

Ms Charlina Vitcheva

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Date: 14 July 2025

PelAC reference: 2425PAC80

Subject: PelAC input following the publication of the Benchmark report on Northeast Atlantic mackerel

Dear Ms. Charlina Vitcheva,

Please find attached the PelAC advice following the publication of the benchmark report on Northeast Atlantic Mackerel.

We hope that you can take the content of this advice into consideration.

Kind regards,



Esben Sverdrup-Jensen
Chair of the Pelagic Advisory Council





Pelagic Advisory Council Advice on the Benchmark report on Northeast Atlantic Mackerel

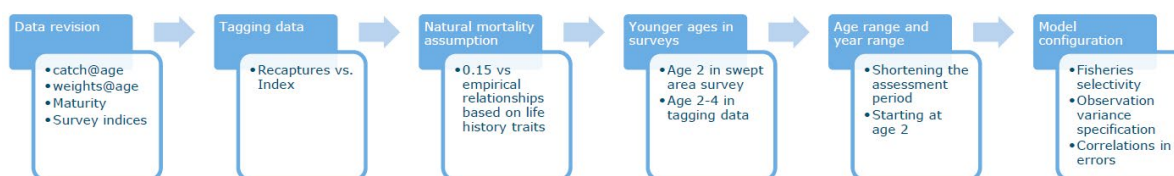
Background

Prior to the benchmark, a list of issues had been identified during the data collection workshop in December 2024. The main issues were:

- the lack of model fit on certain surveys (the egg survey SSB index for example),
- the large revisions in historic stock perception leading to differences up to 2 million tonnes
- the fact that Recruitment at age 0 could not be used as an indicative of year class strength.

Additional issues remained on certain input data and some alternative data series were to be tested to see if it would improve the model.

The benchmark workshop took place from the 24th to the 28th of March 2025 in Copenhagen. The figure below summarises the steps that were taken during the benchmark to address the list of issues that were identified prior to the benchmark.



The results of the benchmark were published on the 11th of June 2025. The final model includes the following changes:

- A change from a fixed natural mortality to a mortality at age Lorenzen et al model.
- The tagging data is used as an index.
- The assessment starts at age 2.
- Ages 2 to 4 are included in the model using a tag based abundance index.
- Changes in the model configuration (Model Starting in 1998, fishing selectivity is no longer plateaued at age 7 and the number of parameters have increased).

This change in the model led to a change in reference points:

	Former reference points	New reference points
$MSY_{trigger}$	2,580,000	4,119,337
F_{MSY}	0.26	0.19
B_{lim}	2,000,000	3,067,017
B_{pa}	2,580,000	4,119,337
F_{pa}	0.36	0.19

Despite the stock being perceived as larger, the decreasing trend in SSB since 2014 remains.

The result of the benchmark confirm the decreasing trend of the mackerel stock, with peak dating back from 2014. Since then, Coastal States have been unable to agree on a long term sharing arrangement, leading to the stock being just above $MSY_{trigger}$ in 2024. Recently, Summer fishing activities have been





carried out by Russian vessels in international waters that may further deplete the stock spawning biomass.

As highlighted by the PelAC in previous advice to the European Commission, it is urgent that Coastal States agree on a long term sharing arrangement for mackerel. The failure of certain parties to do so remains a key concern, as the continued setting of excessive unilateral quotas is a major factor contributing to overexploitation of the stock. This situation is further exacerbated by the misuse of banking and borrowing mechanisms, which enable excessive catches across years without proper accountability or coordination. The PelAC again underlines its long-held view regarding the consequences of mackerel overfishing by other parties which maintain repeated irresponsible actions that run contrary to the UN Convention on the Law of the Sea - and particularly the 1995 Straddling Stocks Agreement, deeming this approach effectively as IUU fishing.

While the PelAC will wait for the 2025 ICES advice before commenting on the state of the stock, however, the benchmark results show a high probability of the stock falling below Blim if the sum of agreed quotas remains higher than the ICES advised catch. **Appropriate Measures should be taken by Coastal States to avoid further decreases in the SSB, and we urge the Commission to undertake any efforts to that end. Venues such as the use of the recently approved revision of EU 1026/2012 on certain measures for the purpose of the conservation of fish stocks in relation to countries allowing non-sustainable fishing should be explored.**

PelAC advice on the results of the benchmark

Develop an Management Strategy Evaluation (MSE) for Mackerel

The previous MSE¹ focused on developing a precautionary Harvest Control Rule, including constraints on the inter-annual variation of TAC and a 10 % banking and borrowing mechanism.

In line with the benchmark report, the PelAC suggests drafting, with stakeholder inputs², a new MSE request for ICES that should include additional consideration, such as:

Implementation error: This MSE request should assess the impact of the sum of quotas being higher than ICES's advised catches since 2014 – using a retrospective analysis and/or undertaking implementation error robustness testing to hypothetical over catch scenarios for the MSE projections. These types of analysis can demonstrate the consequences on the stock of a lack of comprehensive sharing arrangement historically or into the future – i.e. at what point of over catch would managers fail to deliver management objectives.

Rebuilding plan: In line with the latest status of the stock, the request should include a rebuilding plan to ensure that mackerel SSB does not fall below Blim and can be recovered above a Btarget.

Ecosystem considerations: Additionally, the MSE would, in line with the benchmark report, fully test alternative M and lower than average recruitment scenarios. Additional considerations on M could

¹ [Workshop on Management Strategy Evaluation of Mackerel \(WKMSEMAC\) Report](#)

² The Pew Charitable Trusts [\(2024\) To Improve Fisheries Management and Protect Ecosystems, Decision Makers Must Ask Better Questions.](#)





include regional and time variations, increased M when mackerel predator biomass is high, the impact of broader ecosystem considerations on M such as climate change. Additional considerations for recruitment could be robustness tests – if stock productivity is lower than expected, what are the consequences?

Exploration under the results of WKNEWREF and WKREBUILD should be done in the MSE to include EBFM into stock assessment. Furthermore, the recently published Framework for Ecosystem-Informed Science and Advice (FEISA) should be applied to mackerel by developing clear operational objectives (biological/ecological, social and economic) for the fishery. This will allow an MSE to test the performance of Long-Term Management Strategies (LTMS) to achieve these objectives, and for managers and stakeholders to understand any trade-offs between them.

The PelAC hopes that the conclusions of the MSE will lead to the adoption of a Long-Term Management Plan combined with a Long-Term sharing arrangement.

Improving data and our understanding of the stock:

The benchmark tested and included new data sources, new indices and overall improved the fitting of the model to existing data. The data collection workshop provided Member States with the opportunity to improve existing data sources. The benchmark report underlines a series of improvement on the data side that could be carried out prior to future benchmarks:

- *To address any possible issues with misclassification of maturity stages future sampling should concentrate on peak spawning seasons to develop a validated maturity ogive that can be applied to the entire distribution of the stock.*
- *Maintain the time series of mean weights and update annually with new data received in the data call. This data can be used in future analysis of stock weights.*
- *Evaluate the model based approach for the calculation of mackerel abundance at age based on the IESSNS data when the new model is published.*
- *The usefulness of the DEPM index should be further investigated as the time series becomes longer.*

In line with its previous recommendations, the PelAC would like to support data collection for the Daily Egg Production Method considering the potential improvement in data for the model it could provide with a longer time series. Improving DEPM data collection would need to be coordinated with a broader discussion on whether mackerel is a determinate or indeterminate spawner.

The scientific papers published by Naiara Rodríguez-Ezepeleta on “Atlantic mackerel population structure does not support genetically distinct spawning components” and the project carried out by Leif Andersson & Carl-Johan Rubin on Atlantic Mackerel Whole genome sequencing data have proved that there is a single mackerel stock in the Northeast Atlantic, with subpopulations in the Gulf of Saint Lawrence and in the Mediterranean. ICES included their work in its WKEVALMAC report, moving from a three component approach to a single component. With this in mind the PelAC recommends aligning management measures with the 2024 scientific advice from ICES. This entails harmonizing MCRS for mackerel to 20 cm in all management areas (Technical measures Regulation) and removing redundant management measures for MAC/*3A4BC in areas 3a, 4b and 4c to protect the non-existing North Sea component in the TAC and Quota Regulation for 2026. Special provisions for MAC/*03A, MAC/*04B and MAC/*04C should be removed.





Furthermore, the improvement of mackerel genome knowledge could allow the development of a Close-kin mark-recapture approach for Northeast Atlantic mackerel, to provide additional data on estimating absolute abundance and mortality rates.

The stock and catch weight at age computed in the model still use the previous three stock component approach. A research priority would be to develop a new method to compute the stock and catch weight at age without the three component approach.

In its recommendations prior to the benchmark, the PelAC underlined the importance of tackling persistent gaps in the geographic coverage of data and stock distribution. Recently Norway has announced that they would not participate in the egg survey, despite the survey's contribution to the model. Moreover, the distribution of mackerel has an impact on achieving the status of a Coastal State. Given the fluctuating presence and accessibility of mackerel, improving geographic coverage in scientific surveys is essential for the future. With this in mind, the PelAC supports the benchmark's recommendation to *"Evaluate the model based approach for the calculation of mackerel abundance at age based on the IESSNS data when the new model is published"*.

As underlined in the previous PelAC recommendations for the benchmark, new methods are being set up to survey mackerel. Industry-led Acoustic surveys are being set up to utilise the fact that mackerel aggregates in the North Sea, in the Shetland Isles in the autumn. Using commercial vessels equipped with EK80s, it is possible to measure the biomass of mackerel. Additionally, securing adequate resources to fund existing surveys and to develop new approaches is critical, considering the nature of the existing data. Data collection remains key, however, it is as important to ensure that scientists that can compute the data are available.

The PelAC would also like to underline that recruitment has been declining since 2015. In order to try and reverse this trend, the PelAC suggests identifying spawning and nursery areas in order to preserve them from anthropogenic impacts.

Recommendations

Following the publication of the Benchmark, the PelAC recommends:

- The Commission, and like-minded Coastal States, to draft an MSE request that would investigate the inclusion of ecosystem considerations, rebuilding, and the consequences of implementation errors in a long term management strategy (LTMS). Consideration should be given to setting clear operational objectives and incorporating ecosystem considerations, including climate robustness and resilience testing, and exploring further impact of predation and the role of mackerel in the ecosystem. These considerations could be include as age-varying and time-varying natural mortality parameters. The MSE request should include exploratory work to include the results of WKNEWREF and WKREBUILD. The MSE should also include the results of ICES's FEISA report.
- The Commission to, following the agreement of a comprehensive long-term sharing arrangement, following the MSE, initiate discussions with Coastal states on LTMS that includes a rebuilding plan to reverse the current declining stock trend and prevent the stock from falling below Blim, as projected within the next two to three years.





- ICES and the Commission to work to identify nursery and spawning areas for mackerel in order to adapt management measures.
- The Commission and the Member States to consequently align management measures with the 2024 scientific advice from ICES retracting the subcomponent hypothesis for mackerel. This entails harmonizing MCRS for mackerel to 20 cm in all management areas (Technical measures Regulation) and removing redundant management measures for MAC/*3A4BC in areas 3a, 4b and 4c to protect the non-existing North Sea component in the TAC and Quota Regulation for 2026. Special provisions for MAC/*03A, MAC/*04B and MAC/*04C should be removed.
- The Commission to improve the data collection and support the development of novel approaches to fecundity such as the Daily Egg Production Method or genetic understanding of mackerel stocks. The objective will be to better understand the geographical distribution of mackerel, and include it in the assessment. New data collection methods such as the acoustic survey development, mackerel bioenergetic explorations and further adaptation of the IESSNS to the North Sea should be supported.
- The Commission to fund and develop science to address whether mackerel is a determinate or an indeterminate spawner.
- Address the recommendations from the benchmark report to
 - Address any possible issues with misclassification of maturity stages future sampling should concentrate on peak spawning seasons to develop a validated maturity ogive that can be applied to the entire distribution of the stock.
 - Maintain the time series of mean weights and update annually with new data received in the data call. This data can be used in future analysis of stock weights.
 - Evaluate the model based approach for the calculation of mackerel abundance at age based on the IESSNS data when the new model is published.
 - Investigate the usefulness of the DEPM index as the time series becomes longer.
- Ease the implementation of new data collection methods that can address data gaps in the current model such as acoustic surveys or the Close-kin mark–recapture method
- Assess the impact on the stock of the fishing activities carried out in international waters by Russian vessels during the summer. In the event where the activities can be considered as IUU, the PelAC support the efforts by the European Commission's initiative to utilise the recently approved revision of regulation 1026/2012 EU countries engaging in unsustainable fishing practices.

