per-recruit analysis. The potential of these approaches to provide insight into American eel population dynamics and status will be examined in the context of current</p>	d	4.3	Years 2 & 3 Review paper

		and potential future data availability.		
e	Identify potential stock assessment methods and management approaches that would be appropriate to use for fishery management and conservation needs	International governance (i.e., stock assessment and management) remains undeveloped for the American eel, which is comprised of a single, panmictic population shared among many jurisdictions. Although there are concerted assessment and management efforts within each country, there is no formal binational organization overseeing this species between the two main users of the resource, Canada and the United States. The WG will propose methods that could improve assessment, management, and conservation of eels in both countries.	4.3	Years 2 & 3 Report to ICES on methods to improve American eel assessments.

Summary of the Work Plan

Year 1	The WG will meet online to address primarily the first 3 TORs.
Year 2	The WG will meet online or face to face to address the 5 TORs.
Year 3	The WG will meet online or face to face to address primarily the last 2 TORs. The WG will review drafts of papers developed following the first 2 years.

Supporting information

Priority	The current activities of this Group will lead ICES into issues related to the ecosystem effects of fisheries, especially with regard to the application of the Precautionary Approach. Consequently, these activities are considered to have a very high priority.
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resources required to undertake additional activities in the framework of this group is small.
Participants	The Group should be attended by some 20–25 members and guests.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	There are no obvious direct linkages but developing the expertise could link to ACOM in the future.
Linkages to other committees or groups	Interactions will be sought with WGEEL and WGFEA.
Linkages to other organizations	There are linkages to a number of organizations and institutions throughout North America and Europe, such as the Research Programme on European eel from the General Fisheries Commission for the Mediterranean.

WGBAST – Baltic Salmon and Trout Assessment Working Group

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG07 The **Baltic Salmon and Trout Assessment Working Group** (WGBAST), Katarina Magnusson* (Sweden) and Katarzyna Nadolna-Altyn* (Poland) will meet 9–17 April 2024 in Gävle, Sweden to:

- a) Address relevant points in the Generic ToRs for Regional and Species Working Groups;

Material and data relevant for the meeting must be available to the group on the dates specified for the 2024 ICES data call.

WGBAST will report by 3 May 2024 for the attention of ACOM.

Further specific terms of reference and/or workshops linked to WGBAST may arise.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.

WGBFAS – Baltic Fisheries Assessment Working Group

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG08 The **Baltic Fisheries Assessment Working Group** (WGBFAS), chaired by Kristiina Hommik, Estonia, will meet on 10–11 April 2024 online and on 16–23 April 2024 at ICES HQ, Copenhagen, Denmark to:

- a) Address generic ToRs for Regional and Species Working Groups.
- b) Review the main result from WGMIXFISH, WGIAB, WGSAM, WGBIFS, WKBMSYSPICT3, WKHERBAL, WKNEWREF, and WKREBULD2, with main focus on the biological processes and interactions of key species in the Baltic Sea.

The assessments will be carried out on the basis of the stock annexes. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group on the dates to be specified in the 2024 ICES data call.

WGBFAS will report by 9 May 2024 for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.

WGBIE– Working Group for the Bay of Biscay and Iberian waters Ecoregion

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG09 The **Working Group for the Bay of Biscay and Iberian waters Ecoregion** (WGBIE), chaired by Ching Villanueva, France and Santiago Cerviño, Spain, will meet in Lisbon, Portugal, 30 April 2024 – 8 May 2024 to:

- a) Address generic ToRs for Regional and Species Working Groups;
- b) Review results and recommendations from benchmark and other interim relevant workshops held in 2023 and early 2024;

- c) Update on Stock ID studies

The assessments will be carried out on the basis of the stock annex. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group on the dates specified in the 2024 ICES data call.

WGBIE will report by May 17 2024 for the attention of the Advisory Committee.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.

WGCSE – Working Group for the Celtic Seas Ecoregion

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG10 The **Working Group for the Celtic Seas Ecoregion** (WGCSE), chaired by Jonathan White, Ireland and Ruth Kelly*, UK will meet 8–17 May 2024 in ICES HQ Copenhagen, Denmark to:

- a) Address generic ToRs for Regional and Species Working Groups;

and online in September (*dates to be decided in May 2024*) to:

- b) Address generic ToRs for Regional and Species Working Groups for *Nephrops* stocks, anglerfish and megrim in Rockall.

The assessments will be carried out on the basis of the stock annex. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group on the dates specified in the 2024 ICES data call.

WGCSE will report by 31st May 2024 for the attention of ACOM, and by October 2024 for *Nephrops* stocks, anglerfish and megrim in Rockall.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group

WGDEEP – Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG11 The **Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources** (WGDEEP), chaired by Elvar Hallfredsson, Norway and Juan Gil Herrera, Spain, will meet in Copenhagen, Denmark, 24–30 April 2024 to:

- a) Address generic ToRs for Regional and Species Working Groups.
- b) Update the description of deep-water fisheries in both the NEAFC regulatory areas and ICES area(s) by compiling data on catch/landings, fishing effort (inside versus outside the EEZs, in spawning areas, areas of local depletion, etc.), and discard statistics at the finest spatial resolution possible by ICES Subarea and Division and NEAFC regulatory areas. In particular, describe and prepare a first advice draft of any new emerging deep-water fishery with the available data in the NEAFC regulatory areas.

- c) Continue work on exploratory assessments for deep-water species.
- d) Evaluate the status of stocks for the provision of advice in 2024.

The assessments will be carried out based on the Stock Annex. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group on the dates specified in the 2024 ICES data call.

WGDEEP will report by 20 May 2024 for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.

WGDIAD – Working Group on Science to Support Conservation, Restoration, and Management of Diadromous Species

2023/MT/FRSG12

WGEEL – Joint EIFAAC/ICES/GFCM Working Group on Eels

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG13 The **Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL)**, chaired by Jan-Dag Pohlmann, Thünen Institute, Germany and Caroline Durif, Norway will meet, in a split meeting from 11–16 September (online) and 23 September–01 October 2024 (Albania) to:

- a) Address the generic EG ToRs from ICES, and any requests from EIFAAC or GFCM;
- b) Report on developments in the state of the European eel (*Anguilla anguilla*) stock, the fisheries on it and other anthropogenic impacts;
- c) Report on updates to the scientific basis of the advice, including any new or emerging threats or opportunities;
- d) Identify and address Mediterranean-specific issues on European eel
- e) Implement the roadmap proposed by WKFEA

Material and data relevant for the meeting must be available to the group on the dates specified in the 2024 ICES data call.

WGEEL will report by Date, 01 November 2024 for the attention of ACOM, WGDIAD, FRSG and FAO, EIFAAC and GFCM.

Supporting Information

Priority	<ul style="list-style-type: none"> i) The status of the European eel stock remains outside safe biological limits and continuing and further management actions are required to recover the stock. ii) The present stock status assessment is based on recruitment time series, which have no predictive power and therefore cannot be used to identify the most effective way to recover the stock nor the time scale over which recovery might be achieved. Therefore, the development and application of further status assessment methods are urgently required. Therefore the
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	findings of WKFEA require particular attention.
	iii) The Council Regulation (EC) 1100/2007 obliges EU Member States to report national stock indicators, to take management measures and to report progress. Non-EU countries have no such legal obligation, but the same aspirations are necessary to provide a whole-stock assessment and management. The Working Group continues to provide EIFAAC, ICES and the GFCM countries with support in implementing and improving such actions.
	iv) The EU has requested annually recurring scientific advice on the European eel. Specifically, for eel, the advice is sought in support of the Eel Regulation (EC 1100/2007).
Scientific justification	European eel life history is complex and atypical among aquatic species. The stock is genetically panmictic and data indicate random arrival of adults in the spawning area. The continental eel stock is widely distributed and there are strong local and regional differences in population dynamics and local stock structures. Fisheries on all continental life stages take place throughout the distribution area. Local impacts by fisheries vary from almost nil to heavy overexploitation. Other forms of anthropogenic mortality (e.g. hydropower, pumping stations) also impact on eel and vary in distribution and local relevance. Most but not all EU Member States reported quantitative estimates of the required stock indicators to the EU in 2012, 2015, 2018 and 2021. The reliability and accuracy of these data have not yet been fully evaluated, but the ICES WKEMP will examine this. Furthermore, the stock indicators of some non-European countries within the natural range are lacking.
Resource requirements	SharePoint, WebEx
Participants	EIFAAC, ICES and GFCM Working Group Participants, Invited Country Administrations, Client representative
Secretariat facilities	Support to organize the logistics of the meeting.
Financial	At countries expense
Linkages to advisory committees	ACOM
Linkages to other committees or groups	WGDIAD, SCICOM, FRSG
Linkages to other organizations	FAO EIFAAC, GFCM, EU DG-MARE, EU DG-ENV

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.

WGEF – Working Group on Elasmobranch Fishes

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG14 The **Working Group Elasmobranch Fishes** (WGEF), chaired by Sophy McCully Phillips (UK) and Teresa Moura* (Portugal), will meet:

online 5–6 June 2024 to:

- a) Compile the catch and length data for all elasmobranch stocks;

and in Lisbon, Portugal, from 18–27 June 2024 to:

- b) Address generic ToRs for Regional and Species Working Groups.
- c) Update the description of elasmobranch fisheries for deep-water, pelagic and demersal species in the ICES area and compile landings, effort and discard statistics by ICES Subarea and Division, and catch

- data by NEAFC regulatory areas. Describe and prepare a first Advice draft of any emerging elasmobranch fishery with the available data on catch/landings, fishing effort and discard statistics at the finest spatial resolution possible in the NEAFC RA and ICES area(s);
- d) Evaluate the stock status for the provision of biennial advice due in 2024 for: (i) spurdog in the NE Atlantic; and (ii) skates in the Celtic Seas and Bay of Biscay and Iberian Coast ecoregions;
 - e) Collate landings and discard data from countries and fleets according to the ICES data call to follow recommendations from WKSHARK5 to: (i) address the following issues: data quality and onboard coverage; raising factors; discard retention patterns between fleets and countries; discard survival; (ii) advise on how to include discard information in the advisory process; and (iii) develop a coherent data-base for landings/discard information used in the assessments.
 - f) Follow the outcomes of WSKATE and make the best use of survey indices in the assessments where appropriate.
 - g) Work intersessionally to draft/update stock annexes and then develop a procedure and schedule for subsequent reviews.

The assessments will be carried out on the basis of the stock annex in National Laboratories, prior to the meeting. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting as specified in the 2024 ICES data call must be available to the group no later than 14 days prior to the starting date.

WGEF will report by TBD August 2024 for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.

WGHANSA – Working Group on Southern Horse Mackerel Anchovy and Sardine

Approved in Resolutions meeting on 31 October 2023, chair and venue approved in the resolutions forum on 20 February 2024.

2023/AT/FRSG15 The **Working Group on Southern Horse Mackerel Anchovy and Sardine** (WGHANSA), chaired by Rosana Ourens (UK) will meet online 27–31 May 2024 (WGHANSA-1) to:

- a) Address generic ToRs for Regional and Species Working Groups for relevant stocks (hom.27.9a and ane.27.9a in WGHANSA-1 and pil.27.7, pil.27.8abd, pil.27.8c9a and ane.27.8 in WGHANSA-2);

and in Madrid, Spain 25-29 November 2024 to:

- b) Address generic ToRs for Regional and Species Working Groups for remaining relevant stocks (pil.27.7, pil.27.8abd, pil.27.8c9a and ane.27.8).

The assessments will be carried out on the basis of the Stock Annexes. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group on the dates specified in the 2024 ICES data call.

WGHANSA1 will report by 17 June 2024 and WGHANSA-2 will report by 13 December 2024 for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.

WGMIXFISH-ADVICE – Working Group on Mixed Fisheries Advice

2023/AT/FRSG16 *Resolution pending*

WGMIXFISH-METHODS – Working Group on Mixed Fisheries Advice Methodology

T3 – To be approved in the resolutions forum, on the basis that ToR b) is on hold

2023/AT/FRSG17 The **Working Group on Mixed Fisheries Advice Methodology** (WGMIXFISH-METHODS), chaired by Marc Taylor, Germany, and Harriet Cole, UK, will meet in Edinburgh, UK, 17–21 June 2024 to:

- a) Continue the improvement of WGMIXFISH-ADVICE data call, data processing, methodological framework, workflow, auditing, updating associated documentation and increasing transparency;
- b) Respond to the outcomes of the Mixed Fisheries Scoping Meeting;
- c) Exploration of developments in methodology and advice;
- d) Respond to the outcomes and issues encountered during WGMIXFISH-ADVICE;
- e) Develop mixed fisheries models for sea regions not currently covered in the mixed fisheries advice.

WGMIXFISH-METHODS will report by 29 July 2024 for the attention of ACOM.

Supporting Information

Priority:	The work is essential to ICES to progress in the development of its capacity to provide advice on multispecies fisheries. Such advice is necessary to fulfil the requirements stipulated in the MoUs between ICES and its client commissions.
Scientific justification and relation to action plan:	The issue of providing advice for mixed fisheries remains an important one for ICES. Following the Aframe project (2007-2009), SGMIXMAN (2008) and AGMIXNS (2009) where methods were developed and applied, WGMIXFISH has continued this work, combining outputs of single-stock-assessments and métier-effort data to provide forecast of effort and multi-species catch at fleet level based on annual single stock catch advice. WGMIXFISH –METHODS will meet to continue this development, ensuring outputs are informative and fit for purpose.
Resource requirements:	No specific resource requirements, beyond the need for members to prepare for and participate in the meeting.
Participants:	Experts with qualifications regarding mixed fisheries aspects, fisheries management and modelling based on limited and uncertain data.
Secretariat facilities:	Meeting facilities, production of report.
Financial:	None

Linkages to advisory committee:	ACOM
Linkages to other committees or groups:	SCICOM through the WGMG. Strong link to STECF.
Linkages to other organizations:	This work serves as a mechanism in fulfilment of the MoU with EC and fisheries commissions. It is also linked with STECF work on mixed fisheries.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group

WGNAM – Working Group on Northwest Atlantic Mackerel Ecology and Assessment

This resolution was approved on the Resolution Forum in October 2022

2021/2/FRSG40 The **Working Group on Northwest Atlantic Mackerel Ecology and Assessment (WGNAM)**, co-chaired by Kiersten Curti, USA and Elisabeth Van Beveren, Canada, will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2022	24-27 October	online	Interim report by 15 November FRSG	
Year 2023			Interim report by Date Month May to FRSG	
Year 2024	8-12 April	TBD	Final report by Date Month May to FRSG	

ToR descriptors

ToR	Description	Background	Science Plan Codes	Duration	Expected Deliverables
a	Evaluate population structure of Atlantic mackerel and consider the impact of spatial structure on the population dynamics in the region.	Atlantic mackerel in the Northwest Atlantic have long been divided into a northern and southern contingents – definitions based on spawning areas and migratory patterns. The biological relationship between these two contingents is unclear. Population structure in small scombrids (including Northeastern Atlantic Atlantic mackerel) will be reviewed and a comparison of recent methods and results (genomics and otolith stable isotopes) will be made. Presentations and discussions should provide a platform to develop and optimize research projects aimed at differentiating fish from each contingent, and how this capacity should best be used to improve the stock assessments of Atlantic mackerel in the US and Canada.	1.8, 6.6	3 years	Review paper
b	Compare and contrast data collection programs, current research and modeling used for Atlantic Mackerel in the Northwest Atlantic and identify data needs and research topics that could improve assessments.	The Atlantic Mackerel stock is assessed separately by both the U.S. and Canada. In recent years, there has been increased collaboration in developing assessments. Science supporting the two assessments will be compared including data and models. Data and model assumptions reviewed should include but not be restricted to fishery independent and dependent surveys, acoustics, reproductive, aging, growth, natural mortality, availability and habitat. From this comparison, data needs and research questions will be identified to improve assessments in the future.	5.2	3 years	Review paper

c	Develop and evaluate hypotheses for decline in recruitment of Atlantic mackerel and identify research approaches to evaluate these hypotheses.	The biomass of the Northwest Atlantic Mackerel stock is low. One of the contributing factors is decreased recruitment. Hypotheses have been developed for the northern contingent, but these hypotheses have not been evaluated for the southern contingent. Further, the role of physical changes in the system, changes in movement patterns, changes in age-structure, and changes in reproductive dynamics have not been evaluated. This effort will take a holistic approach and consider evidence for a variety of recruitment hypotheses and then identify research approaches to evaluate the most promising ones.	5.1	3 years	Review paper
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Summary of the Work Plan

YEAR 1	The WG will meet and address each ToR.
Year 2	The WG will review drafts of papers developed following the year 1 meeting.
Year 3	The WG will complete the review papers and submit for publication. A final report will also be completed.

Supporting information

Priority	The current activities of this Group will lead ICES into issues related to the ecosystem effects of fisheries, especially with regard to the application of the Precautionary Approach. Consequently, these activities are considered to have a very high priority.
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
Participants	The Group will be attended by some 5-10 members and guests
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	There are no obvious direct linkages but developing the expertise could link to ACOM in the future.
Linkages to other committees or groups	Interactions will be sought with WGMEGS and WGWIDE.
Linkages to other organizations	There are linkages to a number of organizations and institutions throughout North America

WGNAS – Working Group on North Atlantic Salmon

Approved on Resolutions forum 29 January 2024

2023/AT/FRSG18 The **Working Group on North Atlantic Salmon** (WGNAS), chaired by Alan Walker (UK), will meet in Galway, Ireland 11–21 March 2024 to address the ToRs detailed below:

1. With respect to Atlantic salmon in the North Atlantic area:
 - 1.1. provide an overview of salmon catches and landings by country, including unreported catches and catch and release, and production of farmed and ranched Atlantic salmon in 2023¹;
 - 1.2. report on significant new or emerging threats to, or opportunities for, salmon conservation and management²;
 - 1.3. provide a compilation of tag releases by country in 2023;
 - 1.4. provide an update on the distribution and abundance of pink salmon across the North Atlantic through 2023; and,
 - 1.5. identify relevant data deficiencies, monitoring needs and research requirements.
2. With respect to Atlantic salmon in the North-East Atlantic Commission area:
 - 2.1. describe the key events of the 2023 fisheries³;
 - 2.2. review and report on the development of age-specific stock conservation limits, including updating the time-series of the number of river stocks with established CLs by jurisdiction;
 - 2.3. describe the status of the stocks, including updating the time-series of trends in the number of river stocks meeting CLs by jurisdiction; and
 - 2.4. provide catch options or alternative management advice for the 2024 / 2025–2026 / 2027 fishing seasons, with an assessment of risks relative to the objective of exceeding stock conservation limits, or pre-defined NASCO Management Objectives, and advise on the implications of these options for stock rebuilding⁴.
3. With respect to Atlantic salmon in the North American Commission area:
 - 3.1. describe the key events of the 2023 fisheries (including the fishery at St Pierre and Miquelon)³;
 - 3.2. update age-specific stock conservation limits based on new information as available, including updating the time-series of the number of river stocks with established CLs by jurisdiction;
 - 3.3. describe the status of the stocks, including updating the time-series of trends in the number of river stocks meeting CLs by jurisdiction; and
 - 3.4. provide catch options or alternative management advice for 2024–2027 with an assessment of risks relative to the objective of exceeding stock conservation limits, or pre-defined NASCO Management Objectives, and advise on the implications of these options for stock rebuilding⁴.
4. With respect to Atlantic salmon in the West Greenland Commission area:
 - 4.1. describe the key events of the 2023 fisheries³;
 - 4.2. describe the status of the stocks⁵; and
 - 4.3. provide catch options or alternative management advice for 2024–2026 with an assessment of risk relative to the objective of exceeding stock conservation limits, or pre-defined NASCO Management Objectives, and advise on the implications of these options for stock rebuilding⁴.
5. Provide input to and feedback on the development of draft formats and materials for providing advice.
6. Address relevant points in the Generic ToRs for Regional and Species Working Groups for each salmon stock complex.

Material and data relevant for the meeting must be available to the group by the dates specified in the 2024 ICES data call.

The assessments will be carried out on the basis of the stock annex and the most recent benchmark as agreed by ACOM (i.e., on the basis of WKBSalmon 2023).

Notes:

- ¹ With regard to ToR 1.1, for the estimates of unreported catch the information provided should, where possible, indicate the location of the unreported catch in the following categories: in-river; estuarine; and coastal. Numbers of salmon caught and released in recreational fisheries should be provided.
- ² With regard to ToR 1.2, ICES is requested to include reports on any significant advances in understanding of the biology of Atlantic salmon that is pertinent to NASCO.
- ³ In the responses to ToRs 2.1, 3.1 and 4.1, ICES is asked to provide details of catch, gear, effort, composition and origin of the catch and rates of exploitation. For homewater fisheries, the information provided should indicate the location of the catch in the following categories: in-river; estuarine; and coastal. Information on any other sources of fishing mortality for salmon is also requested. For ToR 4.1, if any new surveys are conducted and reported to ICES, ICES should review the results and advise on the appropriateness of incorporating resulting estimates into the assessment process.
- ⁴ In response to ToRs 2.4, 3.4 and 4.3, provide a detailed explanation and critical examination of any changes to the models used to provide catch advice and report on any developments in relation to incorporating environmental variables in these models. Also provide a detailed explanation and critical examination of any concerns with salmon data collected in 2023 which may affect the catch advice considering the restrictions on data collection programmes and fisheries due to the COVID 19 pandemic.
- ⁵ In response to ToR 4.2, ICES is requested to provide a brief summary of the status of North American and North-East Atlantic salmon stocks. The detailed information on the status of these stocks should be provided in response to ToRs 2.3 and 3.3.

WGNAS will report by 16 April 2024 for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.

WGNSSK – Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak

Approved in Resolutions meeting on 31 October 2023

2023/AT/FRSG19 The **Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak** (WGNSSK), chaired by Lies Vansteenbrugge, Belgium, and Alessandro Orio, Sweden, will meet 16–25 April 2024 in Lowestoft, UK and by online September 2024 to:

- a) Address generic ToRs for Regional and Species Working Groups.
- b) Assess Norway pout assessments by correspondence.
- c) Report on reopened advice as appropriate;

The assessments will be carried out on the basis of the stock annex. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group on the dates specified in the 2024 ICES data call.

WGNSSK will report by 24 May 2024, and by 30 September 2024 (Norway pout) for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group

WGRFS – Working Group on Recreational Fisheries Surveys

Was transferred from DSTSG to FRSG in 2023

2022/2/FRSG36 The **Working Group on Recreational Fisheries Surveys (WGRFS)**, chaired by Kieran Hyder, UK, and Estanis Mugerza, Spain, will work on ToRs and generate deliverables as listed in the table below.

	Meeting dates	Venue	Reporting details	Comments (change in Chair, etc.)
Year 2023	19–23 June 2023	Ancona, Italy	Interim report by 01 November 2023 to FRSG	
Year 2024	10–14 June 2024	Horta, Azores, Portugal	Interim report by 01 November 2024 to FRSG	Estanis Mugerza completes 3 years as chair
Year 2025	14–18 June 2025	TBD	Final report by 01 November 2025 to FRSG	Kieran Hyder completes 3 years as chair

ToR descriptors

ToR	Description	Background	Science Plan codes	Duration	Expected Deliverables
a	Collate and review quality of national estimates of recreational catch and effort, catch-and-release impacts, and socio-economic benefits for candidate stocks, identify significant data gaps in coverage and species, and support the ICES TAF and ecosystem approach.	Most countries are engaged in data collection. This activity collates national participation, catch and socio-economic data sets together, understands the quality of data, and highlights where new data are needed. This is important for supporting the ICES TAF and ecosystem approach.	2.1, 3.1, 3.2, 5.4	Regular activity in each year, with intersessional tasks and workshops to develop new approaches.	Report WG perspectives and publication of scientific papers
b	Assess the validity of traditional	Recreational data can be collected in many	3.1, 3.2, 3.3, 3.6,	Regular activity in each	Report WG perspectives

ToR	Description	Background	Science Plan codes	Duration	Expected Deliverables
	knowledge, new survey designs, novel methods (e.g. citizen science, apps), innovative statistical methods for data provision, and approaches for selecting appropriate cost-effective methods.	ways, with different associated biases. This supports improvement of analysis of existing surveys and understanding the utility of new methods. This will lead to the most robust and broad evidence-base to underpin assessment and advice.	4.1, 4.3, 4.4, 5.4	year, with intersessional tasks and workshops to develop new approaches.	and publication of scientific papers
c	Provide guidance to ICES and respond to ad hoc requests from ACOM on the availability of data, design of data collection programs, data storage systems, use of data in assessments, catch allocation, and ecosystem approach.	Recreational catches are not included in many assessments and data collection is limited to a few species. This activity supports data collection requirements, access to data and methods needed. This will facilitate embedding recreational fisheries into fisheries management.	3.1, 3.2, 3.3, 3.5, 3.6, 5.1	Regular activity in each year, with intersessional tasks and workshops to develop new approaches.	Report WG perspectives and publication of scientific papers
d	Develop approaches for regional data collection programmes that generate robust data for end users and support the ICES TAF and ecosystem approach.	Regionalisation is an important goal, but implementation is unclear This is a challenge for recreational fisheries due to the different actors, gears and survey instruments. This will underpin generation of transparent and robust regional data to support end users needs.	3.1, 3.2, 3.3, 3.6,	Regular activity in each year, with intersessional tasks and workshops to develop new approaches.	Report WG perspectives and publication of scientific papers
e	Evaluate the use of economic (e.g. impact, valuation), social (e.g. governance, behaviour, welfare, health), and communication (e.g. participatory process, messaging) to support the	Recreational fisheries have broad benefits and behavioural responses are difficult to predict due to diverse motivations. Hence, understanding of the human dimension is needed. This develops understanding of the	7.1, 7.4, 7.6	Regular activity in each year, with intersessional tasks and workshops to develop new approaches.	Report WG perspectives and publication of scientific papers

ToR	Description	Background	Science Plan codes	Duration	Expected Deliverables
	assessment and management of recreational fisheries.	data and methods needed for codesign.			
f	Review outcomes of the workshops organized by the group.	Recreational fisheries is a diverse topic, so not all aspects can be addressed at WGRFS. A number of workshops on specific topic have been done or are in the workplan. This reviews outcomes of the workshops and the implications for recreational fisheries.	5.4, 7.1, 7.4	Activity-dependent on workshop	Report WG perspectives and publication of scientific papers

Summary of the work plan

Year 1	<ul style="list-style-type: none"> a) Review progress of intersessional groups (i.e. governance, survey design, quality and analysis, regional coordination, data storage, catch-and-release impacts, novel methods, assessment and catch allocation, human dimensions, and communication) and agree approach for the next year. (a, b, c, d, e) b) Evaluate the quality of up to three national survey programmes using the QAT and provide feedback on tasks requested by ICES. (a, c) c) Review the outputs from ICES WRGRFS led workshops and discuss next steps for the inclusion of outcomes. (f) d) Scope data call for ICES based on the formats developed by WGRFS and the RDBES core group. (c, d, f) e) Assess priorities for inclusion of recreational fisheries in stock assessment using data from the pilot studies. (a, c, d) f) Develop ICES workshop proposal with WGCATCH for integrating probabilistic and non-probabilistic surveys. (b) g) Create ICES workshop proposal to evaluate post-release mortality estimates, potential sublethal effects, and reasonable extrapolations across species and fisheries for inclusion in stock assessments. (a) h) Assess the potential for food safety and human health issues from consumption of recreational caught fish (e.g. environmental toxins). (e) i) Review and share methods for engaging with stakeholders and the potential for participatory approaches. (e) j) Draft a roadmap to increase the inclusion of recreational fisheries data into advisory processes
Year 2	<ul style="list-style-type: none"> a) Evaluate the outcomes from the intersessional work and agree approach for the next year. (a, b, c, d, e, f) b) Review national programmes including assessment of quality of up to three programmes and provide feedback on tasks requested by ICES. (a) c) Assess the potential of novel survey methods to deliver recreational fisheries data (e.g. citizen science approaches, smartphone apps, traditional knowledge). (b) d) Develop a framework for allocation of catches between sectors

	<p>based on a review of existing systems and provide best-practice guidance. (c,d)</p> <p>e) Develop MSE approaches to assess the impact of uncertainty in recreational catches on assessment and regional sampling programme. (d).</p> <p>f) Review and share methods for engaging with stakeholders and the potential for participatory approaches. (e)</p> <p>g) Assess outcomes of workshop on inclusion of recreational data in stock assessments. (f)</p>
Year 3	<p>a) Review progress of intersessional groups (i.e. governance, survey design, quality and analysis, regional coordination, data storage, catch-and-release impacts, novel methods, assessment and catch allocation, human dimensions, and communication) and agree approach for the next year. (a, b, c, d, e)</p> <p>b) Evaluate the quality of up to three national survey programmes using the QAT and provide feedback on tasks requested by ICES. (a, c)</p> <p>c) Review the outputs from ICES WRGRFS led workshops and discuss next steps for the inclusion of outcomes. (f)</p> <p>d) Collate advances in survey methods that could be used to improved national approaches. (b)</p> <p>e) Assess the potential for impact of climate change on species caught by recreational fisheries and how that could impact on DCF and regional species requirements. (c, d)</p> <p>f) Develop ICES workshop proposal on MSE approaches to assess the impact of uncertainty in recreational catches on assessment and regional sampling programmes. (d).</p> <p>g) Assess the potential of novel survey methods to deliver recreational fisheries data (e.g. citizen science approaches, smartphone apps, traditional knowledge). (b)</p> <p>h) Evaluate progress against three year plan and develop new ToRs. (a, b, c, d, e, f)</p>

Supporting information

Priority	High—the biological, social and economic impact of recreational fisheries is becoming increasingly recognised and needs to be included in the fisheries assessment and management processes.
Resource requirements	None.
Participants	The WG is normally attended by around 60 members and chair-invited experts.
Secretariat facilities	Normal backstopping support in the organization of the group.
Financial	None.
Linkages to ACOM and groups under ACOM	ACOM, WGBFAS, WGEEL, WGBAST, WGCSE, WGNSSK, WGBIE, WGMEDS, and benchmarks workshops for stocks that have recreational catches.
Linkages to other committees or group	WGCATCH.
Linkages to other organizations	<ul style="list-style-type: none"> • EC, STECF, Regional Coordination Groups, Advisory Councils. • WECAFC/OSPESCA/CRFM/CFMC/MEDAC Working Group on Recreational Fisheries. • Many linkages to (inter)national angling associations, since WGRFS members estimate national marine recreational catches. • Links to broader organizations with interests in angling and fisheries management including EIFACC and FAO.

WGTAFGOV – Working Group on Transparent Assessment Framework Governance

Approved in Resolutions meeting on 31 October 2023

2023/MT/FRSG20 The Working Group on Transparent Assessment Framework Governance (WGTAFGOV), chaired by Iago Mosqueira*, Netherlands, will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	MEETING DATES AND VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2024	1)	Dates and venue TBD	Interim business report by TBD to FRSG, DIG, ACOM, and SCICOM	Iago Mosqueira takes over as chair
	2)			
	3)			
	4)			
Year 2025	1)	Dates and venue TBD	Interim business report by TBD to FRSG, DIG, ACOM, and SCICOM	
	2)			
	3)			
	4)			
Year 2026	1)	Dates and venue TBD	Final business report by TBD to FRSG, DIG, ACOM, and SCICOM	
	2)			
	3)			
	4)			

ToR descriptors

TOR	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
a	Maintain overall responsibility over the TAF project, including adapting the priorities of work being carried out to the changing needs of ICES. Provide steering to the work of the ICES Secretariat TAF team.	Following the vision for TAF set by the manifesto, its translation into strategic decisions on work priorities is required. The relationships of TAF with other ICES initiatives (e.g. RDBES) are to be established so that TAF can cater to their needs. Guidance on handling of feedback, task prioritisation and expected resource availability is still needed.		3 years/ Generic ToR	. Annual strategic priorities for TAF. Definition of resources available. Definition of responsibilities. Collaboration of TAF and other relevant ICES initiatives.
b	<i>Based on the guidance established in ToR A:</i> Provide a channel for user feedback to the Transparent Assessment Framework. Feedback will be	TAF should develop to meet the requirements of a broad range of users and thus needs to be responsive to user feedback. Feedback will be collected and organised using		3 years/ Generic ToR	A GitHub site allowing users to submit feedback and requests. Provide an annual workplan, with an agreed and prioritised list of TAF related EG

<p>compiled by WGTAFGOV and appropriate actions to be taken with assigned responsibilities and resource requirements will be listed and prioritised.</p>	<p>GitHub and the traditional recommendations system from ICES reports.</p> <p>To achieve a long-term stability, availability and quality, TAF development requires a workplan with clear objectives and milestones. This can only be successfully implemented when resource requirements have been estimated and the availability of resources is known.</p>	<p>recommendations along with suggested resource allocations, budget estimates and feasibility estimates.</p>
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c	<p><i>Using the guidance established in ToR A and the feedback captured in ToR B:</i> Oversee and advise on the interpretation and prioritisation of recommendations and requests addressed to the Transparent Assessment Framework.</p>	<p>The project planning cycle needs to be responsive (more than one meeting a year) in order to manage the TAF development effectively. Although there is an annual plan, short term priorities must be evaluated against resource availability and needs of the ICES advice processes that vary through the year.</p>	<p>3 years/ Generic ToR</p>	<p>Reformulate and maintain a project board on GitHub to manage tasks. Review project plan and agree on tasks to be completed. Review new tasks for addition to the workplan, or for consideration for the next annual workplan.</p>
d	<p>Oversee development of user guidance and training for the Transparent Assessment Framework.</p>	<p>As TAF develops over time a range of users will require various levels of training including step by step user manuals, tutorials and workshops. Documentation of guidelines and procedures will also be necessary. Outreach activities will be required.</p>	<p>3 years/ Generic ToR</p>	<p>Annually updated training documentation. Workshops with specific goals proposed and planned where necessary. Relevant fora for dissemination investigated and outreach activities planned.</p>

Summary of the Work Plan.

Year 1	<p>First meeting to establish ToRs a) and b) will be a physical meeting to be followed by quarterly online meetings dealing with ToR c) and d). DIG will aid in review of ToR a).</p>
Year 2	<p>ToRs c) and d) will be addressed in quarterly online meetings, with the potential annual meetings for prioritising ToRs a and b).</p>
Year 3	<p>ToRs c) and d) will be addressed in quarterly online meetings, with the potential annual meetings for prioritising ToRs a and b).</p>

Supporting information

Priority	High priority.
Resource requirements	A commitment of time from the members of the group consistent with progressing actions identified in the quarterly meetings.
Participants	ACOM Leadership and FRSG representative, one member each representing survey data, commercial data and stock assessments. Members with an overview of stock assessment results. ICES Secretariat and other related EG members as need be. Representative of main EGs using TAF. Members of the TAF team.
Secretariat facilities	Community Sharepoint site, remote meeting facilities.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	This is an integral component to the overall Quality Assurance Framework (of Advice) that ACOM together with the Coordination group are describing.
Linkages to other committees or groups	There is a strong linkage to DIG as the main umbrella for data/software governance structures.
Linkages to other organizations	DFO and NOAA have expressed interest in the system.

WGTRUTTA – Working Group to develop and test assessment methods for Sea trout populations (anadromous *Salmo trutta*)

This resolution was approved on the Resolution Forum in June 2020

2019/2/FRSG20 The **Working Group to develop and test assessment methods for Sea trout populations (anadromous *Salmo trutta*) (WGTRUTTA)**, chaired by Johan Höjesjö, Sweden, and Alan Walker, UK, will work on ToRs and generate deliverables as listed in the Table below.

The WG's 4-year term will run from June 2020 to November 2023.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2020	15–18 June	online meeting		Start-up meeting, learning lessons from WG1, preparing detailed workplan with roles & responsibilities, milestones & deliverables
Year 2021	19-21 January	Online meeting		Mid-year progress review and workshop
	29 June – 1 July	Online meeting	Interim E-eval by 1 October	Review progress in year 1 and plans for years 2 & 3
Year 2022	DATE February	Online		Mid-year progress review and workshop
	21–25 November	Rennes, France	Interim E-eval by 9 December	Mid-year progress review and workshop
Year 2023	23 -25 April	Gothenburg, Sweden		Workshop on juvenile assessment using habitat score and biological reference points.
	6-10 November	Evora, Portugal	Final report by 31 March 2024	Draft the Final Report and plan a further term. Submit the Final Report

ToR descriptors

ToR	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
a	Describe the life history drivers and distribution of sympatric sea and freshwater trout populations	The trout life cycle is highly variable over space and time, which renders assessment and management challenging. Our understanding of ecological patterns in trout phenology, life history and distribution across large scale environmental gradients is far from complete but is a prerequisite to improving sea trout management.	5.2	3 years	<p>A1. Fully establish the sea trout database, its population with data from all involved countries, and its preparation for inclusion as one of the official ICES databases.</p> <p>A2. Define a sub-set of variables for trout life history and habitat characteristics accounting for the between-stocks variances, for identifying key index rivers and for targeting stock-recruitment and state models.</p> <p>A3. Investigate trout distribution within rivers as a function of abiotic and biotic habitat characteristics.</p> <p>A4. Quantify the importance of anadromy for trout populations.</p>
b	Quantify the external pressures on trout populations in formats necessary to understand the state of local populations	Knowledge of the ecology of trout is limiting our ability to understand the consequences for trout populations of the rapidly increasing natural, anthropogenic, additive and cumulative impacts on aquatic environments.	2.1, 2.5, 5.6	3 years	<p>B1. Describe the current and potential future impacts of natural and anthropogenic impacts on trout populations.</p> <p>B2. Make recommendations for unified and standardized protocols for</p>

			<p>sampling trout, characterizing habitats and calibrating for extrapolations across the natural range.</p> <p>B3. Describe situations outside the Baltic where sea trout stocks may be exploited or otherwise impacted at an international scale.</p>
c	<p>Develop a toolbox of methods to assess stock and population state, based on a suite of options, and suitable for a range of scenarios found across the natural range of the sea trout.</p>	<p>The WG (2017-2019) developed approaches for assessing the state of trout populations, including (i) stock-recruitment models using metrics from various life stages by applying several curve fitting approaches to 'data rich' stocks with data from counts, returning stock estimates, catches, and juvenile abundance surveys, and (ii) length-based indicators using index catchments, to demonstrate state and identify where pressures may have had an impact; (iii) extended the application of the Trout Habitat Scores (THS); and collaborated on development of a theoretical Bayesian Population Dynamics Model for Baltic sea trout. These all require further development and testing with novel data and situations in order to advance them to a toolbox for managers and other stakeholders.</p>	<p>3.2, 3.3, 6.1. 3 years</p> <p>C1. Examine the S/R models from WG (2017-2019) in terms of transfer functions, types and amounts of data required for setting BRPs, additional data and better and standardized reporting of catches.</p> <p>C2. Examination of the opportunities to develop regional versions of the Trout Habitat Score (THS) process across the native range of sea trout.</p> <p>C3. Develop the Bayesian model of sea trout</p> <p>C4. Develop and propose a data collection framework to support LBI type analysis of pressures on stocks, liaising with EU Regional Coordination Groups.</p> <p>C5. Define the methods for the forecast of catches that would be consistent with the ICES application of the precautionary approach and, in case it is desired, MSY,</p>

d	Develop solutions to achieve sustainable governance of trout stocks	Sustainable use and management of the anadromous sea trout is challenging for many reasons including because the fish use multiple environments and are subject to a variety of impacts and stressors, migrating across different ecological and legislative borders. In many European countries, sea trout fishers are not registered or licenced, and knowledge of effort and catch is insufficient or lacking. Knowledge of non-fishery impacts is even more data-poor.	7.1, 7.4, 7.7 3 years	D1. Describe the key ecological, social and economic management objectives for sea trout fisheries across the natural range, to identify the target audience requirements. D2. Define conservation reference points to ensure stock sustainability consistent with the precautionary approach. D3. Establish what level of socio-economic risk (uncertainty) is acceptable to fisheries managers in setting management reference points. D4. Explore and evaluate management strategies conducive to meeting socio-economic goals while ensuring the biological sustainability of the stocks.
		To effectively conserve the varied and multiple contributions from sea trout to society, social scientific knowledge must complement ecology. Economic valuation studies can clarify how the public, including participants and non-participants of sea trout fishing, benefit from and value sea trout. This may vary spatially between fisheries (e.g. between countries) and, moreover, is likely affected by different regulation regimes between regions. Comparative studies of governance across countries and levels can identify “best practice” and learning across jurisdictions.		

Summary of the Work Plan

Over the 3-year period, there will be 8 meetings, though some will be face-to-face whereas others will be by webex – the WG will only meet by webex in 2020, and will use webex as much as possible to minimise travel.

Meetings will address: a start-up meeting to agree the work plan with roles and responsibilities; annual review and planning meetings at the end of years 1 and 2; interim workshops in years 1, 2 and 3 focussing on specific tasks; a meeting to specifically draft the final report and a final meeting to submit the Final Report.

Subgroups will work on the ToRs between these meetings with regular contact through email and/or webinars. Most of the work regarding deliverables for the different ToRs will be planned and performed in parallel.

All four ToR will be launched at the onset of the working group and be delivered in parallel throughout the three-year term. However, given that ToR D requires expertise on socio-economics that is not within the existing membership but is available through other ICES working groups, we propose to carry out this ToR as a separate workshop under its own resolution in 2021/22.

Supporting information

Priority	The inclusion of sea trout and other diadromous fish in EU policy areas including the CFP and Marine Strategy Framework Directive means that it is important to improve the methods currently available to managers to assess the status of stocks and investigate the effects of management actions. The final report and recommendations will guide both individual countries in making progress on sea trout assessment and management and will steer ICES on the best next steps for sea trout science, assessment and advice.
Resource requirements	The research programmes which provide the main inputs to this group are already underway, and resources are already committed. The additional resource from ICES required to undertake additional activities in the framework of this group is only Secretarial support (see below). A proposal has been submitted for an International Training Network (ITN) of PhDs on subjects contributing to the general aims of the WGTRUTTA and, if successful, this will significantly enhance resourcing of delivery. However, core delivery does not depend on this ITN support.
Participants	The Group is normally attended by some 15-20 members and guests.
Secretariat facilities	Standard support to EG.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	Links to ACOM, FRSG, WGBAST who provide advice on Baltic sea trout, and WGDIAD regarding diadromous fish stocks, life histories, threats and sustainable use of the resource.
Linkages to other committees groups	The activities of this group will take forward the developmental work of WGTRUTTA, testing the implementation of assessment methods, and addressing key knowledge gaps. Links will be fostered with the The Working Group on Cumulative Effects Assessments in Management (WGCEAM). This work will be closely associated with the ICES Ecosystem Observation Steering Group (EOSG) and by incorporating ToR D we will also link with the ICES Human Activities, Pressures and Impacts Steering Group (HAPISG) and any future work of the IEASG-WGSOCIAL Working Group on Social Indicators.
Linkages to other organizations	Links to the EU Commission and the Data Collection Framework / EU Multi-annual Plan (MAP), and to the associated InterSessional Sub-Group (ISSG) on Diadromous Species. Links to the EU-funded research projects of SAMARCH (Interreg: France, England); RETROUT (European Regional Development Fund); MARGEN II (Interreg: Sweden, Denmark, Norway).

WG WIDE – Working Group on Widely Distributed Stocks

2023/AT/FRSG21 **The Working Group on Widely Distributed Stocks (WG WIDE)**, chaired by Erling Kåre Stenevik, Norway, will meet 28 August to 3 September 2024 at the MFRI in Hafnarfjörður, Iceland to:

- a) Address generic ToRs for Regional and Species Working Groups.

The assessments will be carried out on the basis of the stock annex. The assessments must be available for audit on the first day of the meeting.

Material and data relevant for the meeting must be available to the group no later than 14 days prior to the starting date.

WGWIDE will report by 10 September for the attention of ACOM.

Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.

WKBSEABASS – Benchmark workshop on selected seabass stocks

Approved in Resolutions meeting on 31 October 2023

2023/WK/FRSG22 The **Benchmark workshop on selected seabass stocks** (WKBSEABASS) chaired by Pia Schuchert, UK, and Massimiliano Cardinale, Sweden, and attended by invited external experts Vladlena Gertseva, USA, and Laurie Kell, UK, will be established and meet 29 January–2 February 2024, in Copenhagen, Denmark for a data workshop, and 25–29 November 2024, in Copenhagen, Denmark for an assessment methods workshop. Approval for this benchmark was conditional upon the completion of a Stock ID workshop, which took place 29 November–31 2022.

As part of the Stock ID workshop

- a) Review information on stock identification for bss.27.4bc7ad-h and bss.27.8ab and conduct a comparative review of Atlantic seabass population structure, including critical evaluation of inferences from each source of information, to build up a picture of seabass stock structure in Celtic Sea, Bay of Biscay and adjacent areas, based on the following:
 1. Distribution and movements of different life-stages of seabass, including changes over time, inferred from:
 - i. Tagging;
 - ii. Scientific Surveys;
 - iii. Commercial landings;
 - iv. Dispersal models (e.g. of larva/juveniles).
 2. Genetic analyses;
 3. Otolith microchemistry;
 4. Morphometrics and meristics;
 5. Life-history and parasites;
 6. Other approaches not listed above.
- b) Based on the evidence from ToR A, formulate scenarios for seabass stocks in the Celtic Sea, Bay of Biscay and adjacent areas, and assess the evidence-based plausibility of each of these scenarios (including current definitions).
- c) Consider the practical implications, for data, particularly time-series of catch data and year class strength, and mixing rates of each of the scenarios in ToR B, and how any difficulties might be dealt with. For example, considering spatial components with mixing in a single model has different implications for data compared to split stock units. Considerations should include how to deal with changes over time.

- d) Make recommendations for which seabass stock scenario(s) to take forward in the forthcoming seabass benchmark, including in what format data should be requested and prepared.

The Stock ID workshop took place 29 November–31 2022. Stock ID workshop chair: David Murray, UK; Stock ID invited experts: Naiara Rodríguez-Ezpeleta, Spain, and Florian Berg, Norway. The report can be found:

ICES. 2023. Benchmark on selected sea bass stocks–stock ID workshop (WKBSEABASS-ID). ICES Scientific Reports. 5:52. 31 pp. <https://doi.org/10.17895/ices.pub.22794737>

As part of the data workshop 29 January–2 February 2024, in Copenhagen, Denmark:

- e) As part of the data workshop (building on work from Stock ID workshop):
 1. Consider the quality of data proposed for use in the assessment;
 2. (Further) consider stock identity and migration issues;
 3. Make a proposal to the benchmark on the use and treatment of data for each assessment, including discards, surveys, life history, recreational fisheries, etc.;
 4. Invite stakeholders to contribute data in advance of the data evaluation workshop (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality.
- f) In preparation for the assessment methods workshop:
 1. Produce working documents to be reviewed during the assessment methods workshop at least one month prior to the meeting.

As part of the assessment workshop 25–29 November 2024, in Copenhagen, Denmark:

- g) Evaluate the appropriateness of data and methods to determine stock status and investigate methods for short term forecast taking agreed or proposed management plans into account for the stocks listed in the text table below. The evaluation shall include consideration of:
 1. Life-history data;
 2. Fishery-dependent and fishery-independent data;
 3. Further consideration of environmental drivers, multispecies information, and ecosystem impacts for stock dynamics in the assessments and outlook
- h) Agree and document the most appropriate method for evaluating stock status and (where applicable) short-term forecast and update the stock annex as appropriate. Knowledge about environmental drivers, including multispecies interactions, and ecosystem impacts should be integrated in the methodology.
- i) A full suite of diagnostics (regarding e.g. data, retrospective behaviour, model fit, predictive power etc.) should be examined to evaluate the appropriateness of any model developed and proposed for use in generating advice;
- j) If no analytical assessment method can be agreed upon, then an alternative method (the former method or following the ICES data-limited stock approach as outlined in [WKLIFE XI](#)) should be put forward by the benchmark;

- k) Re-examine and update (if necessary) MSY and PA reference points according to ICES guideline (see latest [Technical guidelines](#) on reference points);
 - 1. Note: If additional time is needed to conduct the work and agree to reference points, an additional reference point workshop could be scheduled
- l) Update the Stock Annex; and
- m) Develop recommendations for future improvements in the assessment methodology and data collection;
- n) Provide detailed guidance on the mechanics of the seabass allocation tool.

WKBSEABASS will report by **TBD** 2024 for the attention of ACOM.

Stock list	
bss.27.4bc7ad-h	Seabass (<i>Dicentrarchus labrax</i>) in Divisions 4.b-c, 7.a, and 7.d-h (central and southern North Sea, Irish Sea, English Channel, Bristol Channel, and Celtic Sea)
bss.27.8ab	Seabass (<i>Dicentrarchus labrax</i>) in divisions 8.a-b (northern and central Bay of Biscay)

WKREBUILD2 – Workshop on guidelines and methods for the design and evaluation of rebuilding plans for category 1–2 stocks

Approved in Resolutions meeting on 31 October 2023

2023/WK/FRSG23 The **Workshop on guidelines and methods for the design and evaluation of rebuilding plans for category 1–2 stocks** (WKREBUILD2), chaired by Martin Pastoors, Netherlands, and Dorleta Garcia, Spain, will meet in Copenhagen, Denmark 6–10 November 2023 to:

- a) Define a framework for scientific advice for developing rebuilding plan elements as part of overall management strategies, that could be widely applied to ICES stocks.
- b) Develop guidelines for the evaluation of rebuilding plan elements that consider the precautionary approach, the species life history (incl. longevity), changes in productivity and rebuilding potential.
- c) Propose the performance indicators and thresholds to be used for the acceptability of rebuilding plan elements including rebuilding target, probability of rebuilding and rebuilding time relative to rebuilding time in the absence of fishing.
- d) Test the rebuilding plan evaluation guidelines on a limited number of test cases using a newly developed and dedicated evaluation tool
- e) Identify any additional requirements for a evaluation tool that would allow the evaluation of rebuilding plans elements proposed in ToR (a) in the context of assessment working groups.

WKREBUILD will report by 1 December 2023 for the attention of ACOM and FRSG.

Supporting information

Priority	High. ICES regularly recommends rebuilding plans in combination with zero TACs for the next year, This occurs when stocks are estimated to be below B_{lim} and there is no perceived possibility of rebuilding above B_{lim} within the timeframe of a short-term forecast. Furthermore, the
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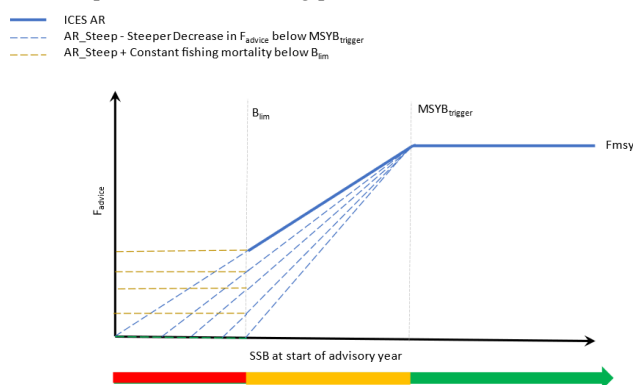
performance of ICES category 1 advice rule below $B_{trigger}$ and especially below B_{lim} has been questioned.

WKREBUILD2 should build on the findings of the first workshop on guidelines and methods for the evaluation of rebuilding plans (WKREBUILD) and taking into account the general guidelines on management strategy evaluations (e.g. WKMSE3). In 2020, WKREBUILD analyzed guidelines and methods for the evaluation of rebuilding plans. The workshop generated a guidance table summarizing the best practices for evaluation of rebuilding plans against the potential criteria of acceptability. However, it did not propose specific rebuilding plans of harvest control rules. Instead, the workshop recommended that a follow-up workshop (WKREBUILD2) be organized for testing the guidelines with actual test cases, with the aim of defining more specific criteria and guidelines.

A simulation tool is being developed and will be ready to be used during WKREBUILD2.

The framework proposed for rebuilding plans should be transferable between the current and proposed new advice frameworks. In terms of the definition of rebuilding plans, independently of specific values, the main difference between the current and the new advice framework is B_{safe} .

The current ICES advice rule specifies the recommended management action when the stock is estimated to be above B_{lim} . When the stock is estimated to be below B_{lim} and unable to recover to B_{lim} within the period of the short term forecast, ICES recommends a zero catch and the development of a rebuilding plan.



WKREBUILD2 should explore how rebuilding plan elements could be included into the ICES advice rule. This can be done through specific (and different) actions when the stock is between B_{lim} and $MSY_{B_{trigger}}$ and when the stock is below B_{lim} . This should involve different shapes of HCRs that take into account recommended management actions at different biomass levels and under different conditions (uncertainty in the assessment, distance between reference points, lifespan of the species, role of the stock in the fishery (target/bycatch) etc.)

The rebuilding plan elements should be aimed at restoring the stock biomass above B_{lim} and ensuring a non-decreasing trend in stock biomass between B_{lim} and $B_{trigger}$. As the plan will need to be evaluated in a short time frame for specific cases, developing a standardized tool is required. It could be similar to eqSim but with initial population equal to the last population estimate and focused on assessing impacts in the short to medium term. The tool should report on the rebuilding probability metrics in absolute terms and in comparison with zero fishing mortality scenario.

Scientific justification	ICES is regularly recommending the development of rebuilding plans so guidance on how to evaluate these plans is required.
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Resource requirements	One meeting room at ICES HQ with at least one breakout room.
Participants	Scientists with experience and interest in rebuilding plans and tools for short-term evaluations of potential effects of rebuilding plans.
Secretariat facilities	Secretariat administrative and scientific support.
Financial	No extra funding requested.
Linkages to committees	The results of this work will feed in directly in the ICES advisory process.
Linkages to other groups	HAWG, WKG MSE2, WGBIE, WGWIDE, WGBFAS, WGCSE, WGNSSK, NWWG, AFWG, WGHANSA
Linkages to other organizations	

WKSIDAC3 – Workshop 3 on Stock Identification and allocation of catches of herring to stocks

Approved in Resolutions meeting on 31 October 2023

2023/WK/FRSG24 **Workshop 3 on Stock Identification and allocation of catches of herring to stocks** (WKSIDAC3) chaired by Christoffer Moesgaard Albertsen, Denmark, and Florian Berg, Norway, will meet 3–7 June 2024 in Bergen, Norway to:

- f) Review current sampling strategies and designs (surveys, catches, etc.)
- g) Establish a simulation framework for estimating stock compositions based on genetics
 1. to investigate differences between random or stratified sampling
 2. to investigate inter-haul variability in surveys
- h) Provide guidance on the optimal sampling strategies for methods with different uncertainty which are used for estimating stock compositions based on genetics

WKSIDAC3 will report by 15 October 2024 for the attention of ACOM and WGBIOP.

Key surveys to focus on:

Stock / component	Abbr.	Area
Icelandic Summer Spawning Herring	ISSH	27.5.a
Norwegian Spring Spawning Herring	NSSH	27.2.a
North Sea Autumn Spawning Herring	NSAS	27.4, 27.3.a, 27.7.d
Downs Winter Spawning Herring		27.4.c, 27.7.d
Western Baltic Spring Spawning Herring	WBSS	27.3.a, etc.
Central Baltic Herring	CBH	27.3.d
Irish Sea Herring	NIRS	27.7.aN
Celtic Sea Herring	IRLS	27.7.aS, 7.g-h, 7.j-k
6a North Autumn spawning herring	VIAN	27.6.aN
6a South 7bc herring	IRLW	27.6.aS, 7.bc

In addition, the following stocks may be considered as part of WKSIDAC 2.

Norwegian Autumn Spawning Herring	NASH	27.2.a
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Faroese Autumn Spawning herring	FASH	
Baltic Autumn spawning herring	BASH	27.3
6a North Spring spawning herring		27.6.aN
Thames/Blackwater herring		
Clyde herring		27.6.aN
Herring in Divisions 7ef		27.7.e, 27.7.f

Supporting information

Priority	High.
Scientific justification	<p>Most herring populations are migratory and often congregate on feeding and wintering grounds where aggregations may consist of mixtures of individuals from several populations, thus the concept of ‘a herring stock’ within a geographical area such as a management unit is not straight-forward and cannot be assumed. Genetic stock identification of herring has been recently examined by WKSIDAC2 in 2023 (ICES, 2023) and recommended methods for future stock identification. However, several caveats have been highlighted before these genetic methods can be fully implemented in the assessment of herring stocks.</p> <p>Therefore, it is now timely to resolve these caveats following the recommendations of WKSIDAC2 in 2023 (ICES, 2023). The objectives of the workshop are to</p> <ul style="list-style-type: none"> • Review current sampling strategies and designs undertaken by laboratories and their surveys. • Investigate the advantages and disadvantages of differing sampling strategies. • Outline a common generic approach for sampling both surveys and commercial catches. • Draft guidelines for the methods along with their uncertainties. <p>The workshop will cover the ICES subareas 2, 3, 4, 5, 6 and 7. A draft manual will be compiled, specifying the areas/surveys relevant for the given method, contain details on the minimum sampling size, stratification, and other sampling related issues.</p> <p>Where appropriate samples have or are being obtained it is possible to undertake ‘stock separation’ using e.g. genetics for the most recent time period, and going forward with a new sampling protocol. Stock assessment, however, is reliant on a time-series of data where the stock information is known. Having the ability to retrospectively separate both survey and catch data to stock is important and this needs to predate any new genetic protocols which may be implemented. The Workshop will also consider a number of available data datasets which could be used to separate the historical survey and catch data into the various populations. These could include otolith archives, age and growth data etc.</p>
Resource requirements	
Participants	20-30
Secretariat facilities	Meeting rooms
Financial	None
Linkages to committees	ACOM
Linkages to other groups	WGBIOP

WKNEWREF – Workshop on the calculation and evaluation of new reference points for category 1–2 stocks

Approved on Resolutions Forum 13 September 2023

2023/WK/FRSG25 The **Workshop on the calculation and evaluation of new reference points for category 1–2 stocks** (WKNEWREF) chaired by C oil n Minto, Ireland, and Dorleta Garcia, Spain, will meet 5–9 February 2024 in Copenhagen, Denmark. Following recommendations from WKREF2, for each stock estimate and report any issues detected in the estimation of: Based on the results from a) to f):

- i) Alternative stock-recruitment relationships.
- j) B_0 , F_{msy} , B_{msy} and $B_{%SPR}$.
- k) B_{lim} , alternatively looking at the distribution of B_{msy} or $B_{%SPR}$
- l) $B_{trigger}$.
- m) Alternative values for F_{target} ($F_{%SPR}$, $F_{0.1}, \dots$)
- n) Allee effects and/or regimen shifts (if relevant).

Based on the results from a) to f):

- o) Identify the situations where a stock recruitment relationship, the breakpoint in the segmented regression stock recruitment relationship, B_0 and B_{msy} can be estimated reliably and those where it cannot.
- p) Identify the strengths and weaknesses of the new reference points in comparison with the current framework.
- q) Propose B_{lim} , $B_{trigger}$ and F_{target} for each stock based on the proposal of WKREF2 or new proposal.

WKNEWREF will report by 1 March 2024 for the attention of ACOM and FRSG.

Supporting information

Priority	The work is essential for ICES to progress in the development of its capacity to provide advice on multispecies fisheries. Such advice is necessary to fulfil the requirements stipulated in the MoUs between ICES and its client commissions.
Scientific justification	<p>WKREF1 and WKREF2 took place in November 2021 and January 2022 respectively. WKREF1 and WKREF2 made several recommendations in relation to the new reference point framework and the basis for the calculation of reference points. However, they recommend having an additional workshop to provide the evidence based and build community understanding and consensus around simplified and harmonised guidelines.</p> <p>WKNEWREF will explore the reference point framework proposed by WKREF1 and WKREF2 in a representative set of stocks across ICES ecoregions. WKNEWREF will estimate and simulation test reference points based on the guidelines of WKREF1 and WKREF2 and will investigate their performance in detail. In particular, the new reference points will be compared to the old ones and pros and cons of both approaches will be identified. Where none of the approaches provide adequate reference points, and if possible, alternative approaches to calculate them will be proposed.</p> <p>Based on these worked examples the WK will make recommendations to ACOM on reference points guidelines.</p>

Resource requirements	One meeting room at ICES HQ with at least one breakout room and facilities for online participation.
Participants	The workshop is normally attended by some 15–20 members and guests.
Secretariat facilities	Secretariat administrative, scientific and TAF support.
Financial	Funding for two external reviewers.
Linkages to committees	The results of this work will directly feed the ICES advisory process.
Linkages to other groups	HAWG, WKG MSE3, WG WIDE, WGBFAS, WGCSE, WGNSSK, NWWG, AFWG, WGHANSA.
Linkages to other organizations	All advice recipients having an interest in ICES reference points.

WKBMSYSPiCT3 – Benchmark workshop 3 on development of MSY advice using SPiCT

Approved in Resolutions meeting on 31 October 2023

2023/WK/FRSG26 The **Benchmark workshop 3 on the application of SPiCT to produce MSY advice for selected stocks (WKBMSYSPiCT3)**, chaired by Massimiliano Cardinale, Sweden, and Henning Winker, FAO-GFCM, and attended by invited external experts Casper Berg, Denmark, and Tobias Mildenerger, Denmark, will be established and meet online 11–13 December 2023 for a data workshop, and 15–19 January 2024 in Copenhagen, Denmark, for an assessment workshop. WKBMSYSPiCT3 will evaluate the appropriateness of data and the use of the Surplus Production in Continuous Time (SPiCT) model to provide MSY advice for selected stocks. The specific ToRs for the WKBMSYSPiCT3 are:

- a) Collate necessary data and information for the application of SPiCT for the stocks listed in Annex 1 before the data workshop.
- b) Review the available data and make recommendations on the most appropriate series to be used for SPiCT and potential improvements to eliminate biases.
- c) Apply the SPiCT methodology and determine the appropriateness of the data and the methodology to determine stock status for each of the stocks listed using the guidance developed following the latest WKLIFE report (*as of 31 October 2023*: [WKLIFE XI](#)) and the 2022 ICES technical guidance for harvest control rules and stock assessments for stocks in categories 2 and 3.
- d) For stocks where the methodology is appropriate, determine the methods to derive the parameters for the catch forecast using the harvest control rule for providing MSY advice using SPiCT.
- e) Prepare the Stock Annex for those stocks where SPiCT is considered appropriate for providing MSY advice.
- f) Provide recommendations for improving the guidance and training for the application of SPiCT and for deriving MSY advice.

WKBMSYSPiCT3 will report by 20 February 2024 for the attention of ACOM.

Supporting information

Priority	Very high. ICES provides advice on more than 260 stocks and more than 60% of these stocks are in categories 3–6 where currently MSY advice is not provided. With the development of approaches to provide MSY advice for category 3–4, these approaches must be implemented as soon as possible.
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Scientific justification	<p>Following on a request from the European Commission through DG MARE, to improve the scientific assessment of some category 3–6 stocks, ICES has held a series of workshops (WKLIFE) to develop methodologies that would allow it to provide MSY advice (see WKLIFEIX). Currently, ICES provides advice for category 3–6 stocks with the precautionary approach. To provide MSY advice for many of these stocks, ICES (through WKLIFEVII, WKLIFEVIII and WKLIFEIX, WKLIFE X, WKLIFE XI) has developed a coherent framework for category 3–4 stocks where available data would permit the use of SPiCT. The purpose of the workshop is to conduct a benchmark peer review of the application of the SPiCT approach to provide MSY advice for selected stocks. The selected stocks to be considered in this benchmark was determined based on the availability of appropriate data and capacity. In addition to producing the Stock Annex for stocks where the method is appropriate, the workshop will serve to provide recommendations to improve the guidance for the method as well as potential training.</p>
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Annex 1

Stock list	
aru.27.1234a	Greater silver smelt (<i>Argentina silus</i>) in subareas 1, 2, and 4, and in Division 3.a (Northeast Arctic, North Sea, Skagerrak and Kattegat); WGDEEP
bzq.27.2628	Flounder (<i>Platichthys</i> spp) in subdivisions 26 and 28 (east of Gotland and Gulf of Gdansk); WGBFAS
cod.27.2.coastS	Cod (<i>Gadus morhua</i>) in Subarea 2 between 62°N and 67°N (Norwegian Sea), southern Norwegian coastal cod; AFWG
dab.27.22-32	Dab (<i>Limanda limanda</i>) in subdivisions 22–32 (Baltic Sea); WGBFAS
fle.27.2223	Flounder (<i>Platichthys flesus</i>) in subdivisions 22 and 23 (Belt Seas and the Sound); WGBFAS
fle.27.3a4	Flounder (<i>Platichthys flesus</i>) in Subarea 4 and Division 3.a (North Sea, Skagerrak and Kattegat); WGNSSK
nep.fu.32	Norway lobster (<i>Nephrops norvegicus</i>) in Division 4.a, Functional Unit 32 (northern North Sea, Norway Deep); WGNSSK
sbr.27.9	Blackspot seabream (<i>Pagellus bogaraveo</i>) in Subarea 9 (Atlantic Iberian waters); WGDEEP
sbr.27.10	Blackspot seabream (<i>Pagellus bogaraveo</i>) in Subarea 10 (Azores grounds); WGDEEP
tur.27.22-32	Turbot (<i>Scophthalmus maximus</i>) in subdivisions 22–32 (Baltic Sea); WGBFAS

WKBAN – Benchmark workshop on anchovy

Approved in Resolutions forum on 8 December 2023

2023/WK/FRSG27 The **Benchmark workshop on anchovy** (WKBAN) chaired by Afra Egan, Ireland, and Kiersten Curti, USA, and attended by invited external experts Andrés Uriarte, Spain, and Stefanie Haase, Germany, will be established and meet online 3–7 March 2023 for a data workshop, and 23–27 September 2024 in Nantes, France, for an assessment methods workshop. WKBAN will:

- o) As part of the data workshop:
 1. Consider the quality of data proposed for use in the assessment;
 2. Consider stock identity and migration issues;
 3. Make a proposal to the benchmark on the use and treatment of data for each assessment, including discards, surveys, life history, etc.;

4. Invite stakeholders to contribute data in advance of the data evaluation workshop (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality.
- p) In preparation for the assessment methods workshop:
 1. Produce working documents to be reviewed during the assessment methods workshop at least 14 days prior to the meeting.
 - q) As part of the assessment methods workshop, agree to and thoroughly document the most appropriate, data, methods, and assumptions for:
 1. Obtaining population abundance and exploitation level estimates (conducting the stock assessment);
 2. Estimating fisheries and biomass reference points that are in line with ICES guidelines (see latest [Technical guidelines](#) on reference points);
 - i. Note: If additional time is needed to conduct the work and agree to reference points, an additional reference point workshop could be scheduled.
 3. Conducting the short-term forecast.
 - r) As part of the assessment methods workshop, a full suite of diagnostics (regarding e.g. data, retrospective behaviour, model fit, predictive power etc.) should be examined to evaluate the appropriateness of any model developed and proposed for use in generating advice;
 - s) If no analytical assessment method can be agreed upon, then an alternative method (the former method or following the ICES data-limited stock approach as outlined in [WKLIFE XI](#)) should be put forward by the benchmark;
 - t) Update the Stock Annex; and
 - u) Develop recommendations for future improvements in the assessment methodology and data collection.

WKBAN will report by 31 October 2024 for the attention of ACOM.

Stock list	
ane.27.8	Anchovy (<i>Engraulis encrasicolus</i>) in Subarea 8 (Bay of Biscay)
ane.27.9a	Anchovy (<i>Engraulis encrasicolus</i>) in Division 9.a (Atlantic Iberian waters)

WKBFLATFISH – Benchmark workshop on selected flatfish stocks

Approved in Resolutions forum on 8 December 2023

2023/WK/FRSG28 The **Benchmark workshop on selected flatfish stocks** (WKBFLATFISH) chaired by Bjarki Þór Elvarsson, Iceland, and Lies Vansteenbrugge, Belgium, and attended by invited external experts Hans Gerritsen, Ireland, and Marc Taylor, Germany, will be established and meet 27 November–1 December 2023 in Copenhagen, Denmark, for a data workshop, and 19 February–23 February 2024 in Copenhagen, Denmark, for an assessment methods workshop. WKBFLATFISH will:

- a) As part of the data workshop:
 1. Consider the quality of data proposed for use in the assessment;
 2. Consider stock identity and migration issues;
 3. Make a proposal to the benchmark on the use and treatment of data for each assessment, including discards, surveys, life history, etc.;

4. Invite stakeholders to contribute data in advance of the data evaluation workshop (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality.
- b) In preparation for the assessment methods workshop:
 1. Produce working documents to be reviewed during the assessment methods workshop at least 14 days prior to the meeting.
- c) As part of the assessment methods workshop, agree to and thoroughly document the most appropriate, data, methods, and assumptions for:
 1. Obtaining population abundance and exploitation level estimates (conducting the stock assessment);
 2. Estimating fisheries and biomass reference points that are in line with ICES guidelines (see latest [Technical guidelines](#) on reference points);
 - i. Note: If additional time is needed to conduct the work and agree to reference points, an additional reference point workshop could be scheduled.
 3. Conducting the short-term forecast.
- d) As part of the assessment methods workshop, a full suite of diagnostics (regarding e.g. data, retrospective behaviour, model fit, predictive power etc.) should be examined to evaluate the appropriateness of any model developed and proposed for use in generating advice;
- e) If no analytical assessment method can be agreed upon, then an alternative method (the former method or following the ICES data-limited stock approach as outlined in [WKLIFE XI](#)) should be put forward by the benchmark;
- f) Update the Stock Annex; and
- g) Develop recommendations for future improvements in the assessment methodology and data collection.

WKBFLATFISH will report by 25 March 2024 for the attention of ACOM.

Stock list	
sol.27.4	Sole (<i>Solea solea</i>) in Subarea 4 (North Sea)
sol.27.8ab	Sole (<i>Solea solea</i>) in divisions 8.a-b (northern and central Bay of Biscay)
sol.27.7a	Sole (<i>Solea solea</i>) in Division 7.a (Irish Sea)
anf.27.3a46	Anglerfish (<i>Lophius budegassa</i> , <i>Lophius piscatorius</i>) in Subareas 4 and 6, and Division 3.a (North Sea, Rockall and West of Scotland, Skagerrak and Kattegat)

WKEELDATA 5 – Workshop 5 on Designing an Eel Data Call

Approved in Resolutions forum on 6 February 2024

2023/WK/FRSG29 A **Workshop on Designing an Eel Data Call** (WKEELDATA5), chaired by Tea Basic, UK, and Jani Helminen, Finland, will meet online 5–9 February 2024 to design a data call to all ICES/EIFAAC/GFCM countries having natural production of European eel and prepare their integration in the eel database supporting WGEEL work. The data call 2024 will request stock indicators (biomass and mortality) in addition to data collected every year (e.g. this call will be similar to the 2020 call). To achieve this aim, the WKEELDATA 5 will:

- a) Update templates that will be used to report data to the ICES and text for the 2024 Eel Data Call, following WGEEL recommendations;

- b) Develop/Update the tools in the WGEEL shiny application and possibly in the database, required to automate the generation of spread sheets for the data call and to manage data integration;
- c) Develop, with the ICES Data Centre, the roadmap to achieve the data call publication beginning of May and the data integration during the WGEEL meeting (part one):
 1. List the necessary tasks to finalise the data call preparation
 2. List and prioritise the developments needed in the shiny application.

WGEELDATA5 will report in 2024 for the attention of FSRG, WGEEL, WGDIAD, ACOM, SCICOM, EIFAAC, GFCM. The WK will require post-meeting work of estimated 15 man-days to run beta tests to validate the developments, which will be distributed among WK members.

Supporting information

Priority	This topic is a high priority for ICES and the countries/institutions supporting the work of the WGEEL because the present data collection procedures of WGEEL are complex and require a large resource in staff time before and during the WGEEL meetings. The refinement of data provision will save time and money, and it will facilitate the future benchmarking of the stock assessment process to support the ICES Advice.
Scientific justification	The WGEEL annually collates data on recruitment, landings from commercial and recreational fisheries, restocking, aquaculture production, biological characteristics of eels, in every annual data call. Every three years, following the reporting obligations from the Regulation, it collates data on stock indicators (Biomass and Mortalities). The development of various tools (database, standardised templates, shiny application for data integration and analysis) have allowed to greatly improve consistency in the data collection and to facilitate their use in the stock assessment process. Since the data collection is continuously improved, the tools must be regularly adapted to these changes.
Resource requirements	The workshop will be run virtually. Videoconferencing system and sharepoint will be required.
Participants	WGEEL members in charge of the data collection and management. One or two persons in charge of answering to the data call. The presence of a GFCM representatives would be required to ensure the consistency between ICES and GFCM data calls.
Secretariat facilities	The standard support for arranging the meeting, providing access to sharepoint, videoconferencing system and for formatting the report.
Financial	No financial implications.
Linkages to committees	Links to ACOM as the data collection and related procedures are crucial for the work of WGEEL, providing the scientific basis for the ICES advice on fishing opportunities published by ACOM.
Linkages to other groups	The results will be of direct benefit to the WGEEL and wider to WGDIAD.
Linkages to other organizations	The results will be of direct interest to DG MARE of the European Commission, in relation to the obligations of the Eel Regulation (EC1100/2007) and the EU MAP, and to GFCM in relation to planned eel Data Collection Framework Reference.

WKLANDEEL - Workshop for the reconstruction of eel landings statistics

Approved in Resolutions forum on 5 February 2024

2023/WK/FRSG30 A **Workshop for the reconstruction of eel landings statistics** (WKLANDEEL), chaired by Laurent Beaulaton, France will be established and meet online 4–6 March 2024 and in Cestas, France 13–17 May 2024 to:

- a) Review methods used to reconstruct eel catch/landings data
- b) Review past and existing eel fisheries and data on eel catch/landings statistics, focusing primarily on ICES and FAO reports (including WGEEL reports) and international research projects.
- c) Identify missing information and, if necessary, design a specific data call to collect additional information required for the reconstruction model.
- d) Develop methods and reconstruct landings statistics as far back in time as possible to inform on their potential use in the stock assessment and propose any means to improve the model and future data collection.

WKLANDEEL will report by 29 April 2024 for the attention of ACOM.

Supporting information

Priority	
Scientific justification	Landings can be used to quantify fishing mortalities but can also be used in population dynamic models. WKFEA (2021) repeats the previous findings that for European eel landings (and effort) data are deficient, heterogeneous, incomplete and not well documented. WKFEA proposes to focus as a first step on landings data and on improving the reconstruction of missing data. Both commercial and recreational landings should be included (WGEEL, 2022).
Resource requirements	This work will require access to the ICES SharePoint, and online meetings facilities. This work will also require access to the WGEEL database and associated shiny visualisation apps.
Participants	The participation should reflect the diverse scientific competence (knowledge of eel fisheries, modelling skill) needed to fulfil the objectives of the workshop. Participants from all countries of the European eel distribution including non ICES countries, particularly Mediterranean countries.
Secretariat facilities	ICES data call, Secretariat support, and Advisory process and Secretariat support
Financial	At countries expense.
Linkages to committees	ACOM
Linkages to other groups	WGEEL, WGDIAD, SCICOM, FRSG.
Linkages to other organizations	FAO EIFAAC, GFCM

WKBPLAICE – Benchmark workshop on selected plaice stocks

Approved in Resolutions forum on 12 February 2024

2023/WK/FRSG31 The **Benchmark workshop on selected plaice stocks** (WKBPLAICE), chaired by Stefanie Haase, Germany, and Pamela Woods, Iceland, and attended by invited external experts Marta Cousido-Rocha, Spain, and Silvia Angelini, Italy, will be established and meet online 3–7 June 2024 for a data workshop, and 21–25 October 2024 in Copenhagen, Denmark, for an assessment methods workshop. WKBPLAICE will:

- a) As part of the data workshop:

1. Consider the quality of data proposed for use in the assessment;
 2. Consider stock identity and migration issues, if appropriate;
 3. Make a proposal to the benchmark on the use and treatment of data for each assessment, including discards, surveys, life history, etc.;
 4. Invite stakeholders to contribute data in advance of the data evaluation workshop (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality.
- b) In preparation for the assessment methods workshop:
1. Produce working documents to be reviewed during the assessment methods workshop at least 14 days prior to the meeting.
- c) As part of the assessment methods workshop, agree to and thoroughly document the most appropriate, data, methods, and assumptions for:
1. Obtaining population abundance and exploitation level estimates (conducting the stock assessment);
 2. Estimating fisheries and biomass reference points that are in line with ICES guidelines (see latest [Technical guidelines](#) on reference points);
 - i. Note: If additional time is needed to conduct the work and agree to reference points, an additional reference point workshop could be scheduled.
 3. Conducting the short-term forecast.
- d) As part of the assessment methods workshop, a full suite of diagnostics (regarding e.g. data, retrospective behaviour, model fit, predictive power etc.) should be examined to evaluate the appropriateness of any model developed and proposed for use in generating advice;
- e) If no analytical assessment method can be agreed upon, then an alternative method (the former method or following the ICES data-limited stock approach as outlined in [WKLIFE XI](#), including considerations of stock-specific tuning with a management strategy evaluation, if possible) should be put forward by the benchmark;
- f) Update the Stock Annex; and
- g) With support from the ICES Secretariat, document the stock assessments in the Transparent Assessment Framework ([TAF](#)); and
- h) Develop recommendations for future improvements in the assessment methodology and data collection.

WKBPLAICE will report by 30 January 2025 for the attention of ACOM.

Stock list	
ple.27.21-23	Plaice (<i>Pleuronectes platessa</i>) in subdivisions 21–23 (Kattegat, Belt Seas, and the Sound)
ple.27.24-32	Plaice (<i>Pleuronectes platessa</i>) in subdivisions 24–32 (Baltic Sea, excluding the Sound and Belt Seas)
ple.27.7e	Plaice (<i>Pleuronectes platessa</i>) in Division 7.e (western English Channel)

WKEcoMSE – Joint ICES/SEAwise workshop to quality assure methods to incorporate environmental factors and quantifying ecological considerations in Management Strategy Evaluation tools

Approved in Resolutions forum February 2024

2023/WK/FRSG32 The **Joint ICES/SEAwise workshop to quality assure methods to incorporate environmental factors and quantifying ecological considerations in Management Strategy Evaluation tools (WKEcoMSE)** will meet on 21–24 May 2024 online chaired by John Trochta (Norway), Marie Savina-Rolland (France) and Piera Carpi (Norway).

The WKEcoMSE will work to provide a powerful set of tools for scientists to develop harvest control options that align with management objectives. Most commonly conducted as single-species analyses, MSEs can also address mixed fisheries objectives by using multi-stock and multi-fleet operating models. The EU project, [SEAwise](#), endeavours to develop such multi-stock multi-species models further so that they can be used to define and evaluate fisheries management strategies that address broad Ecosystem Based Fisheries Management (EBFM) objectives, including identifying HCRs that are robust to changes in productivity.

As such, a key deliverable of this workshop is to develop robust and consistent environment-productivity relationships for commercial stocks across selected case studies, which potentially can be integrated in models used by ICES and the SEAwise project. The methods put forward in the workshop will be peer-reviewed to ensure that they are scientifically robust and fit-for-purpose for the advisory frameworks, policy, and management needs in FAO areas 27 and 37 (the ICES area (i.e. North Atlantic) and the Mediterranean Sea).

Terms of reference

- a) Methods for consideration by the WK will be proposed by workshop participants, including those methods specifically examined by the SEAwise project.
- b) Review the proposed methods regarding their capacity to incorporate the impact of environmental factors on the productivity of commercial stocks in the Fisheries Management Strategy Evaluation tools.
- c) Evaluate the guidelines for each of the different processes controlling productivity, i.e. recruitment, growth and maturity, and survival, including:
 - 1) the biological and environmental datasets to be used and potential pre-processing procedures;
 - 2) the statistical models to use;
 - 3) methods and metrics to assess the predictive capacity of the statistical models developed; and,
 - 4) procedures to assess the uncertainty added to the considered management tool.
- d) Review the proposed approaches and make recommendations to end users on whether the studied environment-productivity relationships should be considered or not. Recommend alternative, more generic approaches if the targeted approach is inconclusive.

WKEcoMSE will report to ACOM no later than 23 June 2024.

Supporting information

Priority	High. ICES is a partner in this European project, SEAwise, facilitating workshops aligned with agreed project work packages and deliverables that are core to ICES Advice and Science plans regarding the development of science and provision of advice on the Ecosystem Based Fisheries Management (EBFM).
Scientific justification	ICES mission is to advance and share scientific understanding of marine ecosystems and the services they provide and to use this

	<p>knowledge to generate state-of-the-art advice for meeting conservation, management, and sustainability goals. This workshop should help to advance this mission.</p> <p>SEAWise is a dynamic research programme aimed at understanding the current state-of-play of fisheries management across Europe and facilitating the widespread implementation of Ecosystem Based Fisheries Management (EBFM) in the region. Through a targeted research programme, and in close collaboration with its stakeholder network, SEAWise is working to develop a fully operational, synthesised management advice tool that highlights the benefits – or potential trade-offs – of fisheries management decisions. To do this, SEAWise is working to identify and address the key challenges currently inhibiting EBFM through workshops like this.</p>
Resource requirements	None.
Participants	SEAWise project participants and modellers, with a special focus on MSE.
Secretariat facilities	SharePoint site, report formatting, and publication
Financial	Staff and reviewer costs are supported by the ICES SEAWise project budget.
Linkages to committees	The ICES Advisory Plan establishes the ecosystem approach as the central tenet that governs how ICES provides independent advice on the management of human activities in our seas and oceans.
Linkages to other groups	It is expected that this workshop will be of interest to a range of end-users both within ICES and outside, reflecting the increasing interest in the ecosystem approach to fisheries.
Linkages to other organizations	Outcomes of this workshop should apply to both the ICES area and the area of the GFCM (FAO areas 27 and 37).

WKBELASMO3 – Benchmark workshop 3 on selected elasmobranch stocks

Approved in Resolutions forum November 2023

2023/WK/FRSG33 **Benchmark workshop 3 on selected elasmobranch stocks** (WKBELASMO3) chaired by Alain Biseau, France, and attended by invited external experts Alfonso Pérez Rodríguez, Spain; Margarita Rincón Hidalgo, Spain; and Arni Magnusson; will be established and meet online 20–24 November 2023 for a data workshop, and 26 February–1 March 2024 in Copenhagen, Denmark, for an assessment methods workshop. WKBELASMO3 will:

- a) As part of the data workshop:
 1. Consider the quality of data proposed for use in the assessment;
 2. Consider stock identity and migration issues;
 3. Make a proposal to the benchmark on the use and treatment of data for each assessment, including landings, discards, surveys, life history, etc.
 4. Invite stakeholders to contribute data in advance of the data evaluation workshop (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality.
- b) In preparation for the assessment methods workshop:
 1. Produce working documents to be reviewed during the assessment methods workshop at least 14 days before the meeting.
- c) As part of the assessment methods workshop, agree to and thoroughly document the most appropriate, data, methods, and assumptions for:
 1. Obtaining population abundance and exploitation level estimates (conducting the stock assessment);

2. Estimating fisheries and biomass reference points that are in line with ICES guidelines (see latest [Technical guidelines](#) on reference points);
 - i. Note: if additional time is needed to conduct the work and agree to e.g. reference points, harvest control rules etc., additional meetings may need to be scheduled.
 3. Conducting the short-term forecast.
- d) As part of the assessment methods workshop, a full suite of diagnostics (regarding e.g. data, retrospective behaviour, model fit, predictive power etc.) should be examined to evaluate the appropriateness of any model developed and proposed for use in generating advice;
 - e) If no analytical assessment method can be agreed upon, then an alternative method (the former method or following the ICES data-limited stock approach as outlined in [WKLIFE XI](#)) should be put forward by the benchmark;
 - f) Update the Stock Annex; and
 - g) Develop recommendations for future improvements in the assessment methodology and data collection.

WKBELASMO3 will report by 8 April 2024 for the attention of ACOM.

Stock list	
rjc.27.9a	Thornback ray (<i>Raja clavata</i>) in Division 9.a (Atlantic Iberian waters)
rjh.27.9a	Blonde ray (<i>Raja brachyura</i>) in Division 9.a (Atlantic Iberian waters)
rjn.27.9a	Cuckoo ray (<i>Leucoraja naevus</i>) in Division 9.a (Atlantic Iberian waters)

WKMIXFLEET – Workshop on mixed fisheries fleets

2023/WK/FRSG34 The **Workshop on mixed fisheries fleets** (WKMIXFLEET), chaired by Harriet Cole, UK, and Claire Macher, France, will be established and meet in Copenhagen, Denmark 12–13 March 2024 to:

- a) Develop and document a new methodology for defining fleets using the combined expertise of mixed fisheries scientists and economists;
- b) Apply this new methodology to mixed fisheries data, taking into consideration future data sources and availability;
- c) Compare the new and existing fleet definitions and, where possible, evaluate the potential effects this may have on fleet dynamics and mixed fisheries scenario results;
- d) Identify any new datasets or changes to current data calls needed to implement the new methodology.

WKMIXFLEET will report by 12 April 2024 for the attention of ACOM.

Supporting information

Priority	The work is essential for ICES to progress in the development of its capacity to provide advice on multispecies fisheries. Such advice is necessary to fulfil the requirements stipulated in the MoUs between ICES and its client commissions.
Scientific justification	Currently, the fleet designations used to produce mixed fisheries considerations are not true fleets but rather aggregations of fishing activities. As such, the fleets used do not represent unique groups of vessels and therefore have implications for accurately characterising

	fleet fishing behaviour and assessing choking effects. Additionally, alternative fleet definitions would facilitate collaborations with WGECON to advance the integration of advice on the socio-economic viability of mixed fisheries scenarios. Demand for such information has been expressed by stakeholders, most pertinently through WKMIXFISH.
Resource requirements	Some support will be required from the ICES Secretariat.
Participants	The workshop is normally attended by some 15–20 members and guests.
Secretariat facilities	SharePoint site provision and Atlantic room.
Financial	No financial implications.
Linkages to committees	ACOM.
Linkages to other groups	WGMIXFISH-METHODS, WGMIXFISH-ADVICE, WKMIXFISH3, and WGECON.
Linkages to other organizations	STECF – Fisheries Dependent Information expert group.

WKMIXFISH3 – Scoping workshop 3 on next generation of mixed fisheries advice

2023/WK/FRSG35 The third **Scoping workshop on next generation of mixed fisheries advice** (WKMIXFISH3), chaired by Paul Dolder, UK, and Marc Taylor, Germany, will be established and meet in Copenhagen, Denmark 14 March 2024 to:

- a) Update and review methodological developments since the previous scoping meeting, including work at WGMIXFISH-METHODS 2023 and in response to the Joint UK-EU request to ICES for advice regarding mixed fisheries science;
- b) Review and make recommendations for potential changes to mixed fishery considerations utilising feedback from the previous scoping meeting;
- c) Review ongoing strategy for improvements to fleet and métier definitions considering future data sources and availability.

WKMIXFISH3 will report by 12 April 2024 for the attention of ACOM.

WKMIXFISH3 is the second of a two-part workshop (with the previous WKMIXFISH2) to take place in March 2024 to update stakeholders regarding recent changes to WGMIXFISH-ADVICE initiated since the last meeting. The meeting will also be informed by WKMIXFLEET, which is scheduled to take place immediately before WKMIXFISH3, aiming to review methodologies used for defining fleets with the goal of improved mixed fishery and economic considerations.

Supporting information

Priority	Mixed fisheries considerations are requested by several ICES clients. While they were first delivered in 2009 for the North Sea, there are still basic gaps on how mixed fisheries considerations are used, what is needed that is not yet provided, validity of assumptions made, and how to communicate them. The activity of this working group will enable ICES to close the existing knowledge gaps and to reshape the advice to fulfil client needs and make it more informative. Consequently, these activities are considered to have a high priority.
Scientific justification	ToR [a] Modelling assumptions and methodologies employed by mixed fishery models and forecasts will have consequences for results and subsequent advice. It is therefore important to accurately understand the implications of these assumptions. Methodological

	<p>evaluations conducted within WGMIXFISH-METHODS and in a separate special request will be reviewed to assess potential applications to mixed fishery considerations.</p> <p>ToR [b] Several changes to mixed fishery considerations have been implemented since the previous scoping meeting; including presentation of current model assumptions, selection of mixed fishery scenarios, and visualisation of results. These changes will be reviewed in terms of their ability to facilitate communication of results to clients.</p> <p>ToR [c] Changes in future data sources are likely to improve the ability to define fleets that accurately represent fishing activities and assess choking effects. Additionally, alternative fleet definitions would facilitate the integration of advice on the socio-economic viability of mixed fisheries scenarios and allow further collaboration among working groups, such as WGECON.</p>
Resource requirements	Some support will be required from the ICES Secretariat.
Participants	The workshop is normally attended by some 15–20 members and guests.
Secretariat facilities	SharePoint site provision and Atlantic room.
Financial	No financial implications.
Linkages to committees	ACOM.
Linkages to other groups	WGMIXFISH-METHODS, WGMIXFISH-ADVICE, and WKMIXFLEET.
Linkages to other organizations	STECF – Fisheries Dependent Information expert group.

WKFAQ - Workshop on the Future of Advice Data Quality Assurance

Approved in Resolutions forum March 2024

2023/WK/FRSG36 The **Workshop on the Future of Advice Data Quality Assurance** (WKFAQ) chaired by Joël Vigneau, France, will be established and will meet in Ostend, Belgium 17–20 June 2024 to:

- a) Identify expert groups that are dealing with data quality issues throughout the advice production lifecycle; ([Science Plan codes](#): 3.2);
- b) Create a plan to deliver a stream-lined, coherent approach to dealing with data quality issues throughout the advice production lifecycle within ICES. ([Science Plan codes](#): 3.2).

WKFAQ will report by 31 August 2024 for the attention of ACOM and FRSG.

Supporting information

Priority	Improving quality assurance processes is a key priority for ICES and is a priority area of the ICES Advice Plan – the work of this group is thus considered as a high priority.
Scientific justification	This workshop builds on the work of the Working Group on the Governance of Quality Management of Data and Advice (WGQuality) https://doi.org/10.17895/ices.pub.22347691.v1 and supports the ICES aim of creating an end-to-end quality assurance framework for advice production - from data management, data integration, data analysis, and data use, to the process of translating that data into ICES advice. It is consistent with the ICES Quality Policy https://doi.org/10.17895/ices.pub.23864760
	Term of Reference a)

The production of advice in ICES relates to a broad diversity of issues and is supported by a large scope of data types. In consequence, there are a large number of groups that consider quality within ICES. Whilst this is positive it can also lead to a number of problems:

- It's difficult for groups to know what work is being done in other groups – useful results are not necessarily effectively communicated between groups, and work might be duplicated.
- Expertise on this topic is spread thinly between groups.
- There are increasing national limitations on physical group attendance – related to issues such as increased travel costs, and a desire to reduce carbon footprints.

The aim for this ToR is to identify key groups that are dealing with data quality issues throughout the advice production lifecycle.

The ICES Data Center and the secretariat are developing tools to improve the storage and handling of the data used for assessment and advice and feedbacks to data providers. These tools and initiatives need to be included in a general quality framework to enable the compilation, identification and development of plans for filling information gaps.

Considering these issues and opportunities, it would be advantageous, whenever possible, to combine expertise on data quality within existing groups rather than creating new groups or workshops. WGQUALITY noted that steering group chairs have a key role in rationalising groups and identifying overlapping ToRs and encourage this work.

Term of Reference b)

We believe that there has been a large body of work looking at the quality of detailed data, but note that there has not been as much work looking at the quality of data through the assessment and advice process life-cycle. Given the large scope of advice and data types involved, strategic reflexive and prioritisation will be needed in the proposed approach. During the workshop it might be useful to work on examples for specific advice products and data flows but we note that the overall approach developed should be generic.

The approach developed will also need to be flexible enough to address future needs as well as the current ones. It should also take into account other related work being carried out within ICES, such as the ICES Quality Policy, the Transparent Assessment Framework and the Data Centre accreditation.

Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resources required to undertake additional activities in the framework of this group is negligible. Countries are encouraged to ensure that their national members have sufficient resources to conduct the necessary intersessional work to address the ToRs. For EU Member States, work within this WK can be funded under the Data Collection Framework (DCF)/European Maritime, Fisheries and Aquaculture Fund (EMFAF).
Participants	Data submitters, expert group members from groups with an advice-related ToR, ICES data centre.
Secretariat facilities	SharePoint.
Financial	No financial implications.

Linkages to advisory committees	There will be strong linkage with ACOM
Linkages to other committees or groups	The work within this group is very relevant to the groups within the FRSG and DSTSG (particularly WGCATCH, WGBIOP, WGDG, WGAcousticGov and WGRDBESGOV). This work will also be relevant to groups within the IEASG, in particular since a wide variety of data source will be contributing to the outputs of those groups.
Linkages to other organizations	There is a natural link to similar issues of quality assurance in the EU Regional Coordination Groups.

WKICEHER – Workshop on the assessment and management plan evaluation for Icelandic herring

2023/WK/FRSG37 The **Workshop on the assessment and management plan evaluation for Icelandic herring** (WKICEHER) chaired by Guðmundur Oskarsson, Iceland, and attended by invited external experts Sindre Vatnehol, Norway, and Olav Nikolai Risdal Breivik, Norway, will be established and meet online 23 January 2024 for a data workshop, and at MRFI, Hafnarfjörður, Iceland, 5–7 March 2024, to evaluate the assessment and management plan evaluation for herring (*Clupea harengus*) in Division 5.a (Iceland grounds summer-spawning herring; her.27.5a). WKICEHER will:

- c) Evaluate the Icelandic management plans for the Icelandic herring stock against precautionary and MSY criteria;
- d) This will include a data workshop which will:
 1. Consider the quality of data proposed for use in the assessment;
 2. Consider stock identity and migration issues;
 3. Make a proposal to the benchmark on the use and treatment of data for each assessment, including discards, surveys, life history, etc.;
 4. Invite stakeholders to contribute data in advance of the data evaluation workshop (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality.
- e) In preparation for the assessment methods workshop:
 1. Produce working documents to be reviewed during the WKICEHER assessment methods workshop at least 14 days prior to the meeting.
- f) As part of the assessment methods workshop, agree to and thoroughly document the most appropriate, data, methods, and assumptions for:
 1. Obtaining population abundance and exploitation level estimates (conducting the stock assessment);
 2. Estimating fisheries and biomass reference points that are in line with ICES guidelines (see latest [Technical guidelines](#) on reference points);
 3. Conducting the short-term forecast.
- g) As part of the assessment methods workshop, a full suite of diagnostics (regarding e.g. data, retrospective behaviour, model fit, predictive power etc.) should be examined to evaluate the appropriateness of any model developed and proposed for use in generating advice;
- h) If no analytical assessment method can be agreed upon, then an alternative method (the former method, or following the ICES data-limited stock approach, see [WKLIFE XI](#)) should be put forward;
- i) Update the Stock Annex; and
- j) Carry out and document the evaluation of the proposed management plan.

WKICEHER will report by 22 March 2024 for the attention of ACOM.

Stock list	
her.27.5a	Herring (<i>Clupea harengus</i>) in Division 5.a, summer-spawning herring (Iceland grounds)

WKBGAD – Benchmark workshop on selected haddock and saithe stocks

2023/WK/FRSG38 The **Benchmark workshop on selected haddock and saithe stocks** (WKBGAD) chaired by Daniel Howell, Norway, and Meaghan Bryan, USA, and attended by invited external experts Helga Bára Mohr Vang, Faroe Islands, and Andrea Perreault, Canada, will be established and meet online 4–8 December 2023 for a data workshop, and 26 February–1 March 2024 in Copenhagen, Denmark, for an assessment methods workshop. WKBGAD will:

- a) As part of the data workshop:
 1. Consider the quality of data proposed for use in the assessment;
 2. Consider stock identity and migration issues;
 3. Make a proposal to the benchmark on the use and treatment of data for each assessment, including discards, surveys, life history, etc.;
 4. Invite stakeholders to contribute data in advance of the data evaluation workshop (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality.
- b) In preparation for the assessment methods workshop:
 5. Produce working documents to be reviewed during the assessment methods workshop at least 14 days prior to the meeting.
- c) As part of the assessment methods workshop, agree to and thoroughly document the most appropriate, data, methods, and assumptions for:
 6. Obtaining population abundance and exploitation level estimates (conducting the stock assessment);
 7. Estimating fisheries and biomass reference points that are in line with ICES guidelines (see latest [Technical guidelines](#) on reference points);
 - i. Note: If additional time is needed to conduct the work and agree to reference points, an additional reference point workshop could be scheduled.
 8. Conducting the short-term forecast.
- d) As part of the assessment methods workshop, a full suite of diagnostics (regarding e.g. data, retrospective behaviour, model fit, predictive power etc.) should be examined to evaluate the appropriateness of any model developed and proposed for use in generating advice;
- e) If no analytical assessment method can be agreed upon, then an alternative method (the former method or following the ICES data-limited stock approach as outlined in [WKLIFE XI](#)) should be put forward by the benchmark;
- f) Update the Stock Annex; and
- g) Develop recommendations for future improvements in the assessment methodology and data collection.

WKBGAD will report by 29 March 2024 for the attention of ACOM.

Stock list	
had.27.6b	Haddock (<i>Melanogrammus aeglefinus</i>) in Division 6.b (Rockall)
pok.27.1-2	Saithe (<i>Pollachius virens</i>) in subareas 1 and 2 (Northeast Arctic)
pok.27.3a46	Saithe (<i>Pollachius virens</i>) in Subareas 4, 6 and Division 3.a (North Sea, Rockall and West of Scotland, Skagerrak and Kattegat)
pok.27.7-10	Saithe (<i>Pollachius virens</i>) in subareas 7-10 (Southern Celtic Sea and the English Channel, Bay of Biscay, Atlantic Iberian waters and the Azores grounds)

WKBHMB – Benchmark workshop on horse mackerel and boarfish

2023/WK/FRSG39 The **Benchmark workshop on horse mackerel and boarfish** (WKBHMB) chaired by Martin Pastoors, The Netherlands, and attended by invited external experts Juan-Carlos Quiroz, Chile, and Ian Taylor, USA, will be established and meet 22–25 January 2024 in Copenhagen, Denmark, for a data workshop, and 8–12 April 2024 in Copenhagen, Denmark, for an assessment methods workshop. WKBHMB will:

- a) As part of the data workshop:
 1. Consider the quality of data proposed for use in the assessment;
 2. Consider stock identity and migration issues;
 3. Make a proposal to the benchmark on the use and treatment of data for each assessment, including discards, surveys, life history, etc.;
 4. Invite stakeholders to contribute data in advance of the data evaluation workshop (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality.
- b) In preparation for the assessment methods workshop:
 1. Produce working documents to be reviewed during the assessment methods workshop at least 14 days prior to the meeting.
- c) As part of the assessment methods workshop, agree to and thoroughly document the most appropriate, data, methods, and assumptions for:
 1. Obtaining population abundance and exploitation level estimates (conducting the stock assessment);
 2. Estimating fisheries and biomass reference points that are in line with ICES guidelines (see latest [Technical guidelines](#) on reference points);
 - i. Note: If additional time is needed to conduct the work and agree to reference points, an additional reference point workshop could be scheduled.
 3. Conducting the short-term forecast.
- d) As part of the assessment methods workshop, a full suite of diagnostics (regarding e.g. data, retrospective behaviour, model fit, predictive power etc.) should be examined to evaluate the appropriateness of any model developed and proposed for use in generating advice;
- e) If no analytical assessment method can be agreed upon, then an alternative method (the former method or following the ICES data-limited stock approach as outlined in [WKLIFE XI](#)) should be put forward by the benchmark;
- f) Update the Stock Annex; and
- g) Develop recommendations for future improvements in the assessment methodology and data collection.

WKBHMB will report by 1 May 2024 for the attention of ACOM.

Stock list	
hom.27.2a4a5 b6a7a-ce-k8	Horse mackerel (<i>Trachurus trachurus</i>) in Subarea 8 and divisions 2.a, 4.a, 5.b, 6.a, 7.a-c,e-k (the Northeast Atlantic)
hom.27.3a4bc 7d	Horse mackerel (<i>Trachurus trachurus</i>) in divisions 3.a, 4.b-c, and 7.d (Skagerrak and Kattegat, southern and central North Sea, eastern English Channel)
hom.27.9a	Horse mackerel (<i>Trachurus trachurus</i>) in Division 9.a (Atlantic Iberian waters)
boc.27.6-8	Boarfish (<i>Capros aper</i>) in subareas 6-8 (Celtic Seas, English Channel, and Bay of Biscay)

WKLIFEXIII – The Workshop on the Development of Quantitative Assessment Methodologies based on Life-history traits, exploitation characteristics, and other relevant parameters for data-limited stocks

2023/WK/FRSG40 **The Workshop on the Development of Quantitative Assessment Methodologies based on Life- history traits, exploitation characteristics, and other relevant parameters for data-limited stocks (WKLIFE XIII)**, chaired by Carl O'Brien (UK), Tobias Mildenerger (Denmark) and Simon Fischer (UK) will meet in Lisbon, Portugal, 30 September – 04 October 2024. The workshop should address the following Terms of Reference:

1. Develop a document with frequently asked questions (FAQ) regarding the ICES approach for data- limited stocks that can be reviewed and updated annually and respond to questions and recommendations from the ICES community.
2. Further evaluate and develop the science for the ICES advice framework for data-limited stocks in Category 2-6, with specific emphasis on stock Categories 4, 5, and 6, and stock status indicators.
3. Quantify the uncertainty and value of information (VOI) associated with available data types and life-history parameters and explore how to account for uncertainty and VOI in data-limited management procedures.
4. Explore data-limited stock assessments, harvest control rules, and simulation approaches for specific life-history strategies, such as short- and long-lived species, and for species with different roles in the ecosystem.
5. Further explore and develop assessment and advice methods with focus on data- and/or resource- limited fisheries, from both within and outside the ICES community.

WKLIFE XIII will report to ACOM no later than 10 **November** 2024.

Supporting Information

Priority

High. ICES provides advice on more than 260 stocks on an annual basis and more than 60% of these stocks are in categories 2-6. The development and testing of operational advice rules for stocks in categories 4, 5 and 6 is urgently needed, both within the ICES area and throughout the world's oceans. WKLIFE is the premier venue for method development and discussion of stock assessments and advice approach for stocks in categories 2-6.

Scientific justification	ICES is working to provide catch advice for all stocks that is in line with the Precautionary approach and the ICES MSY framework. The methods developed and tested by WKLIFE aim to maintain risk-equivalency among all ICES stock categories; a key component to ICES advancements in this area.
Resource requirements	-
Participants	Stock assessment experts, modellers, individuals working with data-limited stocks
Secretariat facilities:	SharePoint site and report formatting
Financial	No financial implications.
Linkages to advisory committees	WKLIFE develops methods that are considered by ACOM and used to develop advice rules for stocks in categories 2-6.
Linkages to other committees or groups	There is a very close working relationship with all FRSG groups, the ICES Student Review Group.