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## Risk Assessment for Sourcing Seafood (RASS) profile; Mackerel (*Scomber scombrus*) in subareas 1–8 and 14, and in Division 9.a (Northeast Atlantic and adjacent waters), captured by pelagic trawls

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### Introduction

This document is a summary of information on the Northeast Atlantic pelagic trawl fishery for mackerel derived from scientific assessments and risk assessed using Seafish's [RASS scoring guidance](#).

Fish populations are divided into fish stocks. A fish stock is a sub population of a fish species which inhabits a defined area of sea. Fish stocks are the units used by scientists and governments to assess and manage fisheries. This RASS profile relates to Northeast Atlantic mackerel stock (Figure 1) caught by the pelagic trawl fishery.

### RASS scoring guidance

RASS applies a framework which scores risk levels for stocks and fisheries on a five-point scale; from 1 very low risk to 5 very high risk, as indicated by the number of solid blue circles shown on the profiles below.

Four aspects are assessed for each fishery;

1. Stock status as advised by [ICES<sup>1</sup> annually](#)
2. Stock management, using information from ICES and other sources.
3. Bycatch effects; that is effects on species which are unintentionally caught
4. Habitat effects; centred around seabed habitat

Scores should not be used in isolation to decide on a purchase of seafood from a stock. Profiles are designed to:

- enable the main features of a fishery to be examined within a structured format,
- inform buyers of questions they might ask about a fishery and where improvements could be made to improve sustainability

Inevitably there are several technical terms used. Please see the Glossary at the end of the document, where there are also links to further reading.



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### Stock structure of Northeast Atlantic mackerel

In the Northeast Atlantic, mackerel is considered to have a single stock that extends from southern Portugal to northern Norway and into Iceland and Greenland waters. Mackerel fished in the whole of the area shown in Figure 1 are considered to belong to a single stock. However, there are three separate spawning components: the Western component which spawns along the continental shelf, west of the British Isles, the Southern component, which spawns off the Iberian Peninsular and the North Sea component, which spawns in the North Sea.

The ICES catch advice is given for the whole of the area, with seasonal and spatial management designed to protect certain components of the stock; see Management Section, below

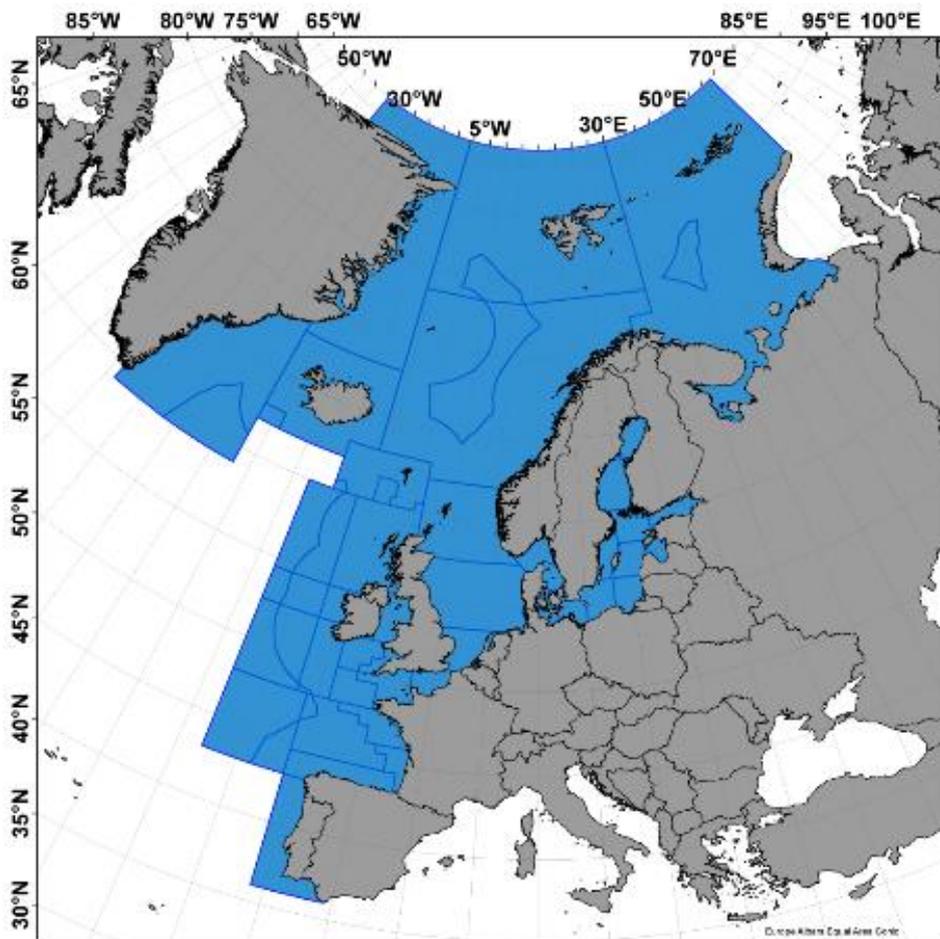


Figure 1 Stock area of mackerel (*Scomber scombrus*) in Northeast Atlantic and adjacent waters

<sup>1</sup> ICES; International Council for Exploration of the Sea, the scientific body charged with carrying out stock assessment and advising Governments concerning management of Northeast Atlantic stocks



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### Stock status 2022

● ● ○ ○ ○ Low risk

**This stock is subject to regular assessments by ICES and is advised as being at full reproductive capacity and harvested sustainably, but at a fishing mortality rate above optimum (above  $F_{MSY}$ ) in 2021. This corresponds a low risk under the RASS scoring guidelines.**

Spawning stock biomass, an indication of the reproductive capacity of the stock, has been forecast to remain close to stable (within 2%) during spawning time in 2023 and 2024, if catches of are in line with the advised catches of 794,920 tonnes in 2022 and 782,066 tonnes in 2023.

### Management 2022

● ● ● ● ○ High risk

**Advice on management controls is derived from analytical models but catches are outside the range specified by scientific advice and may not lead to a sustainable pattern of exploitation. Spatial and temporal management measures are in line with advice, and compliance with management measures is good. This corresponds to a moderate risk under the RASS scoring guidance.**

**However, this is likely to understate the level of management risk on this stock. It is clear that Coastal States exploiting the stock recognise the need to limit catches to scientifically advised levels, because this year (2022) they initially agreed to an overall catch limit (see below). They then went on to set unilateral quotas (that is quotas which are not part of an agreed TAC), the sum of which exceeds scientific advice. This has occurred frequently since at least 2010. Therefore, the risk score has been increased to high risk.**

### Catch limits

The 2022 assessment which corresponds to current management (2022), indicates that a Total Allowable Catch (TAC) should be set at 794,920 tonnes for 2022 which would coincide with the advised catch for Maximum Sustainable Yield. International agreement had been reached, in October 2021, between the Faroe Islands, the EU, Greenland, Iceland, Norway and the UK on a TAC of 794,920 tonnes in 2022. This consists of all of the States exploiting the stock except for the Russian Federation, which takes around 10% of the catch mostly in international waters. Part of the agreement included a requirement for States to agree on the quota of the TAC allocated to each State. They agreed to continue consulting on the quota to be fished by each of the parties with best endeavours to reach a swift conclusion. They have



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also agreed to establish a working group to analyse data on mackerel distributions, to help inform this process, which at the time of the agreement in October 2021 was to include the Russian Federation.

However, subsequent to the international agreement, the States exploiting the stock have declared their own 'unilateral quotas' for 2022, the sum of which ICES estimates as 1,131,416 tonnes or 42.3% higher than the advised TAC.

ICES estimates that the sum of unilateral quotas for this stock have exceeded the advised TAC by an average of 41% since 2010. This consistent overshoot (that is catches exceeding the advised TAC) is considered by ICES to be inconsistent with the assumptions made in the assessment which assumes alignment between advised and agreed catches. ICES considers that this risks loss of catch in the long term and unsustainable utilisation of the resource.

### Other Management measures

There are specific management measures designed to protect the North Sea component of the stock where catches are advised to be at the lowest possible level to allow recovery of the stock. These are;

- No mackerel fishing in divisions 3.a (Skagerrak and Kattegat) and 4.b–c, (Southern North Sea) except for Norway, where a limited amount of the TAC can be fished in Division 3.a
- No mackerel fishing in Division 4.a (Northern North Sea) during the period 15 February–31 July; this is the period when the North Sea component of the stock is present in this area. The Western component is present, and fished, within Division 4.a during the remainder of the year.
- A 30 cm minimum conservation reference size in the North Sea, compared with a 20 cm minimum conservation reference size elsewhere

There is also the mackerel box off SW England, which has been in force since 1981 which was introduced for protection of juvenile mackerel. Within this area there is a ban on targeted fishing for mackerel by trawlers and purse seiners. There is a handline fishery, within the 'box', with a separate quota allocation. There has been a discard ban implemented in European pelagic fisheries since 2015 and Scandinavian fisheries have similar legislation.

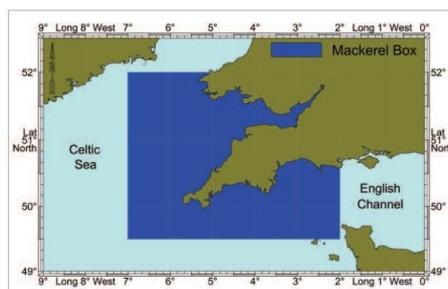


Figure 2 The Southwest of England mackerel box



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## Bycatch risk

● ● ○ ○ ○ Low risk

**A small number of cetaceans, seals, sharks and a very few birds have been observed by independent observers as bycatch in this fishery. Quantities caught were not considered to have a significant effect on the populations of these species.**

## Targeting

These vessels target mackerel or herring using large scale pelagic otter trawls, which are set entirely in mid-water, there is no seabed contact. The vessels search for and target specific shoals. Once the shoals are located tow durations are short and well targeted. Because they are targeting pelagic fish there is a risk of capture of other pelagic species of fish, marine mammals and surface-dwelling birds on hauling.

## Evidence of bycatch risk

The main source of evidence on Endangered Threatened or Protected (ETP) species bycatch are surveys carried out by observers on European vessels under the requirements of EU legislation (Council Regulation (EC) 812/2004), which collect data on bycatches of sea mammals, bird and pelagic shark species designated as ETP.

The UK fleet of these vessels has been monitored under this programme and a small number of bycatches of cetaceans and seals were observed, together with sporadic bycatches of pelagic sharks and a very few birds. The quantities caught were not considered to have a significant effect on their populations (Kingston & Northridge, 2015).

## Mitigation measures

No mitigation measures are considered necessary

## References

Kingston, A., & Northridge, S. (2015). *Protected species, bycatch monitoring in UK pelagic fisheries; A summary report for the pelagic advisory council*. Sea Mammal Research Unit St Andrews University.

## Habitat risk

● ○ ○ ○ ○ Very Low risk

**The seabed habitat impact of the pelagic otter trawl fishery has been scored a very low risk.** Any interaction with the Seabed would be accidental and likely to result in gear damage. In addition, there is far less danger of gear loss (and subsequent ghost fishing) in pelagic trawl fisheries than in demersal fisheries. This is partially due to the lack of contact with the



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seabed, but also because the nets are far lighter, and an entangled net would more easily break and be recovered. No spatial management is in place to restrict the footprint of this gear on the seabed given that the seabed habitat impacts of pelagic otter trawls is minimal.

### **Certification and Fisheries Improvement**

Until March 2019, there were four Northeast Atlantic mackerel fisheries certified to the Marine Stewardship Council Standard:

- Faroese Pelagic Organisation Northeast Atlantic mackerel;
- Iceland Sustainable Fisheries Iceland mackerel;
- Mackerel Industry Northern Sustainability Alliance (MINSAs) North East Atlantic mackerel (which represents the UK part of the fishery and accounted for 78% of the total volume of Northeast Atlantic mackerel harvested); and
- Northern Ireland Pelagic Sustainability Group Irish Sea-Atlantic mackerel.

However, the absence of an agreed and coordinated management approach to limit fishing pressure by participating countries meant that the MSC certification of all these fisheries was suspended in March 2019.

In response to this situation the [North Atlantic Pelagic Advocacy Group \(NAPA\) was established to drive improvements in management of fisheries for mackerel herring and blue whiting](#) was established to drive improvements in management of fisheries for mackerel herring and blue whiting

The NAPA is a collective of retailers and supply-chain businesses with a commitment to sourcing sustainable seafood. This collective is using its voice to advocate for long-term, science-based management of Northeast Atlantic pelagic stocks: for prospering oceans and fisheries, and business security. It has initiated a [Fisheries Improvement Project \(FIP\)](#).

The FIP is classed as inactive because it cannot at present comply with the Fisheryprogress' social responsibility policy because, although there are no known social issues, being a policy FIP it has very little engagement with individual vessels/fishing operators.



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## Glossary

Term	Definition
<b>Fishing Mortality: F</b>	The rate of mortality due to fishing. In some texts it is referred to as “Fishing pressure”. The scientists and managers seek to adjust fishing mortality through management measures such as catch limits (or TACs) on a stock to keep the stocks inside safe biological limits and optimise yields at MSY (see below)
<b>International Council for Exploration of the Sea: ICES</b>	International scientific body responsible for carrying out fish stock assessments in the ICES Area: the Northeast Atlantic and Baltic Seas. Also advises governments on other scientific issues concerning the marine environment <a href="http://www.ices.dk">www.ices.dk</a>
<b>Management plans</b>	Management plans are agreed between the parties exploiting a stock, usually governments. They can take the form of a set of decision rules guiding the management of the stock with pre agreed reference points. This is particularly important when the aim is to recover a stock from outside safe biological limits. Governments can ask ICES to carry out a scientific assessment of their plans to assess whether they are precautionary and will achieve the objectives set out for the stock
<b>Maximum Sustainable Yield: MSY</b>	Catching the maximum quantity that can safely be removed from the stock while maintaining its capacity to produce sustainable yields in the long term.
<b>Precautionary approach</b>	The ICES precautionary approach requires that the risk of a stock being outside safe biological limits is less than 5-10% in any one year.
<b>Quota</b>	A quota is a share of the TAC, divided between States, and further divided between fishers. Unilateral quotas are catch limits declared by individual States (or other entities such as the EU) outside the framework of an overall TAC
<b>Safe Biological Limits: SBL</b>	When a stock is inside safe biological limits there is considered to be sufficient reproductive capacity to support a fishery. If a stock is outside safe biological limits there may not be sufficient reproductive capacity to support a fishery
<b>Spawning stock biomass ('SSB');</b>	This is an estimation of the quantity of breeding adults and hence the reproductive capacity of the stock, measured in tonnes.
<b>Total Allowable Catch: TAC</b>	The Total Allowable Catch (TAC) is a catch limit (expressed in tonnes for a fishery generally for a year or a fishing season.



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## Further reading

Seafish has produced a series of further information including detailed guides to fisheries management and assessment. These can be accessed from [here](#)

## Contact

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