

EU/UK request on Celtic Sea Whiting TAC

Service summary

ICES presents mixed fishery short-term forecasts for the Celtic Sea and North Sea ecoregions. Two scenarios were considered, one being *status quo* effort (*sq_E*) that assumes a similar fleet effort in 2023 to that of the recent historical period (2019–2021 for the Celtic Sea and 2021 for the North Sea). The other scenario assumes that fleet effort in 2023 is equal to the effort required for full uptake of the whiting single stock advice for 2023 for each ecoregion (Whiting TAC). Differences in catches between the two scenarios can be attributed to whiting-specific choking to fleet effort in the two models. ICES also presents an analysis of the technical interactions among stocks. The analysis is similar to the one made for the Greater North Sea ecoregion Fisheries Overview (ICES, 2022d), but it is restricted to ICES division 7.d.

ICES notes that the mixed fishery short-term forecasts assume that the behaviour of fleets in 2023 is similar to the recent period. For the technical interactions, data are aggregated across these strata at the level available to ICES; this might overestimate the degree of technical interaction.

Request

Given the likely technical interactions between whiting and other demersal stocks, ICES is requested to provide a qualitative estimate of the technical interactions between pairs of species caught in the Eastern Channel and to identify any particular choke issues given the distribution of fishing opportunities in the Eastern Channel and adjacent areas.

The EU and the UK therefore seek ICES to tabulate the expected catch data (disaggregated to landings and discards), by fleet (including Country id) and stock area) under a situation where TACs for the two areas are set independently and the relative fishing patterns of fleets operating in the Eastern Channel (7.d) and the wider Celtic Sea whg.27.7b-ce-k. remain as they have been in the recent past.

Elaboration on the service

The mixed fishery model forecast indicates that to be consistent with the single stock advice for whiting in the southern Celtic Seas and western English Channel (whg.27.7b-ce-k), fishing effort and, therefore, catch of other stocks will need to be below current levels of most fleets in the Celtic Sea (Figure 1).

Conversely, the mixed fishery model forecast indicates that current levels of fishing effort and catch in the North Sea and eastern English Channel will not exceed the single stock catch advice for North Sea whiting (whg.27.47d). This is shown in Figure 2.

The CSV files with the tabulated expected catch data (disaggregated to landings and discards) by fleet (including Country ID and stock area) are available for download at: <https://doi.org/10.17895/ices.advice.22332715>

Basis of the service

Background

[ICES is requested to provide advice on the alignment of the management areas and the assessment units used by ICES, with a view to meeting the legal obligation contained in Article 504(1) of the Trade and Cooperation Agreement between the European Union and the United Kingdom.

Specifically, this request concerns the following stocks (ICES stock area): North Sea and Eastern Channel whiting (whg.27.47d) and Celtic sea whiting (whg.27.7b-ce-k)

Celtic Sea whiting and North Sea and Eastern Channel whiting are assessed by ICES as two independent stocks with separate catch advice. However, the two current related TACs do not correspond to the stock distribution areas. The Eastern Channel component of North Sea and Eastern Channel whiting is managed together with Celtic Sea whiting (VIIb-k) under the Celtic Sea whiting TAC (WHG/7X7A-C), and independently from the North Sea Whiting TAC (WHG/2AC4).

ICES recommends an alignment between the management areas and the stock distribution areas, without which it will be difficult to achieve the objective of fishing at MSY for both stock areas.

The management areas of the stocks have been differentiated in the past mainly because different fleets operated in different areas. The North Sea part of the North Sea and Eastern Channel whiting stock was fished by EU, UK and Norwegian fleets. Whereas, EU and UK fleets fish the Eastern Channel component (7.d) of the North Sea whiting. The same as for the Celtic Sea whiting stock.

The fishing pattern of the fleets operating in the Celtic Sea and Eastern Channel that either fishing for whiting as a target species, or that catch whiting as a by-catch, do reflect fishing opportunities that have been established for many years now.

A reopening of the management rules of these stock components could open additional challenges on fishing patterns and fleets' catch composition with potential detrimental impacts on for example discard practices of choking phenomenon.

Methods

Mixed fishery short-term forecasts

For both ecoregions, two scenarios are provided:

1. *Status quo* effort (*sq_E*), assuming similar fleet effort in 2023 to that of the recent historical period (2019–2021 for the Celtic Sea and 2021 for the North Sea); and
2. Whiting TAC (Celtic Sea: whg.27.7b-ce-k, North Sea : whg-ns), assuming fleet effort in 2023 is equal to that required for full uptake of the whiting single stock advice for 2023.

Differences in catches between the two scenarios can be attributed to whiting-specific choking to fleet effort in the two models. For fleets that do not catch whiting, *status quo* effort is also assumed in the Whiting TAC scenario.

For the Greater North Sea ecoregion, the English Channel (Division 7.d) catch share for whg.27.47d is based on the catch proportions of fleets operating in 7.d for the most recent data year (2021) available at the time of the analysis. Only fleets that contain a métier operating in Division 7.d are included in the summary tables and figures. Catches are split according to the most recent landings and discard ratios. These ratios are used for under-quota catches, while all over-quota catches are counted as discards. The *whg-ns* scenario was not conducted during WGMIXFISH-ADVICE 2022, but is provided for this request.

For the Celtic Seas ecoregion, the catch share for whg.27.7b-ce-k is included for fleets operating throughout the area, based on the forecast catch for each fleet under the respective scenarios. Catches of *Nephrops* are differentiated into landings and discards. For all other species landings equate to total catches, under the assumption of full compliance with the landing obligation. For further details on the scenarios, please refer to the ecoregion-specific considerations for the two ecoregions (ICES, 2022a, 2022b) as well as the final WGMIXFISH-ADVICE report (ICES, 2022c).

Technical interaction analysis

In addition to the mixed fishery short-term forecasts, an analysis of the technical interactions among stocks is provided. The analysis is similar to the one made for the Greater North Sea ecoregion Fisheries Overview (ICES, 2022d), but it is restricted to Division 7.d.

Possible technical interactions are observed through co-occurrence of species in the landings. These co-occurrences should be evaluated at the scale of the fishing operation (i.e. haul level) to avoid the creation of any “false” technical interactions through data aggregation. As no database allows for the assessment of technical interactions at that scale, analyses were run on WGMIXFISH data on TAF.

This database includes landings seasonally (usually by quarter), spatially (by ICES subarea, in this case Subarea 27.7.7.d), and by métier. The aggregation across these strata might then overestimate the degree of technical interaction, as landings of several fishing operations with potentially different species compositions are aggregated.

For each strata (i.e. unique year/season/métier/ICES subarea), the percentage of each species in the landings was computed. Technical interactions at the stratum-scale between species A and B were considered to appear when the percentage of species B in the given stratum was higher than X%. The percentage of landings of species A, where species

B is also landed and constitutes more than X% of the total landings in that stratum, has then been computed for each pair of species (ignoring landings of species A of strata where landings of species B were lower than X%). Two analyses are then produced.

The first analysis estimates the degree to which whiting is targeted. Over the period 2009–2021, the percentage of whiting landed in a stratum where it represents more than respectively $X = 5\%$, 15% , 25% , 35% , or 45% is plotted over time. If these percentages are high, then whiting can be considered generally targeted.

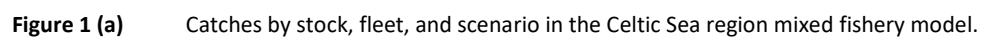
The second analysis estimates the technical interaction between each pair of species. For each species comparison, the percentage of landings of species A, where species B is also landed and constitutes more than $X = 5\%$ of the total landings in that stratum, has then been used to assess if species B has no, low, medium, or high technical interaction with species A.

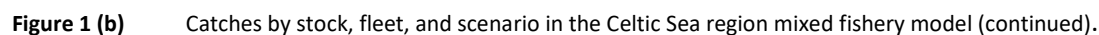
Results and conclusions

Catches are presented by stock, fleet, scenario, and catch category (landings, discards, overshoot) in Figures 1 and 2.

For most Celtic Seas fleet-stock interactions, overall catches are higher for the *sq_E* scenario, indicating that whiting TAC limits the fishing effort for most fleets. Exceptions to this are for several “Static” gear fleets that do not catch whiting; their catches are nearly identical under both scenarios.

For the North Sea, the *whg-ns* scenario is less limiting than *sq_E*, generally allowing for higher catches. This is due to the finding that whiting is the least-limiting stock for 35 of 46 fleets (ICES, 2022a). Thus, the *whg-ns* scenario is very similar overall to the *max* scenario, resulting in substantial TAC overshoots in most other fleet-stock interactions, as observed by the higher discard levels.





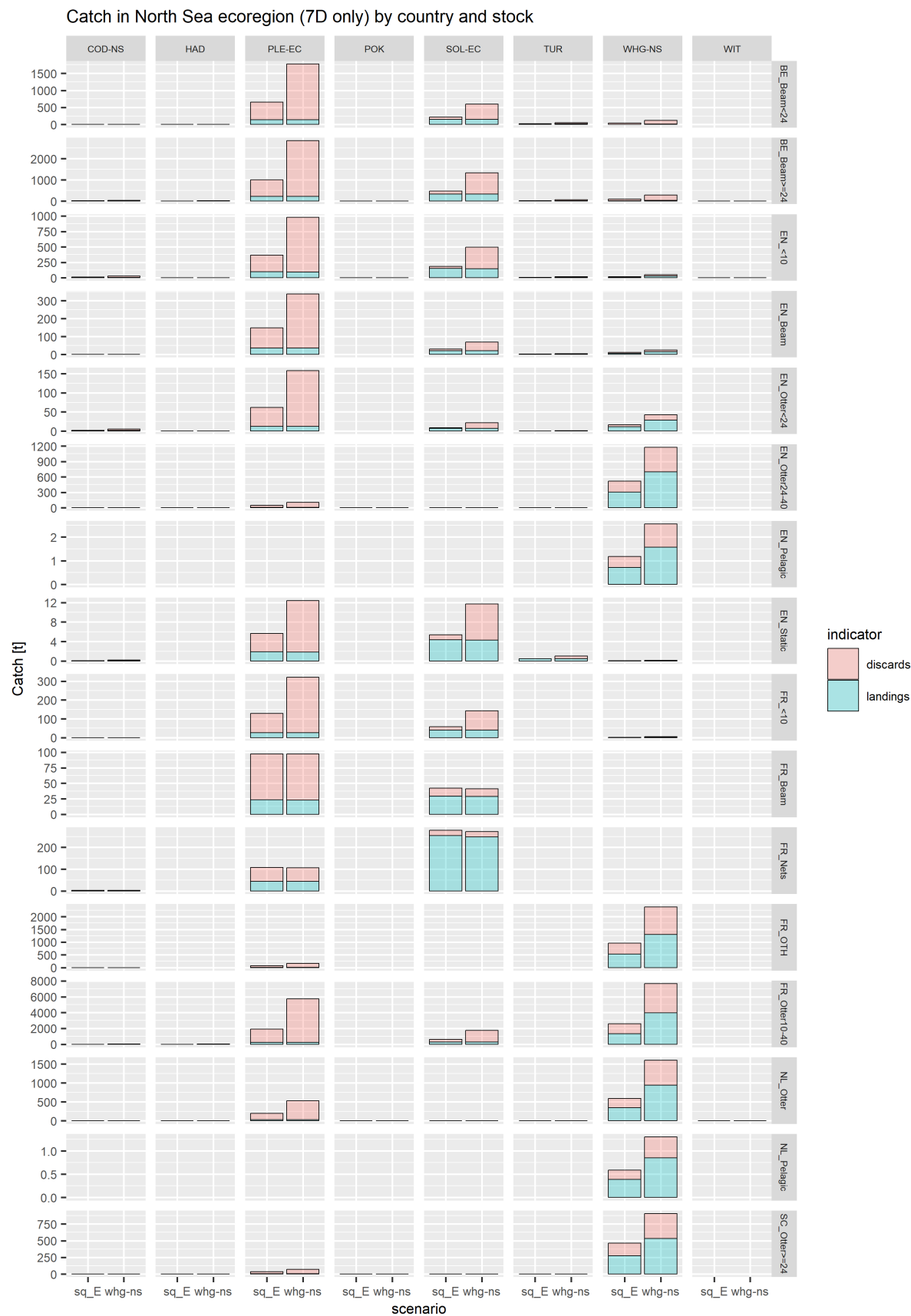


Figure 2 Catches by stock, fleet, and scenario in the North Sea region mixed fishery model.

Technical interaction analysis

Whiting targeting

Whiting is generally targeted in Division 7.d, where up to 50% of the whiting landings are taken in strata that make up 35% or more of whiting (by volume) in their landings (with the exception of the year 2020). This is shown in Figure 3. Nearly all whiting landings derive from strata where whiting represents more than 5% of the total landings. These values are quite high compared to what can be observed in subarea 4, where whiting seems targeted in only some métiers/seasons and in area 3AN (referring to Subdivision 3.a.20) where whiting seems to be a bycatch species.

Whiting technical interactions

Figure 4 shows that when whiting is caught (last row), the main species caught together are mackerel and, to a lesser extent, gurnard, skates, and dogfish. This figure also shows that whiting is caught together with all other species (last column). When other species (dab, gurnard, red mullet, skates, dogfish, and squids) are caught, a high proportion of whiting is also caught. Sea bass, conger eel, flounder, lemon sole, mackerel, plaice, pollack, and undulate ray are also in technical interaction with whiting but to a lesser extent.

In conclusion, most whiting landings seem to be made in targeted fisheries. Some fisheries for mackerel also seem to recurrently land whiting. Whiting also seems to be landed with many other fisheries targeting TAC and non-TAC species.

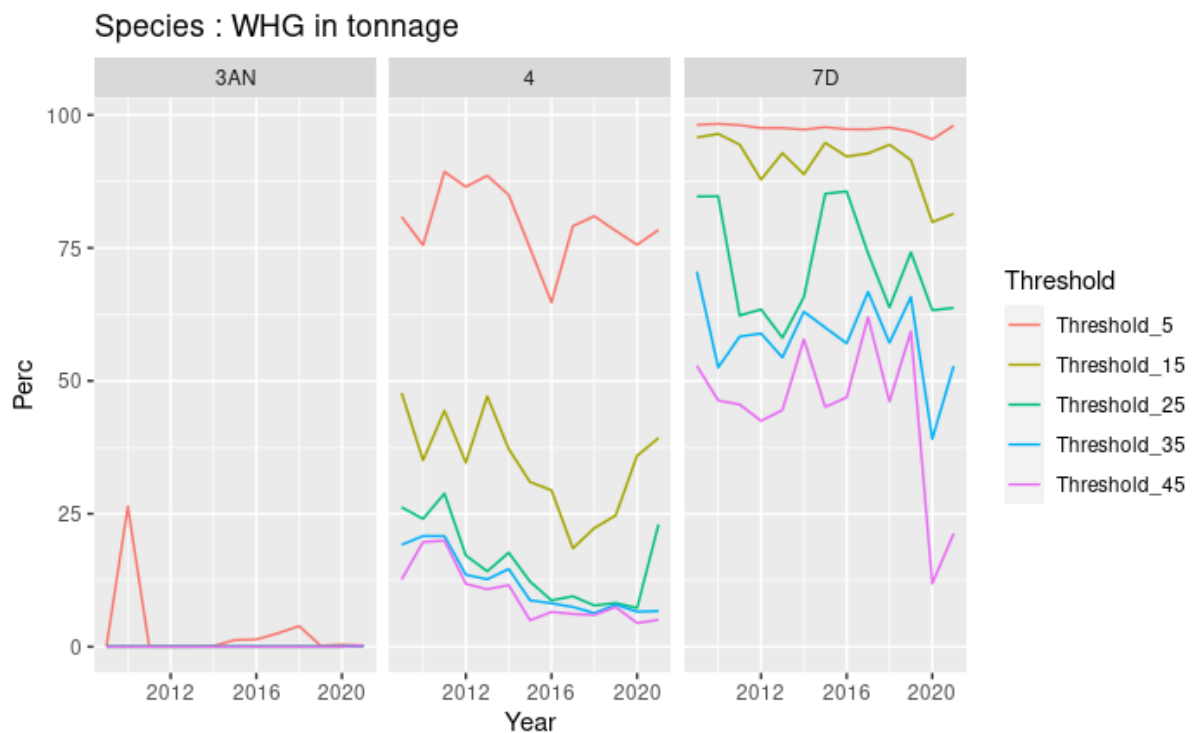


Figure 3 Percentage of total whiting landings (by volume) for those strata for which whiting makes up 5% (red), 15% (yellow), 25% (green), 35% (blue), or 45% (pink) of the landings of all species (by volume), for the period 2009–2021. Note that 3AN refers to Subdivision 3.a.20.

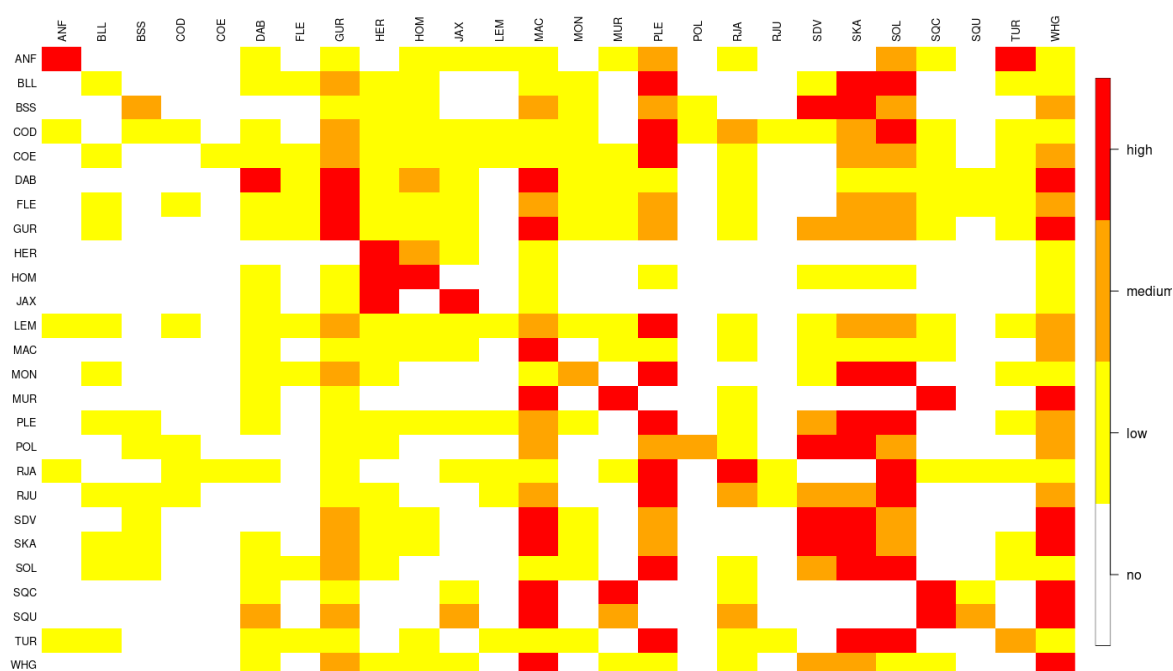


Figure 4 Technical interactions among Eastern English Channel demersal stocks. The rows illustrate the fisheries where species A was caught. Red cells indicate the species B (listed as the columns) with which species A are frequently caught. Orange cells indicate medium interactions and yellow cells indicate weak interactions. The column shows the degree of mixing in fisheries where species B accounts for at least 5% of the total landings.

Sources and references

EU. 2021. Trade and Cooperation Agreement between the European Union and the European Atomic Energy Community, of the one part, and the United Kingdom of Great Britain and Northern Ireland, of the other part. Official Journal of the European Union, L 149, 30.4.2021, p. 10–2539. [http://data.europa.eu/eli/agree_international/2021/689\(1\)/oj](http://data.europa.eu/eli/agree_international/2021/689(1)/oj)

ICES. 2022a. Greater North Sea mixed fisheries considerations. *In* Report of the ICES Advisory Committee, 2022. ICES Advice 2022. <https://doi.org/10.17895/ices.advice.21532941>

ICESb. 2022b. Celtic Sea mixed-fisheries considerations. *In* Report of the ICES Advisory Committee, 2022. ICES Advice 2022, <https://doi.org/10.17895/ices.advice.21532935>

ICES. 2022c. Working Group on Mixed Fisheries Advice (WGMIXFISH-ADVISE). ICES Scientific Reports. 4:83. 229 pp. <https://doi.org/10.17895/ices.pub.21501414>

ICES. 2022. Greater North Sea ecoregion – fisheries overview *In* Report of the ICES Advisory Committee, 2022. ICES Advice 2022, section 9.2. <https://doi.org/10.17895/ices.advice.21641360>

Recommended citation: ICES. 2023. Joint Request from the European Union and the United Kingdom – Celtic Sea Whiting TAC. *In* Report of the ICES Advisory Committee, 2023. ICES Advice 2023, sr.2023.03, <https://doi.org/10.17895/ices.advice.22332715>